

The Effect of Health Infrastructure, Adult Literacy, and Household Characteristics on Antenatal Care (ANC) Coverage in Punjab (Pakistan)

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ABSTRACT

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Objective: The present study is a cross district analysis of the effect of health infrastructure, adult literacy, and household characteristics on antenatal care (ANC) use in Punjab (Pakistan). **Data and Methodology:** The unit of analysis is a district. By covering a panel of 35 districts of Punjab, the study has collected the yearly data for the time period 2010 to 2016. The percentage of pregnant women of reproductive age received ANC services in each district is taken as dependent variable. Health physical infrastructure, adult literacy rate, and the percentage of households: having own house, using improved sanitation facilities, and receiving remittances from abroad are taken as explanatory variables. The study used panel Generalized Method of Moments (GMM) to estimate the effects of the explanatory variables on antenatal care.

Results: Ranking of the districts on the basis of ANC coverage shows that amongst the 34 districts of Punjab province, Bahawalnagar, Rajan pur, Pakpattan, Kasur, Bahawalpur, and Rahim Yar Khan districts are at the bottom with the lowest use of ANC services by the pregnant mothers. The GMM estimates show that health physical infrastructure, adult literacy rate, and the percentage of households having their own house are positively and significantly affecting the ANC use in Punjab-Pakistan. Hence confirming the healthcare services utilization framework of Andesen and Newman (2005) which explains that formal healthcare system (health physical infrastructure), predisposing factors (adult literacy rate), and enabling factors (households having their own houses) significantly matter in fostering better use of healthcare services.

Conclusion: The study advocates the need for investment in health physical infrastructure as well as in overall literacy. At the same time, it suggests that for the better coverage of ANC the geographical targeting can result into better outcomes.

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1. INTRODUCTION

Many of the stillbirths, infant mortalities, and maternal deaths due to pregnancy-related issues can be prevented through better healthcare during pregnancy and childbirth. And over the world only 64% of women receive adequate prenatal care during their pregnancy (The World

Health Organization, 2016). The post-2015 development agenda¹ does not seem to be materialized into reality without adequate use of antenatal care (ANC) services. The very first target of the third Sustainable Development Goal aims to bring the global maternal mortality ratio below 70 per 100,000 live births till 2030 (The United Nations, 2019). While according to the estimates, in 2017 the global maternal mortality ratio stood at 211 and in 2016 nearly 20 per cent of the global live births were attended by the unskilled healthcare staff (The World Bank, 2019).

In Pakistan the percentage of pregnant women receiving antenatal care services was 86.2 in 2018, while maternal mortality ratio was estimated as 140 per 100,000 live births in 2017 (The World Bank, 2019). Although this ratio is lesser than that of in India and Bangladesh but still remains too high in comparison with the maternal mortality ratio in Sri Lanka (see the table). The situation regarding ANC services use is also uneven among various regions of the country.

Table 1
Statistics

Region	Pregnant women receiving prenatal care (%)	Maternal mortality ratio (modeled estimate, per 100,000 live birth)	Births attended by skilled health staff (% of total)	Literacy Rate, Youth Total (% of People ages 15-24)
	Year 2016	Year 2017	Year 2016	Year 2019
World	86.7	211	81.0	91.7
South Asia	78.7	163	75.5	90.0
India	79.3	145	81.4	91.7 (year 2018)
Bangladesh	63.9	173	49.8	94.9
Sri Lanka	98.8	36	100.0 (year 2014)	98.8(year 2018)
Pakistan	86.2 (year 2018)	140	69.3 (year 2018)	74.5 (year 2017)

Education has been shown to have a deep effect on a mother's use of maternal healthcare services. Global analysis of maternal mortality showed that the level of female literacy and schooling were significantly associated with maternal deaths. According to a report, as compared to an educated woman an uneducated woman has 2.7 times larger risk of maternal mortality (Tunçalp, Souza, & Gülmezoglu, 2013). Literature also reveals that adequate use of ANC services could be achieved by educating the women and through the provision of adequate knowledge regarding healthcare options (Chiang et al., 2012; Nisar & White, 2003; Safdar, Inam, Omair, & Ahmed, 2002). Educated partners have also been found to be more aware of the pregnancy-related complications (Shariff & Singh, 2002). Household's wealth or financial wellbeing has significant role in the adequate usage of ANC services. Poor economic status of the family leads to poor access and inadequate number of ANC visits by the women (Agus & Horiuchi, 2012; Edward, 2011).

In Punjab, due to existing inter-regional disparities, the discrepancies concerning the utilization of ANC services are inevitable among different regions and districts of the country. The present study is unique in the context that, for investigation, it includes social, economic, and contextual realities of Punjab province as predisposing, and enabling factors of the ANC services use.

2. LITERATURE REVIEW

In the literature, we have added literature related to antenatal care and health infrastructure to establish the link between ANC and health services through the literature.

Bhatia and Cleland (1995) examined the association of issues with subsequent health-related behavior during pregnancy and childbirth. As less than one-fifth of the mothers had a postnatal checkup, there was a marked disparity between antenatal and postnatal treatment.

¹ Accomplishment of Sustainable Development Goals (SDGs)

Significant determinants of the use of maternal health services were the level of education, economic status, and religion of the mother.

In a cross sectional study, Fatmi and Avan (2002) by employing multivariate logistic regression identified the factors affecting utilization of antenatal care services in Sindh, Pakistan. The result revealed that a woman's socioeconomic status was the major determinant of the use of antenatal care.

Gokhale, Rao, and Garole (2002) investigated the effect of women's education on mortality reduction through increasing use of maternal and child health (MCH) services. Women's illiteracy had more damaging effects in the rural area as compared to the urban area. Male literacy has been beneficial in improving the use of services to reduce infant mortality rates, than female illiteracy.

Arthur (2012) studied the impact of wealth on the maternal health care by using the data from Ghanaian Demographic and Health Survey for 2008. Univariate and multivariate analyses were employed to investigate the impact of wealth and socioeconomic variables on antenatal care use. The result found that there was a positive association between the wealth status and use of antenatal care. Variations were found among urban and rural dwellers in terms of the use of antenatal care.

Pillai, Maleku, and Wei (2013) examined the relationship between female literacy and maternal mortality ratios. The study used the data from 1970 to 2000 for 143 developing countries. The study used the latent growth curve approach to determine the dynamic relationship between female literacy and maternal mortality ratio. According to the study, a dent in the the maternal mortality ratio was found with an increased female literacy rate. The study proposed that, given their ability to produce sustained reductions in mortality rates in developing countries, female literacy programs were of immense value in reducing maternal mortality ratios.

Adjiwanou and LeGrand (2014) evaluated gender discrimination by women's household decision-making at the individual and contextual level by permissive gender performance concerning tolerance of women's violence and assesses its effect on the use of maternal health services in rural Africa.

Majrooh, Hasnain, Akram, Siddiqui, and Memon (2014) have analyzed primary health care facilities in terms of both, scope and quality of antenatal care in Punjab Pakistan, by using a multistage sampling technique for the nine districts of Punjab. The study employed a Univariate analysis. The study showed a very insufficient coverage and efficiency of ANC services, as perceived by the clients and observed during the study, the consistency of ANC is highly impaired. More than 50 % of consumers are not satisfied with their ANC Services.

Mamoon, Raza, and Arshed (2014) studied the reasons behind poor health standards in the workforce. The regional data from the Punjab region (Pakistan) indicate that the main factors that could reduce the infant mortality rate are fertility ratio, number of hospitals, education, and proxy incomes. In 2011 health levels were lower compared to 2004, according to the dummy variables of the GMM model.

Majrooh, Hasnain, Akram, and Siddiqui (2015) examined important resources mandatory in primary healthcare facilities for the provision of ANC services in Punjab, Pakistan. Univariate analysis was employed on cross-sectional data from the nine districts of Punjab. The study concluded that 28 percent of the hospitals, in general, had poor infrastructure and in 16 percent of the health facilities, equipment availability was poor. In rural health centers, infrastructure and the availability of equipment and supplies were generally better than in basic health units.

Dahiru and Oche (2015) have determined the factor that affect the utilization of antenatal care, place of delivery, and postnatal care indicators in Nigeria. The study used the DHS data for 2013 and employed both bivariate and multivariate logistic regression analysis. The findings of the study showed that, nearly four ANC visits were made by 54% of women, 37 percent delivered in health care services, and within two months of births 29 percent of newborns had postnatal

care. Maternal and husband's education, place of residence, wealth level and parity are the factor which affect these three MCH services.

John, Binu, and Unnikrishnan (2019) by applying the ordinary least squares investigated the determinants of antenatal care use in India while using district level household survey data from 2012 to 2013. The study found that there was a positive relationship between antenatal care and health infrastructure, staff, and services. The spatial trend of the percentage of pregnant women with complete ANC was found to be correlated with education and birth order.

Noh et al. (2019) examined the factor affecting the utilization of ANC in Sindh, Pakistan. Logistic regression model was used to analyze the data. The result of the study showed that 83.5% of women received one or more ANCs and 95% mainly from doctors, but only 57.3% received four or more prescribed visits and only 53.7% received initial ANCs in the first three months of their visits.

Table 2
Literature Review Summary

Author (year)	Country	Data Type	Time period	Dependent variable	Independent variable	Estimation technique	Result
Pillai, Maleku, and Wei (2013)	143 developing countries	Cross-sectional	1970-2000.	maternal mortality ratio	Female literacy rate, age, GDP	Latent growth curve (LGC)	There is a negative relationship between female literacy rate and maternal mortality ratio
Gokhale, Rao, and Garole (2002)	India	National Family Health survey	1992	Female illiteracy	Maternal care and Childcare	Multiple regression model	Male literacy has been beneficial in improving the use of services to reduce infant mortality rates compared with high female illiteracy.
Arthur (2012)	Ghana	DHS	2008	Maternal health	Wealth, education, age	Univariate and multivariate analysis	Wealth and education significantly and positively related to the use of antenatal care
John, Binu, and Unnikrishnan (2019)	India	District Level Household Survey-4	2012-2013	antenatal care	education, birth order, health infrastructure,	OLS	Antenatal care is positively related to the health infrastructure, staff, and services.
Adjiwanou and LeGrand (2014)	Ghana, Kenya, Tanzania, and Uganda	Demographic and Health Survey	2003-2006	Skilled birth attendance, antenatal care, women decision making authority index	Sociocultural factors, perceived benefit/need, economic accessibility, contextual variables	Multilevel structural equation models (MSEM)	The influence of a woman in the use of maternal health care facilities by the decision-makers, in the same countries is less pronounced.
Bhatia and Cleland (1995)	India	cross-sectional survey	1993	Maternal health care	Economic status, education, personal hygiene, religion	Logistic regression analysis	Education, economic status, and religion impact positively on maternal health care
Mamoon, Raza, and Arshed (2014)	Pakistan	Punjab Development Statistics and Multi Income Cluster Survey Punjab	2004, 2008, and 2011.	Infant Mortality Rate	Fertility Rate, Government Hospitals, Literacy Rate, ownership of house, foreign remittances	GMM	Poverty raises the lower health conditions. Poor families have minimum savings to help a better quality of health and life
Majrooh et al. (2015)	Pakistan	Cross-sectional survey for district of Punjab	2010-2011	Antenatal health care facilities	infrastructure and availability of equipment, essential supplies, medicines, and infection control items	Univariate analysis	Healthcare facilities, particularly in the areas of infrastructure, equipment and supply, and drugs, lacked resources to provide high-quality ANC services.
Fatmi and Avan (2002)	Pakistan	Cross-sectional survey	1997	Antenatal care use	demographic, socio-economic, and environmental factors	Multivariate logistic regression analysis	A significant determinant of the use of antenatal care is the social status and economic situation of a woman.
Majrooh et al. (2014)	Pakistan	Multistage sampling method	2010-2011	Antenatal care use	low coverage and quality, social factors, miscellaneous home services	Univariate analysis	half of the predicted births are reported and 1/3 are dropped on follow-up visits.

Noh et al. (2019)	Pakistan	Maternal and Child Health (MCH) Program Indicator Surveys	2013-2014	Antenatal care use	demographic, socioeconomic, characteristics of ANC, and informational factors	Logistic regression model	Women's use of ANC is linked with social factors and health information sources.
Dahiru and Oche (2015)	Nigeria	DHS	2013	Antenatal care, place of delivery, postnatal care	sociodemographic and socioeconomic factors	bivariate and multivariate logistic regressions	The three MCH services are highly affected by sociodemographic and socio-economic factors

3. THEORETICAL FRAMEWORK

Theoretical underpinnings of the current study are embedded in the healthcare services utilization model proposed by Andersen and Newman. The description of the model is given below.

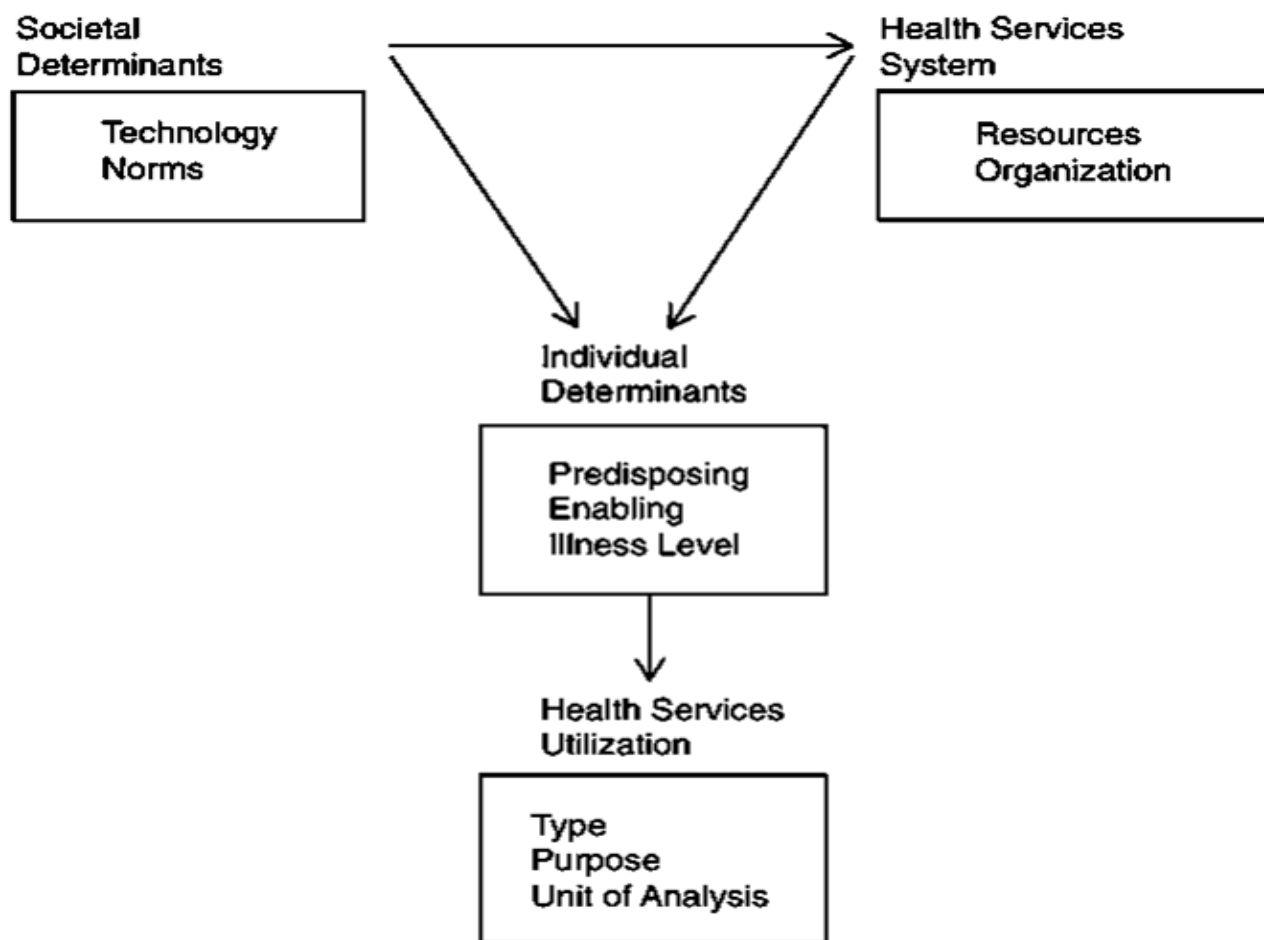


FIGURE 1: Healthcare Services Utilization Framework (Andersen & Newman, 2005)

Figure 1 exhibits how the main components of the framework interact. Societal determinants of utilization affect the individual determinants indirectly via health services system and directly as well. Then various types of individual determinants further shape the health services utilization pattern of the individual.

The health care system provides formal health care goods and services in society. Formal health care goods and services (i.e., providing physician-, hospital-, and dental-care, drugs, health appliances, and services provided by other health care practitioners).

According to the framework, the type of volume of health service a person uses is dependent on: (1) the predisposition—due to demographic (e.g., age, gender, marital status), social structural (e.g., education, family size, occupation, religion), and attitudinal or belief

related characteristics—of the individual to use services; (2) enabling characteristics (like household income, health insurance coverage, or other source of third-party payment, accessibility to the source) which permit to satisfy a need relating to health service utilization; (3) his illness level.

4. DATA AND METHODOLOGY

Based on the theoretical framework and after going through the literature, the functional and econometric forms of the models for the current study could be specified as below:

4.1. Model Specification

$$Antenatal\ care = f(\text{health infrastructure, access to improved sanitation, adult literacy rate, having own house, receiving remittances from abroad})$$

Econometrically,

$$ANCARE_{it} = \beta_{0it} + \beta_1 HEALTHINFRA_{it} + \beta_2 SANITATION_{it} + \beta_3 LITERACY_{it} + \beta_4 OWNHOUSE_{it} + \beta_5 REMITTANCE_{it} + \epsilon_{it}$$

Table 3

Variable Description

Variable Code	Variable Name	Unit of Measurement	Expected Relation
ANCARE	Antenatal care coverage at least once	percentage	Dependent Variable
HEALTHINFRA	Health Physical Infrastructure	Index constructed by making sum of total number of hospitals, dispensaries, rural health centers, and maternal & child health centres	positive
SANITATION	Access to improved sanitation facility	percentage	positive
LITERACY	Adult Literacy 15-24 years	percentage	positive
OWNHOUSE	Having own House	percentage	positive
REMITTANCE	Receiving remittances from abroad	percentage	positive

4.2. Data Source

For the present study, the unit of analysis is a district. Taking into account a cross section of 35 districts of Punjab, the study has covered the yearly data from the annual reports of Punjab Development Statistics for the time period 2010 to 2016.

4.3. Estimation technique

The study used Panel GMM to estimate the effect of the explanatory variables on antenatal care use (Baum, Schaffer, & Stillman, 2003; Wooldridge, 2002). Evidence has been given that GMM estimates are compatible with the Pooled OLS model and are accurate even when there is no heteroscedasticity in the model.

5. RESULTS AND DISCUSSION

As it has been mentioned earlier that the unit of analysis for the current study is a district. Except for the health infrastructure (index) all the variables in the model specified are measured in percentages. According to the Punjab Development Statistics report 2019, the districts of Punjab have been ranked in descending order regarding the percentage of pregnant women of reproductive age received ANC services, the percentage of adult literacy, the percentage of

households having own house, using improved sanitation facilities, and receiving remittances from abroad. A color scheme comprising of dark green, light green, yellow, orange, and red colors respectively represents relatively high, medium, low, lower, and the lowest status of a district with respect to a particular variable. With the help of a cartographic software *PhilCarto* the districts have been divided into five different classes by choosing an option of clustering the regions through equal frequencies. Afterward, each class has been placed in descending order and manually colored.

District	Women Literacy rate (age 15-24 years)	District	Antenatal care coverage at least once	District	Use of improved sanitation facilities	District	Ownership of house	District	Household receiving remittances from abroad	District	Health Infrastructure	
Narowal	91.2	Jhelum	97.4	Gujranwala	97.9	Narowal	95.8	Gujrat	36	Lahore	271	HIGH
Sialkot	89.9	Narowal	95.1	Lahore	96.4	Muzaffargarh	94.5	M B Din	22.2	Faisalabad	179	
Gujrat	89.8	Gujrat	94.7	Sheikhupura	95.8	Rajan Pur	91.2	Jhelum	21.3	Bahawalpur	112	
Rawalpindi	87.5	Sahiwal	94.5	Gujrat	94	D G Khan	90.3	Sialkot	20.8	Gujranwala	103	
Jhelum	86.9	Multan	94.5	Rawalpindi	93	Mianwali	89.6	Narowal	15.6	Jhang	100	
Chakwal	86.2	Rawalpindi	93	Jhelum	91.6	Sialkot	89.5	D G Khan	13.2	R Y Khan	98	
Gujranwala	86.1	Chakwal	92.7	Narowal	89.6	Hafizabad	88.4	Chakwal	12.8	Multan	97	
Lahore	84	Faisalabad	92.5	T T Singh	87.4	Sheikhupura	87.7	Rawalpindi	12.7	Sargodha	91	
M B Din	78.8	T T Singh	92.3	Attock	86.7	R Y Khan	87.3	Gujranwala	12.3	Sialkot	75	
Faisalabad	78	Mianwali	92.3	Chakwal	85.7	Bhakkar	87	T T Singh	11.3	Muzaffargarh	74	
Sheikhupura	76.6	Vehari	92.2	Faisalabad	85.2	Bahawalnagar	87	Attock	10.6	Gujrat	72	
T T Singh	75.7	Lahore	91.8	Hafizabad	85.1	Lodhran	86	Hafizabad	9.7	D G Khan	72	
Sargodha	71.4	Layyah	90.9	Mianwali	82.7	M B Din	85.8	Vehari	9.1	Bahawalnagar	67	
Attock	71.4	Muzaffargarh	90.6	Sialkot	82.2	Gujranwala	85	Sargodha	8.3	Vehari	64	
Sahiwal	70.9	Okara	90.5	Layyah	81.5	Layyah	84.7	Sahiwal	8.1	Okara	63	
Multan	70.6	Sheikhupura	90.4	Sargodha	81.2	Khushab	84.2	Faisalabad	7	Khushab	60	
Hafizabad	68.2	Sialkot	89.9	M B Din	79.2	Gujrat	84	Lodhran	6.7	Rawalpindi	59	
Khanewal	67.3	Attock	89.7	Sahiwal	78.5	Vehari	83.2	Sheikhupura	6.2	Sahiwal	54	
Kasur	66.4	Bhakkar	89	Kasur	76.2	Kasur	83.1	Khushab	6.1	Jhelum	52	
Vehari	66.3	Lodhran	86.4	Bhakkar	75.7	Bahawalpur	82.7	Khanewal	5.8	Kasur	51	
Bahawalnagar	63.5	Khanewal	86.1	R Y Khan	75.6	Multan	82.6	Rajan Pur	5.7	T T Singh	39	
Okara	62.6	M B Din	85.7	Okara	72.9	Sahiwal	82.5	Multan	5.6	Sheikhupura	39	
Layyah	62.2	D G Khan	85.1	Khanewal	71	Chakwal	82.5	Lahore	4.9	Khanewal	39	
Bahawalpur	61.4	Khushab	84.8	Vehari	70.3	T T Singh	80.9	R Y Khan	4.2	Attock	38	
Mianwali	60.2	Jhang	84.6	Bahawalpur	69.6	Pakpattan	79.4	Mianwali	4.2	Bhakkar	37	
Pakpattan	60.1	Gujranwala	84.3	Bahawalnagar	69.5	Khanewal	78.5	Muzaffargarh	4	Mianwali	36	
Jhang	58.7	Hafizabad	82.3	Pakpattan	69.4	Faisalabad	78.1	Jhang	3.9	Layyah	35	
Bhakkar	58	Sargodha	82.2	Khushab	67.7	Jhelum	77.7	Bahawalpur	3.9	Hafizabad	27	
Muzaffargarh	57.9	Bahawalnagar	81.5	Jhang	67.1	Sargodha	77.6	Okara	3.2	Rajan Pur	26	
Khushab	56.2	Rajan Pur	80.6	Muzaffargarh	65.9	Jhang	75.9	Bahawalnagar	3.1	Chakwal	26	
Lodhran	54	Pakpattan	79.9	Multan	63.2	Attock	73.8	Pakpattan	2.9	Pakpattan	24	
R Y Khan	51.3	Kasur	79.4	Lodhran	62.7	Okara	72.6	Layyah	2.8	Lodhran	24	
D G Khan	46.7	Bahawalpur	68.2	D G Khan	61.4	Lahore	70.7	Kasur	2.3	M B Din	23	
Rajan Pur	39.1	R Y Khan	65.5	Rajan Pur	52.2	Rawalpindi	65	Bhakkar	2.3	Narowal	22	

Generalized Method of Moment (GMM) is used to find the empirical results. The results have shown that health infrastructure and antenatal care use are positive and significantly related to each other. It was found that in 2006 to 2012 maternal health rate increase due to higher education and belonging to the richest quintile, exposure to mass media, and avail complete continuum of care. In Brazil found that in 1997 to 2012 maternal health decrease and failing to meet the MDGs. In Pakistan on Punjab level in 2013 maternal health rate decrease due to the highest social group services poorer members and the lowest social group felt pressure the use of services and face financial problems for the use of services.

Table 4
GMM Estimates for Antenatal Care Use

Variables	Coefficients	T statistics	P-Value	Standard Error
HEALTHINFRA	0.718	2.21	0.027	0.325
SANITATION	-0.036	-0.15	0.880	0.243
LITERACY	1.221	2.97	0.003	0.410
OWNHOUSE	1.927	3.59	0.000	0.814
REMITTANCE	0.417	-1.02	0.308	0.408
Diagnostic Statistics				
Sargan Hansen			0.267	
AR (1)			0.254	
AR (2)			0.169	
Exogeniety			0.892	
Exogenous (1)			0.240	
Exogenous (2)			0.391	

According to the above result health infrastructure, adult literacy rate and house positively affect maternal health care (ANC).

The results show the existence of a positive and very significant relationship between the dependent and independent variables. Health infrastructure is highly significant and positively related to antenatal care, improvements in transportation, rural health centers, hospitals this helps to achieve development goals, also improved maternal health care in the case of postnatal care and prenatal care. The result shows that one unit increase in health infrastructure then 0.7187193 unit increase in maternal health due to the positive relationship between them in districts of Punjab. These findings are similar to results obtained by other studies that found health infrastructure improved maternal health care also increases. Lack of infrastructure increase the maternal death ratio, but improvements in health services equipments that are used in the hospitals due to automatically enhance maternal health care (Glatleider, 2006).

The results show that the existence of positive and very significant relation between adult literacy rate and antenatal care, how if women get married to a husband with high education, this improve the education of the population in general and women and girls in particular and availing appropriate package of maternal services. The result shows that one unit increase in education then 1.221584 unit increase in maternal health due to the positive relationship between them in districts of Punjab. Literacy rate increases then maternal health also increases. These findings are similar to results obtained by other studies that found that adult literacy rate increase maternal health care also improved. Women married to husbands with a low level of education, women from a household with no family member attending formal school, women who never experienced difficult labor, abortion/stillbirth, women who use the foot as means of transport, improving the education of the population, availing appropriate package of maternal services to use of maternal health care services (Hou & Ma, 2013; Zelalem Ayele, Belayihun, Teji, & Admassu Ayana, 2014).

The results show the existence of positive and highly significant relation between house and ANC, people own their house they show the financial condition of the household, and expect they can provide better facilities to their family, due to maternal health increase. The result shows that one unit increase in ownership of house then 2.927751 unit increase in maternal health due to the positive relationship between them in districts of Punjab. These findings are similar to results obtained by other studies which found that ownerships of house increase maternal health (Han, Nunes, & Drèze, 2010; Mamoon et al., 2014).

6. CONCLUSION AND POLICY SUGGESTIONS

The results have shown that health infrastructure and maternal health care are positive and significantly related to each other. Improvements in transportation, rural health centers, hospitals this helps to achieve development goals, also improved maternal health care in case of postnatal care and prenatal care, the studies of these all writers are in favor of health infrastructure improve then maternal health care also improve. Lack of infrastructure increase the maternal death ratio, but improvements in health services equipments that are used in the hospitals due to automatically enhance maternal health care (Glatleider:2006). Ownership of house is also positively related to maternal health, in case ownership of house shows the wealth status of the people if they have strong wealth status then they avail the maternal services regularly due to maternal health improves. Rental areas and low-income families are at exceeded risk from health problems and other health and welfare risks. Poor housing conditions have a long-term effect on physical conditions (Chamberlain & MacKenzie, 2001). Education is a powerful factor that positively affects the maternal health if women have educated then properly attend the visits during pregnancy for the good health of mother and child. Women married to husbands with a low level of education, women from a household with no family member attending formal school, women who never experienced difficult labor, abortion/stillbirth, women who use the foot as means of transport, improving the education of the population, availing appropriate package of maternal services to use of maternal health care services (Hou & Ma, 2013; Zelalem Ayele et al., 2014).

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