

## **Mother's Education and Utilisation of Health Care Services in Pakistan**

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### **INTRODUCTION**

Education is one of the crucial social development variables especially for mothers which enriches their mind about their social and reproductive experiences and broadens their understanding to make better choices for themselves and rearing and bearing of their children. In many developing countries there is evidence that mother's education plays an important role in determining child mortality even in situations where the medical facilities are scanty [Berrera (1990); Caldwell (1979, 1981)]. Education, it is argued influences women's beliefs about the good health, causes and cures of diseases that increases the demand of the utilisation of modern health care facilities. Therefore, educated mothers are more likely to seek medical treatment for themselves and for their children resulting in higher intensity of the use of a better quality modern care that grows with the advancement of education. Evidence from the research done elsewhere suggests that mother's education has individual positive effect on the use of health care facilities Abbas and Walker (1986); Berrera (1990) and Caldwell (1979) have pointed out that educated mothers are more likely to take advantage of the modern health facilities than their uneducated counterparts in compliance to the recommended treatments primarily due to the different attitudes in regard to the knowledge and perceptions of the importance of the modern medicine in the care of their children. Berrera (1990) in a study of child nutrition in the Philippines found that the children of educated mothers took more advantage of the public health care facilities than the children of uneducated mothers.

It may be mentioned that one of the principal objectives of the primary health care programmes in the developing countries is to improve child-survival through

the increased utilisation of preventive maternal and child health care services. The question which is of considerable interest to the policy-makers in the field of public health is to establish the degree to which the education of mothers affects the utilisation of the health care services.

### **DATA AND METHODOLOGY**

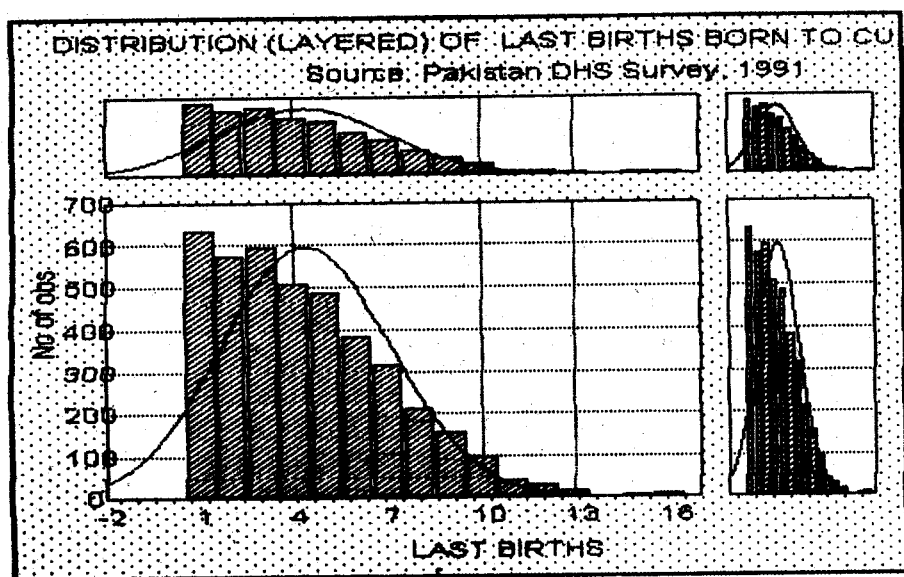
The open-ended question ranged in responses from traditional sources to the modern facilities run by the trained personnel. This study included a sub-sample of the last births to women who reported to have given birth during the last six years preceding the survey date. The choice of women restricted to their last reproductive performance was based on the consideration that most recent occurrence of pregnancy and birth would be a recent experience and probably more alive in memory than that of previous births, therefore, minimising the problems associated with memory lapses. The answers on the use of health care were again sub-set by modern and traditional sources. A dichotomous variable was constructed for trained medical personnel which included doctors, nurses, lady health visitors, family welfare workers and trained birth attendants against those who sought similar help from traditional midwives. The lumping of all modern sources together was done mainly to avoid the problem when the respondents visited multiple modern sources providing health care and netting out of a single source became extremely complicated.

The information on births which took place before the survey date were checked to observe the distribution which appeared to be almost normally distributed (Figure 1) with implications on the randomness of the sample. The graphics and the statistical analysis were carried out by the latest available personal computer software package, SPSS version 6 for Windows. The logistic regression with simple contrasts using the effect coding scheme was applied on categorical variables specifying the last as the reference.

### **RESULTS AND DISCUSSION**

Two dichotomous variables were constructed for the mothers who used antenatal care and for those women who used the care during child birth. As mentioned earlier, the focus is on the mother's education to see if the education alone after controlling for the other individual and the confounding variables, has any significant effect on the utilisation of health care services. The background characteristics of women's educational (WEDU) and other socio-economic characteristics are depicted in the bivariate three dimensional graphs and also in Tables

Figure 1



1 to 4. Figure 2 shows antenatal care by woman's education and educated mothers appear to take more modern care than their illiterate counterparts. Similar results are depicted in Figure 3 where health care facilities were utilised at delivery.

The un-weighted urban-rural breakup of educated women as sampled in the DHS do not depict the national picture as the urban areas were over-sampled [NIPS (1992)]. Among the big urban centres the province of Sindh had a higher number of educated women and in medium-sized urban areas the province of NWFP had a higher number of educated women. Illiteracy was found lower in the least developed province of Balochistan. The utilisation of antenatal and delivery care shows that highly educated women made a better use of modern care whereas the illiterate women used the traditional source of the care.

Table 1

	Chi-square	DF	Sig.
-2 Log Likelihood	2986.215	3189	.0000
Model Chi-square	953.042	20	.0000
Improvement	953.042	20	.0000
Goodness of Fit	3175.371	3189	.0000

Table 2

*Effect of Mothers Background Variables on the Antenatal Care, PDHS 1990-91*

Variable	Additive Effect	S.E.	X <sup>2</sup>	df	Sig.	R	Multiplicative Effect
AGE (Years)			.9607	2	.6186	.0000	
< 20	-.1198	.2190	.2992	1	.5844	.0000	.8871
20-29	.0544	.1108	.2408	1	.6236	.0000	1.0559
30 +							
Birth Order (Births)			6.9268	3	.0743	.0153	
First	.3152	.1848	2.9074	1	.0882	.0152	1.3705
2-3	.0236	.1637	.0208	1	.8854	.0000	1.0239
4-6	-.0427	.1592	.0721	1	.7884	.0000	.9582
7+							
Wife's Education (WEDU)			100.0598	2	.0000	.1562	
Primary	.7242	.1704	18.0589	1	.0000	.0638	2.0630
Middle + None	1.7018	.1738	95.9012	1	.0000	.1544	5.4837
Husband's Education			63.8134	3	.0000	.1211	
Primary	.3717	.1329	7.8243	1	.0052	.0385	1.4503
Middle	.6139	.1512	16.4822	1	.0000	.0606	1.8477
Secondary + None	.9588	.1214	62.3705	1	.0000	.1238	2.6086
Childhood Res							
Urban	.3917	.1318	8.8254	1	.0030	.0416	1.4794
Rural							
Urban			65.1472	2	.0000	.1246	
Major City	1.4006	.1755	63.6730	1	.0000	.1251	4.0578
Small City	.8403	.1877	20.0334	1	.0000	.0677	2.3170
Village							
Region			58.2109	3	.0000	.1151	
Punjab	.8608	.1234	48.6593	1	.0000	.1088	2.3650
Sindh	.0966	.1248	.5991	1	.4389	.0000	1.1014
NWFP	.6041	.1512	15.9652	1	.0001	.0595	1.8296
Balochistan							
WEDU by URBAN			4.4804	4	.3449	.0000	
INT_1	.3040	.3492	.7581	1	.3839	.0000	1.3553
INT_2	.7182	.4054	3.1380	1	.0765	.0170	2.0507
INT_3	-.1919	.3578	.2878	1	.5917	.0000	.8254
INT_4	-.3051	.3836	.6327	1	.4264	.0000	.7370
Constant	.1904	.0981	3.7673	1	.0523		

Table 3

	Chi-square	DF	Sig.
-2 Log Likelihood	3454.739	3189	.0000
Model Chi-square	720.776	20	.0000
Improvement	720.776	20	.0000
Goodness of Fit	3202.050	3189	.0000

Table 4

*Effect of Mothers Background Variables on Use of Care during the Child Birth, PDHS, 1990-91*

Variable	Additive Effect	S.E.	X <sup>2</sup>	df	Sig.	R	Multiplicative Effect
AGE (Years)			1.9860	2	.3705	.0000	
< 20	-.2827	.2011	1.9759	1	.1598	.0000	.7537
20-29	-.0514	.1004	.2618	1	.6089	.0000	.9499
30 +							
Birth Order			10.3845	3	.0156	.0324	
First	.1801	.1673	1.1587	1	.2817	.0000	1.1973
2-3	-.0687	.1469	.2185	1	.6402	.0000	.9336
4-6	-.2299	.1431	2.5816	1	.1081	-.0118	.7946
7 +							
Wife's Education (WEDU)			52.1322	2	.0000	.1074	
Primary	.4474	.1602	7.7999	1	.0052	.0373	1.5642
Middle +	1.1690	.1638	50.9416	1	.0000	.1083	3.2188
None							
Husband's Education			35.5644	3	.0000	.0841	
Primary	.0125	.1254	.0099	1	.9207	.0000	1.0126
Middle	.2035	.1388	2.1506	1	.1425	.0060	1.2257
Secondary +	.6379	.1120	32.4498	1	.0000	.0854	1.8926
None							
Childhood Res							
Urban	.4883	.1255	15.1344	1	.0001	.0561	1.6295
Rural							
Urban			44.3457	2	.0000	.0983	
Major City	1.0961	.1652	44.0069	1	.0000	.1003	2.9926
Small City	.4060	.1791	5.1354	1	.0234	.0274	1.5008
Village							
Region			103.5173	3	.0000	.1528	
Punjab	-.4262	.1167	13.3322	1	.0003	-.0521	.6530
Sindh	-.4148	.1102	14.1757	1	.0002	-.0540	.6605
NWFP	.8532	.1314	42.1900	1	.0000	.0981	2.3471
Balochistan							
WEDU by							
Urban			3.9416	4	.4140	.0000	
INT_1	-.5970	.3205	3.4686	1	.0625	-.0188	.5505
INT_2	-.1804	.3820	.2229	1	.6368	.0000	.8350
INT_3	.1002	.3345	.0898	1	.7645	.0000	1.1054
INT_4	.0289	.3704	.0061	1	.9377	.0000	1.0294
Constant	.2077	.0917	5.1297	1	.0235		

Note: Interactions are defined.

INT\_1 = primary by major city.

INT\_2 = primary by small city.

INT\_3 = middle + by major city.

INT\_4 = middle + by small city.

Figure 2

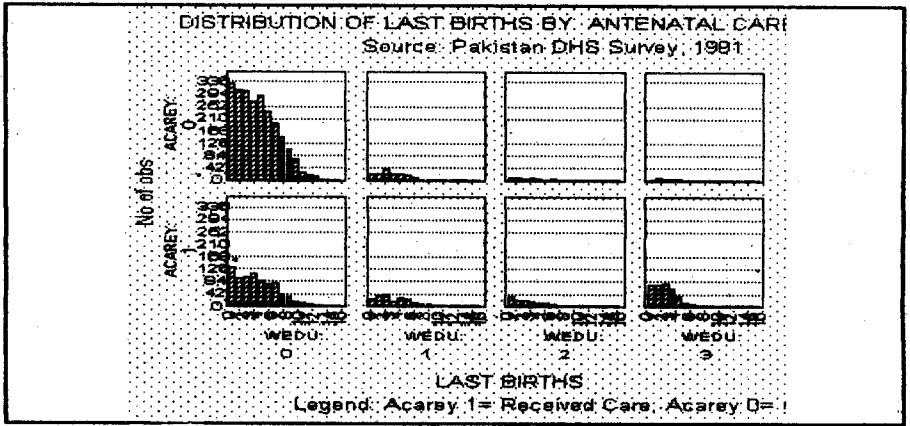
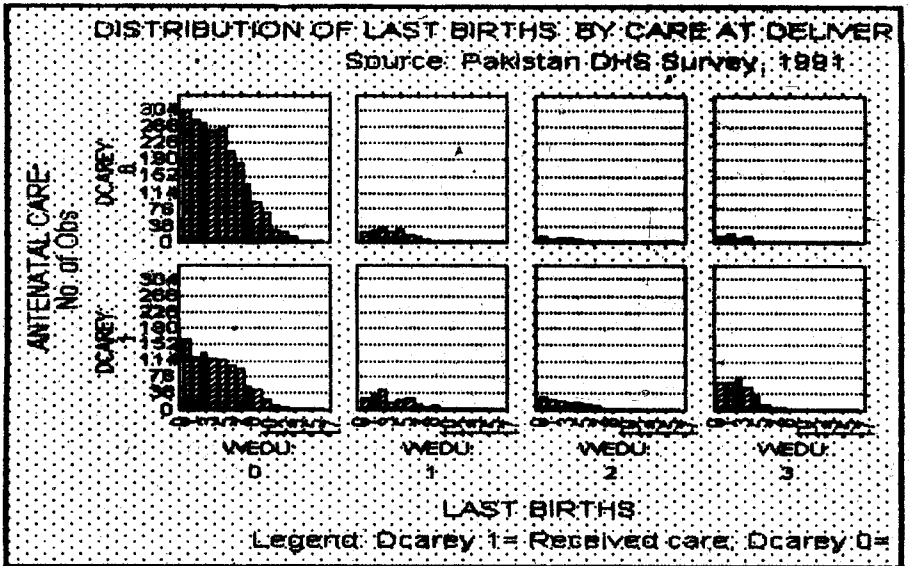


Figure 3



The logistic regression results are presented in Tables 2 and 4 where the effect of the mother's background characteristics are controlled to observe their effect on the utilisation of antenatal care. The effect of the age of mothers does not seem to be an important variable in the acquisition of health care. The birth order variable shows that mothers at the first parity consult the modern sources of health care more than at the later parity. This may be due to their anxiousness of first reproductive experience induces them to consult medical experts to avoid any risks for themselves and the foetus. The childhood place of residence which is reflective of the attitudes and practice of their family environment in regard to the use of medical care and also their migratory status that may have any added influence on the use of the health care services. The urban place of childhood appears to be significant in comparison to the mothers hailing from the rural areas, Mother's education appeared to be very significant in the use of health care facilities compared to the illiterates who seem to be at the disadvantage so far as the use of health care facilities is concerned. This also shows that women with higher education appear to be more concerned to avoid any pregnancy related risks. The husband's education which is a proxy of an income of the household appears to be significant and shows that women with educated husbands and presumably with better incomes also used health care facilities. The use of antenatal care facilities appeared to be significant in major urban cities. This is suggestive of a concentration of the health facilities in the urban areas where women take advantage of the mere availability of the service. This also suggests that when the services are in abundance the use of these facilities is massive regardless of the educational status. The odds ratio suggest that the utilisation of these facilities is twice as much in the major urban centres as it is in the small urban centres when compared to the rural areas. The regional differences in the use do not appear to be significant. The situation of the use appears to be better in the Punjab than in the other provinces.

The significance of the use of health care services in urban areas raises many questions. It may be argued that it is not only the concentration of the facilities but more educated women are located in the urban areas. The confounding situation was tested if there appears to be any such happening in the urban areas. A two-way interaction was introduced in the equation which did not appear to be significant and validated the main results. The significance of the mother's education after controlling for relevant background variables suggests individual effect of the mother's education on the use of antenatal care. This evidence for Pakistan is in conformity with the other developing countries that mother's education plays an important role in the utilisation of health care for mothers and their children. The

results of the use of health care facilities during child birth are given in Table 4. The results do not appear to be different than in the antenatal care except that highly educated women used modern medical care during child birth. This is probably the income effect which suggests that women with higher incomes benefited more from using health care facilities. The effect of education is more pronounced for higher educated women who used these facilities more than the women with primary education.

### **CONCLUDING REMARKS**

The results for the use of antenatal and during child birth care reveal the significant effect of female education after controlling for the effect of the other variables. These results are in conformity with the findings from other developing countries. Education plays an important role and creates general awareness about the matters which affect the quality of life, therefore, female education is of crucial significance as it affects the family's health acquisition. The other important result pertains to the significance of the major urban cities after testing for the interaction of the concentration of educated women in the urban areas where most of the both public and private medical facilities are also available in disproportionate abundance. This shows that if the services are easily accessible then the other differences probably diminish in importance even the effect of education appears to be of a marginal significance because when services are available both educated and the uneducated would equally take advantage and the differences may be visible in the level of use effectiveness. The third important result relates to the education of husband, a proxy for the household income level. The women with highly educated husbands appear to be at an advantage probably due to the fact that they were in a better position to buy quality care for themselves. Although the public health care facilities are subsidised, the significance of the use by high income groups suggest that they probably used private health facilities.

Although, female education appeared to be significant in the utilisation of health facilities, the significance of the use in major urban cities reflects the skewed distribution of the health care facilities. The important policy suggestion based on the results from this study is to harmonise the opportunity of access to the rural population in primary health care as well as in educational institutions to a degree similar to those found in the urban areas, would probably help alleviate the differentials in health care utilisation. This would only be possible when a better managed comprehensive social development programme is evolved where health, education and other social sectors are integrated in their approach and directed to benefit the



disadvantaged groups of population as well as the geographical areas without any prejudice.

### REFERENCES

- Abbas, A. A., and G. J. Walker (1986) Determinants of the Utilisation of Maternal and Child Health Services in Jordan. *Internal Journal Epidemiology* 15: 404-407
- Barrera, A. (1990) The Role of Maternal Schooling and its Interaction with Public Health Programmes in Child Health Production. *Journal of Development Economics* 32: 69-91.
- Caldwell, J. (1979) Education as a Factor in Mortality Decline: An Examination of Nigerian Data. *Population Studies* 33: 395-413.
- Caldwell, J. (1981) Maternal Education as a Factor in Child Mortality. *World Health Forum* 2: 775-778.
- NIPS (1992) *Pakistan Demographic and Health Survey 1990-91*. Islamabad: National Institute of Policy Studies.

**Comments on  
"Mother's Education and Utilisation of  
Health Care Services in Pakistan"**

This is a difficult paper to discuss because it validates through rigorous analysis the commonly known truths about the utilisation of health care services in Pakistan. Imaginative analysis and interpretation of a sub-sample of the Pakistan Demographic and Health Survey (PDHS) 1990-1991 would have given me reasons for a detailed discussion on this subject.

Nevertheless I would like to congratulate the authors for (1) focussing our attention on the factors which would facilitate the utilisation of modern maternal health care services for antenatal care and child birth (2) reposing our confidence in an integrated approach towards understanding women's problems in the social sector and formulating projects to solve these problems particularly in the health and education sectors.

Let me assure the authors that I have totally ignored the typing errors in the paper.

Because it is a serious topic I shall look into the contents of the paper carefully. My comments will focus on the possibilities for further work on this paper.

First of all, the title of the paper may be stated in more specific terms conveying the explicit objectives of the paper such as *Mother's Education and Utilisation of Modern Services for Antenatal Care and Child Birth*.

Underutilisation of services stress the supply side not so much the demand side. Little work has been done to look into the characteristics of the consumers PDHS. Since the analysis in this paper is based on a sub-sample of PDHS 1990-91, it would have been useful to compare the results of this paper with those of the PDHS. For instance, while the results of the PDHS indicate that mothers receiving care from a doctor were slightly younger and of lower parity, the statistical analysis presented in this paper show that "the effect of the age of mothers does not seem to be important in the acquisition of the care". Why is this inconsistency in the results of the PDHS and that presented in this paper? The authors need to say a few words on this point.

In their concluding remarks the authors say that: "the use of antenatal and during child birth care reveal the significant effect of female education after con-

trolling for the effect of the other variables" state that these results are in conformity with the findings from other developing countries. This point is well taken but what are those studies from the other developing countries and what are the findings of these studies? The authors may like to summarise the previous studies with references and cross references.

An analysis of the relative significance of the effect of mother's level of education and other controlling variables on the antenatal care and the care during child birth would have given us better insights about the issues involved. Although the paper gives two separate tables for antenatal care and care during child birth, the comparative analysis and interpretation of these tables is missing in the paper.

Basically mother's education is the main independent variable and a few controlling variables thrown up in the paper are: age, birth order, wife's education, husband's education, major city, small city, village, and region. What is the justification for splitting a sub-sample of PDHS into these variables? What were the controlling variables which were selected and not others such as the size of the family, the family structure, nuclear family versus joint family, general health status of women, the possibility of women being employed, her employment experience and the age at which she started to work, exposure to media, child care facility while working. The questionnaire used in the PDH survey has covered all these variables.

According to the authors while the mother's education creates the general awareness about the matters which affect the quality of antenatal care and the care during child birth, the husband's educational level is taken as a proxy for the household income level. Although this interpretation of the factors selected for analysis in this paper is in line with the patriarchal family system in Pakistan, it has ignored the fact that education also plays an important role in raising the consciousness of husbands about the health care of his wife and children and women's income earned through employment contributes to family income. Something needs to be said about the impact of education in raising the consciousness of husbands about the quality of health care of their wives and children and wife's level of education as a proxy for the household income levels. Otherwise we will have valid reasons to believe that the authors interpretation of the variables used for analysis in this paper is coloured by the patriarchal norms.

It is not explicitly clear as to whether the authors are referring to public health services or private health services or to both. In concluding the paper, the authors state: "the women with highly educated husbands appear to be at advantage probably due to the fact that they were in a position to buy a quality care for themselves. Although the public health care facilities are subsidised and cost of the

care is cheaper, the significance of the use by high income groups suggest that they probably used the private quality care". Some clarification on the sector of health services is needed in interpreting the results because some micro studies and national surveys indicate that public health services are underutilised particularly by the women. For this reason perhaps the findings may be restated in specific terms: amongst those who utilise the public health services mother's education is an important facilitating factor.

Coming to the policy prescriptions stated towards the end of the paper, I would like to say that is rather broad-based. In order to ensure that available health care facilities for antenatal care and child birth in the public sector are adequately utilised, it is necessary to remove gender disparities in availability, accessibility and utilisation of educational opportunities and resources in both the urban and the rural areas. It is equally important to remove rural-urban disparities in availability, accessibility and utilisation of educational opportunities and services because (1) macro statistics/data available through the national surveys indicate that over the decades more urban females than rural males have been educated (2) husband's level of education influences the utilisation of health facilities for antenatal care and child birth as it is indicated in this paper. These are some of the policy prescriptions that come to my mind for facilitating the use of antenatal care and the care during child birth by the mothers.

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