CAUSES AND MEASURES TO CONTROL INFANT MORTALITY IN RURAL AREAS

(A CASE STUDY OF UCH SHARIF)

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ABSTRACT

Infant mortality in Uch sharif is increasing day by day. Purpose of this study is to illustrate the factors determining infant mortality in Uch sharif and measures to control infant mortality in rural areas. Primary data has been used for this study by using interview technique and 120 mothers were interviewed. We used binary logistic model in this study. The result showed that birth gap, doctor availability and mother's employment have significant effect on infant mortality. These results are explained by the odd ratio which showed that we can control infant mortality by the birth gap, provision of doctors and with the concept of carry out jobs after marriages.

KEYWORDS: Infant Mortality, Child Health, Causes Effects of Infant Health, Childhood Mortality

INTRODUCTION

Health is an important an important aspect of life. In general terms better health status of individuals reflects reduced illness, low level of morbidity and less burden of disease in a given pollution. It is a widely recognized that improved health not only lowers mortality, morbidity and level of fertility, but also contributes to increased productivity and regular school attendance of children as a result of fewer work days lost due to illness, which in turn have implications for economic and social well-being of the population at large. Hence investing in Health is vital for promoting human resource development and economic growth in a country [World Bank (1993)]. A view of Pakistan's health profile indicates that the sector has expanded considerably in terms of Physical infrastructure and its man power in both the public and private sector. This has contributed to some in selected Health status indicator over the years. However the public health care delivery system has been inadequate in meeting the needs of the fast growing population and in filtering down its benefits to the gross-root level

As such, Pakistan still has one of the Highest rates of infants and child mortality, total mortality and maternal mortality when compared with many other countries in Asia region [UN(2000 due to low priority given to social sector development in the past and the low budgetary allocations made to the health desired level and large gaps remain in the quality of care indicators, especially in rural areas like Uch Sharif, high level of infant and child mortality and fertility in Pakistan point toward the fact that health and illness problems are sever for young children and Mothers (Mahmud 1993). Infant and child death rates in Pakistan are high even in the context of the Asian region and progress in health and survival of children has been much been less then desired level [world Bank(1993)]. Although estimates of infant and child mortality rates as derived from various data sources in Pakistan show great variation, the available evidence indicates that nearly 58% of all deaths occur among children under five years of age 36% die during infancy and more than half of all infant deaths occur within the four weeks of their birth. Health care facilities in Pakistan are concentrated mostly in urban areas contributing to lower risks of death among children from infections and diarrhea disease. (Mahmud 1994).

Health is main indicator of development. In grappling problem of what forces may be useful for promoting human

development resource, a considerable degree of attention has focused upon general health sector especially infant health. What is infancy? Infancy is generally the period from birth until age one year. It is a time of a lot of growth and change for children and families. Health for all by the year 2000 has became the slogan of primary health care since the declaration of Alama Ata in 1978 (World Health Organization (WHO) 1978) which recommended that, a man social target of government international organization and the whole world community in the coming decades should be the attainment by all people of the world by the year 2000 of a level of health that will permit them to lead a socially and economically productive life' the task seem as formidable especially when it is considered that of the 122 million infant born each year in the world. More than 12 millions die before reaching their first birthday, more than 10 million of these deaths occurring in the developing world (WHO, 1980).

Infant mortality is defined as the number of death of infants per 100 live birth. The most common cause of infant mortality worldwide has traditionally been dehydration from diarrhea. Because of the success of spreading information about oral dehydrations solutions (a mixture of salts sugar and water)to mother around the world, the rate of children dying from dehydration has been decreasing and has became second most common cause in late 1990s currently the most common cause is pneumonia.

Uthman (2008) has investigated the effect of low birth weight on infant mortality. To examine the relationship between high-risk of infant born with low birth weight and infant mortality in Nigeria. Birth weight is a strong indicator not only of a birth mother's health nutritional status but also newborn's chances for survival, growth, long term health and psychosocial development. Chaudhury, et.al., (2006) have investigated the district level variations in infant mortality in Sri Lanka. The purpose of this paper was to study the inter-district variation in infant mortality in relation to certain aspects of economic (access to safe drinking water) and nutrition (birth weight) status; access to health (public health and mid-wife population ratio) and use of health care.

This paper is an attempt to identify some proximate determinant of IMR. Data was taken from the Registrar's general development, Family health bureau and the medical statistics unit of ministry of health. The data was secondary. Multiple regression model used for analysis. They conclude that the focused attention to neonatal survival will be an important policy imperative. Three of the factors (birth weight, access to safe drinking water registration status of pregnant women) examined here directly impact neonatal mortality, which accounts groups for almost three fourths of deaths during infancy in Sri Lanka.Souza, et.al. have analyzed the determinants of child mortality in slums of Karachi, Pakistan.

This study was undertaken to identify risk factors for under-five child mortality. This paper attempts to uncover the role of behavior issues like restricted maternal autonomy and patterns of health seeking behavior alongside the more conventional, socio demographic predictors for under-five child mortality. This study was initiated in January 1993 in Six Slums of Karachi where the community health sciences (CHS) department of the Aga khan University (AKU) has operated primary health care (PHC) programs since 1985. For the theoretical frame work Mosley and Chen's frame work was used. Logistic regression model was used for analysis. And the data was secondary. They concluded that the primary determinant of a programs success will be largely is effectiveness in introducing relevant social and behavioral change in these village-like settings, rather than the biological effectiveness of the technologies themselves exclusively.

MAJOR OBJECTIVE OF THE STUDY

- To examined the determinants of Infant mortality in uch sharif.

- To highlights the diseases in infants and mothers which cause infant mortality.

DATA AND METHODOLOGY

Primary data is collected with the help of questionnaire through field survey by interview technique. In this regard random sample survey was conducted and 120 mother were interviewed. The sample design was prepared aiming at to produce accurate data with in the permitted time and expenditure. Further more variables of Infant health were also computed from census data from SubTehsil Uch sharief. These variables included Health status, major disease at the time of birth, major disease after birth, birthgap, breastfeeding, vaccination, mother employment status, mother qualification, gender of child mother major disease, hospital distance, doctor availability, visit of vaccination team.

Construction of MODEL

The Economic model provides a frame work to identify the investigated relationship and use of the resulting information. The aim of this is to explain the Impacts of different factors on infant mortality. So "the next step is to specify the statistical model that consisting with the sampling process by which underlying data is generated. A model is formulated to suggest a conceptual framework for Infants mortality. In our analysis, we will use binary logistic model. The regress and can take only two values, say 1 if the Infant is died, and 0 if the Infant is not died.

Function

We estimate non linear maximum likelihood function for the binary logistic model. We start with the general functions.

$Yi=f(X1, X2, X3, X4\ldots\ldots\ldots\ldots\ldots\ldots.)$

Where Yi denote infant mortality, Y is equal to 1, if infant is died, and Y is equal to 0 if infant is not died.

X1, X2, X3 and X4 are various factors that affect the infant mortality positively or negatively.

Equation

To find out the determinants of rural infant mortality, we have formed one equation.

This is as under

$INM= \beta_0+ \beta_1\, BG+ \beta_2\, DCA+ \beta_3\, ME+ U_i$

Where

INF= Infant Mortality

BG= Birth Gap

DCA= Doctor Availability

ME= Mother Employment

$\beta_0, \beta_1 , \beta2$ and β_3 are regression coefficient to be estimated by using binary logistic model.

U=Random error term independently and identically distributed with zero mean and constant variance. The direction and strength of INM and explanatory variables are determined from sign coefficient and significance of t ratios.

Binary Logistic Model

Logistic analysis is in many ways the natural complement of ordinary linear regression where the regress was and is not a continuous variable but a state may or may not hold or a category in a given classification. When such discrete variables occur among the independent variables or repressors or a regression equation, they are deal with the introduction of one or several dummy variables. But when the dependent variables belong to this type, the regression model brakes down. Legit analysis and logistic analysis provides a ready alternative. At first sight it is quite different from the familiar linear regression models, and slightly fright men by its apparent complexity, they logic model belongs to the class of probability models.

RESULTS AND DISCUSSIONS

Qualitative Analysis

In qualitative analysis, averages and percentages has been calculated .Descriptive analysis of child Health with the independent variables is as follows

Table 1: Distribution of Respondent by Health Status of Infants

Health Status	Frequency	Percentage
Weightless	16	13.3
Healthy	53	44.2
Normal	51	42.5
Total	**120**	**100.0**

Explanation

According to the results13.3% children are Weightless 44.2% children's are Healthy, and 42.5% have normal Health.

Table 2: Distribution of Gender of Child

Gender	Frequency	Percentage
Female	51	42.5
Male	69	57.5
Total	**120**	**100.0**

Explanation

The Table showed that 57.5% infants are male and 42.5% infants are females which are being interviewed. Male infants are preferred to female infants in this survey because male infants are less healthy than that of female infants.

Table 3: Diseases after Birth

Disease	Frequency	Percentage
Fever	17	14.2
Diarrhea	25	20.8
Respiratory	10	8.3
Pneumonia	20	16.7
Malnutrition	17	14.2
Malaria	15	12.5
Hemoglobin	8	6.7
Hepatitis	8	6.7
Total	**120**	**100.0**

Source: Survey

Explanation

Nine major diseases are found in infants during the survey. According to our results 14.2% infants are suffering in fever, 20.8% are suffering in Diarrhea, 8.3% infants are suffering in Respiratory disease, 16.7% infants are suffering in pneuomia, 14.2% infants are suffering in malnutrition and 12.5% infants are suffering in malaria, 6.7% infants are victim the lack of hemoglobin, 6.7% infants are suffering in hepatitis. The most horrible disease found during the survey is Diarrhea.

Table 4: Baby Vaccinated Completely

Vaccinated	Frequency	Percentage
No	55	45.8
Yes	65	54.2
Total	**120**	**100%**

Source: Survey

Explanation

Vaccination is necessary to every infant as it prevents infants from many diseases. According to our result 45.8% infants are not vaccinated, and 54.2% are vaccinated completely.

Table 5: Infant Feeding

Infant Feeding	Frequency	Percentage
Breast feeding	59	49.2
Powder milk	40	33.3
Cow milk	21	17.5
Total	**120**	**100.0**

Source: Survey

Explanation

According to our results 49.2% infants are on breast feeding, 33.3% infants are on powdered milk and 17.5% infants are on cow milk. In Pakistan, most infants are on breast feeding.

Table 6: Mother Age at Delivery

Age	Frequency	Percentage
16	72	60
19	34	28.4
21	10	8.3
26	4	3.3
Total	**120**	**100.0**

Source: Survey

Explanation

According to the results 60% of women give birth to their first child at the age of sixteen, 28.4% mothers have age of nineteen at the time of their first delivery, 8.3% of women have twenty one year age at delivery time while 3.3% of women are of the age of 26 years at the time of their delivery. Most of the girls are married at the age of fifteen according to survey.

Table 7: Mother Qualification

Qualification	Frequency	Percentage
Uneducated	50	41.5
Primary	3	2.5
Middle	32	26.8
Metric	16	13.3

Table 7: Contd.,		
Up to Metric	19	15.9
Total	**120**	**100.0**

Source: Survey

Explanation

According to the result 41.5% mothers are uneducated. Whereas 2.5% mothers are educated at primary level and 26.8% are educated at elementary level, 13.3% mothers are educated at secondary level and only 15.9% are educated above the metric.

Table 8: Mother Vaccination during Pregnancy

Vaccinated	Frequency	Percentage
No	55	45.8
Yes	65	54.2
Total	**120**	**100.0**

Source: Survey

Explanation

Vaccination is not only necessary for infants but as well as for mothers. According to survey 45.8% of mothers are not vaccinated and 54.2% mothers are vaccinated.

Table 9: Major Diseases Found in Mothers

Disease	Frequency	Percentage
T.B	12	10
Hepatitis	21	17.5
Asthma	161	13.3
Heart Problem	14	11.7
Gastric Problem	15	12.5
Nil	42	35
Total	**120**	**100.0**

Explanation

According to survey five diseases were found in mothers. 10% of mothers are suffering with TB, 17.5% mothers are patient of Hepatitis. Asthma is found in 13.3% of mothers, 11.7% mothers are suffering from heart problems and Gastric problem is common in 12.5% whereas 35% of mothers are considered well.

Table 10: Medical Center Distance

Distance	Frequency	Percentage
1-5	86	71.7
2-8	27	22.5
8-10	7	5.8
Total	**120**	**100.0**

Source: Survey

Explanation

According to survey some of the infants and mothers are not getting the cure on time due to huge distance of nearest medical center, 71.7 % of medical centers are situated at 1 to 5 km, 22.5 % of which are situated at 2 to 8 km while 5.8% centers are at 8 to 10 km.

Table 11: Public or Private Medical Center

Medical Center	Frequency	Percentage
Public	81	67.5
Private	17	14.2
Both	22	18.3
Total	**120**	**100.0**

Source: Survey

Explanation

According to result 67.5% of families are living near to public medical centers while 14.2% are living near to private medical centers and 18.3% have both public and private medical centers near to them.

Table 12: Vaccination Team Visited Houses

Visit	Frequency	Percentage
No	55	45.8
Yes	65	54.2
Total	**120**	**100.0**

Source: Survey

Explanation

According to our survey there are only 54.2% houses which are visited by the vaccinated teams and remaining 45.8% are not visited by vaccinated teams.

Quantitative Analysis

Infant Mortality is used as dependent variable in the Logistic Regression model and the results of model show that child health is effective by three independent variables

- Birth gap

- Doctor availability

- Mother employment

There are many variables used in the Logistic Regression model. But stepwise regression showed that only these three variables are closely related to the dependent variable remaining are excluded from the model.

Table 13: Binary Logistic Model

Dependent Variable	Independent Variables	Coefficient	P-Value	Odd Ratio
Infant Mortality	Bg	-.388	185	678
	Dca	-.576	081	1.780
	Memp	-.964	030	381
	Constant	1.562	071	4.769

Source: Survey; P.V=Level of significance; O.R=Odd Ratio

Explanation

The results showed that the infants where birth gap is low their health is .678 times affected than those who have more birth gap. Birth gap positively associated with infant's health and negatively affected with the infant mortality. Doctor's availability has deeply effected on infant mortality. The areas in which doctors are not available the infant health is 1.786 times more affecting than those areas where doctors available. The Health of children is improved .381 times than the mothers who had not employed. Mother Employment has positive impact on infant health and negative with infant

mortality. In rural areas, average expenditure on children is very low because there are not more facilities of health and parents have low level of income.

CONCLUSIONS

Ensuring the survival and well being of children is a concern of families, communities and nations throughout the world. In quantitative analysis, birth gap, doctor Availability and mother employment are very closely related with children health and have negative impact on infant mortality. As the families which have more birth gap between their children have less probability than those families who have less birth gap between their children's. The areas where doctors are easily available have less chance of infant mortality than those areas where doctors are not easily available. Mother's employment also has a negative impact on infant mortality. Nine major diseases Fever, Diarrhea, Respiratory, Pneumonia, Malnutrition, Malaria, Hemoglobin, hepatitis are seemed to be badly effecting on infants health in rural areas. These all diseases are the cause of infant mortality in Uch Shareef. In the Rural areas, economic activity and poverty in Pakistan have adversely affected the child health particularly their nutritional status, poor income, education of mothers, household income, occupation of father, standard of living ,birth interval are variables which are affecting children health.

RECOMMENDATIONS

- There should be launched some Child survival Campaigns in rural areas for the awareness of child health in parents.

- There should provide some job opportunities in rural areas regarding to women.

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