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Research Article

Out of Pocket Expenditure on Delivery and Postnatal Care in Public and Private Hospitals

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ABSTRACT:

Background: Pakistan is a developing country of South Asia and currently facing many challenges and public health especially maternal health is one of the emerging issues. There is limited empirical evidence on the out of pocket expenditure (OOPE) on selection of public and private healthcare facility. This area was overlooked in the research and the current study has tried to investigate the impact of OOPE on public and private hospital selection for delivery and postnatal care.

Material and Methods: Survey approach was used. Primary data was collected from the Rajanpur district of Punjab Pakistan. Descriptive statistics and backward binary logistic regression were used. Non-probability convenience sampling technique was used for selection of sample size. Total 368 completed questionnaires were used in the analysis.

Findings/Results: Results revealed that Results also revealed that mothers with high in age, education were found significant and their spouse with government jobs, self-employed prefer to go to public sector hospitals for delivery. Those respondents having income between 10 thousand PKR to 20 thousand PKR likely to go to public sector facility and mothers having more children such as 3-4 or above like to go public hospitals for delivery. Moreover distance from home to hospital and transportation charges and OOPE also play significant role in selection of healthcare facility. On the other hand age of mother, transportation and distance from home to hospital does not play any significant role for postnatal care while remaining factors such as education of mother, occupation of mother and household head, family income, number of children and out of pocket medical expenses plays significant role in selection of hospital for postnatal care.

KEYWORDS
Out of Pocket Expenditure (OOPE), Delivery, Postnatal Care,, Public and Private Hospitals. SPSS.

1 | INTRODUCTION

According to World Health Organization (WHO)[1] developing economies are facing several challenges and among those public health is one of the most prominent challenges. In another report of WHO[2] around three hundred thousand women died due to complications in pregnancies and delivery. Further WHO, [1-3] in its report claimed that daily eight hundred and thirty women died due to childbirth difficulties globally. WHO also reported that around ninety nine percent women died in developing economies while one third belong to South Asian countries, Moreover among those women majority of them lived in rural areas. In developed economies maternal mortality ratio (MMR) is considerable low as compared to developing countries. Developing countries are improving their maternal healthcare facilities but still eighty six percent deaths recorded in South Asian countries especially Pakistan, Nepal and Afghanistan.[4,5] The factors responsible for maternal deaths are miscarriage, hypertensive disorder, abortion and these causes also responsible for disability in women of childbearing age. There are limited are lack of healthcare facilities available to women living in rural areas of Pakistan. Other factors are out of pocket expenditure (OOPE), distance from home to healthcare facility which comes up with poor overall women health. Provision of adequate healthcare facilities in rural areas and provision of skilled health workforce might reduce the maternal mortality in Pakistan. Women living in poor socio-economic societies are one of the reasons for not having adequate healthcare facilities. Population of Pakistan is more than two hundred twenty million and majority of the population is living is rural areas. Most of the people never visited any healthcare facility in their whole life. Health care performance indicators are not satisfactory. In the report by World Bank[2] around 30 percent population in Pakistan is living below the poverty line. Studies on OOPE revealed that socio economic factors are positively associated with utilization of care services and OOPE. The income level of household is an indicator of capability to afford OOPE on delivery care. It is assumed that education and occupation of women influence the choice of health care facility. Working women have more awareness about health, delivery and postnatal facilities.

1.1| Rationale of the Study

Government of Pakistan is promoting safe childbirth strategies in public healthcare system in its maternal health policy. Efforts were made to execute this policy through millennium development goals (MDGs) and safe motherhood initiatives. However, these efforts aimed at enhancing the affordability of maternal healthcare services. Unfortunately Pakistan is failed to achieve MDG 4 and 5. The main reason for this failure is strategies which are failed to address the barriers that restrict access to maternal healthcare for women living in rural areas.

1.2 | Objective of the Study

- To investigate the influence of soci0-economic factors on choice of health facility for delivery and postnatal services (public & private).

2 | MATERIAL AND METHODS

2.1 | Research Design

This study is quantitative in nature and survey design was adopted. The nature of the data was cross-sectional and primary data was collected from the respondents. Population of the current study was households living in Rajanpur district of Dera Ghazi Khan, Punjab province Pakistan.[6] Total 368 completed questionnaires were received and used in the analysis. Respondents were made assured that data would be kept confidential and it would be used only for academic purpose. Identity of all respondents would be kept confidential. Respondents were given 4 to 5 days to fill the questionnaire. Researcher has requested the leady health workers (LHWs) and leady health visitors (LHVs) to help in data collection. Therefore researcher accompanied LHWs and LHVs on their visit to their respective areas and collected the data. Permission from the respective department was already taken prior to data collection. All

respondents were explained the purpose of the study and it was allowed to withdraw from the survey any time.

2.2 | Population and Sampling

Population of the current study was district Rajanpur. Non-probability convenience sampling technique was used for selecting the sample size. Benefit of non-probability sampling technique allows the researcher to collect the data for many respondents who are willing to participate in the survey as well as fulfill the criteria of the study participant.

2.3 | Measures

Questionnaire was adopted form past studies and it includes questions regarding the age of mother, occupation, income, number of children, income of household, place of recent delivery, transportation charges, loss of income, insurance, mortgage, distance of home form hospital.

2.4 | Data Analysis Techniques

SPSS 26 was used for analysis of the data. Frequency, percentage was used for demographic information while testing hypotheses binary logistic backward regression was used.

3 | RESULTS

3.1 | Determinants of the Choice of Delivery In Public Vs Private Health Facilities

In the multivariate binary logistic regression analysis, the researcher used the category of the dependent variable as the place of delivery care (public hospitals vs. private hospitals). Independent variables considered in the model were mother's age, education of mother, occupation of the spouse, number of living children, family income, distance to the health facility, transport costs, OOPE. The multivariate logistic regression analysis helps us retrospect the possible reasons for utilization of delivery and postnatal services at public and private health facilities. The logistic regression analysis results revealed that the mother's age has a significant role in choosing by utilizing public or private health facilities for delivery care. The results show that women in a lower age group had lower odds of utilizing public sector facilities than the private sector. This means mothers in the younger age group are less likely to use public health facilities for delivery care compared to the higher age group. The mothers with age groups lower than 20 years were more than 99 percent less likely to use public health facilities than the reference age group (age 41 and above). The mother's level of education has a significant effect on the choice of the type of facility. The analysis indicates that as the educational level increases, facility preference is more likely to be private. The results show that mothers with more years of schooling had lower odds of utilizing public sector facilities than the private sector.

Regarding mothers' occupation, the results show that mothers employed in the government or private services are less likely to choose public facilities than housewives. This also holds for the occupation of a spouse, as the results show that husbands who were employed in the government or private sector had a lower odds of utilizing public facilities, while daily labors (OR=1.10) and self-employed households (OR=1.28) were more likely to prefer public health facility for delivery care. Family income is another significant factor in choosing the type of health facility for delivery care. When family income increases, the preference for health facilities is more likely to be private. In other words, the higher family income had lower odds of choosing the public sector hospital for delivery care. The number of living children is another factor affecting the choice of health facility for delivery care. The analysis showed that mothers with more living children had greater odds of choosing the public sector hospital for the delivery of care. Compared to less number of living children, mothers with 3-4 children were a 52 percent higher chance of going to public health facility and those who had 5-10 children were more than two times higher chance (OR=2.82) of preferring public health facilities compared to the reference category (i.e., those who have 1 to 2

children). Those with 11 children or more are likely to choose a public facility more than two times (OR=2.44) compared to those with 1 to 2 children. Distance from home to a health facility is considered an essential factor affecting the choice of health facility for delivery care.

TABLE 1 Logistic regression analysis for factors determining the Choice of Health Facilities for Place of Delivery Care (Public vs.Private)

Variables	Categories	Odds Ratio	CI (95%)	Sig.
Age of Mother	< 20	0.003	(0.00 -5.07)	0.153
	20-30	0.037	(0.00 - 6.27)	0.130
	31-40	0.057*	(0.00- 2.47)	0.025
	41 and above ®	1.00		0.520
Education of Mother	No Schooling ®	1.00		0.820
	1 -5 yrs Schooling	0.619	(0.09- 4.10)	0.619
	6-10 yrs schooling	0.021*	(0.00 -2.31)	0.045
	Above 10 yrs Schooling	0.010*	(0.00 – 2.39)	0.049
Occupation of mother	Housewife ®	1.00		0.462
	Government Service	0.025	(0.00 – 1.92)	0.993
	Private/Self Employed	0.090	(0.02 – 4.01)	0.214
Occupation of Spouse	Unemployed®			0.118
	Government Employee	0.050*	(0.00 – 1.41)	0.196
	Private/Contract	0.076	(0.00 – 2.23)	0.161
	Daily labour	1.105*	(0.01 -1.48)	0.010
	Self Employed	1.280**	(0.83 – 1.52)	0.008
Family Income	< 10000®	1.00		0.887
	10,000-20,000	0.813*	(0.21 – 2.34)	0.048
	20,001 - 30,000	0.855*	(0.16 – 3.51)	0.047
	Above 30,000	0.365**	(0.01 – 5.17)	0.013
No of Living Children	1 - 2 ®	1.00		0.525
	3- 4	1.525*	(0.18 – 2.26)	0.049
	5-10	2.838*	(0.45 – 5.21)	0.038
	11 and Above	2.444*	(0.02 – 6.54)	0.025
Distance to Health Facility	<10 ®	1.00		0.100
	10 -20km	0.955	(0.11 – 3.81)	0.966
	21-30km	1.511	(0.44 – 4.67)	0.819
	Above 40 km	4.483**	(1.06 – 8.43)	0.014
Transport Charges	No Expense®	1.00		0.136
	< Rs. 500	0.022*	(0.00 – 1.49)	0.038
	500-1000	0.035**	(0.00 – 2.21)	0.009
	Above Rs. 1000	0.036*	(0.00 – 2.58)	0.042
Out of Pocket Medical Expense	< 2000 ®	1.00**		.001
	2000-5000	0.031*	(0.00 – 3.21)	.043

	5001-10000	0.045*	(0.00 – 4.38)	.047
	Above 10,000	0.052*	(0.00 - 4.95)	.039

Note:* p<0.05 and **p<0.01, ® Reference Category

In the logistic regression analysis of postnatal care, the dependent variable was a place of postnatal care coded as public hospitals is one and private hospitals as 0. All independent variables considered in the logistic regression model for delivery care were used in this model. Independent variables were the mother's age, education of mother, occupation of the spouse, number of living children, family income, distance to a health facility, transport costs, OOPE. The logistic regression analysis enables us to retrospect the possible reasons for the utilization of postnatal services at public and private health facilities in the district.

The logistic regression analysis results reveal that the mother's age does not have a statistically significant association in choosing to utilize postnatal care. However, middle-aged women had higher odds of utilizing public sector facilities for postnatal care than the reference category (age 41 and above). The level of education of the mother has a significant effect on deciding the place of PNC. The analysis indicates that as educational level increases, facility preference is more likely to be public as the odds of using the public sector for postnatal care are more than two times higher for more educated mothers than uneducated mothers. As far as mother occupation is concerned, the results show that mothers employed in the government services are less likely to choose public facilities for postnatal care than other occupational groups. However, the results reveal that the likelihood of using public sector hospitals for postnatal care is more than two times higher (OR=2.42) among women employed in the private sector and self-employed.

Contrary to these results, the spouse's occupation has a significant role in deciding to avail of postnatal care from the public sector. Women whose spouses employed in the government services are almost 4 times higher chance to choose public sector (OR=4.81) for postnatal care, those employed in the private services are 2 times more likely to use postnatal care from the public sector, and women whose spouses were self-employed were 3 times more likely to choose public sector hospitals compared to unemployed spouses, and it is statistically significant also. Like choosing a health facility for delivery care, family income is another highly significant factor in choosing the type of health facility for postnatal care. When family income increases, the preference of health facilities for postnatal care is more likely to be private and highly significant ($p < 0.009$). In other words, the higher family income had lower odds of choosing the public sector hospital for postnatal care. The number of living children is another contributing factor for choosing the health facility for postnatal care. The analysis showed that mothers with more living children had lower odds of choosing the public sector hospital for the delivery of care. Compared to less number of living children, mothers with 3-4 children were a 63 percent lower chance of going to the public health facility for postnatal care, and those who had 5-10 children were a 64% lower chance of preferring public health facilities compared to the reference category (i.e., those who have 1 to 2 children). Women who had 11 children or more are 85% less likely to choose public facilities than those who had 1 to 2 children, and it is statistically highly significant also ($p<0.00$). Although the distance from home to a health facility is considered an essential factor affecting the choice of health facility, the results indicate that distance to a health facility had a limited role in choosing public health facility for delivery care.

TABLE 2 Logistic regression analyses for factors determining the Choice of Health Facilities for Place of Postnatal Care (Public vs. Private)

Variables	Categories	OR	CI (95%)	Sig.
Age of Mother	< 20	0.840	(0.17 – 4.17)	0.831
	20-30	1.062	(0.33 – 3.47)	0.921
	31-40	1.830	(0.55 – 6.11)	0.326
	41 and above ®	1.00		0.398
Education of Mother	No Schooling ®	1.00		0.468

		1.166	(0.59 – 2.32)	0.661
	1 -5 yrs Schooling	2.118**	(0.84 – 5.35)	0.012
	6-10 yrs schooling	2.440*	(0.44 – 5.64)	0.048
	Above 10 yrs Schooling			
Occupation of mother	Housewife ®	1.00		0.015
		0.274*	(0.80 – 0.94)	0.040
	Government Service	2.422	(0.86 – 6.86)	0.096
	Private/Self Employed			
Occupation of Head	Unemployed®	1.00		0.010
		4.891*	(0.92 – 15.23)	0.043
	Government Employee	2.339	(0.37 – 14.79)	0.367
	Private/Contract	1.105	(0.31 – 3.91)	0.877
	Daily labour	3.663*	(0.90 – 14.85)	.048
	Self Employed			
Family Income	< 10000®	1.00		.019
		0.693	(0.34 – 1.42)	0.316
	10,000-20,000	0.243**	(0.09 – 0.66)	0.005
	20,001 - 30,000	0.262**	(0.09 – 0.72)	0.009
	Above 30,000			
No of Children	1 - 2 ®	1.00		0.006
		0.374*	(0.16 – 0.90)	0.028
	3- 4	0.360*	(0.16 – 0.82)	0.014
	5-10	0.151***	(0.05 – 0.43)	0.000
	11 and Above	1.00		
Distance to Health Facility	<10 ®			
		1.728	(0.85 – 3.53)	0.134
	10 -20km	0.893	(0.31 -2.55)	0.832
	21-30km	0.690	(0.20 – 2.35)	0.553
	Above 40 km			
Out of Pocket Medical Expense	< 2000 ®	1.00		0.298
	2000-5000	0.654	(0.32 – 1.33)	0.243
	5001-10000	0.805	(0.17 - 3.85)	0.786
		1.811*	(0.34 – 9.67)	0.047
	Above 10,000	1.00		0.309
Transport Cost	No Expense ®			
		1.545	(0.49 – 4.81)	0.453
	< 500			

	0.952	(0.28 – 3.20)	0.936
500-1000			
Above 1000	2.774	(0.59 – 12.95)	0.194

Note:* p<0.05 and **p<0.01, ® Reference Category

4 | DISCUSSION AND CONCLUSION

Findings of the study explained that majority of the mothers prefer to visit public hospitals due to low socio-economic conditions. Results also revealed that mothers with high in age, education were found significant and their spouses with government jobs, self-employed prefer to go to public sector hospitals for delivery. Those respondents having income between 10 thousand PKR to 20 thousand PKR likely to go to public sector facility and mothers having more children such as 3-4 or above like to go public hospitals for delivery. Moreover distance from home to hospital and transportation charges and OOPE also play significant role in selection of healthcare facility.[7-10] On the other hand age of mother, transportation and distance from home to hospital does not play any significant role for postnatal care while remaining factors such as education of mother, occupation of mother and household head, family income, number of children and out of pocket medical expenses plays significant role in selection of hospital for postnatal care. It is concluded that there is significant difference found between public and private sector hospitals charges for delivery and postnatal care services. These factors have significant impact on selection of health facility. [11]

The results indicate that the higher the distance to a health facility, the higher the likelihood of families choosing public health facilities for delivery care. The mothers living farther from the health facilities had greater odds of choosing public health facilities for delivery care. Mothers living more than 40 km from health facilities are more than four times more likely to choose public health facilities for delivery care than those living within 10 kilometers' distance. Travel expenses to be incurred by the families are likely to affect the decision to choose a health facility for seeking delivery care which are aligned with past studies.[12] The analysis indicates that when the travel expense increases, the preference of facility is more likely to be a private facility, which means most mothers who visited public health facilities had utilized ambulance services from the government hospitals. Finally, the OOPE indicates that mothers who spent more on delivery care had lower odds of choosing a public health facility for delivery care.[13]The results indicate that mothers who spent PKR.2000 and above were less likely to choose public facilities than those with low medical expenses. Findings of the current study are consistent with findings of numerous past studies which also reported that socio economic factor contributed towards choice of health facility for delivery care.[14-16]

The overall results indicate a clear preference for the public sector health facilities for delivery care among women of higher age group, poor education, housewife, low job category of spouses, lower economic strata, living far from a health facility, low transport expenses, and overall OOPE. The mothers living farther from the health facilities were less likely to choose public health facilities for postnatal care. Travel expenses incurred by the families are likely to affect choosing a health facility for seeking postnatal care.[17]The analysis indicates that when the travel expense increases, the facility's preference is more likely to be a public facility, which means most mothers who visited public health facilities for postnatal care had to incur huge expenses on transport. However, most of them had availed free ambulance services for delivery care. Finally, the OOPE indicates that mothers who spent more on delivery care had greater odds of choosing a public health facility for postnatal care. The results indicate that mothers who spent PKR.1000 and above were more likely to choose public facilities than those with low medical expenses. The overall results indicate a clear preference for the public sector health facilities for postnatal care among women with higher education, employed in government services, government/private service or self-employed spouses, higher economic strata, living far from a health facility, high transport expenses, and overall OOPE.[18-20]

5 | POLICY IMPLICATIONS AND RECOMMENDATIONS

Health care professionals, practitioners and policy makers in MoH could take benefits from the findings of the study. Such policies could be formulated so that it would be easy for those women living in rural areas of Pakistan should have access to health facilities for delivery and post-natal.

6 | LIMITATIONS AND FUTURE DIRECTIONS

This study offered many contributions but it is essential to highlight some limitations. First limitation is single method of data collection which might cause common method bias (CMB). It is recommended that future studies can use longitudinal data or mix methods for better understanding of the subject matter. Second this study has collected data form one district and sample size was very small therefore one must be careful while making generalization to other population or sectors. Therefore in future big sample size could better explain the subject matter in detail.

Conflict of Interest: There is no competing interest

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