

11 A 59 / 15

THE PROTECTIVE EFFECT OF EACH OF  
THE RECOMMENDED DOSES OF ORAL POLIOVACCINE IN  
PRESCHOOL CHILDREN IN  
BAGHDAD, IRAQ

THESIS

Submitted in the Partial Fulfilment  
For Master Degree in  
(EPIDEMIOLOGY)

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(1987)

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

سُبْحَانَكَ لَا عِلْمَ لَنَا إِلَّا مَا عَلَّمْتَنَا بِإِذْنِكَ أَنْتَ الْعَلِيمُ الْحَكِيمُ.

صدق الله العظيم



## ACKNOWLEDGEMENT

I would like to express my thanks and deep gratitude to the **Council of Arab Health Ministers**, for their support of the study, and the **Council's Academic Committee**, for their invaluable guidance and assistance during the preparation to this study.

My deep thanks, to **Professor Dr. ALY MASSOUD** the father of this programme. I am grateful to my supervisors **Professor Dr. RIFKY FARIS** and **Professor Dr. SABAH AL-OBAYDI** for their generous assistance and the very valuable guidance made by them during the whole period of the study.

I am grateful to the staff of the Department of Community, Environmental and Occupational Medicine in Ain Shams Faculty of Medicine, for their assistance during the whole period of the project.

I am thankful to the Bacteriologist **Mr. ALI RAGAB** the Director of the Department of Virology in the Central P.H. Laboratory (Baghdad) and to the Bacteriologist **Mrs. AHLAM AL ASWAD** for their assistance in Conducting the Laboratory job of this study.

My study population deserve special thanks for their cooperation which made this work possible.

Lastly, I would like to thank my wife, who exhibited infinite patience throughout the various stages of the production of this thesis.

**Dr. AHMED HARDAN**

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# Introduction

## INTRODUCTION

The introduction of oral poliovaccine in Iraq in 1967 has dramatically affected the epidemiology of poliomyelitis. The spread of the disease has been limited by partial immunization. This, together with suboptimal immunization results in the buildup of a substantial immunity deficits in the population. Thus the introduction of virulent wild-type virus into these populations causes extensive epidemics of paralytic poliomyelitis as occurred in 1976. Partial immunization may thus result in a particularly precarious situation and it therefore becomes mandatory that regular immunity surveillance be carried out to prevent the build-up of a substantial immunity deficits and to protect against the consequent major epidemics. A comprehensive serosurvey is recommended to determine vaccine coverage and vaccine quality as well as the determination of antibody status by serology to define pockets of susceptibles all over the country.

There is little doubt that a monitoring programme such as this is costly, involving a large number of health professionals. Energetic motivation and a high degree of dedication of purpose are required to ensure

a satisfactory collection of specimens. The immediate and direct cost of a monitoring programme is too little if compared by the cost of long-term hospitalizations, appliances, rehabilitation, and days of healthy life lost... etc. It is clear that an epidemic of poliomyelitis cost many orders higher than a monitoring programme.

It has become apparent in recent years that prophylactic vaccination against poliomyelitis has not achieved complete eradication of the disease. In spite of the marked reduction in reported cases since the legislation of the compulsory vaccination for infants in Iraq 1980, the disease remain a major cause of permanent disability.

Despite the 63% coverage rate by three doses of OPV in below two years of age Iraqi children (1985), there appeared to be continuing circulation of wild poliovirus. There is continuing incidence of paralytic poliomyelitis, including cases among children who had received complete courses of the primary three doses of OPV.

Since 1967, when Sabin vaccine was first introduced into Iraq, there has not been any documented data on the protective effect of each dose of OPV.

The following important questions have been raised concerning the WHO recommendations for the use of oral poliovirus vaccine (OPV)

- a) How effective is OPV when administered before the age of three months?
- b) What is the protective effect of each of the three recommended doses?
- c) How effective is OPV when intervals between doses are less than 6-8 weeks?
- d) What are the benefits of booster doses for children who have received three doses of OPV during the first year of life?

This project is proposed to answer question (b): among preschool children in Baghdad, Iraq.

# **OBJECTIVES**

### OBJECTIVES OF THE STUDY

#### Immediated Objectives:

The assessment of the protective effect of each dose of the three recommended doses in preschool children in Baghdad.

#### The Ultimate Objectives:

To provide a base line data on the effectiveness of poliovaccine in Baghdad that help to:

- 1) Reduce morbidity and mortality from poliomyelitis by providing effective immunization programme.
- 2) To set up a system of disease surveillance, to study epidemiological aspects of poliomyelitis and to take appropriate measures to reduce disease transmission and incidence in the vulnerable age groups.

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# Review of Literature