A STUDY ON PHYSIOLOGICAL PROFILE AND SOCIO-ECONOMIC STATUS OF FEMALE FARM WORKERS IN RUDRAPUR TAHSHIL

Abstract

In this study exit information about socio economic condition of female farm workers through SESS scale. Socioeconomic status is indict condition of respondent that includes such factors as like age, education, family type , family size and income, occupation, sanitation facility and agriculture land etc. and these socio-economic profile is provide the appropriate perspective of social background of the respondents. The present data was carried out Rudrapur Tahsil. The results Defined that maximum female farm workers were the age group of up to 35 years and most have living type of house is kaccha and some have no drinking water facility so they have use another source of water. Here also present Physical fitness of respondent level of female farm worker who engaged in paddy cultivation. Physical characteristics were judge by using Harvard step stool test and VO2 Max, BMI,. Majority of respondents were having mesomorphic body type and female farm workers physical fitness was unsatisfactory.

Keyword: Female Farm Worker, Socio economic status, Physical Fitness, Physiological assessment.

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I. INTRODUCTION

Female farm worker participation givea important and vital role in agriculture sector and allied field They give necessary contribution to the farming growth and different activity of house hold and substance strategies. Female farm worker compered to male take away a very heavy working load both in the house and on the house, with very limited approach and control over the resources essential for farming or home circle. Their role and limit of involvement in farm activity is varieswidely among splitsecological sub-zones,, farming system, caste, class, socio-economic status of families, etc. Female farm worker's work in agriculture has become more revealed over the last few decades as female farmers get more involved in agricultural activities, and we get result productivity is more increasing in crop production. Agricultural work is more laborious and energy demanding, with tasks that vary according to the farming needs of transplanting, winnowing, harvesting, and storing cereals & grains. This study is conducted female farmer's socio-economic condition and Physical fitness on the basis of vo2max BMI and Harvard step stool test. Fitness is the term in which the capacity to carry out every time activity without exorbitant fatigue and with sufficient energy in reserve foe emergency. It supply appropriate energy to perform greater amount of work. Physical fitness also determined by the maximum oxygen intake or maximum aerobic capacity.In our economy system, very few scientific effort have been formed to examine the actual participation of female farm labor in crop cultivation and other auxiliary activities at the farm level while evolutive and disseminating suitable agricultural technology for the small and marginal farmers.

II. METHOD AND MATERIAL

The location of the study was Rudrapur Tahsil in Eastern Uttar Pradesh . The descriptive data was collected all 120 respondence using the interview schedule on personal and socio economic status of farm women carried out in 12 village in RudrapurTahsil. A meeting was made to all the selected respondents anterior to data collection in order to establish a report with the respondent as well as with owners to ensure full cooperation from them.The socioeconomic Status scale was adopted to find out the back ground information of the respondents. In this investigation was involved 120 farm women were selected out through randomly selected for the study. The detailed schedule was formulated and use to get the information on various aspect related to the factors such as education, age , size of family. The information covereddifferent facet pertaining to general information about the family, land holdings, crops cultivated, livestock and other assets. It was pretested before undertaking the socioeconomic survey by administering the schedule to selected farmers whose primary occupation is agriculture. The respondent physical fitness is also assessed by taking different measurement of height and weight, BMI. The collected **data** was analyzed using descriptive and **frequency analysis** techniques by **IBMSPSS Software.**

Physical Fitness Index = $\dfrac{\text{Duration of stepping} \times 100}{\text{Sum of I II III min recovery heart reat}}$

Classification of physical fitness based on the physical fitness score physical fitness index Upto 80-Poor, 81-100 Low average, 101-115 High average, 116-135 Good, 136-150 Very good, Beyond 150- Excellent. Source: Varghese et al (1994)

Physical fitness on the basis of aerobic capacity (VO2 Max) is present the maximum capacity of Oxygen consumption. VO2 max was estimate by using the following formula to determine the physical fitness.

VO2 Max (l/min) = 0.023X Body weight (Kgs) -0.034XAge (yrs) +1.65

$$\text{VO2 Max (ml/kg/min)} = \frac{\text{VO2 Max (l/min)}}{\text{Body weight (kgs)}} \times 100$$

BMI (Body mass index)

Body mass index or Quetelet index was derived by measuring weight and height of the respondent using given formula.

$$BMI = \frac{\text{Weight(kg)}}{\text{Height}^2\text{(m)}}$$

Classification of BMI is less than 18.5 - 20 Low weight normaland 20 – 25 is coming in category normal If BMI is greater than 25 - 30 is categorized as obese grade I and if BMI is greater than 30 it is categorized obese Grade II.

Physiological Workload of respondents during Paddy cultivation

AHR = Average working heart rate – Average resting heart rate
Total cardiac cost of work (TCCW) = CCW + CCR
Cardiac cost of work (CCW) = AHR x Duration of work

Cardiac cost of rest (CCR)
= (Average recovery heart rate – Average resting heart rate) x Duration of recovery

Energy Expenditure (KJ/min.) = 0.159 x Average working heart rate (bpm) – 8.72

$$\text{Physiological Cost of work} = \frac{TCCW}{\text{Total time of activity}}$$

Physiological Workload Index

Physiological work load	Physiological variables	
	Energy Expenditure (Kj /min)	Heart Rate(beats/min)
Very light	Up to 5	Up to 90
Light	5.1 -7.5	91 – 105

Moderately heavy	7.6 – 10	106 -120
Heavy	10.1 – 12.5	121 – 135
Very heavy	12.6 – 15	136 -150
Extremely Heavy	>15.0	>150

III. RESULT AND DISCUSSION

In paddy cultivation mostly activity are women dominated activity. In Uttar Pradesh more than 70% female farm workers are involve in paddy cultivation such as seedling, transplanting, winnowing, harvesting, sun drying, sieving, cleaning and storage. In all activity of paddy they expense more energy during performance. The energy costs of work is therefore, a measure of physiological work load in a task and thereby the given occupation.

1. **Socio- Economic Characteristics Of Female Farm Worker In Rudrapur Tahsil:** Socio economic characteristics, it is found that the the given graph present of living in a type of the house of the female farm workers in which 29% respondent living in mixed house and 24% respondent belonged to the Kaccha House and the lowest percentage of the respondents 11% living in Juggi .
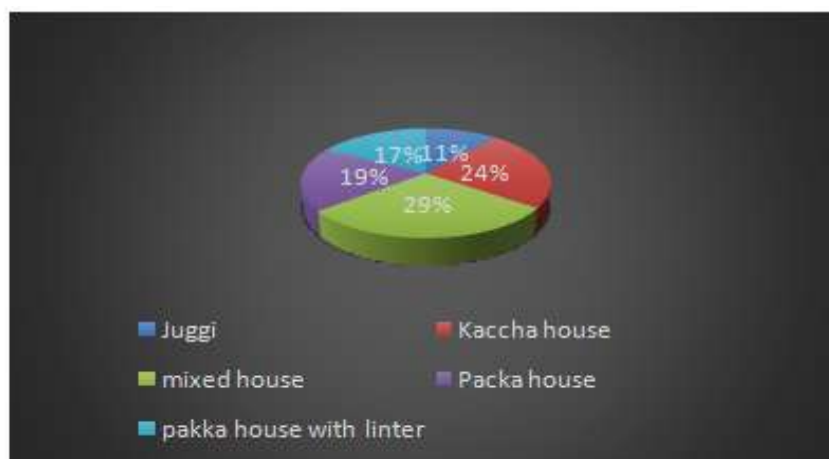

Figure 1: Distribution of respondent on the basis of living type of house

Figure 2 further revealed that the majority of the respondent more 32.5% were won agriculture land (less than one acr.) followed by 18.3% were farming on own agriculture land but no irrigation facility. Only 4.2% respondent no agriculture land and they do labour work another's farm.
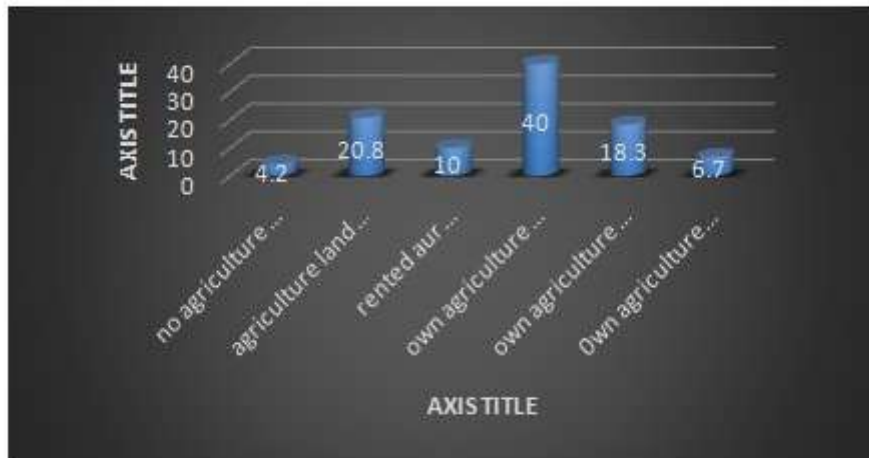
Figure 2: Distribution of respondent on the basis of agriculture land

Figure: 3 revealed that more than 30.8% were multiple sources of drinking water with pakka drainage and 28.3 % were individual water facility along with kaccha drainage and only 1% were suffering from drinking water is arrange from other sources.
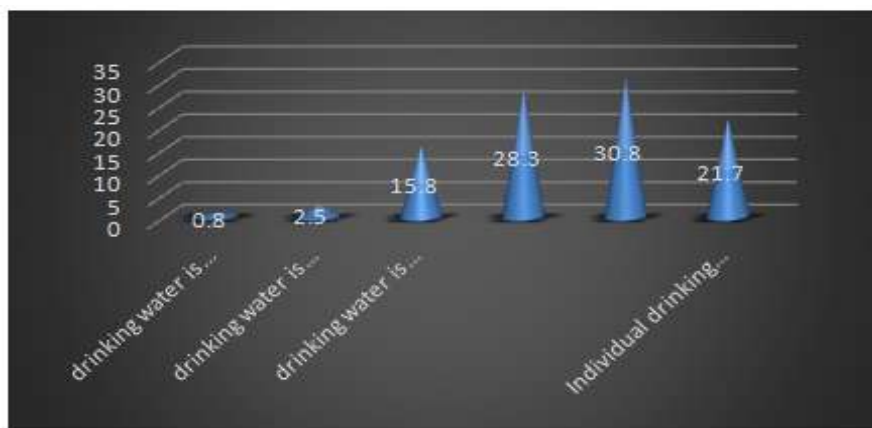

Figure 3: Distribution of respondent on the basis of Drinking water facility

Figure: 4 present the data of sanitation facilities in this 47.5% of the farm women have individual toilet facility without water compared 15 % farm women have individual toilet facility with water and more critical condition 14.2 % farm women have no availability of toilet facility and 4.2% farm women were use individual pit toilet. it was also fund that the majority of respondent 14.2% were use community sanitation facility without water compared 5% use community toilet facility with water.

Figure 4: Distribution of respondent on the basis of sanitation facility

Table 1: Socio- Personal Characteristics of Female Farm Worker in Rudrapur Tahsil

S.No.	Categories		Frequency	Percentage
1.	Age	Young (up to 35 year)	48	40.00
		Middle (36 to 55 year)	43	35.83
		Old (above 55 year)	29	24.16
2.	Education	Illiterate	32	26.66
		Primary education	67	55.83
		High school	16	16.33
		Intermediate	05	4.16
3.	Family type	Nuclear family	56	46.66
		Joint family	64	53.33
4.	Family size	Small (1 – 4 member)	29	24.16
		Medium (4 – 8)	61	50.83
		Large (above 9)	30	25.00
5.	Social participation	Without any official position	12	10.00
		No position but active participation in village activity.	52	43.33
		Official in more than one organization	40	33.33
		Financially contribution and raising fund.	16	13.33

Table:1 It is clear from the result the majority of the farm women (40%)were up to 35 age group and higher percentage of farm women (55.83%) were educated up to primary level and more than half and the total respondent (53.33%) were from nuclear family group and followed by most of the farm women had medium size of family and the higher percentage of the farm women (43.33%) had no position but active participation in village activity and lower percentage of respondent (10%) had without any official position.

2. **Assessment of Physical Fitness of Rural Women, who involved in Farming Activity:** The term physical fitness was commonly defined as the capacity of the body to carry out of the hole day's activities without any fatigue. In present context, this term is considered as a measure of the physical ability work efficiently and effectively in leisure activities, to be healthy to protest hyperkinetic syndromes and to meet emergency situations.

Table 2: Physical Fitness Test of Respondents

PFI Level	No. of women workers (%)	
	Frequency	**Percentage**
Poor		
Low average	24	20
High average	14	11.66
Good	65	54.16
Very good	17	14.16
Excellent	---	---

Table 2 showed that the majority 54.16% of respondents was good category, and 20 % respondents was belonged to the low average category.

3. **Physical Characteristic of Women Respondents:** The physical fitness level was considered as the good measure of individual capacity for doing manual work. The basic need for maintaining productivity is a higher capacity to perform efforts proficiently.

Table 3: Physical Characteristics of the Selected Respondent.

Physical characteristic	Mean ± Standard deviation
Age	41.18 ± 11.3
Hight	151.93 ± 5.1
Weight	56.15 ± 10.9
BMI	24.33 ± 4.7
VO2 Max	27.57 ± 8.03

Table 3: show that the physiological characteristics of the female farm worker selected for agriculture activates to carryout the identified maximum drudgery prone activities in agriculture land. The mean age of the female farm workers was 41.18 years and height was 151.93 cm. The mean body weight was 56.15 kgs. The calculation of Body Mass Index (BMI) revealed that the average BMI was 24.33 and almost all the female farm workers fell in the normal range. The VO2Max estimated based on heart rate was 27.57.

4. **BMI of the Respondents:** Body Mass Index is a simple index of weight for height that is commonly used to classify underweight, overweight and obesity in adults.

Table 4: BMI of the Respondents Involved in Paddy Cultivation.

BMI categories	Frequency	Percentage
<18.5 Underweight	32	26.66
18.5 – 22.9 Normal	69	57.5
23.0 – 24.9 at risk of obesity	28	23.33
25.0 – 29.9 Obese- I	11	9.16
>30 Obese – II	---	---

Table: 4 The majority of respondents 57.5% normal BMI and only 9.16% respondent to belonged to obese-I category, underweight respondent are 26.66% and no any respondents in obese grade II.

5. **Physiological Workload of Respondents during Paddy Cultivation:** Physiological workload is influenced by the physical fitness, number of hours spend in sleeping, types of food consumed, nutrition, basal metabolic rate (BMR) and energy expended while working which can be indirectly measured by measuring oxygen consumption and heart rate. Physiological workload of farm women in storage of paddy was studied in term of heart rate and energy expenditure

Table 5: Physiological Workload of Respondents.

S.No.	Physiological parameters	Respondents Mean ± SD
1.	Average resting heart rate, (beats/min)	87.86 ± 1.15
2.	Average working heart rate (bets/min)	105.31 ± 1.58
3.	Average energy expenditure (Kj/min)	6.99 ± .34
4.	Average TCCW (beats)	791.50 ±122.13
5.	Average physiological cost work (bets/min)	26.38 ± 4.07

IV. CONCLUSION

It can be concluded that the higher percentage belonged that Young female farm worker mostly engaged in farm activity and mostly farm women educated primary level education and some farm women have no own sources of drinking water facility the

dependent other sources of water. Female farm workers have more agriculture activity but their physical fitness is After investigate the physical fitness of female farm workers involved in agriculture activity be said that the physical fitness level of respondents was unsatisfying. It can be concluded that the physical fitness of female farm workers in involved in paddy cultivation was unsatisfactory due to heavy work load, poor nutritional status, less resting period etc.

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