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Social Support and Loneliness Among Black and Hispanic Senior Women Experiencing Food Insecurity

The Nurse as Primary, Secondary, and Tertiary Intervention

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KEYWORDS

• Vulnerable populations • COVID-19 • Food insecurity • Loneliness
• Perceived social support • Neuman systems model • Nursing intervention • Stress

KEY POINTS

- When compared with White senior women, Black and Hispanic senior women are more likely to have low or moderately low levels of social support, and to experience food insecurity, which may be exacerbated by loneliness.
- Food insecurity has been linked to negative health outcomes, both directly and indirectly as the result of stress.
- Through the lens of The Neuman Systems Model, nurses are in a position to act as sources of primary, secondary, and tertiary prevention to support the wellness of Black and Hispanic senior women who are food insecure.

INTRODUCTION

The impact of social determinants of health (SDOH) on vulnerable populations, especially during the COVID-19 pandemic, is understudied. Additional research in this area is needed. However, while research is being carried out, interventions to improve health outcomes for vulnerable populations can be considered. The aim of this article

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is to provide a theoretic framework for nurses to identify pathways for nursing interventions to minimizing the influence of food insecurity, perceived social support, and loneliness on stress and client health. The intervention pathways are delineated through the lens of The Neuman Systems Model.[1] The vulnerable population of interest is Black and Hispanic senior women because, when compared with White senior women, Black and Hispanic senior women are more likely to have low or moderately low levels of social support and to experience food insecurity, which may be exacerbated by loneliness.

Background

Poverty

Historically in the United States, poverty rates among Blacks and Hispanics have been higher than poverty rates for Whites.[2,3] Since the onset of the COVID-19 pandemic in February of 2020, overall poverty rates in the US have increased from 15.3% to 16.7%; without federal stimulus payouts afforded by the CARES Act, the increase would have been greater at 18.0%.[4] When compared with Whites (0.08%), Blacks (1.4%) and Hispanics (2.1%) experienced the greatest increases in poverty rates during the pandemic.[4] Considering these inequities, it is no surprise that compared with White (30.7%) women over the age of 65, Black (50.2%) and Hispanic (48.7%) women in that same age group are more likely to live 200% below poverty.[5] Supplemental poverty measure data showed even higher rates and greater disparity, with 41.4% of White women over the age of 65 living 200% below poverty compared with 64.1% of Black women and 67.4% of Hispanic women in the same age group.[5]

Food Insecurity

Because household income is linked to food insecurity[6,7]—defined as food scarcity[8]—it is not surprising that Blacks and Hispanics are more likely to be food insecure when compared with Whites, and that Black and Hispanic women are more likely to be food insecure when compared with men. Specifically, Blacks (11.5%, 7.6%) and Hispanics (10.7%, 4.9%) are more likely to have low and very low food security, respectively, when compared with Whites (4.6%, 3.3%).[9] Women are also more likely to have low (19.1%) or very low (9.6%) food security when compared with men (9.5%, 5.9%, respectively).[9]

Similar conditions exist for Black women. In 2017, 79.4% of non-Hispanic White women but only 9.0% of non-Hispanic Black women were food secure.[10] Additionally, non-Hispanic Black women were more likely to be food insecure (22.8%) than to be food secure (9.0%).[10] Furthermore, Black (15.1%) and Hispanic (14.8%) seniors age 60 and older are more likely to be food insecure when compared with White (6.2%) seniors in the same age group.[11]

Loneliness and Social Support

For women, food insecurity has been linked with social support[10] and the social capital those supports provide.[12] Most of the women who are food insecure have low (59.1%) or moderate (31.0%) levels of social support.[10] Marital status,[13] participation in a government assistance program,[13,14] household income (ie, poverty),[6] education,[15] employment,[16] and loneliness[13,14] are additional factors of food insecurity. During the COVID-19 pandemic, seniors have reported experiencing increased loneliness.[17,18]

RATIONALE

Loneliness has been linked to negative health outcomes, including depression for those who developed closer relationships within their social networks during the pandemic.[18] Food insecurity has been linked generally to overall poorer self-reported health[7,19] as well as to prediabetes,[6,20–22] diabetes,[7,21,23] high blood pressure, congestive heart failure, heart attack, asthma,[7] obesity,[24] and nonalcoholic fatty liver disease.[25]

Comorbidities may negatively mediate the influence of food insecurity on health outcomes.[26] Comorbidities include cardiovascular disease,[27,28] cancer,[27,29] chronic fatigue syndrome,[30] musculoskeletal injury,[31] and depression,[27,32] and health-related behaviors include smoking, substance abuse, and poor[27] and disturbed eating habits.[33]

Enrollment in a nutrition assistance program may mediate the influence of low food security on overall physical health outcomes.[19,34] Additionally, social support[35]—potentially in the form of nursing prevention interventions[35]—can reduce the influence of comorbidities and health-related behaviors[27] and thus act as a barrier against the adverse effects of stress on patient health.[35]

The specific focus on Black and Hispanic populations is warranted not only because of the greater potential for those populations to be socioeconomically challenged[2,3] and food insecure[9,11] but also because Blacks and Hispanics have been found to have higher incidence of stress when compared with Whites.[27] Sources of stress disparity include (a) greater exposure to incidents of discrimination[36] and violence, (b) greater exposure to barriers to occupational advancement,[37] and (c) the cultivation of resources useful for overcoming these sources of stress[38] have been exacerbated with the COVID 19 pandemic.

THE CLIENT SYSTEM

The Neuman systems model is based on the concept of the client system, which can be considered a single client, a group, or multiple groups, and is focused on how those systems interact with their environments[39] in response "to actual or potential environmental stressors, and the use of primary, secondary, and tertiary nursing prevention interventions for retention, attainment, and maintenance of optimal client system wellness."[35(p67)] Types of environmental stressors vary[39] and can be "intrapersonal, interpersonal, and extrapersonal" and characteristically "physiologic, psychological, sociocultural, developmental, and spiritual."[35(p67)] Examples of stressors include "loss, pain, sensory deprivation, [and] cultural change".[39(p20)]

Levels of Energy

In the client system model, available energy for resisting stressors exists in 3different capacities and in addition to basic bodily functions such as genetic structure, organ strength and weakness, and body temperature regulation.[39] Those levels of energy within client systems are referred to as lines of resistance, normal lines of defense, and flexible lines of defense. In all cases, a client's levels of energy are supported by coping mechanisms, cultural and spiritual belief systems, and lifestyle factors.

A client's normal line of defense refers to the client's usual state of wellness and is developed and shaped over time through client behaviors.[39] The client's usual state of wellness, defined as the stable condition of the client system, serves as a baseline for assessing deviances from that condition.

When a client's normal line of defense is disrupted, the client's lines of resistance are activated whereby the client's internal and external resources (both known and

unknown) engage to protect the client against the identified encroaching stressor.[39] The client's lines of resistance include major biological protection systems such as the immune system's activation of white blood cells in response to injury or infection. Ideally, the client's lines of resistance will be sufficient enough to return the client system to a stable condition. The alternative is the depletion of system energy and client death.

A client's flexible line of defense is their primary protective element against environmental stressors that disrupt the client's normal line of defense (ie, stable health).[39] The client's flexible line of defense is dynamic and can fluctuate rapidly. A simplified graphic of the Neuman systems model is presented in **Fig. 1**.

Client Perceptions of Health

In addition to client system reactions to stressors, the ways in which clients perceive their health[35] and the way they cope with stressors[39] influences the strength of their lines of defense and resistance. Essentially, stress is a neutral concept that only gains the capacity for positive or negative influences on health outcomes to the degree that the client perceives the stressor will have positive or negative outcomes and to the extent that the client perceives they are capable of coping with the stressor.[35,39] The mere exposure to a pandemic is a stressor for the client. Couple this with systemic racism and lack of resources, this potentiates stress affecting lines of defense. The concepts of client perceptions and coping are rooted in Lazarus and Folkman's theory of stress and coping.

Stress and Coping

Unlike traditional, and dichotomous, perspectives of stress that characterize stress as either a stimulus or response, Lazarus and Folkman[35] considered stress a factor related to the characteristics of both the person and the environment for which the person functions. This relationship between stress and the characteristics of both the person and the environment for which the person functions is similar to the way

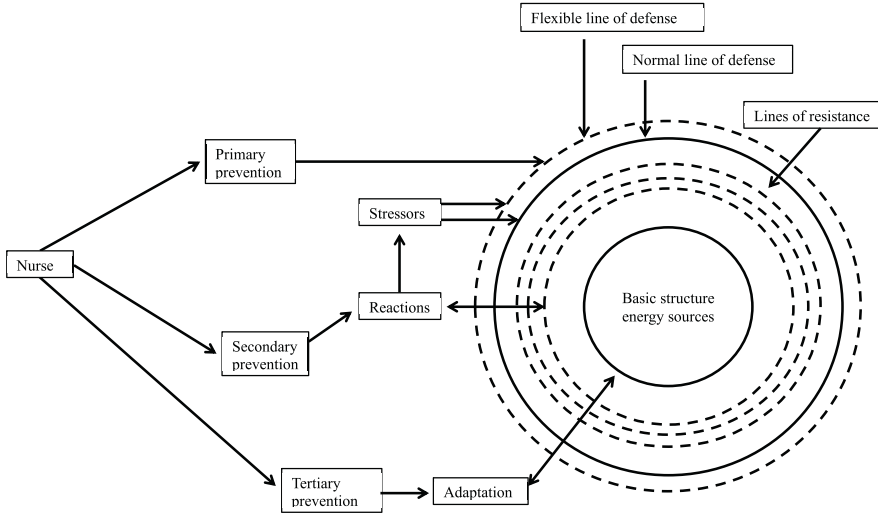

Fig. 1. Simplified interpretation of the Neuman systems model. (*Note*. *Adapted from* The Neuman Systems Model, by B. Neuman and J. Fawcett, 2011 (5th ed.), p. 13, Pearson.)

illness cannot be considered solely a function of external influences but a combination of those influences and a person's behavior and susceptibility to illness. Central and critical components to managing stress are appraisal and coping, whereas the degree to which a person perceives a situation to be stressful (appraisals) and that that person can successfully cope with that stressor is due, in part, to that person's perceived level of social support. Subsequently, the person's perceived the stressfulness of a situation and their capacity to cope with the stressful situation influences the person's ability to adapt to the stressful situation. Finally, a person's ability to adapt to a stressful situation mediates the influence of stress on a person's health outcomes. In this way, social support encourages a relationship perspective that can protect people from the negative health outcomes associated with stress.[40] Additionally, from this perspective, people with greater levels of perceived social support will be less likely to experience stress-related health problems because they will be less likely to judge their situations as stressful.

Primary, Secondary, and Tertiary Roles of the Nurse

Because the Neuman systems model can be applied to a variety of populations and conditions, it is uniquely adaptable to a range of health care concerns in nursing and can be used to delineate the primary, secondary, and tertiary roles of the nurse within the client system.[39] Primary preventions are those that occur before a client encounters and reacts to a stressor. Nursing actions that can function as primary preventions are associated with general nursing knowledge used to identify and assess potential client stressors and implement interventions to mitigate or alleviate those stressors. Additionally, primary preventions may be focused on increasing a client's flexible lines of defense.

Secondary preventions are those that occur after a client encounters and reacts to a stressor.[39] Nursing actions that can function as secondary preventions are associated with symptomology related to client reactions to stressors. Actions in this category of prevention include prioritizing interventions and implementing interventions focused on reducing the negative effects of clients' reactions to stressors. Interventions of this nature might include early screening and detection, and treatment of symptoms.

Tertiary preventions are those that occur after a client has reacted to a stressor and received treatment.[39] Nursing actions that can function as tertiary preventions are those that help clients adjust and adapt to changing health conditions and move clients closer to system stability. Interventions of this nature might include education meant to prevent future susceptibility to a particular stressor.

CONCEPTUAL APPLICATION OF THE NEUMAN SYSTEM MODEL

In this article, the Neuman systems model is used to consider food insecurity as a source of stress for the client system, in this case, the Black or Hispanic female senior patient who is food insecure. Perceived social support and loneliness are considered factors of food insecurity. The nurse is conceptualized as a source of primary, secondary, and tertiary interventions. A graphic representation of the relationships among the theoretic concepts presented to this point and the associated covariates and mediating factors is presented in **Fig. 2**.

The holistic perspective of the Neuman systems model makes it not only "timeless [but] expansive in being adaptable to all client care situations."[41(p112)] Because the client system is dynamic, nurses may effectually help transform those systems to promote better health outcomes for clients. Using the Neuman systems model to examine the relationships between perceived social support, loneliness, and food insecurity

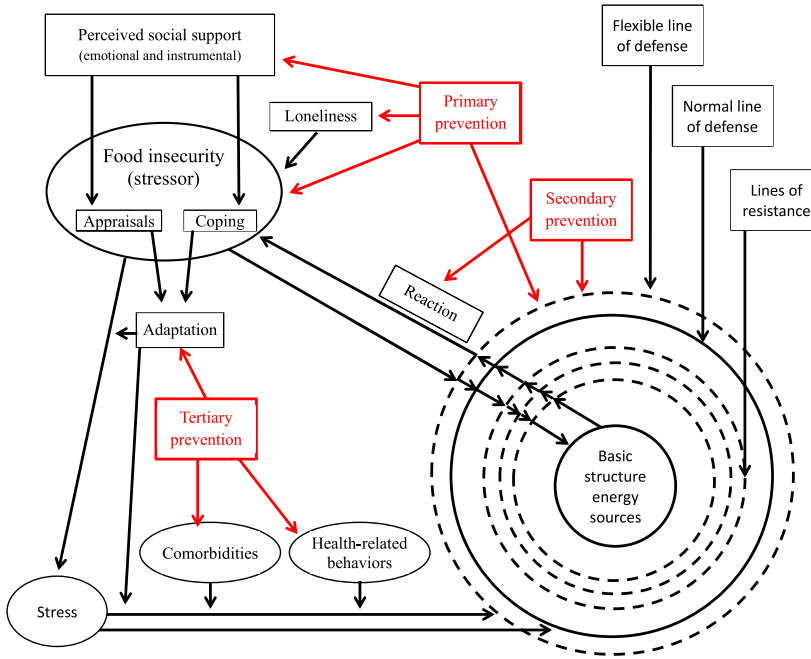

Fig. 2. Application of the Neuman systems model: Food insecurity as a stressor on the client system.

provides an effective means not only for considering the patient as a complex system but for understanding how the environment influences that system and the varied ways in which nurses can serve as sources of support for patient wellness.

As initiators of preventions in the food insecure client senior minority model, nurses may direct clients to sources of emotional and instrumental support and companionship. They also may function to help clients improve their perceptions about their experiences with food insecurity and to better adapt to outcomes of the food insecurity they are experiencing, including stress. Additionally, nurses may help promote client engagement in positive health-related behaviors while also addresses comorbidities that may be having additional negative influences on the client system. In these ways, nurses have the capacity to contribute to improved client wellness, in this case, specifically Black and Hispanic senior women who are food insecure.

APPLICATION IN PRACTICE

A list of suggested primary, secondary, and tertiary preventions and their conceptualized applications in practice as they relate to perceived social support, loneliness, and food insecurity is presented in **Table 1**. These suggestions are not all inclusive, and nurses are encouraged to generate other potential means of prevention. Nurses conduct health assessments and obtain data related to the psycho-social-cultural being which allows one to examine potential risks for allostatic load and burden of diseases. Early detection is key and providing a toolkit for vulnerable populations in particular to have during unplanned circumstances such as pandemics and or natural disasters may be key elements in attaining good health outcomes.

Table 1
The nurse as source of primary, secondary, and tertiary prevention

Model Component	Application in Practice
Primary prevention	
Identify and assess potential client stressors	• Identify food insecurity as a potential stressor to the client system • Assess the degree to which food insecurity has the potential to negatively affect the client system • Identify social support and loneliness as potential influences on client's perceived severity of food insecurity • Assess the degree to which social support and loneliness are potential influences on client's perceived severity of food insecurity
Primary prevention	
Implement interventions to mitigate or alleviate those stressors	• Generation of food assistance program database and educational materials for clients • Generation of emotional and instrumental support program database and educational materials for clients • Generation of companionship program database and educational materials for clients
Increase client's line of flexible defense	• Through primary preventions focused on decreasing experiences of food insecurity • Through primary preventions focused on decreasing experiences of low emotional and instrumental support • Through primary preventions focused on decreasing experiences of loneliness • Client perception that the nurse is a source of social support
Secondary prevention	
Prioritize interventions and implement interventions focused on reducing the negative effects of clients' reactions to stressors	• Formal screening for food insecurity • Informal screening for lack of social support and signs of loneliness • Referral to support services: food, emotional support, instrumental support, and companionship programs • Encourage client use of support services • Encourage support seeking behavior • Encourage engagement in positive health-related behaviors • Support behaviors to minimize or eliminate comorbidities
Tertiary prevention	
• Promote client adjustment and adaptation to changing health conditions	Encourage positive thought patterns

(*continued on next page*)

Table 1
(continued)

Model Component	Application in Practice

• Nurture client journey to system stability
  ○ Looking at feedback on secondary prevention
  ○ Reeducation to prevent the recurrence of stressors
	• Analyze the effectiveness of screening for food insecurity, social support, and loneliness
	• If interventions are effective, remind nurse colleagues about available client supports to prevent future occurrences of stressors
	• Analyze value of referrals for food programs, emotional support programs, instrumental support programs, and companionship programs
	• If interventions are effective, remind clients about the available support programs
	• Analyze the effectiveness of encouraging client use of support services, support seeking behavior, and engagement in positive health-related behaviors

Tertiary prevention	

• Nurture client journey to system stability
  ○ Looking at the feedback on secondary prevention
  ○ Reeducation to prevent recurrence of stressors
	• If interventions are effective, remind nurse colleagues about the value of encouraging these client behaviors
	• Analyze the effectiveness of supporting client behaviors to minimize or eliminate comorbidities
	• If interventions are effective, remind nurse colleagues of the value of encouraging client behaviors to minimize or eliminate comorbidities

Support maintenance of healthy client system	Return to primary prevention processes

RECOMMENDATIONS

Some of the preventions suggested in **Table 1**, in particular those that require identification and assessment, necessitate the observation and/or measure of social support, loneliness, and food insecurity. Nurses are urged to consider the various definitions of these terms as they plan potential interventions. A list is provided in **Table 2**, although this list is not inclusive. Because of the conceptual complexity of social support and food insecurity, those terms are discussed in more detail.

Social Support

Over the last 4 decades, researchers and theorists have proposed various definitions of social support in response to their explorations of its connection to psychological and physical manifestations of health.[45,50] Lack of agreement on the definition is due to its multidimensionality in the way it operates,[43] whereas support can be (a) both given and received, (b) considered from the perspectives of both availability and use, and (c) considered from the perspective of the origin of the support.[51] However, social support also can be informal or formal[52] and emotional or instrumental.[42] Social support also can be considered with respect to clinical utility and health outcomes,[52] whereas social support can be a direct influence on health outcomes or a

Table 2
Definition of terms

Variable	Definition
Social support	
NIH Toobox[42(p28)]	Social relationships that are "available to provide aid in times of need or when problems arise"
Shumaker & Brownell[43(p11)]	"An exchange of resources between at least 2 individuals perceived by the provider or the recipient to be intended to enhance the well-being of the recipient"
Cohen[44(p676)]	"A social network's provision of psychological and material resources intended to benefit an individual's ability to cope with stress" (p. 676)
Feeney & Collins[45(p1)]	"Deep and meaningful close relationships"
Loneliness	
NIH Toolbox[42(p28)]	"Perceptions that one is alone, lonely or socially isolated from others"
De Jong Gierveld & Van Tilburg[46]	The feeling of missing an intimate relationship (emotional loneliness) or missing a wider social network (social loneliness)
Food Insecurity	
Operational	
Johnson et al.[47(p1257)]	Food insecurity measured by the 4 domains of the Four Domain Food Insecurity Scale: "shortage of food (quantitative), unsuitability of food and diet (qualitative), preoccupation or uncertainty in access to enough food (psychological), and alienation or lack of control over their food situation (social)"
Conceptual	
Anderson[48(1560)]	"Food insecurity exists whenever the availability of nutritionally adequate and safe foods or the ability to acquire acceptable foods in socially acceptable ways is limited or uncertain"
Murillo et al.[8(p428)]	"Lack of access or availability to healthy foods due to scarce resources or money"
Nagarajan et al.[49]	Lack of availability of healthy foods
Wright et al.[22(p130)]	"Limited access to a sufficient quantity of affordable, nutritious food"

buffering agent such that social support lessens the negative outcomes associated with stressful events.[53]

Food Insecurity

The United States Department of Agriculture (USDA) typically refers to food security, which they define as "access by all people at all times to enough food for an active, healthy life"[9(p2)] Murillo and colleagues[8] referred to that USDA definition for food security when they defined its opposite, food insecurity. As shown in **Table 2**, Wright and colleagues[22] and Nagarajan and colleagues[49] defined food insecurity using similar language. However, unlike Murillo and colleagues who included reasons for the lack of access to or availability of healthy foods in their definition of food insecurity, neither

Wright nor Nagarajan and colleagues do so. The USDA also does not reference reasons for having access to enough food in its definition of food security. The most comprehensive definition of food insecurity includes quantitative, qualitative, psychological, and social factors associated with food insecurity.[47] Because it is broad in scope, that definition is suggested for use in future research.

SUMMARY

A disciplinary focus in the nursing field is social justice; as nurses, we are morally obligated to act in ways that promote immediate social change in the form of improved patient care and outcomes.[54] Nurses are in an ideal position to examine SDOH and to implement strategies to rectify health inequities among vulnerable groups such as the aging population. Additionally, nurse educators are well-situated to raise awareness of the importance of nurses to act in this capacity. Such efforts are encouraged and could help the United States move closer to the 2030 goal of eradicating food insecurity championed by the Food and Agriculture Organization of the United Nations and colleagues[55] and reducing the incidence of health inequities among Black and Hispanic senior women.

In addition to improving patient outcomes, reduction of cost negative health-related outcomes of food insecurity could be reduced. According to Berkowitz and colleagues,[56] median annual state- and county-level health care costs are $687,041,000 and $4,433,000, respectively. For food insecure adults, additional health care costs amount to $1834 annually. At the national level, those numbers are even more astounding at $77.5 billion and $1,863, respectively.[57] Saved monies could be reallocated for additional interventions to further reduce the incidence of health inequities among Black and Hispanic senior women.

The timing of this article correlates with the updated recommendations put forth in *The Essentials: Core Competencies for Professional Nursing Education* which include SDOH as one of the 8 featured concepts for professional nursing education programs.[58] The 8 concepts are intertwined among 10 domains of competence; together, they represent what the American Association of Colleges of Nursing describes as a new model for nursing education that is competency based, structured for application across levels of education, and adaptable to accommodate a future change in the field of nursing.

The inclusion of SDOH as an essential concept of learning for nurses underscores the important role nurses can serve in addressing SDOH and health inequities that contribute to inequity in health outcomes. Through health and needs assessments, health promotion, patient education, and improved access to care, nurses may have a direct impact on the health care of community members from vulnerable populations.[58] In this article, we argued that these very actions be taken by nurses acting as primary, secondary, and tertiary interventions to improve health outcomes for Black and Hispanic senior women experiencing food insecurity.

CLINICS CARE POINTS

Screening for SDOH during the patient intake process can be expedited using

- The Hunger Vital Sign screening tool (2 items),[59]
- The Three-Item Loneliness Scale,[60] and
- The Social Support Questionnaire (SSQ3; three-item short form).[61]

Referral to food support programs is associated with decreased

- Loneliness,[62]
- Medication nonadherence,[63]
- Admissions to nursing homes,[64] and
- Overall health care costs.[65]

DISCLOSURE

The authors have nothing to disclose.

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