

WOMEN COTTON PICKERS' PERCEPTIONS ABOUT HEALTH HAZARDS DUE TO PESTICIDE USE IN IRRIGATED PUNJAB

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ABSTRACT:- In Pakistan, cotton crop has special importance from the perspective of largest employment generation both for males and females in the production and value chains. Cotton picking is primarily a female specific activity in all cropping zones of Pakistan. Women cotton pickers mostly belong to poor rural society involved in this labour force to feed their families. Cotton pickers in Pakistan face some serious health related problems due to heavy use of pesticides on cotton crop. The present study was designed to investigate the problem faced by women cotton pickers and their role in household decision making. Overall 150 women cotton pickers were interviewed from Bahawalnagar, Sahiwal and Vehari districts of cotton-wheat zone of the Punjab. Summary statistics of women cotton pickers' showed mean average age was 33 years and had 2.4 years of formal schooling and 10 years of cotton picking experience. The main reasons for cotton picking reported were to reduce family financial burden (30%) followed by better access to food and resource (23%) and better education of children (21%). Majority of the respondents (97.33%) reported that the mode of payments of cotton picking was in cash and the most of the respondents (83.70%) reported that they got wages in time. Only few respondents (8.70%) were aware of health hazards due to pesticides and only 10% women wear protective clothes during cotton picking. Majority of the respondents (76%) wash their clothes after cotton picking whereas almost all the respondents wash their hand after cotton picking. The women cotton pickers faced health problem, tiredness (54.5%), mental disturbance (9.90%) and fatigue (8.00%). More than 58% women reported their involvement in household decision making regarding food and groceries while 30.6% women involved in decision about education of children. It is suggested that the female cotton pickers should be educated about the importance (in terms of disease treatment and long-run health costs) of using safety measures during and after cotton picking.

Key Words: Cotton; Women Pickers; Pesticides; Health Hazards; Safety Measures; Pakistan.

INTRODUCTION

Agriculture sector has immense importance in Pakistan's economy because of its 21.4% share in GDP

and provides employment opportunities to 45% population of Pakistan. Agriculture has critical importance to economic growth, exports, income and food security. Agriculture growth

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stood 3.3% as compared to previous year (GoP, 2013). Pakistan's economy depends heavily on cotton crop which significantly contributes by providing raw material to the textile industry, such as cotton lint as an export item. It accounts for 7.0% of value added in agriculture and 1.5% of GDP (GoP, 2013).

Pakistan has fourth position among cotton producers after China, India and USA and 3rd position among cotton consumers in the world ranking (GoP, 2013). Worldwide, women perform several labour intensive jobs in agriculture such as weeding, hoeing, grass cutting and picking. In Pakistan, women of rural areas are extensively involved in crop production but their contribution to agriculture sector labour force is mostly un-paid. Rural women play a significant role in cotton picking because this is exclusively female activity and 89% women are engaged in it (Zarimedia, 2013).

Cotton picking is an important source of employment for rural women, providing supplementary income to rural farm and non-farm households. Mostly they are illiterate and completely depend on wages and earnings from cotton picking activity. On an average, they have to work 8h a day and picking 40-50 kg of cotton. The women are busy in cotton picking for 3-4 months. Females involved in this activity from all age groups and most of them belonging to landless households, who are generally the poorest population (Sayeed, 2003).

In Pakistan, cotton is picked manually contrary to America, Canada and other western countries, where mechanical picking is done. Cotton picked by hands is best in

quality. Picker women are paid in two ways; 1) paid in rupees on the basis of their picked cotton; ii) given specific portion of their picked cotton. Women cotton pickers face some serious issues of health and hygiene as well as low wage rates. Health problems like skin and internal organs diseases (Jamali, 2009) arise due to intensive use of pesticide on cotton crop. The present study was conducted to ascertain the female cotton pickers' awareness about health hazards of pesticides.

MATERIALS AND METHOD

The present study is based on primary data collected from three districts namely Bahawalnagar, Sahiwal and Vehari from the cotton-wheat cropping zone in 2013. From each district, 50 women cotton pickers were selected as respondents. Thus, total 150 women cotton pickers were taken using random sampling technique.

To compare the categorical responses between districts chi square test was applied, whereas to compare the average values of different numerical variables and their statistical significance F test was incorporated. The data was analyzed by using Statistical Package for Social Sciences (SPSS version 17).

RESULTS AND DISCUSSION

Socioeconomics Characteristics

Data revealed overall combined average age of respondent as 33 years whereas, the respondents belong to Vehari district were older (39.26 years) while respondents in Bahawalnagar were quite young (26.92 years). Usher (2006) reported that women of

all age groups were involved in cotton picking. Malik (2003) also concluded that average age of rural women cotton pickers was 29.22 years. Education level of most of the respondent observed was under primary whereas overall cotton picking experience recorded was 10 years, highest (14 years) in Vehari district (Table 1). Overall combined average family income of the respondent was Rs.9862 whereas average family expenditures were Rs.10497. Comparison across districts shows that monthly family income and expenditure were highest in Sahiwal (Rs.14600 and Rs.12040, respectively) compared to other districts.

Overall results show that in most of the respondents (30%) family financial burden decline followed by better access to food and resources (23%) and education of children (21%). However, own needs and health were the other reasons reported by 13% and 12% women, respectively (Table 2).

About 90% women were given light refreshment at working place. More than 60% women cotton pickers had provision of clean drinking water while 41% reported that transport facility was provided by the owner farmers (Table 3). The results are consistent with Haq (2007) who reported that 80% women were involved in cotton picking in cotton wheat cropping zone.

Female Involvement

Overall results show that on average 1.75 female family members were involved in cotton picking. The cotton pickers have to travel 5.80 km daily for cotton picking from their homes to the farms. On an average, they spent about 7h daily and picked 29kg cotton per women. They remained busy in cotton picking business for about 23 days in a month. The involvement in cotton picking, distance traveled for picking, time spent in picking, cotton picked and number of days spent in picking per month were significantly lower in

Table 1. Socio-economic characteristics of respondents of the study area

Socio economic characteristics	Sahiwal	Bahawalnagar	Vehari	Overall	F. Stat
Age (years)	32.78 (10.86)	26.96 (8.26)	39.26 (10.40)	33.00 (11.06)	24.15***
Education (years)	2.76 (3.68)	2.58 (2.61)	1.86 (2.25)	2.40 (2.92)	2.66*
Picking experience (years)	11.42 (8.44)	5.38 (3.38)	14.24 (6.81)	10.35 (7.49)	5.69**
Family income (Rs. month ⁻¹)	14060.00 (11310.84)	10969.39 (5266.25)	6474.00 (5727.55)	10497.99 (8487.81)	11.53***
Family expenditure (Rs. month ⁻¹)	12040.00 (6871.89)	10800.00 (5202.04)	6746.00 (5800.36)	9862.00 (6374.83)	10.65***

Figures in parenthesis are standard deviations

*, **, *** = Significant at 10%, 5% and 1% level, respectively

Table 2. Reasons for cotton picking (percent response)

Reason of cotton picking	Sahiwal	Bahawalnagar	Vehari	Overall
Reduce family financial burden	22.0	33.0	16.0	30.0
Education of children	30.0	14.0	40.0	21.0
Own needs	16.0	12.0	8.0	13.7
Health	10.0	10.0	16.0	12.0
Better access to food and Resources	22.0	31.0	20.0	23.0

Table 3. Availability of facilities to the women cotton picker (percent response)

Facility	Sahiwal	Bahawalnagar	Vehari	Overall
Transport	44.00	53.20	42.00	41.00
Water	70.00	93.90	38.00	67.10
Light refreshment	74.00	100.00	98.00	90.60

Sahiwal district as compared with other sample district (Table 4).

Picking wage rate were significantly higher in Vehari district as compared with other sample districts. The delay in wage payments was reported by female of Vehari district only. The satisfaction level about wage rate was comparatively higher in Sahiwal district than that of other districts. Ruma et al. (2004) stated that cotton pickers females are involved in cotton picking for 2-3 months per year.

Health Hazards

Overall scenario shows that only 8.7% female cotton pickers were aware about the health hazards of pesticides. However, more than 10% of pickers wear protective clothing during cotton picking. The awareness level about health hazards of pesticide was significantly higher in Bahawalnagar district as compared with other districts. Majority of the

respondents (76.7%) reported washing of clothes after cotton picking and almost all the respondents (100%) reported washing of hands after cotton picking. In Sahiwal district none of the respondents were aware about health hazards of pesticides and use of protective clothing during cotton picking.

These results are consistent with Jabbar and Mohsin (1992) who stated that 32% women were aware of the side effects of pesticides and only 5% were taking precautionary measures (Table 5). The results were consistent with Haq (2007) who reported that 75% cotton pickers oriented with health hazards of pesticides on human beings, 17% of respondents had little knowledge in this regard and 8% considered it harmless to human health. Garcia (2003) stated that cotton pickers rarely covered their mouth and nose during picking resulting in respiratory track problems.

Table 4. Women involvement in cotton picking and payment of wages*(Average value)*

Variable	Sahiwal	Bahawal-nagar	Vehari	Overall	F-test
Total family members involved in cotton picking	1.54 (0.73)	1.54 (1.03)	2.18 (0.98)	1.75 (1.01)	06.75**
Distance traveled for cotton picking (km)	2.40 (2.05)	8.86 (4.43)	6.16 (3.77)	5.80 (3.58)	63.49***
Daily time spent in picking (hours)	6.06 (1.42)	7.88 (0.83)	7.48 (1.55)	7.13 (1.49)	16.96***
Daily cotton picked (kg)	23.23 (9.92)	32.32 (9.77)	31.60 (6.05)	29.05 (9.64)	16.60***
Picking days (month)	19.16 (6.70)	25.68 (4.64)	24.82 (3.64)	23.22 (5.88)	23.61***
Wage rate (Rs.kg ⁻¹)	7.28 (1.02)	6.49 (2.00)	7.66 (1.75)	7.16 (1.37)	17.29***
Payment mode (% response)					Chi Square Value
Cash payment	100.00	91.50	100.00	97.33	08.75**
Commodity payment	-	8.50	-	2.70	
Payment time (% response)					
Timely payment	100.00	100.00	52.00	83.70	55.65***
Delay payment	-	-	48.00	16.30	
Satisfaction about wage rate (% response)					
Satisfied	74.00	46.90	50.00	57.00	08.92**
Not satisfied	16.00	53.10	50.00	43.00	

*Figures in parenthesis are standard deviations**** and *** = Significant at 5% and 1% level, respectively***Health Problems Faced by the Cotton Pickers**

Overall results shows that more than half of the respondents (54%) reported tiredness as the main health problem they face while cotton picking followed by mental retardness (9.90%) and fatigue (8%). Respondents of Sahiwal and Bahawalnagar districts also reported the tiredness and mental retardness as major health problem they face while respondent of Vehari face cough and

tiredness as main problem reported almost 21% of the respondents (Table 6). About half of the respondents (50%) reported that there was availability of Hakeem while almost half of the (49.60%) recorded availability of doctor in emergency.

Ruma et al. (2004) found that female cotton pickers felt stomach problems sometimes during or after picking cotton and also felt weakness and tiredness and also are faced by skin burning and eye irritation.

Table 5. Percentage response of awareness about health hazards due to pesticides

Respondents' awareness about pesticides		Sahiwal	Bahawal-nagar	Vehari	Overall	Chi-Square value
Aware of health hazards of pesticides	Yes	-	18.0	8.0	8.7	25.797***
	No	100.0	82.0	92.0	91.3	
Protective clothing during cotton picking	Yes	-	8.5	22.0	10.2	18.356***
	No	100.0	91.5	78.0	89.8	
Washing of clothes after cotton picking	Yes	100.0	94.0	36.0	76.7	34.595***
	No	-	6.0	64.0	23.3	
Washing of hands after cotton picking	Yes	100.0	100.0	50.0	92.0	16.876***
	No	-	-	50.0	18.0	

*** = Significant at 1% level.

Table 6. Percent response regarding health problem faced and availability of medical facility

Burden during cotton picking	Districts			Overall	Chi-Square value
	Sahiwal	Bahawal-nagar	Vehari		
Tiredness	63.20	87.20	20.90	54.50	69.751***
Mental retardness	21.10	12.80	2.30	9.90	
Fatigue	2.00	8.00	14.00	8.00	
Disturbance	5.30	-	2.30	2.00	
Pain in body	-	-	10.00	3.300	
Headache	5.30	10.00	12.00	7.300	
Skin irritation	-	-	4.70	2.00	
Asthma	-	-	9.30	4.00	
Cough	-	-	20.90	8.90	
Fever	-	-	14.00	5.90	
Eye irritation	-	-	11.60	5.00	
Medical facility available					
Hakeem	44.90	46.00	62.50	50.40	7.596**
Doctor	55.10	54.00	37.50	49.60	

** and *** = Significant at 5% and 1% level

Mansour (2004) showed that adverse health effects which female cotton pickers face include acute and persistent injury to nervous system and lung damage. Jamali (2009) reported that rural women of Pakistan have to face many problems during their agriculture related activities. They suffer from blisters, skin rashes caused by chemical sprays on cotton.

Social Well-being of Cotton Pickers

More than half of the pickers (59%) reported better access to food followed by better access to clothes and sanitary conditions (32.60%) as a result of earning from cotton picking. All the respondents of Bahawalnagar district reported change in their social well-being while in Sahiwal and Vehari around (9%) respondents recorded no change in their present status. Priorities of the respondents in spending their income earned from cotton picking revealed that about 53% spend their income on domestic needs while about 23% respondents spend on children education and dowry of their adults. However, the respondents of Bahawalnagar district are spending highest (64%) on

domestic needs and dowry purpose (26%) while respondent of Vehari shows highest response (32%) to education of children (Table 7). The results were in line with Oladeji et al. (2007) who stated that women participation in income generating activities like cotton picking has significantly improved their quality of life and health status. Ferdoos (2007) stated that rural married women prefer to work instead of staying home by helping their husbands and achieve a higher standard of life.

Involvement of Women Cotton Picker in Household Decision Making

Overall results show that more than half of the respondents (58%) reported that they participate in decisions regarding food and groceries followed by education of children (30%). In Vehari district almost all the respondents involve in household decision making while few respondent (14.30% and 16.70% from Sahiwal and Bahawalnagar districts, respectively) reported that they were not involve in household decision making (Table 8).

Table 7. Percent response in social well-being and spending of wages

Improvements	Sahiwal	Bahawal-nagar	Vehari	Overall	Chi-Square value
Better access to food	52.40	60.10	65.20	58.90	18.356***
Better cloth and sanitary conditions	37.80	39.90	26.30	32.60	
No change	9.80	0.00	7.60	8.50	
Spending of wages					
Domestic needs	48.00	64.00	48.00	53.30	35.234***
Children education	28.00	10.00	32.00	23.30	
Dowry purpose	24.00	26.00	20.00	23.40	

*** = Significant at 1% level.

Table 8. Percentage involvement of women cotton picker in household decision making

Household decision making	Sahiwal	Bahawal-nagar	Vehari	Overall	Chi-Square value
Food and groceries	38.00	53.30	26.30	58.90	62.316***
Education of children	34.00	6.70	47.40	30.60	
Marriage of children	14.00	23.30	26.30	5.60	
Not involvement	14.30	16.70	0.00	4.80	

*** = Significant at 1% level.

CONCLUSION AND RECOMMENDATIONS

Present study was conducted in cotton-wheat cropping system of the Punjab. The women cotton pickers were mostly from the non-agriculture families with very low education level. Mostly women were married and living in nuclear family system. The main reasons reported by the women for cotton picking were to meet the domestic needs, education of children, own needs, and health expenses. As cotton picking is full day job, most of the respondents could not give proper time to their families. The present study recommends that:

- Awareness campaign may be launched about the health hazards of heavy pesticide usage on the health of cotton pickers.
- The female cotton pickers should be educated about the use of protective measures (wearing of protective clothes, gloves and mask) in picking and after picking (washing of clothes on daily basis, washing of hands and bathing).
- Medical facilities should be enhanced in the rural areas in case of any disease attack in

cotton picking area. It is also suggested that cotton growers should be persuaded to provide gloves and masks to the female cotton pickers besides other facilities.

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