
Infant Mortality Rate from 2007-2009 in Falluja City, Western Iraq

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Abstract:

Background: Infant mortality is considered one of the most sensitive indicators of the health status of a community. Fallujah lacks accurate information on mortality and related indicators. Reporting of infant deaths is defective. Causes of death in general are grossly misrepresented in death certificates.

Objectives: Estimating the IMR in Fallujah city, Al-Anbar governorate, Iraq, during the years 2007, 2008, & 2009.

Patients & methods: This is a review of hospital records involving all live births & deaths occurring from the beginning of January 2007 to 31 December 2009. The data were collected from files of patients admitted to the neonatal & children hospital wards during the studied years, from birth & death certificates recorded in the hospital & Fallujah health vital statistics center. Data collected included name, age, sex, residence, place & date of death.

Results: The IMR was 75/1000 live births in 2007, 67.4/1000 live births in 2008, & 65.9/1000 live births in 2009. About 83.8% of deaths occur during the neonatal period, & 16.2% in the postneonatal period, the male IMR (89/1000 live births) was higher than female IMR (50.4/1000 live births). The studied dead infants were 52.8% in the rural & 47.2% in the urban areas.

Conclusion: IMR didn't show much difference during the 3 studied years this may reflect the fact that there was no much improvement in the social, health economic in addition to the security situation during the studied years.

Key words: Infant, mortality rate, Fallujah, Iraq.

Introduction

Infant mortality rate (IMR) is the number of newborns dying under a year of age for 1000 live births. The infant mortality rate correlates very strongly with and is among the best predictors of state failure⁽²⁾ IMR is also a useful indicator of a country's level of health or development, and is a component of the physical quality of life index^(2,3). The IMR includes the neonatal and post neonatal mortality rate. Neonatal mortality rate (NMR) defined as the number of deaths in the 1st 27 days of life per 1000 live births, and the post neonatal mortality rate (PNMR) defined as the number of deaths at the age of 28 days and over, to the end of the first year of life, per 1000 live birth^(3,5). IMR is an accepted global indicator of health and socioeconomic status of a given population. While neonatal health is found to be dependent on health care services⁽⁸⁾

Post neonatal health is dependent largely on environmental factors. A high IMR, therefore, can indicate unmet health needs and unfavorable environmental factors^(6,10,11). This statistical index not only indicates the quantity and number of deaths, but is also indicative of life quality⁽¹²⁾ That is why UNICEF maintains that infant mortality rate is certainly one of the most expressive indices of development concept, and this significance has taken shape for the fact that the decrease in child mortality is only possible with an improvement in living circumstances of a majority of people⁽⁴⁾ The rise of IMR is attributed to dissatisfied hygienic requirements; and unfavorable environmental factors, economical conditions, environmental sanitation and medical care.^(4,8)

Subjects & methods

This is a review of patients records of paediatric department in Fallujah general hospital & Fallujah health vital statistics center to study the IMR in Fallujah city population (425,774 inhabitants).

The study period was from 10th of February to the 20th of April 2010. All registered live births & infant deaths occurred between January 2007 to December 2009, were included in the study.

The data used were collected from files of patients admitted to the neonatal & pediatric wards during the 3 years, & from birth & death certificates recorded in the hospital & Fallujah health vital statistics center. The data collected included name, age, sex, residence, place & date of death.

Results:

During the 3 studied years (2007, 2008, 2009), the total number of live births was 12591, from which 6182 were males & 6409 were females (with male/female ratio was 0.69), & the total number of death were 873, from which 550 were males & 323 were females (male/female ratio = 1.7).

IMR was 69.3/1000, with male IMR=89/1000, & female IMR= 50.4/1000.

The NMR during the 3 studied years was 57.3/1000 which is much higher than the PNMR (12/1000).

Table (1) shows the number of births, deaths, & IMR for each studied year.

The IMR was 75/1000, in 2007, 67.4/1000 in 2008, & 65.9/1000 in 2009. About 83.8% of deaths occur during the neonatal period, & 16.2% in the post-neonatal period (figure 1 & Table 2).

The studied dead infants were 52.8% in the rural & 47.2% in the urban areas (figure 2).

Discussion:

The infant mortality rate correlates very strongly with and is among the best predictors of state failure & highly correlates with the socioeconomic state of the country. High IMR registered in Angola (180.82/1000 livebirths), Afghanistan (151.95/1000 livebirths), Liberia (138.24/1000 livebirths), Zambia (101.20 livebirths), Sudan (82.43/1000 livebirths), Ethiopia (80.80/1000 livebirths), Tanzania

(69.28/1000 livebirths), & Pakistan (65.14/1000 livebirths).⁽¹⁾

Moderate IMR registered in Algeria (27.73/1000 livebirths), Egypt (27.26/1000 livebirths), Brazil (22.58/1000 livebirths), Tunisia (22.57/1000 livebirths), Lebanon (21.82/1000 livebirths), Libya (21.05/1000 livebirths), Oman (16.88/1000 livebirths), Malaysia (15.87/1000 livebirths), while low rates were found in Hungary (7.86/1000 livebirths), Poland (6.80/1000 livebirths), USA (6.26/1000 livebirths), European union (5.72/1000 livebirths), United Kingdom (4.85/1000 livebirths), south Korea (4.1/1000 livebirths), Germany (3.99/1000 livebirths), Hong Kong (2.92/1000 livebirths), Japan (2.79/1000 livebirths), & Singapore (2.31/1000 livebirths)..^(1,2)

In Iraq IMR was 47.04/1000 livebirths at 2007, 45.43/1000 livebirths at 2008 & 43.82/1000 livebirths.^(1,8)

IMR in Fallujah is high compared to that of Iraq & Iraq neighbor countries, Iran (35.78/1000 livebirths), Syria (25.87/1000 livebirths), Turkey (25.78/1000 livebirths), Jordan (14.97/1000 livebirths), Saudi Arabia (11.57/1000 livebirths), Kuwait (8.96/1000 livebirths).^(1,5,6,9)

We couldn't find records of IMR in other Iraqi governorates to compare with the results.

The study recorded much higher NMR than PNMR, this is consistent with other studies reported in Korea⁽³⁾, & Iran⁽⁴⁾.

The mortality in 1st 4 weeks of was mostly related to pregnancy & infant, while after 1st 4 wks it is related to social & environmental factors. Our study did not include the cause of death.

In our study the male IMR (89/1000 livebirths) was higher than female IMR (50.4/1000 livebirths), this is consistent with another Jordanian study (22.6/1000 livebirths for males & 20.1/1000 livebirths for females)⁽¹³⁾.

There is a little difference in IMR among infants in the rural & urban areas in the present study it was only 5.6 % higher in the rural areas.

The high IMR in Fallujah during the 3 studied years may be related to the poor social, economic & health services in the city...

There may be more numbers of births & deaths that have been not registered especially those from the rural areas because of difficult access to the hospital & the center of vital statistics as a result of the bad security situation in the city during the past 7 years.

About 83.8% of deaths occur during the neonatal period, & 16.2% in the post-neonatal period (figure 1 & Table 2).

The studied dead infants were 52.8% in the rural & 47.2% in the urban areas (figure 2).

Table 1: Infant births death & IMR for each of the studied years

Year	Infant birth	Infant death	IMR
2007	3955	297	75
2008	4315	291	67.4
2009	4321	285	65.9

Table 2: Neonatal & post neonatal death in each of the 3 studied years:

Year	Neonatal death		Post-neonatal death		Total
	male	female	male	female	
2007	188	70	24	15	297
2008	136	104	27	24	291
2009	153	81	22	29	285
Total	477	255	73	68	873

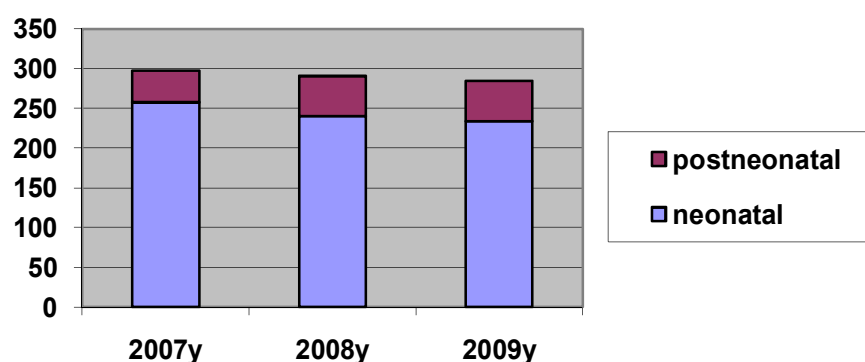


Figure 1: Neonatal & post-neonatal death of each of the 3 studied years.

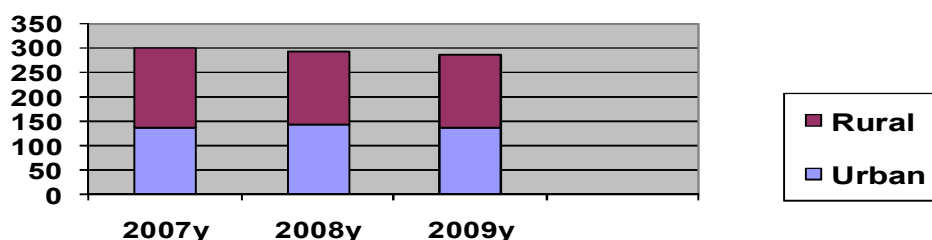


Figure 2: Rural & urban deaths of each of the studied years

Conclusions & recommendations:

IMR didn't show much difference during the 3 studied years this may reflect the fact the there was no much improvement in social, health economic in addition to the security situation during the studied years.

We recommend that more future studies have to be done to study the risk & contributing factors to this high rate

Considering the fact that many of the factors, which have a significant

relationship to infant mortality in Iraq & other countries , are likely to change we can prevent many of these deaths by increasing the level of family information, enforcing family planning, improving pregnancy care, correct referring system, discovering mothers who need special care during and after pregnancy and providing special care for their infants.

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