VFAST Transactions on Education and Social Sciences
http://vfast.org/journals/index.php/VTESS@ 2023, ISSN(e): 2309-3951, ISSN(p): 2411-0221
Volume 11, Number 2, April-June, 2023 *pp:201-210*

Rural Women Contribution in Providing and Increasing Domestic Food and Nutrition Security. A Correlational Study of Rural Areas of South Punjab, Pakistan

Amara Amman[1], Madiha Naz[2*], Tafoor Amjad[3], Tahir Abbas[4], Saima Afzal[5]

[1]Mphil scholar, Department of Sociology, Riphah international university Faisalabad campus, Pakistan
[2]Assistant professor, Department of Sociology, Riphah international university Faisalabad campus, Pakistan
[3]BS Information Technology, Department of Information Technology, University of Sialkot main campus, Pakistan
[4]Lead Fire Rescuer, Punjab Emergency Service Department Rescue 1122 Faisalabad, Pakistan
[5]Assistant professor, Department of Sociology, Bahauddin Zakariya University, Multan, Pakistan
*Corresponding author email address: madiha.naz@riphahfsd.edu.pk

ABSTRACT

Women play a crucial role in sustainable rural development and agriculture. Despite suffering severe inequalities, worldwide women are crucial for ensuring security of food. Women have a variety of roles in the food system including as producers, entrepreneurs, leaders, and consumers. It is essential to be taken into consideration when discussing gender equity and gender mainstreaming. Rural women play a significant role in each of the four components of food security: availability, accessibility, utilization, and stability. Therefore, this study explores the different contributions that rural women make as the key contributor of achieving and enhancing domestic food security. Women who currently reside in rural south Punjab, Pakistan, aged 18 to 60, make up the study's population. A well-structured interview schedule was used to obtain primary data from 200 houses in the research area. For the purpose of gathering data, a multistage random sampling technique was used. Dera Ghazi Khan and Jampur were the two randomly chosen districts. Two tehsils were randomly chosen for the second stage. In the third step, five villages were selected at random from each tehsil. The data analysis employed both descriptive statistics and the logit regression model. Results show that women contributed to domestic food security through their involvement in food production and preparation, the purchase of food products for intake and storage. According to empirical findings, 40% of households were food secure while 60% of households experienced food insecurity. The outcome also shows that household food security in the research area was significantly influenced by age, education, income, and household size. Study suggested that women's education, knowledge about food consumption and paid employment status should be improved for increasing domestic food security.

KEYWORDS

Rural women, providing and increasing, domestic food and nutrition security, south Punjab Pakistan.

JOURNAL INFO

HISTORY: Received: May 30, 2023 Accepted: June 27, 2023 Published: June 30, 2023

INTRODUCTION

All living organisms need food to maintain the health of their bodies and satisfy their desires. The majority of individuals go to food for well-being and satisfaction. The human body needs optimal nutrition for a variety of reasons, including physical development, performance, motivation and productivity. A balanced, nutrient-rich diet is essential that provides all the building blocks for growth and energy (Otunaiya & Ibidunni, 2014). Food security refers to the condition in which all people, at all times, have economic, social, and physical access to an adequate quantity of food that is safe, nourishing, and satisfies their dietary requirements and food choices for a healthy and active lifestyle (FAO, 2020).

Even though there is enough food in the world to feed everyone, 821 million people still experience food insecurity, because everyone doesn't have equal access to adequate food. Food security includes not only the availability of enough nutrient-rich food but also adequate access, distribution and utilization of food by all members of the household. According to the United Nations, about 50% of Pakistan's population experiences food insecurity, with 24.3% of them living below the poverty line (FAO, 2022).

Regarding ensuring domestic food security, both genders typically perform various roles and carry out different obligations. In rural households, both sexes are wage workers, but males are primarily responsible for generating income while women are mostly in charge of managing the household and utilizing food (Fatima, 2009). In the realm of agriculture, women play a crucial role. Women make up a total of 37% of the global workforce in rural agriculture. In low-income nations, this ratio jumps to 48%. They make up over half of the 600 million small-scale livestock and agriculture producers around the world. However, their employment, which is frequently informal and performed in a family environment, is rarely acknowledged or compensated (Bailey, 2017).

This work is licensed under a Creative Commons Attribution 3.0 License.

Due to the numerous roles that women play around the world, it is widely acknowledged that they perform a substantial role in the widespread food insecurity and poverty at the national and domestic level. Thus, achieving and enhancing household food security depends on the empowerment of rural women. Enhancing females' access to productive assets, ownership of land, animals, and impartial employment opportunities is crucial for ensuring food security (Naz et al., 2020).

In low-income rural households, women work as wage workers because their income is crucial to the maintenance of the domestic level of food security. However, there is widespread prejudice, patriarchy, and discrimination against women in rural regions. Women's contributions are negatively impacted by their control over resources and lack of access to assets. Rural women have several challenges, and the social, economic, and cultural norms that govern them frequently frustrate their responsibilities. Rural women have limited access to and control over a variety of resources, including those related to education, health, land, credit, work, skills, absence of decision-making authority, restricted freedom of movement, and a lack of training services (Saddia et al, 2017).

"Women hold up half the sky" especially rural women unquestionably carry the larger load in the fight against poverty and hunger. Growing food or earning money to buy food are two ways that women are increasing their contribution to domestic food security. Due to pressing needs, women frequently attempt to accomplish both. Cash revenue is required to cover the other essential needs because household crops rarely meet all of the demands of the family. To supplement their income and buy food for their family, women therefore work outside the home. In Pakistan, women have a comparable role when it comes to ensuring the food security of the household, particularly in rural traditional settings. The management of the home, preparation and distribution of food have traditionally fallen to rural women. However, studies that comprehensively explore this topic of concentration and demonstrate the association between rural females' role in guaranteeing domestic food security are few and far between (Shelia, 2017).

LITERATURE REVIEW

In this regard, Madiha et al. (2020) stated that food security typically depends on a person's ability to maintain both the availability of a sufficient food supply and access to food. Contrary to popular belief, in agricultural productivity, women are more prevalent, particularly in food production. Women often go unrecognized in the agricultural industry because the majority of the things they produce are for domestic use and do not reach the market economy. According to data from Sudan, rural females produce sixty to seventy percent of the food in the majority of pastoral communities. Another study, Ibrahim (2018) argued that women had an important role in food production (both paid and unpaid work), revenue generation, food consumption, and household management in rural areas, but they had restricted possession of resources, such as apprenticeship jobs, education, and health care. Similarly, Kishwar et al. (2018) revealed that women consistently put the requirements of the family's food first. Compared to men, women always spend more money on their eating demands. In underdeveloped nations like Pakistan, domestic income, females' ability to make an income, their level of education, and their awareness of nutrient-dense foods all play crucial roles in ensuring domestic food intake and nutritious levels. Similarly, Abu and Aondonenge (2016) stated that females' control over home resources and decision-making had a positive impact on food consumption. According to Malapit et al. (2013), women's educational attainment positively influenced the food diversity and nutritional quality of their households. According to Erin et al. (2019), family food consumption and calorie intake were found to be positively impacted by the proportion of women who controlled household income. Likewise, Modirwa and Oladele (2017) presented that for food security, the family head's gender was crucial. Households with female heads were shown to be more food insecure than those with male heads as a result of their restricted access to productive resources.

Objectives

1. To identify the socio-economic factors affecting domestic food and nutrition security status.
2. To investigate women's role in each dimension of domestic food and nutrition security.

Hypotheses

1. H1. Relationship between females' education status and their role in domestic food and nutrition security.
2. H2. Relationship between females' income and their role in domestic food and nutrition security.

METHODOLOGY

The methodology of research is a term that describes the process used to carry out a particular piece of research. It describes the procedures applied to find and look at data about a particular field of study. The method used for research is therefore concerned with how a researcher plans their study in a way that enables them to obtain reliable and accurate data and accomplish their research objectives (Creswell, 2017). Measuring two variables and assessing their statistical link (correlation) with one another is part of non-experimental research techniques like correlational research. In the present study, the correlational research design was used (Agresti and Finlay, 2008). A total of 200 households (sample size) were chosen by using a simple random sampling technique. In this research, a primary woman (respondent) is a married woman who is

most involved in household tasks such as food preparation, processing, production, and consumption. She must be between the ages of 18 and 60. The Fitzgibbon table was used to estimate the sample size. (Fitzgibbon and Morris, 1987). There are 36 districts in the province of Punjab. Dera ghazi khan and Jam Pur were two selected districts at random. Two tehsils from each district were randomly chosen in the second stage. Five villages from each tehsil were chosen in the third step by using a simple random sample technique. Twenty households from each selected village making the selected sample size of two hundred respondents, which were selected through random sampling. To gathering data for this study, a face-to-face structured interview schedule was developed. The validity of the questionnaire's face and content was confirmed by the experts. Additionally, the researcher used SPSS Software version 24 to measure the items' reliability using Cronbach's Alpha Coefficient. Cronbach's alpha was calculated to be 0.76. A Field survey was used to gather primary data. A governmental report, records, working papers, and a published field survey were used to gather secondary data. Various descriptive and inferential statistical approaches were used to analyze the data. The world food program's seven-day recall food consumption score (FCS) was employed in stage one to assess the domestic food security situation, 2450 Kcal per day per person threshold for domestic food security (GOP, 2003). A household that satisfies these food security requirements would need to consume standard calories per person each day. In the second phase, binary logistic regression was applied to identify the socioeconomic variables affecting domestic food security. The dependent variable (Y = domestic food security) indicates the status as either food secure (1) or food insecure (0) and X indicates independent variables (Log ln [p/ (1-p)] = a + $B_0+Bx_1+Bx_2---+Bx_n$).

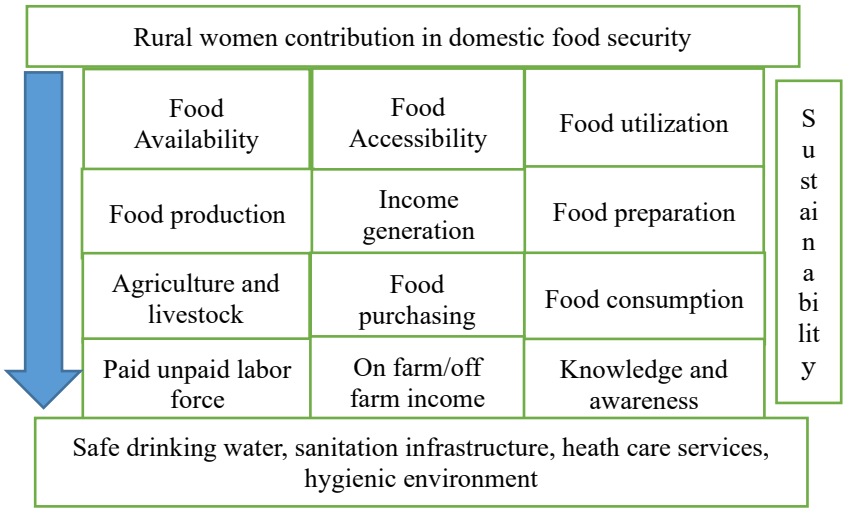

Figure 1. Conceptual framework

Food groups	Yes (1)	No (0)	Weight
Meat/ fish			04
Milk and dairy products			04
Pulses and legumes			03
Cereal and grains			02
Vegetables			01
Sugar and sweets			0.5
Oil and fats			0.5
Spices and condiments			0

FCS threshold		
Poor	(<) 28	Less than 1500 kcal
Borderline	28.5-42	Between 1500-1800 kcal
Acceptable	(>)42	Above 2100 kcal

FCS calculation= (Meat,Fish*4) + (milk and dairy products*4) + (pulses and legumes*3) + (cereal and grains*2) + (vegetables*1) + (sugar and sweets*0.5) + (oil and fats*0.5) +

Figure 2. Food consumption score Threshold

RESULTS AND DISCUSSION

Table 1: Distribution of respondents acoording to their socio-economic characteristics

Women Age (years)	Frequency	Percentage
Up to 25	92	46.0
26 to 35	37	18.5
36 to 45	52	26.0
46 to 55	11	5.5
56 and above	8	4.0
Women education	F	%
Illiterate	53	24.3
Primary	33	15.1
Middle	35	16.1
Matric	23	10.6
Intermediate	50	22.9
Graduations	18	8.3
Post- Graduations and above	6	2.8
Women income	F	%
No (Housewife)	64	32.0
up to 10000	77	38.5
10001 to 20000	34	17.0
200001 and above	25	12.5
Family size (Members)	F	%
Up to 5	107	31.9
6 to10	131	39.1
11to15	81	24.2
15 and above	16	4.8
Total	200	100.0

Table 1 shows the socio-economic characteristics of the respondents, 19.5 percent of respondents belong to 16-25years age group, 41.5 percent of respondents belong to 26-35 years, 10.5 percent of respondents belong to 36-45 years age group, and 23 percent of respondents belong to 46–55years age group, while 5.5 percent of respondents were belonging to 56 and above year's age group. In this regard, Ahmad and Sultan (2004) argued that women were more actively involved in household management and production activities throughout their prime years of productivity as opposed to later in life. Another study Akhtar (2008) revealed that a key factor in ensuring family food security among women was their age. With the aging of women came a reduction in domestic food security. Women were more active throughout their most productive years than they were as they get older.

Table 1 presents the educational attainment of respondents, 24.3 percent of respondents were illiterate, 15.1 percent of respondents had primary level education, 16.1 percent of respondents had middle-level education, 10.6 percent of respondents had matric level education, 22.9 percent of respondents had intermediate level education and 8.3 percent of respondents had graduation level education while 2.8 percent of respondents had post-graduation and above level education. In this regard, UNDP (2017) presented that the average number of schooling in Pakistan was 5 to 7 years. Due to patriarchal rural society and regional cultural norms, which provide a considerable impediment to female education, the situation for women's education was not adequate. In most developing nations, females produce between sixty to eighty percent of the food, accounting for half of the global food output. Nevertheless, women were still seen as domestic workers or farm helpers rather than as independent farmers and business owners. Similarly another research Proscovia and Berg (2012) stated that educated farmers were more inclined to adopt new technologies, and educating females would help increase agricultural output and incomes. Female farmers who had higher education were more likely to grow coffee, a high-value commodity, as well as to encourage other women farmers who were more prone than men to imitate women to do the same.

Table 1 shows that 32 percent of respondents had no income (housewife), 38.5 percent of respondents had up to 10000 rupees per month income, and 17 percent of respondents had 10001-20000 Rs per month income, while 20.8 percent of respondents had 20000 above per month income. According to, Umar et al. (2017) found that monthly income played a significant role in determining the food security of rural areas. Similarly, Fatma (2009) presented that the status of food security was highly correlated with household income. Compared to households with a single source of income, households with multiple sources of income (both farm and non-farm income) had greater food security. Access to sustainable food is fundamentally dependent on income.

Table 1 shows that 31.9 percent of respondents had 1-5 household members, 39.1 percent had 6-10 household members, 24.2 percent had 11-15 household members and 4.8 percent had 15 and above household members. In this regard, GOP (2017) presented that families in Pakistan tend to be large, with six to seven people living and eating in one house on average. Likewise, Adepoju and Adejare (2013) stated that the size of the household had a considerable, but unfavorable, impact on the level of food security. Greater financial strain and responsibility were placed on households with larger families. The amount of calories consumed per member in a household decreased by one unit as family size increased.

Table 2: Distribution of households according to domestic food security status (N=200)

HHFS	Frequency	Percentage
Household food security (HFS)	Count	%
Food secure	80	40.0
Food insecure	120	60.0
Household food insecurity access scale (HFIAS)	Count	%
Food secure (0)	80	40.0
Mild food insecure (1-9)	55	27.5
Moderately food insecure (10-18)	40	20.0
Severe food insecure (19-27)	25	12.5
Household hunger scale (HHS)	Count	%
None or light hunger (0-1)	85	42.5
Mild or moderate hunger (2-3)	90	54.0
Severe hunger (4-6)	25	12.5
Food consumption score/ Calorie intake (FCS)	Count	%
Poor (< 28) Less than 1500 kcal	25	12.5
Borderline (28.5-42) Between 1500-1800 kcal	95	47.5
Acceptable (> 42) Above 2100 kcal	80	40.0
Household dietary diversity score (HDDS)	Count	%
High dietary diversity (+ 6)	53	26.5
Medium dietary diversity (4.5- 6)	105	52.5
Low dietary diversity (< 4.5)	42	21.0

Table 2 presents the domestic food security situation in the study area, empirical findings show that 40% of households were food secure while 60% of households were food insecure. 12.5% households were severely food insecure. 47.5% of households had a borderline food consumption score while 52.5% of households had a medium dietary diversity score. Ibrahim (2018) demonstrated that rural women had a variety of responsibilities throughout their lives. Every woman's main duty was to take care of household members and hygiene. Women were inextricably associated with food management (dietary variety and calorie intake). To ensure food security, females were not only responsible for household duties but also for activities that produced food and generated revenue.

Figure 3: Females' role in domestic food security

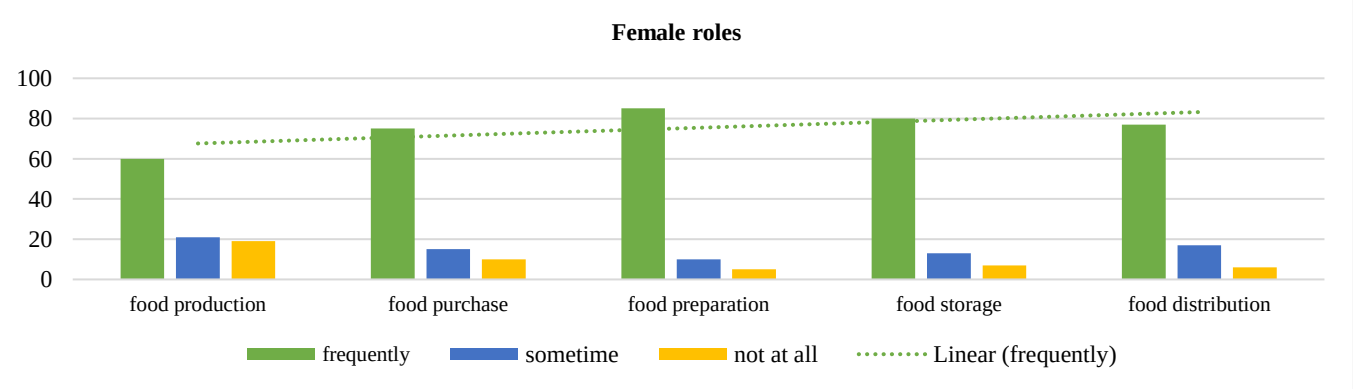

Figure 3 presents the rural females contribution in providing domestic food security. Results show that the majority 70% of females were frequently involved in different household food-related activities. Similarly, Ibrahim (2018) stated that rural women's key responsibility was supervision of the household and taking care of all matters related to food security which included food production to buying and utilization to distribution at the domestic level.

Table 3: Relationship between females' education and domestic food security status

Education	Food insecure household	Food secure household	Total
Illiterate	43	10	53
% within women education	81.1%	18.8%	100.0%
% within HFS	28.3%	8.3%	36.6
Primary	21	12	33
% within women education	63%	36%	100.0%
% within HFS	17.5%	10%	27.5
Middle	24	11	35
% within women education	68.5%	31.4%	100.0%
% within HFS	20%	9.1%	29.1
Matric	9	14	23
% within women education	39.1%	60.8%	100.0%
% within HFS	7.5%	11.6%	19.1
Intermediate	14	18	32
% within women education	43.7%	56.2%	100.0%
% within HFS	11.6%	15%	26.6
Graduation and above	9	15	24
% within women education	37.5%	62.5%	100.0%
% within HFS	7.5%	12.5%	20
Total	120	80	200
% within women education	60.0%	40.0%	100.0%
% within HFS	100.0%	100.0%	100.0%

Chi-square: 17.10, df: 5, sig: 0.001, Gamma: 0.790

Table 3 represents the relationship between females' education level and domestic food security status. Chi-square and Gamma value shows a significant and positive ($\chi2 = 17.10$, $p = 0.001$), ($\lambda = 0.790$) relation among the variables. It means there is a positive association between females' education level and domestic food security status. So, the hypothesis "higher the females' education level higher will be the domestic food security status" is accepted. In this regard, Parveen (2007) argued that education improves the financial status of women and gives them the ability to stand up for their rights. There was a positive association between the educational status of women and the provision of food for household members for food security. Similarly another study, Rehman et al. (2008) promoted the idea that education had the potential to elevate women's status since it may help them work more productively in paid employment, improving domestic food security. Higher-educated females were more likely to offer a variety of foods, enhancing domestic food security.

Table 4: Relationship between females' income and domestic food security status

Women income	Food insecure household	Food secure household	Total
No	91	24	115
% within women's income	79.1%	20.8%	100.0%
% within HFS	75.8%	20%	95.8
up to 10000	15	27	42
% within women's income	35.7%	22.5%	100.0%
% within HFS	12.5%	22.5%	35
10001- 20000	6	19	25
% within women's income	24%	75%	100.0%
% within HFS	5%	15.8%	20.8
200001 and above	8	10	18
% within women's income	44.4%	55.5%	100.0%
% within HFS	0.6%	8.3%	8.9
Total	120	80	200
% within women's income	60.0%	40.0%	100.0%
% within HFS	100.0%	100.0%	100.0%

Chi-square: 20.52, df: 3, sig: 0.00, Gamma: 0.420

Table 4 represents the relationship between females' income and domestic food security status. Chi-square and Gamma value shows a significant and positive ($\chi2 = 20.52$, $p = 0.000$), ($\lambda = 0.420$) relation among the variables. It means there is a positive association between females' income and domestic food security status. So, the hypothesis "higher the income of

females higher will be the domestic food security status" is accepted. In this regard, Bashir et al. (2012) argued that economically active women were more productive, which improved the situation of household food security. Households had the opportunity to improve their food quality and boost their financial resources thanks to the earnings of women. Because women typically contribute more money to the family's need for food, their income plays a crucial role in disadvantaged households.

Table 5: Logit regression

				95% C.I. for EXP(B)		
Variables	B	S.E	Exp (B)	Lower	Upper	Sig.
X1	-0.609	0.291	0.837	0.764	0.916	.02
X2	0.597	0.131	0.738	1.059	2.851	.00
X3	0.087	0.380	0.298	0.541	9.765	.04
X4	0.462	0.518	0.180	1.080	1.289	.02
X5	0.588	0.736	0.868	2.042	7.328	.00
X6	0.008	0.074	0.961	34.321	5.303	.00
X7	0.001	0.423	0.151	1.065	5.541	.03
X8	-0.662	0.941	0.313	3.744	8.061	.00
X9	0.126	0.281	0.718	0.370	7.982	.01
X10	0.338	0.406	0.619	0.435	0.882	.04
X11	0.564	0.620	0.395	1.280	2.518	.03
X12	0.151	0.349	0.398	1.590	3.868	.02
X13	0.834	0.556	0.817	1.056	2.892	.04
Constant	0.386	0.165	.02			.02
Wald		5.524				
-2 Log likelihood	168.333					
Cox & Snell R Square	0.738					
Nagelkerke R Square	0.583					
Total	200					

Table 5 shows the factors affecting the domestic food security status. Different socio-economic factors had a great impact on domestic food and nutrition security status.

X1: Age of women. The Age of women had a significant but negative affect on domestic level of food security. (B = - 0.608, p = 0.001) result demonstrated that an increase in age resulted in a reduction in domestic food security levels. Young to moderately aged women were more useful and increased the financial resources of the family. In this way, Ahmad, and Sultan (2004) also discovered an important link between the age of women and the level of food security in their families. Positions in domestic food security fell as women's ages increased. The aging of women reduced their level of cooperation in common and practical family activities.

X2: Education of women. Women's education was found to be a key factor in determining food security. There was a significant and positive relation among variables (B=3.597, p=0.001), an increase in female education led to an expansion in the level of food security. Successful women were more knowledgeable and aware of the importance of eating healthfully and using sterile products. They also had access to better employment opportunities and pay rates, all of which can contribute to improved food security. According to Parveen, (2007) stated that the level of education among women and their access to food was crucial. Including more women in instruction could reduce food uncertainty; stated that educated females had higher knowledge and awareness about the hygienic use of nourishing food and had better prospects for money generating than uneducated women. The level of food security was significantly influenced by household income.

X3: Occupation of women. Women's employment status essentially affects the family's household level of food security. There was a significant and positive association between the variables (B=0.087, p=0.001), it was shown that women's contributions to paid work increased the food security of families. Working women not only took care of their families and participated in board activities, but they also produced essential income for their families through their pay-age activities. Similarly, Roy and Niranjan (2005) described how females' income had a significant effect on domestic level of food security. For families with low incomes, women's wages were significant.

X4: Education of household head. The schooling of the family head was found to be a fundamental determinant of food security. A significant and positive (B = 0.462, p = 0.001) association was found between variables. In this regard, Ibrahim (2018) concentrated on the fact that a superior schooling level of the family head was critical and decidedly connected with food security status.

X5: Household income. Family income is exceptionally fundamentally impacted by family food security status. (B= 0.008, p=0.001 showed that any change in family pay caused expansion in family food security status. Another study Matchaya, and Pius (2012) revealed that increased household budgets as a result of increasing household income inevitably

enhance the level of domestic food security. The level of household food security was considerably positively correlated with household assets. Better pay families were more food secure as stood out to houses from little pay or little admittance to income valuable open doors.

X6: Household food expenditure. A key factor in determining the food security of a family is family food consumption. (B= 0.001, p=0.001) concluded that the rise in family food consumption increased in domestic food security. In this regard, Bashir et al. (2012) reported that 60% of families were spending more on their food needs in this way. Families who had access to enough food spent more on fruits, vegetables, and natural goods than reputable and seriously food-insecure families.

X7: Family size. Family size had an important but negative impact on food security. (B = -0.662, p = 0.001) Huge families tend to be more burdens on one another and place more load on family assets, which lowers their level of food security. Likewise, Aziz (2005) stated that family size and food security had a reverse relationship in Nigeria. Families with less reliable access to food had more relatives than families with more reliable access to food. The size of the family was so large that it had a negative impact on their financial situation.

X8: Earning members. Household earning members were significantly and positively associated with food security status. (B= 0.126, p=0.001) assigned that the growth in a family's procuring individuals caused an expansion in the family's food security. Moreover, Bashir et al. (2012) presented that in Punjab Pakistan there was a positive and critical relationship between food security status and the number of earning individuals. More family acquiring individuals mean more monetarily secure households.

X9: Household assets. Household assets were a fundamental factor in domestic food security. (B =0.338, p=0.001) shown that the expansion of family resources led to an increase in food security. The main resources, especially for rural families, are land and domesticated animals. The accessibility and availability of family food were improved by these resources. Similarly, Kimlong (2016) revealed the relative importance of domestic resources for the state of food security.

X10: Women's awareness and knowledge about nourishing food. The level of domestic food security was fundamentally impacted by female knowledge of healthy food. Women's knowledge increases family food security by one unit. In this regard, Mahfouz et al. (2016) described that female knowledge and awareness of nourishing food helped to increase family food consumption and dietary variety. It would be wise for taught females to become familiar with food handling, food preparation, and food storage.

X11: Women's indigenous knowledge for household management. Women's family activities have a significant and consistent relationship with the state of food security. (B = 13.338, p=0.001)Family care was a woman's primary responsibility, and executive exercises increased the likelihood that families will have access to food security. Likewise, Boakye (2012) found that women performed different roles, contributed to food production, bought food for utilization and storage.

X12: Women's intention of preparing nutritious food. The situation with food security had been significantly impacted by women's preparation of food. (B =0.834, p=0.04) Educated women set higher standards for the preparation of nourishing food. Similarly, Agwu and Irohibe (2014) explained that rural women had less knowledge and awareness of nourishing food. Pastoral females were less conscious of using food hygienically.

CONCLUSION AND RECOMMENDATIONS

There is adequate food for everyone in the world, but not everybody has access to it. Particularly in rural south Punjab, the situation concerning food security is worse. According to the empirical findings, 60% of households experienced food insecurity, while 40% of households were determined to be food secure. According to the empirical data, domestic food security is not necessarily interpreted in terms of national food security and sufficiency. The study's findings demonstrate that rural women are essential to ensuring domestic food security. They participated in income generation, worked as paid and unpaid laborers in the agriculture and livestock sectors, and their main responsibilities included food preparation, processing, buying, storing, distributing, and supervision of households. Females consistently exercised control over food consumption and dietary variety at the household level. The supply of domestic food security was positively impacted by women's education, occupation, household income, decision-making, household assets, household expenditures, and awareness of nourishing foods. It is recommended that women-focused policies be implemented to enable rural women to actively contribute to the provision and increase of domestic food security. Females should be encouraged to participate in income-generating activities at the family level to improve long-term food security. Women should be motivated to increase their knowledge, awareness, and education about food consumption and preparation.

CREDIT AUTHOR STATEMENT

Amara Amman: Conceptualization, conduct research, draft preparation, **Madiha Naz:** Supervision, **Tafoor Amjad**: Provide guidance in finalizing methodology, **Tahir Abbas**: Analyzed the data, **Saima Afzal**: Reviewing and editing manuscript.

COMPLIANCE WITH ETHICAL STANDARDS:

It is declare that all authors don't have any conflict of interest. Furthermore, informed consent was obtained from all individual participants included in the study.

REFRENCES

Abu, G., A. Soom and A. Aondonenge. (2016). Analysis of factors affecting food security in rural and urban farming households of benue state Nigeria. *International journal of food and agriculture economics, 1*(1), 1-6.

Adepoju, A.O. and K.A. Adejare. (2013). Food insecurity status of rural households during the Post-planting Season in Nigeria. *Journal of Agriculture and Sustainability, 4*(1), 16-35. (Doi: 10.22004/ag.econ.160140).

Agresti, A. and B. Finlay. (2008). Statistical options for the social sciences, 4th Ed. Upper Saddle River, NJ: Prentice Hall.

Agwu, E., A. and I. Irohibe (2014). Determinants of rural women's access to food security information in the Niger Delta, Nigeria. *Journal of sustainable environment and agriculture, 76*(11), 1-11.

Ahmad, F., & Sultan, M. (2004). Women's empowerment and mobility in Pakistan: result from a national survey. *Fifth annual research conference women's studies international forum, 7*(12), 4-16.

Akhtar, S. (2008). Trends in regional inequalities in Pakistan: evidence since 1998," *Lahore Journal of Economics, 13*(1), 205-220. (Doi:10.1080/1049650).

Bailey, K. (2017). The role of women in providing and improving household food security in sudan: implications for reducing hunger and malnutrition. *Journal of international women's studies, 10*(4), 10-20. (Doi:10.1080/10496505.2016.121).

Bashir, M.K., S. Schilizzi and R. Pandit. (2012). Determinants of food insecurity for landless households different from that of other rural household Pakistan. *Journal of agricultural sciences, 49*(1),363-370. (Doi: 10.22004/ag.econ.90632).

Boakey, W. (2012). Links between food price behavior and nutrition in the developing world *Journal of social sciences,* 5(2), 1-12. **(**Doi.https://doi.org/10.21083/surg.v5i2.1785).

Creswell, J. W., (2017). Research design: qualitative quantitative and mixed methods approach. *Sage publications, 1*(2), 1-80. (http://dx.doi.org/10.1080/19312458.2020.1812556).

Erin, L., S. Narayanan, M. Fontana and B. Kulkarni. (2019). Rural women's empowerment in nutrition: a proposal for diagnostics linking food, health and institutions. *Indira Gandhi Institute of Development Research, Mumbai. 1*(1),1-53.

FAO (2016). Women hold the key to building a world free from hunger and poverty But gender inequality putting a brake on sustainable development. (Doi:10.1037/0022-0663.82.1.33).

FAO (2022). The state of food and nutrition in the world building resilience for peace and food security. Food and Agriculture Organization of the United Nations Rome.(http://www.fao.org/3/a-I7695e.pdf).

Fatma, O. I. (2009). The role of women in providing and improving household food security in Sudan: Implications for reducing hunger and malnutrition. *Journal of international women's studies*, *10*(4), 144-167. (Doi: 10.4236/jss.2017.53013).

Fitzggibbon, T.C. and L.L. Morris. (1987). How to design program evaluation. Newbury Park, CA: Sage.

GOP (2003). Economic Survey of Pakistan, Ministry of Food and Agriculture. Finance Division, Economic Advisor's Wing, Islamabad, Pakistan.

GOP (2017). National food policy Government of Pakistan Ministry of National Food Security and Research Islamabad p1-28. Government of Pakistan. (Doi: 10.1093/ije/dym004).

Ibrahim, L. (2018). The relationship between socioeconomic factors and food security in pregnant women in Tehran. *Journal of Semiconductors, 18*(1), 41-83. (Doi: https://doi.org/10.17795/semj41483).

Kimlong, A. (2016). "The determinants of food security in rural Ethiopia: An empirical analysis of the effect of food aid on households". *Journal of The Network Consumer Protection in Pakistan, 1*(2),1-10.(Doi: 10.22004/ag.econ.155555).

Kishwar, M.S., M. Oliujjaman, M.A. Rahman and R. Akther. (2018). Rural women and food security in Mymensingh district Department of Rural Sociology, Department of Agricultural Finance, Bangladesh Agricultural University, *J. Bangladesh Agril. Univ. 12*(1),105–110.

Madiha, N., Izhar, A. K., Ashfaq, A. M., Babar, S. (2020). Women's contribution in provision of household food security: A study from rural areas of Punjab, Pakistan. Rawal Medical Journal, 45(1), 1-5.

Mahfouz, R, Joane M, Yonna S (2016). Evaluation of food security, eating behavior and awareness of low socio-economic Lebanese Women Living in Akkar. *Journal of comm pub health Nurs, 2*(16), 130-141. (Doi:10.4172/2471-9846.1000141).

Mahfouz, R, M. Joane and S. Yonna. (2016). Evaluation of food security, eating behavior and awareness of low socio-economic lebanese women living in Akkar. *J Comm Pub Health Nurs. 1*(2),1-141.

Malapit, H.J., S. Esha, A.R. Quisumbing and A. Ahmed. (2013). Women's Empowerment in Agriculture: What Role for Food Security in Bangladesh. *World development. 62*(1),11-52.

Matchaya, G., & Pius, C. (2012). Estimating effects of constraints on food security in Malawi: policy lessons from regressions quantiles. *Journal of applied econometrics and international development, 12*(2), 165-191.

Modirwa, S. and O.I. Oladele . (2017). Food Security among Male and Female-headed Households in Eden District Municipality of the Western Cape, *South Africa Journal of Human Ecology. 37*(1),1-10

Naz, M. Izhar, A. K. Ashfaq, A. M. and Babar, S. (2020). Rural women contribution in household food security in agrarian communities: a cross-sectional study of rural areas of Punjab, Pakistan. *J Agric. Res., 58*(1), 49-57.

Otunaiya, A.O. and O.S. Ibidunni. (2014). Determinants of Food Security among Rural Farming Householdsin Ogun State, Nigeria. *Journal of sustainable development in Africa,1*(1), 1-16. (Doi: http://dx.doi.org/10.20956/jars.v2i2.1479).

Parveen, S. (2007). Gender awareness of rural women in Bangladesh. *Journal of international women's studies, 9*(1), 253-269. (https://vc.bridgew.edu/jiws/vol9/iss1/14/).

Proscovia. R. N. and M. v. d. Berg. (2012). Effect of market production on rural household food consumption: Evidence from Uganda. *Journal of food security*, *11*(1), 1051-1070. (Doi:10.1007/s12571-019-00959-2).

Rahman, T., K. M. Aujla, M. Sharif and Z. Yasmin (2008). Gender dimensions of labor participation in vegetable farming system in district attock of Punjab Pakistan. *Journal of Agri sci*, *47*(1), 1-91. (Doi:10.25919/f6h5-k692).

Roy, T. K., & Niranjan, S. (2005). Indicators of women's empowerment in India. *Journal of Asia-Pacific Population Journal, 19*(3): 23-38. (Doi: https://doi.org/10.18356/b8bd2326-en).

Saddia, R., I. A. Khan, B. Shahbaz, M. Luqman and A. Chaudhry. (2017). Role of rural women in agriculture activities and household food security a case study in Faisalabad district. *Journal of Agri sci, 55*(3), 585-589.

Shelia, A. 2017. Women are the key to food security and rural development agriculture and rural development conference edition gender in agriculture sourcebook, 1(1), 1-792.

Umar, I. A., L. Ying., M. K. Bashir., M. Abid., F. Zulfiqar. (2017). Status and determinants of small farming households' food security and role of market access in enhancing food security. *Plos one, 1*(1), 1-15. (Doi: 10.1371/journal.pone.0185466).

UNDP (2017). Human development index. Indices and Indicators: Statistical Update Briefing. United Nations Development Program.