

Arsenic Pollution: An Assessment of The Gap between Awareness and Practice

Dr. Rajeshwari Roy¹, Rajlakkhi Bhabuk (Hati)² and Swati Chatterjee¹

[¹Department of Environmental Studies, Rabindra Bharati University]

[²Rajyandharpur Netaji High School, Serampore, Hoogly]

Abstract: Arsenic in ground water has been detected since few decades in West Bengal. This toxic chemical is proved to be lethal. Incorporation of arsenic through intake of water and other food items can result fatal. At least 8 districts of the state is severely suffering from arsenic pollution. Several steps have already been taken by the government and nongovernmental sectors in order to mitigate the crisis. The health effects include skin cancer, cardio vascular diseases, diabetes, improper growth of children and so on. Although the administrations as well as the commoners, all are well aware of the arsenic problem in most of the cases, the mitigation measures are not much effective. The problem might not always be the lack of management exercises rather it is the lack of willingness of the people to get shifted from conventional practices. In the current research, we have surveyed few arsenic affected localities in Nadia district and found that majority of the dwellers have got the complete understanding of the arsenic poisoning, but they are indifferent until the problem turns out to be harsh enough. So a gap has been evidently identified between knowledge and practice among the sufferers.

Keywords: Arsenic, Awareness, Practice, Gap, Habit, Willingness.

Introduction

Human exposure to high levels of arsenic arises mainly all the way through the intake of underground water containing naturally occurring inorganic arsenic, crops irrigated with arsenic contaminated water sources, food prepared with toxic water and so on. Arsenic contaminated water consumed by cattle has also been reported to provide poultry products and milk that contains a good amount of arsenic (Donoghue et al., 1994). Arsenic pollution has been detected in parts of West Bengal since a few decades. As per the State Government's evaluation the minimum number of affected block are 79, these involve 26 million commoners across 2600 villages (Paul et al, 2013; Basu et al., 2015). More than 35% of the total population of the state are suffering from arsenic poisoning (Yadav et al., 2015). Public health actions are essential to cut down exposures to arsenic toxicity, mainly in arsenic prone areas.

The manifestations of arsenic poisoning in human health are uncountable, and the proper diagnosis depends chiefly on awareness among the people regarding arsenic pollution and its ultimate fate. It is very not easy to identify arsenicosis from its early symptoms as they are very common health issues and sometimes negligible. Besides, appropriate

medications are not even defined till date. So, once the severe health issues have developed the unavailability of treatment results in fatality. The only way of endurance is to remove (or at least reduce) arsenic from daily food items and water as well. Several authorities including government and private companies, scientist from corners of the world are concerned to address the issue. (Yadav et al., 2015).

Studies reveal that mostly the arsenic affected areas in West Bengal are villages inhabited by people from very poor economic condition. A correlation between economy – nutrition and occurrence of arsenicosis has been identified (Das and Roy, 2013). Unfortunately the victims even reported to face social exclusion (Chowdhury et al, 2001 ; Mukherjee et al., 2006). The suffering from arsenicosis, is even more than other illnesses as it is robustly harmful to mental health. The obvious results are social stigma and psychological difficulties which effect on mental well-being (Chowdhury et al., 2016). Besides, sometimes arsenic poisoning is mistaken as transmittable (Brinkel et al., 2009).

This paper embodies a preliminary report on the current scenario of arsenic pollution, health issues, socio economy in relation to arsenic at Bagpara, Ghetugachi Panchayat of Chakdah Block, Nadia district of West Bengal.

Materials and Methods

Study Area

Ghetu gachhi (23.0335° N, 88.5734° E), Bagpara gram panchayat under Chakdah Block of Nadia district, West Bengal has been selected as study area (Fig.1).



Fig. 1. Study Area

Survey

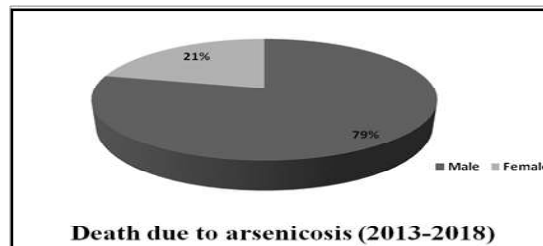
Interactions with the administrative personnel as well as with common people have been carried out to acquire the idea regarding the current scenario, the level of awareness, the effectiveness of taken mitigation measures, and possible future scope of actions. The villagers irrespective of economic classes, social, professional backgrounds, age and genders were interrogated. Among the officials, Panchayat Pradhan and some officers of health departments were interviewed following a pre modelled questionnaire (Fig.2).



Fig 2. Arsenicosis victims

3. Results and Discussions

This area is under the threat of arsenic poisoning since the last two decades. The number of death due to arsenic poisoning is 14 since the last five years (2013 – 2018) (Fig 3).



The current scenario from the population survey reveals that more than a quarter (26.32%) (fig. 4) of the total population is suffering from arsenicosis in spite of implementation of mitigation measures taken by both the government and some multinational nongovernmental organizations since last 5 years.

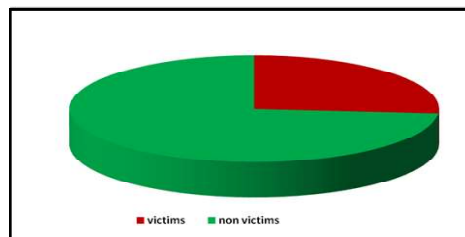


Fig. 4. Propostion of arsenicosis victims among the surveyed population

More than 85% (87.5%) of the households under survey comprises records of deaths due to arsenicosis. The current records show a major part of the arsenicosis patients are

male, followed by the females. Even children aren't set aside from the curse of arsenic poisoning (fig. 5).

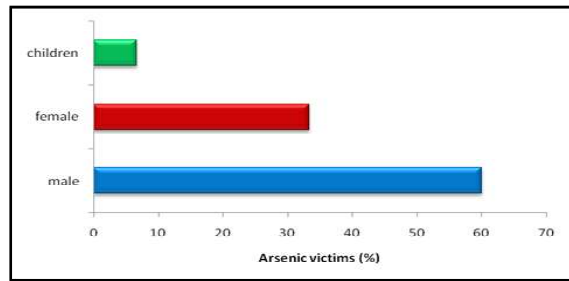


Fig 5. Current scenario of arsenic poisoning

Although alleviation measures have been taken by authorities since the last five years but the situation is still no good. Tap water supply has been installed but it is being used for drinking only. Agriculture and all other daily activities, even the livestock is fed with tube well or shallow well contaminated water. The economic condition of the particular village is nearly miserable. Average income per family is 4625 INR per month where the average family size is almost 5 in the surveyed locality.

Conclusion

People suffering from extreme poverty are more concerned about the pain of unfulfilled appetite rather than that of ulcers or skins lesions or even cancer. Where survival is challenging due to improper nutrition, nobody would care about arsenic free water or food. Most of the villagers are well aware of arsenic toxicity but they are reluctant or indifferent due to other societal or economic adversities. Nutrition is a major determinant of arsenic poisoning (Maharjan et al., 2007). Moreover the light of education didn't touch the elderly generations, as stated by the villagers. A few societal issues have also been reported; the most remarkable one is that the grooms from surrounding villages deny accepting brides from this particular village, as arsenicosis is widely misunderstood as contagious. Arsenic as researched, badly affects mental health (Fujino et al., 2004). This might be perilous for the children and the elders as well. The supplied water might not meet the entire demand of water apart from drinking, but water for agricultural practice and livestock feeding with contaminated water may spread the poisoning beyond the affected zones. Almost everyone of the surveyed population has understanding about arsenic and its ill effects but there lies a gap between knowledge and its applications. This is the highest time for the policymakers to make out the actual snags and fix these up so that we can acquire an arsenic free West Bengal in the nearest future.

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