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Research Article

Perspectives of Food Insecurity and Service Delivery amongst Emergency Food Relief Clients in a Regional City in Victoria, Australia

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This cross-sectional study examined the experiences of people accessing Emergency Food Relief (EFR) in the regional city of Ballarat, Victoria, Australia, including determinants, impacts of food insecurity, and service delivery recommendations. The forty-one item survey examined demographics, food security status (six-item adult US-Household Food Security Survey Module), food acquisition, use of charitable food services, and self-rated health. Adults $n = 100$ accessing meal programs and/or EFR services from three EFR organisations in 2018 were surveyed. Ninety-seven percent of participants received government social security payments. Food insecurity prevalence was 92% (USDA-HFSSM 6 item); of these, 63% were experiencing very low food security. Over half (54%) of households with children ($n = 26$) reported being sometimes unable to feed their children balanced meals and 50% indicated that they were not eating enough. Participants (47%) relied on EFR services for food between one and five years. Poor self-rated dental health was expressed by over 50% of participants and 97% indicated the importance for services to provide healthy food. Food insecurity prevalence was high and chronic among adults receiving EFR services in a large regional Australian city. Recipients' poor dental health, chronicity of use of services for food assistance, and calls for healthier food suggest more was needed to secure pathways out of food insecurity. The chronicity of reliance on EFR is a concern. The results of this study are likely to be of interest to providers and funders of EFR, policy makers, academics, and client advocates. Whilst the provision of EFR is not a sustainable solution to the problem of food insecurity, scope exists to improve service delivery to uphold principles of dignity, choice, and access to nutritious food. Furthermore, this highlights that the key strategies to mitigate food insecurity lie beyond simply feeding people.

1. Introduction

Australia is highly urbanised with 72% of the population residing in major cities; however, seven million people live in regional, rural, and remote areas. These are populated areas outside of capital cities in each State or Territory [1]. Health status differs between regional and metropolitan areas, for example, poorer dental health and higher rates of cardiovascular disease, diabetes, and some cancers [1, 2]. Geographic isolation, low population density, limited infrastructure and access to services, poorer socio-economic circumstances, lower access to health care services, and

higher prevalence of smoking and harmful alcohol consumption contribute to health inequities for people living in regional areas [1, 2].

Food security, defined as access to adequate, safe, and nutritious food, is a fundamental human right and important to physical, mental, and social wellbeing [3]. Conversely, food insecurity is the limited or uncertain availability of nutritionally adequate and safe foods [4]. Food insecurity is a complex and persistent problem across many high-income countries [5]. Evidence suggests the health impact of food insecurity is considerable for Australians living in regional, rural, and remote areas [6, 7]. In these areas, food insecurity is associated with lower incomes, higher cost of living (including cost of food), limited food supply, and geographical and social isolation [8].

Food insecurity can be episodic or chronic, with individuals and households transitioning in and out of food insecurity [9]. The experience of food insecurity at a household and individual level occurs across a continuum of severity ranging from worry about running out of food to compromising food quantity and nutritional quality to reducing meal size, frequency, and going hungry [9].

The most current and available data indicates that in 2014 the population prevalence of severe food insecurity (with hunger) in Victoria was 3.6%, with 13% of adults worried about experiencing food insecurity (with hunger) [10]. People who were unable to work, identified as Aboriginal, lone parents with dependent children, and those who were unemployed were more likely to be experiencing food insecurity [10]. Recipients of Australian social security payments, e.g., disability and carer payments, unemployment benefits, and student allowances are more likely to be food insecure [11]. Whilst individuals and households on low incomes are more at risk of food insecurity in Australia; low-to-middle income households increasingly face challenges in maintaining food security [12].

Ballarat is a regional city, in Victoria with a population of approximately 111,361 people located 115 kilometres northwest of Melbourne, the nearest capital city [13]. Compared to regional and rural Victoria, Ballarat is an area experiencing higher social and economic disadvantage. Ballarat measures 980 on the Australian Socio-Economic Indexes for Areas (SEIFA), with SEIFA scores of less than 1,000 indicating areas of relatively greater disadvantage [13]. Individual suburbs vary, ranging from 855 to 1090 SEIFA in 2016, with some suburbs in the lowest tenth percentile of disadvantage in Victoria. These pockets of disadvantage and poor health outcomes are of a major concern. In 2014, the prevalence of severe food insecurity with hunger was 5.9% (2.5%–13.5%) of Ballarat residents compared to 5.3% (4.3%–6.5%) across regional and rural Victoria. Furthermore, 14.3% (9.3%–13.5%) of adult residents reported worrying about food insecurity with hunger [10].

Feeding programs and coordinated activities are the main response to food insecurity, with 12% of Ballarat residents accessing emergency food relief. During 2015/16, this response included 55,400 meals provided in community settings and 1,700 weekly school meals, mainly breakfasts [14]. The Ballarat Food Access Network, comprised of local food relief agencies, health, government, and community organisations work collaboratively to provide services, share information, and advocate for improved food access and regional solutions to food security. Consistent with the Australian response to food insecurity, EFR programs (food banks or pantries and meal programs) run by faith-based and nongovernment organisations are the dominant response [15, 16].

Little information exists regarding EFR in Australian regional areas, with most research undertaken in metropolitan areas [17]. This highlights the need to understand the experience of recipients and if EFR services are adequately meeting their needs. Data on the regional picture and experience of food insecurity will also give service providers valuable evidence for client centred service improvements. Only two recent studies examined the differences between regional, rural, and metropolitan EFR services, recipients, and the types of food provided [18, 19]. Amid concerns that the food relief sector in rural Australia is poorly understood [18], this work offers a deeper understanding of food insecurity and recommendations for regional service delivery best practice. Furthermore, this work will contribute to the evidence on the limitations of EFR approaches [20] and also shed light in the EFR sector in regional Australia.

1.1. Purpose of Study and Rationale. The impetus for this study is drawn from the concerns of our partner EFR organisations in their ability to adequately address the needs of their clients. In order to inform and strengthen the capacity of these EFR organisations to better understand and respond to food insecurity, this research is aimed as follows:

(i) Explore food security status (severity), barriers to food security, experiences of food insecurity (e.g., potential impacts on children and food access practices and preferences), and the self-reported health and wellbeing of adults using three large charitable food services (EFR) in Ballarat

(ii) Understand and document EFR recipients' opinions of and recommendations for, EFR service improvement.

2. Methods

2.1. Study Population and Recruitment. Participants were conveniently recruited from meal programs (MP) and/or EFR services offered by three major EFR organisations in Ballarat between February and March 2018. MPs included any meals across the day offered by the three EFR organisations. Eligible participants were those over 18 years of age who had accessed EFR and/or MP within the previous 12 months. Recruitment was via pamphlets/flyers at each organisation, referral from EFR staff, or word of mouth. The research information sheet was read by or to each person and written consent was recorded.

2.2. Measures, Instruments, and Data Collection. All data collection, storage, and management were in alignment with the study approval by the Monash University Human

Research Ethics Committee. Methodology included a paper-based survey, anthropometric measures (height and weight), and a 24-hour dietary recall. Anthropometric and 24-hour dietary recall data are not the focus of this paper and will be reported elsewhere.

A 38-item questionnaire developed by Pollard et al. for use in an inner-city food relief service context formed the basis of our instrument [17]. This questionnaire was based on relevant questions from their previous studies, and included input from their advisory group (service providers and experienced researchers). With permission, we adapted Pollard et al.'s instrument to reflect the regional context and the final 41-item questionnaire included both tick box and open comment responses.

The final instrument measured demographics, the temporality and severity of food insecurity, food purchasing behaviours, food sources, food attainment, intake, expenditure, self-rated health and health service access, use of EFR services, and service improvement recommendations. See Supplementary File 1. Food security status was determined using the validated six-item adult short form of the US Department of Agriculture (USDA) Household Food Security Survey Module (HFSSM) [21]. The six-item instrument was selected to reduce respondent burden but still capture the severity of the experience. Participants with children 18 years and under were asked two additional questions from the child component of the USDA 18 item HFSSM [21] to explore potential impacts of food insecurity for children.

The anonymous self-administered questionnaires were completed in a private room within the EFR services and reading glasses were available for participants if required. Researchers assisted participants who had trouble completing the survey due to literacy or other issues. Refreshments and a AUD$20 grocery voucher were provided in appreciation for participants' time. Completed questionnaires were checked by researchers for completeness and any errors rectified.

2.3. Data Analysis. Survey responses were entered by researchers into a Microsoft Excel spreadsheet and data was crossed checked with the original data collection forms for accuracy before being entered into SPSS version 26 (SPSS Inc., Chicago IL, USA). All data were stored according to the University-approved ethics requirements including password-protected electonic files. Paper surveys were stored in a locked filing cabinet. Frequencies of demographic characteristics and food security variables were calculated. Food security status severity categories were scored following the USDA-HFSSM-short adult form protocol using the number of affirmative responses to the six questions to provide a raw score categorising food security as follows: (i) high food security (score of 0) with no reported indications of food access limitations; (ii) marginal food security (score of 1) indicating anxiety over food sufficiency or a shortage of food in the house; (iii) low food security (score of 2–4) indicating reduced quality and variety of food with little or no indication of reduced intake; and (iv) very low food security (score 5-6) describing multiple indications of a disrupted eating pattern and reduced food intake [21]. The two child questions were reported according to the frequency of question variable response options [21]. Data from open text response questions were synthesised using a Microsoft Excel spreadsheet and a simple thematic analysis was conducted to group common responses and was reported accordingly.

3. Results

The demographics of the study participants $n = 100$ are shown in Table 1, with 53% males and 35% aged between 50–59 years. Ninety percent had completed high school and private rental was the most frequent form of housing tenure (41%) followed by public/community housing (37%). Twenty-six percent reported at least one or more children under the age of 18 living in their household. A fortnightly income of between AUD$450 to $649 was reported by 37% of participants. Ninety-seven percent received social security payments, with Disability Support Pension and Newstart (unemployment benefit) the most common. Over half (54%) of participants assessed their dental health as poor. Thirty-nine percent of participants accessed both EFR and MP (39%), followed by EFR (36%). Nearly half of survey participants (47%) used EFR services for between 1 and 5 years, and a further 11% had been relying on them for between 6 and 11 years.

3.1. Food Insecurity Severity Status and Barriers to Food Security. Ninety-two percent of participants were experiencing food insecurity, and of these, 63% experienced very low food security according to the USDA-HFSSM 6 item categorisation (Table 2). For those who were classified as experiencing very low food insecurity $n = 45$ (71%) reported cutting their meal size and $n = 13$ (21%) reported not eating for a whole day almost every month. Half of participants reported the main impacts of not having enough food to eat affected their physical and mental health and wellbeing.

Over half (54%) of the 26 households with children reported that it was "sometimes true" that they could not feed their children balanced meals and 50% ($n = 13$) indicated that their children were not eating enough due to affordability reasons.

Figure 1 describes participants' perceptions of barriers and concerns related to food security. Seventy-six percent indicated that they do not have the money in their budget to buy the food they need, and 73% felt that they should eat more fresh foods but they are too expensive.

Most participants accessed supermarkets, EFR organisations or MP's over the last week to obtain their food (Table 3). Forty percent reported spending AUD$51 to $100 per week on food for themselves and/or family. When asked to list the three foods they would buy if they had an extra AUD$20, participants indicated meat (64%), vegetables (42%), fruit (32%), dairy (18%), and fish (14%). The most frequent coping methods that participants would sometimes use to access food included borrowing money (46%) and/or food (40%) from friends or relatives and/or stealing food or drink (24%).

Table 1: Demographic characteristics of direct service recipients accessing emergency food relief and meals programmes in Ballarat, Victoria ($n = 100$).

Characteristics	Total n (%)
Male	53
Female	47
Age group	
18–29 years	16
30–39 years	14
40–49 years	21
50–59 years	35
60–69 years	10
70–79 years	3
80–89 years	1
Households with children <18 years of age	
Yes	26
No	74
Country of birth	
Australia	87
New Zealand	4
United Kingdom	2
Other	6
Did not respond	1
Aboriginal and/or torres strait islander origin	
Yes	10
No	90
Highest level of education	
Primary school	2
High school	61
College/TAFE	32
University	5
Income source*	
Disability support pension	37
Newstart allowance	30
Parenting allowance	12
Youth allowance	7
Age pension	5
Carer allowance	2
Wages	3
Family and/or friends	2
Other	2
Fortnightly income amount ($AUD)	
0–249	1
350–449	14
450–649	37
650–1049	35
More than 1050	8
Do not know	5
Accommodation	
Rent private	41
Rent public housing	37
Own home/mortgage	9
Temporary accommodation	6
Sleep in car/Couch surf	5
Live on the street	2
Self-reported health status	
Poor	25
Good	64
Excellent	11
Self- reported dental status	
Poor	54
Good	36
Excellent	10
Food programme attending	
Emergency food relief	36
Meal programs	18
Both	39
No response	7
Length of time attending services	
Less than 1 year	28
1–5 years	47
6–10 years	11
11–20 years	7
Not specified	7

*7 participants reported a second income source: 1 youth allowance; 1 disability; 1 aged pension; 3 Newstart; 1 carer.

3.2. Emergency Food Relief Service Improvements: Food and Service Delivery. The majority of participants said that it was important for EFR services to provide healthy food (93%), fruits and vegetables (92%), cooked meals (91%), soups (74%), grocery (supermarket) vouchers (89%), food for special dietary requirements (69%), food and drinks at the right temperature (77%), cutlery (76%), and a place to sit and eat with others (71%).

Most respondents praised the local EFR services and were grateful for the services provided with typical comments such as "the help and support is wonderful," and 40% indicating there was nothing further that EFR services can do to improve. Respondents appeared to understand the hardships services face, commenting "they do their best on what they get."

Suggestions for improvements included better quality or "fresher" food (12%), more funding or government intervention (11%), and greater availability of services, e.g., longer trading hours, greater frequency or more locations (9%). Other suggestions included "more donations" (5%), "less judgment" from volunteers or workers (2%) and reduce food wastage among clients (2%).

Greater coordination between organisations and/or more advertisement of services available were recommended by 5% of participants, 4% recommended more vouchers, budgeting, and/or financial help and that "more tailored" care to suit individuals would improve the services. Some respondents noted "less greed" from their fellow clients (3%), in terms of them taking more than they need.

4. Discussion

This is the first study undertaken using a multi-item tool to measure food insecurity status (including severity) amongst people accessing EFR services in a regional Victorian city. In addition, it explores experiences of food insecure people, their food access and EFR experiences and

Table 2: Food security status in the last 12 months, severity and components according to the USDA-HFSSM-6 item of people accessing emergency food relief programmes in the city of Ballarat, Victoria.

Food security status and components	Categories	Count (%)	
Food security status: USDA-HFSSM-6 item adult, $n = 100$	Food secure	8	
	Food insecure	92	
Food security severity status: USDA-HFSSM -6 item adult, $n = 100$	High food security	2	
	Marginal food security	6	
	Low food security	29	
	Very low food security	63	
Food security components of those classified as food insecure USDA-HFSSM-6 item, $n = 92$		Low food secure $n = 29$ (%)	Very low food secure $n = 63$ (%)
Did you ever cut the size of your meals or skip meals because there was not enough money for food?	Yes, almost every month	4 (14)	45 (71)
	Yes, some months but not every month	8 (28)	14 (22)
	Yes, only 1 or 2 months	3 (10)	4 (6)
	No	14 (48)	0 (0)
Did you ever eat less than you felt you should because there was not enough money for food?	Yes	10 (34)	59 (94)
	No	15 (52)	3 (5)
	Don't know	4 (14)	1 (2)
Were you ever hungry but did not eat because there was not enough money for food?	Yes	11 (38)	57 (90)
	No	16 (55)	5 (8)
	Don't know	2 (7)	1 (2)
The food that I/we bought just did not last, and I/we did not have money to get more	Often true	8 (28)	30 (48)
	Sometimes true	14 (48)	31 (49)
	Never true	5 (17)	1(2)
	Don't know	2 (7)	1(2)
I/we could not afford to eat balanced meals	Often true	4 (14)	34 (54)
	Sometimes true	12 (41)	28 (44)
	Never true	11 (38)	1(2)
	Don't know	2 (7)	0 (0)
In the last 12 months did you ever not eat for a whole day because there was not enough money for food?	Yes, almost every month	4 (14)	13 (21)
	Yes, some months but not every month	5 (17)	18 (29)
	Yes, only 1 or 2 months	5 (17)	12 (19)
	No	15 (52)	20 (32)
Food security components households with children <18 years of age, $n = 26$ (%)		Count n (%)	
I/we could not feed my/our children a balanced meal because I/we couldn't afford that	Often true	8 (31)	
	Sometimes true	14 (54)	
	Never true	8 (31)	
My/our children were not eating enough because I/we could not afford enough food	Often true	2 (8)	
	Sometimes true	13 (50)	
	Never true	11 (42)	

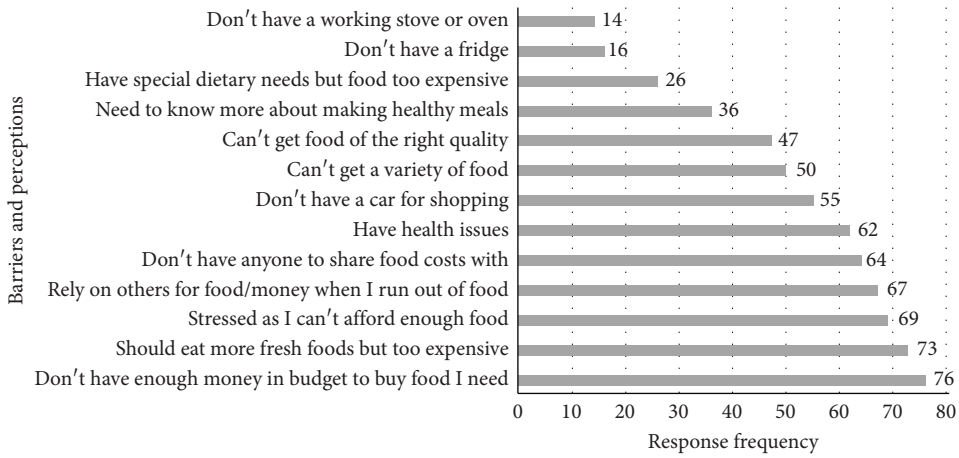

Figure 1: Food security barriers experienced by people receiving emergency food relief and meals programmes in Ballarat, Victoria $n = 100$.

recommendations for improvement. Levels of food insecurity amongst regional EFR recipients in this study (92%) are comparable to those found amongst inner-city area EFR food recipients (91%) in Western Australia [17]. This study builds on Mungai et al.'s (2020) work in regional New South Wales, which qualitatively explored the experiences of purposively selected food relief recipients and service providers. Notably, Mungai's study captured only small numbers of recipients and service providers ($n = 6$ and $n = 4$, respectively). A further point of difference between this study and Mungai's is that the focus of the study was to highlight practice implications for the social work profession [19]. Importantly this study further extends regionally focused research on food insecurity in Australia.

This study highlights the omnipresence of the drivers of food insecurity including poverty, housing affordability and availability, un/underemployment across diverse geographic locations [11]. Respondents' reliance on government social security payments was a key driver of food insecurity and is consistent with previous Australian research where approximately 80% of households experiencing food insecurity were in receipt of similar payment types [22]. These findings continue to highlight the inadequacy of social security payments in supporting the basic cost of living. A key indicator of un/underemployment is the number of people receiving government Jobseeker (unemployment benefit in Australia) and/or Youth Allowance social assistance payments. The percent of people in receipt of such payments in Ballarat ranged 6.4% (2019) and 7.0% (2022) increasing to 10.9% in 2020 [23].

Housing affordability in regional areas is a particular concern with over three quarters of respondents in this study renting (41% private renters versus 37% in public/community housing). This is expected given that the study participants were on a low income and accessing EFR. According to the most recently available Australian Bureau of Statistics Population and Housing data, 25% of Ballarat residents were renting privately and 4.5% were in public/community housing. This was higher than other areas in regional Victoria [24]. Rent is a fixed living cost and consequently leaves less money for food, whereas food costs are elastic and may be reduced to balance the household budget.

Food costs were a concern for participants and if given an additional AUD$20 they would purchase nutritious food (fresh fruits, vegetables, and meats) over unhealthy, ultra-processed food. The Victorian Population Health Survey reported that 25% of people in Ballarat considered some foods as being too expensive and about 18% relied on unhealthy, low-cost foods [10]. Inadequate income, combined with the cost of fresh food and other living expenses was highlighted by participants as key barriers. In regional Victoria, the distance of food stores from Melbourne (capital city), is predictive of a greater food cost [25, 26]. Furthermore, fresh foods may be more expensive and subject to price fluctuations compared to shelf stable ultraprocessed foods [26].

Findings highlight the importance of using a comprehensive food security measure USDA-HSSFM 6 item that provided details on the severity of food insecurity across the continuum of experience, with 63% classified as experiencing very low food security (the most severe form). This is not surprising given the sample were EFR service recipients.

A key marker of household food insecurity severity is the degree to which children are impacted. The findings are consistent with recent quantitative and qualitative Australian studies; namely, food insecure households change the type and amount of food available for children [27, 28]. Of the quarter of respondents/households with children ($n = 26$), 58% were unable to feed them sufficient food due to lack of money. This is slightly less than a study of financially disadvantaged families in Western Australia that reported 67% of adults were unable to feed their children balanced meals due to limited finances [29].

Notably, self-reported poor dental health was of concern for over half of the study respondents. Previous cross-sectional studies in countries such as the United States, reported the relationship between food insecurity status and severity and poor self-reported oral health (tooth decay and periodontal disease) [30], but to date, the Australian literature has been silent on this issue. Oral disease left untreated

Table 3: Food acquisition, food spend, and food preferences for emergency food relief of people ($n = 100$) receiving emergency food relief and meals programmes in Ballarat, Victoria.

Question and variable item	Variable response	Count
In the last week, which places did you go to get food?*	Supermarket	90
	Meal programmes	64
	Emergency food relief organisations	50
	Takeaway or fast food	30
	Friends or relatives	28
	Soup bus	22
	Deli/café/coffee shop	18
	Other church/welfare organisations	12
	Emergency accommodation	7
	Pub or restaurant	6
Which of the following have you done to obtain food?		
Borrow food from friends or relatives	Often	8
	Sometimes	40
	Never	52
Borrow money for food from friends or relatives	Often	10
	Sometimes	46
	Never	44
Ask people on the street for food	Often	1
	Sometimes	2
	Never	97
Ask people on the street for money for food	Often	1
	Sometimes	7
	Never	92
Taken food from rubbish bins	Often	1
	Sometimes	4
	Never	95
Stolen money to buy food	Often	1
	Sometimes	5
	Never	94
Stolen food or drink	Often	2
	Sometimes	24
	Never	74
How much do you usually spend on food each week?	Nothing	1
	<$20	11
	$21–$50	34
	$51–100	39
	>$100	15
List three foods you would buy if you had an extra $20 a week to spend on food?*	Meat	64
	Vegetables	42
	Fruit	32
	Milk/dairy	18
	Fish	14
How important is it that charitable food services provide the following?*	Healthy food	93
	Fruit and vegetables	92
	Cooked meals	91
	Grocery vouchers	89
	Food and drink at the right temperature	77
	Cutlery	76
	Place to sit and eat with others	71
	Food for special dietary requirements	69

*More than one response by participants.

can cause pain and physical and psychological disability impacting overall wellbeing and social participation [31]. Dental care in Australia is relatively expensive [32] and shortages of dentists have been problematic in some regional areas [33]. These issues combined with an inability to afford costly private health insurance may force low-income households to rely on free public dental services, with average appointment wait times of nearly two years [34]. In the

United States, collaborative arrangements between food banks and health care providers are becoming more prevalent. The nature of the collaboration is about triage and support clients experiencing health needs [35]. This partnership model may offer a way forward in the Australian context.

Chronic use of EFR, defined as a year or more was evident with 65% of respondents using food assistance for between 1 and 20 years. This is slightly higher (65% versus 57%) than reported by Pollard et al. [17] and suggests that whilst EFR provides food, it lacks the capacity to offer people pathways to food security, thus perpetuating the cycle of food insecurity. Despite a heavy reliance on EFR for food provision, participants preferred to source food from "mainstream" less stigmatising sources such as supermarkets.

Although participants praised the EFR services for their assistance and acknowledged that they did their best with available resources, they indicated service improvements were needed, including "better food quality" or "fresher food," increased government funding to services, more service locations and increased operational hours, and service coordination across other food relief agencies. The extension of EFR service provision across service locations, extension of hours, and the type of service delivery model is limited by resources (e.g., funding and volunteers) [36, 37]. Furthermore, support for special dietary requirements was also described by some participants to facilitate chronic disease management and these issues have previously been noted in the literature [38, 39].

Consistent with similar studies the context of food provision within EFR service design also needs attention, for example to make people feel comfortable, through personalised, respectful, and nonjudgemental services including opportunities for food choice and commensality [17, 18]. The development of service-based charters, may offer progressive realisation toward this goal. Co-created with the food relief sector, charters provide a stated commitment towards an optimal food relief system leading to improved client and community outcomes [40, 41].

Addressing food quality and freshness in EFR by including the use of food and nutrition policies or procurement guidelines is important. For example, The South Australian government and EFR providers have collaborated to develop voluntary food and nutrition guidelines to provide healthier foods for recipients [42]. Of note, the New York Food bank, "No Soda, No Candy" donation policy was designed to improve the nutrition quality of charitable food provision [43]. The policy was successful in reducing soda and to a lesser extent candy by the second year of implementation, in line with the food preferences of "guests" [43].

5. Implications

The study provides insight to the food insecurity and service access experiences of people access three large food relief organisations in a regional Victorian town in Australia. This research highlights two key factors. Firstly, regardless of geography, levels of food insecurity and the reliance on ERF in a regional city are commensurate with those in an inner-city context. Secondly, this study offers an important opportunity for regional food charities to gain some insight into the experiences and perspectives of people accessing food relief and MP services. Such insights may inform the development of service improvements to improve the client experience. International examples such as the US 'The More Than Food" framework supports EFR organisations to address food insecurity determinants and to build client food security, health, and life stability of clients [44]. The Scottish Government The Dignity in Practice Principals, outlines the importance of and how community food initiatives can have a positive and important role to play in protecting and restoring people's sense of dignity [45].

6. Strengths and Limitations

This study is the first of its kind to examine the level and severity of food insecurity using the validated six-item adult short form of the US Department of Agriculture (USDA) Household Food Security Survey Module (HFSSM), food access practices, and the health and wellbeing needs of Australians in a regional city. Using a survey previously implemented in a similar population group the levels of food insecurity amongst clients of EFR services in Ballarat were similar to those of the EFR population in the inner-city (Perth). Whilst a limitation of this study is the modest sample size ($n = 100$), this however was the first time that the three EFR organisations had worked together to support research on client centred service best practice. These results should be interpreted cautiously as they are indicative of one regional city in one Australian state. These data reflect the experiences of EFR users and not members of the wider community who may also be experiencing food insecurity.

7. Conclusions

The drivers and experiences of food insecurity transcend geography with poverty, low income, un/under employment, and housing costs as key determinants. Recipients of EFR want better quality and variety of foods consistent with a healthy diet. Whilst the provision of EFR is not a sustainable solution to the problem of food insecurity, scope exists to improve service delivery. Opportunities exist for Australian EFR services to explore alternative models of food delivery to meet client preferences via nutrition focused food banking and procurement policies. Future research should focus on investigating, piloting, and evaluating new EFR models that seek to ameliorate food insecurity. Notably, the majority of EFR recipients in this study were experiencing poor dental health, which warrants further investigation to inform policy and service delivery. As the major response to food insecurity in Australia, the chronicity of EFR reliance is of concern and highlights that the key strategies to mitigate food insecurity lie beyond simply feeding people.

Data Availability

The survey respondent data used to support the findings of this study are included within the article.

Ethical Approval

This study was conducted according to the 84 guidelines laid down in the Declaration of Helsinki and all procedures involving research study participants were approved by the Monash University Human Research Ethics Committee.

Consent

Written informed consent was obtained from all subjects/participants.

Disclosure

This work was undertaken while BD, EC, JX, and CS were undertaking their Monash University Masters of Dietetics Public Health Nutrition placement.

Conflicts of Interest

The authors declare that they have no conflicts of interest.

Authors' Contributions

Conceptualisation and refining of research idea was performed by SK, DG, MF, SB and CP. Research was designed by DG, MF, SK, SB and CP. Data were collected by BD, EC, CS, JX, DG and MF. Data synthesis and statistical analyses were performed by SF, BD, EC, CS, JX, DG, MF and SK. Interpretation of analyses was performed by all authors. The manuscript was prepared by SK and SB. All authors reviewed and approved the manuscript. DG, MF and SK supervised the work.

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Supplementary Materials

Table 1: Food survey. (*Supplementary Materials*)

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