



“Beyond Hunger: Community-Based Nursing Strategies for Addressing Food Insecurity and Promoting Population Health”

Alishiba Lawrence¹, Dr. Manoj Prajapati²

¹PhD Research Scholar, ²Research Supervisor

Index Nursing College,

Malwanchal University, Indore M.P

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Abstract: Food insecurity remains a persistent global public health challenge affecting millions of individuals and families across developed and developing nations. Defined as the limited or uncertain availability of nutritionally adequate and safe foods, food insecurity is associated with adverse physical, psychological, and social outcomes. Vulnerable populations, including children, pregnant women, older adults, low-income households, and marginalized communities, are disproportionately affected. The consequences of food insecurity extend beyond hunger and malnutrition, contributing to chronic diseases, poor mental health, impaired child development, increased healthcare utilization, and reduced quality of life. Community health nurses occupy a unique position in addressing food insecurity through assessment, health education, advocacy, resource coordination, policy engagement, and implementation of community-based interventions. By integrating social determinants of health into nursing practice, community health nurses can identify at-risk populations and facilitate access to nutritional resources and support systems. This review explores the concept of food insecurity, its determinants and health consequences, and highlights evidence-based community-based nursing strategies that can mitigate food insecurity and improve population health outcomes. Strengthening nursing involvement in food security initiatives is essential for achieving health equity, reducing health disparities, and promoting sustainable community development.

Keywords: Food insecurity, community health nursing, nutrition, social determinants of health, public health, food security, vulnerable populations, health promotion, nursing interventions, community-based care

Introduction

Food is a fundamental human necessity and an essential determinant of health and well-being. Access to sufficient, safe, and nutritious food is recognized as a basic human right and a critical component of sustainable development. Despite significant advances in agricultural production and food distribution systems, food insecurity continues to affect populations worldwide. The Food and Agriculture Organization (FAO) defines food security as a condition in which all individuals have physical, social, and economic access to sufficient, safe, and nutritious food that meets their dietary needs and food preferences for an active and healthy life (FAO, 2023). Conversely, food insecurity refers to the inability to consistently obtain adequate food due to financial, social, geographical, or environmental constraints.

Food insecurity is not merely an issue of hunger; it encompasses inadequate dietary quality, reduced food intake, uncertainty regarding future food availability, and compromised nutritional status. Globally, economic inequalities, unemployment, inflation, climate change, population growth, conflict, and public health emergencies have contributed to increasing rates of food insecurity. The COVID-19 pandemic further exposed vulnerabilities in food systems, leading to widespread disruptions in food supply chains, loss of income, and heightened nutritional risks among vulnerable populations (Niles et al., 2020).

The health consequences of food insecurity are extensive and multifaceted. Individuals experiencing food insecurity are more likely to suffer from malnutrition, obesity, cardiovascular diseases, diabetes, mental health disorders, weakened immunity, and poor developmental outcomes. Food insecurity also exacerbates existing



health disparities and places a significant burden on healthcare systems. Given their close interaction with individuals, families, and communities, nurses are strategically positioned to identify food insecurity and implement interventions aimed at improving nutritional health and reducing inequities.

Community health nursing emphasizes prevention, health promotion, and population-based care. Community health nurses address social determinants of health and collaborate with multidisciplinary teams to improve health outcomes. Their involvement in food security initiatives extends beyond clinical settings and includes community engagement, advocacy, policy development, and resource mobilization. This review examines the relationship between food insecurity and health, explores determinants contributing to food insecurity, and discusses community-based nursing strategies that can effectively address this growing public health concern.

Understanding Food Insecurity

Food insecurity exists along a continuum ranging from mild concerns about food availability to severe deprivation resulting in hunger and malnutrition. It encompasses four essential dimensions of food security: food availability, food access, food utilization, and food stability. Availability refers to the presence of sufficient food supplies within a community or region. Access involves the economic and physical ability to obtain food. Utilization pertains to the body's ability to effectively use nutrients through adequate dietary intake, healthcare, and sanitation. Stability ensures consistent access to food over time without disruptions caused by economic crises, natural disasters, or social instability.

Food insecurity may be temporary, seasonal, or chronic. Temporary food insecurity often occurs following unexpected events such as job loss, illness, natural disasters, or economic downturns. Seasonal food insecurity is common among agricultural communities where income and food availability fluctuate throughout the year. Chronic food insecurity results from persistent poverty, systemic inequalities, and long-term socioeconomic disadvantages.

The experience of food insecurity affects individuals differently depending on age, gender, health status, and social circumstances. Families facing food insecurity frequently adopt coping mechanisms such as reducing meal sizes, skipping meals, purchasing inexpensive nutrient-poor foods, or sacrificing personal nutritional needs to feed children. These behaviors can have long-term consequences for physical and mental health.

Research increasingly recognizes food insecurity as a social determinant of health. Social determinants refer to conditions in which people are born, grow, live, work, and age. Factors such as income, education, housing, employment, social support, and access to healthcare significantly influence nutritional status and food security. Addressing food insecurity therefore requires comprehensive interventions that target underlying social and economic conditions rather than focusing solely on food provision.

Determinants of Food Insecurity

Food insecurity arises from complex interactions among economic, social, environmental, and political factors. Poverty remains one of the strongest predictors of food insecurity worldwide. Households with limited financial resources often face difficult choices between purchasing food and meeting other essential expenses such as housing, transportation, healthcare, and education. Rising food prices and inflation further exacerbate these challenges, particularly among low-income populations.

Unemployment and underemployment contribute significantly to food insecurity. Individuals with unstable employment may experience irregular income, making it difficult to maintain consistent access to nutritious food. Economic recessions and labor market disruptions often increase food insecurity rates by reducing household purchasing power. In many regions, inadequate social protection programs fail to provide sufficient support to vulnerable populations during periods of economic hardship.

Educational attainment also influences food security. Lower levels of education are associated with reduced employment opportunities, lower income, and limited



nutritional knowledge. Individuals with limited health literacy may struggle to make informed dietary choices, understand nutritional information, or access available food assistance programs. Educational inequalities therefore contribute to disparities in food security and health outcomes.

Geographical factors play an important role in determining food access. Rural communities may experience limited availability of grocery stores, transportation challenges, and higher food costs. Urban populations can encounter similar difficulties in areas known as food deserts, where residents have restricted access to affordable and nutritious foods. Food deserts disproportionately affect low-income neighborhoods and marginalized communities, contributing to nutritional disparities and poor health outcomes.

Climate change has emerged as a significant determinant of food insecurity. Rising temperatures, changing precipitation patterns, droughts, floods, and extreme weather events negatively affect agricultural productivity and food supply chains. These environmental challenges threaten food availability and increase food prices, particularly in regions heavily dependent on agriculture. Climate-related disruptions also increase vulnerability among populations already experiencing socioeconomic disadvantages.

Political instability, armed conflict, and forced migration represent additional contributors to food insecurity. Conflicts disrupt agricultural production, damage infrastructure, displace populations, and limit access to humanitarian assistance. Refugees and internally displaced persons frequently face severe food insecurity due to limited resources and restricted access to employment and social services.

The COVID-19 pandemic highlighted the interconnected nature of food systems and public health. Lockdowns, business closures, supply chain disruptions, and economic uncertainty significantly increased food insecurity worldwide. Vulnerable populations, including informal workers, low-income families, and older adults, were particularly affected by these disruptions. The pandemic underscored the need for resilient food systems and

community-based approaches to address nutritional vulnerabilities.

Health Consequences of Food Insecurity

Food insecurity has profound implications for physical health across the lifespan. Inadequate access to nutritious foods increases the risk of both undernutrition and overnutrition. While food insecurity is traditionally associated with hunger and nutrient deficiencies, it is also linked to obesity and diet-related chronic diseases. Limited financial resources often force individuals to rely on inexpensive, energy-dense, nutrient-poor foods that contribute to excessive caloric intake and poor nutritional quality.

Children experiencing food insecurity are particularly vulnerable to adverse health outcomes. Early childhood nutrition plays a critical role in growth, cognitive development, immune function, and academic performance. Food-insecure children are more likely to experience developmental delays, behavioral problems, poor educational achievement, and increased susceptibility to infections. Nutritional deficiencies during critical developmental periods can have lifelong consequences for physical and cognitive health.

Among adolescents, food insecurity is associated with unhealthy dietary behaviors, poor mental health, and reduced academic performance. Adolescents facing food insecurity may engage in risky coping strategies, including meal skipping and consumption of low-cost processed foods. These behaviors contribute to obesity, metabolic disorders, and psychosocial stress.

Pregnant women experiencing food insecurity face increased risks of inadequate gestational weight gain, anemia, pregnancy complications, and adverse birth outcomes. Maternal malnutrition can negatively affect fetal development, resulting in low birth weight, preterm birth, and increased infant morbidity. Food insecurity during pregnancy may also contribute to maternal stress and depression, further impacting maternal and child health.

Adults living with food insecurity exhibit higher rates of hypertension, cardiovascular disease, diabetes mellitus, obesity, and certain cancers. The cyclical nature of food



deprivation and overconsumption associated with limited resources can contribute to metabolic dysfunction and chronic disease development. Food insecurity may also interfere with disease management by limiting adherence to dietary recommendations and medication regimens.

Mental health consequences of food insecurity are increasingly recognized. Individuals experiencing food insecurity frequently report anxiety, depression, psychological distress, social isolation, and reduced quality of life. The uncertainty associated with obtaining adequate food creates chronic stress that can negatively affect emotional well-being and family functioning. Parents experiencing food insecurity often report feelings of guilt, frustration, and helplessness related to their inability to provide adequate nutrition for their children.

Older adults constitute another high-risk population. Food insecurity among older adults is associated with malnutrition, frailty, functional decline, increased hospitalization rates, and reduced independence. Fixed incomes, mobility limitations, chronic illnesses, and social isolation contribute to food insecurity within this population. Nutritional deficiencies among older adults can accelerate age-related health problems and increase healthcare expenditures.

Food insecurity also places a substantial burden on healthcare systems. Individuals experiencing food insecurity are more likely to utilize emergency services, require hospitalization, and experience poor disease outcomes. The increased healthcare costs associated with food insecurity highlight the importance of preventive interventions that address nutritional needs and underlying social determinants of health.

The Role of Community Health Nurses in Addressing Food Insecurity

Community health nurses play a pivotal role in addressing food insecurity through comprehensive, population-focused approaches that integrate health promotion, disease prevention, and social support. Their unique position within communities enables them to identify vulnerable populations, assess nutritional risks, coordinate

resources, and advocate for policies that promote food security.

Assessment is a fundamental nursing responsibility in addressing food insecurity. Community health nurses routinely interact with individuals and families in homes, schools, clinics, and community settings, providing opportunities to identify nutritional challenges and food access barriers. Through systematic screening and assessment, nurses can detect early signs of food insecurity and connect individuals with appropriate resources before health complications arise.

Nursing assessments should extend beyond physical health indicators to include socioeconomic factors, dietary patterns, housing conditions, employment status, transportation availability, and social support systems. Comprehensive assessments enable nurses to understand the broader context influencing food security and develop individualized intervention plans. Screening tools specifically designed to identify food insecurity can be incorporated into routine healthcare encounters, facilitating early detection and intervention.

Health education represents another essential nursing strategy. Community health nurses provide education regarding balanced nutrition, meal planning, budgeting, food preparation, and healthy lifestyle behaviors. Educational interventions can empower individuals and families to maximize available resources and make informed dietary choices. Culturally sensitive nutrition education is particularly important in diverse communities where dietary practices and food preferences vary significantly.

Community-Based Nursing Strategies for Combating Food Insecurity

Community-based nursing interventions are most effective when they address both the immediate nutritional needs of individuals and the underlying social determinants contributing to food insecurity. Nurses utilize evidence-based approaches that emphasize prevention, empowerment, community participation, and sustainability. By working collaboratively with community stakeholders, nurses can develop comprehensive programs that improve



food access, nutritional knowledge, and long-term health outcomes.

One of the most important strategies is the implementation of routine food insecurity screening within healthcare and community settings. Screening enables nurses to identify individuals and families experiencing food-related challenges before severe health consequences occur. Incorporating validated food insecurity assessment tools into primary care visits, maternal and child health services, school health programs, and community outreach initiatives facilitates early intervention. Once food insecurity is identified, nurses can initiate referrals to food assistance programs, social services, and community resources. Early identification reduces delays in accessing support and helps prevent the progression of nutrition-related health problems.

Case management represents another critical nursing intervention. Food insecurity often coexists with other social and health challenges such as unemployment, housing instability, chronic illness, mental health disorders, and limited healthcare access. Community health nurses coordinate services across multiple sectors to address these interconnected needs. Through case management, nurses assist individuals in navigating complex social support systems, completing applications for assistance programs, and accessing healthcare services. This coordinated approach enhances resource utilization and promotes continuity of care.

Home visitation programs provide valuable opportunities for nurses to assess food security within the context of daily living environments. During home visits, nurses can evaluate food storage practices, meal preparation capabilities, household resources, and environmental barriers affecting nutrition. Home-based interventions allow nurses to provide personalized education and support while fostering trust and engagement with families. Such programs are particularly beneficial for pregnant women, young children, older adults, and individuals with chronic illnesses who may face additional nutritional vulnerabilities. Nutrition education remains a cornerstone of community-based nursing practice. Effective nutrition education extends beyond providing dietary information and focuses

on practical skills that enable individuals to make healthier choices within their economic constraints. Nurses educate community members about nutrient-dense foods, portion control, food label interpretation, safe food handling, and meal planning. Educational sessions may be delivered through community centers, schools, healthcare facilities, faith-based organizations, and virtual platforms. Interactive approaches such as cooking demonstrations, group discussions, and hands-on workshops have been shown to improve engagement and knowledge retention.

Community health nurses also promote food literacy, which encompasses the knowledge and skills necessary to obtain, prepare, and consume healthy foods. Food literacy interventions help individuals understand the relationship between nutrition and health while developing confidence in making informed food choices. Enhanced food literacy contributes to improved dietary behaviors, greater self-efficacy, and better long-term nutritional outcomes.

Community Partnerships and Collaborative Approaches

Addressing food insecurity requires collaboration among healthcare providers, government agencies, educational institutions, nonprofit organizations, and community members. Community health nurses serve as essential facilitators of these partnerships, bringing together diverse stakeholders to address common goals related to nutrition and health.

Partnerships with food banks and food pantries are among the most common collaborative strategies employed by nurses. Food banks provide emergency food assistance to individuals and families facing immediate nutritional needs. Community health nurses can establish referral pathways between healthcare settings and food assistance organizations, ensuring that vulnerable populations receive timely support. In addition to facilitating access to food, nurses may assist food banks in incorporating health promotion activities such as nutrition counseling, chronic disease screening, and health education.

Schools represent another important setting for collaborative interventions. School-based nutrition programs, including breakfast and lunch initiatives, play a



significant role in reducing food insecurity among children. Community health nurses work closely with educators, school administrators, and parents to identify students at risk of food insecurity and connect them with available resources. School gardens, nutrition education programs, and healthy eating campaigns further support food security and promote lifelong healthy behaviors among children and adolescents.

Faith-based organizations often serve as trusted community institutions capable of reaching vulnerable populations. Nurses can collaborate with religious organizations to implement food distribution programs, health education initiatives, and community outreach activities. Such partnerships are particularly valuable in underserved communities where faith-based institutions play a central role in social support and community engagement.

Community gardens have gained increasing recognition as effective tools for promoting food security and community empowerment. Community health nurses can support the development and maintenance of community gardens by providing health education, facilitating partnerships, and encouraging participation among local residents. Community gardens improve access to fresh fruits and vegetables while fostering social connections, physical activity, and environmental sustainability. Participation in gardening activities has also been associated with improved mental well-being and increased consumption of healthy foods.

Collaborations with agricultural organizations and local farmers can further enhance food security efforts. Farmers' markets, farm-to-school programs, and community-supported agriculture initiatives increase access to fresh, locally produced foods. Nurses can advocate for programs that make healthy foods affordable and accessible to low-income populations through subsidies, vouchers, or incentive programs.

Advocacy and Policy Development in Nursing Practice

While direct service interventions are essential, sustainable improvements in food security require policy-level changes that address systemic inequalities.

Community health nurses play a critical advocacy role by influencing policies that affect food access, nutrition, and social welfare.

Nurses possess firsthand knowledge of the health consequences associated with food insecurity and can use this expertise to advocate for evidence-based policies. Advocacy efforts may focus on expanding food assistance programs, improving access to affordable housing, increasing minimum wages, strengthening social protection systems, and addressing healthcare inequities. By participating in policy discussions and public health initiatives, nurses contribute valuable perspectives regarding community needs and health outcomes.

Public awareness campaigns represent an important advocacy strategy. Community health nurses can educate policymakers, community leaders, and the general public about the prevalence and consequences of food insecurity. Increased awareness helps reduce stigma associated with food assistance and promotes community support for nutrition-related interventions. Public education efforts may include media engagement, community forums, educational workshops, and participation in public health campaigns.

Research and evidence generation are equally important components of nursing advocacy. Nurses contribute to the growing body of evidence examining the effectiveness of food security interventions and their impact on health outcomes. Research findings can inform policy decisions, resource allocation, and program development. By documenting community needs and intervention outcomes, nurses strengthen the case for continued investment in food security initiatives.

Community health nurses may also advocate for the integration of food insecurity screening into routine healthcare practice. Recognizing food insecurity as a health-related risk factor encourages healthcare systems to address nutritional needs as part of comprehensive patient care. Such integration promotes early intervention and reinforces the importance of social determinants of health in healthcare delivery.

Innovative and Emerging Nursing Interventions



Technological advancements and evolving healthcare models have created new opportunities for addressing food insecurity through innovative nursing interventions. Telehealth services, mobile health applications, and digital education platforms can expand access to nutrition support, particularly in rural and underserved communities. Telehealth allows nurses to provide nutrition counseling, health education, and follow-up support remotely. This approach reduces transportation barriers and improves accessibility for individuals who may have difficulty attending in-person appointments. Telehealth interventions became particularly important during the COVID-19 pandemic and continue to offer valuable opportunities for community-based care.

Mobile health technologies can facilitate dietary monitoring, nutrition education, and resource navigation. Smartphone applications may help users identify nearby food assistance programs, access healthy recipes, track dietary intake, and receive personalized health recommendations. Nurses can incorporate these technologies into health promotion efforts to enhance engagement and self-management.

Social prescribing is another emerging approach that aligns closely with community health nursing practice. Social prescribing involves connecting individuals with non-medical community resources that address social determinants of health. For individuals experiencing food insecurity, social prescriptions may include referrals to food pantries, community kitchens, nutrition programs, or gardening initiatives. This holistic approach recognizes that health outcomes are influenced by social and environmental factors beyond traditional medical care.

Mobile food distribution programs have also demonstrated effectiveness in reaching underserved populations. These programs deliver nutritious foods directly to communities with limited access to grocery stores or transportation. Community health nurses often participate in outreach activities associated with mobile food programs, providing health assessments, education, and referrals alongside food distribution services.

Community kitchens and cooking programs represent additional innovative strategies. These initiatives provide

opportunities for individuals to learn food preparation skills, share resources, and strengthen social connections. Nurses can facilitate educational sessions focused on healthy meal preparation, chronic disease management, and food safety while fostering community engagement and empowerment.

Challenges in Addressing Food Insecurity

Despite numerous interventions and programs, significant challenges remain in addressing food insecurity effectively. One major challenge is the stigma associated with seeking food assistance. Many individuals experiencing food insecurity may feel embarrassed or reluctant to access available resources due to concerns about judgment or discrimination. Nurses must create supportive, nonjudgmental environments that encourage open discussions about food-related needs.

Resource limitations represent another significant barrier. Community-based programs often operate with limited funding, staffing, and infrastructure. Insufficient resources may restrict program capacity and limit the ability to reach all individuals in need. Sustained investment in food security initiatives is necessary to ensure long-term effectiveness and accessibility.

Cultural and linguistic differences can also affect program participation and effectiveness. Nutritional interventions must be culturally appropriate and responsive to the diverse needs of communities. Community health nurses should consider cultural food preferences, beliefs, traditions, and language barriers when designing and implementing programs.

Geographical disparities continue to pose challenges, particularly in rural and remote regions. Limited transportation options, healthcare shortages, and inadequate food retail infrastructure can hinder access to nutritious foods and support services. Innovative outreach strategies and technology-based interventions may help address some of these barriers, but ongoing efforts are needed to improve rural food security.

Climate change, economic instability, and global crises further complicate efforts to achieve food security. As environmental and socioeconomic conditions continue to



evolve, community health nurses must remain adaptable and proactive in responding to emerging challenges affecting food systems and population health.

Future Directions for Community-Based Nursing Practice

Future efforts to address food insecurity should emphasize interdisciplinary collaboration, preventive interventions, and health equity. Community health nurses will continue to play a central role in integrating food security into public health and primary healthcare frameworks. Expanding nursing education related to nutrition, social determinants of health, and policy advocacy can strengthen the profession's capacity to address food insecurity effectively. Greater emphasis should be placed on community empowerment and participatory approaches that involve community members in identifying needs, developing solutions, and evaluating outcomes. Empowering communities fosters sustainability and ensures that interventions are responsive to local priorities and cultural contexts.

Research should continue to examine the effectiveness of nursing-led interventions and identify best practices for addressing food insecurity across diverse populations. Longitudinal studies exploring the impact of community-based programs on health outcomes, healthcare utilization, and quality of life will provide valuable evidence to guide future practice and policy development.

Advances in digital health technologies, data analytics, and community-based participatory research offer promising opportunities for innovation. Leveraging these tools can enhance program reach, improve resource allocation, and support evidence-based decision-making. As healthcare systems increasingly recognize the importance of social determinants of health, food security interventions are likely to become more integrated into routine healthcare delivery.

Conclusion

Food insecurity is a complex and multifaceted public health challenge with significant implications for physical health, mental well-being, and social equity. Its effects extend

beyond hunger, influencing chronic disease prevalence, developmental outcomes, healthcare utilization, and overall quality of life. Vulnerable populations, including children, pregnant women, older adults, and low-income households, are disproportionately affected by inadequate access to nutritious food.

Community health nurses occupy a critical position in addressing food insecurity through assessment, education, advocacy, resource coordination, and community engagement. By implementing evidence-based interventions and fostering collaborative partnerships, nurses can help reduce nutritional disparities and improve population health outcomes. Community-based strategies such as food insecurity screening, nutrition education, home visitation programs, community gardens, policy advocacy, and innovative technology-based interventions offer promising approaches for addressing both immediate nutritional needs and underlying social determinants.

Sustainable progress in combating food insecurity requires coordinated efforts across healthcare, public health, social services, education, agriculture, and policy sectors. As advocates for health equity and social justice, community health nurses have an essential role in advancing food security initiatives and promoting healthier, more resilient communities. Strengthening nursing leadership in food security efforts will contribute significantly to achieving improved health outcomes, reducing disparities, and supporting sustainable community development.

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