

Investigation the mortality rate of children (infants) in west area of Isfahan province from 2006 to 2012

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ABSTRACT

Background and aims: The study investigated mortality rates of children in west area of Isfahan province in 2006-2012.

Methods: This cross-sectional study performed in a seven-years period by using information received from Isfahan Health center on neonatal mortality rate, and infant mortality rate under 5 years mortality rate in the west of Isfahan province.

Results: The results showed that the NMR in rural areas was 13.5 and in urban areas was 9.5, IMR in rural areas was 18.6 and in urban areas was 13.5, and also U5MR in rural areas was 21.8 and in urban areas was 15.3, Results showed significant relation between indicators of NMR and IMR and U5MR with their life area showing.

Conclusion: The results showed that the family physician design has been effective in reducing child mortality, but child mortality rates are still higher in rural areas than urban areas. Therefore, it can be concluded that with implementation family physician design only couldn't change healthy indications in different areas by itself. Other social and economic factors such as income and health education should be improved along with it.

Keywords: Child mortality rate, Family physician, West area of province, Isfahan.

Original article

INTRODUCTION

According to the World Health Organization's definition, health is "a perfect physical well-being, psychological, and social health is not to be considered only the absence of disease, and disability.¹ In other words, being healthy is a multi-dimensional process which is very important.² The ultimate goal of providing health services is improvement of health for all people in a country, so that they can have enough health in economic activities and social sharing.³

In 2005, the health system in Iran implemented the family physician plan in the villages and cities of population under

20000 people after a comprehensive survey in other health systems around the world in response to health-related problems and current inequalities in the health system.⁴

This is the second big change of plan after commissioning of health networks. In this plan, physician is the main correspondent for health team, in cooperation with the midwife and other health workers provide all the services and health care to the population covered by the delegation.⁵ Death of child and death of infants are net indexes for a country's social situation and dangers of unhealthy environments like (malnutrition,

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low levels of health, infection and injuries) economic characteristics- social and cultural families.^{6,7}

In Iran (1977), the death rate in infants, children aged less than one year and under 5 years children were 32, 93 and 135 respectively. These indicators in 2000 were 6.3, 28.18 and 36 respectively and in the year of 2009, they were 16.9, 11, and 20 per 1000 live births.⁸

Seventy percent of mortality in infants occurs in neonatal. On the basis of the third millennium document, the death rate among children less than 5 years in 2015 must be decreased to two thirds of this amount in 1990. To achieve this index, death of infants must be decreased to less than 8 cases per 1000 live births until 2015. This rate in 2008 was 12.53 per 1000 live births. Despite two decades efforts at the country level, the index did not show a significant decrease in infant mortality and Iran has not been able to reach the Millennium development goal. Therefore, according to the World Health Organization, recommendations and effectiveness should be with the aim of reducing infant death.⁹

Several studies have been done on factors which affecting on children's mortality under 5 years in different locations. Frey and others examined the factors affecting on infant mortality in the less developed countries. This study was based on 5 various theories that each of these opinions was used as a separate variable in the template, The data of this study included less than 59 in developed country in 1991 in which the children's deaths under one year. The economic situation of women employed in industry, households, the amount of concentration and focus, gender equality and women's literacy rates were important variables.¹⁰⁻¹¹

Despite all the progress achieved and improving the promotion of the country's health indicators, changes in the pattern of

inequality in recent years the country has never been so remarkable. Meanwhile it doesn't seem to be an ongoing process in order to reduce inequalities in children's deaths in the stream index. However, a glimpse into the country's health indicators in recent decades, rapid promotion process on the one hand and on the other hand the existence of inequalities was shown in some indicators in different provinces and regions of the country.¹²

The study of Barati showed that the partners implementing and family physician in the year 84, promoted more than half of the studied indicators. The remarkable things is that 4 deaths index contains the amount of the death of children under one year and under 5 years old, death rates of infants and mothers' death rate during the study has been statistically significant and seems family physician design implementation above indicators 84 has been effective. A study conducted in a positive the implementation? of family physician health indicators on rural areas before and after the implementation of the plan has been described.¹³

According to the conducted investigation so far has not yet been done appropriate analyze about the process of review of death of children in rural areas after the implementation of the family physician, and comparing it with the mortality rate of children in west urban areas in the city of the Isfahan province. So, the aim of the study is to investigate the above indexes process throughout the rural areas for many performances and compares it with the urban area.

METHODS

This study is a descriptive study. Death rates at three levels: Neonatal, infant and less than 5 years, were the indexes in deprived districts of Isfahan province reviewed in present study. (Westparishes in this study are Golpaygan, Khansar,

Chadegan, Fereidoonshahr and Fereidan-the deprived districts in Isfahan province). The data for this study collected of Isfahan health development center.

For gathering data used the population software which includes type of index, type of area (urban or rural), the name of the city

and the year of the study (2006-2012) in the process.

Review of neonatal mortality (NMR), children under one year mortality (IMR) and children under 5 years of age mortality (U5MR) over a period of seven years in deprived city of Isfahan province (Table 1).

Table 1: The table of Neonatal, Infant and under 5 years' mortality rates in west area of Isfahan provinces in 2006-2012

Parish name	Index	Area	2006	2007	2008	2009	2010	2011	2012
KHansar	NMR	urban	3.89	10.79	3.98	4.31	9.43	14.21	14.56
		rural	11.42	19.9	34.24	12.42	20.57	0	6.90
	IMR	urban	15.56	10.79	3.98	4.31	14.15	23.69	24.27
		rural	22.85	19.9	47.94	18.63	28.8	14.8	6.90
	U5MR	urban	15.56	14.39	3.98	4.31	14.15	23.69	24.27
		rural	22.85	29.85	47.94	18.63	28.8	14.8	6.90
Golpaygan	NMR	urban	14.56	11.94	10.46	15.2	13	6.4	12
		rural	27.95	3.1	8.81	0	18.69	10.3	25.25
	IMR	urban	15.89	13.26	12.55	18.1	14	11.8	14.6
		rural	31.05	6.21	8.81	5.26	23.36	15.5	25.25
	U5MR	urban	17.21	14.59	14.64	21.9	19.1	14.5	16.3
		rural	31.05	12.42	17.62	5.26	28.03	20.6	30.30
Fereidoonshahr	NMR	urban	0	0	3.28	8.49	8.49	12.19	14.83
		rural	16.8	11.62	15.15	2.71	21.6	17.6	5.88
	IMR	urban	0	0	9.86	8.49	11.33	12.19	17.79
		rural	23.1	16.28	27.27	10.84	21.6	23.5	8.82
	U5MR	urban	4.2	0	13.15	8.49	11.33	14.04	17.79
		rural	27.31	20.93	30.3	18.97	24.69	29.4	11.76
Fereidan	NMR	urban	8.3	8.22	11.27	9	12.73	4.94	3.19
		rural	24.47	23.4	9.58	2.87	15.45	7.8	4.63
	IMR	urban	8.36	13.15	16.1	12.01	12.73	14.87	14.37
		rural	30.49	28.08	12.78	8.63	18.54	9.3	4.63
	U5MR	urban	11.70	14.80	17.71	16.51	17.51	16.52	15.97
		rural	32.1	29.64	15.97	12.94	21.63	10.9	9.26
CHadegan	NMR	urban	17.54	25.53	4.20	0	13.63	19.45	3.59
		rural	25.64	11.87	11.8	14.83	11.59	10.5	10.14
	IMR	urban	26.31	29.78	8.40	9.43	18.18	31.12	3.59
		rural	28.49	20.77	17.7	23.73	11.59	20.94	10.14
	U5MR	urban	26.31	29.78	8.40	9.43	27.27	31.12	7.19
		rural	31.33	23.73	20.64	23.80	14.49	23.56	17.76
Total	NMR	urban	8.85	11.29	6.63	7.40	11.45	11.43	9.63
		rural	21.25	13.97	15.91	6.56	17.58	9.24	10.56
	IMR	urban	13.22	13.39	10.17	10.46	14.07	18.73	14.92
		rural	27.19	18.24	22.90	13.41	20.77	16.80	11.14
	U5MR	urban	14.99	14.71	11.57	12.12	17.87	19.97	16.30
		rural	28.92	23.31	26.49	15.92	23.52	19.85	15.19

RESULTS

The rate of NMR was 15.05 in 2006 and this index in the 2012 was 10.01. So, this index in the period of 7 years decreased to 5.04. This rate in the district Fereidoonshahr decreased too. This rate was 16.8 in 2006 and in the year of 2012 it was 10.35. This rate decreased to 6.45 in this period of time (7 years). The rate of NMR in the Fereidan in 2006 was 16.38 and in the year of 2012 was 3.91. In the Chadegan district the rate of NMR decreased too. This rate was 21.59 in 2006 and this rate in the year of 2012 was 6.85. This change also happened in the Khansar area. This rate was 7.65 in 2006 and changed to 10.73 in 2012. In the Golpaygan district the rate of NMR changed from 21.25 in 2006 to 18.62 in 2012.

Index of the IMR in 2006 was 20.20 and in 2012 was 13.03. In the Fereidoonshahr parish this rate was 23.1 in 2006 and this index was 13.3 in 2012. This index in the Fereidan in 2006 was 19.42 and in 2012 were 9.5. This rate in the Chadegan was 27.4 in 2006 and in 2012 was 6.86. In the Khansar area this rate was 19.2 in 2006, whereas in 2012 this rate was 15.58. The rate of IMR in the Golpaygan was 23.47 in 2006, but this rate was 19.92 in 2012. The index of U5MR in 1385 was 21.95 and in 191 was 15.75. This index in Fereidoonshahr, Fereidan, Chadegan, Khansar and Golpaygan was 15.75, 21.9, 28.8, 19.20 and 24.13 in 2006, whereas this index was 14.77, 12.6, 12.47, 15.58 and 23.3 in 2012.

CONCLUSION

Over a period of 7 years, implementation of the family physician in rural areas came to a certain extent the mortality rate of infants less than one year and children under 5 years of age has given dimension to deaths in parts of the city. The rate of death in neonatal was 13.5 in rural area and 9.5 in urban. The rate of IMR in rural area was 18.6 and in urban area was 13.5. The index of U5MR in rural area was

21.8, whereas in urban area was 15.3. There were significant relationship between the death index, (NMR, IMR, U5MR) with the location (rural, urban).

The statistics used in this study using forms of reports sent from the department and the annual statistics provided the Center for network development and health promotion in Health Center of Isfahan province.

The result of the study of Simba and his colleagues in Indonesia showed that there is a significant relationship between the deaths of less than one year in families who are smokers, compared to fathers of families who are not smokers ($P=0.001$). Also, Shooshtari reported that there is a significant relation between the IMR index and smoky fathers.^{14,15}

Child death is influenced by the economic, social, cultural, health situation. Households have access to the centers in order to receive health care, a number of studies in the field of medicine, and the care of mothers and babies has been done. Implementation of the family physician will not be successful alone because these variables influenced on them.

with regard to the duties and mission of family physician program efforts to increase awareness and knowledge, as well as the culture of building societies covered can team it can be concluded that the implementation of the family physician alone cannot make health indexes in different regions with the economic situation improvement social, cultural, health, increased access of households to increase the number of health topics, with increased training of scientific topics in the medical field, increased maternal care can be used to upgrade health indexes.

As a whole it seems that there are many factors that influenced on NMR, IMR, U5MR.

Some factors in this area include: Genetic disease (the most important factor on IMR, NMR); Congenital disease (the most important factor on IMR, NMR); Consanguineous

marriages this group of disease creates parental disease and genetic problems and premature infant; and Malnutrition and quality and quantity of food especially in under the 5 years old children.

Some social factors can impact on death of child indirectly for instance self-care of mothers: Lack of skills in child upbringing. Lack of accessibility for drug and health services especially on treatment, conditions of Geography and weather.

CONFLICT OF INTEREST

There is no Conflict of interest in this study.

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