

Assessment of drinking water quality and its health impact on local community in coastal belt Karachi

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(Received April 13, 2017, Revised October 31, 2017, Accepted November 13, 2017)

Abstract. For survival of human beings clean water is an essential commodity whereas contamination in drinking water threatens to mankind. The main cause of water contamination is social and development activities of human being along with increasing population. The community in the study area has acute shortage of drinking water along with about 40 to 60% has no access to safe drinking water. This study indicates drinking water quality of two major sources of coastal belt of Karachi one is supplied by Karachi Water & Sewerage Board (KWSB) as tap water and the other through groundwater. The physicochemical analysis was carried out by following the standard methods for checking the quality of drinking water. The analyzed results showed that the quality of groundwater was unfit as potable water. The most critical situation was observed as high level of contamination followed by high turbidity and increased salinity levels. TDS in surface water were found 12% above and TDS in groundwater was 20% below the National Drinking Water Quality Standards (NDWQS) of Pakistan as well as the permissible WHO drinking water quality guidelines.

Keywords: coastal belt; tap water; groundwater; contamination; physicochemical; health; community

1. Introduction

Water is an essential natural resource that is vital for ecosystem functioning and human being water is an essential component of life (Okoro *et al.* 2016). Water occupies more than 70% of the Earth's surface but out of this total stock less than 3% is sweet freshwater. Again out of this total 3% the quantity of freshwater accessible for human intake is hardly 0.01%; the remaining water is confined in snow caps and glaciers (Ahmed *et al.* 2014). Accessible lesser portion of the Earth's total fresh water is becoming highly contaminated due to numerous human influenced activities like dumping of residential, industrial and chemical waste along with application of fertilizers and pesticides in agricultural practices. The human influenced practices induce numerous injurious constituents in the water and they consequently cause water based and water related diseases in the society (Soomro *et al.* 2011).

The situation is not good in developing countries as majority of the people use that water which

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