

Effect of Agricultural Chemicalization on Health and Sanitation of Farm Women and Children

Riti Chatterjee¹ and Sankar Kumar Acharya²

¹MSc(Agriculture) in Department of Agricultural Extension, Department of Agricultural Extension
Bidhan Chandra Krishi Viswavidyalaya, Mohanpur, Nadia, 741252

²Department of Agricultural Extension, Department of Agricultural Extension
Bidhan Chandra Krishi Viswavidyalaya, Mohanpur, Nadia, 741252
E-mail: ¹ritichatterjee2015@gmail.com, ²acharya09sankar@gmail.com

1. INTRODUCTION

Women are the lifeline and backbone of every society. From the dawn of civilization their role is silently appreciated without economic recognition. Man received lion's share of income and recognition for their economic contribution, while most of women's work remains unpaid, unrecognized and undervalued because of faulty concept of labour force participation (HRD Report Govt. of India). Household or domestic work is not considered as economic activity, mainly because of its use value than exchange value (Debra Osnowitz, 2009), which indicates reason behind neglect of women's economic contribution. Farm Women of Pandua block, Hooghly District, West Bengal are not exceptional. If measured by the extensiveness and intensiveness of their involvement, farm women shoulder much more burden than man (Nirmal Chandra, 2013). Many of such activities are drudgery prone to varying degree. Even women suffer from different health problems which adversely affect their working efficiency and family welfare. Women have shorter time to rest than men and environmental degradation is increasing women's workload (Janet, 1995).

2. OBJECTIVES:

1. To assess the extent of effects of chemicalization in agricultural sector on farm women and children.
2. To study the way of their livelihood and health parameters as an indicator of this harm.

3. MATERIAL AND METHODS

Total of 50 subjects of five age groups (20-30yrs,30-40,40-50,50-60 and above 60yrs) from two villages of Pandua block of Hooghly District, who were involved in farmland works, were selected purposively for the study. The subjects who had

body temperature not above 99° F, blood pressure 120/80 ± 10, and heart rate 70-90 bpm were selected for the experiments. In order to collect the reliable experimental data, the selected subjects were given enough rest before putting them on selected tasks.

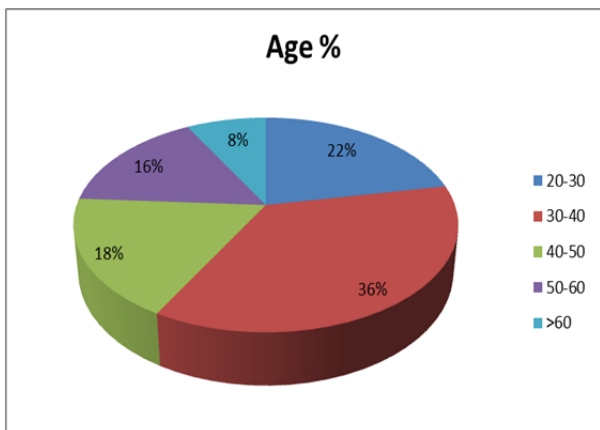
Criteria of measuring the physiological parameters:

1. Height
2. Weight
3. B.M.I (weight/height)
4. Blood Report
5. Main & Chronic Health Problems
6. Age
7. Number of children
8. Size of holding
9. Literacy and
10. Chemicals use

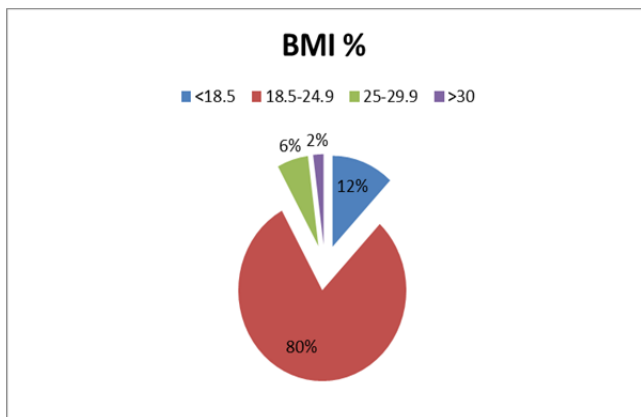
4. RESULTS

According to the survey, the main characteristics in the result can be identified as follows.

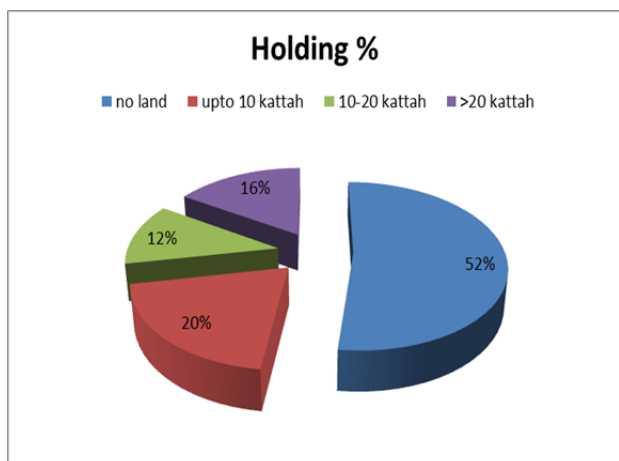
1. Age: Maximum number of respondents (58%) are of younger age (20-40), 34% are middle aged and rest are old women.



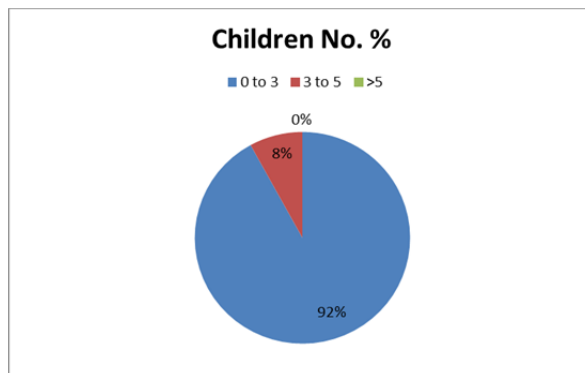
2. BMI: BMI of most of the respondents (80%) within healthy range, so obviously their weight are at par their height and good (74%), though 18% are under weight.



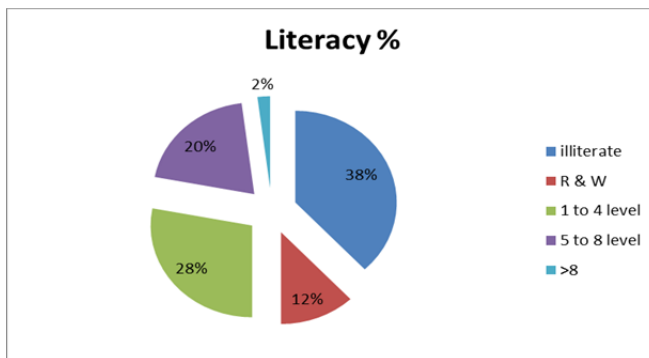
3. Holding Size: It is very heart breaking that 52% respondents have no land. They are working on landlord fields while 48% have land to a small extent.



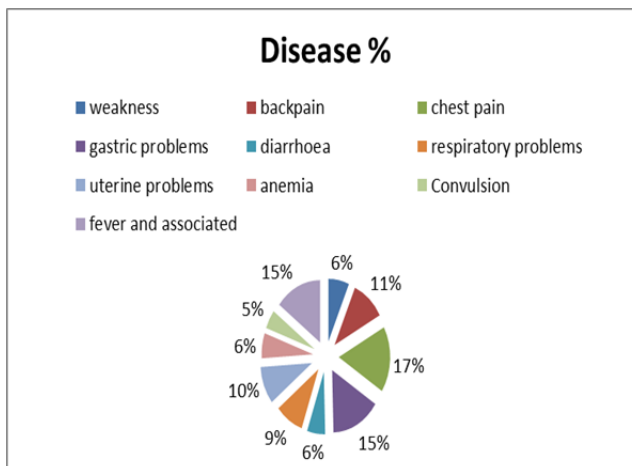
4. Children: The respondents are to some extent aware about present birth control policies, having 3 children per couple.



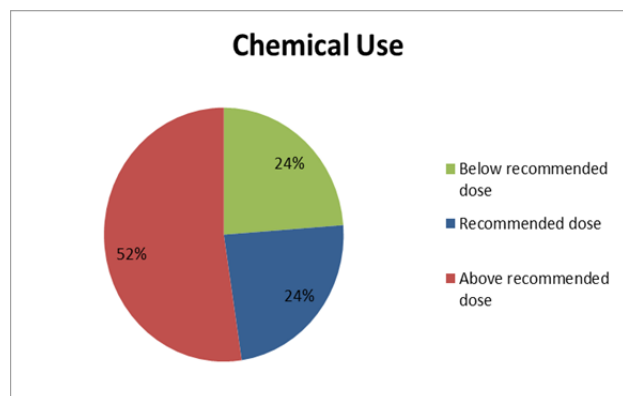
5. Literacy: Although literacy rate is very poor. 38% women are totally illiterate, 12% can read and write, 28% have primary education, and above eighth standard is only 2%.



6. Diseases: Main 9 types of problems are prevalent in the area. Among these problems, 17% is chest pain, and 15% is gastric problems. Besides fever(15%), uterine problems(10%) are also prevailing at a noticeable rate. Diarrhoea(6%) is also occurring frequently.



7. Chemicals: Half of the chemicals (52%) used are of above recommended dose, which is of very high concern. 24% of each of them are above and below recommended dose.



Majority of the population under the survey are poor, undernourished farm women. Their Height ranges from 4.2-5.3 feet & weight varies from 43-56 kg, which is not a good measure at all. Average daily work-hour in farmlands is estimated to be 8-10 hours, which exceeds 12 hours in peak crop seasons, leading to severe exposure to chemical pesticides & other pollutants, causing several diseases & physical abnormalities, which is not even detected by them until it goes up to extreme level. This is supposed to be due to their low standards of education (most of them are barely 4th standard pass). Moreover, their low hygienic status (having no sanitary bathroom in most of the huts) & poor standards of nutrition (main food is fermented rice; Panta Vat & boiled potato, rarely substituted with seasonal vegetables & pulses; almost no animal protein supplement), has made the situation worse.

5. DISCUSSION

The exposure to the pollutants in the field can easily be blamed. Because the toxicological effects of pollutants can play an important role on the etiology of several diseases in humans, such as mutagenicity and carcinogenicity (Tabrez et al., 2014). And as several organo-chlorine pesticides (OCPs) are still in use in developing countries like India, and Exposure to OCP is a risk factor to female cancer because their potential of estrogenic activity (Rachon, 2015) and their immunosuppressive and development of tumor properties (Iscan et al., 2002), clearly relating to their miscarriage & uterine-cervix abnormalities.

Moreover, Prolonged exposure to OCPs can affect the liver & kidney functions (Peres et al., 2006), disruption of endocrine system (Colborn et al., 1993), mental & psychomotor development (Sagiv et al., 2008), neurological & immune system disorders (Karmaus et al., 2003), risk of breast, lung, cervix & prostate cancer (Ahmed et al., 2002). Additionally, earlier studies in India on pesticide residue detection in human breast milk were confined to OCPs mainly

(Mishra and Sharma, 2011), making it the main pathway of affecting infants, though indirectly, but severely.

Another main source of hazards is poor sanitation. One serious problem that affects the quality of the region's groundwater is leaching of nutrients from the soil and percolation into the aquifer to groundwater system, which is especially evident in areas dominated by agriculture activities (Rahmati and Melesse, 2016), causing nitrate & heavy metal pollution in groundwater sources. Excess nitrates in the drinking water can cause health risks such as conversion of hemoglobin to methemoglobin which depletes oxygen levels in the blood in infants (Gao et al., 2012), gastric problems in adults (Almasri, 2007), decreased functioning of the thyroid gland, cancer due to formation of nitrosamines (Elisante and Muzuka, 2016).

6. CONCLUSION

It is evident how chemicalization in Agricultural sectors is affecting the livelihood of farm women and children in rural tracts. Moreover, their poor way of living and lack of proper health awareness are other two synergistic factors to the previous harm. If not controlled beforehand, it will not only ruin our present but also will destroy future scope and workforce of agriculture.

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