

Attitude of the Community People towards Health and Environmental Hazards of Tanneries in Dhaka

Abdur Rahman^{1*}, Dr. Azizur Rahman², Biplob Kumar Dey³

ABSTRACT

The purpose of the present study was to investigate the attitudes of the community people towards health and environmental hazards of tanneries in Dhaka city of Bangladesh. 200 community people were selected as respondents. A semi-structured interview guide was used to collect relevant data. It was an exploratory study following qualitative approach. The findings of the study revealed all of the community people at Hazaribagh felt that their environment is being seriously polluted by tanneries. Most of them suffered from skin disease, allergy, diarrhea, asthma, typhoid, head ache and fever. They have been seriously suffering while moving from one place to another. They mentioned tanneries are responsible for extreme pollution of the Buriganga River. The majority of the respondents think that tanneries should move from Hazaribagh & relocate at any industrial area.

Keywords: *Attitude, Health, Environmental hazards, Tanneries.*

Attitude is an expression of favor or disfavor toward a person, place, thing, or event. An attitude can be as a positive or negative evaluation of people, objects, events, activities, and ideas. It could be concrete, abstract or just about anything in our environment. An attitude is "a relatively enduring organization of beliefs, feelings, and behavioral tendencies towards socially significant objects, groups, events or symbols" (Hogg & Vaughan, 2005).

Health has defined as being "a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity" (WHO, 1948). Overall health is achieved through a combination of physical, mental, emotional, and social well-being. There are four general determinants of health including human biology, environment, lifestyle, and healthcare services.

¹ Assistant Professor, Department of Psychology, University of Chittagong, Chittagong, Bangladesh

² Professor, Department of Psychology, University of Dhaka, Dhaka, Bangladesh

³ Assistant Professor, Department of Psychology, University of Chittagong, Chittagong, Bangladesh

*Responding Author

Attitude of the Community People towards Health and Environmental Hazards of Tanneries in Dhaka

An environmental hazard is a substance, state or event which has the potential to threaten the surrounding natural environment and adversely affect people's health.

Urban areas of Bangladesh particularly the big city Dhaka have serious pollution problems with respect to solid waste management, growth of slum areas without supply of clean water and sanitation facilities, congested living conditions, inadequate drainage system and untreated industrial waste disposal. Most of these factors affect the urban poor in terms of general hardship; ill-health and even death. Pollutions can take several forms such as air pollution, water pollution, soil pollution, noise pollution etc.

Bangladesh has a good number of leather processing industries (tanneries), which are very important to its economy. Nowadays, leather and leather products are principal export products of Bangladesh and the sector provides a significant portion of employment in the country. About 180,000 people are engaged with this industry directly and indirectly (Billah, 2000). The total export income under the leather sector during the year 2014-2015 amounted to US \$ 1 billion (Saha, 2013). Government of Bangladesh has identified the leather industry as one of the “highest priority sectors” for its growth potential and its contribution to export diversification and employment generation.

There is no denying that most of the urban-based industries in Bangladesh pollute environment. Of them, tanneries do the extreme damage. It has created serious environmental pollution. Most of the tanning industries in Bangladesh are located in Dhaka City at Hazaribagh area in an unplanned way. About 240 tanneries are located on 25 hectares of land; most of the tanneries are very old and use mineral tanning processes that discharge liquid wastes everyday. These harmful wastes including chromium, lead, sulphur, ammonium, salt and other materials are severely polluting the capital city and the river Buriganga (Bhowmik, 2007). The primary health impacts from chromium are damage to the gastrointestinal, respiratory, and immunological systems as well as reproductive and developmental problems. Chromium is a known human carcinogen. In addition, the chromium-laced solid wastes from tanneries are often converted into poultry feed as is the case in areas of Bangladesh—and can thus impact livestock and humans (Hossain, 2007).

Tanneries are more hazardous than textile, medicine, fertilizer, paper industries etc. Three workers died from inhaling toxic carbon monoxide gas and several others fell ill at a tannery in the city's Hazaribagh area (Ahmed, 2010). Tanneries are releasing a large quantity of toxic waste at the time of processing of leather causing a severe environmental pollution. The pollution is seriously affecting the livelihood of some 0.1 million people in and around the Hazaribagh area of the capital city. The water of Buriganga River has become black and mucky due to continuous inflow of untreated tannery effluents. The tannery units release nearly 22,000 cubic metres of untreated toxic waste everyday to the Buriganga River. So, the condition of the river has become worst (Uddin, 2003). Very bad smells are also emitted from Hazaribagh and nearby Hazaribagh

Attitude of the Community People towards Health and Environmental Hazards of Tanneries in Dhaka

like Rayerbazar, Jhigatola and parts of Dhanmondi in Dhaka city. Nobody wants to go to Hazaribagh from outside area due to bad effect of tanneries. Even the tanneries' owners don't live in those areas (Muhammad & Haque, 2012).

Rusal et al. (2006) investigated about environmental pollution of process industries in Bangladesh. They estimated about 60,000 tons of raw hides and skins are processed in tanneries every year, which release nearly 95,000 liters of untreated effluents into the open environment daily resulting into the dead river Buriganga.

Mohanta et al. (2012) investigated the prevalence and determination of occupational diseases of leather tannery workers. They found that, tanning effluents entering the surface water bodies in the area including drain, canal, khal is reducing the quality of water and as a result they are completely unable to use it.

According to the Maurice (2001), over 8,000 workers in the tanneries of Hazaribagh suffer from gastrointestinal, dermatological, and other diseases and 90% of these population die before the age of 50.

Bangladesh Institute of Labour Studies (BILS, 2000) conducted a field survey in 9 tanneries at Hazaribagh area. It found that noise pollution of tanneries create hearing loss, high blood pressure, stress, and sleep disturbance of the tannery workers.

A research conducted by Society for Environment and Human Development (SEHD, 2008) revealed that out of 240 tanneries in the country, except for two BATA and Dhaka Leather Complex none of the tanneries has a treatment plant as required by the law.

Mahmood (2002) conducted a study to see the effect of toxic chemicals of tanneries on public health in Dhaka. He found that Short-term exposure to chromium can cause allergic responses. Long-term exposure can cause sores, ulcers and even lung cancer.

Muhammad and Haque (2012) studied about the effect of industrial pollution on the physical and mental health of the tannery workers as well as the related residential area's people of Hazaribagh in Dhaka city. They found physical health of the respondents was directly related to mental health. Industrial pollution had negative impact on tannery workers and inhabitants' physical and mental health respectively. The argued that, physically problematic persons always feel tension regarding their health issues. For this reason they can not fulfill their life provisions properly that may spoil their mental health.

The above mentioned studies show that tannery industries pollute environment greatly and as a result these industries create various health related problems for both the workers and the

Attitude of the Community People towards Health and Environmental Hazards of Tanneries in Dhaka

community people living around tanneries. Waste water, organic particulars and toxic chemicals is discharged in open drains and ultimately finds its way into land surfaces and in natural waters in the vicinity. As a result, water, air, soil, shelter and food are getting continuously polluted & most affected victims are the tannery workers & the community living around. There are some studies exist concerning the tannery workers health related problems, but there appears to be no study dealing with the perception and attitude of the community people towards environment pollution of the tanneries. In this context, it would be interesting and necessary to know the feelings & attitudes of the community people regarding the effect of the tanneries on their health and environment. The findings of such a study would help us to provide suggestions to improve the situation. Moreover, it is a crying need to relocate these industries as soon as possible. In this context it can provide strong research evidence of public opinion in respect to the necessity for relocation of the tannery industries from the Hazaribagh residential area to far industrial area.

Objectives:

The objectives of the present study were-

1. To understand the perception and attitudes of the community people about environment pollution of tanneries in their area;
2. To assess the health problems of the community members living around;
3. To understand the attitude of the community people towards the planning and management of tanneries;

METHOD

Sample

The target population of the present study was the people living around the hazardous industries (Tannery) in Dhaka City. From among those living around one-kilometer area of the tanneries at Hazaribagh in Dhaka City, 200 individuals were selected by incidental sampling technique. By socio-demographic characteristics 60.5% of the participants were male and 39.5% were female. The mean age of the participants was 30.14 years. By marital status, 46.0% were unmarried and 54.0 % were married. The occupations of the participants were as follows: Business (25.5%), student (22.5%), housewives (21.5%), service (15.0%), tannery worker (12.5%) and retired/unemployed (3.0%). The participants had been leaving around the tanneries at Hazaribagh for a minimum of one (1) year to a maximum of 54 years.

Data collection instrument

To collect the relevant data, a semi-structured interview guide was used. The major issues addressed in the interview guide included: community members' perception about environment pollution, health problems of the community members, attitudes of the community members towards tannery industries in their area, etc.

Study design

The present study was an exploratory study following qualitative approach.

Procedure

Before developing the semi-structured interview guide, the target area was physically visited by the researcher. There preliminary discussions were held with a few community people, tannery workers and a local doctor in order to have an initial idea about the problem under investigation. Also, literature search was conducted on the relevant issues. Synthesizing all the information, a semi-structured interview guide (draft) was developed by the researcher. This draft instrument was then pre-tested with 20 community members living around the tannery industries located in Hazaribagh (Dhaka). The draft interview guide was finalized after incorporating the feedback obtained from the pre-test. For collecting the required data, the final instrument was applied on 200 participants selected on the basis of availability. However, before collecting data from them, the respondents were informed about the purpose of the study, there informed consent was taken, and attempts were made to build up good rapport with each one of them. Additionally, the respondents were told that the data to be collected would be used for academic purpose only, and they were assured of the confidentiality of their responses.

Data analysis

The collected data were analyzed by qualitative data analysis approach. For this, the responses to the open-ended questions were first examined and categorized. However, for the sake of presenting the score, the frequency of the responses were counted and reported in percentage form by using SPSS software.

RESULTS

Table 1, Percentage of the responses to specific items concerning perception about the environment pollution of tanneries

SL no	Items	Response	Percentage
1	Whether environment is being polluted by tanneries	Yes No	100 0
2	Kind of pollutions	Water pollution Air pollution Sound pollution	47.7 42.2 6.7

Table 1 shows that in response to the question, whether they feel that their local environment is being polluted by the tanneries, all the respondents (100%) replied in the affirmative. Being enquired about the nature of environment pollution caused by tanneries, highest percentage of the respondents (47.7%) mentioned water pollution, 42.2% mentioned air pollution and 6.7% mentioned sound pollution.

Attitude of the Community People towards Health and Environmental Hazards of Tanneries in Dhaka

Table 2, Percentage of the responses to specific items concerning attitude towards travelling problem and pollution of the Buriganga River

SL no	Items	Response	Percentage
1	Whether face problem during travelling	Yes No	100 0
2	Nature of the problem	Liquid toxic waste overflow from drain on street Tanneries emit bad smell which is beyond tolerable limit Create traffic jam because cargo stand on the narrow roads Leather pieces are dried on the side of the roads	54.2 23.9 14.1 7.7
3	How much responsible the tannery industries for the extreme pollution of the Buriganga river	Very high High	66.5 31.5

Table 2 shows that in response to the question, whether they face problem during travelling from their area, all the respondents (100%) replied in the affirmative. When asked about the nature of the problem, the most common responses were: liquid toxic waste overflow from drain on the street (54.2%), tanneries emit bad smell which is beyond tolerable limit (23.9%), create traffic jam because cargo stand on the narrow roads (14.1%) and leather pieces are dried on the side of the roads (7.7%). Being enquired about the responsibility of the tannery industries for the extreme pollution of the Buriganga River, highest percentage of the respondents (66.5%) termed it as “very high” and 31.5% termed it as “high”.

Table 3, Percentage of the responses to specific items concerning perception about the health problems

SL no	Items	Response	Percentage
1	Whether tanneries’ environment pollution is harmful to health	Yes No	100 0
2	How much harmful	Very high High Low	46.0 48.5 3.0
3	The nature of health problem	Skin disease Allergy Diarrhea Asthma Typhoid Head ache Fever	39.2 21.0 16.8 16.4 6.7 6.4 5.2

Attitude of the Community People towards Health and Environmental Hazards of Tanneries in Dhaka

According to table 3, in response to the question, whether they feel that the environmental pollution was harmful to their health, all the respondents (100%) replied in the affirmative. When asked about the degree of harmfulness from pollution, the highest percentage of the participants (48.5%) termed it as “high” and 46.0% of the respondents termed it as “very high”. Being enquired about the nature of the health problems they are facing, the most common response were skin disease (39.2%), allergy (21.0%), diarrhea (16.8%), asthma (16.4%), typhoid (6.7%), head ache (6.4%) and fever (5.2%).

Table 4, Percentage of the responses to specific items concerning attitude towards the planning and management of tanneries

SL no	Items	Response	Percentage
1	Whether tannery industries are located in an unplanned way	Yes No	100 0
2	Why it is unplanned	Located in a residential area Having no treatment plant Lacking of sufficient drainage system Do not follow government rules & regulations	30.4 28.8 22.6 18.3
3	Whether tanneries should relocate at any industrial area	Yes No	96.5 3.5
4	The reasons that although government has taken steps to relocate the tannery industries but it is still not moving	Lack of strict decision of the government Lack of willingness of the tannery owners Relocation process needs a lot of money that nobody can provide Lack of consciousness of the inhabitant of Hazaribagh	62.4 27.1 9.4 7.2

Table 4 shows that in response to the question whether they feel that tannery industries are located in an unplanned way, all the respondents (100%) replied in the affirmative. They also mentioned that tanneries are unplanned because the tanneries are located in a residential area (30.4%), having no treatment plant for toxic waste management (28.8%), lack sufficient drainage system for the passage of wastes (22.6%) and the owners disrespect for government rules and regulations (18.3%).

Attitude of the Community People towards Health and Environmental Hazards of Tanneries in Dhaka

In response to the question, whether they think that tanneries should move from Hazaribagh and relocate at any industrial area, the majority of the respondents (96.5%) replied in the affirmative. Being enquired about the reasons that although government has taken steps to relocate the tannery industries; it is still not moving away, the most common responses were: lack of strict decision of the government (62.4%), lack of willingness of the tannery owners (27.1%), relocation process needs a lot of money that nobody can provide (9.4%) and lack of consciousness of the inhabitant of Hazaribagh area (7.2%).

DISCUSSION

Leather industry plays an important role in Bangladesh economy due to its large potential for employment, growth and export. At the same time, it poses serious environmental threats by discharging liquid effluents and solid wastes directly into surrounding low lying areas without proper treatment. The findings of the present study revealed that all of the community people at Hazaribagh felt that their environment is being polluted by tanneries. Water and air are the most essential element for living, but the water and air of the areas near tanneries at Hazaribagh are polluted beyond the tolerable limits. Sometimes hides and skins were cooked in open air to obtain glue for the local market. The most hazards occur when some poor people burn leather pieces (damaged) instead of coal or wood for cooking as it is cheaper. But there is no necessary warning from the government or aid giving agencies or their representatives to improve the hazardous situation. Most of the participants mentioned, tannery industries are located at Hazaribagh area in an unplanned way. Most of the tanneries are very old and use mineral tanning processes that discharge a huge amount of toxic waste. But, the owners of the tanneries do not keep any treatment plant for toxic waste management. It was also observed that there was no easy passage for wastes.

The results of the present study also indicated that the community members of Hazaribagh have been seriously suffering while moving from one place to another as liquid toxic waste were overflowing from drain on the streets, discharging bad smell which is beyond tolerable limit. These pollutions are very harmful to their health, causing various diseases. Most of the respondents responded that they suffered from skin disease, allergy, diarrhea, asthma, typhoid, head ache and fever. They also suffer from traffic jam very often, because chemicals and leather bearing big cargoes stand on the narrow roads of the Hazaribagh. The findings also showed that the tannery industries are responsible for the extreme pollution of the Buriganga River. The tannery waste causes the harmful effect on fisheries sector also. Fish production of Buriganga River is decreasing day by day due to unplanned disposal of tannery wastes.

The findings of the present study shows that, community members wanted tannery industries to be relocate from Hazaribagh residential area to any other industrial area as soon as possible. But yet the relocation did not take place because of lack of strict decision of the government in this

Attitude of the Community People towards Health and Environmental Hazards of Tanneries in Dhaka

regard. The unplanned tanneries at Hazaribagh in Dhaka do not have supporting infrastructure facilities. Hazaribagh itself is surrounded by thickly populated localities of the city. Relocation of the tanneries to a more spacious location with appropriate infrastructure is an obvious need. A government plan to relocate the tanneries to a dedicated site outside of Dhaka city by 2005 has faced numerous bureaucratic delays. The government of Bangladesh has sought extensions to a 2009 High Court order to relocate the Hazaribagh tanneries out of Dhaka city, and then ignored the order when the extension passed. Although again the Government has set 1 March 2016 as the new deadline for moving the tanneries from the capital's Hazaribagh to Savar (outside of city), not a single factory building at the new site is going to be ready for relocation by the deadline. The central effluent treatment plant (CETP), the most essential component of the project, is not ready either. A little over 50% of the work at the plant has been completed (Roy, 2016). Meanwhile the tannery associations continue to seek even greater compensation than the amount initially agreed upon from the government for the relocation. Moreover, the 'leather town' in Savar could not be completed in time as the tanners never showed any real interest in relocating their factories there. Ongoing legal tangles that have lasted for years are also partly to blame.

Finally, it could be said that though tannery industries are playing a significant role for the development of the economy of Bangladesh, but unfortunately it hampers people and environment greatly. The government has tried by giving deadline after deadline for solving the problem, but failed. Under the circumstances, the authorities concerned are well advised to make strict necessary arrangements to expedite the process for tannery relocation and save the River Buriganga, the environment and the people living around.

Acknowledgments

The author appreciates all those who participated in the study and helped to facilitate the research process.

Conflict of Interests

The author declared no conflict of interests.

REFERENCES

- Ahmed, F. (2010, March 6). Three tanners die from gas poisoning. *The Daily Star*, p1.
- Bangladesh Institute of Labour Studies- BILS, (2000). Occupational health, safety and environment: Status in tannery industry [Monograph]. Labour, 3rd year, 4th issue, 23-32.
- Bhowmik, K. A. (2007). *Buriganga Pollution: Reasons & Prospects*. Khulna: Urban and Rural Planning Discipline, Science, Engineering and Technology School, Khulna University press. 87-97.
- Billah, S. M. R. (2000). *Heath of the tannery workers*. Dhaka: SHED.
- Hogg, M. & Vaughan, G. (2005). *Social Psychology (4th edition)*. London: Prentice-Hall.

Attitude of the Community People towards Health and Environmental Hazards of Tanneries in Dhaka

- Hossain, A. M. (2007). Heavy Metal Concentration in Tannery Solid Wastes Used as Poultry Feed and The Ecotoxicological Consequences. *Bangladesh Journal of Scientific and Industrial Research*, 42(2), 397–416.
- Mahmood, A. (2002). Effect of industrialization on health issue. *Bangladesh Journal of Scientific and Industrial Research*, 44(1), 81-86.
- Maurice, J. (2001). Tannery Pollution Threatens Health of Half-Million Bangladesh Residents. *Bulletin of the World Health Organization*, 79.
- Mohanta, M. K., Saha, A. K. & Hasan, M. A. (2012). Prevalence and determination of occupational diseases of leather tannery workers. *University Journal of Zoology, Rajshahi University*, 31, 79-82.
- Muhammad, N. & Haque, M. A. (2012). Physical and Mental Health of Tannery Workers and Residential People of Hazaribagh Area in Dhaka City. *ASA University Review*, 6(2), 161-169.
- Roy, P. (2016, February 9). Relocation of tanneries: how long will it take. *Leather International Magazine*. Retrieved from <http://www.leathermag.com/features/featurerelocation-of-tanneries-how-long-will-it-take-4805624>.
- Rusal, M. G., Faisal, I. & Kamal, K. M. M. (2006). Environmental pollution generate from process industries in Bangladesh. *Journal of Enviromental Polution*, 28(2), 44-161.
- Saha, S. (2013, January 18). Leather industry aims to cross \$1b exports. *The Daily Star*, Retrieved from <http://www.thedailystar.net/news-detail-265699>.
- Society for Environment and Human Development- SEHD, (2008). *Leather Industry, environmental pollution and mitigation measures*. Retrieved from <http://www.sehd.org/publications/environment/21-leather-industry-environmental-pollution>.
- Uddin, k. (2003). Eradication of hazardous child labour in Bangladesh. The need for an integrated strategy. *The International Journal of Children's Rights*, 10, 233.
- WHO (1948). Adopted by the International Health Conference, New York, 19-22 June, 1946.

How to cite this article: A Rahman, A Rahman, B Dey (2016), Attitude of the Community People towards Health and Environmental Hazards of Tanneries in Dhaka, *International Journal of Indian Psychology*, Volume 3, Issue 4, No. 64, ISSN 2348-5396 (e), ISSN: 2349-3429 (p), DIP: 18.01.133/20160304, ISBN: 978-1-365-32519-9