

ATTITUDE OF THE PERI-URBAN WOMEN TOWARD HOMESTEAD GARDENING

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Abstract

The main objective of the study was to determine the attitude of the peri-urban women towards homestead gardening. The study was conducted in two peri-urban areas –namely, Jahanpur and Sayedpur at the premises of Sadar upazila of Sylhet district. Data were collected from 100 women following a simple random sampling technique from a population of 1624 women using a pretested well-structured questionnaire interview schedule from 26 April through 30 May, 2018. Attitude was measured on 24 statements mainly constructed on cognitive, affective, conative, and evaluative issues of homestead gardening. Scoring for each positive statement was done on the basis of response of the respondent by assigning +2, +1, 0, -1, and -2 to the five alternative responses as "strongly agree", "agree", "undecided", "disagree", and "strongly disagree" fashion. A reverse score was assigned for a negative statement. Findings indicated that 57% of the respondents were middle-aged, 49% had a secondary level of education, 65% of them had medium family size, and the majority (67%) had medium knowledge about gardening. The respondents had no training experience (48%), very low organizational participation (86%), and medium cosmopolitanism (62%). Most of them (67%) showed a moderately favorable attitude towards homestead gardening, followed by 20 percent showed less favorable, and only 13 percent showed a highly favorable attitude. They evaluated homestead gardening as a profitable enterprise (ranked 1st; AI=148) and a good source of family nutrition (ranked 2nd; AI=144). Pleasing feelings with homestead gardening (ranked 3rd; AI=143) has developed a belief regarding effective use of leisure time (AI=129), which ranked 4th. An idea of 'establishing a homestead garden from a long distance of land gardening ensure more production' generated through experiencing this practice ranked 5th (AI=128). In contrast, insect and pest infestation, absence of a suitable environment for growing vegetables year round, sudden loss of production, complexity in maintenance, and high cost of growing vegetables during the summer season were the negative impact of homestead gardening. Pearson's product moment correlation coefficient 'r' showed that the attitude of the peri-urban women is significantly and positively associated with annual income, homestead size, knowledge, use of information sources, and cosmopolitanism.

Keywords: Attitude, homestead gardening, peri-urban women

Introduction

Peri-urban areas are the interface of urban and rural areas and thus embody some characteristics of both areas (UNESCO, 2014; Allen, 2003), whereas population density is likely to be lower than the urban areas, house occupancy is higher, income levels are lower than those in urban areas. It is considered the transition zone during urbanization, experiencing a two-way flow of goods, services, and population with nearby urban centers. Peri-urban agriculture is a dominant economic activity in peri-urban areas (Mbuligwe, 2011), but traditional land uses like agriculture are replacing with industrial activity and infrastructure development to support urban expansion and population growth (Vij and Narain, 2016). Moreover, its social composition is also evolving. Typically, a diverse mix of people is found in peri-urban areas, including farmers, industrial entrepreneurs, informal settlers, and urban middle class (Allen, 2003).

Bangladesh is an agro-based over-populated country (Ghosh and Hasan, 2013) where women hardly participate in agricultural activities outside their homes (Hossain, 2002; Abdullah and Zeidenstein, 1982). Half (49%) of the population of Bangladesh is women, and 45.6 percent of them are associated with farming activities (Agricultural Diary, 2012). Agriculture contributes about 18 percent to GDP and employs approximately 62 percent of the nation's labor force (BBS, 2013). Among the 90 percent of the peri-urban women, 59 percent are engaged in post-harvest agricultural activities especially homestead gardening (Khan *et al.*, 2009). This homestead gardening provides the major livelihood resources for poor farmers (Kulsum *et al.*, 2019), contributing to sustainability and better living

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(Bushamuka *et al.*, 2005). The involvement of peri-urban women in agricultural activities enhances their livelihood status (Sahoo *et al.*, 2020).

According to FAO (1995) “The home garden is an important land unit for households as it is often the center of family life; a well-developed home garden is a complete farming system; the home garden is the most direct means of supplying families with most of the non-staple foods they need year-round”. In peri-urban areas, plants are generally grown in the backyard, at the pond side, around the cowshed, and on the rooftop of the building. Vegetables from homesteads are predominantly consumed at home, and only the surplus is sold (Kulsum *et al.*, 2019). Various empirical studies claim that homestead gardening has been considered a solution for improving poor living conditions in undeveloped urban and peri-urban areas of developing countries on the grounds of its effects on improving household food and nutrition intakes (Amrullah *et al.*, 2017; Bhatta *et al.*, 2008; Bukusuba *et al.*, 2007; Dossa *et al.*, 2011; Gallaher *et al.*, 2013a; Lynch *et al.*, 2013) and the physique of a child (Maxwell, 1995; Maxwell *et al.*, 1998), increasing or diversifying household income (Amrullah *et al.*, 2017; Ashebir *et al.*, 2007; Maxwell, 1995), providing remunerative economic activities for women (Mudimu, 1996; Maxwell, 1995), empowering women through economic independence (Gororo and Kashangura, 2016; Masvaure, 2015), and accumulating social capital (Gallaher *et al.*, 2013a). However, it is well known that food poverty remains widespread and continues to be a challenging problem in South Asian countries, particularly Bangladesh, which has a large poverty-stricken urban and peri-urban population (Yamashita and Ishida, 2017).

The development of socio-economic condition of Bangladesh largely depends upon the development of the peri-urban area (Islam, 1977). Especially in peri-urban society, all women, educated and uneducated are generally involved in their domestic duties and play a significant part in homestead gardening (IFPRI, 2003). Halim (1987) reported that the peri-urban women are the potential agricultural product producer. They prefer to grow several types of vegetables simultaneously on the same plot, such as cabbages, red amaranths, spinach, and chilies, as that enables them to harvest leafy vegetables within a month and then sell green chilies, followed by cabbages (Pramanik, 2013). Year-round intensive cultivation in the peri-urban areas needs adequate supplies of water. As the main source of irrigation water is groundwater, too many tube wells is already creating a problem during the dry season. As a result, the area experiences a drinking water shortage. The Government of Bangladesh has no specific policy provision or legislation promoting peri-urban agriculture in general or rooftop gardens in particular. There is no specific city policy that promotes peri-urban agriculture. Women can play a vital role in their full talent can be explored. Suppose women can perform their roles in homestead gardening properly and skillfully. In that case, they will be able to ensure food security and family nutrition, increase family income and contribute to the overall improvement of Bangladesh.

In contrast weather, climate, and soil of Bangladesh are very suitable for growing vegetables year-round. But vegetable production is so low that per capita/day availability is hardly 112 gm whereas the requirement is estimated to be 400 gm. Peri-urban women must be included in development activities especially in homestead gardening activities. So, when peri-urban women are involved and included in this development activity and are aware of their rights and claims, their participation in homestead gardening activities will be increased to a great extent. In a developing country like Bangladesh, it cannot be denied that under-utilized peri-urban female force forms a vast reservoir of human resources. The role of peri-urban women in the socio-economic development of Bangladesh cannot be overlooked. Their enhanced economic role has not gone in hand with substantial improvement in education, training, health and nutrition, and access to production resources and services.

Similarly, they remain largely unrepresented in national agenda-setting and resource allocating bodies. Peri-urban women are generally involved in different enterprises but have not been clearly defined so far, since there is no systematic research in these aspects. It is essential, therefore, that peri-urban women become a priority target group in agricultural production. Considering the above mentioned facts, the study considered the selected socio-demographic characteristics of peri-urban women, attitude towards homestead gardening, and the relationship between selected characteristics of the peri-urban women and their attitude.

Materials and Methods

The study was conducted in two peri-urban areas, namely Jahanpur and Sayedpur premises of Sadar upazila of Sylhet district. One thousand six hundred twenty-four peri-urban households constitute the population of these two villages, from which 100 were taken as sample for the study following a simple random sampling method. 13 rural women were selected from the population as reserves who were supposed to be interviewed only when respondents in the original list found unavailable during data collection. By using a pretested well-structured interview schedule, data were collected from the sample women during the period from 26 April to 30 May 2018.

Measurement of dependent variables

The attitude of the peri-urban women towards homestead gardening was considered the dependent variable of this study. Attitude was measured through 24 statements constructed on cognitive, affective, conative, and evaluative thinking about homestead gardening. Among them, 18 were positive and 6 were negative. Scoring for each positive statement was done on the basis of the response of the respondent by assigning +2, +1, 0, -1, and -2 to the five alternative responses as "strongly agree", "agree", "undecided", "disagree", and "strongly disagree" fashion ('Attitude Scales - Rating Scales to measure data', n.d.). Reverse score was assigned for a negative statement. However, the attitude towards homestead gardening of a respondent was obtained by summing up his/her scores for all the twenty-four statements in the interview schedule. Based on the computed scores, the peri-urban women were classified into three categories according to Salawat *et al.*, 2013, i.e., "less favorable attitude" (up to 8 scores), "moderately favorable attitude" (9 to 19 scores) and "highly favorable attitude" (20 to 26 scores). Ranking of the statements was done on the basis of AI (Attitude Index) score. AI was computed using the following formula:

$PI = (SA \times 2) + (A \times 1) + (U \times 0) + \{D \times (-1)\} + \{SD \times (-2)\} \dots$ In case of positive statement

$PI = \{SA \times (-2)\} + \{A \times (-1)\} + (U \times 0) + (D \times 1) + (SD \times 2) \dots$ In case of negative statement

Where,

SA= Strongly Agree; A= Agree; U= Undecided; D= Disagree; SD= Strongly Disagree

Measurement of independent variables

The independent variables of this study were respondents' age, education, family size, farm size, annual income, knowledge, training experience, cosmopolitaness, use of information sources, and organizational participation. Age of a respondent was measured on the basis of the actual age of his life and expressed in years. Education was measured by the number of years of schooling. Family size was measured by the total number of members, including the farmer himself, spouse, children, and other permanent dependents who lived together as a family unit. The total land area possessed by the farmer under farm and homestead was the basis of measuring farm size in this study, and it was expressed in hectares. The yearly income from different sources was the annual income of the respondent. Training experience was determined by the duration of training and expressed in days. Farmer's visit to different places outside of his village was the basis of the cosmopolitaness score measurement. For measuring the use of information sources, a four-point scale- not at all, rarely, occasionally, and frequently was used, and appropriate weights were assigned to quantify the variable. Twenty-one questions were selected in the interview schedule to measure homestead gardening knowledge. The score assigned against each item was 2 for a fully correct answer, 1 for partial correct answer and 0 for an incorrect answer. Weight for responses on the 21 questions of a farmer were added together to get his score for homestead gardening.

Necessary tables and categories were used to classify the data considering their nature and distribution. As per the study's objective statistical tests like frequency counts, percentage, mean, and standard deviation were used to analyze and interpret data. Correlation coefficients were used for hypothesis testing, and 0.05 and 0.01 level probabilities were used to explore the relationship between the concerned variables throughout the study.

Results & Discussion

Socio-economic profile of the respondents

Data displayed in Table 1 indicated that the middle-aged constituted the highest proportion (57%) of the respondent, followed by the young and old-aged category with an average of 32.23 years. 49% of the respondents got the highest secondary level education, followed by can sign only, primary, and above secondary level education. The largest farm size was 1 ha with an average of 0.43 ha. The highest proportion (54%) of the farmer had marginal homestead size, followed by small, medium, and large homestead sizes. The number of family members of the farmers ranged from 3 to 10, with an average was 5.81. The income of the farmers ranged from Tk. 23000 to Tk. 55000, the average was Tk. 39840. Training experience scores of the farmers could range from 0 to 8 days, with an average was 1.33. The highest proportion (48%) of the farmer fell in the no training experience category, followed by low, medium, and high training experience. The maximum (62%) of the farmers had medium cosmopolitaness followed by low and high cosmopolitaness. Most respondents had medium use of information sources (61%) followed by low and high use of

information source. Knowledge scores on homestead gardening of the peri-urban women ranged from 6 to 22, with an average was 14.26. The highest proportion (67%) of the women fell in the medium knowledge category compared to the poor and in the high knowledge category.

Table 1. Categories of the selected characteristics of the peri-urban women.

Characteristics (Unit)	Categories	Peri-urban women (%)	Observed range	Mean	SD
Age (year)	Young(18 to 30)	40.0	18-58	32.23	10.17
	Middle (31 -50)	57.0			
	Old (>50)	3.0			
Education (score)	Illiterate (0)	5.0	0-12	4.98	3.81
	Can sign only (0.5)	26.0			
	Primary (1-5)	15.0			
	Secondary (6-10)	49.0			
	Above secondary (>10)	5.0			
Family size(member number)	Small (up to 4)	20.0	3-10	5.81	1.70
	Medium (5-7)	65.0			
	Large (>7)	15.0			
Family income(Tk.)	Low (up to 31000)	16.0	23.0-55.0	39.84	8.57
	Medium (32000-48000)	62.0			
	High (>48000)	22.0			
Homestead size	Marginal (up to 0.2)	54.0	0.02-2.02	0.43	0.61
	Small (0.21-1)	22.0			
	Medium (1.1-2)	15.0			
	Large (>2)	9.0			
Knowledge(score)	Poor (up to 9)	18.0	6-22	14.26	4.37
	Medium (10-18)	67.0			
	High (>18)	15.0			
Training experience(score)	No training (0)	48.0	0-8	1.33	1.78
	Low (up to 2)	36.0			
	Medium (3-5)	10.0			
	High (>5)	6.0			
Use of information sources(score)	Low (1-7)	22.0	6-22	10.86	3.77
	Medium (8-14)	61.0			
	High (>14)	16.0			
Cosmopolitaness (score)	Low (1-3)	22.0	0-15	6.74	4.36
	Medium (4-11)	62.0			
	High (>11)	16.0			
Organizational participation(score)	Very low (up to 7)	86.0	4-15	5.55	2.26

Vegetables are grown in a peri-urban homestead garden in the study area

Table 2 shows us the vegetables grown in homestead gardens of the study area, and the percentage of the respondents who practice this. Several kinds of vegetables were grown in the garden where bean, gourd, capsicum, tomato, yardlong bean, papaya, snake gourd, bitter gourd, eggplant, luffa, sweet gourd, zucchini, wax gourd, cucumber, sweet and bitter gourd were fruity vegetables and red amaranth, coriander, mustard leaves, data shak, Indian spinach, radish leaves, and mint were leafy vegetables.

Table 2. Vegetables grown in peri-urban homestead gardens and percent of the respondents.

Sl. No.	English name	Local name	Percent of respondents	Sl. No.	English name	Local name	Percent of respondents
<i>Vine types</i>							
1	Bean	Shim	100.0	12	Bitter gourd	Korola	31.25
2	Gourd	Lau	81.25	13	Eggplant	Begun	25.0
3	Red amaranth	Lalshak	62.5	14	Luffa	Jhinga	25.0
4	Capsicum	Morich	62.5	15	Indian spinach	Puishak	18.75
5	Tomato	Tomato	56.25	16	Sweet gourd	Mistikumra	18.75
6	Yardlong bean	Lubia	56.25	17	Zucchini	Dhundol	12.5
7	Coriander	Dhoniapata	56.25	18	Wax gourd	Chalkumra	12.5
8	Papaya	Pepe	50.0	19	Radish leaves	Mulashak	12.5
9	Mustard leaves	Lai shak	43.75	20	Cucumber	Shosa	6.25
10	Data shak	Dengashak	37.5	21	Mint	Pudinapata	6.25
11	Snake gourd	Chichinga	31.25	22	Sweet bitter gourd	Kakrol	6.25

Results show us that all of the respondents of the study area grow a bean in their homestead garden. 81.25 percent of the peri-urban women cultivate gourd in their gardens. About 63 percent of them grow red amaranth and capsicum. 50-56 percent of the peri-urban women grow fruity vegetables like tomato, yardlong beans, papaya, and leafy vegetable like coriander leaves. Only 6 percent of the peri-urban women grow cucumber, mint, sweet and bitter gourd.

Distribution of the peri-urban women according to the attitude towards homestead gardening

The observed attitude score of peri-urban women towards homestead gardening ranged from 8 to 26 against the possible score -48 to 48 with the average of 13.99 and a standard deviation 5.46. Based on the mean \pm standard deviation attitude of the peri-urban women was classified into three categories: “less favorable attitude” (up to 9 scores), “moderately favorable attitude” (10 to 19 scores) and “highly favorable attitude” (20 to 26 scores). The distribution of the peri-urban women according to their attitude towards homestead agriculture is shown in Table 3. The Table shows that more than two-thirds (67%) of the respondents had a medium favorable attitude, 20 percent had a low favorable attitude, and only 13 percent had a highly favorable attitude. Ghosh and Hasan (2013) also found similar findings in their studies. A similar moderately favorable attitude was also found by Chakma *et al.*, (2021).

Table 3. Distribution of the peri-urban women according to the attitude toward homestead gardening

Attitude level(score)	Rural women		Mean	Standard deviation
	Number	Percent		
Less favorable attitude (up to 9)	20	20.00	13.99	5.46
Moderately favorable attitude (10-19)	67	67.00		
Highly favorable attitude (20-26)	13	13.00		
Total	100	100.00		

The attitude of the peri-urban women towards homestead gardening

A total of 24 statements, of which six were on cognitive issues, five were affective, five conative, and eight were on the evaluation of homestead gardening for measuring peri-urban women’s attitudes. Data contained in Table 4 indicated that the women had top most attitude in respect of ‘Homestead gardening is highly profitable’ was the highest (AI=148) followed by ‘Vegetable harvested from homestead garden is highly nutritious’ (AI=144). Then ‘I feel pleasure working in homestead garden’ (AI=143) was in third position. ‘I believe that it is highly suitable for rural women to use of their leisure time effectively’ (AI=129) was in fourth and ‘I got more production from homestead garden by establishing a

long distance from the land gardening' (AI=128) was fifth. From the first five statements, it can be said that most of the respondents of the study area found homestead gardening is highly profitable and helps fulfill family nutrition. They also mentioned that more vegetables could be grown with more care.

Table 4. Indices and ranking of items constructed to measure the attitude of peri-urban women towards homestead gardening.

Attitude of the peri-urban women towards homestead gardening		AI	Rank order
Cognitive	+1. I believe that it is highly suitable for rural women to make effective use of their leisure time	129	4
	+2. I believe that homestead gardening doesn't require much education	103	10
	-3. I think that the maintenance of a homestead garden is very complex	26	21
	+4. I know that more vegetables can be grown through more care	103	10
	+5. I believe that proper care of the homestead garden can reduce disease and pest infestation	126	6
	+6. I know it is possible to develop a homestead garden in a small area	79	14
Conative	-7. I avoid homestead gardening because growing vegetables in the summer season is an expensive enterprise	48	19
	-8. I avoid homestead gardening because a suitable environment is not available all the year round for gardening	22	22
	+9. I got more production from the homestead garden by establishing a long distance from the land gardening	128	5
	+10. I prefer homestead gardening as it enhances the smooth supply of family nutrition	54	16
	+11. Due to less and unreliable rainfall for field crops, rural women prefer to establish homestead gardens	82	13
Affective	+12. I feel pleasure working in the homestead garden	143	3
	+13. Homestead gardening is preferred by rural women as it enhances the beauty of a home	51	18
	+14. In rural areas, the success of gardening in the house courtyard is a family tradition	113	7
	-15. Many rural women express unwillingness in homestead gardening because it requires lots of hard work and time which is quite difficult by maintaining family.	53	17
	-16. I feel scared about sudden loss of production of homestead garden	18	23
Evaluative	+17. Homestead gardening is highly profitable	148	1
	-18. Insect and pest infestation is high	30	20
	+19. Homestead gardening increases the skills and knowledge of rural women	89	11
	+20. Less chemical fertilizers is required for homestead gardening.	111	8
	+21. Vegetable harvested from homestead garden is highly nutritious	144	2
	+22. Use of hybrid seed increase the production of a homestead gardening	62	15
	+23. It meets not only the requirements of the home but also the source of additional income.	107	9
	+24. Proper use of fallow land can be possible through homestead gardening.	84	12

Source: Author's estimation based on field survey, 2018

The respondents showed a negative attitude toward some statements. 'Insect and pest infestation is high' (AI=30) was in 20th, 'I think that maintenance of homestead garden is very complex' (AI= 26) was in 21th, 'I avoid homestead gardening because the suitable environment is not available all the year round for gardening' (AI= 22) was in 22th, 'I feel scared about a sudden loss of production of homestead garden' (AI= 18) was in 23th. From the above discussion, homestead gardening was clear to most of the respondents, and they opined that it is economically profitable.

Correlation between the selected characteristics of the respondents with their attitude towards homestead gardening

Each selected characteristics of the peri-urban women constituted the independent variables, while their attitude towards homestead gardening was considered a dependent variable. Pearson’s product moment correlation coefficient “r” was used to test the hypotheses concerning the relationships between any two variables.

Table 5.Correlation coefficient between the selected characteristics of the respondents and their attitude toward homestead gardening

Dependent Variable	Independent Variable	The computed value for ‘r’	Table value of ‘r’ at 98 Degree of freedom	
			0.05	0.01
Attitude	Age	0.101 ^(NS)		
	Level of education	0.012 ^(NS)		
	Family size	-0.028 ^(NS)		
	Annual income	0.603**		
	Homestead size	0.503**		
	Knowledge	0.356**	0.197	0.257
	Training experience	0.164 ^(NS)		
	Use of information sources	0.426**		
	Cosmopolitaness	0.479**		
	Organizational participation	-0.100 ^(NS)		

***Correlation is significant at the 0.01 level, *Correlation is significant at the 0.05 level, ^{NS} Not significant*

Results from Table 5 revealed that respondents' age, level of education, family size, training experience, and organizational participation had no significant relationship with their attitude towards homestead gardening. Similar findings were found by Nurzaman (2000) and Habib (2000) in their respective study.

There was a positive and significant relationship between homestead size and attitude on homestead gardening as the ‘r’ value was 0.503** at 1% significance level. So the null hypothesis was rejected. It indicates that the higher the farm size, the higher the response on homestead gardening, i.e., farmers with medium and large farms had more response to homestead gardening. Farmers who had more farms can take more risk than those had less farm. This risk-bearing ability also increased the response towards homestead gardening. Rahman (2005) also found similar findings in his studies. The annual income of the farmers had significant positive relationship with their attitude towards homestead gardening, with the computed ‘r’ value being 0.603**. It means that the higher the respondents' income level, the higher their attitude toward homestead gardening. Afrad (2009) also found similar results in his studies.

Cosmopolitaness of the respondents had a significant positive significant relationship with attitude with computed ‘r’ value of 0.479** at 1% significance level. It means that the higher the level of cosmopolitaness of the respondents, the higher their attitude toward homestead gardening. People differ in their traveling to different places, while others confine themselves within a narrow boundary. Those people, who are outward going by nature, come into contact with different people, and see new experiences and ideas. These people liberate themselves from narrow attitudes and develop a clearer outlook on life. These people exhibit different attitudes and behaviors in everyday life compared to others. Mominul (2011) found similar results in his studies.

The use of information sources by the respondents had a significant positive relationship with attitude towards homestead gardening and the computed ‘r’ value was 0.426** at 1% significance level. So the null hypothesis was rejected. That means higher the use of information by the respondents, the higher their attitude. A similar relationship was also obtained by Alam (2007).

Conclusion and Recommendations

Homestead gardening is a very effective agricultural activity as it helps to get fresh vegetables that provide pure nutrition to one’s family. The attitude of the peri-urban women in the study area was medium towards homestead gardening. This might be due to the fact that a considerable proportion of the farmers were not exposed to any training on homestead gardening suitable for peri-urban area. Nonetheless, the low extension contact kept them ignorant about the knowledge on modern techniques for making this farming economically sustainable. As attitude is the pre-cursor

for the adoption of new technology, and extension contact, training exposure, and use of information sources were found to be positively significant with the attitude, delineation of proper extension program targeting these huge peri-urban women may have an impact in boosting vegetable production in Sylhet region. Based on the findings of this study, it is recommended that:

- ☒ Extension agents should develop their relationship with peri-urban women as this would grant them more information, knowledge, and cosmopolitaness.
- ☒ Efforts should be geared toward increasing technical support and reducing the incidence of pests and diseases in the study area. This will increase the production level and, in turn, increase income for the women farmers.
- ☒ Financial aid should be granted to the women to reduce financial constraints in accessing extension services and lack of collateral in securing loans. These would also boost their morale in exploring the benefits of extension services.

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