

The Incidence of Acute Diarrhea in Children under Five Years Old in Rasht City in 2009: The First Phase of the Effect of Using Sewerage System

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Abstract

Background and Objective: The lack of a proper sewage collection & disposal system, the water and sewerage project, in the city of Rasht, became a priority by Guilan province Urban Water and Sewerage Company with the government partnership and World Bank financial support. The objective of this research was to complete the first phase of a two-phase study, to determine the impact of using an urban sewerage system on acute diarrhea in children under five years old, in Rasht city in the Guilan province.

Materials and Methods: The study is a concurrent control before and after field trial which is carried out in two phases: before (phase I) and after (phase II). Sampling for phase I was performed in the middle month of each season, November and February 2009 and May and August 2010. The incidence of acute Diarrhea was measured with the participation of 1560 mothers of children under 5 years old. This was done in two groups: the intervention group (inside the sewerage system project perimeters) and the control group (outside the project perimeters). Data was collected by local female general practitioners and medical students by door-to-door interviews with mothers. Data was analyzed using the SPSS 11.5 software package. The Pearson Chi-Square was used to compare qualitative variables between groups, whilst the t-test and One-Way ANOVA was used to compare quantitative variables.

Results: The average annual incidence of acute diarrhea in children under five years old was 10.4% (9.4% in the intervention group and 11.4% in the control group). The seasonal pattern of acute diarrhea incidence was 10.5% (9.3% in the intervention group and 11.7% in the control group) in May, 12.5% (11.5% in the intervention group and 13.4% in the control group) in August, 9.3% (8.1% in the intervention group and 10.5% in the control group) in November, and 9.1% (8.5% in the intervention group and 9.8% in the control group) in February respectively.

Conclusion: The study showed the incidence of acute diarrhea in children under five years old in Rasht city is moderate and it follows a seasonal pattern. The highest rate was seen in summer and the lowest rate in winter. It is expected to decrease with the initiation of the sewerage system program.

Keywords: Acute Diarrhea, Children, Incidence rate, Epidemiology, Sewerage, Rasht