

Evidence Review

Food Security in Psychosis or other Mental Health conditions

Key messages

- There is a substantial body of evidence to suggest a relationship between poor mental health generally and food insecurity. Much of this research has focussed on common mental health conditions, with little evidence to suggest a causal relationship between food security and psychosis or other more severe mental illness, although one study from 1995 (5) recorded an association between mothers experiencing famine in the second trimester and higher levels of affective psychosis in their male offspring.
- There is some evidence that those with psychosis or mood disorders are more vulnerable to food insecurity, although more research is needed in this area.
- Research concerning psychosis and metabolism have noted that many have metabolic abnormalities prior to any anti-psychotic medication, as well as higher levels of obesity and impaired appetite regulation, although research is limited.
- Children who experience food insecurity are at higher risk of depression, suicidality and, some studies suggest, behavioural problems or disordered sleep in adolescence or in old age.
- People who experience food deprivation have higher rates of depression, even when adjusting for other social factors. Global studies have suggested this occurs at a higher rate particularly in places where the population is generally food secure or more affluent by contrast.



The Evidence

Food Security and Psychosis

- 1. Misiak B, Bartoli F, Stramecki F, Samochowiec J, Lis M, Kasznia J, Jarosz K, Stańczykiewicz B. Appetite regulating hormones in first-episode psychosis: a systematic review and meta-analysis. *Neuroscience & Biobehavioral Reviews*. 2019 Jul 1;102:362-70.**

This systematic review included 31 eligible studies, investigating the levels of 7 appetite regulating hormones (adiponectin, insulin, leptin, ghrelin, orexin, resistin and visfatin) in 1792 first episode psychosis (FEP) patients and 1364 controls. The review found that the insulin levels were higher in FEP patients compared to controls, and lower levels of leptin in antipsychotic-naïve patients. The authors concluded that impaired appetite regulation already appears as psychosis onset, before the introduction of any antipsychotic medications. They also suggested that the review findings provide some preliminary evidence that interventions aimed at increasing insulin sensitivity might impact clinical outcomes of psychosis, however more longitudinal studies are required in this area.



Appetite regulating
hormones in first ep |



2. Cadenhead KS, Minichino A, Kelsven S, Addington J, Bearden C, Cannon TD, Cornblatt BA, Mathalon D, McGlashan TH, Perkins DO, Seidman LJ. Metabolic abnormalities and low dietary Omega 3 are associated with symptom severity and worse functioning prior to the onset of psychosis: Findings from the North American Prodrome Longitudinal Studies Consortium. Schizophrenia research. 2019 Feb 1;204:96-103.

This study examined a sample group who were antipsychotic free and at clinical risk for psychosis, aged 12-28 and found that the group displayed a high level of metabolic abnormalities prior to any antipsychotic medication exposure. They note the high levels of metabolic syndromes in people with conditions such as schizophrenia and the continued difficulties in identifying the source of these, whether these are specific to their illness or related to other social economic factors (poverty, poor diet) and common side effects of several medications. The study found that teenagers and young adults at CHR for psychosis, with little or no history of antipsychotic exposure, have high rates of cardiometabolic abnormalities including obesity, dyslipidemia and hypertension that are independent of antipsychotic history.



Metabolic
abnormalities and lc



3. Mucheru D, Hanlon MC, Campbell LE, McEvoy M, MacDonald-Wicks L. Social dysfunction and diet outcomes in people with psychosis. *Nutrients*. 2017 Jan;9(1):80.

This study looked at potential links between social dysfunction and diet among people with psychosis. The majority of results were variable, although there was some correlation between higher levels of dysfunction and not eating breakfast, and overall high rates of social dysfunction, significant food insecurity, and intakes of fruits and vegetables below recommendations in people with psychosis. The authors acknowledged however that other factors, including socioeconomic issues, lack of access and lack of ability/energy to prepare meals were also key factors affecting this outcome.



Social Dysfunction
and Diet Outcomes

4. Asher L, Fekadu A, Hanlon C. Global mental health and schizophrenia. *Current opinion in psychiatry*. 2018 May 1;31(3):193-9.

Although this paper looked more broadly at the experiences of those with schizophrenia-illness and their caregivers worldwide, the review found that particularly in lower and middle income countries food insecurity was substantially higher in this population group than in others.



Global mental
health and schizop



- 5. Brown AS, Susser ES, Lin SP, Neugebauer R, Gorman JM. Increased risk of affective disorders in males after second trimester prenatal exposure to the Dutch hunger winter of 1944–45. *The British Journal of Psychiatry*. 1995 May 1;166(5):601-6.**

This older population-based article looked at the effects of the Dutch Hunger Winter on birth cohorts born in that period, over time, and the cumulative incidences of affective psychoses and neurotic depression. The article found an association between mothers' experience of food insecurity/hunger in the second trimester and affective psychosis development in their male children.



increased-risk-of-affective-disorders-in-

Food Security and Mental Health

- 6. Pourmotabbed A, Moradi S, Babaei A, Ghavami A, Mohammadi H, Jalili C, Symonds ME, Miraghajani M. Food insecurity and mental health: a systematic review and meta-analysis. *Public health nutrition*. 2020 Jul;23(10):1778-90.**

This systematic review examined the evidence around the relationship between food and depression, anxiety and stress. The review found that food insecurity was highly associated with depression and high levels of stress, but lacked evidence around anxiety. Subgroup analysis also suggested people over 65 and men were slightly higher risk of depression in food insecure environments than those younger or women. The authors suggested that having insufficient food and nutrients undermines social relationships because of feelings of deprivation and alienation, however they also acknowledged additional contributing factors around food insecurity such as demographic, socioeconomic, lifestyle and clinical variables, therapy support and genetic background, can all be confounding factors



Food Insecurity and Mental Health a Syst



7. Myers CA. Food Insecurity and Psychological Distress: a Review of the Recent Literature. Current Nutrition Reports. 2020 Apr 2.

This paper offers a review of literature around food insecurity and psychological distress or mental health effects. It highlights that in both longitudinal studies, cross-sectional research as well as primary and secondary data analysis there is a link between food insecurity and multiple indicators of psychological distress particularly in common mental disorders such as depression, suicide ideation and anxiety. This adverse relationship exists in adults, adolescents and young adults, college students, individuals with chronic disease, and parents. The review also highlights gaps in the research for further exploration.



Myers2020_Article_F
oodInsecurityAndPs

8. Loh S, Knight A, Loopstra R. Working-age adults using food banks in England have significantly poorer health and higher rates of mental health conditions than adults in the general population: A cross-sectional quantitative study. Health & Social Care in the Community. 2020 Nov 19.

This recent study used data from a survey of 598 adults using the Trussell Trust foodbanks in the UK. It found that adults who used foodbanks were more likely to be poor self-rated health, disability, mental health disorders and musculoskeletal conditions than population average, which was not completely explained by socioeconomic measures. The authors discuss the relationship between poor mental health and food insecurity and the difficulties associated with identifying whether those with poorer health are more likely to experience food insecurity, or whether the food insecurity has a causal relationship in exacerbating poor health and mental health conditions, as well as considering these in relation to wider effects from the last decade of austerity in the UK.



working age adults
using foodbanks in



9. Arenas DJ, Thomas A, Wang J, DeLisser HM. A systematic review and meta-analysis of depression, anxiety, and sleep disorders in US adults with food insecurity. Journal of general internal medicine. 2019 Aug 5:1-9.

This systematic review examined the published research on depression, anxiety and sleep disorders in relation to food insecurity surrounding populations in the USA. The review found that food insecurity was linked to increased risk for all three, with the highest increase being risk of depression.



Systematic Review
and Meta-analysis o

10. Althoff RR, Ametti M, Bertmann F. The role of food insecurity in developmental psychopathology. Preventive medicine. 2016 Nov 1;92:106-9.

This paper provides a review of existing literature related to the relationship between family food insecurity and two areas of preventive medicine associated with high morbidity – mental health and obesity risk. The review highlights the evidence linking child mental health and food insecurity including children being at higher risk of developing emotional and behavioural problems, higher levels of depression, anxiety, suicide ideation and inattention/hyperactivity symptoms. Although most studies of parental mental health and food insecurity have been limited to mothers, associations between food insecurity and parental mental health suggest that food insecurity is related to higher levels of depression in either parent. Yet, it is also possible that higher levels of depressive symptoms lead to more food insecurity.



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11.Elgar FJ, Pickett W, Pförtner TK, Gariépy G, Gordon D, Georgiades K, Davison C, Hammami N, MacNeil AH, Da Silva MA, Melgar-Quiñonez HR. Relative food insecurity, mental health and wellbeing in 160 countries. Social Science & Medicine. 2020 Nov 28;268:113556.

This study looked at data from 160 countries and found that not only was relative food insecurity related to more mental health symptoms, lower positive wellbeing and lower life satisfaction, but these were more strongly related in more affluent countries, when the prevalence of food security was lower. The authors noted that in these communities, those who feel comparative deprivation in food insecurity also experience social deprivation, when living in countries where contrast is sharp compared to others who have plenty.



relative food
insecurity mental he

12.Hatem C, Lee CY, Zhao X, Reesor-Oyer L, Lopez T, Hernandez DC. Food insecurity and housing instability during early childhood as predictors of adolescent mental health. Journal of Family Psychology. 2020 Mar 19.

This longitudinal study took data from 4 waves of the Fragile Families and Child Well-Being Study in the USA. The study found that experiences of food and housing insecurity at a young age predicted adolescent symptoms of depression a decade later, although both maternal depression and parenting stress relationships were statistically significant at earlier stages. Overall, experiencing food insecurity without any other economic hardship or experiencing food insecurity, in addition to another form of economic hardship, the authors concluded, places children at greater risk of experiencing depressive and anxiety symptoms during adolescence.



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d_housing_in.pdf



13. Adynski H, Schwartz TA, Santos HP. Does Participation in Food Benefit Programs Reduce the Risk for Depressive Symptoms?. Journal of the American Psychiatric Nurses Association. 2020.

This US study found that high levels of food insecurity are associated with elevated risk of depressive symptoms, the study aimed to explore whether participation in food benefit schemes had any effect on this, but found no improvement to depressive symptoms.



Does participation
in food benefit prog

14. Lee YS, Kim TH. Household food insecurity and breakfast skipping: Their association with depressive symptoms. Psychiatry research. 2019 Jan 1;271:83-8.

This Korean study involved 225,965 people aged 18 years or older who answered questions related to eating habits and mental health. The study found a correlation between those experiencing food insecurity, those skipping breakfast at least two times in a row, and higher levels of depressive symptoms.



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15. Koyanagi A, Stubbs B, Oh H, Veronese N, Smith L, Haro JM, Vancampfort D. Food insecurity (hunger) and suicide attempts among 179,771 adolescents attending school from 9 high-income, 31 middle-income, and 4 low-income countries: A cross-sectional study. Journal of affective disorders. 2019 Apr 1;248:91-8.

This study looked to assess the association between food insecurity and suicide attempts in adolescents from 44 countries. The study found that severe food insecurity was significantly associated with higher odds for suicide attempts in 31 of the 44 countries studied, and also the stronger associations between suicide and food insecurity were in countries with a lower population prevalence of food insecurity.



Koyanagi_et_al_2019.pdf



16.Stickley A, Koyanagi A, Inoue Y, Leinsalu M. Childhood hunger and thoughts of death or suicide in older adults. The American Journal of Geriatric Psychiatry. 2018 Oct 1;26(10):1070-8.

This study looked at the experiences of 2455 adults over the age of 60 using data from the Estonian Health Interview Survey 2006. Overall, 37.6% of the respondents aged 60 years or older had experienced hunger during their childhood, with 14.3% reporting that they often had to go to bed hungry. Of these 7.6% reported suicidal thoughts or thoughts of death in the previous four weeks. Respondents with chronic diseases or who had a major depressive episode in the past 2 weeks or recurrent thoughts of death or suicide in the past 4 weeks were also more likely to have experienced childhood hunger. The authors found correlation between childhood hunger and recurrent thoughts of death and suicide in Estonian older adults, arguing that this demonstrates the longer term mental impact on mental health of childhood hunger, however there are also a number of limitations on the study and more work needs to be done in this area.



childhood hunger
and thoughts of de:



17. Power M, Uphoff E, Kelly B, Pickett KE. Food insecurity and mental health: an analysis of routine primary care data of pregnant women in the Born in Bradford cohort. J Epidemiol Community Health. 2017 Apr 1;71(4):324-8.

This data was taken from NHS records for the Born In Bradford cohort and found that food insecurity was significantly linked to common mental disorders such as depression and anxiety in women before and during pregnancy. This was most common in the white british sample, the prevalence of food insecurity and the prevalence of CMD were lower in the Pakistani subsample, and the associations between food insecurity and mental health did not reach statistical significance.



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18. Martin MS, Maddocks E, Chen Y, Gilman SE, Colman I. Food insecurity and mental illness: disproportionate impacts in the context of perceived stress and social isolation. Public health. 2016 Mar 1;132:86-91.

This study used data from the 2009-10 Canadian Community Health Survey to examine whether food insecurity is associated with higher levels of mental illness. The review found that mental illness prevalence was higher for both men and women in food insecure households, and more pronounced among females and those reporting stress and social isolation.



martin2016.pdf



19. McIntyre L, Williams JV, Lavorato DH, Patten S. Depression and suicide ideation in late adolescence and early adulthood are an outcome of child hunger. Journal of affective disorders. 2013 Aug 15;150(1):123-9.

This study examined data from the Canadian National Longitudinal Survey of Children and Youth covering 1994 through 2008/2009. It found that even when adjusting for other variables there was a demonstrable link between child hunger and risk of depression/suicide ideation in later adolescence.



Muldoon2013_Article_FoodInsufficiency

20. Laurenzi C, Field S, Honikman S. Food insecurity, maternal mental health, and domestic violence: a call for a syndemic approach to research and interventions. Maternal and child health journal. 2020 Feb 3:1-4.

This paper reviews the evidence around maternal mental health in connection with food insecurity risk and domestic violence. It highlights the intersectional and bidirectional relationships between maternal mental health, risk of domestic violence and risk of food insecurity and the sociodemographic relationships between risk factors.



Laurenzi2020_Article_FoodInsecurityMa



21.Davison KM, Kaplan BJ. Food insecurity in adults with mood disorders: prevalence estimates and associations with nutritional and psychological health. Annals of general psychiatry. 2015 Dec 1;14(1):21.

This Canadian study involved 97 adults selected from the membership list of the Mood Disorder Association of British Columbia. The study found that people with mood disorders were more likely to experience food insecurity compared with the population average, and those experiencing food insecurity having lower levels of nutrition.



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Indicative search strategy

Food sec*; food insec*; food poverty; hunger; food depriv*; food scarcity;
Mental health; mental illness; psychosis;

Sources searched

PsycINFO, Medline, Pubmed, CINAHL, Cochrane
Past 10 years
A structured public domain search for unpublished research.

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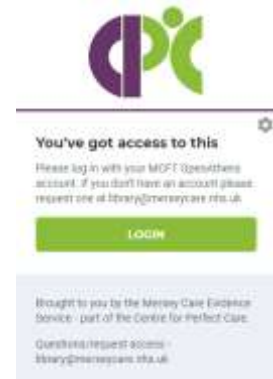


This review is a summary of the best available evidence that has been selected using expert searching in order to answer a specific query. It may not be representative of the entire body of evidence available. No responsibility can be accepted for any action taken on the basis of the information presented herein.



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