DOI: https://doi.org/10.68064/jshe.2024.yvx1ylby

The Impact of Backyard Vegetable Gardening on Food Security of Urban and Suburban Communities In Pankshin LGA

Goshit Sarah Chris & Hemba Andrea Eyikomisan

Abstract

As global populations surge and urbanization accelerates, concerns regarding food security and nutritional health intensify. In response to these challenges, the practice of backyard fruit and vegetable gardening has emerged as a potential solution. This study aims to systematically investigate the impact of backyard vegetable gardening on food security and nutritional health in urban and suburban communities in Pankshin LGA. Three (3) research questions were raised and analyzed. Survey research was adopted for the study. The population of the study comprised four hundred and fifty (450) residents of both urban and suburban households aged 18 years and above. A sample size of two hundred and fifty (250) respondents were selected from the population. Sample techniques were used to select five communities from the study area. The instrument used for data collection was a structured questionnaire with a total of 15 items tittle, "Vegetable Garden and Food Security Questionnaire", (VGFSQ). Data collected were analyzed using descriptive statistics. The result showed high price of Fresh produce can lead to food insecurity with the mean value of 4.09, the finding on the extreme climate change can lead to poor yield of fresh produce with the mean 3.35 and 3.17 respectively. Farmers use of chemicals such as herbicides, pesticides and fertilizer promote vegetation gardening (3.97), illiteracy among households are barriers to the cultivation of vegetable (3.51) limited resources of households lead to poor vegetation gardening (3.77). it was concluded that adequate knowledge and right attitude toward vegetable gardening are essential for farming survival, food security and sustainability in Pankshin LGA of Plateau State. Thus, it was recommended that households should imbibe the right attitude toward the use of natural resources such as land, air and water to practice vegetable gardening.

Keywords: **Food Cost, Food Security, Healthy Diet, Defensive Food, Macro and Micronutrient.**

Introduction

Backyard gardening is the cultivation of a small plot of land near homes or homesteads with various plants that can provide an additional source of food and income. It has been widely accepted and practiced in various settings by subsistence families in developing countries, (Haji, Abdul, Hindra, Almira, & Ilma 2021). Backyard vegetable gardening has been an essential part of the local food system and family farming in urban and suburban communities to improve food security, nutrition and livelihood. It's a source of food security and additional income for the household since the family can sell a portion of the garden's produce and increase household food security throughout the year. It provides marketing opportunities to urban and suburban communities and builds a base for food production for the vulnerable, (Hayes, Roth & Zepeda, 2017). Furthermore, backyard gardening increases food security,

improved nutrition, supplementary income and better rural employment, reduced risk of failure and environmental benefits. In addition to being located close to dwellings, backyard gardens have several characteristics, such as it contains high plant diversity, production being supplemental to family consumption and income, occupying small plots, and having low barriers to entry even for low-income households.

Backyard gardens can be of different sizes and types. They are called home gardens or kitchen gardens located near the homestead specifically for vegetables and fruits. Backyard garden plays an important role for rural families to provide diversified vegetables in their daily diet (Richa, Vinod, & Suresh 2018. According to Driskell, (2009), food security is a situation that "exists when all people, always, have physical, social and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life. The issues in food security include not only the number of households with food-insecure status, but also the quality of diets. Food insecurity affects both rural and urban family size and extended family affiliations than urban households.

In the context of ever-increasing problems of malnutrition and smaller farm size for field crops production, the only feasible option for healthcare is to grow vegetables intensively in the backyard, which can provide household food security**.** Limited access to food is the biggest problem facing the nation. Food insecurity occurs when food is not easily accessible to households. Therefore, backyard gardening plays an important role in fulfilling dietary and nutritional needs, (Abdullah et al 2017). Urban food security, much like rural and indigenous food security is multifaceted and influenced by a variety of factors. The cost of living rather than the cost of food is a major factor in accessing food in urban centers (Al Hamad et al., 2018; Martin & Vold, (2018). Lower income families who live in high-rent areas often have less money to access market foods. This leads to decreased fresh vegetable consumption and increased processed food consumption. The spatial distribution of grocery stores and restaurants in urban centers further influences nutrition by increasing access to processed foods (Balcaen & Storie, 2018). Agricultural initiatives have been suggested as a solution to offset urban food insecurity. Urban agriculture increases the diversity of food available in urban areas, healthy food consumption and accessibility (Fairbridge et al., 2021; Martin & Vold, 2018.

Suburban communities face similar issues surrounding food security, such as market food cost, distance from urban centers and isolation influences food availability through economic barriers. Increased transportation costs of market foods to rural communities, increases barriers to accessing food (Ivanov, 2019;). Due to increased market food costs, individuals living in rural communities often reach for energy dense foods, foods high in fat, carbohydrates, and sugars (Al Hamad et al., 2018; Kenny et al., 2018). According to Sethy, Sarkar and Kumar (2010), limited access to fresh produce, reliance on imported goods, and environmental concerns. Backyard vegetable gardening presents an opportunity to address these issues by promoting local food production, increasing access to nutritious foods and fostering community resilience. The concept of food security should be broadened to make it holistic to mean every individual has physical, economic, and environmental access to a balanced diet that includes the necessary macro and micronutrient.

Vegetables are key components in a healthy diet because of the rich sources of vitamins, minerals, antioxidants and fiber. Consuming a wide variety of vegetables helps to ensure an adequate intake of all the essential nutrients. Including the recommended levels of vegetables in the daily diet tends to decrease the risk of non-communicable diseases such as stroke, heart disease, cancer and diabetes, (World Health Organization, 2019). According to WHO (2012) frequent consumption of defensive foods like milk, vegetables and organic products leads to a multitude of health benefits. Leafy vegetables grown on homesteads provide households with rapid access to essential supplements that may not be readily available or affordable. People who live in suburban areas need to be aware of the significance of vegetables in human diets. Increasing the food security of the

home would be accomplished through backyard gardening. The present study seeks to assess the impact of vegetable gardening on the food security of families in the urban and suburban communities of Pankshin LGA of Plateau State Nigeria.

Statement of Problem

Urban and suburban communities in Pankshin LGA struggle to access fresh produce, resulting in restricted dietary options, high levels of malnutrition and related health issues, and a reliance on industrial food systems, ultimately undermining self-sufficiency. Backyard vegetable gardening has emerged as a strategy to tackle these food challenges. However, its impact on food security and healthy eating habits in these communities remains uncertain, necessitating further investigation. This study aims to investigate the relationship between backyard vegetable gardening and food security, with the goal of providing valuable insights and policy recommendations that can inform strategies to improve food access and nutrition in the target communities of Pankshin LGA.

Objectives of the Study

This research seeks to explore backyard gardening on enhancing food security within urban and suburban communities in Pankshin LGA. The specific objectives of the study are:

1. Examine the potential of backyard vegetable gardening to improve food security in Pankshin LGA
2. Assess the benefits and identify challenges of backyard vegetable gardening in communities of Pankshin LGA
3. Identify strategies to promote backyard vegetable gardening in Pankshin LGA

METHODOLOGY

Research Design

The study adopted the descriptive survey research design. According to WYK (2010), the aim of descriptive survey design is to provide an accurate and valid representation of the factors or variables that are relevant to the research objectives. The study was conducted in Pankshin LGA in Plateau State, Nigeria. Its headquarters are in the town of Pankshin, it has an area of 1,524km and a population of 191,685 at the 2006 census. ICT Development Agency 2021.

Population of the Study: The population of the study comprised of household's resident in Pankshin LGA. The target population are men and women from the urban and suburban communities in the five selected areas namely, Wulmi, Tambes, Vel, Duk and Chigwong. The target population of the study comprised of four hundred and fifty (450) households.

Sample and sampling techniques: The researchers adopted the proportionate sampling technique to select households from five communities in Pankshin LGA including Wulmi, Tambes, Vel, Duk, and Chigwong area. A simple random sampling technique was used to select two hundred and fifty (250) respondents which constituted the sample size. Respondents were selected from each of the communities where most of the families have backyard gardens of different sizes and are interested to improve the practice.

Method of Data Collection

The instrument used for data collection was a questionnaire titled, "Vegetable Gardening and Food Security Questionnaire", (VGFSQ). The instrument contains fifteen (15) items questionnaire on a five (5) point Likert scale of Strongly Disagree (SD-1), Disagree (D-2), Mildly Agree (MA-3), Agree(A-4), Strongly Agree (SA-5).

Data Analysis Techniques

Data from the study were analyzed using descriptive statistics of percentages, mean, and standard deviation. A mean score of 3.00 was used as the benchmark, therefore, any mean that measures from 3.00 and above was considered as good practice while a mean of below 3.00 was seen as poor practice.

Results

The result on table one shows respondents agreed that the high price of food lead to food insecurity with a mean value of 4.09, followed by extreme climate change can lead

to poor yield with a mean value of 3.35 and 3.17 respectively. Vegetable gardening is given adequate attention by households in Pankshin LGA had the least mean value of 2.00.

Table 1: Respondents mean rating on The Potential of Backyard Vegetable Gardening To Improve Food Security in Pankshin LGA

S/N	ITEMS	$\bar{X}$	SD	Remark
1.	High prices of food can lead to food insecurity	4.9	1.15	Excellent
2.	Extreme climate change can lead to poor yield of fresh produce	3.35	1.38	Excellent
3.	Vegetable gardening is given adequate attention by households in Pankshin LGA	2.00	0.96	Poor
4.	Households are aware of measures that can lead to the yield of food	2.22	1.28	Poor
5.	Cost of vegetable garden are known by households in Pankshin LGA	2.23	1.06	Poor

Table 2 shows the benefits and challenges of backyard vegetation gardening in Pankshin LGA of the plateau. The respondent's view on this shows that farmers who used chemicals such as herbicides, pesticides and fertilizers to promote vegetable gardening had a mean of 3.97, 3.77, and 3.51 respectively. Dry season irrigation farming should not be encouraged among farmers who had the lowest mean value of 2.56

Table 2: Mean Response on the Benefits and Challenges of Backyard Vegetable Gardening in Pankshin Local Government Area

S/N	ITEMS	X	SD	Remark
	Famers' use of chemicals such as herbicides, pesticides, and fertilizers promote vegetation gardening	3.97	1.17	Accepted
	Illiteracy among households is barrier to the cultivation of vegetation vegetables	3.51	1.43	Accepted
	Dry season irrigation should not be encouraged in the Plateau	2.56	1.06	Rejected
	Limited resources of households lead to poor vegetation gardening	3.77	1.37	Accepted
	Household lack of space and income affect vegetation gardening	3.17	1.17	Accepted

Table 3 Show results that household practice vegetable gardening to avoid food insecurity, community effort to intensive information (awareness) on causes of food insecurity. Farmers use improved agricultural practices such as dry season irrigation systems to reduce food insecurity. Households develop the right attitude towards resources such as land, trees, water and air, information through media enlightens household on the effect of climate change.

Table 3: Mean Responses on the Strategies to Promote Backyard Vegetable Gardening among Households.

S/N	ITEMS	X	SD	Remark
1.	Households should practice vegetation gardening to avoid food insecurity.	4.06	1.08	Accepted
2.	Farmers use improved agricultural practices such as dry season irrigation systems to reduce food insecurity.	3.78	1.16	Accepted
3.	Households develop the right attitude towards resources such as land, trees, water and air.	3.97	1.08	Accepted
4.	Community effort to intensify information (awareness) on cause of food insecurity	4.04	1.04	Rejected
5.	Information through media enlightens households on the effect of climate change	3.57	1.16	Accepted

Discussion

From the findings on table 1, the high cost of food production can lead to food insecurity with the mean value of 4.09, followed by extreme climate change can lead to poor yield of food with the mean 3.35 and 3.17 respectively. The result agrees with the findings of Al Memed, Kauppi, Montgomery and Virchez (2018), who found that the cost of food is the major factor in accessing food produce in urban centers. In the context of ever-increasing problems of malnutrition and smaller farm size for field crop production, the only feasible option for healthcare is to grow vegetables intensively in the backyard, which can provide household food security.

The findings in table 2, on benefits and challenges of backyard vegetable gardening in Pankshin LGE agree with the findings of Richa, Vinod and Suresh (2018) who stated that backyard gardening increases food security, improve nutrition, supplementary income and better rural employment, reduce risk of farming failure and environmental hazards. Sethy, Sarkar and Kumar (2010) noted that urban and sub urban communities face challenges in ensuring food security due to various factors such as limited access to fresh food produce and reliance on imported goods. Backyard vegetables gardening presents an opportunity to address these issues by promoting local food production, increase access to nutrition foods and foster community resilience.

The findings on table 3, indicates the strategies to promote and support back yard vegetable gardening among households in line with Abdullahi, Ali, Illiyas, Shah and Zhou (2017) noted that backyard gardening play an important role for urban and sub urban families to provide diversified vegetables in their daily diet such as increasing vegetable promote subsidize fertilizer, herbicide and pesticide for the household so as to improve food security and then reduce malnourishment. Backyard gardening has been shown to be an important way to improve the intake of vitamin A-rich foods centers for Disease control 2009.

Conclusion and Recommendations

Right attitude towards vegetable gardening are essential for family survival, food security and sustainability in Pankshin LGA of Plateau State. According to the results of this study, the cost of food production can lead to food insecurity. Therefore, the only feasible option for health care is to grow vegetables intensively in the backyard which can provide food security. Current challenges that urban and suburban communities face in ensuring food security is due to various factors such as limited access to fresh food produce and reliance on imported goods, backyard vegetable gardening presents an opportunity to address these issues by promoting local food production, increase access to nutritious foods and foster community resilience. The adaptation of adequate coping strategies and proper vegetable gardening can alleviate the challenges of food insecurity faced by households, since household can participate

in vegetable gardening to supplement their household food basket. In view of the findings from this research, the following recommendation were made.

1. Households should imbibe right attitude towards the use of natural resources such as land, air and water to practice vegetable gardening to have fresh food available.
2. Education is key to a change of attitude, therefore, education on home and vegetable gardening should be pursued at all levels in the educational sector,
3. Urban household should be encouraged to consider adopting urban agriculture as a source of food diversified nutrition and income.
4. Government should adopt various strategies and programs, subsidize fertilizer, herbicide and pesticide for the household to improve food security and then reduce malnourishment.

References

Abdullah, Ahmad, W., Ali, S., Ilyas,A., Shah, Tariq., Ud Din, I., and Zhou, D., (2017). Factors affecting household food security in rural Northern Hinterland of Pakistan. *Journal of the Saudi Society of Agriculture Sciences* (18), 201 – 210.

Al Hamad, A., Kauppi, C., Montgomery, P., & Virchez, J. (2018). Food Insecurity and Women's Health in Canada: Does Northern and Southern Ontario Residency Matter? *International Journal of Health, Wellness, and Society*, 9(1), 1–18. https://doi.org/10.18848/2156-8960/cgp/v09i01/1-18

Algert, S. J., Baameur, A., & Renvall, M. J. (2014). Vegetable output and cost savings of community gardens in San Jose, California. *Journal of the Academy of Nutrition and Dietetics*, 114(7), 1072–1076. https://doi.org/10.1016/j.jand.2014.02.030

Audate, P. P., Fernandez, M. A., Cloutier, G., & Lebel, A. (2019). Scoping review of the impacts of urban agriculture on the determinants of health. In BMC Public Health (Vol. 19, Issue 1). BioMed Central Ltd. https://doi.org/10.1186/s12889-019-6885-z

Balcaen, M., & Storie, J. (2018). Identifying Food Swamps Based on Area-Level Socioeconomic Patterning of Retail Food Environments in Winnipeg, Canada. Canadian Journal of Urban Research, 27(1), 14–23.

Centers for Disease Control (2009). Obesity and Overweight for Professionals: Data and Statistics: U.S. Obesity Trends. Retrieved from the CDC website: http://www.cdc.gov/obesity/data/trends.htm

Fairbridge, N. A., John', S., & Labrador, C. (2021). Regulations and Agriculture Across Newfoundland and Labrador: A Scoping Review. Journal of Rural and Community Development Municipal Development, 16(2), 177–189. www.jrcd.ca

Food and Agricultural Organization (2020) Fruit and vegetables- your dietary essential. The International Year of Fruit and Vegetables 2021, background paper. Rome, https://doi.org/10.4060/cb239/

Haji. S, Abdul G, Hindra. W, Almira. U and Ilma (2021). The contribution of Home Gardening Programme to household food security in Indonesia: A Review.

Hayes, J., Roth, M., and Zapeda, L. (2017). Tenure security, investment, and productivity in Gambian Agriculture: A Generalized Probit Analysis. American Journal of Agricultural Economics.

Ivanov, V. (2019). Conditions and opportunities to realize the agricultural potential of the North. Arctic and North, 35, 25–45. https://doi.org/10.17238/issn2221-2698.2019.35.25

Judy A., D., (2009) Food and Nutrition value of Foods. Online at https://extension.un/edu/publications

Kenny, T. A., Fillion, M., MacLean, J., Wesche, S. D., & Chan, H. M. (2018). Calories are cheap, nutrients are expensive – The challenge of healthy living in Arctic communities. Food Policy, 80, 39–54. https://doi.org/10.1016/j.foodpol.2018.08.006

Martin, W., & Vold, L. (2018). Building

capacity through urban agriculture: Report on the askîy project. Health Promotion and Chronic Disease Prevention in Canada, 38(1), 29–35. https://doi.org/10.24095/hpcdp.38.1.06.

Razes, M. (2010) FAO's work on nutrition and food security: Indicators that link food, food security and nutrition. Available Online: http://www.worldfishcenter.org/resource_centre/SF0959SID/Benin/FAO%20Present

Richa. S, Vinod Kumar S, Suresh S(2018) Organic Backyard gardening: a promising approach to enhance household food security and wellbeing.

Sethy S, Sarkar S, Kumar M. (2010) Constraints in adoption of improved techniques of kitchen gardening. Indian Res. J Ext. Edu.; 10(2):89-92.

WHO (2019) Health inequities and their causes.

World Health Organization (2012) Guideline: Sodium intake for adults and children. Geneva:

WYK, B, (2010). Research Design and Methods: Part 1. University of Western Cape, University Press, Cape Twon.

ICT Development Apency (2021) Developed & Maintained by the Plateau State. www Plateaustate.gov.ng