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Demographic and Socio-Economic Effects of Delays in Health Services with Special Reference to Infant Mortality in Multan City-Pakistan

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Abstract

This research aimed to explore the role of delays in health services in infant mortality in Multan City, Pakistan. These delays include 1) delay in recognition of appropriate time of delivery, 2) delay in reaching hospital and 3) delay in receiving care/ hospital services. The research focused on identifying the socio-economic causes of these delays. However the demographic and socio-economic effects of these delays on the health of mother and family were investigated. Due to the limited number of cases reported in the hospitals only 60 respondents (mothers of dead infants) were interviewed at their homes. The respondents were the mothers with at least one child dead before completing first year of life. Careless attitude in caring, late arrival at hospital and delay of proper services were found important causes of infant mortality with equal weight-age of occurrence. Moreover abortion rate was found associated with the age of the mother and her educational level and frequency of still birth was found, related with family structure and regular check up of respondent during pregnancy.

Key Words: Demographic, socio-economic, effects

Introduction

Infant mortality rate (IMR) is an indicator of a country's civilization and social development. It has been widely accepted as an important and significant indicator of health achievement, because healthy children are vital for the future of any society. Children tend to be most vulnerable in their first year of life when their health is influenced not only by their own physical condition but also by the social and environmental conditions of the household, and of the wider community (Verdiell, 2003).

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Pakistan is the seventh most populous country in the world and has the highest rate of growth among these countries. IMR measures the mortality below one year of age per 1000 live births in the year. Infant mortality is an important indicator to judge socio-economic conditions, cultural factors, status of hygiene and availability & utilization of medical services. IMR has been declining in Pakistan but it is still high. The IMR has slightly risen from 76.2 per 1000 in 2003 to 76.7 per 1000 in 2005. IMR were much higher (about 32 percent) in rural areas (81.2/1000) than in urban areas (67.1/1000) where better neo-natal and post-natal facilities are available (Government of Pakistan, 2005).

The three-delays were first given by Thaddeus and Maine (1994) as (i) in recognition of illness, (ii) delay in seeking and accessing care, and (iii) delay in the provision of care once at a health facility—to understand maternal deaths. While similar delays have been documented by Schumacher *et al*, (2002) for young infants with severe illness and, with the rapid progression of many neonatal illnesses, certainly play an important part in neonatal deaths.

In Pakistan, Among the factors contributing to infant mortality are, high fertility rates, inadequate access to quality maternal and childcare services, inadequate emergency obstetric and newborn care poverty, no access to primary health care and there are some major delays identified that have key contribution in infant mortality.

1. Delay in recognition of appropriate time.
2. Delay in reaching hospitals.
3. Delay in receiving care/hospital services.

The first delay occurs when the family decides to seek care. In Pakistani case, the mother-in-law plays an important role.

This matriarchal institution is powerful one, and not just in poor households. She is the one who decides if there is need to seek care, where to go and finally when to go. There is a clear difference between how she treats her pregnant daughter as opposed to her pregnant daughter-in-law.

The second delay is identifying and reaching a medical facility. The third delay happens if after you've crossed the other two barriers and make it to the hospital. Mother does not receive adequate and appropriate treatment at the facility because none is available. Many facilities do not provide 24 hours obstetric care and they lack supplies and staff (Ebrahim, 1983). Maternal care rates tend to be low, and maternal and infant mortality rates high, in countries where women have low status, and also in areas with poor access to routine health services in general.

Infant mortality is often attributable to poor nutrition and lack of a clean environment, whereas 80% of infant deaths are due to direct obstetric complications that require medical treatment however, in the case of prenatal mortality (from 28th week of pregnancy until one week after birth). Causes of infant mortality are related to obstetric complications (Maine, 2003).

Infant mortality has its own socio-economic implications. It is matter of fact that high infant mortality rates are associated with high fertility rates and that family planning, urbanisation, incomes and female education are confirmed to be inversely related to fertility rates. The analysis presented has some policy implications (Gani, 1999).

Antenatal screening along has been shown to be an ineffective tool in mortality reduction, as it is not feasible to predict or prevent most complications of pregnancy and childbirth. Instead, one must assume that all pregnant women are at risk for complications, and women who develop life-threatening complications such as obstructed labor, infection, or serious hemorrhage must receive treatment within a reasonable period of time (Mavalankar and Rosenfield, 2005).

The study in hand was designed to investigate about the role of delays in health services in infant mortality specifically focusing on; finding out causes of delays in health services, analyzing the demographic and socio-economic effects of delays in health services on mother and infant health and to suggest measures.

Materials and Methods

The universe for the present research was based on secondary data taken from various hospitals of Multan named as Nishter Hospital Multan, Fatima Medicare Hospital Multan, and Al-Khaliq Hospital Multan.

Due to the limited number of cases reported in the hospitals only 60 respondents (mothers of dead infants) were interviewed at their homes. The respondents were those mothers whose any of children was dead before completing first year of life. The data were collected with the help of well designed interviewing schedule. The data thus collected, were analyzed by using statistical techniques of Chi- Square and Gamma test with the help of SPSS (Statistical Package for Social Sciences).

Results and Discussion

As table 1 show, there is a marked decline in the risk of death as education increases. For women, education makes an even bigger difference, especially at the extremes. This is consistent with the way you might theorize that education would affect maternal and infant mortality, since it should enhance an individual's ability to avoid dangerous, high-risk situations (Weeks, 2002). This is also uphold by the present study that showed that 40.00 percent respondents were having primary level of education 30.0 percent respondents had secondary 20.0 percent respondents were graduate and 10.0 percent of respondents were having master level of education.

Table 1: Educational level

Educational level	Frequency	Percent
Primarily	24	40.0
Secondary	18	30.0
Graduation	12	20.0
Master	6	10.0
Total	60	100.0

The most important aspects of occupation and social class that relate to mortality are undoubtedly income, income to buy protection against and cures for diseases. There is a striking relationship between income and mortality in south Asia. Kitagawa and Hauser's data for 1960 showed clearly that as income

went up, mortality went down and more recent studies have confirmed that conclusion (Weeks, 2002). Poverty has influence on health since it means less money is available to purchase adequate foods or drugs, thus increasing the risk of illness and disease. Sub-standard living conditions manifested in poor housing, deficient standards of hygiene, unhealthy sources of water, lack of garbage collection services all attributable to poverty, and expose populations to risk of disease (Kitts and Roberts, 1996).

In the present study majority of respondents (53.3 percent) had monthly income ranging from Rs. 5000-10000. An equal numbers of respondents (23.3 %) had monthly income ranging from Rs 10000-15000 and Rs. 15000-20000 (Table 2).

Table 2: Monthly Income.

Total income	Frequency	Percentage
5000-10000	32	53.3
10000-15000	14	23.3
15000-20000	14	23.3
Total	60	100.0

In our society, people considered high number of children as a mark of prestige because it affects the power of family within the society, because it strengthens and enhance the income level of family. Now progress in standards of life has made people to change their attitudes towards family size. Moreover frequent child-bearing also affects mother health which ultimately put the next infant on health risk. Rosenzweig *et al* (1985) and Schultz (1993) note that a bi-directional causality is possible between fertility and infant mortality rates, that is, infant mortality may affect fertility and fertility may affect infant mortality.

The research showed that half of the respondents (50.0%) were those having small families (1-3 children). While half or the respondents had large families i.e. 40.0 percent respondents were having 3-6 children and 10.0 percent of respondents were those who had 6-9 children (Table 3).

Table 3: Total number of children

No. Of children	Frequency	Percentage
1-3	30	50.0
3-6	24	40.0
6-9	6	10.0
Total	60	100.0

Regular checkup makes affect on the health of the mother and can solve the problems related to both infant's and mother's health. Birth can be a traumatic and dangerous time not only for the infant, but for the mother as well. Mother can know the complications during pregnancy through regular checkup and can take treatment for solving the problem. Table 4 shows that 45.0 percent of respondents made regular checkup during pregnancy and 55.0 percent respondents did not give attention to their regular checkup.

Table 4: Regular checkup during pregnancy

Checkup during pregnancy	Frequency	Percentage
Yes	27	45.0
No	33	55.0
Total	60	100.0

In Pakistan there is very low ratio of child specialists and when the patients go in hospitals, there they do not found any child specialist. If child specialist will be present at right time he can treat the child in a good way and can save the life of a child. Table 5 is showing that 20.0 percent respondents got child

specialists presence in hospitals and 80.0 percent of the respondents did not got presence of child specialists when they visited hospital.

Table 5: Presence of any child specialist

Presence of child specialist in hospital	Frequency	Percent
Yes	12	20.0
No	48	80.0
Total	60	100.0

The unavailability of a doctor in the hospital at right time is a key factor in infant mortality. If the doctor will not be available then the patient cannot seek care for herself and it makes affect on the infant's health. About 72 percent respondents found doctors in the hospital at right time and 28.3 percent of the respondents did not found doctors at right time (Table 6).

Table 6: Availability of the doctor at right time

Availability of doctor at right time	Frequency	Percentage
Yes	43	71.7
No	17	28.3
Total	60	100.0

Medicines are too much important for the health care of new born baby and health of mother whether at home or in hospital. If required medicines will not be available then the protection of the baby will be at risk. It was found that 53.3 percent respondents got medicines in hospital and 46.7 percent of the respondents did not get medicines in hospital at the right time (Table 7).

Table 7: Availability of medicines in hospital

Availability of medicines in hospital	Frequency	Percentage
Yes	32	53.3
No	28	46.7
Total	60	100.0

The three delays model- delay in recognition of illness, delay in seeking and accessing care, and delay in the provision of care once at a healthy facility-has helped in understanding maternal deaths. Similar delays have been documented for infants with severe illness and, with the rapid progression of many neonatal illnesses, certainly play an important part in neonatal deaths (AED, 2004). Three delays in infant mortality are playing very important role. Infant mortality ratio is becoming high because of these (Table 8).

three delays. In Pakistani society mostly deaths of infants are because of these three problems.

It was observed that about 32 percent of the respondent's babies died because of personal uncaring behavior of mother. The same percentage of respondent's babies died because of late arrival in hospital while about 37 percent respondent's babies died because of unavailability or delay of proper services

Table 8: Causes of death of babies (related to care and treatment)

Causes of death	Frequency	Percent
Uncaring behavior of mother	19	31.7
Late arrival at hospital	19	31.7
Delay of proper services	22	36.7
Total	60	100.0

Lack of access and inadequate utilization of healthcare, especially essential or Emergency Obstetric Care (EmOC) services is an essential cause of maternal deaths. Only 34 percent of deliveries take

place in health facilities. In rural areas, three out of four births take place at home (Hill *et al*, 2001**).**
Table 9 shows that about 9 percent respondents did not get proper services due to low staff level in hospital. About 59 percent respondents did not get proper services due to inefficient staff and about 32 percent respondents were unable to get proper services due to uncommitted staff.

Table 9: Causes of delay in proper services

Causes of delay in proper services	Frequency	Percentage
Low staff level in hospital	2	9.09
Inefficient staff	13	59.09
Uncommitted staff	7	31.81
Total	22	36.7

Hypothesis No.1: As the age of mother increases the chances of abortion are also increases
The results in the table 10 are showing that research hypothesis is accepted which means that age of the respondents significantly affect the frequency of abortion. It is also a well-known phenomenon that as the age of mother increase the chances of complications are also increases.
Many poor women in their 40s suffer from anemia, malnutrition, damage to their reproductive systems from earlier births and the sheer physical depletion associated with frequent childbearing—all conditions known to increase the likelihood of having a baby at increased risk of dying. The average infant mortality rate among women giving birth in their 40s—94 per 1,000 live births—is much higher than the rate among women in their 20s and 30s and almost as high as the rate among teenage mothers. As with adolescent mothers, high infant mortality rates among babies born to women in their 40s occur in countries at every income level.

Table 10: Association between age and frequency of abortions

Age	Frequency of abortions		Total
	Once %	Twice %	
25-35	50.00	28.57	78.57
35-45	7.14	14.28	21.42
Total	57.14	42.85	100

Chi-square = 10.78
Significance = 0.05
Gamma = .556

Hypothesis No.2: Education level of mothers directly affects the abortion rate.

The table 11 presents negative association between the educational level of mothers and the frequency of abortion rate. It is explored from the table that value of chi-square is significant at 0.05 level of significance. There is a marked decline in the risk of infant death as education increases. For women, education makes an even bigger difference, especially at the extremes (Weeks, 2002). Higher education is expected to reduce fertility as educated women are likely to comprehend more clearly the logic of fertility control including a re-think of age-old customs, resulting in a change of attitudes and motivations (Ghatak, 1995).

Table 11: Association between level of education and frequency of abortion

Level of Education	Frequency of abortion		Total
	Once %	Twice %	
Primarily	21.42	10.71	32.14
Secondary	17.85	14.28	32.14
Graduation	7.14	10.71	17.85
Master	10.71	7.14	17.85
Total	57.14	42.85	100

Chi-square = 8.959
Significance = 0.05
Gamma = 0.31

Hypothesis No.3: Structure of family directly affects the still births rate.

Table 12 indicates an association between the structure of the family and the frequency of still birth rate. Pakistani society is one where a large number of people are living in joint family system. In this system, the hold of family is in one hand and mostly that person is mother in-law. Mother who is in the process of pregnancy has no power of decision of seeking medical care and faces a lot of barriers in caring of herself. In a nuclear family the mother can live with her own will and can understand her requirements of seeking care during pregnancy. So, the structure of family affects the still birth rate.

Table 12: Association between structure of family and frequency of stillbirths

Structure of family	Frequency of still births			Total
	Once %	Twice %	Thrice %	
Joint	29.72	21.62	8.10	59.45
Nuclear	13.51	10.81	16.21	40.54
Total	43.24	32.43	24.32	100

Chi-Square = 13.380
Significance = 0.05
Gamma = 0.3

Hypothesis No.4: Regular check up during pregnancy directly affects the still birth rate.

The results in the table 13 are showing that alternate hypothesis is accepted which means that regular check up during pregnancy of the respondents significantly affect the frequency of stillbirths. During pregnancy, any woman can develop serious, life-threatening complications that require medical care. Because there is no reliable way to predict which women will develop these complications, it is essential that all pregnant women have access to high quality obstetric care throughout their pregnancies especially during and immediately after childbirth when most emergency complications arise. Antenatal care programs should not spend scarce resources on screening mechanisms that attempt to predict a woman's risk of developing complications.

Table 13: Association between regular check up during pregnancy and frequency of stillbirths

Regular check up during pregnancy	Frequency of still births			Total
	Once %	Twice %	Thrice %	
Yes	10.81	13.51	13.51	37.83
NO	32.43	18.91	10.81	62.16
Total	43.24	32.43	24.32	100

Chi-square = 12.397
Significance = 0.05
Gamma = .416

Conclusion and suggestions

This research is an attempt to explore the demographic and socio-economic impacts of delays in health services which ultimately affects the rate of infant mortality in Pakistan. Information on the socio-economic and demographic factors and delays in provision of health care likely to influence the child mortality were gathered and thus analyzed. It was concluded as absence of child specialist in the hospitals, non-availability of doctors and medicines in hospital at right time were contributing factors in infant mortality. The main causes of infant death in the present study were found as uncaring behavior of mother, late arrival at hospital and delay of proper medical services. However among the demographic and social factors education of mother, family income and number of children affects the infant mortality rate. It is worth noticing that abortion rate was found to be positively associated with the age of the mother and inversely related with her educational level. It implies that as the age of mother increases, the chances of abortion also increases and with the increase in educational level of the mother abortion frequency was declined. Similarly frequency of still birth was found to be related with family structure and regular check up of respondent during pregnancy.

Taken all the findings into account following suggestions are given for policy implication:

1. Government and private hospitals should provide timely services and a separate hospital should be started provided with all possible facilities from surgical instruments to medicines.
2. The responsibility of provision of transport at proper time should be made possible by both, family and health care centers. Family should arrange transport two days prior to the recommended birth date.
3. An awareness campaign should be launched to educate the mothers regarding healthcare during pregnancy and after that care for infants' health.
4. Health education must be imparted to mothers to get ready to deal with any complication aroused during gestation period and at the time of birth.

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