

Common Health Problems Among Agricultural Workers in A Selected Rural Area of Mymensingh, Bangladesh

Hasan AHM¹, Hossain MT², Begum M³, Islam MS⁴, Alam FS⁵

Abstract

This cross-sectional descriptive study was conducted in Churkhai village of Bhavokhali union during December 2018 to find out common health problems among 200 agricultural workers in a selected rural area of Mymensingh as a part of Residential Field Site Training by 3rd year MBBS students session 2016-17. 63 percent of population lives in rural area. Agricultural workers have illnesses common to general population. Moreover socioeconomic and work condition poses extra burden. The study was carried out on 200 agricultural workers who were selected purposively. Data were collected on a predesigned questionnaire by face to face interviewing agricultural workers. Data analysis was done by SPSS version 20.0. Age distribution of respondents ranged from 19 years to 80 years; mean age 46.53 years and standard deviation 14.891 years. Males were predominant (male: female ratio 506.06: 100. Majority of them (57.50%) were literate. Most of them (65.00%) belonged to middle class family. More than half (55.00%) of agricultural workers were suffering from illness. Respiratory illnesses 16.00% were predominant followed by skin disease 10.50%, gastrointestinal disease 6.50%, conjunctivitis 6.00%, arthritis 6.00%, hypertension 6.00%, diabetes mellitus 5.00%, anemia 4.50% and hearing loss 0.50%. In summer heat exhaustion (14.50%) was predominant followed by heat syncope (10.00%). In rainy season ARI (12.00%) was predominant followed by diarrheal diseases (10.50%). In winter mild hypothermia (27.00%) was predominant followed by ARI (4.50%). In recall of last 1 year the important events were crop loss 12.50%, damage to house 10.00%, and unemployment 2.50%. There was no case of anthrax and bird flu. Prevalence of occupational accidents was 5.00%. which includes fall from height 0.50%, heavy object fallen on body 1%, domestic fire 1%, electrocution in house 1%, electrocution by power pump 0.50%, cattle hitting by horn 0.50% and accidental insecticide poisoning 0.5%. Most of the injury occurred in the current week. Majority of the workers (66.50%) had partial tetanus toxoid immunization. Morbidity in this study was better than several studies conducted in Bangladesh and India. By knowing health problems we can give health care to agricultural workers which will prevent diseases and illnesses of them, prolong their healthy life, promote their health and efficiency.

CBMJ 2022 July: vol. 11 no. 02 P: 125-130

Keywords: Health problems, agricultural workers, rural area

Introduction

Agriculture workers provide us food, clothing, raw materials for shelter, education, health care and environment for our healthy living. Agriculture accounts for 47.3 percent of total labor force and contributes approximately 16 percent of the GDP of Bangladesh. Agricultural workers are exposed to extremes of climatic condition due to working in sunshine from morning to evening in spring and summer, soaked in rain drops in rainy season which is the longest season in Bangladesh, works in field amongst thunder and lightning, shivering cold in winter season. Very often they are subject to natural disasters like draught, flood, storm, river erosion causing damage to house and crop loss. They lead their live through selling labor, cultivating land on

shared basis/lease. Very often they do not receive fare wage and fare share of produced crops. Even they do not receive fare price of crops also. No social security scheme for them. Agricultural laborers are amongst the poorest

1. Dr. AHM Hasan, Associate Professor, Community Medicine, Community Based Medical College Bangladesh.
2. Dr. Md. Tufael Hossain, Associate Professor, Community Medicine, Community Based Medical College Bangladesh.
3. Dr. Maksuda Begum, Associate Professor, Community Medicine, Community Based Medical College Bangladesh.
4. Dr. Md. Shahidul Islam, Associate Professor, Dermatology and Venereology, Community Based Medical College Bangladesh.
5. Dr. Fakir Sameul Alam, Associate Professor, Community Medicine, Community Based Medical College Bangladesh.

Address of Correspondence:
Email: dr.tufaelhossain@yahoo.com

people in rural areas. Their jobs are often temporary, wages are low and working conditions can be very hazardous. Women are also more and more joining in this agricultural work. Moreover they are not organized.¹ Churkhai is a village of 12 Bhavokhali union. It has 1,889 households with population of 8,791.² In this context survey on common health problems among agricultural workers in a selected rural area of Mymensingh was carried out as a part of Residential Field Site Training by 3rd year MBBS students with the guidance of teachers of Community Medicine. Health problems of agricultural workers in Bangladesh are: heat related illnesses (prickly heat, heat syncope, heat cramps, heat exhaustion, heat stroke), problems in rainy season: acute respiratory tract infection, water-borne and vector-borne diseases (mostly diarrhea), food-borne diseases, water related diseases like malaria and dengue, skin infection, lightning, electric shock, unemployment in winter season: hypothermia, fire accident due to ignition of fire for escape from cold injury, acute respiratory tract infections and asthma.³⁻¹⁰ Throughout the year other physical injuries such as use of fire for per-boiling paddy and other agricultural processes (burn and scald), exposure to noise and vibration when working in rice mill, grinding mill, tractor, irrigation pump (hearing loss and orthopedic problems), burns and electric shock when working with electricity run machinery.³⁻⁹

Chemical hazards: Chemicals are being used increasingly in agricultural either as fertilizers, insecticides or pesticides.^{3,4} **Respiratory diseases:** Exposure to dusts of grains, rice husks, coconut fibers, tea, tobacco, hay and wood are common where these products are grown. The resulting diseases e.g. byssinosis, bagassosis, farmer's lung and occupational asthma appear to

be widespread.^{3,4}

Biological hazards: The close contact of the agricultural worker with animals or their products increases the likelihood of contracting certain zoonotic diseases such as brucellosis, anthrax, leptospirosis, tetanus, tuberculosis (bovine) and Q fever. Habit of open air defecation and working in field barefooted exposes them to soil transmitted infections notably helminthiasis and tetanus. Workers are also susceptible to insect bite, snake bite and dog bite.^{3,4} **Mechanical hazards:** Injuries due to sharp cutting and blunt heavy agricultural equipments. Agricultural accidents are increasing due to use of modern agricultural machinery.^{3,4}

Methods

This was a cross-sectional descriptive type of observational study conducted in Churkhai village of Bhavokhali union during December 2018 to find out common health problems among 200 purposively selected agricultural workers. Study area was selected purposively. Data were collected on a predesigned questionnaire by direct interviewing agricultural workers. Data analysis was done by SPSS version 20.

Results

This cross-sectional descriptive study was conducted in Churkhai village of Bhavokhali union during December 2018 to know about common health problems among 200 agricultural workers of that village as a part of Residential Field Site Training by 3rd year MBBS students session 2016-17. The village is located nearby Community Based Medical College Bangladesh, Mymensingh. The sample constituted agricultural workers. All the respondents were Muslim. Age distribution of respondents ranged from 19 years to 80 years; mean age 46.53 years and standard deviation 14.891 years. Most of the agricultural

workers belonged to 45-54 years, followed by 35-44 years. Males were predominant (male: female ratio 506.06: 100. Most of the respondents (97.50%) were married. Majority were literate (57.50%), belonged to middle class family (65.00%), had joint family (49.00%). Socioeconomic condition was ascertained by ownership of house: 97.00% own house; housing type: kutcha 47.00%), pucca 8.00%, semipucca 45.00%; ownership of agricultural land: no land 30.00%, less than 25 decimal 45.00%, 25 to 99 decimal 21.00%, 100 decimal and above 4.00%; monthly family income: less than 10,000 taka 30.00%, 10,000 taka to 24,999 taka 65.00%, 25,000 taka and above 5.00%; ownership of animals 50.00%, ownership of poultry 50.00%. Majority (70.00%) works in their own land. Table I shows socio-demographic variables of agricultural workers.

Table I: Distribution of socio-demographic variables of agricultural workers (n=200)

Status	Frequency	Percentage (%)
Age group		
15 to 24 yrs	8	4.00
25 to 34 yrs	37	18.50
35 to 44 yrs	42	21.00
45 to 54 yrs	47	23.50
55 to 64 yrs	34	17.00
65 yrs and above	32	16.00
Total	200	100.00
Sex		
Male	167	83.50
Female	33	16.50
Total	200	100.00
Literary status		
Illiterate	85	42.50
Literate	115	57.50
Total	200	100.00
Socioeconomic status		
Poor	60	30.00
Middle	130	65.00
Rich	10	5.00
Total	200	100.00
Type of Family		
Nuclear	89	44.50
Joint	98	49.00
Extended	13	6.50
Total	200	100.00

61.00% of agricultural workers were suffering from illness. Respiratory illnesses 16.00% were predominant followed by skin disease 10.50%, gastrointestinal disease 6.50%, arthritis 6.00%, conjunctivitis 6.00%, hypertension 6.00%, diabetes mellitus 5.00%, anemia 4.50% and hearing loss 0.50% (Table II).

Table II: clinical profile of agricultural workers (n=200)

Clinical status	Frequency	Percentage (%)
Respiratory illness	32	16.00
Skin disease	20	10.00
Gastrointestinal disease	12	6.50
Arthritis	12	6.00
Conjunctivitis	12	6.00
Hypertension	12	6.00
Diabetes	10	5.00
Anemia	10	4.50
Hearing loss	2	0.50
No illness	78	39.00
Total	200	100.00

In recall of last summer heat exhaustion was predominant followed by heat syncope. In rainy season ARI was predominant followed by diarrheal diseases. In winter season mild hypothermia was predominant followed by ARI. Table III shows seasonal variation of diseases.

In recall of last 1 year the important events were crop loss (25/200) 12.50%, damage to house (20/200) 10.00% and unemployment (5/200) 2.50%. There was no case of anthrax and bird flu. Majority of the agricultural workers (57.50%) had 6 to 10 equipments. The equipments were sickle, spade, axe, plough, tractor, shovel, weeding tool, knife, wooden stick, crowbar, irrigation pump, husking pedal, machete, gail and cheaith. Prevalence of occupational accidents was 5%. which includes fall from height 0.50%, heavy object fallen on body 1.00%, domestic fire 1.00%, electrocution in house 1.00%,

electrocution by power pump 0.50%, cattle hitting by horn 0.50% and accidental insecticide poisoning 0.50%. Most of the injury occurred in the current week. Table IV shows distribution of occupational accidents.

Table III: Distribution of seasonal variation of diseases

Status	Frequency	Percentage (%)
Heat related illnesses		
Heat exhaustion	29	14.50
Heat syncope	20	10.00
Prickly heat	18	9.00
Heat cramps	16	8.00
No heat related illness	117	58.50
Total	200	100.00
Rainy season diseases		
ARI	24	12.00
Diarrheal diseases	21	10.50
Skin infections	16	8.00
No diseases of rainy season	139	69.50
Total	200	100.00
Winter related illnesses		
Mild hypothermia	54	27.00
ARI	9	4.50
Asthma	7	3.50
No illness	130	65.00
Total	200	100.00

Table IV: Occupational accidents of agricultural workers

Occupational accidents	Frequency	Percentage
Fall from height	1	0.50
Heavy object fallen on body	2	1.00
Domestic fire	2	1.00
Electrocution in house	2	1.00
Electrocution by irrigation pump	1	0.50
Cattle hitting by horn	1	0.50
Accidental insecticide poisoning	1	0.50
No injury	190	95.00
Total	200	100.00

Nature of injury were mostly soft tissue injuries 3.00% percent, followed by laceration 1.00% and abrasion 1.00%. Site of injury were upper extremity 2.00%, lower extremity 2.00%, internal organs 0.50% and face 0.50%.

Discussion

The study was done on 200 agriculture workers to know about their health problems. The respondents live in Churkhai village of Bhavokhali union where there are 1889 households with population of 8791.²

In this study all the respondents were Muslim. Age distribution of respondents ranged from 19 years to 80 years; mean age 46.53 years with standard deviation 14.891 years. Most of the agricultural workers belonged to 45 to 54 years, followed by 35 to 44 years. Males were predominant (male: female ratio 506.06: 100). Most of the respondents (97.50%) were married. Majority were literate (57.50%), belonged to middle class family (65.00%), had joint family (49.00%). Majority (70.00%) works in their own land. In a Bangladeshi study conducted in two upazilas majority belonged to 46 to 55 years, followed by 36 to 45 years. Males were predominant (male: female ratio 1,150:100; 354.50: 100). Majority were literate 98.00%, 84.00%, lower socioeconomic condition (less than 15,000 BDT 79.00%, 82.00%).¹¹ In an Indian study mean age 31.18 years with SD of 12.19 years; majority (50.95%) belonged to 20 to 40 yrs; males were predominant (male: female ratio 382:100). Majority (75.48%) were hired laborers followed by own land workers (24.52%).¹² In another Indian study mean age 47.19 years with SD 12.47 years; females predominant (male: female ratio 19.55: 100; majority Hindu 98.80%; married 91.50%; illiterate 54.20%; nuclear family 81.20%; socioeconomic condition belonged to class III (65.80%).¹³

In this study more than half (61.00%) of agricultural workers were suffering from illness. Respiratory illnesses 16.00% were predominant followed by skin disease 10.50%, gastrointestinal disease 6.50%, conjunctivitis 6.00%, arthritis 6.00%, hypertension 6.00%, diabetes mellitus 5.00%, anemia 4.50% and hearing loss 0.50%. In summer heat exhaustion was predominant followed by heat syncope. In rainy season ARI was predominant followed by diarrheal diseases. In winter mild hypothermia was predominant followed by ARI. In recall of last 1 year the important events were crop loss 12.50%, damage to house 10.00%, and unemployment 2.50%. There was no case of anthrax and bird flu. In a Bangladeshi study 51.30% were suffering from illness. Fever of all types 33.20% was predominant followed by gastrointestinal diseases 24.90%, respiratory diseases 17.80%, pain/aches 9.90%, skin/eye/ENT diseases 5.10% and others 9.10%.¹⁴ In an Indian study 96.88% of agricultural workers had problems. Musculoskeletal problems 60.76% were predominant followed by skin disease 11.46%, gastrointestinal disease 8.68%, respiratory illness 4.86%, injuries 5.21%, ophthalmology 3.12%, genital infection 3.12%, urinary tract infection 2.43%, tuberculosis 1.38% and others 16.66%.¹⁵ A Portuguese study shows high prevalence of respiratory symptoms among poultry workers (42.50% asthmatic and 51.10% nasal symptoms); prevalence of asthma was 6.40%.¹⁶ In a US study among migrant and seasonal farm workers health problems include accidents, pesticide related illnesses, musculoskeletal and soft-tissue disorders, dermatitis, noninfectious respiratory conditions, reproductive health problems, health problems of children of farm workers, climate caused illnesses, communicable diseases, bladder and kidney disorders, eye and ear problems.¹⁷

In this study prevalence of occupational accidents was 5.00%. which includes fall from height 0.50%, heavy object fallen on body 1.00%, domestic fire 1.00%, electrocution in house 1.00%, electrocution by power pump 0.50%, cattle hitting by horn 0.50% and accidental insecticide poisoning 0.50%. In an Indian study prevalence of injury 5.21 percent.¹⁵ In an Indian study majority of the cases of mechanical hazards were due to equipment/instrument induced (64.15%, followed by animal induced (35.85%) injuries.¹² In a Bangladeshi study 67.00% injuries were due to hand tools and remaining 33.00% due to machinery or other sources. Though most were not serious, about 22.00% were greater than or equal to abbreviated injury scale 2.¹⁸

Conclusion

Morbidity in this study was better than several studies conducted in Bangladesh and India. By knowing health problems we can give health care to agricultural workers which will prevent diseases and illnesses of them, prolong their healthy life, promote their health and efficiency. Agriculture workers need to be educated about common illnesses like respiratory illnesses, skin diseases, gastrointestinal diseases, arthritis, conjunctivitis, hypertension, diabetes, anemia, heat related illnesses, diseases of rainy season and winter season, how to avoid occupational accidents, how to use personal protective equipment's during work and to cultivate hygiene practices.

References

1. *Bangladesh Labour Foundation. Promotion of decent work for Agricultural workers in Bangladesh. Access date May 31, 2021*
2. *Community Report, Mymensingh Zila, June 2012, Population and Housing Census 2011 Bangladesh Bureau of Statistics, Statistics and Informatics Division, Ministry of Planning*

3. Rashid KM, Rahman M, Hyder S, Rashid, Khabir, Hyder's Textbook of Community Medicine and Public Health. Reprinted Fourth Edition, RHM Publishers. 2008: 190- 200, 483- 494.
4. Park K. Park's Textbook of Preventive and Social Medicine. 25th Edition. M/S Banardsidas Bhanot Publishers. 1167, Prem Nagar, Jabalpur, 482 001 (M.P.) India, 2019: 765-848, 864-880.
5. AchooAllergy.com. Home/Learning Center/The effects of humidity on the human body. Access date May 31, 2021.
6. World Climate Guide, Climates to travel. Climate-Bangladesh. Access date May 31, 2021.
7. Kumar P, Clark M. Kumar and Clark's Clinical Medicine, Tenth Edition, International Edition, Elsevier. 2021: 1487-1495.
8. Goldman L, Andrew I. Schaffer, Goldman-Cecil Medicine, International Edition, Elsevier, 26th Edition, 2020: 74-82.
9. Stuart H. Ralston, Ian D. Penman, Mark W.J. Strachan, Richard P. Holson. Davidson's Principles and Practice of Medicine, 23rd Edition. Elsevier, Edinburg, London, New York, Oxford, Philadelphia, St. Louis, Sydney 2018: 164-172.
10. Hassan Z. Rainy season problems and precautions. Fashion Ki Batain. Fitness & Health, Lifestyle. July 2, 2017. Access date May 31, 2021.
11. Shammi M et al. Pesticide exposures towards health and environmental hazards in Bangladesh: A case study on farmer's perception. Journal of the Saudi Society of Agricultural Sciences. 2020; 19 (2): 161-173.
12. Manwani VK, Pandey S. An Epidemiological study of mechanical health hazards amongst agricultural workers in rural India. International Journal of Occupational Safety and Health. 2014; 4(2): 19-23.
13. TR Rajshri. Occupational profile and morbidity pattern among farmers of Perambular Taluk: A Cross study. Dissertation for M.D. Community Medicine. 2020; 1-86
14. Rahman M, Islam MM, Islam MR, Sadhyta G, Latif MA. Disease pattern and health seeking behavior in rural Bangladesh. Faridpur Medical College Journal. 2011; 5 (1): 32-37.
15. Gurav RB, Kartikiyan S, Wayal R, Joshi SD: Assessment of health profile of daily wage labourers. Indian J Occupational Environment. 2005; 9 (3): 115-117.
16. Viegas S, Faisca VM, Dias H, Clerigo A, Carolino E, Viegas C. Occupational exposure to poultry dust and effects on the respiratory system in workers. Journal of Toxicology and Environmental Health. 2013; 76: 230-239.
17. Mobed K, Gold EB, Schenker MB. Occupational health problems among migrant and seasonal farm workers. In Cross cultural Medicine- A Decade Later [Special Issue]. West J Med 1992; 157: 367-373.
18. Parvez MS and Shahriar MM. Agricultural Farm related injuries in Bangladesh and convenient design of working hand tools. Journal of Health Care Engineering 2018; 4273616: 1-11.