Nutrition Security through Sustainable Home Garden Food Production Initiatives

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ABSTRACT

Food security is achieved through food availability, economic and physical access, proper food utilization, and food stability. Safeguarding the access to sufficient food is more a problem than availability for the most malnourished group as food insecure households favor quantity over quality to avoid hunger. The Nutrition and Dietetics Department of Silliman University, in partnership with the local government units of San Jose and Amlan in Negros Oriental, launched the Nutrition and Food Security Training Program to reduce the problem of malnutrition. One of the components of the program is sustainable home garden food production, which emphasized the role of home gardening to improve access to food quality, thereby addressing nutrition security. This qualitative study seeks to describe the views of the participants on home vegetable gardening to address food and nutrition security. A total of 20 participants were invited to participate voluntarily in this qualitative study. A focus group discussion was used as a qualitative tool. As a result, participants realized that having a home garden can improve nutrient consumption, provide economic benefits, and address food security of the household. Food security was tenable within their homes through concerted efforts, patience, and love. Barangay policymakers were encouraged to formulate legislation and include in their budget the promotion of home gardens to improve the nutritional status of their constituencies.

Keywords: Food Security, Nutrition Security, Home Gardens, Food Accessibility, Malnutrition, Negros Oriental, Philippines

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1.0. Introduction

In the Philippines, 15-26 million Filipinos are affected by malnutrition. There is a high prevalence of underweight children that 2 out of 10 are underweight. Interestingly, this epidemiological condition of Filipino underweight children increased significantly from 20% in 2013 to 21.5% in 2015 (DOST-FNRI, 2016). The United Nations Food and

Agricultural Organization (FAO) Integrated Food Security Classification categorized the entire Philippines as food insecure. In a nutrition-sensitive agriculture study of the Southeast Asian Regional Centre for Graduate Study and Research in Agriculture (SEARCA), it was reported that out of 109 countries, the Philippines' global ranking in food security has shrunk from rank 62 in 2011 to 72 in 2017 (Vera-Ruiz, 2018). In lower- and middle-income countries, enormous pressure is felt in its food systems to provide sustainable food and nutrients to cope with the increase in urbanization and population (Häsler, Msalya, Roesel, Fornace, Eltholth, Sikira, Kurwijila, Rushton, & Grace, 2019).

Low-income countries are strongly dependent on a single source of carbohydrates, and diets are unvaried. The constancy of their food intake is due to the inadequacy of the global population to currently supply the need for vegetables and fruits (Canales Holzeis, Fears, Moughan, Benton, Hendriks, Clegg, Ter Meulen, & Von Braun, 2019). The consumption of low-cost, energy-dense food choosing food quantity over food quality and variety has been a practice of food-insecure households (Hwalla, El Labban, & Bahn, 2016). In the World Food Summit, food security is defined by the FAO as "when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious foods that meet their dietary needs and food preferences for an active and healthy life." Furthermore, there were four identified vital dimensions of food security: availability, access, utilization, and stability (FAO, 2006).

Historically, the diet of the household was enriched and complemented by backyard or home vegetable gardens. The recent dietary trend on the consumption of healthy foods has led to an increase in household food production (Burgin, 2016). Home gardens typically supply 50 percent of fresh vegetables and fruits, improving the nutrient density and quality for the family. This resource can provide a pronounced increase in the dietary allowance of protein, iron, vitamin A and vitamin C. Food security is addressed in home gardening since the family members have a daily supply of available food (Marsh, 1998). In rural areas, having a home garden provides unobstructed access to food. The ease of convenience promotes better nutrition for the household (Musotsi, Sigot, & Onyango, 2008).

In order to face the new challenges of hunger and food security, the goal is to develop food policies. Guidelines on having a locally adapted food system adapted to the environment, economic conditions, and sustainability must be formulated (Filippini, Mazzocchi, & Corsi, 2019). In developing countries, home gardens have been a part of agriculture and food production systems to alleviate hunger and malnutrition. There are nutritional and economic benefits of using a small portion of land around the household or nearby to plant vegetables, fruits, crops, spices, and herbs (Galhena, Freed, & Maredia, 2013). The economic contribution of home gardens allows the increase of household's purchasing power by freeing up money to be spent on food. Similarly, the sales from excess garden produce can be a source of additional income for the household (Bagson & Beyuo, 2012).

Home gardening does not require an extensive budget to materialize. It can be done using containers for those who do not have access to a plot of land (Marsh, 1998). Furthermore, limited space is not a hindrance to home gardening, and this can be addressed by using containers to grow vegetables (Masabni & Cotner, 2009). In a rapidly growing country such as the Philippines wherein space can be at such a

premium, the challenge lies in using container gardening to provide the family access to fresh and nutritious vegetables for consumption (Deveza & Holmer, 2002).

There is no one single solution to address the issue of food security. However, sustainable food security requires collective stakeholder engagement in bringing about policy change (Mc Carthy, Uysal, Badia-Melis, Mercier, O'Donnell, & Ktenioudaki, 2018). Local governments can support community gardens by enacting policies and signifying their support through communication and interactions (Barbolet, Cuddeford, Salle, Dominoni, Geggie, & Rideout, 2009).

In times of calamities, hunger might result in malnutrition. This unfortunate condition becomes an important challenge to attend to by the local government units (Aclaro-Naranjo, Mana-ay, Honculada-Genove, & Entea, 2018). In December of 2011, the Philippines, particularly the Province of Negros Oriental, was hit by tropical storm Washi locally known as Sendong (Ramos, 2012). Guided by the key aspects of food security, the Home Economics-Nutrition and Dietetics Department and the Office of the Vice President for Development of Silliman University in its Continuing Calamity Response Program collaborated with the Municipalities of Amlan and San Jose in Negros Oriental. The program was implemented from February to March of 2017. It was entitled *Nutrition and Food Security Training Program (NFSTP) in Selected Municipalities in Negros Oriental*. This NFSTP was previously developed and implemented in the cities of Dumaguete and Tacloban from June 2015 to May 2016. The municipalities of Amlan and San Jose were randomly chosen from the list of municipalities with a high incidence of malnutrition rate and its vulnerability to calamities. The program is created particularly for municipal service providers such as the municipal office workers, health workers, nutrition workers, barangay captains, barangay *kagawad*, trainers and service providers on nutrition and security. It was designed to be a Training of Trainers to capacitate the officials at the Barangay level, making them capable of transferring the knowledge and skills learned to the household units. The program utilized the andragogy approach in training where a variety of adult-learner activities were utilized.

One of the modules of the training is on home containerized gardening. The objective was for the participants to gain knowledge of the nutrients from vegetables and the benefits of having a home and a community garden. A transfer of skill on the rudiments of home containerized gardening was done for the participants to emulate and duplicate. To gain a better appreciation for it, the participants were asked to imagine the benefits of having a home or community garden. The intended outcome of the module is for the barangays to implement and sustain a home or community garden in its surrounding area and among its constituents as a way to have food available and readily accessible.

Therefore, the central aim of this paper is to describe how the participants view home gardening as a means of addressing food and nutrition security in selected communities of the municipalities of Amlan and San Jose, Province of Negros Oriental, Philippines.

2.0. Methods

This qualitative narrative aims to understand the breadth and width of the participants' perspective of the training, particularly on home gardening through a focus group discussion using a semi-structured interview (Nyumba, Wilson, Derrick, & Mukherjee, 2018). In this way, the findings of this narrative approach reveal what the participants think and reveal a part of themselves through their stories (Butina, 2015). The narrative analysis allows for the discovery of gainful insights through the lessons shared by the stories (Akinsanya & Bach, 2014).

Given this consideration in the use of this qualitative approach, a homogenous purposive sampling was done, inviting all of the 20 participants of the training to take part willingly in the focus group discussion (Mack, 2005). With having a large number of people to gain insights from, it might be difficult to manage the discussion, so the group was divided into three smaller ones (Onwuegbuzie, 2009). Their sharing's and musings revolved around the sample 3 questions in the interview guide, such as what topics were their most and least favorite and why, what beliefs and practices may have changed because of the program and how they can apply what they have learned in their household, barangay or municipality. The interview was composed of a facilitator, a note-taker, and a documenter. The facilitator briefly shared the session's group dynamics and led and moderated the discussion. The note-taker took precise and accurate notes, while the documenter attentively observed and carefully recorded the entire proceeding. The focus group discussions were created within a warm atmosphere where consultation and disclosure of opinions, habits, convictions, preferences, tastes, and associations can be revealed freely and without judgments.

The data captured was carefully analyzed in its content and summarized according to themes revealed that are relevant to the research question (Stewart, Shamdasani & Rook, 2007). Data gathered were tidied up to present participants' views for readability and understanding (Corden & Sainsbury, 2006).

3.0. Results and Discussion

The collective experience of the 20 participants of the training yielded three significant views on home gardening and food security. These perceptions are home gardening and nutrient consumption, home gardening technology and food security, and community support and policymaking.

Home Gardening and Nutrient Consumption

By and large, the consumption of vegetables as part of the daily diet has countless health benefits. Hence, having sufficient knowledge of what nutrients the vegetables provide can be a propelling factor to increase its popularity in the human diet. Adapting to a new diet needs information about its implications on the body. One participant realized that the training was important and that without it, they would not have learned about home gardening and vegetables. As verbalized, "If you did not come here, we would not have learned about home gardening and the benefits of vegetable consumption." The common response of the participants on their perceived benefits of vegetable consumption is that vegetables can make you healthy. It is nutritious and can provide you with the necessary vitamins and minerals to sustain life and promote

life. This generalization was further supported by another participant, "The concept of home gardening is simple, but we would not have learned about its benefits if we had not attended the training. We learned that home gardens provide nutritious and safe food, it helps lessen our expenditure on food, it improves our vegetable intake, and we can have an adequate supply of food."

Research studies have identified countless nutrients from vegetables, and their distinctive functions in the human body, such as those vegetables contain Vitamin A for good eyesight and calcium for strong bones. On the other hand, the problem of malnutrition is significantly increased among rural inhabits. This is caused by the lack of nutritional knowledge, which decreased their consumption of a balanced diet that includes green vegetables (Ferdous, Datta, Anal, Anwar, & Khan, 2016). Furthermore, in a study by Faber (2013), mothers in a rural village in South Africa carried out a home-gardening project. The study sought to determine whether the endeavor could improve Vitamin A knowledge of the mothers implementing the project. The increase in nutritional knowledge hoped that it would increase dietary intakes of yellow/orange and dark-green leafy vegetables. The project would ultimately result in higher serum retinol concentrations in children aged 2 to 5. The home-gardening initiative successfully increased the mother's nutritional knowledge, which caused an increase in the consumption of vegetables. Indeed, the prevalence of low serum retinol concentration decreased from 58% at baseline to 34% after the implementation. The mothers were empowered when they were able to understand what made their children healthy. The home-gardening skills allowed them to have easy access to the vegetables, and there was a strong perception that home vegetable gardens contributed to the improvement in their children's Vitamin A levels.

Gaining sufficient knowledge of nutrients and food sources tend to influence the consumption of vegetables. Access to vegetables in a home garden has a direct positive impact on the nutritional status of the household. It cannot be neglected the extent to which home gardens help solve the problem of malnutrition.

Home Gardening Technology and Food Security

Having a home garden helps lessen household expenditure and has a significant impact economically. As one participant reflected, "Maintaining a home garden is also encouraged not only because of health benefits but for economic benefits. It helps augment our income to be able to provide for our other needs." This reflection compares with the early studies of Bagson (2012), who suggested that home gardens have a positive impact on household finances in terms of providing fresh and nutritious food free of charge.

Another participant observed, "What made us vigorously interested and attentive is on the backyard or home containerized gardening session. It made us aware that not all in our community is practicing the technology even though they have a vacant lot to utilize for such. Food security is the bottom line of this, and that is the availability, accessibility, and affordability of food." The participants grasp the concept of food security. It was agreed by many to mean that an improvement in the access to food quality, to address the deficiency of vegetable consumption, a home garden is a feasible solution. Home vegetable gardens are considered effective and an important

means of providing nutritious and safe food to the household. Research suggests that school-based nutrition education and home gardening intervention is regarded as an effective means of improving the dietary diversity of school adolescents (Tamiru, 2016).

Location and limited space are not considered a hindrance to having a home garden. One participant fondly expressed, "Even if we are situated beside the river and having no place to plant, we can still do so by using containers, and we shall share this concept to our neighbors." It does not hold that for one to have a home garden, they must first own land. However, new gardening technologies and innovations have made it possible for families to overcome this limitation (Galhena, Freed, & Maredia, 2013).

Undoubtedly, home gardening is not limited to planting on land per se. It can be done by using repurposed containers in the home. It cannot be denied that having one's supply of fresh vegetables in the home addresses the food and nutrition security of the household. The budget for vegetables can be freed, allowing access to other nutritious foods, answering diet quality, and diversity. The excess produce from the backyard can be sold to help augment the family income, thus increasing household purchasing power. For these reasons, the establishment of home gardening is a vital answer to food security.

Community Support and Policy Making

For the project to come to fruition and achieve success, initiative, concerted efforts, patience, and love are important within the community. As one participant reflected and as quoted, "This can be done in your backyard. It is just a matter of initiative, concerted efforts, patience, and the love to do it." Another participant said, "The lecture on home gardening is ingrained in her mind and heart. It is important that we can bring back this knowledge and skill to their barangays.'

Barangays can organize the community in having a home or community garden. This can be done through legislation and allocation of budget. As a barangay leader, she has reflected that through the training, she has another vision for her barangay in the succeeding year as she said, "I have an additional vision for my barangay for next year."

The policymakers are aware that improving the nutritional status of the community is their mandate as an elected official. Similarly, as one participant reflected, "It appears that legislation and allocating the budget to support this activity falls on us. It is our mandate in augmenting the status of nutrition in our family and community where we live and serve.' This statement agrees with Barbolet (2009) that by enacting policies, the local government can effectively support home gardens.

Gaihre (2019) said that the effectiveness of the interventions on ways to improve food and nutrition security is highly dependent on what can be done or changed within the stakeholders. As evidenced by another participant's reflection, "I really find the training a must for all. There is a need for all of us to cascade all of our learning to our stakeholders when we go back to our respective barangays and schools. The success and effectiveness of this training can only be assessed when we can practice home gardening and have enjoyed the fruits of our labor." This statement is further strengthened by Marsh (1998) that the sustainability and success of home gardening activities are dependent upon community involvement and knowledge dissemination among the members of the community.

The success of home gardening truly needs the involvement of all members of the community. Legislators can enact policies and allocate budget to capacitate their constituents in adapting home containerized gardening. Community members need to change their mindset to adopt it themselves. Two concepts are highly valued for home gardening to materialize: concerted efforts among the community and the love for home gardening.

4.0. Conclusion

The paper successfully surfaced viable ways of how a home containerized gardening technology can be used as a means of providing nutrition security within and among the members of the community. Its practicality and easiness of use in making a home containerized garden a readily available source of important nutrients for the household are its good points. Home gardening affects household expenditure by lessening the amount of money spent on food; thereby, it can be allocated for other household expenses. By organizing the community, improving legislation, and allocating budget, the home gardening can be done within the community. Having patience, concerted efforts, and love can contribute to food and nutrition security within their own home or community, making it a way of addressing malnutrition.

Though this study has a limitation, it only reflected the participants' views on home gardening in addressing food and nutrition security. A follow-up study is recommended on the community members adapting home containerized gardening and its effect on nutritional status. For any intervention on nutrition and health to be successful, it is significantly important to be aware of the views, perceptions, and acceptance of the participants. We end this study with this generalization that home gardening can be used to address food security.

5.0. Notes

This is an improved version of the paper read during the 41st International Annual Conference of the *Ugnayang Pang-AghamTao* (UGAT) Anthropological Association of the Philippines held at the Visayas State University in Baybay, Leyte on 7-9 November 2019.

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