

Awareness about Personal Protective Equipments and Health Problems among Poultry Workers

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Abstract

Background: Taking protective equipment is important for poultry workers as they are at risk of poultry hazard. Use of personal protective equipment (PPE) is essential for preventing & controlling diseases experienced by poultry processing workers.¹

Aims and Objectives: To assess the awareness about personal protective equipments and health problems among poultry workers.

Method and materials: Descriptive cross-sectional study was conducted under the guidance of the Department of Community Medicine, National Institute of Preventive and Social Medicine (NIPSOM), Dhaka, from March to June 2006 on 100 poultry workers who were selected purposively from six poultry farms from the area of Gazipur districts. Informed consent was obtained and structured questionnaire was used to collect data through face to face interview. Data was edited, processed and analyzed both manually and used of SPSS version 10.

Result: Mean age was 27.49% with SD \pm 9.84 years, highest age range 59% was 20-30 years. Regarding level of education & economic status revealed that 43% were illiterate and 72% earned 2000-3000 taka monthly. 20% had highest work experience of 6-8 years. 82% of the respondents thought that personal protection is necessary during working in poultry. 79% of the respondents knew the name of PPE. But only 42% use PPE and 58% of the respondents did not use it. Among the user 16% use PPE regularly and 26% use PPE irregularly. Result showed significant association between education and knowledge of diseases of transmission ($p < 0.004$). Observing health hazard 34.71% had respiratory problem 27.27% skin problem 23.14% eye problem. Significant association found between itching (skin problem) and use of PPE ($p < 0.004$).

Conclusion : Literate person had more knowledge about disease transmissions. The respondents who used PPE suffered less from health problems. For the safety of poultry workers advocacy arrangements of training program and formulation of guideline and regulations are important points to be considered.

Key words : Awareness, Personal protective equipment (PPE), Health problem, Poultry worker.

Introduction : The poultry industry includes places such as hatcheries and farms where chicks are grown, feed mills, where grains are stored, selected and mixed for hatcheries and processing plants. Poultry industry plays important role in the agro-based economy of Bangladesh. It is one of the growing sectors and fitting example of how private initiative flourishes in an enabling environment vision and policy. The number of poultry farms has increased from 9750 in 1991 to 163193 in 2001.² Poultry

workers include poultry growers and their employees, service technicians of poultry processing companies, caretakers, farm manager, layer barn workers and chick movers and chick moves at movers at egg production facilities.³ They are constantly exposed to agents causing health hazard in poultry industry. The expansion of poultry industry largely depends on the prevention and control of contagious diseases as well as on the use of personal protective measures by the workers working in poultry farms. Recent outbreak of highly pathogenic "Avian Influenza" in poultry has a new threat to poultry industry of Bangladesh. Appropriate disease prevention and management through bio-security is important of rearing poultry.⁴

Therefore, we must give special attention to poultry workers, because they spend the most of their time in the poultry premises and experience the greatest risk of exposure to a variety of contaminants including organic dusts, gases such as ammonia and microorganisms like viruses, bacteria, and fungi that can cause illness. Respiratory problem like allergic reactions, asthma, and hypersensitivities, pneumonitis, organic dust toxic syndrome (ODTS) can develop from prolonged exposure to air borne contaminants.⁵ Skin problems like dermatitis, rashes irritation, itching, ear problems like hearing loss and tinnitus, chemical exposures like irritation of the eyes are common hazards. Uses of PPE, maintenance of personal hygiene are important preventive measures against above health hazards.⁶

Method and Materials : Descriptive cross-sectional study was conducted under the guidance of the Department of Community Medicine, National Institute of Preventive and Social Medicine (NIPSOM), Dhaka, from March to June 2006 on 100 poultry workers who were selected purposively from six poultry farms from the area of Bagher bazar, Madhab Khola, Gargoria & Mawna at Gazipur districts. The data were collected from the respondents through face-to-face interview by using a structured questionnaire. Informed consent was taken before interview. The obtained data were analyzed manually and also by using SPSS version 10.

Result : A total 100 poultry workers were interviewed Mean age was 27.49% with (SD \pm 9.84) years highest age range 59% was 20-30 years of age. Male respondent was more. Economic status of the workers

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were very low, 72% of the respondents earned 1000 to 2000 taka per month (mean 2172.50, SD ±709.38). Regarding poultry workers experience 5% had more than 3 years and 21% had 6-8 years experience in working poultry farm. (Mean 1.72, SD ±0.965) (Table I).

Table 1 : Distribution of respondents by their Socio-demographic Characteristic:

Age of respondents in years	Frequency	Percentage (%)
<20	16	16.0
21-30	59	59.0
31-40	17	17.0
>40	8	8.0
Mean 27.49 S D ±9.840		
Monthly income in taka	Frequency	Percentage (%)
1000-2000	72	72
2000-3000	15	15.0
3000-4000	5	5.0
>4000	8	8.0
Mean 2172.50 SD ±709.38		
Length of services in years	Frequency	Percentage (%)
<3	59	5.9
3-5	15	15.0
6-8	21	21.0
>8	5	5.0
Mean 1.72 SD ±0.965		

Education level revealed 43% were illiterate, 37% primary, 14%secondary and about 3% were HSC passed. (Figure 1)

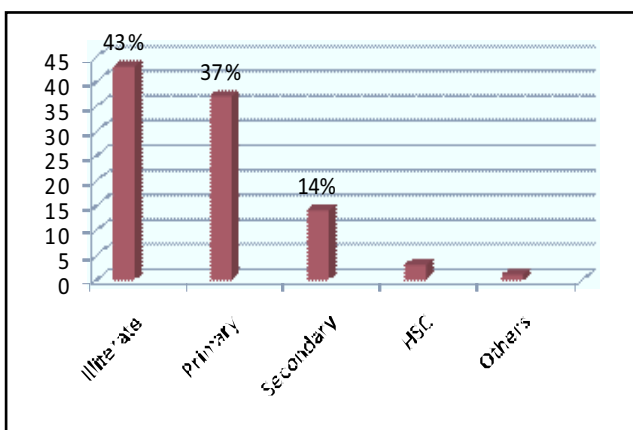


Figure 1: Distribution of respondents by their educational status

Among the respondents only 59% had knowledge about transmission of diseases 82% of the respondents had knowledge on personal protection is necessary during working in poultry and 79% knew the name of PPE (Table II)

Table II: Knowledge about diseases transmission, personal protection, and the name of PPE

Knowledge about	Frequency	Percentage (%)
Disease transmission		
Yes	59	59
No	41	41
Knowledge on Personal protection		
Yes	82	82
No	18	18
Know the name of PPE		
Yes	79	79
No	21	21

Regarding PPE use 42% use PPE & 58% did not use it. Among the PPE user 16%, use PPE regularly and 26% use PPE irregularly (Table III).

Table III : Distribution of respondents by regular use of personal protective equipments.

Use of PPE	Frequency	Percentage (%)
Regular	16	16
Irregular	26	26
Total user	42	42
Not user	58	58
Total	100	100

Among the respondents 42 (34.71%) suffered from Respiratory problem followed by 33 (27.27%) skin problem and eye problem 28 (23.14%) (Figure 2)

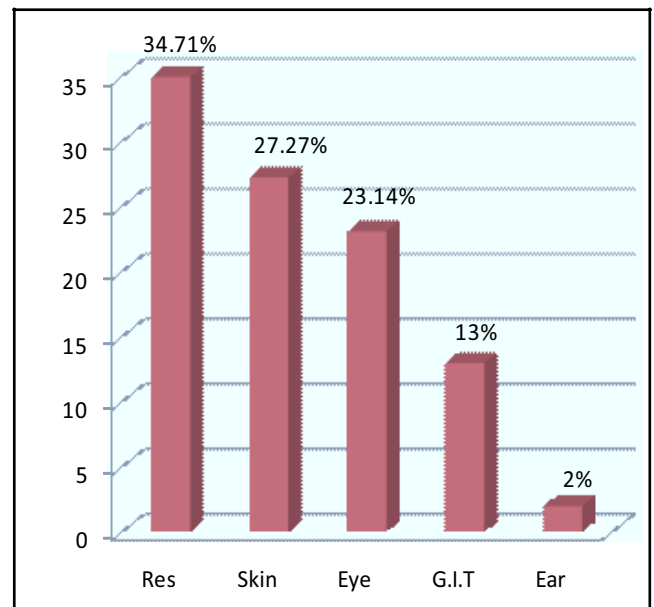


Figure 2: Different type of health problems among respondents

The study result also revealed that highly significant association was between education and knowledge of diseases transmission (p=0.004). Also highly significant association between itching and use of PPE (p=0.004) (Table IV).

Table IV: Association between Education and Knowledge of disease transmission & between itching and use PPE

Education	Knowledge of disease transmission		
	Yes (%)	No (%)	P value <0.004
Literate	43(52.4%)	2(11.1%)	
Illiterate	16(88.9%)	39(47.6%)	
Total	59(59.0%)	41(41.0%)	
Itching (skin problem)	Use of PPE (%)		
	Yes (%)	No (%)	P Value <0 .004
Yes	14(42.4%)	19(57.6)	
No	28(41.6%)	39(58.2%)	
Total	42(42%)	58(58%)	

Discussion : The study was conducted among the 100 poultry workers among them majority 59% were between 20-30 years of age (Mean age 27.49%, SD ±0.965) and 78% were male. Study done in Netherland reported a little higher age group and most workers were male. In our study Islam was major religious group (91%). Most of them were illiterate (43%) and next highest group 37% were educated up to primary level. Majority of the workers (72%) monthly income was low between 1000-2000/month. (Mean 2172.50, SD ± 709.38). A few number (5%) had job experience more than 8 years but highest number (21%) had 6-8 years (Mean 1.72, SD ±0.965). Similar result found in Netherland study which reported that workers earn less and most of them had similar duration of work experience in this type of industry.⁶ During this study when the workers asked about transmission of diseases only 59% had knowledge about transmission of disease and 82% had knowledge on personal protection, they knew that personal protection is necessary during working in poultry. Most of the respondents 79% knew the name of PPE, but only 42% use PPE 58% of did not use it because authority did not supply them PPE. Among the users only 16% used regularly and 26% used irregularly.

On 14 April 2003 the Outbreak Management Team reported compliance with preventive measures was low. Among 124 poultry farmers in an infected farms, 22 (17.7%) used mouth nose masks and 4(3%) used goggles while working. Only 8 (6%) used masks consistently, and one person (0.8%) always wore protective goggles.⁷ In this study, 42(34.71%) suffered from Respiratory problem followed by 33(27.27%) skin problem and eye problem 28(23.14). Version. M, at all reported that out of 4500 persons who had contacted with poultry in the infected areas, 453 reported health problems.⁸ Case studies conducted at six poultry processing plants by National Institute for Occupational Safety and Health (NIOSH), The Occupational Safety and Health Administration (OSHA),⁷ the U.S Department of Agriculture (USDA),⁹ and state health departments revealed that processors and inspector experienced acute eye and upper respiratory irritation associated with their work. The most frequently reported symptoms were burning, watery eyes, sneezing, stuffy, runny nose, and cough. Other symptoms included blurred vision, light sensitivity, sore throat, headache and nausea.¹⁰ There was significant association between Education and Knowledge of disease transmission (p<0.004). Also significant association found between itching and use of PPE (p<0.004).

Conclusion : This study showed that most of the workers had knowledge about personal protective equipments and literate persons had more knowledge about disease transmissions. Those respondents used PPE they suffered less health problems in comparison to illiterate person.

Recommendation : Awareness and training program about personal protective equipments should be arranged for the poultry workers, so that they should have update knowledge about disease related to their working environments. Government should formulate guidelines and regulations in relation to Occupational Safety & Health Act (OSH act) for the poultry farms and their workers which should be followed strictly.

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