ISSN 2828-5252
EXCEL JOURNAL OF ENGINEERING TECHONOLOGY AND MANAGEMENT SCIENCE
(A Peer Reviewed International Multidisciplinary Journal)
VOL. 01 | NO. 30 | JUNE. JULY. 2026



The Impact of Diet and Nutrition on the Progression and Management of Schizophrenia

Dr. Mansi Karajgaonkar

RCI Licensed Clinical Psychologist, Associate Professor & Head, Department of Psychology, MGM University.

&

Pallavi Mallaya Mutha

Research Scholar, MGM University.

Abstract:

Schizophrenia is a complex psychiatric disorder affecting perception, thought, emotions, behaviour and social functioning. While antipsychotic medications and psychosocial care remain central to treatment, growing attention has focused on nutritional status, dietary quality and physical health. This paper examines the relationship between diet and the progression and management of schizophrenia using a descriptive analysis of research published from 2001 to 2022. It considers micronutrient deficiencies, medication-associated metabolic problems, theories connecting diet with mental health and evidence from dietary intervention studies. Published research reports lower levels of certain nutrients in some people experiencing first-episode psychosis, while structured dietary support can improve selected weight-related outcomes in serious mental illness. These associations do not demonstrate that nutritional deficiencies cause schizophrenia or that special diets treat its core symptoms. The paper concludes that nutrition should be integrated into psychiatric services through individual assessment, practical education and coordinated metabolic care. Diet remains a supportive intervention rather than a replacement for evidence-based psychiatric treatment.

Keywords*: Schizophrenia; Diet; Nutrition; Mental Health; Micronutrients; Antipsychotic Medication; Metabolic Health; Psychiatric Rehabilitation.*

1. Introduction

Schizophrenia is a serious mental health condition marked by changes in the perception and interpretation of reality. Its manifestations may include hallucinations, delusions, disorganised thinking, reduced motivation and impaired social functioning. The course differs from person to person. Many people experience meaningful improvement with suitable treatment, while

Date of submission 14-06-2026 Date of acceptance 1-09-2026

others require continuing assistance with daily life, work and relationships. Although psychiatric symptoms receive deserved attention, physical health is equally significant. People living with schizophrenia often face challenges associated with metabolic conditions, poor diet, limited physical activity and unequal access to healthcare. Some antipsychotic medicines can increase appetite or contribute to weight gain and changes in glucose and lipid metabolism. Neglecting these risks can undermine long-term well-being. Nutrition is therefore relevant in two distinct ways. First, adequate dietary intake is needed for normal physiological and neurological function. Second, balanced eating and nutritional counselling may help prevent or manage some physical health complications that accompany psychiatric illness and its treatment. These two arguments should not be confused with a claim that a diet can cure schizophrenia. Research has examined vitamin D, folate, other micronutrients, inflammatory pathways and communication between the intestine and brain. Some studies show differences between clinical and comparison groups, but whether these differences contribute to symptoms or arise from lifestyle, poverty, reduced sunlight exposure and other conditions remains uncertain. Equally, promising case reports cannot substitute for controlled clinical evidence.

This paper reviews the contribution of dietary patterns and nutrition to schizophrenia management, distinguishes established findings from emerging hypotheses and identifies implications for integrated mental healthcare.

2. Conceptual Framework or Theoretical Background

2.1. Definitions of Key Terms

- **Schizophrenia:** A mental disorder involving significant disturbances in thought, perception, emotional expression and behaviour, with possible impairment of social and occupational functioning. The World Health Organization describes manifestations such as delusions, hallucinations and disorganised thinking.
- **Dietary management:** The assessment and practical modification of food intake according to personal preferences, nutritional requirements, medical needs and social resources. In schizophrenia care, this can involve meal planning, metabolic monitoring, cooking skills and support from professionals or caregivers.

2.2. Relevant Theories and Models

The biopsychosocial model offers a comprehensive explanation of why nutritional care cannot be isolated from clinical treatment or daily living circumstances. Biological contributors include medication effects, metabolic changes and nutritional status. Psychological influences

Date of submission 14-06-2026 Date of acceptance 1-09-2026

include cognition, motivation and emotional distress. Social factors involve financial resources, family support, housing and access to food. An individual may experience several of these pressures simultaneously.

The neuroinflammation and oxidative-stress hypotheses explore whether immune signalling and cellular stress contribute to aspects of psychiatric illness. Some vitamins and other nutrients participate in antioxidant or metabolic pathways, encouraging investigation of dietary interventions. Yet identifying a plausible mechanism does not prove that a supplement improves psychotic symptoms or prevents relapse. The gut-brain axis model considers communication between gastrointestinal microbes and the brain through neural, immune and metabolic pathways. Diet can influence the intestinal microbiome, and researchers have explored possible associations with psychiatric conditions. Evidence available through 2022 was not sufficient to establish microbiome-targeted diets as effective treatments for schizophrenia.

2.3. Educational Policies and Healthcare Reforms

Guidelines and healthcare education help place nutrition within routine mental healthcare. The National Institute for Health and Care Excellence guideline on psychosis and schizophrenia in adults (2014) addresses the monitoring of physical health and recommends healthy eating and physical activity programmes, particularly for people receiving antipsychotic medication. Patient education can explain food choices, appetite changes, weight monitoring and the need for periodic metabolic assessment. Psychiatric rehabilitation programmes can also teach budgeting, grocery shopping and meal preparation. Such instruction is most useful when adapted to local food habits, functional capacity and household income. Importantly, education must not suggest stopping prescribed treatment in favour of dietary experimentation.

3. Review of Literature

3.1. Firth (2018)

Firth et al. (2018), in "Nutritional Deficiencies and Clinical Correlates in First-Episode Psychosis: A Systematic Review and Meta-analysis," examined blood concentrations of vitamins and minerals early in psychotic illness. The review included 28 studies and 2,612 participants, with 1,221 people experiencing first-episode psychosis and 1,391 controls. Compared with controls, individuals with first-episode psychosis showed significantly lower folate and vitamin D levels. The researchers also discussed associations between some nutrient measures and symptom severity. These findings make early nutritional assessment relevant,

Date of submission 14-06-2026 Date of acceptance 1-09-2026

but they do not determine whether the nutritional differences cause psychosis, result from its associated circumstances or reflect other factors. The study supports further investigation rather than routine use of supplements to treat schizophrenia.

3.2. Teasdale (2017)

Teasdale et al. (2017), in "Solving a Weighty Problem: Systematic Review and Meta-analysis of Nutrition Interventions in Severe Mental Illness," evaluated nutrition interventions targeting weight and related physical health outcomes among people with severe mental illness. Their work highlighted the practical need for dietary support in psychiatric settings where medication-associated metabolic risk may be substantial. Nutritional interventions can be more effective when delivered as structured programmes with follow-up instead of general advice alone. However, the research addressed weight management and physical health, not proof that diet reduces hallucinations, delusions or the biological progression of schizophrenia.

3.3. Rocks (2022)

Rocks et al. (2022), in "Effectiveness of Nutrition and Dietary Interventions for People with Serious Mental Illness: Systematic Review and Meta-analysis," synthesised evidence from 25 studies and 26 intervention comparisons. Some interventions were associated with improvements in weight-related outcomes; the pooled findings for metabolic syndrome risk factors were not statistically significant overall. The review identified limitations in study quality and differences in how programmes were delivered. Individual or dietitian-led interventions showed modest benefits in some analyses. Since the population included serious mental illness more broadly, the findings should not automatically be generalised to every person with schizophrenia. The authors' work supports a cautious, practical role for nutritional services within coordinated treatment.

4. Current Scenario

This section examines published secondary evidence through 2022. No new participants were recruited, and no laboratory tests, nutritional interventions or psychiatric assessments were conducted for the present paper. Physical health remains a major concern for people receiving long-term psychiatric treatment. Dietary patterns, reduced activity and medication-associated changes can contribute to adverse metabolic outcomes. Regular assessment is therefore clinically relevant even where the effect of nutrition on psychotic symptoms is uncertain. The first-episode psychosis literature suggests that certain micronutrient differences may be present before prolonged treatment. This raises useful questions about nutrition, socioeconomic

Date of submission 14-06-2026 Date of acceptance 1-09-2026

circumstances and illness-related changes in daily routines, but does not resolve causation. Published dietary intervention studies provide a different perspective. They examine whether nutritional education or structured support changes weight, waist circumference and related metabolic indicators. Benefits tend to vary with intervention intensity, individual circumstances and study design. The central analytical distinction is between nutritional status as a correlate of illness and dietary intervention as an attempt to improve outcomes. An association in one type of study cannot stand in for evidence of clinical benefit in another.

Table 1. Selected published evidence related to nutrition and psychotic disorders

Indicator	Finding
Nutritional studies	28 studies
Total participants	2,612
First-episode psychosis group	1,221
Control group	1,391
Nutrition intervention studies	25 studies
Intervention comparisons	26

***Source**: Firth (2018), Schizophrenia Bulletin, 44(6), 1275–1292; Rocks (2022), Medical Journal of Australia, 217(S7), S7–S21. These results are drawn from different samples and designs.*

The table summarises study scale rather than estimating the prevalence of nutritional deficiency across all people with schizophrenia. It would be misleading to combine these populations as if they formed one survey. The findings justify attention to assessment and care but do not establish a direct effect of specific nutrients on disease progression. Diet quality may matter indirectly through energy levels, health and the ability to participate in daily activities. Balanced food intake can support normal bodily function; however, some patients require help planning purchases or preparing meals because of cognitive or motivational difficulties. Weight gain can affect self-esteem and willingness to remain engaged with treatment. Nutritional counselling may be useful alongside physical activity, metabolic monitoring and clinical review. A decision to change antipsychotic medication belongs with a qualified prescriber, not with a diet programme.

Micronutrient research has investigated folate, vitamin D and other vitamins and minerals. Supplementation may be appropriate where a deficiency is clinically identified, but high-dose supplements can have adverse effects and should not be treated as universally beneficial. Rehabilitation provides a valuable setting for practical dietary support. Activities such as preparing simple meals, keeping a regular routine and learning affordable shopping strategies can improve independence. These steps should fit the person's circumstances and preferences rather than impose unrealistic regimens. Evidence through 2022 does not demonstrate that any

Date of submission 14-06-2026 Date of acceptance 1-09-2026

specific dietary pattern reliably prevents schizophrenia progression or replaces antipsychotic and psychosocial care. The stronger case for nutritional integration concerns physical health, functioning and overall quality of life.

5. Key Issues and Challenges

- Nutritional inadequacy may arise from irregular food intake, limited variety, poverty or difficulties planning meals. It should not be presumed from diagnosis alone. Individual clinical assessment is required to distinguish deficiency from other health problems.
- Medication-related changes in appetite and metabolism can complicate long-term care. Some people need continuing support with weight, glucose and lipid monitoring. Dietary adjustments are useful only as part of a broader plan that preserves psychiatric stability.
- Financial barriers matter because fresh and varied food, reliable cooking facilities and nutritional consultations are not equally accessible. Programmes based on expensive specialised products may be unsuitable for low-income households.
- Psychological and cognitive symptoms may interfere with shopping, cooking and regular eating. Repeated demonstrations, visual reminders and respectful caregiver involvement may be more practical than written advice alone.
- The evidence base for restrictive or therapeutic diets remains limited. Small trials and isolated case reports have suggested avenues for research but cannot determine reliable effectiveness or safety. Overstating such results risks giving individuals unrealistic expectations.
- Psychiatric services may lack dietitians or integrated physical healthcare. Communication gaps between mental health practitioners, primary care providers and community services can delay recognition of metabolic problems.

6. Case Study: Ketogenic Dietary Intervention in a Patient with Schizophrenia

Kraft and Westman (2009) published “Schizophrenia, Gluten, and Low-Carbohydrate, Ketogenic Diets: A Case Report and Review of the Literature” in Nutrition & Metabolism. Their report described an older woman with longstanding psychotic symptoms who adopted a carbohydrate-restricted ketogenic dietary regimen. The report described improvement in psychiatric symptoms following the dietary change. The authors explored possible roles of altered metabolism and reduced gluten exposure. These were proposed explanations rather than

Date of submission 14-06-2026 Date of acceptance 1-09-2026

experimentally established mechanisms. The case is relevant because it raised questions about the possible relationship between metabolism and psychiatric functioning. However, it involved only one patient, with no randomised comparison or controlled separation of dietary components. Improvement after an intervention does not prove that the intervention caused it. Restrictive diets may involve nutritional and medical risks and can be difficult to maintain. The appropriate conclusion is that such observations can generate research hypotheses, not that a ketogenic diet is an established treatment for schizophrenia. Any substantial dietary changes should be discussed with appropriate healthcare professionals and should not displace prescribed psychiatric care.

7. Policy Recommendations

1. It is recommended that psychiatric services incorporate nutritional assessment and relevant metabolic monitoring into routine care, with referral for deficiencies or concerning physical health findings.
2. It is recommended that healthcare teams develop individualised, affordable dietary programmes reflecting medical requirements, personal preferences, cultural food practices and the practical skills of the individual.
3. It is recommended that hospitals and community services provide accessible education on balanced eating, medication-associated metabolic effects, meal planning and food preparation, with caregiver participation when the patient agrees.
4. It is recommended that public and community health programmes address food insecurity and unequal access to nutritional services, prioritising achievable changes over costly or unproven specialised diets.

8. Conclusion

The relationship between diet, nutrition and schizophrenia deserves attention because mental and physical health are closely connected. Research has identified lower levels of some nutrients among people with first-episode psychosis, and studies of dietary interventions have reported selected improvements in weight-related outcomes among individuals with serious mental illness. These findings support nutritional assessment and practical dietary support as parts of comprehensive care. At the same time, evidence must be interpreted carefully. Lower nutrient levels do not prove that deficiency causes schizophrenia. Similarly, improvements in weight or metabolic measures do not demonstrate improvement in psychotic symptoms. Case reports involving specialised diets may motivate further research, but they cannot establish

Date of submission 14-06-2026 Date of acceptance 1-09-2026

clinical effectiveness across a diverse population. Nutritional care is most credible when individualised and coordinated with psychiatric medication, psychological treatment, physical healthcare and rehabilitation. Patient autonomy, affordability, cultural eating habits and family circumstances must be considered. A balanced diet, support with daily routines and metabolic monitoring may contribute meaningfully to well-being without promising to cure the disorder. The paper therefore concludes that diet and nutrition have an important supportive role in schizophrenia management, particularly in reducing avoidable nutritional and metabolic burdens. Their direct influence on disease progression remains an area for rigorous investigation. An integrated model of care offers the strongest foundation for improving quality of life, physical health and participation in everyday activities.

References

1. Firth, J., Carney, R., Stubbs, B., Teasdale, S. B., Vancampfort, D., Ward, P. B., Berk, M., & Sarris, J. (2018). Nutritional deficiencies and clinical correlates in first-episode psychosis: A systematic review and meta-analysis. Schizophrenia Bulletin, 44(6), 1275–1292.
2. Firth, J., Stubbs, B., Sarris, J., Rosenbaum, S., Teasdale, S., Berk, M., & Yung, A. R. (2017). The effects of vitamin and mineral supplementation on symptoms of schizophrenia: A systematic review and meta-analysis. Psychological Medicine, 47(9), 1515–1527.
3. Kraft, B. D., & Westman, E. C. (2009). Schizophrenia, gluten, and low-carbohydrate, ketogenic diets: A case report and review of the literature. Nutrition & Metabolism, 6, Article 10.
4. National Institute for Health and Care Excellence. (2014). Psychosis and schizophrenia in adults: Prevention and management (Clinical guideline CG178).
5. Rocks, T., Teasdale, S. B., Fehily, C., Young, C., Howland, G., Kelly, B., Dawson, S., Jacka, F., Dunbar, J. A., & O'Neil, A. (2022). Effectiveness of nutrition and dietary interventions for people with serious mental illness: Systematic review and meta-analysis. Medical Journal of Australia, 217(S7), S7–S21.
6. Teasdale, S. B., Ward, P. B., Rosenbaum, S., Samaras, K., & Stubbs, B. (2017). Solving a weighty problem: Systematic review and meta-analysis of nutrition interventions in severe mental illness. The British Journal of Psychiatry, 210(2), 110–118.
7. World Health Organization. (2021). Comprehensive mental health action plan 2013–2030. World Health Organization.
8. World Health Organization. (2022). World mental health report: Transforming mental health for all. World Health Organization.

VOL. 01 | NO. 30 | JUNE. JULY. 2026
Date of submission 14-06-2026 Date of acceptance 1-09-2026

Excel Publication
Impact factor: 5.136 (IIFS)