

Research Article



Perceptions of Senior Farmers Regarding their Advisory Role in Capacity Building of Young Farmers in Sargodha District, Punjab, Pakistan

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Abstract | This study was conducted to assess the perceptions of senior farmers for their advisory role in capacity building of young farmers in Sargodha district-Punjab, Pakistan. As per list obtained from District Officer Agriculture Extension, Sargodha, tehsil Sahiwal was randomly selected. Sahiwal comprises of 17 union councils; four union councils were randomly selected and two villages per union council were randomly selected. The list of potential old aged farmers those were not active in farming system (above the age of 60 years) was prepared with the help of Field Staff of the Extension Department of district Sargodha. Finally, 425 potential respondents were identified from which sample of 120 respondents was randomly selected. The data were collected by using interview schedule. Descriptive as well as inferential statistics were employed for interpretation of the desired results. Significant association was observed between age groups of the senior farmers and capacity building approaches or styles used by the senior farmers to train and educate young farmers.

Received | April 27, 2019; **Accepted** | August 15, 2019; **Published** | October 31, 2019

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Citation | Ashraf, E., H.K. Shurjeel, U. Mumtaz, M.Z. Khan and A. Naveed. 2019. Perceptions of senior farmers regarding their advisory role in capacity building of young farmers in Sargodha District, Punjab, Pakistan. *Sarhad Journal of Agriculture*, 35(4): 1045-1053.

DOI | <http://dx.doi.org/10.17582/journal.sja/2019/35.4.1045.1053>

Keywords | Perceptions, Senior farmers, Capacity building, Young farmers, Advisory services

Introduction

Gerontology is another emerging area in research and by incorporating constructs of gerontology in Agricultural Extension lot of issues and problems of elderly farmers could be addressed and solved. It provides relationship between different stages of life and work ethics covers many important aspects of human development in the form of different life events and experiences (Mayor, 2009). An alarming increase in elderly population in near future is

expected. Furthermore, most of this increase is expected in South Asia which will experience quiet drastic increase in elderly population approximately nine times during the period from 2010 and 2025. Lifespan will improve up to 75 years for males and 82 years for females (Rehmatullah, 2011). According recent global trends, the older population is more concentrated in urban areas. According to one report of United Nations (1993), the older population of the world may reach to 62% by the year 2025. Old-age is a fact and every human being has to face some time

in life. The need is to identify the ways and means to utilize the experiences of old-age population for knowledge sharing and for growth and development of new generation in every walk of life. This would also give the sense of participation to older people to play their role in the society while they are away from active participation.

Pakistan stands sixth among most populated countries in the world with population of 220 million by the year 2020. The common perception is sixty years and above population is increasing at high pace. In Asian nations, the numbers of aged people since 1944 in the overall population is calculated as ten million. By 2050, the number is expected to rise to fifteen million (United Nations, 2004). In Pakistan, the comparative ratio of senior and older population (more than sixty years) in 1950 was 205 million and this number was 606 million in 2000. The number is expected to rise to more than two billion by the year 2020 (United Nations, 2002).

Old-age is inevitable stage of human life measured by biological, social and financial factors. It can be taken as sequence of changing phenomenon from one group to another group of social contributions that is manipulated by social organization (Mishra, 2004). The elderly persons in a society are considered as the bedrock for existence of life in any form and are carriers of the past history. They are the carriers of traditions, culture, values and experiences, the source of inspiration for younger generations. The society may lose its stability if elders do not play their role. Healthy and progressive societies always treat their elders with high respect and consider them as most important part of life (Schoeni, 1992). Due to vast experiences, strong values, knowledge, and traditions, old-aged persons always have leadership role in society (Phua, 2000). In many countries, aging of the people inclines more in the rural areas if compared with the cities (Gerardo, 2005). This is due to rural-urban migration usually high in younger people and adults who migrate to cities seek employment and other business opportunities (Gustavo, 2008). Consequently, the elders generally stay behind at home in villages (Gerardo, 2005).

Lot of concerns of old aged people have emerged with the passage of time. There is growing need to study issues and problems related to aging process and work place. It is significant since at this time of information

age, every individual has to play his or her role in the development process of the society. Aging of the population is unavoidable factor and considered as most critical demographic event of the life (Saeed et al., 2011). Aged people have central role not only in family but also in all other social and professional areas of life. There is a severe need to ponder about the welfare and utilization of skills and experiences of old-age people in every walk of life. In addition, there is need to explore the role of old-age people in agricultural system through research to bring change in agricultural practices for coming generations on sustainable bases.

This is first ever attempt in Pakistan to understand the role of old-age farmers for capacity building of young farmers through skills and experiences they possessed. Nevertheless, there is hard to find a single study in the past in which the role of senior farmers was explored for capacity building of young farmers for agricultural development in the country. The present study was conducted to observe how elderly people could play their role in agricultural development such as crop production, crop protection, post harvest, family matters, community issues and provision of leadership in decision making at local level.

Research objectives

1. To explore demographic profiles of the respondents in the study area.
2. To identify perceptions of senior farmers regarding their advisory role in capacity building of young farmers in agricultural system.
3. To identify perceptions of senior farmers regarding their advisory role in capacity building of young farmers in livestock system.
4. To identify perceptions of senior farmers regarding their advisory role in capacity building of future farmers to cope with affairs at community level.
5. To identify skills possessed by senior farmers for knowledge transfer/advising to future farmers.
6. To identify advising styles of senior farmers of different age groups.

Materials and Methods

The study was conducted in district Sargodha to evaluate the perceptions of senior farmers regarding their advisory role in capacity building of future farmers. District Sargodha was selected as research

area. As per available statistics from Pakistan Bureau of Statistics (1998) total population of Sargodha district is 2,665,979 of which 28.1% is urban. The average annual growth rate is 1.97%

Population and sample

The population of the present study comprises of all senior farmers residing in the district Sargodha, Punjab, Pakistan. District Sargodha was purposively selected as the research area that is administratively divided into six tehsils such as Bhalwal, Kot Momin, Sahiwal, Sargodha, Shahpur, Bhera and Sillan wali. Tehsil Sahiwal was purposively selected for survey. Sahiwal comprises of 17 union councils; four union councils were randomly selected and two villages per union council were randomly selected. As per list provided by District Officer Agriculture, Sargodha, tehsil Sahiwal has 137 villages. Out of 137 villages, 8 villages were randomly selected. The lists of old-age farmers those were not active in farming system (above the age of 60 years) prepared with the help of Field Staff of the Extension Department of district Sargodha and finally 15 respondents from each village were selected for the survey purpose. Final sample for the study was 120 respondents of tehsil Sahiwal.

Instrumentation

Research instrument (interview schedule) for survey was developed as per research objectives. Instrument comprised of demographic profiles of respondent, advising role of senior farmers in agricultural system, livestock system to cope with affairs at community level and skill possessed by seniors farmers required for advising to young farmers. Likert type scales, dichotomous and open-ended questions were added in the instrument for each factor in the study. Content and face validity of the instrument was checked and improved as per expert's suggestions. Instrument's reliability was checked before actual study. The overall reliability coefficient Cronbach's alpha for complete instrument having 67-items was computed as 0.823 which was satisfactory to apply the instrument in the field.

Data collection and analysis

The data were collected by using interview schedule. The collected data, were coded and entered into computer on excel sheet and analyzed with the help of computer software Statistical Package for Social Sciences (SPSS). Descriptive as well as inferential statistics were employed for interpretation of the desired results.

Table 1: Distribution of respondents according to their demographic characteristics.

Items	Frequency	Percent
Education Primary	13	10.80
Middle	19	15.80
Matriculation	18	15.00
Intermediate	47	39.20
Bachelor	23	19.20
Age		
60-69	56	46.70
70-79	48	40.00
80-89	16	13.30
Farming experience		
40-49	54	45.10
50-59	50	41.60
60-69	14	11.60
Above 69	02	1.70
Land holding		
0-9	71	59.10
10-19	44	36.70
Above 19	05	4.20
Social status		
Lower	09	7.50
Middle	79	65.80
Upper	32	26.70
Tenancy status		
Landowner	99	82.50
Tenant	21	17.50
Marital Status		
Single	09	7.50
Married	100	83.30
Divorced	11	9.20
Children above 20 years		
Yes	86	71.70
No	34	28.30
Total	120	100.00

Results and Discussion

Demographics: Almost (47%) of the respondents were lying between the age group 60-69 years and (40%) of the respondents were between 70 to 79 years of age. Only (13%) were between the age group of 80 to 89 years. The mean age of the respondents was 71 years. Many of the respondents considered educated in study area since two-fifth (39.2%) of respondents was qualified up to intermediate level. More than (41%)

of the respondents had 50 to 59 years of experience in farming. Results depicted that respondents were well experienced since average experience calculated as 51 years. Almost (59%) of the respondents hold up to 9 acres land and considered as small farmers. However, there were large scale farmers as well. Majority of the respondents (83.3%) were married. Few (7.5%) were single while 11 respondents were divorced. Majority of the respondents (65.8%) belong to middle class. About 7.5% belong to lower class while 26.7% of the respondents belong to upper class.

Approaches used for capacity building of young farmers

Keeping in view the importance of different approaches used by the respondents for capacity building of young farmers, question was included in the demographic section regarding the ways used by senior farmers for capacity building of young farmers. Frequency distribution is given below.

Table 2: *Distribution of respondent according to the approaches used for capacity building of young farmers.*

Type of capacity building approach	Frequency	Percentage
By participation in field work	25	20.80
By advising young farmers in groups	14	11.70
Staying at home and advising young farmers	81	67.50
Total	120	100.00

The respondents were asked about the ways they involve in capacity building of young farmers. Results depicted that (20.8%) of the respondents were involved in the capacity building of young farmers by participation in field work since they think that capacity building is more effective in actual field conditions. About (11.7%) were doing capacity building by advising them in groups while a large percentage (67.5%) were advising young farmers by staying at home and young farmers generally visit them time to time for seeking guidance and exchange of experiences.

Senior farmers' perceptions regarding their role in capacity building of young farmers in agricultural system

Perceptions of senior farmers regarding their role in capacity building of young farmers in agricultural system were also evaluated.

Table 3: *Means, S.Ds. and ranks for perceptions of senior farmers regarding their advisory role in capacity building of future farmers in agricultural system.*

Items	n	Mean	Std Deviation	Rank order
Seed selection	120	4.216	0.522	15
Seed treatment	120	4.266	0.530	10
Seed rate	120	4.350	0.529	4
Selection of tillage	120	4.300	0.603	5
Sowing time	120	4.300	0.574	5
Land preparation	120	4.375	0.609	3
Benefits of early sowing	120	4.308	0.619	5
Losses of late sowing	120	4.183	0.502	16
Sowing techniques	120	4.258	0.587	11
Sowing method	120	4.141	0.612	19
Crop rotation	120	4.308	0.562	5
Inter-cropping	120	4.283	0.597	9
Inter-culturing	120	4.233	0.590	14
Use of farm yard manure	120	4.183	0.594	16
Selection of pesticide/insecticide	120	4.025	0.716	27
Pesticide application timing	120	3.816	0.767	30
Safe mode of using pesticide	120	3.941	0.690	29
Irrigation method	120	4.091	0.550	24
Irrigation techniques	120	4.125	0.477	22
No. of irrigation different crops	120	4.183	0.580	18
Selection of fertilizer	120	4.250	0.612	12
Fertilizer application time	120	4.510	0.630	2
Fertilizer application method	120	4.841	5.030	1
Latest chemical techniques	120	4.050	0.671	25
Crop harvesting time	120	4.050	0.646	25
Harvesting method	120	4.141	0.652	19
Proper crop storage	120	4.141	0.652	19
Traditional storage method	120	4.116	0.688	23
Latest Storage practices	120	3.967	0.819	28
Marketing of crops	120	4.242	0.648	13

Scale: 1= Very low, 2=low, 3=Moderate, 4=High, 5= Very High

The results depicted that senior farmer's perceptions about their advisory role in fertilizer applications method was between high to very high with maximum mean value as 4.841. Their perception regarding fertilizer time application was ranked second with mean value of 4.510 (from high to very high). The guidance regarding seed rate was ranked

fourth with mean value 4.350. Crop rotation and benefits of early sowing were collectively ranked fifth important practices in which capacity building of young farmers was evaluated. Selection of tillage operation and sowing time both were collectively ranked fifth among the listed practices. Intercropping received 9th rank with mean value of 4.283 (high). The results depicted that capacity building regarding seed treatment practices ranked 10th (4.266 as high), sowing methods 19th nineteen, fertilizer selection was at twelve (4.250 as high), crops marketing was 13th (4.242 as high), inter culturing was (4.233 as high) and pesticide application timing was ranked 30th lowest (3.816).

Table 4: Means, Standard Deviation score and Ranking for perceptions of senior farmers regarding their advisory role in capacity building of young farmers in livestock system.

Items	n	Mean	Std. Deviation	Rank order
Animal health problems	120	4.175	0.496	6
Animals food preparation	120	4.241	0.534	3
Animal Breeding	120	4.158	0.549	8
Animal feeding	120	4.258	0.526	2
Animal marketing	120	4.225	0.614	4
Animal shed management	120	4.316	0.621	1
Animal waste management	120	4.100	0.571	12
Farm management practices	120	4.150	0.528	9
Animal nutrition issues	120	4.150	0.574	9
Animal diseases and treatments	120	4.083	0.527	13
Help in livestock farm management issues	120	4.150	0.574	9
Record keeping issue	120	4.200	0.643	5
Share their experience for Increasing milk production	120	4.17	0.630	6
Different farm issues like Sanitation, fodder management	120	4.008	0.510	15
Various problem regarding livestock farming	120	3.950	0.532	18
Milking	120	4.033	0.533	14
Help in animal Vaccination issues	120	3.983	0.647	16
Animal health problem	120	3.958	0.737	17

Scale: 1: Very low; 2: low; 3: Moderate; 4: High; 5: Very High.

Perceptions of senior farmers regarding their advisory role

in capacity building of young farmers in livestock system

The third objective was related to perceptions of senior farmers regarding their role in capacity building of young farmers in livestock system. Various questions related to livestock management were asked to the respondents. Various livestock management practices were enlisted and farmers were asked to rate each practice according to their perceived role in capacity building of young farmers regarding these livestock practices. Following table shows the collected information in this regard.

Results depicted that the respondents were highly efficient in providing the advisory role in animals' shed management practices and animal feeding techniques with highest mean values 4.316 and 4.258 respectively. Their advisory role was also majorly supporting the young farmers in managing the animals' food preparation techniques and animals' marketing techniques with mean values 4.241 and 4.225 respectively. Results show that senior farmers' were playing their role in capacity building regarding record keeping issues of animals and increasing milk and meat production with mean values 4.200 and 4.175. They were also sharing the information regarding animals breeding techniques, farm management, animal nutrition issues, resolving farm management issues, animals' diseases and their treatment techniques, milking techniques and animal's waste management. The other miscellaneous issues related to the livestock were also advised by the senior farmers to future farmers.

Perceptions of senior farmers regarding their advisory role in capacity building of young farmers to cope with affairs at community level

The fourth objective was related to perceptions of senior farmers regarding their role in capacity building of young farmers in coping with various community based affairs.

The results showed that respondents were of the view that their advisory role in capacity building of young farmers to cope with pedigree and inheritance issues with highest mean score 4.39 following the community issues and resolving family issues which ranked second and third with mean value 4.37 and 4.325, respectively. The minimum mean value 4.058 was computed of voluntary contribution in social activities of the young farmers. The results depicted that the advisory role of senior farmers in capacity

building of the young farmers is of great importance which leads towards agricultural development.

Table 5: Means, S.Ds. score and Ranks for perceptions of senior farmers regarding their advisory role in capacity building of future farmers to cope with affairs at community level.

Item	n	Mean	Std. Deviation	Rank order
Resolving family issue	120	4.325	0.504	3
Community's issue	120	4.375	0.503	2
Pedigree and inheritance issues	120	4.391	0.539	1
Community growth & development issues	120	4.258	0.572	6
Marriages related issues as well as intra family conflicts	120	4.291	0.627	4
Provision of coordination & leadership to young in resolving matters at community level	120	4.275	0.579	5
Community based knowledge sharing with young farmers	120	4.258	0.557	6
Participation in forming of association to resolve local body Issues	120	4.200	0.543	9
Participation in punchait system	120	4.258	0.252	6
Voluntary contribution in social activities of young farmers	120	4.058	0.639	10

Scale: 1: Very low; 2: low; 3: Moderate; 4: High; 5: Very High.

Skills required for knowledge transfer to young farmers as perceived by senior farmers

The fifth objective was related to perceptions of senior farmers regarding skills that must be possessed by senior farmers for knowledge transfer/advising to young farmers. According to Ashraf et al. (2018) the triangle of success i.e. education, research and extension of knowledge cannot be completed unless the message delivered to the end users.

Results in the table-6 showed that respondents were of the view that skills for knowledge transfer to the young farmers are pretty much important and lying from moderate to high on five Point Likert-type scale. The knowledge and training play significant role in the farmer's agricultural activities (Shurjeel et al., 2016). In this regard, all questions asked were essential however, the community practice was at highest among all with mean score of 4.266 and the

minimum mean score was computed for field trips with mean of 3.216. The results depicted that skills possessed by senior farmers have key role in transfer of knowledge to young farmers as well as solving other social or agricultural development issues.

Table 6: Means, S. Ds and Ranks for skills possessed by senior farmers for knowledge transfer/advising to young farmers.

Items	n	Mean	Std. Deviation	Rank order
Community practice	120	4.266	0.670	1
Informal discussion	120	4.133	0.647	2
Providing historical context in telling stories	120	4.008	0.628	3
Group discussion	120	3.766	0.730	7
Panel discussion	120	3.816	0.685	5
Field trips	120	3.216	0.997	9
Experience sharing	120	3.808	0.689	6
Interactions in different Environment	120	3.833	0.639	4
Information technology	120	3.608	0.736	8

Scale: 1: Not possessed at all; 2: Possessed up to some extent; 3: Possessed up to moderate extent; 4: Possessed up to good extent; 5: Possessed up to very good extent.

Association between age groups of senior farmers and their style (approach) for capacity building

Association was checked by using chi-square between different age groups of senior farmers and their style or approaches used for advising or capacity building of young farmers. The following hypotheses were formulated to evaluate the association.

H_0 : Age groups of senior farmers and their capacity building approaches are independent

H_1 : Age groups of senior farmers and their capacity building approaches are not independent

Cross tabulation in Statistical package for social sciences (SPSS) was used in order to apply chi-square test of independence of two categorical factors to check the association of age groups of senior farmers with different approaches used by them for capacity building of young farmers. The results are given in the following table.

The result shows that 25 farmers between age group of 60-69 years of age were doing capacity building during field job, 14 were doing in group meetings

Table 7: Cross tabulation of the age groups and different capacity building Approaches.

Age group	Item	Capacity building approach or style			Total
		Capacity building during field job	Capacity building in group	Capacity building while staying at home	
60- 69	Count	25	14	17	56
	% within Age group of Senior Farmers	44.6%	25.0%	30.4%	100%
	% within Cap. building approach	100.0%	100.0%	21.0%	46.7%
	% of Total	20.8%	11.7%	14.2%	46.7%
70-79	Count	0	0	48	48
	% within Age group of Senior Farmers	0.0%	0.0%	100.0%	100%
	% within Cap. building approach	0.0%	0.0%	59.3%	40.0%
	% of Total	0.0%	0.0%	40.0%	40.0%
80-89	Count	0	0	16	16
	% within Age group of Senior Farmers	0.0%	0.0%	100%	100%
	% within Cap. Building approach	0.0%	0.0%	19.8%	13.3%
	% of Total	0.0%	0.0%	13.3%	13.3%
Total	Count	25	14	81	120
	% within Age group of Senior Farmers	20.8%	11.7%	67.5%	100%
	% within Cap. Building approach	100%	100%	100%	100%
	% of Total	20.8%	11.7%	67.5%	100%

Table 8: Chi Square Tests.

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	66.032	4	.000
Likelihood Ratio	82.587	4	.000
Linear-by-Linear Association	46.235	1	.000
N of Valid Cases	120		

Table 9: Symmetric measure.

		Value	Approx. Sig
Nominal by	Phi	0.742	0.00
Nominal by	Cramer's V	0.525	0.00
Total valid cases	120		

while 17 by staying at home. Furthermore, senior farmers of age group of 70 – 79 and 80-89 years were preferably doing capacity building of young farmers while staying at home due to age factor. Hence, the results from table-7 show clear association of 70-79 and 80-89 age groups of the senior farmers and their capacity building approach while staying at home. While looking at the chi square test value from table -8 $\chi^2(4) = 66.032$, $p = .000$ which is less than the significance level (0.05) and tells statistically significant association among age groups of the senior farmers and capacity building approaches used by them for young farmers. Phi and Cramer's V

both measure the strength of association. Therefore phi=0.742 and Cramer's V =0.525 indicated degree of association between the age groups of senior farmers and different approaches used for capacity building of young farmers.

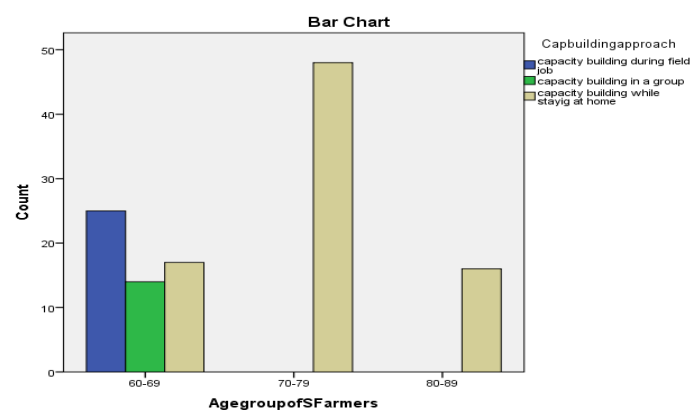


Figure 1: Age groups of senior farmers and their preferred capacity building approaches.

The clustered bar chart option allows a relevant graph produced that highlights the group categories and the frequency of counts in these groups. Along x-axis represents the age groups of senior farmers and y-axis shows the frequency of the respondents used different capacity building approaches of young farmers. The displayed graph shows the use of different approaches by different age groups of senior farmers. The bar chart clearly shows association among two age groups

of 70-79 years and 80-89 years with capacity building approach when senior farmers prefer to stay at home.

Conclusions and Recommendations

This study was designed to explore the role of elderly farmers for knowledge transfer and experience sharing with young farmers in the country. The role of old-age farmers are generally decreases with growing age. Therefore, this study explored the demographic profiles of the aged respondents in the study area. Farmers above the age of 60 years were the main respondents. Objectives were designed to measure active role of old-age farmers in capacity building of young farmers in different farming and community level activities. The results showed that old-age farmers inclined to play their positive role in the capacity building of young farmers. Hence, it is inferred from the results of the study that at different age levels, senior farmers still seek their contribution in sustainable agricultural development in the country in one way or the other. It is further concluded from the results that all senior farmers do not get equal opportunities for capacity building of young farmers in three mentioned areas such as agricultural system, livestock system and community affairs in the study area. Due to this reason, perceptions of the respondents varied during the survey in the study area.

In addition, it is also inferred that elder farmers are excellent source of conventional knowledge, wisdom and experience in the field of agriculture. This knowledge and experience provide foundation for future capacity building in agriculture extension system for young farmers. It is therefore highly encouraged that Extension system must take necessary measures to involve all old-age farmers for taking advantages from their knowledge, wisdom and experiences for mentoring and solving imminent problems of young farmers. Similar conclusion was drawn by [Chikaire et al. \(2015\)](#) in their study and said that training and capacity building of staff and human resources are important to meet the needs of the clients and day-to-day emerging changes in job descriptions and field work. They also pointed out that mentoring of young individuals is important capacity building method in extension work. Senior researchers, extension field staff or co-workers who have more experience in agriculture, livestock and other professional affairs of extension jobs are vital sources to be utilized for extension work to train

young individuals.

Keeping in view the results of the study, it is recommended that

- The Government must establish family counseling sessions for collaborating with NGO's for enhancing the value of elderly people in society. It is important to involve young people especially in rural areas for capacity building. Old-age farmers have got experience and therefore can share their views for imparting technical knowledge and skills in the field
- Government must have some kind of mechanism to monitor all organizations, departments in public and private sector working for the welfare of the aged people.
- Government should start technical projects collaborating with technical and vocational training institute for aged people where they spend their time in preparing valuable products for earning.
- In decision making, seniors must be involved as they know more how to control any type of problem.
- Social security services and pension paid social assistance should also be offered on competitive bases to old-aged people. So, the aged who cannot move much due to some disability should be visited and treated by mobile team of doctors and physiotherapists to provide health services to them at their homes.

Novelty Statement

The concept of gerontology is first time incorporated in any research study of agricultural extension in Pakistan. The authors used the expressions of senior and young farmers which were rarely mentioned in extension education research in the country. The study of aged farm population provides additional insight of marginalized, ignored and experienced human resources. These resources should not allow frittering away.

Author's Contribution

Ejaz Ashraf conceived the idea for study, supervised overall research process and finalized the write up of the manuscript. Hafiz Khurram Shurjeel, Umar Mumtaz and Muhammad Zafarullah Khan helped in the preparation of the instrument, data collection, data analysis and in corrections of the final write up.

Abdul Naveed reviewed and corrected the document for final submission. There is no conflict of interest among the main author and the co-authors of this study.

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