

Interactive comment on “Cost and impact analysis of preventive and remedial measures for safe drinking water” by M. A. Tahir and H. Rasheed

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P3L17: missing reference to WHO reports

Reply: Reference added in the text with year

World Health Organization technical reports (WHO, 1972-73) have revealed that after installation of safe water pipes alone in 30 rural settlements of Japan—

WHO1972 -73 Technical Report Series No.505, 532. World Health Organization, Geneva

P5L10 and beyond: Several disease names are miss-spelled Reply: Spellings corrected for following: Infective Hepatitis Enteric diarrhea, Schistosomiasis Onchocercia-

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sis methaemoglobinaemia Leptospirosis Trichuriasis P6L1-9: information about methods for water quality analysis is missing

Reply: Reference added in the text :

In total, 300 drinking water samples were collected from the study areas and analyzed following the Standard Methods for the Examination of Water Waste Water (APHA, 1992) for 22 basic physico-chemical and microbiological parameters.

Following reference is added in the list of References: APHA, AWWA and WEF, D.E 1992 Standard Methods for the Examination of Water and Wastewater. American Public Health Association, American Water Works Association and Water Environment Federation, 18th Edition, Washington, DC.

P6L15 and figs 1 and 2: only presence/absence r also information about concentration? If yes, include (as data or WHO categories)

Reply: Analytical data in terms of quantified concentrations were generated, which was compared with the WHO Drinking Water Guidelines and after data analysis percentage contamination is expressed.

P6L16-22: the way the information about the prevalence of diseases is collected is very obscure. Was it self-reported? Over what period? Was there confirmation at the BHU? How was the disease diagnosed?

Reply: Two types of Questionnaire were used: (i) village profile/questionnaire, which was used during the drinking water sampling (2004-06), reflects the basic information regarding the village such as: household numbers, major occupations of inhabitants, type of roads, education and health facilities, literacy rate, ratio of male and female, water supply and sanitary. drainage system etc., In total, 10P8L17:as indicated by the authors, they only compare costs of medication against water related diseases vs water supply chlorination and improved sanitation facilities. Many studies have involved cost estimates of lost labour and costs of health- care/family care that could have been

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included here.

Reply: The study has almost covered all of these parameters and as it was a pioneer study in Pakistan to predict the cost benefit analysis of water and sanitation interventions, however; in future studies the suggestion of the referee will also be considered for incorporation in the methodology. - P9L2: the calculation of the cost/benefit assumes that the interventions will completely eliminate the costs of medication, This is not likely, esp. since malaria may be a large contributor to costs of medication, while the effect of the interventions on malaria are limited.

Reply: Proper construction of toilets and septic tanks will prevent open flow of waste water and thus; can eradicate malaria to a greater extent. However; the safe water interventions will completely eliminate the medication costs of water borne and sanitation diseases. - P9L12: mortality?

Reply: Change inserted in following line:

Hypothetically and truly three main factors are considered to reduce water related diseases that are ultimately responsible for excessive mortality (M)

P9,10,11: the victim's rate calculation has no references and justification of the calculation. It combines the data on unsafe systems and data on diseases and seems to be an attempt to determine the relative contribution of unsafe drinking water, unsafe sanitation and improper hygiene, but a straightforward multiplication of

Reply: The literature review from various sources indicate similar type of studies without any developed model to predict expected population on risk of water-sanitation diseases, therefore, the literature reviewed for this study has only shown the comparative analysis of water quality treatment and improved sanitation facilities without using modeling methodology.

Interactive comment on Drink. Water Eng. Sci. Discuss., 6, 1, 2013.