

EFFECTIVENESS OF THE CONDITIONAL CASH TRANSFERS ON THE UTILIZATION OF THE INSTITUTIONAL HEALTH FACILITIES BY THE EXPECTING WOMEN IN DISTRICT NOWSHERA KHYBER PAKHTUNKHWA PAKISTAN

BREKHNA GUL, JAVED IQBAL, ZAHOOR UL HAQ AND ASIA BAIG*

Abstract. Demand-side cash transfer programs have been used in many countries to address the problems of underutilization of health and social services, particularly among vulnerable groups. The government of Khyber Pakhtunkhwa initiated one such program to achieve the Sustainable Development Goal 3 (SDG3) to increase handling deliveries by trained birth attendants. This program provides financial assistance of Rs. 2700 to every pregnant woman seeking medical care from public health facilities and community midwives. In this research, we evaluate the effectiveness of this program to find out if demand-side constraints are financial based or driven by socio-economic characteristics. A well-structured questionnaire was designed to collect data from both the beneficiaries and non-beneficiaries of this program. Besides the cash transfer program, other socioeconomic factors effect was estimated on the number of visits to the institutional health care facilities by the expecting woman using the count data models such as Poisson, Exponential Count, and

*The authors are respectively Lecturer, Assistant Professor, Professor and Demonstrator at the Department of Economics, Pakhtunkhwa Economic Policy Research Institute (PEPRI), Abdul Wali Khan University Mardan-Pakistan.

Corresponding author's e-mail: javediqbal@awkum.edu.pk

This paper is an extraction from a NRP funded project of the Higher Education Commission of Pakistan

Normal Least Square models. We found that as travel cost increased, the number of visits decreased. The study indicated that conditional cash transfer increased the visits statistically significantly. Finally, families with higher income groups took more visits to the institutional health care facilities compared to the lower income groups once the cash transfer was controlled for in the model. The cash transfer amount was not enough to cover for the expenses and there were also complaints about the delays in payments. It is recommended that additional budget for the program may be allocated as it affects the number of visits to the institutional health care facilities. There is also a need for more widespread awareness campaigns run through various media outlets for more extensive adoption of the program.

Keywords: Conditional cash transfer programs, health care service utilization, count data models

JEL Classification: C31, D12, I38

I. INTRODUCTION

Maternal health refers to the health of women during pregnancy, childbirth, and the period after the birth of a child. Maternal mortality has generally been higher among the poor and those living in rural areas. In low income countries, the lifetime risk of dying during pregnancy or childbirth is 1 in 45 compared with 1 in 5400 in high income countries mainly due to variations in access to quality health care facilities available before, during and after the child birth (WHO, 2019). Approximately, half a million women die each year as a result of pregnancy-related complications, out of which ninety-nine percent are from the underdeveloped countries (Hogan, Foreman, & Naghavi, 2010). The insufficient availability of resources to seek proper health care during pregnancy and delivery is a major cause of loss of human life (Ballantyne, 1999). Socio-economic conditions could also be inhibiting women to take care of themselves as well as of their children during and after the pregnancy.

Montgomery and Hewett (2005) observed that a lack of maternal health care is due to the economic status of the family as well as of the

norms of the society in which they live. According to a survey by the world bank, some women are deprived of proper maternal health care because of their in-law's belief on traditional medicines (Simkhada, Porter, & van Teijlingen, 2010 and Mumtaz, Bahk, & Khang 2019). Home deliveries can lead to increased deaths of women as attendants are not very well trained (Paxton, Bailey, & Lobis, 2006). Also, many women avoid seeking trained consultants due to their unfriendly behaviour and also due to their vulnerabilities (Titaley, Hunter, Dibley, & Heywood, 2010). Other factors like age, income and education also affect the health and fertility decisions of women (Alexander, Kogan, & Nabukera, 2002).

In order to avoid more deaths during pregnancy and childbirth, the availability of trained consultants is very important (AbouZahr, 1998). Regular appointments with trained consultants not only ensure proper diet and medication but also regular follow up appointments help to avoid any future complications (Pallikadavath, Foss, & Stones, 2004). Availability of trained consultants and institutional facilities can prevent complications during the pre-pregnancy period, during labour and post-pregnancy (Bullough, 2005). Social factors such as underaged marriages and pregnancies, short duration between pregnancies, level of education, low-income levels in many developing countries could impede such care and leading to mortalities (Clements et al. 2008).

In Pakistan, both federal and provincial levels governments have introduced primary health care programs intending to save the lives of both child and mother by providing them quality services. The primary goal of maternal health is to encourage expecting women for regular examination and to recognize complications that could arise at the time of birth. Sadly, in developing countries such as Pakistan, many mothers lose their lives due to maternal care complications (Addai, 2000).

Pakistan being a signatory to meeting the Sustainable Development Goals (SDGs) has the responsibility to achieving the goal of reducing maternal mortality under "Goal 3: Ensure healthy lives and promote well-being for all at all ages". Further, the World Health Organization introduced the "Strategies toward ending preventable maternal mortality (EPMM)" under which by 2030, global maternal mortality ratio (MMR) need to be lower than 70 maternal deaths per 100,000 live births and no

country should have an MMR greater than 140 maternal deaths per 100,000 live births, a number twice the global target.

As outlined previously, many deaths can be avoided during pregnancy, delivery, and the postpartum period by providing access to safe prenatal care and deliveries in a health facility with skilled birth attendants. Programs can also be introduced that affect the socioeconomic factors that are deterring the use of proper institutional health facilities. The Government of Pakistan has taken measures to reduce these barriers as much as possible. It has put in place several strategies to ensure that specialist doctors are available and trying to provide staff with equipment (Hafeez et al., 2011). These steps are taken under the safe motherhood program to meet the Millennium and the Sustainable Development Goals. Further, to this end, the Government of Khyber Pakhtunkhwa allocated Rs. 200 million in the 2013-2014 budget to protect mothers and their newborns. Under this program, Rs 2700 stipend was provided to expecting women subject to undertaking routine medical check-ups at designated institutional health facilities. It was initially implemented in 12 relatively neglected areas, i.e. Chitral, Shangla, Upper Dir, Lower Dir, Buner, Torghar, Kohistan, Battagram, Nowshera, Hangu, Lakki Marwat and Tank which was extended later to the all districts in KP. The Rs.2700 per pregnancy was provided based on 4 antenatal visits (Rs.300 per visit), the delivery incentive (Rs.1000) and Rs. 500 for a postnatal visit within 42 days of birth.

In this study, we examine the differences in availing the institutional health care facilities between those who benefited from the conditional cash transfer (CCT) program compared to those who did not while controlling for the effect of socio-economic characteristics. It is expected that the result of the study will highlight whether any CCT program could be successful in changing people's behavior. Moreover, the study will help the policy makers in the formulation of future budgetary policies regarding health programs in the province.

II. LITERATURE REVIEW

This section reviews both the theoretical as well as the empirical literature on the use of the conditional cash transfer (CCT) programs in various countries. Conditional cash transfer programs have been used at various times in many countries. Stampini and Tornarolli (2012)

provided a detailed history of the effectiveness of the CCT programs. They described that the very first CCT program named PROGRESSA was started in 1997 in Mexico. It offered funds to poor families conditional upon children regularly attending school and that family bought preventive health care. Similarly, Gertler (2004) examined the impact of PROGRESA on child health outcomes such as morbidity, height, and anemia. Women choice of institutional birthing increased as a result of this program. Similarly, Lim et al, (2010) using district-level data on JSY found that pregnant women received cash payments with a varying degree of 5% to 44%. The probability of receiving payments under JSY amongst the poorest and illiterate women was very low. Antenatal care and in-facility births were significantly affected by JSY. Further, Randive, Diwan and De Costa (2013) found that prior to JSY, institutional births were on average 20% while it increased to 49% during the five years of the CCT. They also found a negative correlation between institutional births and district maternal mortality ratio. Okoli et al. (2014) studied the utilization of conditional cash transfer (CCT) program for promoting the use of maternal and child health (MNCH) services among rural women in Nigeria. The CCT was found to raising the monthly visits of women attending four or more ANC visits.

Barber and Gertler (2009) examined the role of the CCT program on empowering women through a program referred to as “Empowering women to obtain high-quality care” in Mexico. Eligible women accepted CCT in order to obtain health care, nutritional supplements, and to attend health and education sessions. They found that the implementation of the CCT program resulted in achieving women empowerment goals by encouraging beneficiaries to be informed and be active health consumers. It was also found that there was a 12.2% increase in pre-natal care after the program. Leroy Ruel and Verhofstadt (2009) reviewed various CCT programs and their impact on child nutrition. The study examined in detail the two CCT programs regarding child dietary intake in Mexico and Colombia. They concluded that there was a significant improvement in child nutrition due to these programs.

Chaudhury and Parajuli (2007) analyzed the effect of school stipend program on female enrolments in public schools in the Punjab, Pakistan. Methods like the difference in difference (DD), triple differencing (DDD), and regression-discontinuity design (RDD) were employed on

data collected from provincial school censuses 2003 and 2005. Their results showed that there was an absolute increase of six female students per school (9%) due to the conditional cash program.

Stampini and Tornarolli (2012) observed growth of conditional cash transfers in Latin America and the Caribbean (LAC) to promote human capital. The study results showed that there was an increase of 20% in the income of poor beneficiaries and that the poverty headcount index was lower by 13% on average during the CCT program. The CCT programs in Brazil, Colombia, and Mexico were successful in reaching out to about 50-55% of the poor population.

It is evident that the CCT programs have generally been successful in encouraging the use of institutional health facilities for health care, to empower women in making the decisions about health and education, in increasing the school's enrollments and reducing the poverty. However, the effect of CCT could be different in different countries due to varying socioeconomic, cultural, ethnic, religious, and geographic factors. Therefore, this study examines as to how the CCT in Khyber Pakhtunkhwa could be effective in improving the utilization of the institutional health care facilities by the expecting women.

III. RESEARCH METHODS

This section deals with the presentation of the conceptual/theoretical framework, the empirical model, and the data collection.

THEORETICAL FRAMEWORK AND MODEL

Cash transfer generally augments income of the beneficiary households that may allow households to purchase better quality food which they otherwise could not afford. The Conditional Cash Transfer program in the province of Khyber Pakhtunkhwa was introduced in order to increase the utilization of the health care facilities by the expecting women compared to using the non-institutional healthcare methods.

Cash programs conditional upon the number of visits to the hospitals may reduce mother and child illnesses. Also, the program condition of visiting only institutional health facilities for health care, attending educational sessions and to receive payments may be inconvenient for women as they may have to travel long distances. Health CCT programs

may improve both mothers' and newborns' health as women get awareness about different nutrition supplements and have regular checkups before and after delivery. Further, better nutrition may improve cognitive development and educational achievement which may lead to economic productivity at adulthood (Hoddinott, and Bassett (2008). It has been shown that cash transfer brings about positive outcomes for mothers and children (Leroy, Ruel, & Verhofstadt, (2009).

The provision of the CCT is akin to increase in income of the expecting woman and thus can be framed as to affect the demand for medical services. The demand for medical services has been developed in detail in Acton (1973a, 1976b, 1976). Further, Grossman (2017, 1972) similarly developed a model for the demand for health and medical services. Following the household production model developed in Kolstad (2011:188-189), we estimate the effect of the CCT program on the healthcare utilization. It is assumed that utility is maximized by choosing the medical services (represented by the number of visits (v)) and a composite, X , for all other goods and services subject to the monetary and time constraints as given below in equation (1).

$$\underset{X,v}{\text{Maximize}} U(X, v) \quad (1)$$

subject

$$y + WL = R_1 X + (P_0 + F)v \quad (2)$$

where $y = Y + \pi + \tau$ represents the lump-sum income taken as exogenous composed of Y as transfer to the households, π as the profit income and the τ as taxes paid. Further, W stands for an endowed wage of households, L is the available working hours, P_0 is the out of pocket charges i.e visits charges or bus charges etc., F is the admission charges to visit a doctor and R_1 is the price of X which is considered as a numeraire good and thus its price is assumed to be equal to 1. Further, the patient may choose to go to a doctor or health care center or use this time for leisure or working productively. Thus, his time is given as follows:

$$T = L + (T_t + T_v)v \quad (3)$$

The equation above shows T as time available to the patient to visit doctor or work, L is working hour, T_t shows travel time of a single trip to

the hospital, T_v shows on site time spent on a single visit, and v shows the number of visits. If we take L to left side of the equation and T on the right side of the equation, we will get equation (4) as follows:

$$L = T - (T_t + T_v)v \quad (4)$$

By substituting the value of T in the budget constraint

$$y + W[T - (T_t + T_v)v] = X + (P_0 + F)v \quad (5)$$

$$y + WT = X + W(T_t + T_v)v + (P_0 + F)v \quad (6)$$

$$y + WT = X + v[P_0 + F + W(T_t + T_v)] \quad (7)$$

Using the Lagrangian optimization techniques, we can find the demand for the number of visits as follows:

$$\mathcal{L} = U(X, v) + \lambda (y + WT - X - v[P_0 + F + W(T_t + T_v)]) \quad (8)$$

We can find the demand for the v which is an optimal number of visits to the hospital depending upon price, income, transfers, and other socioeconomic variables.

Newhouse and Phelps (1976), Wedig (1988) and McCarthy (1985) used the number of visits to the physicians as the dependent variable. We also use the number of institutional health facility visits as a dependent variable to estimate the effectiveness of the CCT program.

Specifically, our empirical model can be represented as follows:

$$v = \beta_0 + \beta_1 P_v + \beta_2 P_t + \beta_3 T_t + \beta_4 T_v + \beta_5 Y + \beta_6 E_i + \beta_7 E_j + \beta_8 R + \beta_9 D + \mu \quad (9)$$

Where v stands for physician visits, P_v are the visitation charges i.e. consultants fee, laboratory tests, X-rays, P_t travel charges in bus or rikshas, T_t is the time spent on the travel, T_v is the time spent in the clinic during a checkup, Y is the income, E_i is the patients' education, E_j is the husband's education, R is the religion, and D is the dummy variable indicated if the CCT program was availed.

SAMPLE SIZE

The universe of the study is the beneficiaries of the conditional cash transfers recipients in the district Nowshera. The number of beneficiaries in the sample district were 8226. The list of beneficiaries with all information including their mobile number, their national identity card (NIC) number, and other characteristics were obtained from the district headquarter hospital Nowshera. This study used Krejcie and Morgan (1970) table and the formula for a given population to determine the sample size which is given below in equation 9:

$$s = \frac{X^2 NP(1-P)}{d^2(N-1)+X^2 P(1-P)} \quad (10)$$

where s is the required sample size, X^2 is the table value of chi-square for 1 degree of freedom at the desired confidence level (3.841), N is the known population size, P is the population proportion (assumed to be .50 since this would provide the maximum sample size), d is the degree of accuracy expressed as a proportion (.08). Using the above relationship, we found the sample size to be 147. Therefore, from the list of beneficiaries (treatment group), about 150 beneficiaries were phoned interviewed. Similarly, about same number of non-beneficiaries were also interviewed for the study as a controlled group. Sekran, (2003, p. 295-296) and Roscoe (1975) suggested that a sample sizes larger than 30 and less than 500 are appropriate for most research, a minimum sample size of 30 is also needed for each subsample in case sample is broken into subsamples, and a sample of preferably 10 times or more of the numbers of variables is required for the regressions analysis.

The data were collected through a well-structured questionnaire. The questionnaire had the information about the general characteristics, cost information on items such as consultant fees, laboratory tests, medicines, travel cost and the problems that the respondents faced in receiving the conditional cash transfer amount.

IV. RESULTS AND DISCUSSIONS

Respondent's access to and utilization of maternal health care services are influenced by different factors such as socio-economic characteristics along with other health expenses and consumption patterns. The

following section presents the results of such relationships by using both the descriptive statistics and econometrics techniques.

DESCRIPTIVE STATISTICS

Table 1 indicates age at marriages of the respondents who belonged to non-beneficiaries (controlled) and beneficiaries (treatment) groups. There is no significant difference found between the ages among the two groups. Table 1 also shows the household relationship with the respondents. In majority of the households in both the groups, husbands were the household heads. The chi-square test shows that there is no difference between the beneficiaries and non-beneficiaries based on the head of the households. Table 1 of the study further shows an association between the level of education of the respondents and the non-beneficiaries and beneficiaries groups. Those who availed conditional cash transfer were generally more educated. Also, the education was statistically different between the expecting women in the two groups.

TABLE 1

Age at the Marriage, Relationship with Head of the Household, and Level of Education of Both Groups

Age at the Marriage						
	15-25	26-35				
Non-Beneficiary					Chi-square	P value
Frequency	150	0			30.94***	0.000
Percentage	100	0				
Beneficiary						
Frequency	151	1				
Percentage	99.3	0.7				
Relationship with Head of the Household						
	Husband	Father in Law	Brother in law			
Non-Beneficiary					Chi-square	P value
Frequency	106	36	08		3.065	0.216
Percentage	70.7	24	5.3			
Beneficiary						
Frequency	114	26	13			
Percentage	74.5	17	8.5			
Level of Education						
	Illiterate	Primary	Secondary	Higher		
Non-Beneficiary					Chi-square	P value
Frequency	111	26	12	1	9.419	0.024
Percentage	74	17.3	8	0.7		
Beneficiary						
Frequency	89	48	14	2		
Percentage	58.2	31.4	9.2	1.3		

Table 2 shows the total household income of the respondents in non-beneficiaries and beneficiaries' groups. In the non-beneficiaries' group, 51.3% respondents had household income between Rs.10, 001-20,000 while only 9% had the income more than Rs. 60, 000. Similarly, majority responds in the beneficiaries group had the income ranged between Rs.10,001-20,000. The association between the income and the treatment and control group was not statistically significant.

TABLE 2

Household Income relationship with Non-Beneficiaries and Beneficiaries Group

	Income Group							Chi-square	P value
	Rs 0 - 10,000	10,001- 20,000	20,001- 30,000	30,001- 40,000	40,001- 50,000	50,001- 60,000	>60,000		
Non-Beneficiary									
Frequency	2	77	21	13	20	3	14	7.323	0.300
Percentage	1.3	51.3	14	8.7	13.3	2	9.3		
Beneficiary									
Frequency	2	70	32	22	17	1	9		
Percentage	1.3	45.8	20.9	14.4	11.1	0.7	5.9		

***, **, * stands for 1%, 5% and 10% significance level respectively

Table 3 shows the relationship between the number of pregnancy visits (ante-natal, delivery and post-natal) and whether the respondents belonged to the nonbeneficiaries (controlled) group or the beneficiaries (treated) group. In the controlled group, majority (26%) of the woman undertook only four visits to the hospital compared to the 42.5% of woman in the treated group who had all the required six visits. Chi-square test is used to test whether the number of visits is independent of the controlled and treatment group association of the respondents. Chi-square test indicates that there is a strong association between the number of visits and belonging to the controlled and treatment groups. Furthermore, table 3 presents the delivery visits to the institutional facilities by the treatment and control group. In the non-beneficiary's group, 74.7% had institutional delivery while 25.3% chose to deliver at home. However, among the beneficiary's group, 81.7% had institutional delivery while 18.3% chose to deliver at home. The relationship between the delivery visit and treated and control group association was not found statistically significant.

TABLE 3

Cross Tabs of Total Number of Visits, Delivery Visits, and Travel Mode of Beneficiaries and Non-Beneficiaries Group

Total Number of Visits								
Non-Beneficiary	1	2	3	4	5	6	Chi-square	P value
Frequency	28	23	19	39	18	23	30.94***	0.000
Percentage	18.7	15.3	12.7	26	12	15.7		
Beneficiary								
Frequency	24	14	20	20	10	56		
Percentage	15.7	9.2	13.1	13.1	6.5	42.5		
Delivery Visits								
	No		Yes				Chi-square	p value
Non-Beneficiary								
Frequency	38		112				2.199*	0.138
Percentage	25.3		74.7					
Beneficiary								
Frequency	28		125					
Percentage	18.3		81.7					

***, **, * stands for 1%, 5% and 10% significance level respectively

Table 4 shows a comparison of the consumption pattern between those who availed the CCT program compared to those who did not. Wheat and maize being major staples food in the area so there is no difference in the consumption pattern. However, there have been a statistically significant difference between the consumption patterns of rice, fruits, and vegetables between the two groups.

TABLE 4

Household Consumption Pattern of Rice, Wheat, Maize, Vegetables and Fruits between Beneficiary and Non-Beneficiary's Respondents

Consumption Pattern of Household									
	Daily	2/3 times	Weekly	Bi-weekly	Monthly	Occasionally	Never	chi-square	P-value
RICE									
NON-BENEFICIARY									
Frequency	0	0	134	16	0	0	0	28.949***	0.000
Percentage	(0)	(0)	(89.3)	(10.7)	(0)	(0)	(0)		
BENEFICIARY									
Frequency	1	25	118	9	0	0	0		
Percentage	(0.7)	(16.3)	(77.1)	(5.9)	(0)	(0)	(0)		
WHEAT									
NON-BENEFICIARY									
Frequency	150	0	0	0	0	0	0	0.984	0.321
Percentage	(100)	(0)	(0)	(0)	(0)	(0)	(0)		
BENEFICIARY									
Frequency	152	1	0	0	0	0	0		
Percentage	(99.3)	(0.6)	(0)	(0)	(0)	(0)	(0)		
MAIZE									
NON-BENEFICIARY									
Frequency	1	0	43	70	20	16	0	21.477**	0.02
Percentage	(0.7)	0	(28.7)	(46.7)	(13.3)	(10.7)	0		

Consumption Pattern of Household									
	Daily	2/3 times	Weekly	Bi-weekly	Monthly	Occasionally	Never	chi-square	P-value
BENEFICIARY									
Frequency	0	5	22	81	17	21	7		
Percentage	0	(3.3)	(14.4)	(52.9)	(11.1)	(13.7)	(4.6)		
VEGETABLES									
NON- BENEFICIARY									
Frequency	94	21	16	18	1	0	0	62.847***	.000
Percentage	(62.7)	(14)	(10.7)	(12)	(0.7)	(0)	(0)		
BENEFICIARY									
Frequency	150	3	0	0	0	0	0		
Percentage	(98)	(2)	(0)	(0)	(0)	(0)	(0)		
FRUITS									
NON- BENEFICIARY									
Frequency	1	22	56	19	53	0	0	45.786***	.000
Percentage	(0.7)	(14)	(37.3)	(12.7)	(35.3)	(0)	(0)		
BENEFICIARY									
Frequency	0	5	56	32	33	27	0		
Percentage	(0)	(3.3)	(36.6)	(20.9)	(21.6)	(17.6)	(0)		

***, **, * stands for 1%, 5% and 10% significance level respectively

Table 5 shows the consumption of various types of meat by the beneficiaries and non-beneficiary’s households. Beneficiaries household consumed it monthly while 27.3% consumed it on weekly basis. There has been a statistically significant relationship observed in the consumption of the beef, mutton, and chicken while no significant relationship is found in fish consumption.

TABLE 5

Meat, Beef, Mutton, Chicken, and Fish Consumption Pattern of Beneficiaries and Non-Beneficiary’s Households

Items	Consumption Pattern of Household								chi-square	P-value
	Daily	2/3times	Weekly	Bi-weekly	Monthly	Occasionally	Never			
BEEF										
NON- BENEFICIARY										
Frequency	0	19	3	65	19	44	0	112***	0.000	
Percentage	(0)	(12.7)	(2)	(43.3)	(12.7)	(29.3)	(0)			
BENEFICIARY										
Frequency	0	0	30	18	81	24	0			
Percentage	(0)	(0)	(19.6)	(11.8)	(52.9)	(15.7)	(0)			
MUTTON										
NON- BENEFICIARY										
Frequency	0	0	44	46	21	39	0	26.286***	0.000	
Percentage	(0)	(0)	(29.3)	(30.7)	(14)	(26)	(0)			
BENEFICIARY										
Frequency	0	1	17	35	37	60	3			
Percentage	0	(0.7)	(11.1)	(22.9)	(24.2)	(39.2)	(2)			
CHICKEN										
NON- BENEFICIARY										
Frequency	1	21	50	22	54	2	0	18.994**	.002	
Percentage	(0.7)	(14)	(33.3)	(14.7)	(36.1)	(1.3)	(0)			
BENEFICIARY										
Frequency	0	16	42	49	38	8	0			
Percentage	(0)	(10.5)	(27.5)	(32)	(24.8)	(5.2)	(0)			
FISH										

Items	Consumption Pattern of Household							chi-square	P-value
	Daily	2/3times	Weekly	Bi-weekly	Monthly	Occasionally	Never		
NON- BENEFICIARY									
Frequency	0	0	41	27	65	17	0	8.787	.32
Percentage	(0)	(0)	(27.3)	(18)	(43.3)	(11.3)	(0)		
BENEFICIARY									
Frequency	0	0	23	38	66	26	0		
Percentage	(0)	(0)	(15)	(24.8)	(43.1)	(17)	(0)		

***, **, * stands for 1%, 5% and 10% significance level respectively

Table 6 shows the consumption pattern of milk, juices, and multivitamins supplements for both non-beneficiaries and beneficiaries' households. Significant differences in the consumption of these items have been observed for the two groups.

TABLE 6

Consumption of Milk, Juices, and Multi-Vitamins between Beneficiaries and Non-Beneficiary Households

Consumption Pattern of Households									
ITEMS	Daily	2/3times	Weekly	Bi-weekly	Monthly	Occasionally	Never	Chi-square	P-value
MILK									
NON- BENEFICIARY									
Frequency	0	21	28	27	56	18	0	14.23***	0.007
Percentage	(0)	(14)	(18.7)	(18)	(18)	(37.3)	(0)		
BENEFICIARY									
Frequency	0	3	21	44	68	17	0		
Percentage	(0)	(2)	(13.7)	(28.8)	(44.4)	(11.1)	(0)		
JUICES									
NON-BENEFICIARY									
Frequency	0	21	50	26	19	44	0	112.00***	0.000
Percentage	(0)	(12.7)	(2)	(43.3)	(12.7)	(29.3)	(0)		
BENEFICIARY									
Frequency	0	0	30	18	81	24	0		
Percentage	(0)	(0)	(19.6)	(11.8)	(52.9)	(15.7)	(0)		
MULTIVITAMINS									
NON-BENEFICIARY									
Frequency	0	0	44	46	21	39	0	32.75***	0.000
Percentage	(0)	0	(29.3)	(30.7)	(14)	(26)	0		
BENEFICIARY									
Frequency	0	1	17	35	37	60	3		
Percentage	(0)	(0.7)	(11.1)	(22.9)	(24.2)	(39.2)	(2)		

***, **, * stands for 1%, 5% and 10% significance level respectively

ECONOMETRIC RESULTS

Since our dependent variable is the number of visits by the beneficiaries and non-beneficiaries of the CCT program to the institutional healthcare facility, we follow Lattin, Carroll, & Green (2003) and Green (2008). Due to the count number nature of the dependent variable, we shall use the count models. Table 7 presents the results from the estimation of the models using Poisson, Exponential Count, and Normal Least Square models. According to economic theory,

an increase in travel cost decreases the number of visits which is in accordance with the economic theory; however, only in the case of the Exponential Count model it is found to have a statistically significant relationship. The hospital expenses variable sign in all the models has been found to have a positive relationship with the number of visits which may be at odds with the general expectations. The conditional cash transfer variable is significant at 1% level and it positively affects the number of visits by expecting women to the institutional healthcare facility. Age and family type of respondents were not found to be significant determinants of the number of visits. Finally, families with higher income groups were found to be taking more visits to the institutional health care facilities compared to lower income groups.

TABLE 7

Various Estimation Methods of the Effect of CCT and other Socio-Economic Variables on the Visitation Rate of the Expecting Women to Institutional Facilities

Variable	Poisson Co-efficient	Exponential Co-efficient	Normal Least Square Co-efficient
Travel Cost	-0.003	0.030**	-0.008
Hospital Expenditures	0.599***	0.390***	0.608***
Education	0.043	0.031***	0.012***
Cash transfer	0.123***	0.039***	0.047***
Family type	0.012	-0.023	0.023
Household Income	0.001	0.221**	0.130***
Age	0.014	0.003	0.000
Constant	-3.451***	-2.610***	-3.508***
R ²	0.80	0.74	0.80
F-Statistics/LR Stat.	234.02	64.89	820.00
Prob. of F-Stat./LR Stat.	0.00	0.00	0.00

***, **, * stands for 1%, 5% and 10% significance level respectively

RESPONDENTS COMMENTS ABOUT THE CCT PROGRAM

Expecting women were also asked some general questions and they responded that most women did not have the resources or the empowerment to care about their own wellbeing. Almost, 48 percent of the respondents expressed that the CCT program encouraged and the conditional grant helped them to visit the hospitals which otherwise they would have probably not done due to income constraints. About 47% of

women participated in the program because of poverty and low income. Previously, many women preferred to deliver at home because they could not afford hospital expenses. Woman also stated that the conditional cash transfer increased their purchasing power, helped improve their health as well as of their newborn babies. Many women suggested that the CCT stipend was not enough to cover for the hospital visitations, medicines, laboratory tests, multivitamins, and should be increased. Further, 12.4 percent of respondents complained that they did not receive cash on time, while some respondents also stated that they received their stipend only after delivery.

V. CONCLUSION AND RECOMMENDATIONS

The main aim of this study was to estimate the impact of conditional cash on expecting women undertaking the four prenatal, delivery and one postnatal visit to the institutional health facilities in the province of Khyber Pakhtunkhwa. A list of beneficiaries was obtained from the district headquarter hospital. After examining the data for completeness, a sample of about 153 respondents were interviewed as a treatment group. Similarly, about the same number non-beneficiaries of similar characteristics in the neighborhood were also interviewed for comparison. Due to the count nature of the dependent variable (number of visits), we used Poisson, Exponential Count, and Normal Least Square models. It was found that as travel costs increased, the number of visits decreased. Other expenses such as hospital expenses when increased, so were the visits but the effect was not statistically significant. The main variable of interest of the study - the conditional cash transfer was found to be affecting the visits positively and statistically significantly. Finally, families with the higher income groups were found to be taking more visits to the institutional health care facilities compared to the lower income groups. Respondents highlighted that the CCT amount was not enough to cover for the expenses and there were also complaints about the delay in payments. Since CCT has a positive effect on the visitation rates, there need to be more allocation for the program. Further, there need to be more widespread advertisements through various media outlets for more widespread adoption of the CCT program.

REFERENCES

- AbouZahr, C. (1998). Maternal and prenatal health. *Global Burden of Disease and Injury Series*, 111–164.
- Acton, J. P. (1973a). Demand for health care among the urban poor, with special emphasis on the role of time. Memorandum R-1151-OEO/NYC, Rand Corp.
- Acton, J. P. (1973b). Demand for health care when time prices vary more than money prices. Memorandum R-1189-OEO/NYC, Rand Corp.
- Acton, J. P. (1976). Demand for health care among the urban poor, with special emphasis on the role of time. In *The role of health insurance in the health services sector* (pp. 163-214). NBER.
- Addai, I. (2000). Determinants of Use of Maternal-child Health Services in Rural Ghana. *Journal of Biosocial Science*, 1-15.
- Alexander, G., Kogan, M., & Nabukera, S. (2002). Racial differences in prenatal care use in the United States: are disparities decreasing? . *American Journal of Public Health*, 170-75.
- Ballantyne, J. W. (1999). *Human Reproduction*. 386–9.
- Barber, S. L., & Gertler, P. J. (2009;24). Empowering women to obtain high-quality care: evidence from an evaluation of Mexico's conditional cash transfer programme. *Health Policy and Planning*, 18–25.
- Bullough, C. (2005). Current strategies for the reduction of maternal mortality. *British Journal of Obstetrics and Gynaecology* 112.
- Chaudhury, N., & Parajuli, D. (2007). Conditional cash transfers and female schooling: the impact of the female school stipend program on public school enrollments in Punjab, Pakistan. The World Bank.
- Clements, K. M., Barfield, W. D., Kotelchuck, M., & Wilber, N. (2008). Maternal Socio-Economic and Race/Ethnic Characteristics Associated with Early Intervention Participation. *Matern Child Health J*, 708–717.
- Greene, W. (2008). Functional forms for the negative binomial model for count data. *Economics Letters*, 99(3), 585-590.
- Grossman, M. (1972). On the concept of health capital and the demand for health. *Journal of Political economy*, 80(2), 223-255.
- Grossman, M. (2017). *The demand for health: a theoretical and empirical investigation*. Columbia University Press.

- Hafeez, A., Mohamud, B. K., Shiekh, M. R., Shah, S. A. I., & Jooma, R. (2011). Lady health workers programme in Pakistan: challenges, achievements and the way forward. *JPMA: Journal of the Pakistan Medical Association*, 61(3), 210.
- Hoddinott, J., & Bassett, L. (2008). Conditional cash transfer programs and nutrition in Latin America: assessment of impacts and strategies for improvement. Available at SSRN 1305326.
- Hogan, M., Foreman, K., & Naghavi, M. (2010). Maternal mortality for 181 countries, 1980–2008: a systematic analysis of progress towards Millennium Development Goal 5. *The Lancet* 375, 1609–1623.
- Kolstad, Charles D. (2011). *Environmental Economics*. Second Edition. Oxford University Press.
- Krejcie, R. V., & Morgan, D. W. (1970). Determining Sample Size for Research Activities. *Educational and Psychological Measurement*, 30(3), 607–610.
- Lattin, J. M., Carroll, J. D., & Green, P. E. (2003). *Analyzing multivariate data* (pp. 351-352). Pacific Grove, CA: Thomson Brooks/Cole.
- Leroy, J. L., Ruel, M., & Verhofstadt, E. (2009). The impact of conditional cash transfer programmes on child nutrition: a review of evidence using a programme theory framework. *Journal of Development Effectiveness*, 103-129.
- Lim, S. S., Dandona, L., Hoisington, J. A., James, S. L., Hogan, M. C., & Gakidou, E. (2010). India's Janani Suraksha Yojana, a conditional cash transfer programme to increase births in health facilities: an impact evaluation. *The Lancet*, 375(9730), 2009-2023.
- McCarthy, T. R. (1985). The competitive nature of the primary-care physician services market. *Journal of Health Economics*, 4(2), 93-117.
- Montgomery, M. R., & Hewett, P. C. (2005). Urban poverty and health in developing countries: Household and neighborhood effects. *Demography*, 397–425.
- Mumtaz, S., Bahk, J., & Khang, Y. H. (2019). Current status and determinants of maternal healthcare utilization in Afghanistan: Analysis from Afghanistan Demographic and Health Survey 2015. *PloS one*, 14(6), e0217827. <https://doi.org/10.1371/journal.pone.0217827>
- Newhouse, J. P., & Phelps, C. E. (1976). New estimates of price and income elasticities of medical care services. In *The role of health insurance in the health services sector* (pp. 261-320). NBER.

- Okoli, U., Morris, L., Oshin, A., Pate, M. A., Aigbe, C., & Muhammad, A. (2014). Conditional cash transfer schemes in Nigeria: potential gains for maternal and child health service uptake in a national pilot programme. *BMC Pregnancy and Childbirth*, 14:408.
- Pallikadavath, S., Foss, M., & Stones, R. W. (2004). Antenatal care: provision and inequality in rural north India. *Social Science & Medicine*, 1147–1158.
- Paxton, A., Bailey, P., & Lobis, S. (2006). The United Nations Process Indicators for emergency obstetric care: reflections based on a decade of experience. *International Journal of Gynecology and Obstetrics*, 192–208.
- Randive, B., Diwan, V., & De Costa, A. (2013). India's conditional cash transfer programme (the JSY) to promote institutional birth: is there an association between institutional birth proportion and maternal mortality?. *PloS one*, 8(6), e67452.
- Roscoe, J. T. (1975). *Fundamental research statistics for the behavioral sciences* (2nd ed.). New York: Holt, Rinehart and Winston.
- Sekran, U. (2003). *Research Methods for Business: A skill Building Approach*, 4th, John Wiley and Sons. Inc. USA.
- Simkhada, B., Porter, M. A., & van Teijlingen, E. R. (2010). The role of mothers-in-law in antenatal care decision-making in Nepal: a qualitative study. *BMC pregnancy and childbirth*, 10, 34. <https://doi.org/10.1186/1471-2393-10-34>
- Stampini, M., & Tornarolli, L. (2012). The Growth of Conditional Cash Transfers in Latin America and the Caribbean: Did They Go Too Far? *IZA Policy*.
- Titaley, C., Hunter, C., Dibley, M., & Heywood, P. (2010). Why do some women still prefer traditional birth attendants and home delivery? A qualitative study on delivery care services in West Java Province, Indonesia. *BMC Pregnancy and Childbirth* 10, 43–56.
- Wedig, G. J. (1988). Health status and the demand for health: results on price elasticities. *Journal of health economics*, 7(2), 151-163.
- World Health Organization. (2019). Trends in maternal mortality 2000 to 2017: estimates by WHO, UNICEF, UNFPA, World Bank Group and the United Nations Population Division.