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The Impact of Farmers' Awareness of Visit to Health Care Centers on their Health Problems in Bangladesh

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Abstract

Farmers are the prime human resource for the economic development of a country. So understanding the health problems of framers and their communication with the health care centers are vital. In this regard, the study aims to identify the impact of farmers' awareness of visit to health care centers on their health problems. The study was conducted in the Raozan sub-district of the Chittagong district of Bangladesh. The size of the sample was 126. The selection of the study site and the number of respondents were done purposively. Descriptive and quantitative analysis methods have been adopted to examine the study's objective. The study found that farmers' frequent visit to health care centers can reduce their occupational health problems. Furthermore, the personal protective equipment and age variables of farmers may also control the farmers' occupational health problems. The majority of the sample farmers contacted the health care centers but still many farmers unaware to communicate with the health care centers. The study is concluded with fewer recommendations to formulate a health care policy of farmers by consolidating with the agricultural development in Bangladesh.

Keywords: Bangladesh; Farmers; Health care centers; Health problems; Regression.

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1. Introduction

Farming has always been an integral part of the Bangladeshi culture, from even before the country's birth. Today, nearly half of the Bangladesh's workers and two-thirds in rural areas are directly employed by agriculture and about 87 percent of rural households rely on agriculture for at least part of their income [1]. In 2020, the share of agriculture in the GDP of Bangladesh was 12.92% [2].

The agricultural community not only makes up a significant portion of Bangladesh's population but also contributes greatly to the country's economy like many other countries [3]. Agriculture is dependent on nature and farmers of Bangladesh are efficient in production but not aware of their own safety and security [4]. Many agricultural workers of Bangladesh suffer occupational health problems which are not given the due attention in this country. Many of the farmers never use any protective measures during their agricultural works. Though they face different types of health problems, many still do not make use of the health services that are available to them. These situations are also visible in other parts of the world [3]. Farmers are the lifeblood of the economy of a country. So, to ignore their health and well-being would be a wrong decision [3, 5].

Many studies have been attempted to learn about farmers' occupational health problems and health-seeking behavior. The study of Gelaye, *et al.* [6] investigated the occupational health problems among seasonal and migrant farmers in Ethiopia. The sample of the study was 990 and the study applied the cluster sampling technique. Both bivariate and multivariate analyses procedures have been done. The prevalence of work-related injuries among seasonal and migrant farmworkers was 32.5%, while the work-related stress among seasonal and migrant farmworkers was 67.6%. The study suggested that training on health's safety and hazard control measures would be necessary to minimize the risk.

The study's [7] objective was to find out the perceptions and practices followed by agricultural workers from three villages in India. The number of respondents were 380. It was a community based cross sectional study. Most of the study participants thoughts that pesticides are harmful. The association between perception of harmful effects of pesticides, gender, age, education and socio-economic status was statistically significant.

The study [8] conducted to assess the rice farmers' perception of their occupational risk, which originated from a union in Mymensingh district in Bangladesh. The number of sample of the study was 100 rice farmers. Data analyses were done through descriptive statistics, rank order and coefficient of correlation. The study found that education,

household size, farm size, annual income, organizational participation, training received, extension contact and farmers' perception of pesticides are associated with the perception of rice farmers' occupational hazards to pesticides. The study concluded that awareness rising programs, credit facilities, proper training on safety measures and extension services may reduce the risk of rice farmers to use pesticides.

Another study [9] examined the occupational hazards of vegetable farmers caused by pesticide application. About fifty farmers were selected from three Mymensingh central sub-district villages. The study found that farmers are not conscious about the proper use of pesticides and the lack of consciousness of the use of pesticides is the root cause of occupational hazards for farmers of the selected villages.

The one experiment [10] has been conducted to identify the perception and behavior of pesticide use and its relevant risks to the environment and human health. The study areas were Savar and Mehendiganj sub-districts of Bangladesh. The size of sample was 150. The study reported that education, age, farming experience and farm ownership have similar contributions towards understanding the danger of pesticides and their impact on farmers' health in rural and urban areas.

The application of pesticides and the effects of pesticides on the health of farmers were discussed in Miah, *et al.* [11]. The study area was Burichong sub-district in the Comilla district of Bangladesh. The sample of the study was comprised of 120 respondents. Data were collected with the help of structured and non-structured questions. The study observed that three–fourth of farmers adopted safety measures partially but failed to save themselves from different diseases.

The perception of farmers' occupational hazards and safety issues to identify the differences among the selected personal and demographic variables were focused in a study [12] . The study is based on primary and secondary data. The sample size was 30 small farmers from five villages in Dumki sub-district of Bangladesh. The study observed that farmers had no modern knowledge of occupational hazard and safety. The study recommended proper policy and legislation at local and international levels.

Farmers' health and safety scores were evaluated by the researchers also Swamynathan, *et al.* [13]. The selected farmers were involved in conventional vs. sustainable farming styles. The study also analyzed the impact of the adoption of sustainable agricultural practices on exposure levels to different occupational hazards. The study was empirical and based on primary data. The study assumed that improvements need to be made in agricultural practices to protect farmers.

Some researchers [14] focused on developing health and welfare awareness of farmers towards conventional application of pesticides. The number of respondents were 175 rice and vegetable farmers of San Jose in the Philippines. The study was based on qualitative and quantitative techniques. The study found that most farmers were aware of the health hazards caused by pesticides, but they refused to use personal protective equipment due to convenience and cost availability factors. It was suggested from the study that training on the proper use of personal protective equipment health awareness program necessary. The study also reported that the Department of Agricultural Extension must conduct a health awareness campaign.

The health hazards between tobacco and paddy farming people were done by researchers Ali, *et al.* [15]. The study also identified the kind of diseases during the time of farming and about the health-seeking behavior of farmers. The study was based on secondary and primary data. It was adopted mixed methods, such as qualitative and quantitative methods of analysis. The number of selected paddy farmers was 25 while the number of tobacco farming people was 384. The results of the study suggested that 90% of tobacco workers and 72% of paddy workers realized work involved with crop farming and processing had health risks. The most common problem of tobacco farming people was the green tobacco sickness. In the case of paddy farming, the study found different diseases such as stamina, vomiting, headache and skin rash, etc. It was revealed from the study that paddy farming is safer than tobacco farming to avoid occupational health problems. The outcome of the study thinks that farmers are not aware of using protective gears at the time of farming works. The study conveyed the messages to the rural health professional about the health risks associated with paddy and tobacco farmers in Bangladesh

It is evident from the above information that several studies have been conducted about the farmers' occupational hazards. But most of the previous studies conducted the use of pesticides and its' ultimate effect on occupational hazards of farmers. Unsafe use of pesticides can cause occupational hazards; thus, those studies are recognized. However, many other causes are assumed to be responsible for the occupational health problems of farmers. For example, farmers' health will be degraded if they do not have contact with health care facilities such as health care centers. The present study is limited to the impact of farmers' awareness of visit to health care centers on their occupational health problems in the context of a union in Chittagong district of Bangladesh. To the best of knowledge, no such studies have been done for the farmers.

The human resource management practice in the agriculture of Bangladesh yet been well organized like other industrial sectors due to the lack of organized farming systems such as the cooperative farming or farming industry in the country. It is expected that the outcome of the present study will be able to apply HRM practices in the context of health improvements of the farmers and an appropriate agricultural development policy either in Bangladesh or elsewhere.

2. Methodology

2.1. Location of Study

The study area is the Gohira Union of Raozan sub-district in the Chittagong district of Bangladesh. The Gohira Union is located in the Western part of the Raozan sub-district. The area of the union is 14.15 square kilometers. The distance between the Raozan sub-district and the Gohira Union is about 10 kilometers [16].

2.2. Selection of Study Venue

There are 14 union councils in Raozan Sub District. The Gohira Union is a progressive union among all other unions of the Raozan Upasubdis trial-Banglapedia [16]. The selection of this union is done convenient for the study.

2.3. Collection of Data

The number of population of Gohira Union is 1200, comprising males and females respectively, as per the statistics of 2011 [16]. The size of the sample is 126, which has been collected purposively.

2.4. Instrument of the Study

A mixed pretested questionnaire containing both structured and unstructured interview questions were prepared to collect data from the sample farmers. Both primary and secondary data have been collected.

2.5. Analysis Procedures

The collected data were coded, compiled, tabulated and analyzed according to the study's objective. The nature of the collected data was qualitative. Therefore, the qualitative data have been converted to quantitative data. No consistent scoring techniques were found to convert qualitative data into quantitative data [17]. In this regard, qualitative data have been transformed to quantitative data by applying scoring techniques based on past relevant studies [17] .

The dependent variable of the study was the health problems of farmers. The study's independent variable was farmers' awareness of visit to health care center. However, many other factors can also affect farmers' health problems, which is assumed in relevant studies [17]. Therefore, age, education level, personal protective equipment, marital status, working hours and farmers' cropping types were also included in the model. By applying input-output method of analyses, a semi-logarithmic multivariate regression procedure has been done to avoid the disparities [17-19] of the variables in order to examine the impact of farmer's visit to health care center on the health problems of farmers. Thus the functional relationship can be interpreted as follows:

$LnY = f(LnX_1, X_2, LnX_3, LnX_4, X_5, LnX_6, X_7)$

The selection backgrounds, assumptions, coding, and scores of dependent and independent variables are found in Table -1A and 2A.

3. Results and Discussion

According to the respondent farmers, 72(57.14%) farmers faced health problems during cultivation and 54(42.86%) farmers did not face any health problems during cultivation (Table 3A).

In regards to what caused the health hazards/problems, 35(48.6%) farmers faced accidents, 15(20.8%) people were affected by toxic or harmful substances, while 22(30.6%) faced different types of health problems (Table 4A). A previous study revealed that respiratory tract infection (54.25%) was the most common causes of morbidity among farmers [20].

The result of multiple regression analysis shows that the value of AR^2 is 85.4% which indicates that 85.4% of total variations in health hazards of farmers have been explained by the independent variables included in the model (Table 5A). The value of F is 105.18 and found 1% significance level. The 1% significance level of F–value indicates the goodness fit of the model (Table 5A). Similarity is also found in many studies [17, 18].

Among all the cultivators, 56.3% used health care services and 43.7% did not utilize health care services in the last one year from the time of the field survey (Table 6A). It is found that 28.9% and 50.3% of farmers used IPD (inpatient department) and OPD (outpatient department) treatments, respectively [21]. Among respondents of the present study area who visited the health care centers, 42.07% people had visited health care facilities 1 or 2 times, 26.19% had visited health care facilities 3 or 4 times and the remaining farmers, 31.74% people had visited 5 or 6 times and above number of times.

It is found in the study that the impact of farmer's visit to health care centers on their health problems is inverse and significant. It means that if farmer's visit to health care centers increase, health problems of farmers will decrease and vice versa. It is seen in (Table 6A) that the majority of the respondents visited the health care centers. It means that farmers of the study area are aware of health problems. Health care centers have the abilities and capacities to reduce the health problems of farmers. It is found that 49.3% sought treatment for easy access, 25.4% reported free/low-cost treatment and 25.4% made miscellaneous reasons when farmers were asked (Table 7A) the reason for contacting the health care centers. However, a large number of farmers are still out of contact with the health care centers. Due to financial constraints (40%), lack of time (21.8%) and other reasons (38.2%) such as local beliefs or ignorance were the main reason for not communicating the health care centers which the respondents disclosed during the survey (Table 8A). However, the influences of other factors of the model cannot be degraded. Variables such as PPE and Age of the farmers are found to be negative and statistically also significant (Table 5A). Negative values of the regression coefficients indicate inverse associations with the occupational health problems of farmers. It means, if the use of PPE increases, farmers' occupational health problems decrease and if the farmers' age increases, they decrease and vice versa. The regression coefficients of working hour, marital status and cropping types of farmers are weak since the magnitudes of these variables are not significant (Table 5A). The regression coefficient of farmers' education level is positive and significant (Table 5A). It means, if farmers' education level increases, farmers' health problems also increase and vice versa. Similarity is found in Raghupathi and Raghupathi [22]. But education cannot decrease the awareness of health problems; thus, the result of the coefficient of education

disagrees with the usual assumptions. Hence, the positive impact of education on health problems in the present study needs more investigation.

4. Conclusion and Recommendations

Thus, the study proves that farmers visit to health care centers decreases health problems and vice versa. However, the influences of other study factors such as PPE and Age of the farmers cannot be ignored. The education effects on health problems are complex. Anyhow, the followings are fewer proposals for the development of agriculture in Bangladesh in line with the outcomes of the current study:

Bangladesh is an agricultural country and agriculture is the driving force for the development of Bangladesh. The importance of agriculture is being accelerated since the agro based economy of Bangladesh will take the country forward [23].The government has provided inputs subsidies for farmers [23]. However, subsidized better health care facilities for the farmers have yet to be developed. Still, farmers visit to rural health care centers and government hospitals for their treatment of health. It is also seen that many farmers of the study area have no communication with the health care centers due to various causes such as monetary crisis and ignorance, etc. Such situations can be improved if they are provided health insurance or subsidy for their health treatment. Policymakers should take note of this.

The agricultural extension services should accelerate their knowledge dissemination to the farmers about using PPE and create awareness of health, hygiene and safety measures. The application of human resource management (HRM) in the agriculture sector has yet to be developed in Bangladesh. The absolute practice of HRM in the context of the agricultural sector should be expanded widely among the farmers through the Department of Agricultural Extension (DAE), which includes health, hygiene and safety measures.

The positive impact of education on health problems in the present study indicates that the existing education system of Bangladesh is hardly outcome based. The government of Bangladesh should therefore pay more attention to formulate policies that can promote outcome based education.

In order to introduce 4.0 agriculture [24] in Bangladesh, the better technology should be utilized in the country's agriculture. In this context, better health of farmers is necessary because the healthy farmers can increase production through improved technology. Communication between farmers and health care centers should be accelerated for better health.

The Bangladesh government has distributed agricultural inputs cards among 2.10 crore farmers [25]. Farmers are expected to be given health cards also to achieve the vision of agriculture for the overall economic development of the country by 2041 [25].

This study was carried out with minimal resources in a small area and thus, it is not sufficient to accurately and completely assess the present conditions of the farmers in a rural society of Bangladesh. Future research can address critical issues such as the impact of farmers' education on the health problems of farmers.

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