

Impact of oral rehydration and selected public health interventions on reduction of mortality from childhood diarrhoeal diseases in Mexico

G. Gutiérrez,¹ R. Tapia-Conyer,² H. Guiscafré,¹ H. Reyes,¹ H. Martínez,¹ & J. Kumate³

Reported are the results of an analysis of mortality trends from diarrhoeal diseases among under-5-year-olds in Mexico between 1978 and 1993 in relation to the impact of education, basic sanitation, and selected medical care practices. The study period was divided into three stages; the first pre-dated the widespread application of oral rehydration therapy (ORT); the second, covered the implementation of a nationwide programme promoting ORT; and the third included additional measures, such as immunization and improvements in basic sanitation. Mortality rates decreased progressively, at an average of 1.8% per year in the first stage, 6.4% in the second, and 17.8% in the third. The importance of literacy campaigns for women and the promotion of ORT was confirmed. Both of these measures reduced mortality; however, a greater reduction resulted from a massive immunization campaign against measles and improvements in sanitation (expansion of the drainage and piped water systems, improved water chlorination procedure, and effective prohibition of the use of sanitary sewage for vegetable irrigation).

Introduction

Experiences in several countries indicate that selected public health interventions reduce mortality from diarrhoeal diseases (1, 2). Historically, improvements in basic sanitation, nutritional status, and hygiene education have had the greatest impact in this respect (3, 4). More recently, use of oral rehydration therapy (ORT) and measles vaccination have been reported to reduce short-term childhood mortality from diarrhoeal diseases (2, 5).

In Mexico mortality from diarrhoeal diseases has decreased over the last few decades, mainly because of general improvements in living conditions, an increase in school attendance, and in particular an increase in literacy campaigns for women, as well as improvements in basic sanitation. In 1984, a nationwide programme was implemented to promote use of the ORT formulation recommended by WHO in order to accelerate this trend in mortality reduction, mainly among children under 5 years of age.⁴ Prior to

this, ORT had been used only in a few public hospitals, with no measurable impact on mortality (6, 7). Since the launch of the national oral rehydration therapy programme there has been an increase in the consumption of oral rehydration salts (ORS) and the reduction in mortality rates has been more evident. Among the other public health interventions that have been introduced in Mexico in recent years are the following: a universal immunization programme (UIP), with particular emphasis on measles immunization (8), a programme to increase the quality and availability of potable water (clean water programme (CWP)) (9), and an increase in women's education standards, which may have also influenced the decrease in diarrhoeal disease mortality, as has been observed in other countries (1, 10-12). Since the role played by these interventions in this decline had not been analysed, we carried out the present study to assess their impact on the decrease of diarrhoeal disease mortality and to estimate the relative impact of the national ORT programme on this reduction.

Methods

Secondary data analyses were carried out to study mortality trends in Mexico, correlating them with the use of ORT and other selected public health interventions.

Three periods were covered in the analyses, as outlined below.

¹ Interinstitutional Health Systems Research Group, Ministry of Health, Mexican Social Security Institute, Mexico City, Mexico. Requests for reprints should be sent to Dr G. Gutiérrez, Hortensia No. 57, Col. Florida, C.P. 01030, Mexico D.F., Mexico.

² Ministry of Health, Mexico City, Mexico.

³ Former Minister of Health, Mexico City, Mexico.

⁴ *The treatment of diarrhoea: a manual for physicians and other senior health workers*. Unpublished document WHO/CDR/95.3, 1995.

Reprint No. 5691