![Dietitians Australia]

Nutrition and mental health in food security

Foreword: Nutrition plays a complex role in people's mental health. Trust, respect, and hearing each person's lived experience is crucial to being able to provide appropriate and safe nutrition counselling. It is important to uphold truly person-centred care alongside evidence-based practice, and to acknowledge that mental health is multifactorial and more complex than diet alone.

Purpose of this resource

The aim of this resource is to improve the knowledge and skills of graduate and emerging dietitians working with people who are experiencing or have experienced a mental health condition and food insecurity, with a view to providing support for professional development through evidence-based discussions and practice tips.

What is food security?

Food and nutrition security exists when: "all people at all times have physical, social and economic access to food, which is safe and consumed in sufficient quantity and quality to meet their dietary needs and food preferences, and is supported by an environment of adequate sanitation, health services and care, allowing for a healthy and active life."[1] Conversely, food insecurity is described as "whenever the availability of nutritionally adequate and safe foods or the ability to acquire acceptable food in socially acceptable ways is limited or uncertain."[2]

What determines food security?

Availability	Access	Utilisation	Stability	Agency	Sustainability
Food quality and quantity	Physical (mobility, transport)	Biological utilisation of food	Adequate food for economic or health crises	Personal capacity to make food choices	Long-term regeneration of natural, economic and social systems
Home food production	Social acceptability	Nutrition knowledge	Stabiilty across seasons	Engagement in policy processes	
Meeting dietary needs	Financial means	Clean water		Food sovereignty	

Figure 1: The six pillars of food security: availability, access, utilization, stability, agency and sustainability (adapted from FAO – Food and Agricultural Organisation of the United Nations) [3, 4]

An individual and household's food security status is underpinned by the six dimensions of availability, access, sustainability, agency, utilisation, and stability, which exist in the context of the greater political landscape and environmental matters (Figure 1). People with mental illness are at greater risk of experiencing inequalities in any of these pillars, placing them at risk of food insecurity.[5] Food insecurity is associated with poor mental health across all socio-economic groups, and has been shown to be associated with a higher likelihood of all major mental illnesses and suicidal ideation.[6-8] Children who grow up in food insecure households have been shown to have an increased risk of anxiety, depressive and attention-deficit disorders in adolescence.[8, 9] Moreover, the experience of food insecurity has been linked to poor mental health even for people who do not have a clinically diagnosed mental illness.[10]

Prevalence of food insecurity among people experiencing mental illness

The prevalence of food insecurity in the general Australian population ranges from 4% to 14%,[3,11] however this is likely an underestimate of the true prevalence within the community. Currently food insecurity In Australia is measured using a single-item questionnaire, however there are calls for a more comprehensive 18-item screening tool to be used to more accurately assess national food insecurity,[12] as well as for a more practical two-item questionnaire to be used in healthcare settings.[13] People who are food insecure are significantly more likely to report experiencing mental illness, with 35% of people experiencing food insecurity also reporting mental illness, compared to 13% of food secure people.[14]

Food insecurity is thought to be more prevalent amongst people with mental illness due to disruptions across the a number of the domains of food security (Figure 1), such as higher rates of insecure housing with limited cooking facilities, changes in capacity to access transport and food stores, as well as difficulties preparing food. People living with a mental health condition may also experience decreased economic participation and an associated lower income, which may lead to food insecurity.[15,16]

There is limited data on the true prevalence of food insecurity in people living with mental illness, especially in Australian populations. One study[5] in America revealed a prevalence of overall food insecurity among people with severe mental illness of 71%, with 44% reporting severe food insecurity.[5] In a cross-sectional study conducted across Sydney of food insecurity among people diagnosed with severe mental illness who were receiving long acting injectable antipsychotics, 45% were found to be food insecure.[16, 17]

Impacts of social, economic and environmental challenges

The stability of food security can be interrupted by economic crises, natural disasters, health emergencies (such as COVID-19), and socio-political changes.[3] For example, mental distress, job-related stress and financial hardship increased in Australia as a result of the coronavirus pandemic, leaving more people vulnerable to food insecurity.[18, 19]

There were 3.24 million people living below the poverty line in Australia in 2017, including around 774,000 children.[20] Studies have shown that low income is the strongest and most consistent predictor of food insecurity,[15] with even single episodes of unemployment increasing the odds of a household experiencing food insecurity by 8%.[21] People with mental health concerns experience job-related stress including unemployment and homelessness at significantly higher rates than those without mental health concerns, which in turn increases the risk of food insecurity.[22-24]

Mental health concerns associated with food insecurity

The experience of food insecurity often involves a person or household experiencing ongoing psychological stress, such as a sense of powerlessness, anxiety, fear, shame, guilt and disconnection from others.[10] The relationship between food insecurity and mental health concerns appears to be multi-directional and complex.[25] Food insecurity impacts a person's mental health and wellbeing in a number of ways, including increased levels of stress and anxiety due to uncertainty about food procurement, the physical impacts of vitamin and mineral deficiencies, as well as the emotional impacts of social exclusion and stigma.[26, 27] For children, household food insecurity can result in poorer academic achievement, behavioural difficulties, and social difficulties in adulthood.[12]

Food insecurity can also lead to a reliance on emergency food relief or measures to obtain food that may be considered socially undesirable

as well as constituting a health risk, such as stealing food or taking food from rubbish bins ('dumpster diving').[28] In Australia, various charity organisations such as Food Bank, Meals on Wheels and Anglicare may provide food to an individual on a regular basis. However, there are a number of concerns regarding the reliance on food charities to provide relief from food insecurity, including questions of long-term feasibility, and political issues arising from funding.[29] Moreover, many people experience obtaining food from charities as shameful, socially ostracizing and stigmatising.[27, 28]

More research is needed to better understand the prevalence of and relationship between specific factors that impact food security and nutritional status for people living with mental illness in Australia.[17] Researchers and government bodies have suggested increased monitoring of food security at a population level, as well as addressing socio-political drivers of food insecurity.[5, 30-32]

Physical health concerns associated with food insecurity

Adults and children who experience food insecurity have an increased risk of developing kidney disease, nutrient deficiencies, cardiovascular disease, diabetes, and other chronic conditions, while food insecurity for children can result in developmental delay.[33-36] The physical implications of food insecurity are understood to arise from inadequate access to and intake of nutritious foods, as well as the stigma and distress associated with poverty, and lack of access to appropriate and timely health care.[26, 27, 34]

There is a high prevalence of food insecurity among people with mental health concerns who experience homelessness.[23] People who experience homelessness are understood to have a higher risk of early mortality, as well as an increased likelihood of developing chronic physical health concerns such as high blood pressure, diabetes, and chronic obstructive pulmonary disease.[37]

Screening for food insecurity

When working with people with mental health concerns, it is important to consider that anyone can experience food insecurity and to screen people appropriately with cultural sensitivity and safety.[5, 38] Food insecurity is often a difficult topic, so it is essential to be empathetic, open-minded and non-judgmental in your approach (see box below). It is also important to be prepared with further information that you might offer the person if necessary and appropriate (see table overleaf). Finally, ensure that any assessment and screening of food insecurity is addressed as part of a multidisciplinary team, including for example a social worker, psychologist, GP, case worker, and other allied health professionals as appropriate.

Practice tips for understanding a person's food security status

When trying to understand a person's food security status, it is important to focus on person-centred care and developing an understanding of each person's social circumstances. Emphasise building trust and rapport throughout the assessment process, rather than focusing on collecting diet histories.

- Use the ABCDE model (anthropometry, biochemistry, clinical, diet, environment) to gather information during a session, with a focus on a person's environment (E)
- Be mindful that a high intake of nutrient poor, energy dense foods may be a person's way to manage the uncomfortable sensation of constant hunger
- Consider using food insecurity *screening questions*[12] to develop an understanding of a person's social, environmental and financial circumstances
- Consider nutrition impact symptoms that a person might be experiencing as a side-effect of psychiatric medications (such as appetite changes), as well as the physical impacts of alcohol and substance use (such as diarrhoea or increased nutrient needs). These factors can play a role in food utilisation pillar of food security, and can further exacerbate the impact of food insecurity on physical and mental health[3, 39]

Practice tips at a population or community level

Food insecurity can be addressed at three levels: population, community and individual. At the population and community level, political and economic interventions are required to support affordable and appropriate access to food for all groups. Local crisis food support services such as food banks and food drives should only be recommended during the short-term, or for emergencies, as they can be experienced as socially unacceptable. For dietitians working at the community level, more effective strategies to address food security may involve working to develop social supermarkets, food cooperatives, and community grocers, as well as advocating to policy-makers to address political drivers of socio-economic disadvantage.[40, 41]

Practice tips for individual clients experiencing food insecurity

Listed below are potential resources to discuss with people in an individual setting who are experiencing food insecurity. It is important to follow person-centred care principles of honouring respect and agency when seeing all people, including those experiencing food insecurity, and remember that each person has a different lived experience and complex set of social, personal, and environmental factors that impact whether particular recommendations are appropriate.

Pillar of food insecurity	Barrier	Interventions to discuss with client
Availability	Transport to and from food stores	• Are community transport options available? • Are support services available to assist with shopping? • Would you consider a meal delivery service? • Refer to case manager or social worker
Availability	Location of food aid	• What low cost food services are available in the area? • Are home delivery schemes for fruit and vegetables available? • Community food gardens • School breakfast programs, community cafes, lunch clubs
Access	Income	• Is the person receiving Centrelink payments, as well as the maximum income support from all sources (such as their employer)? • Consider education to the consumer on cooking and shopping on a budget (see further resources below) • Consider discussing maximum and minimum budgets available across pay cycles; if bills allow consider buying food at the beginning of the pay cycle • Refer to a financial counsellor or occupational therapist
Access	Cooking facilities	• Education on preparing food without appliances • Referral to Non-Government Organisations such as the Salvation Army for resources e.g. fridge or microwave • Refer to case or social worker for support to access
Access	Income influenced by smoking, alcohol, drug use, orgambling	• Referral for smoking cessation support (e.g. Quitline or GP) • National Alcohol and Other Drug Hotline • Family Drug Support service • Relationships Australia for gambling support • Consideration of financial guardianship • Liaise with social worker, psychologist or case worker
Utilisation	Food and nutrition knowledge	• Food safety posters in clinic rooms and waiting rooms • Education on understanding safe food practices in the kitchen, including safe food storage, safe food preparation and avoiding contamination • Recipes and ideas for easy food preparation • Community cooking classes • Education on medications and nutrient absorption • Information on meal planning and shopping strategies

Further resources and readings
- Recipes and resources to assist with cooking on a budget: *No Money No Time*, *Recipe Tin Eats*, *Food sensations*, *Budget Bytes*
- *Identifying and responding to food insecurity in Australia:* Child Family Community Australia
- *Food security and nutrition: building a global narrative towards 2030:* Food and Agriculture Organization (FAO)
- *Foodbank Locator:* for clients seeking local emergency food aid
- *Ellyn Satter's Hierarchy of Food Needs*
- *Cost Saving Tips for the Supermarket:* Nutrition Education Materials Online

Acknowledgements
MHANDi would like to acknowledge and thank the many volunteers who contributed to the development of this resource, and extend a special thank you to Danielle Gallegos for generously offering her expertise.

Afterword: When working to improve the mental health and wellbeing of others, it's also important to look after your own mental health. Personal life stress, and stress related to work can affect your mood, thoughts and feelings in different ways, at different times. Remember to be mindful of your own wellbeing and make time to take care of your mental health at work, such as debriefing, taking a short walk/break outdoors, seeking support, and practising self-care. If any of the topics discussed in this resource brought up any distress for you, you can find helpful resources at Beyond Blue, Head to Health, and Mental Health Australia.

References
1. Committee on World Food Security. Thirty-ninth Session: Coming to Terms with Terminology. 2012. Rome, Italy.
2. Radimer KL and Radimer KL. Measurement of household food security in the USA and other industrialised countries. Public Health Nutr 2002; 5: 859-864. 2003/03/14. DOI: 10.1079/phn2002385.
3. FAO, IFAD, UNICEF, et al. The State of Food Security and Nutrition in the World 2020. Transforming food systems for affordable healthy diets. Rome: FAO, 2020.
4. HLPE. Food security and nutrition: building a global narrative towards 2030. Rome: A report by the High Level Panel of Experts on Food Security and Nutrition of the Committee on World Food Security, 2020.
5. Mangurian C, Sreshta N and Seligman. H. Food Insecurity Among Adults With Severe Mental Illness. Psychiatric Services 2013; 64: 931-932. DOI: 10.1176/appi.ps.201300022.
6. Jones AD. Food Insecurity and Mental Health Status: A Global Analysis of 149 Countries. Am J Prev Med 2017; 53: 264-273. 2017/05/02. DOI: 10.1016/j.amepre.2017.04.008.
7. Men F, Elgar FJ and Tarasuk V. Food insecurity is associated with mental health problems among Canadian youth. Journal of Epidemiology and Community Health 2021: jech-2020-216149. DOI: 10.1136/jech-2020-216149.
8. Pryor L, Lioret S, van der Waerden J, et al. Food insecurity and mental health problems among a community sample of young adults. Social Psychiatry and Psychiatric Epidemiology 2016; 51: 1073-1081. DOI: 10.1007/s00127-016-1249-9.
9. Hatem C, Lee CY, Zhao X, et al. Food insecurity and housing instability during early childhood as predictors of adolescent mental health. J Fam Psychol 2020; 34: 721-730. 2020/03/20. DOI: 10.1037/fam0000651.
10. Shim RS and Compton MT. The Social Determinants of Mental Health: Psychiatrists' Roles in Addressing Discrimination and Food Insecurity. FOCUS 2020; 18: 25-30. DOI: 10.1176/appi.focus.20190035.
11. Bortolin N, Priestly J and Sangster J. Food provision among food relief agencies in rural Australia, and perceived barriers and enablers to provide healthy food. Australian Journal of Rural Health 2018; 26: 86-92. DOI: 10.1111/ajr.12398.
12. McKechnie R, Turrell G, Giskes K, et al. Single-item measure of food insecurity used in the National Health Survey may underestimate prevalence in Australia. Australian and New Zealand Journal of Public Health 2018; 42: 389-395. DOI: 10.1111/1753-6405.12812.
13. Kerz A, Bell K, White M, et al. Development and preliminary validation of a brief household food insecurity screening tool for paediatric health services in Australia. Health & Social Care in the Community 2020; n/a. *https://doi.org/10.1111/hsc.13219*. DOI: *https://doi.org/10.1111/hsc.13219*.
14. Temple JB. The Association between Stressful Events and Food Insecurity: Cross-Sectional Evidence from Australia. Int J Environ Res Public Health 2018; 15 2018/10/27. DOI: 10.3390/ijerph15112333.
15. Seivwright A, Callis Z and Flatau P. Food Insecurity and Socioeconomic Disadvantage in Australia. International Journal of Environmental Research and Public Health 2020; 17: 559. DOI: *https://doi.org/10.3390/ijerph17020559*.
16. Browne J and Ponce A. Assessing Food Insecurity in Individuals with Serious Mental Illness: A Pilot Training for Community Mental Health Providers. Community Ment Health J 2020; 56: 1110-1114. 2020/02/29. DOI: 10.1007/s10597-020-00593-9.
17. Teasdale SB, Morell R, Lappin JM, et al. Prevalence and correlates of food insecurity in community-based individuals with severe mental illness receiving long-acting injectable antipsychotic treatment. British Journal of Nutrition 2020; 124: 470-477. 2020/04/01. DOI: 10.1017/S0007114520001191.

18. Newby JM, O'Moore K, Tang S, et al. Acute mental health responses during the COVID-19 pandemic in Australia. PLOS ONE 2020; 15: e0236562. DOI: 10.1371/journal.pone.0236562.

19. Fisher J, Tran T, Hammarberg K, et al. Mental health of people in Australia in the first month of COVID-19 restrictions: a national survey. Med J Aust 2020; Preprint, 10 June 2020.

20. Davidson P, Bradbury, B., Wong, M. Poverty in Australia 2020: Part 2, Who is affected? ACOSS/UNSW Poverty and Inequality Partnership Report No. 4. Sydney: ACOSS, 2020.

21. Huang J, Kim Y and Birkenmaier J. Unemployment and household food hardship in the economic recession. Public Health Nutr 2016; 19: 511-519. 2015/06/02. DOI: 10.1017/s1368980015001603.

22. Mojtabai R, Stuart EA, Hwang I, et al. Long-term effects of mental disorders on employment in the National Comorbidity Survey ten-year follow-up. Social Psychiatry and Psychiatric Epidemiology 2015; 50: 1657-1668. DOI: 10.1007/s00127-015-1097-z.

23. Loftus EI, Lachaud J, Hwang SW, et al. Food insecurity and mental health outcomes among homeless adults: a scoping review. Public Health Nutrition 2020: 1-12. 2020/07/22. DOI: 10.1017/S1368980020001998.

24. Lachaud J, Mejia-Lancheros C, Wang R, et al. Mental and substance use disorders and food insecurity among homeless adults participating in the At Home/Chez Soi study. PLOS ONE 2020; 15: e0232001. DOI: 10.1371/journal.pone.0232001.

25. Pourmotabbed A, Moradi S, Babaei A, et al. Food insecurity and mental health: a systematic review and meta-analysis. Public Health Nutr 2020; 23: 1778-1790. 2020/03/17. DOI: 10.1017/s136898001900435x.

26. Booth S and Smith. Food Security and poverty in Australia – challenges for dietitians. Aust J Nutr Diet 2001; 58: 150-156.

27. Purdam K, Garratt EA and Esmail A. Hungry? Food Insecurity, Social Stigma and Embarrassment in the UK. Sociology 2015; 50: 1072-1088. DOI: 10.1177/0038038515594092.

28. Pollard CM, Booth S, Jancey J, et al. Long-Term Food Insecurity, Hunger and Risky Food Acquisition Practices: A Cross-Sectional Study of Food Charity Recipients in an Australian Capital City. Int J Environ Res Public Health 2019; 16 2019/08/04. DOI: 10.3390/ijerph16152749.

29. Gallegos D, Booth S, Kleve S, et al. 'Food insecurity in Australian households: From charity to entitlement'. In: Williams L and Germov J (eds) A Sociology of Food and Nutrition. 4th ed.: Oxford University Press Australia, 2016.

30. Innes-Hughes C, Bowers K, King L, et al. Food Security: The What, How, Why and Where to of Food Security in NSW. Discussion Paper. 2013.

31. Goetz J. Exploring Food Insecurity among Individuals with Serious Mental Illness: A Qualitative Study. 2020.

32. Dowler E and Lambie-Mumford H. How Can Households Eat in austerity? Challenges for Social Policy in the UK. Social Policy and Society 2015; 14: 417-428. 2015/02/23. DOI: 10.1017/S1474746415000032.

33. Vozoris NT and Tarasuk VS. Household Food Insufficiency Is Associated with Poorer Health. The Journal of Nutrition 2003; 133: 120-126. DOI: 10.1093/jn/133.1.120.

34. Tarasuk V, Cheng J, de Oliveira C, et al. Association between household food insecurity and annual health care costs. Canadian Medical Association Journal 2015; 187: E429. DOI: 10.1503/cmaj.150234.

35. Kirkpatrick SI, McIntyre L and Potestio ML. Child Hunger and Long-term Adverse Consequences for Health. Archives of Pediatrics & Adolescent Medicine 2010; 164: 754-762. DOI: 10.1001/archpediatrics.2010.117.

36. Gucciardi E, Vogt JA, DeMelo M, et al. Exploration of the Relationship Between Household Food Insecurity and Diabetes in Canada. Diabetes Care 2009; 32: 2218. DOI: 10.2337/dc09-0823.

37. Tsai J, Gelberg L and Rosenheck RA. Changes in Physical Health After Supported Housing: Results from the Collaborative Initiative to End Chronic Homelessness. Journal of General Internal Medicine 2019; 34: 1703-1708. DOI: 10.1007/s11606-019-05070-y.

38. Lindberg R, Lawrence M, Gold L, et al. Food insecurity in Australia: Implications for general practitioners. Australian Family Physician 2015; 44: 859-862.

39. Whittle HJ, Sheira LA, Frongillo EA, et al. Longitudinal associations between food insecurity and substance use in a cohort of women with or at risk for HIV in the United States. Addiction 2019; 114: 127-136. DOI: 10.1111/add.14418.

40. Yii V, Palermo C and Kleve S. Population-based interventions addressing food insecurity in Australia: A systematic scoping review. Nutrition & Dietetics 2020; 77: 6-18. https://doi.org/10.1111/1747-0080.12580. DOI: https://doi.org/10.1111/1747-0080.12580.

41. Bowden M. Identifying and responding to food insecurity in Australia. In: Australia CFC, (ed.). Vic, Australia: Australian Institute of Family Studies, 2020.