Vertical Gardening as Remedy to Obesity that has been occasioned by Supplemental Nutrition Assistance Program

Name

Course

Tutor

Date

**Abstract**

*Most Americans and policy makers have impressively embraced the foods assistance programs. In the world where economies are plummeting and the costs of food becoming unbearable, families have resorted to the use of stamped foods to ease the financial burdens that they have. However, various research activities have concluded that these foods have huge effects on the health of the consumers. Among the children and women, there are reports that such programs have contributed to the rise in the number of people suffering from obesity. The matter is complicated because even the liberal members of the society who are aware of the effects of such foods move in to acquire such products. Besides, the policymakers in the government are also conscious of the consequences of such substances, and yet they continue offering such items to the public for their consumption. In the face of such challenges, it becomes incredibly important to find alternative ways that would provide foods that are healthy to the members of the public yet still affordable. In this regard, the concern is on the affordability of the foods and the health standards of the food items. In that sense, this paper demonstrates how vertical gardening may be used to improve food security by exploiting minimal space to grow fruits and vegetables and in the process reduce the reliance on stamped foods which contribute hugely to obesity.*

**Introduction**

The world is faced with an acute shortage of food products. Most countries are struggling with the problem of how to provide sufficient and healthy foods to the citizens. A lot of factors have contributed to the reduction in the production of foods among many nations. While some of the factors are natural, and therefore beyond human control, there are some that are directly due to the activities of humans. Some of the natural causes include natural calamities such as floods, extended periods of drought and climatic changes. On the other side, people, through some of their activities, are capable of causing a reduction in the production of foods in the environment. Some of these actions include urbanization and air pollution. As a result, communities have not been in a position to produce the right amounts of food that they would require to feed their populations (Shenkin & Jacobson, 2010).

 Due to these factors, there has always been a need to come up with creative ideas to make sure that Americans do not sleep hungry. Among the many interventions that have been adopted by different stakeholders towards this endeavor, the supplemental nutrition assistance has stood out to be preferred by many Americans. The Supplementary nutrition assistance program (SNAP) was formerly referred to as stamp foods. It is a program that was adopted by the federal government as a mechanism aimed at mitigating the harshness of the economic environment towards most families in America, especially those that had low-income levels. Statistics indicate that the programs have benefitted more than 44 million Americans each year and consumed over 71 billion dollars in 2016.

 While it is the responsibility of any government to ensure the security of its people, including food safety, it is equally important to make sure that the foods that are being supplied do not have any health hazards which may, in the long run, affect the lives of the individuals (De Bono et al, 2012). Besides, since the costs of food are the main issues in contention here, the fundamental question that needs to be addressed in need to come up with foods that are cheap yet safe for the consumption by human beings. From experience and research, there is a broad range of health concerns that arise from the continued use of supplemental nutrition assistance programs in the country (Nestle, 2013). One of the issues of concern that have arisen due to this program is the increase in the cases of abortion among users.

 The issue of overweight and obesity is so severe in America to the extent that it is approximated that more than two-thirds of the adult population are suffering from the problem. While there are a lot of factors that predispose individuals to obesity and overweight, the most common cause of the problem is the lifestyles that people have adopted especially with the foods that they eat. One of the main contributors to this issue is the use of the foods that are provided in the supplemental nutritional addition program. These foods contain chemicals and are stored in a manner that would affect the chemical reactions in the human body and the long run lead to the cases of obesity.

 Fundamentally, it is also important to examine in details the reasons that compel individuals to resort to the use of such food items. Most notably, there is a reduction in the production of foods in the country, and that makes the output insufficient to satisfy the demands of the American population. In the modern environments where the majority of the people prefer to live in the cities as opposed to the country sides, it becomes reasonable that the process of production would be hampered (Kreider et al, 2012). The process of urbanization makes sure that the portions of the land that would have been used in cultivation are utilized in the building of companies, housing facilities, and other social amenities. In the long run, there is only a little space that is left to cultivate food items that are expected to feed multitudes of people. In the face of such realities, it becomes near impossible to get the right quantities of crops that would meet the demands of the citizens.

 According to the statistics that have been alluded to above, about two-thirds of Americans are suffering from issues that are related to overweight and obesity. If that is examined carefully and compared with the number of persons who are dependent on the supplemental nutritional addition program, the result is that there is a close link between the two concepts. Now, in 2016, the United States Department of Agriculture spent a whopping 70 billion dollars on the project. If this money would have been invested in the production of healthy foods through alternative means, perhaps the results would have been much better that what is was witnessed.

 In that vein, this paper attempts to introduce vertical gardening as a solution to the food situation in the country, and that would go a long way in helping to ease the food situation in the country. Vertical gardening includes the practicing of cultivation by utilizing little spaces that are available in urban and some rural settings. Due to the limited space, individuals can grow delicious fruits and vegetables that they like on trellis, garden settings or even utilize pots to plant their produce. The main advantage of this kind of gardening is that all families can use them in the little spaces that they have (Fell, 2011). Besides, the gardens are easy and cheap to maintain. Additionally, this type of farming requires minimal resources to start. When this project is adopted, the paper proves that they will substantially reduce the amounts of supplemental nutritional addition food products that families have on their tables. As a consequence, the number of people who are becoming overweight and obese will drastically reduce.

**Literature Review**

 Leung et al., in their paper, "Dietary intake and nutritional quality of low-income adults in the Supplemental Nutrition Assistance Program" have captured the reality regarding the supplemental program, popularly known as stamped foods. In their analysis, the authors find that there are challenges regarding the nutritional contents of the foods, their quality and to an extension their benefits on the health of the consumers. The paper indicates that under the current arrangement, there are a wide variety of choices from which the consumers can make their choices. While there are plenty of foods and beverages from which the buyers can select whatever they want, research indicates that the quality of the dietary contents may not be of the desirable level (Andreyeva et al, 2012). Regarding this shortcoming, policymakers have urged the department of agriculture, under which this program falls, to seek alternatives to make the program beneficial and useful in developing a healthy nation.

 In the paper, the writers indicate that some of the worst hit group of Americans in this engagement includes the children, women, and infants. There is a glaring pool of evidence which suggests that a prolonged use of the supplemental nutritional adjustment program has been more damaging to these people than it has been helpful. Most worryingly, reports indicate that the increasing cases of overweight and obesity among women, children, and infants are down to the food choices that they make, especially those that are of the low-income group. In the desire to mitigate the challenges that arise, the department came up with a raft of dietary policies that it thought would be necessary for making the persons make proper choices regarding their diets. However, the initiatives have largely failed because the scarcity of resources makes these low-income earners to settle on anything that is affordable without giving much consideration to the health implications that are involved.

 In the recent years, the policy makers have made tremendous efforts to align the stamp food programs to the Dietary Guidelines for Americans (DGAs). However, studies indicate that the responses towards these policies have been worryingly low since the low-income earners are made hostage to their shallow pockets. For instance, if restrictions are made to the individuals regarding the quantities of particular foods that they need to purchase, it is possible that they will not get all the items or nutrients that they need for the sustenance of their health (Leung et al, 2012). The main argument is that since they are required to take less of the products, it is expected that they will buy other products to complement whatever they get. However, since they are financially incapacitated, these persons will end up living on amounts that are less than what they desire. That fact is likely to have massive impacts on their health.

 Drenowski, in an article entitled, "Obesity, diets, and social inequalities" ascertains that the route towards healthy eating is dictated by the dietary quality that is involved in whatever the individuals partake. In the recent studies, claims the writer, it has become evident that a comparison between income-able nonparticipants in the stamp food programs saw a huge variance with what their counterparts in the stamp food programs did eat. The fundamental argument of this writer is that the choice of food items is always dictated by the income levels of the persons. Families that are having significant income levels are in a position to carefully select the diets that they use. In such families, children are provided with an opportunity to eat only those foods that are suitable for their biological system and those that will not cause any troubles to them. On the other hand, Drenowski indicates that the low incomes of some individuals compel them to eat foods that have inadequate dietary levels. One of the results that emerge is that they will become obese.

 One of the features of the SNAP foods is that children are provided with substances that contain a lot of sugar, meats and high-fat content daily products. On the other side, the foods contain little fruits, vegetables, and nuts. For a child to have a healthy growth in all the faculties of the body, it is incredibly important for them to have a diet that is complete and healthy. From the look of the situation, it is evident that the foods are lacking critical ingredients and that has contributed immensely to the problem with obesity. Additionally, since the parents of these kids are not financially capable of affording other alternative means due to the increased costs of living, it is most likely that the children will have slow growth in almost all the faculties of their souls.

 The adults have also not been spared in this case. Most of the adult SNAP foods contain too many sweeteners, sugary beverages, and meats. There is little or no fruits and vegetables that they consume in the process. The same research also concludes that it is some of these contents that have been responsible for the significant increase in the cases of people suffering from obesity. The writer suggests that even with a minimal improvement in the dietary contents and quality to include vegetables and fruits, coupled with the reduction of the level of sweets and meat, the individuals are likely to have a considerable improvement in their health.

 The sentiments are shared by Damman and Smith in their article entitled "Factors affecting low-income women's food choices and the perceived impact of dietary intake and socioeconomic status on their health and weight." In this piece of work, the writers found out that most women are pushed to choose the SNAP foods because they are sweet and cheap. The report says that most of the women that they included in the study did not care much about the impacts that the food would have on their health. Their primary concern is to make sure that they are full and not hungry. Worryingly, the authors suggest that while some of the beneficiaries or participants are concerned about the health ramifications of the SNAP program, there is a huge population that does not care about the possible outcomes.

 While Smith and Damman believe that there are financial factors that dictate the manner in which individuals choose the foods that they eat, there are also other social factors that have been critical in this whole problem. The cultural and environmental circumstances in which people find themselves have been at the center of the whole problem. For instance, the absence of fruits and vegetables in the menus has been occasioned by the rapid urbanization process that has had an enormous impact on the cultivation process in the country (Leung et al, 2013). Few people have picked up small scale farming, electing to leave the full activity to the large-scale commercial farmers. Due to the increased demand, the farmers are not in a position to produce food that would be sufficient to feed the entire nation. As a result, there is a need to adopt mechanisms that will make sure that each family is in a position to have at least a small area where they can grow some of the fruits and vegetables that they will need for their family consumption (Nguyen et al, 2014).

 National surveys and other programs have indicated that one of the most challenging effects of SNAP is its contribution to the increase in cases of obesity in the country. The main components of SNAP are meats, high-fat dairy products, potatoes and sugary beverages. It is also notable that they lack whole grains, nuts, vegetable fruits which are critical to the maintenance of healthy human bodies. In this circumstance, the combination of these factors has been very detrimental to the development of a healthy population. The results include obesity and other lifestyle-related complications (Story et al, 2008). In that regard, some creative strategies may be adopted that are cheap and fruitful to the development of the human health. One of these mechanisms is vertical gardening.

 Vertical gardening is one of the oldest types of cultivation yet little understood by most people. That is paradoxical. While the history of this kind of farming is as old as the history of civilization, very few people have the knowledge and the benefits of vertical gardening. Vertical gardening involves the utilization of tiny spaces to construct structures that can be used to support the growth of crops such as fruits and vegetables. For example, walls can be used to support the growth of some plants that may be used to add nutritional value to the diets.

One of the reasons that have been advanced for the increase in the consumption of SNAP is the decline in the production of foods such as vegetables and fruits. Mainly, urbanization has made sure that the pieces of land that were previously used in cultivation are utilized in the construction of houses and the huge industrial set ups. Besides, families have become engaged in other activities and have avoided practicing of agriculture related activities. However, with the onset of vertical gardening, even those who dwell in the apartments have a chance to grow some crops that can be used by the families as food.

Another reality of the vertical gardening is that it has been used to disguise a view which is unattractive successfully. For example, when some vegetables are grown along a perimeter wall, the wall that might have looked dull may all of a sudden become very attractive to the eye. In some of the communities that have embraced this kind of farming, it became clear that these regions are pleasant to the eye. That applies in particular when a mixture of fruits have vegetable which produces a perfect blending of leaf arrangement is adopted by the farmers.

Now, in most scenarios, it is evident that most low income earning families have some space that they can use to grow their fruits and vegetables but may not have the idea or the skills that may be needed for such adventures. The primary objective of vertical gardening is to make an impact on the productivity of the urban and semi-urban areas especially with regards to agriculture. Due to the limited space and yet the growing desire to grow crops to sustain families, it has become incredibly important that people adopt vertical gardening as an alternative to improving their food security.

There are a plethora of factors that dictate the choice of vertical walls that an individual, entity or a family can choose for its farming activities. Some of the factors that must be put into consideration include the amount of space that is available, the preferences of the consumers as well as the materials that would be used in the entire exercise. Besides, there would also be a need to make a serious consideration regarding the skills and the techniques that the planners would have to use in the exercise (Barnhill, 2012). Additionally, the choice of gardening would also be hugely affected by the types of crops that the persons would like to grow. The individuals would adopt various approaches regarding whether they are interested in fruits, vegetables or herbs. Since these crops have varied nature, it would be inconceivable that such a factor would be left out of the process of consideration.

There are many approaches that the farmers can give to their activities. In some cases, the producers may decide to exploit the benefits of pots, sacks, tins, bins or even boxes. The main aim is to use the little space in a manner that would allow for the maximum production of the selected items at manageable costs. According to the prevailing circumstances and scenarios, the persons may place the elements on the roof, balconies or just hand them somewhere on the walls. However, some of these techniques may be complicated and at times may call upon the farmers to seek some little expert training and advice on the best ways to approach the matter. The following are some of the images of vertical gardening and the various methods that can be given to a variety of crops;







The images above provide the different scenarios in which individuals may use vertical gardening so as to improve their food production. There are a lot of advantages that can be obtained from the use of vertical gardening to improve the productivity of a family. One of the biggest benefits is that individuals have the freedom to select the kinds of crops that they would want to grow. In most cases, families have different tastes and preferences, and that makes it incredibly necessary for them to try and make a choice regarding the kinds of foods that they would want to cultivate. Additionally, vertical gardening is very cheap to start and yet produces results that are highly admirable. For a humble family, vertical gardening involving fruits is in a position to produce quantities that are sufficient for the consumption of the household.

 Of all the benefits that are derived from vertical farming, the most profitable of all of them is that the farmer is in charge of the growth process. In most circumstances, there is a little failure in the adventure since it does not rely on the natural environmental conditions for its survival. For instance, it is the farmer who makes the selection of the type soil, the fertilization, and the watering (Salas et al, 2010). In this regard, it is possible for the farmer to have a reasonable level of control over the growth process of the crops.

 Many advantages are derived from the use of vertical gardening among families. One of the primary benefits is that it helps families to reuse or recycle some of the resources that they have including water. In most families, research indicates that there is a lot of wastage of water. To put used water to good use, the same water may be used in watering the crops in the family garden. That would make sure that no water goes to waste. Besides, there is evidence that there is a broad range of household waste products such as excreta and biodegradable products that can be used in this exercise.

 Perhaps the best explanation of the benefits of this kind of gardening is founded on its affordability. The main reason why families cannot afford decently; a high quality meal is because they are financially incapacitated. However, vertical gardening provides an opportunity where people would have to grow foods at little costs. There is a little expense that is being incurred about the preparation of the farming area. Additionally, since it is not a large piece of area, the crops being used are those that are affordable. Moreover, the simplicity of the entire progress eliminates the need for expert assistance. That too results in the reduction of the costs of operations.

 Fell, in an article entitled, "Vertical gardening: grow up, not out, for more vegetables and flowers in much less space" says that vertical gardening is one of the modern ways that most families can use in the war against food insecurity, poverty, and malnutrition. The process makes sure that each household has a vast variety of healthy foods from which to choose their food menu. Some of the missing diets such as fruits and vegetables can, therefore, be easily obtained from these gardens. It is necessary that families seek these interventions as a way of addressing the challenges that arise from the supplemental nutritional addition programs. The government policy making organs need to pursue very vigorously the path that is geared towards the realization of food security by embracing and exploiting the benefits that come with vertical gardening.

**Methodology**

The study randomly identified twelve (12) families that are of low-income levels and who are beneficiaries of the stamp food program. Out of the families, there were women, children, and male adults. At the beginning of the study, measurements were taken of the family members about their waistline. The size of the waistline was done using a tape. The measurements were in centimeters and measured the distance of the body part that is above the hipbone. For the children, those who were included in the research included those who were below twelve years of age and not younger than six years. The averages of the measurements were then recorded. The measurements were taken and recorded as indicated below;

Table 1

|  |  |  |  |
| --- | --- | --- | --- |
| FAMILY | WOMEN | CHILDREN | MEN |
| Family 1 | 88 | 45 | 102 |
| Family 2 | 89 | 53 | 103 |
| Family 3 | 89 | 45 | 101 |
| Family 4 | 88 | 55 | 100 |
|  Family 5 | 90 | 53 | 99 |
| Family 6 | 91 | 52 | 102 |
| Family 7 | 89 | 50 | 100 |
| Family 8 | 88 | 48 | 100 |
| Family 9 | 88 | 49 | 100 |
| Family 10 | 90 | 51 | 102 |
| Family 11 | 89 | 50 | 102 |
| Family 12 | 90 | 50 | 100 |

*Table 1; the measurements of the waistlines of the members of the twelve families before the experiment*

After all these measurements had been taken, the families were then separated into two groups. The first group consisted of the first six families, that is, family 1 to family 6. The second group started from family 7 to family 8. To test the effects that vertical gardening would have on the two groups, the first group was put on a program in which they would be taught how to grow fruits and vegetables in the gardens. They were expected to eat from the produce of the firm for the next one year in addition to the regulated consumption levels of the supplemental nutritional addition program. On the other hand, the second group was fed on the supplemental nutritional additional program for the next one year. The results were recorded in Table 2.

**Results**

 After one year of the experiment, it was realized that there was a significant change in the measurements of the waistlines between the group that adopted vertical gardening as a source of some of the foods and the other one that relied wholly on the supplemental nutritional addition program. The results were recorded in table 2 below;

*Table 2*

|  |  |  |  |
| --- | --- | --- | --- |
| FAMILY | WOMEN | CHILDREN | MEN |
| Family 1 | 84 | 40 | 97 |
| Family 2 | 85 | 50 | 98 |
| Family 3 | 85 | 40 | 96 |
| Family 4 | 84 | 50 | 96 |
| Family 5 | 86 | 49 | 94 |
| Family 6 | 85 | 48 | 97 |
| Family 7 | 90 | 52 | 102 |
| Family 8 | 91 | 50 | 101 |
| Family 9 | 91 | 51 | 101 |
| Family 10 | 92 | 51 | 104 |
| Family 11 | 90 | 52 | 104 |
| Family 12 | 92 | 52 | 102 |

*Graphical representation of Table 2*

**Discussion**

 The measurement of waistline is one of the most effective measures of determining whether a person is sliding down the slippery path towards weight gain and obesity. The Nurses' health study is one of the oldest studies that have examined the relationship between the size of the waist and the risks of abdominal obesity. The research suggests that ordinarily, the weight of a healthy woman should not exceed 88 centimeters. At the same time, the circumference of the waists of men ought not to go beyond 102 cm. However, the situation of children becomes complicated since there is a need to examine the waist size against the height of the child. In this case, since the focus in on children between the ages of six and twelve years, the arbitrary point beyond which an average healthy weight should not exceed is 45 centimeters.

 From the study above, before the groups were divided into two, all the participants were feeding on the supplemental nutritional addition programs. As a result, the waistlines of almost all the members had reached levels that indicated that they were either overweight or obese. However, at the beginning of the study, the families were divided into two, and one of them was introduced to vertical gardening as a means of adding some diets into its menu. When the one year period ended, it became evident that the families that added vertical; planting where they grew fruits and vegetables saw a significant reduction in their weight as is indicated in the reduced waist circumference measurements. However, the second group that maintained the supplemental nutrition assistance programs as their foods experienced an increase in their size measurements.

 The primary reason for this significant difference is because the introduction of vertical gardening exposed the families to food items such as fruits and vegetables that they lacked in the stamp food programs. In the process, they have a massive reduction in the amounts of meats, sugary drinks and high-fat daily contents in their diets. The introduction of fruits and vegetables was instrumental in making sure that their bodies were served with the right quality of foods that it deserved for its development.

**Conclusion and recommendations**

 The paper has confirmed that supplemental nutritional addition programs play critical roles in the exposure of the body to substances that cause obesity and related diseases. Since the cost of foods has soared to stratospheric levels and in the process making them unaffordable to the low-income families. That leaves the parents with the option to settle on the stamp foods. However, as this paper has confirmed, vertical gardening is one of the measures that families can take to improve the quality of foods that they put on their tables.

Vertical gardening allows individuals to grow fruits and vegetables by utilizing small pieces of space such as balconies and walls that they have in their houses. The products enable people to replace the harmful food products from the stamp food products with health and cheap items from their gardens. In conclusion, this paper recommends that low-income families should adopt vertical gardening as a solution to the food challenges that they have as opposed to the utilization of the supplemental nutritional addition programs. It will go a long way to reduce the cases of obesity and related health concerns by a great margin.

References

Andreyeva, T., Luedicke, J., Henderson, K. E., & Tripp, A. S. (2012). Grocery store beverage choices by participants in federal food assistance and nutrition programs. *American journal of preventive medicine*, *43*(4), 411-418.

Barnhill, A. (2011). Impact and ethics of excluding sweetened beverages from the SNAP program. *American journal of public health*, *101*(11), 2037-2043.

Dammann, K. W., & Smith, C. (2009). Factors affecting low-income women's food choices and the perceived impact of dietary intake and socioeconomic status on their health and weight. *Journal of nutrition education and behavior*, *41*(4), 242-253.

DeBono, N. L., Ross, N. A., & Berrang-Ford, L. (2012). Does the Food Stamp Program cause obesity? A realist review and a call for place-based research. *Health & place*, *18*(4), 747-756.

Drewnowski, A. (2009). Obesity, diets, and social inequalities. *Nutrition reviews*, *67*(suppl 1), S36-S39.

Fell, D. (2011). Vertical gardening: grow up, not out, for more vegetables and flowers in much less space. Rodale.

Kreider, B., Pepper, J. V., Gundersen, C., & Jolliffe, D. (2012). Identifying the effects of SNAP (food stamps) on child health outcomes when participation is endogenous and misreported. *Journal of the American Statistical Association*, *107*(499), 958-975.

Leung, C. W., Blumenthal, S. J., Hoffnagle, E. E., Jensen, H. H., Foerster, S. B., Nestle, M., ... & Willett, W. C. (2013). Associations of food stamp participation with dietary quality and obesity in children. *Pediatrics*, peds-2012

Leung, C. W., Ding, E. L., Catalano, P. J., Villamor, E., Rimm, E. B., & Willett, W. C. (2012). Dietary intake and dietary quality of low-income adults in the Supplemental Nutrition Assistance Program. *The American journal of clinical nutrition*, ajcn-040014

Leung, C. W., Willett, W. C., & Ding, E. L. (2012). Low-income Supplemental Nutrition Assistance Program participation is related to adiposity and metabolic risk factors. *The American journal of clinical nutrition*, *95*(1), 17-24

Nestle, M. (2013). *Food politics: How the food industry influences nutrition and health* (Vol. 3). University of California Press

Nguyen, B. T., Shuval, K., Njike, V. Y., & Katz, D. L. (2014, September). The Supplemental Nutrition Assistance Program and dietary quality among US adults: findings from a nationally representative survey. In *Mayo Clinic Proceedings* (Vol. 89, No. 9, pp. 1211-1219). Elsevier.

Salas, M. C., Verdejo, M. M., Sánchez, A., Guzmán, M., Valenzuela, J. L., & Montero, J. L. (2010, August). Vertical gardening. Adaptation of hydroponic systems and ornamental species. In XXVIII International Horticultural Congress on Science and Horticulture for People (IHC2010): International Symposium on 937 (pp. 1153-1160).

Shenkin, J. D., & Jacobson, M. F. (2010). Using the Food Stamp Program and other methods to promote healthy diets for low-income consumers.

Story, M., Kaphingst, K. M., Robinson-O'Brien, R., & Glanz, K. (2008). Creating healthy food and eating environments: policy and environmental approaches. *Annu. Rev. Public Health*, *29*, 253-272.