Maternal Health Seeking Behavior: A Case Study of Reproductive Women of Slums

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CERTIFICATE

This is to certify that this thesis entitled: ***"Maternal Health Seeking Behavior: A Case Study of Reproductive Women of Slums"*** submitted by Ms. Hina Akhtar is accepted in its present form by the School of Public Policy, Pakistan Institute of Development Economics (PIDE), Islamabad as satisfying the requirements for partial fulfillment of the degree in Master of Philosophy in Public Policy.

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To my family and my husband who supports me at their best.

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Abstract

The main objective of this study is to explore the current state of maternal (in the reproductive age of 15-49) healthcare practices as well as to identify the determinants of health seeking behavior of reproductive women. The study assesses both ante-natal care (ANC) & post-natal care (PNC) of women in the reproductive age by collecting data from slums of Islamabad. The study interviewed a total of 400 reproductive women via pre-designed semi-structured proforma from different slums of Islamabad divided into 20 Primary sampling units. Results suggest that high rate of unemployment (61.3%) might be because of low level of education (44.7% up to metric). The seemingly high pregnancy loss (20.9%) might be because of poor knowledge on pregnancy complications (87%) and its dangerous signs (82.7%). Majority of them receive ANC more than 4 times but very less seek PNC. Houses are mostly occupied by the slum dwellers with average size of around 3 to 4 Marla's having 2 to 3 living rooms. About all the houses had kutcha dwelling material and the major water source (from cooking to bathing) is tube well. Most of the houses in slums uses pit toilet in their houses and garbage are disposed at fixed place in slum. Responses showed that lady health worker did not visit their homes and delivery was taken place mostly in government hospitals. The multivariate logistic regression results show that income level, household head, lady health workers visit, level of education and family size are the factors that influence maternal health seeking behavior (both ante-natal care (ANC) & post-natal care (PNC)).

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CHAPTER1

INTRODUCTION

Health seeking behavior in words of (Christman, 1980) "*is the sequence of curative actions that an individual seeks to cure perceived ill health*". Choudhury et al., (2011) define the health seeking behavior at delivery time is the activities such as arrangement of skilled birth attendant, equipment for safe delivery, specifying the place for delivery in emergency along with arrangement of transport and money.

Skilled birth attendant is defined in the words of joint WHO/International Federation of Midwives/ International Federation of Gynecology and Obstetrics as "all those attendant who are health professional qualified in the categories of midwife, doctor or nurse has the ability to handle and manage the pregnancies, child birth and the postnatal period together with to manage and recommend mother and her child in case of severe complications". Delivery should take place either in home or in hospital. By delivery in institutional system mean that a place where every equipment of life saving are available in time of emergency, the place should be hygienic so that deadly situation may not arise either for mother or child in time of delivery (Campbell et al., 2005).

Fundamentally known as slums in urban, suburban and rural ranges, constitute a significant part of housing in Pakistan. These colonies of slums in large cities co-exist in the neighborhood of wealthy people having posh concrete houses which also create class divisions. According to Friday time report (21 November 2014) there are 23 to 32 million slum dwellers in Pakistan. The major contributor to slums (Kachi abadi) formation in Pakistan is the influx of Afghan during 1980s. Article 38-D of the Constitution of Pakistan states, *"The state shall provide basic necessities of life, such as food, clothing, housing, education and medical relief for all such citizens, irrespective of sex, caste, creed or race, as are permanently or temporarily unable to earn their livelihood on account of infirmity, sickness or unemployment."*

Literature on health and diseases in urban settings is increasing among academics. With the increase in cities size and density along with increase in growth through migration and commerce leads to higher morbidity and mortality (Grob, 2002). Such undesirable migration of middle class to urban cities has been observed recently in United States, which causes severe health issues in areas of intense disadvantage (Vlahov, et al., 2005). Keeping in view the above mentioned demographic shifts, the health seeking behavior in slums of cities became the center of attention for practitioners and academics.

The condition of slums life is characterized as extreme poverty, poor living standard along with the limited access of women to health facilities (Unger, 2013). Women in the age group (15-49) faces constrained in these overcrowded, resource less and unsanitary settings while seeking for their health care services. Individual and social/communities' problem greatly affect the health seeking behavior of women in the age group (15-49) and therefore must be analyzed (Ramasubban & Singh, 2001).

Literature on health and diseases in urban settings is increasing among academics. With the increase in cities size and density along with increase in growth through migration and commerce leads to higher morbidity and mortality (Grob, 2002). Such undesirable migration of middle class to slums in urban cities has been observed recently in United States, which causes severe health issues in areas of deep disadvantage (Vlahov, et al., 2005). Keeping in view the above mentioned demographic shifts, the health seeking behavior in slums of cities became the center of attention for practitioners and academics.

The role of women are inevitable in shaping the societies. The inadequate health facilities in slums of cities limit their contribution in generating economic activities. In Urban Kenya (Kenya capital city Nairobi), the maternal death rate is above the country average[1] according to African Population and Health Research Centre (2012). In a male-controlled society like Pakistan, the decisions about medical

[1]560 per 100,000 live births is country average death rate while 706 deaths per 100,000 live births is for slums of Nairobi.

care is taken by men. Also, due to complex family structure there are some household factors that limit the access of reproductive women to health services. In addition to household factors there are economic, social and cultural constraint that women faced while receiving health care services.

The characteristics of Pakistan maternal health policy include indorsing safe child births, skilled birth attendance and emergency medical appointment of pregnant women (in age group 15-49) in a well-functioning health care system (Mumtaz et al., 2014). Despite the best effort of National Maternal and Child Health Program, Pakistan misses the target of the fifth Millennium Development Goals (MDG) to reduce maternal mortality and universal access to reproductive health services in 2015. Pakistan is the most vulnerable country for women and children in terms of health care seeking behavior. The infant and maternal mortality are 89/1000 live births and 276/100,000 live births respectively according to the Save the children report (May, 2015). These high statistics of maternal and child mortality reflect that women health is neglected in Pakistan and particularly in slum areas of the cities.

The most important measure of safe delivery is the proportion of births attended by skilled personnel. According to (Pradhan et al., 2002, WHO), through skilled birth attendants (SBA) about 80 percent of maternal deaths could be saved. In contrast, the environment at home for delivery is not hygienic or the midwives often use an unhygienic way while work as birth attendant during delivery leads to higher Reproductive Tract Infections (RTI). Therefore, an intensive care is required before delivery and post delivery period because most of the deadly complications arises during this period (Hossain & Hoque, 2005).

The presumption that health and economic condition of the urban populations are better than their rural counterpart might not be true anymore because of the geometric growth in urban slum settings. There also exist evidence showing that health disparities in urban poor and non-poor in less developed nations is increasing (Fotso, 2006). In case of Pakistan Save the children report (May, 2015) claim that Maternal Mortality Rate (MMR) among the poor in urban areas are 2.5 times higher than the MMR among the rich in urban areas. Therefore, it is necessary that the health offices in cities focus on areas, where health services

are less available. This could be done by defining geographic areas of those people and expose their unhealthy environments that causes more diseases (Vlahov, 2005). To improve overall health condition of the nation along with socio-economic indicators, it is the need of the time to bridge the health inequities between poor and non-poor population of urban and pay full attention to urban poor.

Therefore, in order to avoid any deadly complications during pregnancy time, a good healthcare seeking behavior is required. The reproductive women in urban slums area are less motivated than women in rural area to seek help for maternal health services of the reproductive women. For this reason women bear the cost of deadly pregnancy complications. There may be many reasons behind the lack of motivations for reproductive women to seek health care during pregnancy including but not limited to political, economic and cultural to specific social relations (Price & Hawkins, 2007).

A plethora of literature exist in Pakistan and around the world covering various aspects of the health seeking behavior of women in the age group (15-49). The debate on maternal health and its determinants is also growing with reference to Pakistan (Midhet et al., 1998; Nisar & White, 2003; Mumtaz & Salway, 2005; Dasgupta et al. 2007; Agha & Carton, 2011; Hou &Ma, 2011) by covering its various aspects.

The aforementioned studies has certain limitation. These studies include data only from specific regions and provinces of Pakistan. Their results cannot be generalize to the entire country either because most of them redrawn from qualitative interviews or focus group discussions. Only a few studies in Pakistan have employed empirical estimation techniques to identify a causal mechanism (Nisar & White, 2003; Agha & Carton, 2011; and Hou &Ma, 2011). However, these studies rebased on simplistic assumptions and techniques which consider the results questionable because identifying determinants of health seeking behavior is a complex area of research.

According to (WHO, 2006; Sepehri et al. 2008), full ante-natal care comprises of tetanus toxoid (TT) injections and the frequency of visits to healthcare facility. In addition, unlike prenatal care

and safe delivery, the role of postnatal care a strong pillar of safe motherhood is relatively untapped in the literature. Agha & Carton (2011) and (Hou & Ma, 2011) are two recent studies which employed postnatal care from a trained service provider as a component of maternal health care services in Pakistan. This study aims to augment the existing literature on determinants of maternal health care in Pakistan by using a Logistic regression model.

In light of the above discussion, health interventions, according to the demand of the dwellers in slums, are much needed. For effective health intervention, current knowledge about the health seeking behavior such as differentials and determinants of reproductive women are must. Since aggregate information regarding the slum (disadvantage group of population) are often not available, therefore to change the behavior of reproductive women towards health care it is necessary to have a look on the integrated socioeconomic development intervention. Also, the National Demographic and Household Survey (NDHS) data of Pakistan did not contain sufficient information regarding the population residing in slums. Therefore, it is not represented in national survey which leads to huge disparities and inequitable distribution of maternal health care access and delivery for poor and non-poor in slums.

1.2) Importance of the Study

The present study aims to assess the determinants of maternal health care seeking behavior of women in the reproductive age group of (15-49) living in slums of Islamabad. It examines the effect of individual, household and socio-economic/community factors on maternal health seeking behavior of women. It also explores the current state of maternal health care practices among slums of Islamabad. The health seeking behavior of the reproductive women is affected by both supply side factors and demand side factors. Several attempts has been made in this direction to identify the factors but unfortunately in Pakistan, there are very few researches conducted on this important issue.

Health interventions according to slum dwellers are needed, in order to get knowledge and understanding about their current health seeking behavior. Integrated information about different disadvantage groups such as slums is required to examine the role of integrated socioeconomic development intervention. An attempt has been made in this study to find the factors responsible for slums women choice of delivery in Islamabad. The choice of delivery by the slums dwellers and their identification and determinants play significant role for the policy makers to design new policy measure. This new policy measure are supposed to overwhelmed the shortcoming in the existing delivery system so that current utilization rate of modern delivery facilities by urban slums women are increased.

In light of the scenario discussed above, the present study is therefore intended to achieve the following specific objectives.

1.3 Objectives

1) To explore the current state of maternal healthcare practices among slums of Islamabad.

2) To examine factors affecting the health seeking behavior both Ante-natal (ANC) & Post-natal (PNC) of women in the reproductive age in slums of Islamabad.

3) To draw policy lessons helping to reform health policy agenda for slums

1.4 Organization of the Study

The organization of this thesis is as follows. Chapter 2 presents a literature review on the Maternal Health Seeking Behavior, while chapter 3 presents the complete procedure of data collection and methodological framework to analyze the behavior of women towards maternal health. In chapter 4, the results of the study obtained through descriptive statistics and logistic regression analysis. Chapter 5 concludes the overall study with some policy implications and recommendations.

CHAPTER2

Literature Review

2.1. Introduction

Before proceeding, it is necessary to have a broad idea of the current development in the theoretical and empirical literature on maternal health seeking behavior in urban slums. For this purpose, there is a need to review the literature to identify the gap and to make clear the mechanism to fill this gap. There exist a large body of theoretical and empirical literature to identify and examine the determinants of maternal health seeking behavior. This chapter review the literature relevant to the objectives of the study.

Economic development and maternal health seeking behavior are significantly associated (Singh et al., 2012) and therefore ensuring maternal health remained a great concern for developing nations. Most of the developing countries had miserable health care system which negatively affect the nation economic development. Continuous effort has been made by researchers to unveil the factors affecting maternal health seeking behavior and to address the issue at policy forum. Consequently, there exist a plethora of theoretical and empirical literature that has been conducted around the world especially in less developed countries in order to know about the root cause of the issue and formulate the counter policies. The studies includes (Elo, 1992; Bhatia & Cleland, 1995;Celik&Hotchkiss, 2000;Gyimah, et al., 2006;Mumtaz &Salway, 2005; Sepehri, et al., 2008;Amin, et al., 2010; Singh, et al., 2012; Unger, 2013;; Mungai, 2015; Wanjala, 2015; Ononokpono, 2015; Bhutta, 2015).

The health seeking behavior of the reproductive women are affected by both supply side factors and demand side factors and a number of attempts has been made in this direction to identify the factors. The first category of literature consist of identifying factors, for instance quality of infrastructure and health care facilities available in region, while the second category of literature try to find factors belonging to women itself (individual factors). Beside these two types of determinants of the health of reproductive women, a third category of determinants widely known among academics and practitioners is the socioeconomic factors.

The results of the many studies suggest that mother age is the significant factor of maternal heath (Elo, 1992; Celik & Hotchkiss, 2000; Dasgupta et al., 2007; Amin et al., 2010; Singh et al., 2012). According to the study results conducted by (Elo, 1992) suggest that older women in Peru are more prone to utilize the antenatal care services and assistance during delivery than younger women. He further argue that this higher demand of older women than younger may be because of previous experience learned by them. A totally contrasting results are obtained by (Amin et al. 2010), who conducted a study for Bangladesh where the finding suggest that it is younger women not exceeding 20 years who demand more maternal health care services.

Adolescent girls due to immaturity both psychologically and emotionally together with less awareness about pregnancy complications force them to seek more health services. A study by (Singh et al. 2012) obtain results for India consistent with the above arguments. The second important determinant of health of reproductive women are their level of schooling which are directly related with their health seeking behavior. This is verified by (Elo,1992) by utilizing Peruvian Demographic Health Survey. The author justified his results by arguing that education enable women to alter the household approach to health care service because educated women are more aware of importance of better health. The outcome variable i.e. maternal health is affected both directly and indirectly by education, because more schooling mean more intellectual knowledge about health. Furthermore, the new literature on mother health is based on the groundwork of mechanism of education on health e.g. how the effect of mother's education is transmitting to better child health (Thomas et al., 1991; Webb &Block, 2003).

Individual basket of consumption varies significantly with household size and family structure. Women in families having large multigenerational and hierarchal structure are dependent more on their male counterpart decisions in family matters of health consumption. Being as prudent and experienced, old age women in demoted societies like Pakistan are more powerful in family decision making as opposed to reproductive women in the age of (15-49) (Shariff & Singh, 2002; Mumtaz &Salway,2005andSinghet al.2012). In contrast families having nuclear structure and small family size, every individual member are

independent in their decision making. Access to health services such as accessibility to hospital or pharmacy and better road network to hospitals are considered as the community level determinants of health care system. The impact of such indicators on maternal health is also investigated by (Elo, 1992; Celik & Hotchkiss; 2000, Gage & Calixte, 2006; Sepehri et al. 2008; Amin et al. 2010). In this direction (Gage & Calixte, 2006) examine that poor road condition and less transportation facilities adversely affect the receipt of antenatal care while the reproductive women medical assistance is positively associated with short distance to hospitals.

The debate on maternal health and its determinants is also growing with reference to Pakistan (Midhet et al., 1998; Nisar & White, 2003; Mumtaz & Salway, 2005; Dasgupta et al. 2007; Agha & Carton, 2011; Hou &Ma, 2011) by covering its various aspects i.e. determinants of health care utilization while some evaluate that how supply side factors such as women autonomy influence maternal health. Agha & Carton, (2011) conducted a study in rural Jhang to examine that whether institutional delivery has any effect on mother mortality. The study analyzed the impact of socio-demographic and program factors collected through a representative household survey by utilizing the logistic regression and conclude that factors like Parity, higher education, higher age, independence, more household wealth, exposure to mass media are increasing the chances of institutional delivery which in turn reducing the maternal mortality. A community based cross sectional study was conducted by (Nisar & White, 2003) to identify the socio-economic determinants of utilization of antenatal care for urban settings of Karachi. The study uses the multivariate logistic regression and find that antenatal care services are used by higher income women than low income women.

By exploring the risk factors connected with maternal mortality in 16 districts of Baluchistan and Khyber Pakhtunkhwa (Midhet et al., 1998) tried a nested case (261 cases) control (9135 controls) study and find that maternal mortality risk could be reduced through better provision of peripheral health facilities and improved access to essential obstetric care (EOC). The association between women independence and the utilization of reproductive health services i.e. the use antenatal care services are investigated by (Hou & Ma, 2011; Mumtaz & Salway, 2005). The first study by utilizing the Pakistan Social and Living standard

measurement (PSLM) maintain that empowered women regarding their decision making enhanced the health practices of the reproductive women. The second study were basically aim to show that the utilization of antenatal care service is influenced by older women decision regarding pregnancy rather than by pregnant women herself and find that this biased decision making is moderated by social class such as female education and household wealth.

Besides the aforementioned general literature on maternal health a number of studies (both internationally and domestically) also explore the maternal health seeking behavior of reproductive women living in slums areas of the cities. The studies include (Bir, 2012; Oronje, 2009; Fotso et al., 2009; Unger, 2013; Fotso, et al., 2008; Safdar et al., 2002; Vlahov et al., 2007; Fotso, 2006; Nisar & White, 2003; Haider and Thaver, 1995; Mull and Mull, 1993; D'Souza, 2003; Rao and Soomro, 2004;). Fotso, et al., (2008) collected individual level data in the slums of Nairobi, Kenya to examine the behavior of health care services such as provision of obstetric care and patterns of antenatal and delivery care. The study findings suggest that poor people in Nairobi are deprived of mother health services. Moreover, the statistical results find that pregnancy and timing of ANC are highly influenced by household wealth, education, parity and place of residence. Another study by (Fotso, 2006) aiming to find the extent of child malnutrition disparities within urban poor and rich in Sub-Sahara Africa (SSA). The study utilized the logistic regression technique and find that socio-economic inequalities is larger in urban areas than rural.

The generative health problems got less attention in the urban slums settings relative to rural based population because of the likely reasons that government spends major share of their health budget on cities hospitals (Fotso et al., 2008). There is also some slums based studies (D'Souza, 2003; Nisar & White, 2003; Haider and Thaver, 1995; Mull and Mull, 1994; Rao and Soomro, 2004; Bhatti al. 1999) conducted in Pakistan. A community based cross sectional study was conducted by (Nisar & White, 2003) to identify the socio-economic determinants of utilization of antenatal care for urban settings of Karachi. The study uses the multivariate logistic regression and find that antenatal care services are used by higher income women than low income women. Moreover, among the slums studies conducted in Pakistan

(Haider and Thaver, 1995; D'Souza, 2003; D'Souza & Bryant, 1999) focus on determinants of child mortality while only two studies (Nisar & White, 2003; Bhatti al. 1999) examine the women health seeking behavior in squatter settlements of Karachi. The former study specifically examines the socio-demographic characteristics of antenatal care of reproductive age group women (15-49 years) in an urban squatter settlement of Karachi while the latter study was aim to explore the related factors that influence the health-seeking behavior of infertile women in the squatter settlements of Karachi.

2.2 The Expected Maternal Health-Seeking Behavior and its Importance

The availability and accessibility of maternal and neonatal services to public is the responsibility of government. The government must assure access to maternal and neonatal services, as the access to health care is the constitutional right of every citizen. On the other hand it is also the women responsibility to visit the available health facilities for seeking antenatal care, post-natal care, for child delivery and other pregnancy complications; this will help the woman and the child for attaining a good healthy life. The antenatal care is compulsory for women during pregnancy from any professional or experienced doctor/nurse/midwife for the betterment of both mother and child health.

The World Health Organization recommends that women should have at least four antenatal visits throughout pregnancy (WHO, 1994). The studies reveal that antenatal care reduces the infant and maternal mortality rate. The (Forste, 1994) study shows the important relationship between antenatal care and under-five child mortality. Furthermore, it also specifies the relationship between tetanus injection received in pregnancy and under-five children mortality. The women receive the tetanus toxoid injection during their pregnancies which prevent the tetanus in neonatal child, the neonatal tetanus is one of the major cause of early infant death in developing countries. (Bhatia, 1989; Luther, 1998; Zahid, 1996). Studies reveal the relationship of mother immunization and neonatal pregnancy.

Those children are more probable to survive whose mother had tetanus injection during their pregnancies as compared to those children whose mother did not had injection during their pregnancies. The study of (Luther, 1998) in India also reveals that the mother tetanus immunization is associated with neonatal

mortality as well as with the infant mortality. A study in Pakistan by (Zahid, 1996) also reveals that the chances of survival in those children is more whose mother had antenatal care during pregnancies as compare to those children whose mother had not receive any antenatal care, those children whose mother never received antenatal care are 2.03 time more likely to die than those children whose mother received antenatal care. Hence the conclusion is that maternal tetanus immunization is an effective and good indicator for prevention of neonatal and infant mortality.

The place of delivery is also an important factors, the woman who visits to health institution for the delivery of their children reduces the risk of complication and infection and morbidity and mortality of both mother and child, because of availability of skilled attendant (professional doctor/nurse/midwife) and well equipped tools in health institution. It is estimated that about 2 million of maternal deaths, neonatal deaths, infant death and under-5 deaths are due to lack of skilled attendant during birth delivery (Countdown, 2015).

The study of (Zahid, 1996) argues that the children who born in hospital are more likely to survive their childhood as compare to those who were not born in hospitals. Another study from Bangladesh by (Howlader, & Bhuiyan, 1999) reveals that the place of delivery is related to children survival, and also the author argued the reason that why many studies about neonatal mortality reveals the high rate of mortality of neonatal of those children whose mother went for delivery to health institution compare to home deliveries. The author argued that those mothers whose delivery take place in health institution may have been high risk mothers who felt that the health facilities will be better equipped and will easily take care of pregnancy complications then the midwife and relative at home. Although the study of (Forste, 1994) in Bolivia argued that there is no relation about birthplace and child survival. The association in between place of delivery and child survival infers the place of delivery as an indicator maternal health seeking behavior.

Post-natal care (PNC) is the care for both mother and child to receive after the delivery of the child. The PNC care is important for physical health of both mother and child because the checkup evaluate the

complication arising from birth delivery. The PNC helps in preventing the maternal and neonatal death by observing symptoms and other complications. Moreover, other health tips are also provided in post-natal care visits to mothers like vaccination, hygiene and breast feeding benefits, the post-natal care should be receive within 48 hours after delivery of the child because those first 48 hours are crucial for both mother and child because most of the deaths of mother and child occur in first 48 hours of the delivery. The World Health Organization (1998) recommended the post-natal care should include immediate and exclusive breast feeding, warming of the baby, and identification of complications that should be treated timely. The mother has a prime responsibility of taking care of their child up to first 5 years of newborn, because those first 5 years is the most vulnerable stage of life of newborn, like the monthly vaccination of children, the weight surveillance program like growth and development of the child, detecting child illness, breastfeeding, promoting healthy behavior of children etc. These all factors are essential for child health.

Children who receive one dose of BCG vaccine, three doses of DPT vaccines, three doses of polio vaccines and one dose of measles vaccine during the first five years of life will be called fully vaccinated children (ZDHS, 2006). The vaccines strengthen the immunity system in children which help in the prevention of many infectious diseases like tuberculosis which is prevented through BCG vaccines, DPT protects against diphtheria, pertussis and tetanus. Studies shows the relationship between vaccination and under-5 mortality, (Zahid, 1996; Howlader & Bhuiyan, 1999) argues that the children who are not fully immunized experience higher mortality rate as compare to those children who are fully immunized. The (ZDHS, 2006) report reveals the percentage number of children who are immunized which stated that about 53% of children 12-23 months old had received all the vaccinations and 47% of these children were not fully immunized.

2.3 Socio-economic Determinants of Maternal Health-Seeking Behavior:

The maternal health seeking behavior is defined as the action of a mother to promote herself and her child health during and after the pregnancy. The actions include pre-natal care (tetanus injection, iron tablets)

natal care (place of delivery) and post-natal care (check-up of both mother and child after delivery to observe and find the complications, breastfeeding). The mothers who utilize the health care services and follow the instructions which will be given by health centers is called a good maternal health-seeking behavior. And the bad or poor maternal health seeking behavior is that the mother will not seek or utilize the health centers and will be delivering the child at home and avoid breast feeding.

The health seeking behavior of the women are influenced by several factors like socio-economics (education, income), political factors and cultural factors are the main determinants of health seeking behavior (Kroeger, 1983). Hence the maternal health seeking behavior is not only the mother own choice but it also influenced by other factors like characteristic of household community and environment, religious factors, cultural factors, economic factors etc. Maternal education also having an effect on maternal health seeking behavior. The study done in India (Govindsamy & Romesh, 1997) reveals a strong and positive relationship between mother schooling and her health seeking behavior, and also the mother with high schooling are more likely to immunized their children and have better knowledge of managing the child illness. The study shows that mother with higher education are 62% more likely to seek the health care. A study in Pakistan by (Zahid, 1996) shows that mother with higher education are utilizing more health services as compare to uneducated women. The study of Caldwell's (1979) explains that the educated women usually having a higher rate of utilization of health facilities, because the education changes the behavior and attitude toward health. The educated women ignores traditional treatment which is harmful for children and utilize modern health care because it have more chances of children survival. Mosley and Chen (1984) argues that the education increase the mother skills in understanding the health care practices like contraception, vacation. Breast-feeding, nutrition, hygiene, preventative care and disease treatment etc. understanding those skills are crucial for child survival.

The socio-economic status of household is having a strong influence on maternal health seeking behavior. In most of the studies wealth, education, income, and occupation have been used to measure socio-economic status. According to (Addai, 2000) those areas where socio-economic status is higher ultimately

those areas women health seeking behavior is higher as compare to those areas where socio-economic status is low their health seeking behavior is also recorded low. The main reason in high-socio economic women good health seeking behavior is because they are having money to spend on nutritious food, warm clothing, medicine, education, health care services, access to safe and clean drinking water, so in high socio-economics areas child is more likely to survive as compare to low socio-economics status areas.

Amin et al., (2010) a study in Bangladesh argues that wealth is the most important tool in socio-economic status for maternal health seeking behavior. Those household are having more wealth, the mothers are more likely to use professional and trained antenatal care, birth attendance, vaccination of child, post-natal care as compare to those household who are living in low income quintile. The mother with higher wealth income quintile is 11 times more likely to go for trained birth attendant as compare to those who are from lower quintile. Similarly the higher quintile women are 7.6 times more likely to go for antenatal care as compare to the lower quintile women. The study also reveals that the mother schooling years is significantly associated to seeking for (antenatal care, delivery place, and postnatal care). According to (Zimbabwe ZDHS 2005-6) report the socio-economic factors do influence on health seeking behavior. A significant relation is found between place of delivery and mother education on wealth quintile. The higher wealth quintile is 2 times more likely to seek for birth attendant as compared to lower wealth quintile. The study also reveals the mother schooling year association with birth delivery place, the women with secondary or higher education are more likely to utilize health from professional or trained birth attendant as compare to illiterate mothers. The urban residence, higher education, higher wealth quintile are more likely to seek post-natal care with in first 48 hour of birth.

On the basis of the literature reviewed, it is worth mentioning here that very limited studies are conducted in Pakistan to explore the socioeconomic factors of maternal health seeking behavior and therefore a significant void has been found on this topic which the present study aimed to fill. This is the first study in slums of Islamabad aimed to analyse the maternal health seeking behavior of women in the reproductive age. This study uses an extensive questionnaire to cover background characteristics of reproductive

women, income and expenditure pattern of reproductive women and access to health care and health care seeking behavior of reproductive women in Slums of Islamabad. Analysis of both ANC and PNC in one study also differentiate this study from those already conducted in Pakistan which analyse either ANC or PNC.

CHAPTER3

Method of Analysis and Data

3.1 Maternal Health Care Seeking Behavior:

Maternal health is defined as the care of pregnant mother during, before and after pregnancy. A good care of pregnant women following the health care dimensions such as family planning, prenatal care and postnatal care are associated with lower mortality and morbidity along with improved wellbeing for mother and its child (WHO, 2010). For the women to play their active role being as individual, mothers and family members together as citizen and community, maternal health is critical issue and needs to be ensured. Poor maternal health has cost both at individual level (i.e. causing unemployment) and at family level i.e. in terms of loss of children and family wellbeing (UNFPA, 2005).

3.2 Theoretical Framework:

In social science literature of maternal health, various models are introduced in order to understand the health seeking behavior based on past experience and empirical evidence. The current research is in light of some of those models including Health Belief Model, the "Four As" model and the Healthcare Utilization Model. All these models are briefly discussed below.

3.2.1 The Health Belief Model (HBM):

By following (Sheeran & Abraham, 1995), the Health Belief Model (HBM) is based on various factors such as threat perception which is the belief of health client about impact of illness and its consequences, health motivation i.e. health client must have concern about their health matters, internal and external factors that provide clues to health client, health client beliefs about consequences of health practices along with the socio-demographic and psychological characteristic of the population.

This model mainly focus on how reproductive women perceives her illness and its effects, some of them take the issue seriously while some very lightly. Those who take the issue of illness seriously would seek for institutional delivery and vice versa. This is one determinant of choosing institutional delivery by

reproductive women, the rest are their belief, health motivation along with concern about health issues.

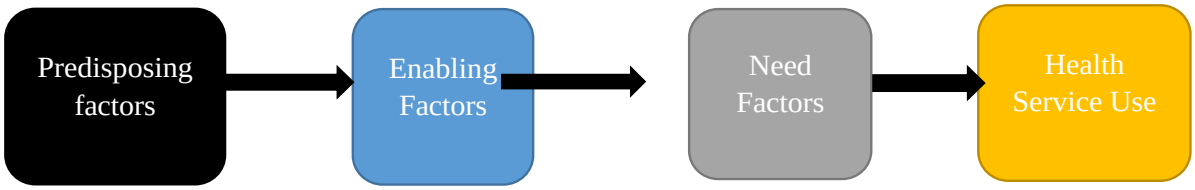
3.2.2 The "Four As":

The “Four As” includes (1) Availability (2) Affordability (3) Accessibility and (4) Acceptability is also based on (Sheeran & Abraham, 1995). By availability, we mean availability of health facilities geographic wise, the health seeking women must be able to afford the direct, indirect and opportunity cost of health services. The health seeking behavior of women also depend on access to transport along with the socio-cultural barriers. These are the factors that greatly influence the health seeking behavior of reproductive women.

3.2.3 The Healthcare Utilization Model (Socio-behavior model):

The three categories of factors that influence the healthcare seeking behavior of reproductive women are arranged in a logical sequence in healthcare utilization model proposed by (Andersen, 1995). The factors are displayed in figure 1 below.

Figure 1: Healthcare Utilization Model



The predisposing factors includes age of the reproductive women, gender, religion, ethnicity, education, occupation, social capital, knowledge and prior experience about the illness and health services. Similarly the enabling factors comprises of availability and affordability of services, health insurance and social network support. Lastly, the need factors are perception of severity, days lost due to illness and help from outside for caring. All these factors are supposed to cover most of the aspects of health seeking behavior of reproductive women and these factors can affect the health seeking behavior either positively or negatively depending on the circumstances.

3.3 Data and Variables:

The main objective of the study is to determine the impact of individual, socio-economic and community level variables on maternal health seeking behavior in the age group (15-49) living in slums of Islamabad. For this purpose, the proposed study undertake a field survey aimed to collect data on the subject of maternal health seeking behavior. Moreover, the study is based on quantitative data collection technique such as questionnaire are designed to collect relevant numerical data regarding women health seeking behavior and therefore the results of the study are based on both quantitative and descriptive methods.

3.4 Sample and Sampling Technique:

There are two broad components of the sampling method including determination of sample size and method of sample selection. Both of these are discussed below in detail.

3.4.1 Determination of Sample Size:

There are two types of sampling 1) probability and 2) non-probability. The given study adopt probability sampling so that to get scientific grounded estimates, although the non-probability sampling is easy to apply and less expensive. The probability sampling has the characteristic that each element of the population must have equal chance of selection and must be numerically calculable. The target population is all the women in the reproductive age of (15-49) and Islamabad is the only domain of the survey.

According to Pakistan Demographic and Health Survey 2012-13, about 37 percent women receive ANC from medically trained persons. But this percentage is not for slums, therefore we take 0.20 expected use rate or the value of probability (p) of health care for slums in the sampling formula. A margin of relative error (d) is assumed 5 percent for reliable estimates. Dividing the slums into cluster and choosing sample from these cluster was due to absence of complete listing of households in each slum. According to Designing Household Survey Samples: Practical

Guidelines, UN 2015 (page 41), in order to reduce sample bias and prevent the parameter tat in standard formula from escalation a design effect usually lies between 1.5 to 2, we assume it 1.5 in our case. Based on the abovementioned assumptions and by following (WHO, 1994) the following formula was used for sample calculation:

$n = \frac{Z^2 p(1-p)}{d^2}(design\ effect)$, Where

N is the sample size

Z is value of the standard normal variable, which is equal to 1.96 at 5% level of significance

P is expected use rate of health care

D is the maximum acceptable error.

By using these values, our required sample size was 370 which was increased by 20 percent due to non-response so 370+(370*20)≈ 444 households which was rounded to 400 households.

3.4.2 Method of Sample Selection

The Islamabad Police Slum Survey (February 27, 2014) in Islamabad listed the Slums and number of households in each slum which identified total 23 slums in Islamabad. The study used a two stage cluster sampling technique for sample selection. Through systematic random sampling, in the first stage 20 slums were selected out of 23 in Islamabad. Next each slum was divided into sections of about 40 households and this section is considered as the Primary Sampling Units (PSUs). From each slum only one PSU were selected randomly and for household survey 20 PSUs were chosen from 20 slums where each PSU were considered as the cluster in the study. In the second stage after selection of PSUs, through systematic random sampling 20 households from each PSU were chosen. From the section of selected slum and from first three households the first one is selected as random and then women in the reproductive age of every third household in each PSU was asked to fill out the questionnaire. Thus the total required sample

was 400 households, 20 HHs*20 clusters (one cluster from each slum). This type of sampling has the characteristics that each household has equal chances of selection.

Table 3.1: Selected Slums, number of households and PSUs

Name of Slum	Location	Number of Households	Number of individuals	PSUs	PSUs covered
Christian Colony	G-6/1-4	10	70	0	0
Dhobi Colony	G-6/2	50	250	1	1
Shopper Colony	G-7/1	600	3700	15	1
66 Quarters	G-7/2	670	4100	17	1
48 Quarters	G-7/3-2	400	2390	10	1
100 Quarters	F-6/2	500	6150	13	1
France Colony	F-7/4	550	6000	14	1
Muslin Colony	PM Sec	3200	15000	80	1
Afghan Basti	I-11/1	783	5488	20	1
Afghan Basti	I-10/3	170	1390	4	1
Afghan Basti	H-11/4	90	760	2	1
Afghan Basti	H-11	19	102	00	0
Afghan Basti	I-11/4	372	2564	9	1
Afghan Basti	I-11/2	49	415	1	1
Afghan Basti	I-10/1	45	184	1	1
Roshan Colony	I-12	35	135	1	1
Roshan Abadi	I-9/4	12	149	0	0
Esa Nagri	I-9/1	180	1436	5	1
Muslim Abadi	I-9/1	53	187	1	1
Akram Gill Colon	I-9/2	214	1060	5	1
Ghorri	Phase-6	40	295	1	1

Dhoke Pathana	Sihala	140	780	3	1
Mera Jaffar	Ramna	4804	28536	120	1

3.5 Specification of the Econometric Model for Analysis

The proposed study analyzes that maternal health seeking behavior is a function of household, individuals, socioeconomic and health seeking behavior variables where the dependent variable i.e. Maternal health seeking behavior is a dummy dependent variable. In categorical response variable (i.e. a regression in which the dependent variable is a binary output variable) every transformation will not lead to normal residuals of the model. The most popular among the alternative regression equation is the logistic regression equation; the unknown parameter of this regression is estimated by maximum likelihood. Since the dependent variable taking two values i.e. 1 if the reproductive women are getting health services and, 0 otherwise. Therefore, for empirical purposes, due to binary dependent variable the logistic regression is used.

3.5.1 Preliminaries of the Logistic Regression

Logistic regression is considered as one of the most suitable regression technique for categorical or more specifically binary response data. It is also called as generalized linear model. In contrast to linear regression, the logistic regression has the characteristic of predicting probabilities directly as well as these probabilities are well calibrated. Moreover, one can also obtained from working data the marginal probabilities and in addition, the model coefficient has the power to identify the relative importance of each variable.

For better interpretation of the model results, one must have to know the steps involved in derivation of logistic regression. In this section of the thesis, a less concise derivation of the logistic regression is provided and will bring the important discussion in front. The case of binary response is considered where the case of interest is represented by 1 and vice versa. Primarily, the log-odds of the observation Z in logistic regression is regressed as a linear function of the m input variables x.

$$log\frac{p(x)}{1-p(x)} = \sum_{j=0}^{m} b_j x_j \quad (3.1)$$

It is called the logistic regression because of its logit of p on the right hand of the above equation. By taking the exponent of the equation, we get

$$\frac{p(x)}{1-p(x)} = \exp(\sum_{j=0}^{m} b_j x_j) \quad (3.2)$$

$$= \prod_{j=0}^{m} \exp(b_j x_j) \quad (3.3)$$

It is distinctive from linear repression on one hand is that in linear regression the inputs are additive while in logistic regression the input is multiplicative along with interpretation of its coefficients. The coefficient is interpreted as all other things remaining the same, the value $\exp(b_j)$ is interpreted as the response of the odds to a one unit change inx_j. Suppose the value of $\exp(b_j)$ is 2 and if the independent variable x_j is a binary variable is sex i.e. 1 for male and zero for female then all else being equal, the odd ration or the response is to be two times higher for male than female. By inverting the logit equation, the new equation is expressed as follows:

$$p(x) = \frac{expz}{1+expz} \quad (3.4)$$

$$z = \exp \sum_{j=0}^{m} b_j x_j \quad (3.5)$$

The derivative of the $p(z)$ is as follows:

$$p(z) = \frac{expz}{1+expz} = (\text{expz})(1+expz)^{-1} \quad (3.6)$$

$$p^{/}(z) = (\text{exp z})(1+expz)^{-1} + (\text{exp z})(-1)(1+expz)^{-2}(expz) \quad (3.7)$$

By chain rule, we get

$$\frac{expz(1+expz)}{(1+expz)^2} - \frac{(\text{expz})\,2}{(1+expz)^2} \quad (3.8)$$

$$= \frac{expz}{(1+expz)^2} \quad (3.9)$$

$$= \frac{expz}{1+expz} \cdot \frac{1}{1+expz} \quad (3.10)$$

$$= P(z)(1 - P(z)) \quad (3.11)$$

The set of parameters represented by "b" maximize the likelihood of the data and is expressed as the product of the predicted probabilities of the N individual observations.

$$L(X/P) = \prod_{i=1,y_i=1}^{N} \mathrm{p}(x_i) \prod_{i=1,y_i=0}^{N} (1 - \mathrm{p}(x_i)) \quad (3.12)$$

A general representation of the above equation in log form is given as follows:

$$\mathcal{L}\left(\frac{X}{P}\right) = \sum_{i=1,y_i=1}^{N} \log \mathrm{p}(x_i) + \sum_{i=0,y_i=0}^{N} \log(1 - \mathrm{p}(x_i)) \quad (3.13)$$

An equivalent to the residual sum of square in linear regression model is the quantity $-2 * log - likelihood$ and is called deviance of the model in logistic regression. The objective of Ordinary Least Square (OLS) to minimize the RSS and similarly the objective of the logistic regression to minimize the deviance. Similarly, the goodness-of-fit in the logistic regression is measured by the pseudo-R^2 and is defined as follows:

$$pseudo - R^2 = 1 - \frac{deviance}{null\ deviance} \quad (3.14)$$

3.5.2 On Excution

The relationship between dichotomous variable Y and vector of explanatory variables X with covariates $x_1, \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots x_p$, whether continious or categorical is described through logit model. The dependent varible take the value 1 for those who have health seeking behavior and 0 for those who do not have HSB (Hosmer & Lemeshow, 1989). P($Y|x$) is the expected value of the dependent variable given the vector of independent variables also called the conditional mean. Although the conditional mean takes values between (-∞ and +∞) but in binary response model it takes values between 0 and 1 i.e. [$0 \leq P(Y|x) \leq 1$]. The conditional mean denoted by $\pi(x)$ for simplicity is calculates as follows:

$$\pi(x) = \frac{e^{\beta_0 + \beta_1 x_1 + \cdots \beta_k x_k}}{1 + e^{\beta_0 + \beta_1 x_1 + \cdots \beta_k x_k}} \quad (3.15)$$

In terms of $g(x)$ the logit transformation is as follows:

$$g(x) = logit\{\pi(x)\} = \ln\{\frac{\pi(x)}{1-\pi(x)}\} \quad (3.16)$$

The linear transformation of this function is given by:

$$g(x) = logit\{\pi(x)\} = \beta_0 + \beta_1 x_1 + \cdots + \beta_k x_k \quad (3.17)$$

Most of the independent variables in our study are categorical with levels greater than 2, so we need to represent the model in terms of design variables (Hosmer & Lemeshow, 1989) which is denoted by D_{jm}. Where m is the level of independent variables and j is the j[th]independent variables. In terms of design variables the logistic regression is given as follows:

$$g(x) = logit\{\pi(x)\} = \beta_0 + \sum_{j=1}^{p} \sum_{m=1}^{k_j - 1} \beta_{jm} D_{jm} \quad (3.18)$$

Where the coefficient of the design variable D_{jm} is denoted by β_{jm}. Reparametrizing, the logistic regression is written as follows:

$$\pi(x) = \frac{e^{g(x)}}{1+e^{g(x)}} \quad (3.19)$$

3.5.3 Fitting the Logistic Regression Model

The proposed study is intended to analyze that maternal health seeking behavior is a function of household, individuals, socioeconomic and health seeking behavior variables where the dependent variable i.e. Maternal health seeking behavior is a dummy dependent variable. Since the dependent variable taking two values i.e. 1 if the reproductive women are getting health services and, 0 otherwise. Therefore, for empirical purposes, due to binary dependent variable the logistic regression is used.

Logistic regression is more popular in health sciences because coefficients can be interpreted in terms of odds ratios. Probit models can be generalized to account for non-constant error variances in more advanced econometric settings (known as heteroskedastic probit models) and hence are used in some contexts by economists and political scientists. If these more advanced applications are not of relevance, than it does not matter which method you choose to go with.

Since the study is aimed to examine both antenatal care (ANC) and post-natal care (PNC) for reproductive women, therefore the study has two dependent variables. The probability of whether the reproductive women utilize the healthcare services or not is determine by the response variable specified as follows:

$$Y_i = X_i\beta + \varepsilon \quad (3.20)$$

Where Y_i is dependent variable, D_1 for antenatal care and D_2 for post-natal care while X_i is vector of independent variables including, women age, level of education, household head, employment status, previous pregnancy lose, knowledge about pregnancy complications, family size, average income of household per month, average cost of treatment, home visit from a health worker. β is the vector of parameters to be estimated.

The prenatal health seeking behavior is measured by an index, where the index is constructed from four binary variables including (i.e. Blood test during pregnancy (yes/no), Number of Tetanus injections (Yes/No), Urine tests (Yes/No) and Iron tablets intake (Yes/No). A women are said to be getting prenatal health care services if she is getting at least three of the aforementioned services (Afulani, 2015).Similarly, postnatal health care services is measured by dummy = 1 if trained postnatal care was obtained within 42 days of delivery; 0= otherwise.

Each of the binary dependent variable is regressed on individual, households and socio-economic variables in order to know that how these variables are associated with maternal health seeking behavior in a probabilistic way.

Since Y_i represent D_1 and D_1 the study is going to estimate two logistic regression model representing ante natal care and post-natal care utilization. The model are expresses as follows:

$$MPre_h = \beta_0 + \beta_1 WA + \beta_2 LE + \beta_3 HH + \beta_4 ES + \beta_5 PPL + \beta_6 KAPC + \beta_7 FS + \beta_8 AIH + \beta_8 ATC + \beta_8 HV + \mu \quad (3.21)$$

$$MPost_h = \beta_0 + \beta_1 WA + \beta_2 LE + \beta_3 HH + \beta_4 ES + \beta_5 PPL + \beta_6 KAPC + \beta_7 FS + \beta_8 AIH + \beta_8 ATC + \beta_8 HV + \mu \quad (3.22)$$

Where $MPre_h$ is prenatal maternal health seeking behavior, WA is age of women, LE is level of education of women in the reproductive age, HH represent head of the household, ES is employment status, PPL is previous pregnancy lose, knowledge about pregnancy complications is represented by KAPC, FS is family size, AIH is average income of household per month, average cost of treatment is represented by ACT and HV is home visit by health worker. Where in equation 3.22, the dependent variable is postnatal maternal healthcare seeking behavior.

The model parameters are estimated through maximum likelihood estimation (MLE) method. This method search for parameters that maximize the probability of observed data. The likelihood function expresses the probability of observed data as a function of the unknown parameters. Next, the parameters are chosen that maximize the likelihood function. Where $p(Y = 1/x) = \pi(x)$ is the probability of occurrence of an event (in our case HSB) and $p\left(Y = \frac{0}{x}\right) = 1 - \pi(x)$ is the probability of non-occurrence of an event. Where $\pi(x)$ and $1 - \pi(x)$ is the contribution of the likelihood function when $p(Y = 1/x)$ and $p(Y = 0/x)$ respectively for the pairs (x_i, y_i) and is calculated as follows:

$$\zeta(x_i) = \pi(x_i)^{y_i}\{1 - \pi(x_i)\}^{1-y_i} \quad (3.23)$$

While the likelihood function for the assumed independence of observation is as follows:

$$l(\beta) = \prod_{i=1}^{n} \zeta(x_i) = \prod_{i=1}^{n} [\pi(x_i)^{y_i}\{1 - \pi(x_i)\}^{1-y_i}] \quad (3.24)$$

Working with log likelihood is easier and so is expressed in log likelihood form as follows:

$$\log\{l(\beta)\} = \sum_{i=1}^{n} [y_i \log\{\pi(x_i)\} + (1 - y_i)\log\{1 - \pi(x_i)\}] \quad (3.25)$$

The estimated maximum likelihood estimator of β is $\hat{\beta}$ and the estimated maximum likelihood of $\pi(x_i)$ is $\hat{\pi}(x_i)$ computed using $\hat{\beta}$ andx_i.

3.5.4. Ethical consideration:

The household members (female in reproductive age) of Islamabad city are the subject of the study. The study had no risk to subjects. The data collection required no blood test or any such experiments related to body of the respondents. It was only a verbal agreement with respondent before the interview was conducted while the respondent participated voluntarily. The interview was totally at the discretion of the participant i.e. that they can leave anytime if feel uncomfortable and there were no penalty on refusal of the interviewee from interview. Most importantly, the collected information and data were kept very confidential. The study will present only the aggregated information during presentation of research findings and by name information will be kept secret. The interviewers were told about the importance of confidential information before data collection.

CHAPTER4

Results and Analysis

4.1 Introduction

The descriptive analysis has been carried out to achieve the objective of the study along with to examine the demographic and socio-economic characteristics of the sample in the study area. To describe, categorize and summarize the data analytically in a comprehensive form, descriptive analysis is the most widely used technique (Nachmias & Nachmias, 1992). Percentages and classification of data is the centre of descriptive analysis.

The findings of the study is presented in this section having three subsection. Section one is about the socioeconomic status of reproductive women of slum-dwellers in Islamabad. Income and expenditure pattern of the house of the reproductive women are given in second section while section three is about the residential environment of reproductive women. Access to health care and health care seeking behavior of reproductive women are given in section four and lastly the results from logistic regression is provided in last section.

4.2 Socioeconomic Status of Reproductive Women in Slums of Islamabad

The socio-economic characteristics of the reproductive women determine the demand for health care of the slum-dwellers. Thus, for the identification of demand for health care of reproductive women of slum dweller, the important characteristics of slum dweller is analyzed first in the following section.

4.2.1 Background Characteristics of Reproductive Women in Slums of Islamabad

From Table 1 it is evident that out of total sample the highest percentage of the reproductive women are in the age of 32-39 years which is 37.0 percent of total population, followed by age group 23-31 which comprises 24.25 percent while the lowest percentage distribution is in the age of 40-49.

Table 1: Percentage distribution of reproductive women by age group

Age group	Frequency	Per cent
15-23	93	23.25
24-31	97	24.25
32-39	148	37.0
40-49	62	15..5
Total	400	100.0

Considering education, Table 2 reveals that about 44.7 percent of women have education up to matric while the second highest percentage of reproductive women had intermediate level education (21.3 percent). But there were no master level educated women found in slums in the whole sample. The illiterate women proportion is 21 percent in the slums of Islamabad.

Table 2: Percentage distribution of reproductive women by level of education

Level of education	Frequency	Per cent
Illiterate	84	21.0
Up to Metric	178	44.7
Intermediate	85	21.3
Bachelor	53	13
Master	0	0.0
Total	400	100.0

Most of the women (61.3 percent) in the reproductive age are unemployed (see table 3). Out of the employed women 16.3 per cent of women had occupation of service and sale workers followed by self-employed women with 12 per cent, and 10.3 per cent of women were professional's workers. The unemployed women were mostly house wives.

Table 3: Percentage distribution of reproductive women by employment status and occupation

employment status	Frequency	Per cent
Employed	155	38.7
Unemployed	245	61.3
Total	400	100.0
Occupation	Frequency	Per cent
Service and sales workers	65	16.3
professionals	42	10.3
Self Employed	48	12.0
Total	155	38.7
System missing	245	61.3
	400	100.0

In the selected sample there are 21.7 percent of women who are the head of their houses (see table 4); while 78.3 percent of the houses were run by their male counterpart.

Table 4: Percentage distribution of reproductive women by Household Head

Household Head?	Frequency	Per cent
Yes	87	21.7
No	313	78.3
Total	400	100.0

From table 5, we see that about 55 percent of households have only 1 earner or employed person, the main reason was nuclear family observed during the survey. Male was the main earner and the women were house wives taking care of their children's, followed by 40.7 percent of households who had 2 employed persons while only 4.3 percent of household had more than 2 employed persons.

Table 5: Percentage distribution of HH by number of member employed

HH member employed	Frequency	Per cent
1.0	220	55.0
2.0	163	40.7
4.0	17	4.3
Total	400	100.0

The respondent report (see table 6) that 32 percent of households has the family size of 1-4, and 63.7 percent of the family's size ranges from 5 to 7, while only 4.3 percent of the families had family size more than 7.

Table 6: Percentage distribution of reproductive women by family size

Family size	Frequency	Per cent
1-4	128	32.0
5-7	255	63.7
above 7	17	4.3
Total	400	100.0

4.2.2 Income and Expenditure Pattern of Reproductive Women in Slums of Islamabad

Table 7 shows that about 49 present of household had less than Rs. 14000 average income this is because that most of the household had only one earner and most of them were engaged in unskilled and low earning jobs. Followed by 38 percent of household income range is between 14001 and 30000 and 4.3 present of household had more then 45000 income.

Table 7: Percentage distribution of HH by average monthly income

Average income per month	Frequency	Per cent
< 14000	196	49.0
14001-30000	152	38.0
30001-45000	35	8.7
45001-60000	17	4.3
Total	400	100.0

There were 32.3 percent of women who had to pay no treatment costs (see table 8) because most of the reproductive women were using government hospitals. By no treatment cost mean they only pay the parchi fee (hospital fees) Rs. 5 to Rs. 10 and the rest of the treatment was free. While 30 percent of women had paid fee in between 2000 to 4999 the reason was they preferred to utilize the private clinics for the treatment.

Table 8: Percentage distribution of reproductive women by cost of treatment

Treatment cost	Frequency	Per cent
no cost	129	32.3
<1000	47	11.7
1000-1999	69	17.3
2000-4999	120	30.0
5000 and above	18	4.3
could not remember	17	4.3
Total	400	100.0

4.2.3 Residential Environment of Reproductive Women in Slums of Islamabad

The researcher observed during survey that the slums were very unhygienic, congested and over populated. Most of the slums population was situated on the bank of the sanitary watercourses and was totally separated from the urban population of Islamabad. The houses were mostly (55.7 percent) owned by them (see table 9) by own house they mean (qabza) on government places. The percent of shared houses are 32 percent and any other like rented houses are 12.3 percent.

Table 9: Percentage distribution of HH by house ownership

House ownership status	Frequency	Per cent
Owned	223	55.7
Shared	128	32.0
any other	49	12.3
Total	400	100.0

Table 10 report the percentage distribution of the type, size and composition of houses. The percentage of kuccha houses was 39.7 while 34.3 percent of houses was pucca and 26 percent were quarters. 37 percent of the houses walls was made of CI sheet plus brick wall while 34 percent of the houses had brick wall followed by CI sheet (steel) which was 17 percent. Most (51 percent) of the roof was made of CI sheet, 33.7 percent was made of Brick + rod +cement and polythene + fence roof material was 15.3 percent. About half (50.7 percent) of the house size was 3 Marla followed by 4 Marla which was 34.3 percent, while 15 percent of the houses had 2 Marla size.

Table 10: Percentage distribution of HH by house composition

Type of house	Frequency	Per cent
House	137	34.3
Quarter	104	26.0
Other	159	39.7
Total	400	100.0
Size of house (marlas)	Frequency	Per cent
2.00	60	15.0
3.00	203	50.7
4.00	137	34.3
Total	400	100.0
Wall material	Frequency	Per cent
sack/polythene	32	8.0
Fence	16	4.0
CI sheet(steel)	68	17.0
brick wall	136	34.0
CI sheet plus brick wall	148	37.0
Total	400	100.0
Roof material	Frequency	Per cent
polythene+fence	61	15.3
CI sheet	204	51.0
Brick+rod+cement	135	33.7
Total	400	100.0

The most severe problem as told by the slum-dwellers during the survey (Table 11) was the (un)availability of water. 41 percent of households use hand pump water for cooking purpose while 27.3 percent of household use tube well water for cooking. Similarly, only 21.7 percent of household uses the filter water for cooking purposes where the filter plants is on walking distance from their houses. Hand pump water proportion is 34.7 percent for drinking water followed by 33.7 percent water of tube well is used for drinking purposes while 26.7 percent of filter water is used for drinking purposes. In most of the slums there were no electricity and supply water connections so they heavily depended on pump water about 45 percent of pump water is used as a source of bathing followed by 35.7 percent of tube well water and only 19.3 percent of supply water is used as a source of bathing.

Table 11: Percentage distribution of HH by source of water

Source of cooking water	Frequency	Per cent
tube well	109	27.3
supply water	40	10.0
electric motor/pump water	164	41.0
Filter water	87	21.7
Total	400	100.0
Source of drinking water	Frequency	Per cent
tube well	135	33.7
supply water	20	5.0
electric motor/pump water	139	34.7
Filter water	106	26.7
Total	400	100.0
Source of bathing water	Frequency	Per cent
tube well	143	35.7
supply water	77	19.3
electric motor/pump water	180	45.0
Filter water	0	0.0
Total	400	100.0

The use of toilets differs in different slums (see table 12) like 39 percent of household use sanitary toilets while in 39.7 percent of houses pit toilets is used and in 21.3 percent of household hanging toilets is used. The average number of household per toilet was estimated as 4.71, this is because there was only one toilet in each house.

Table 12: Percentage distribution of HH by sanitation facility

Type of toilet	Frequency	Per cent
sanitary toilet	156	39.0
pit toilet	159	39.7
hanging toilet	85	21.3
Total	400	100.0
Average number of HH per toilet	4.71	

It is evident from table 13 that about 57 percent of household dispose their garbage in some fixed place in the slums while 21 percent of house hold used city corporation dustbins for their garbage disposal only 13 percent of garbage is collected by garbage man from the slums houses while 9 percent of households had no fix place for disposal of their garbage.

Table 13: Percentage distribution of HH by garbage disposal

Garbage disposal	Frequency	Per cent
City corporation dustbin	84	21.0
Fixed place in slum	228	57.0
No fixed place	36	9.0
Pot inside house cleaned by garbage man	52	13.0
Total	400	100.0

About half (50 percent) of the household have 2 rooms for living and 26 percent of the household have 1 room for living this is because most of the houses were 2 or 3 Marla. While 24 percent of houses had 3-5 rooms (see table 14).

Table 14: Percentage distribution of reproductive women by Number of living rooms

Number of living room	Frequency	Per cent
1 room	104	26.0
2 room	200	50.0
3-5 room	96	24.0
Total	400	100.0

4.2.4 Access to Health Care and Health Care Seeking Behavior of Reproductive Women in Slums of Islamabad

This subsection shows the health care seeking behavior and access to maternal health care of slum-dwellers in Islamabad.

The number of health workers visit record is very low in slum areas i.e. only 4 percent of health workers visit to home are reported by the respondent during the survey (see table 15). Moreover, the respondents were not aware of the reasons for such negligible visits to home while some told the reason is backward area and so they give us less attention. Moreover, table 15 shows that the health workers mostly discuss the topics including family planning, healthy life style and necessity of vaccines for pregnant women while advice of common illness and children topics were also discussed.

Table 15: Percentage distribution of HH by visits of health worker and topics discussed

Home visits from a health worker?	Frequency	Per cent
Yes	16	4.0
No	384	96.0
Total	400	100.0
Topics discussed during the visits	Frequency	Per cent
Family planning	2	.5
Healthy life-style (using clean water for drinking	2	.5
Advice for common illness	1	.25
Necessity of vaccines for pregnant women	3	.75
Children	4	1
Diet and nutrition	4	1
Total	16	4.0
Missing System	384	96.0
Total	400	100.0

Regarding reproductive women by reasons for choosing health facility, about 25 percent of the women report that they utilize the health facilities on the basis of good health services availability, while 24.3 percent of the women choose to use health facilities on the basis of less cost and 20.3 percent of women choose health facilities because of nearness of the facilities while 13 percent was because of the availability of qualified doctors.

Table 16: Percentage distribution of reproductive women by reasons for choosing health facility

Reasons for choosing health facility	Frequency	Per cent
Nearness of the facility	81	20.3
Service providers are cordial	18	4.3
Good service available	100	25.0
Short waiting time	19	4.7
Qualified doctors available	52	13.0
Low fees/low treatment cost	97	24.3
Confidentiality is maintained	16	4.0
Do not know where else to go	17	4.3
Total	400	100.0

It is evident from table 17 that about 82.7 percent of the women were satisfied from the health facilities, the main reason of satisfaction was that majority of the women were using government hospitals where treatment cost is very low along with the nearness of the hospitals.

Table 17: Percentage distribution of reproductive women by satisfaction from health service

Satisfied with service from health facilities	Frequency	Per cent
Yes	331	82.7
No	69	17.3
Total	400	100.0

Where only 17.3 percent of the women (see table 18) were not satisfied from the health facilities because of long waiting times (4.3 percent), lack of privacy (4.3 percent) and no response were (8.7 percent) unavailability of doctors.

Table 18: Percentage distribution of reproductive women by reasons for dissatisfaction

Reason for dissatisfaction	Frequency	Per cent
Lack of privacy	17	4.3
Long waiting time	18	4.3
No response	35	8.7
Total	70	17.3
Missing System	330	82.7
Total	400	100.0

The table 21 reveals that there were total 79.1 percent of women who never experience pregnancy loss while 20.9 percent of women experience pregnancy loss.

Table 21: Percentage distribution of reproductive women by pregnancy loss

pregnancy loss	Frequency	Per cent
Yes	78	20.9
No	322	79.1
Total	400	100.0

Only 13 percent of women (see table 20) were aware from the pregnancy complications before the delivery of their 1st birth while 87 percent of women are not aware from the pregnancy complications. 17.3 percent of the women (see table 19) are familiar with the dangerous signs of pregnancy, while 82.7 percent of the women had poor knowledge about pregnancy complications.

Table 19: %age distⁿ of reproductive women by knowledge about danger signs of pregnancy

Knowledge about danger sign of pregnancy	Frequency	Per cent
better knowledge	71	17.3
poor knowledge	329	82.7
Total	400	100.0

Table 20: %age distⁿ of reproductive women by knowledge about pregnancy complications

knowledge about pregnancy complications	Frequency	Per cent
Yes	52	13.0
No	348	87.0
Total	400	100.0

Regarding place of delivery (see table 22), 37 percent of the women give birth in government hospitals and 24 percent of women go to private hospitals and clinics, while 30 percent of the women deliver child in their own residence with the help of area obstetrician, there is a risk of delivering child in own residence because they do not have the required equipment and tools.

Table 22: %age distribution of reproductive women by Place of delivery after coming to slum

Place of delivery after coming to slum	Frequency	Per cent
Govt. hospital	148	37.0
Private hospital/clinic	96	24.0
Own residence	120	30.0
Total	364	91.0
Missing System	36	9.0
Total	400	100.0

Most of the home deliveries (20 percent) was take place with the help of household/relative and 4.3 percent deliveries takes place through quack and 5.8 percent of deliveries takes place without any assistance (see table 23).

Table 23: Percentage distribution of reproductive women by Home delivery assisted by

Home delivery assisted by	Frequency	Per cent
Quack (A doctor of questionable ability and reputation)	17	4.3
HH member/relative/neighbour	80	20.0
Without any assistance	23	5.8
Total	120	30.0
Missing System	280	70.0
Total	400	100.0

Table 24 shows that most of the reproductive women (41.4 percent) visit to health care centre for antenatal care more than 4 times followed by 24 percent of women who had 4 time visit to health care centre for antenatal care while 17.3 percent of women had 3 time visit for antenatal care and 17.3 percent of women had no visits for antennal care.

Table 24: Percentage distribution of reproductive women by No of ANC visits

No of ANC visits	Frequency	Per cent
3 times	69	17.3
4 times	96	24.0
> 4 times	166	41.4
Total	331	82.7
Missing System	69	17.3
Total	400	100.0

Out of 17 percent, 13 percent (see table 25) did not seeking antenatal care because of religious barriers/superstition, most of the women said that we cannot be examined by male doctors, while 4.3 percent of women had no need of antennal care.

Table 25: Percentage distribution of reproductive women by reasons for No ANC visits

Reasons for no ANC	Frequency	Per cent
Religious barrier/superstition	52	13.0
Not needed	17	4.3
Total	69	17.3
Missing System	331	82.7
	400	100.0

Regarding tetanus (TT) injection 58 percent of women receive it during their pregnancies, while 34 percent of women did not (see table 26). The reasons they give for no tetanus injection ranges from no spare time for tetanus injection was no need of injection.

Table 26: %age distⁿ of reproductive women by reception of TT injection during pregnancy

Reception of TT injection during pregnancy	Frequency	Per cent
Yes	232	58.0
No	136	34.0
Total	368	92.0
Missing System	32	8.0
Total	400	100.0

Post-natal care is not received by about 35.7 percent of the women as table 27 reveal while 64.3 percent of the women did seek for the postnatal care.

Table 27: Percentage distribution of reproductive women by receiving PNC

Receiving post-natal care	Frequency	Per cent
No	143	35.7
Yes	257	64.3
Total	400	100.0

41.8 percent of the women in slum went to Government Polyclinic hospital (see table 28) because it is close to them plus they were satisfied from the treatment and checkup of polyclinic hospital, while 4.3 percent of women visit to PIMS hospital.

Table 28: Percentage distribution of reproductive women by Source of PNC

Source of PNC	Frequency	Per cent
PIMS Hospital	17	4.3
Govt. Polyclinic Hospital	167	41.8
Private hospital/clinic/nursing home	73	18.3
Total	257	64.3
Missing System	143	35.8
Total	400	100.0

Only 18.3 percent of the women went to private clinics for healthcare. The obvious reason for low use of the private clinics is its expensiveness which most of slum dweller cannot afford. As can be seen from table 29, 23.2 percent reproductive women say that they do not need of postnatal care while 5.8 percent did not seek post-natal care because of religious barriers; they said that our husbands did not allow to get treatment from male doctors.

Table 29: Percentage distribution of reproductive women by Reasons for no PNC

Reasons for no PNC	Frequency	Per cent
To travel a long distance for PNC	17	4.3
PNC was expensive	10	2.5
Religious barrier/superstition	23	5.8
Not needed	93	23.2
Total	143	35.7
Missing System	257	73.3
Total	400	100.0

4.2.5 Bivariate Analysis of postnatal care and its determinants variables

The association between post-natal care and its determinants are given in tables from 30 to 39 below. The table 30 reveal that most of the women (84) who receive post-natal care fall in the age group (32-39) while only 10 women in the age group (15-23) receive post-natal care. Similarly, most of the women who do not receive post-natal care also fall in the age group (32-39). The table 30 also shows that most (249) of the women out of 400 did not receive post-natal care while the rest (151) receive post-natal care.

Table 30: Association between age and receiving post-natal care

	15-23	24-31	32-39	40-49	Total
yes	10	40	84	17	151
no	61	68	80	40	249
Total	71	108	164	57	400

Regarding education it can be seen from table 31 that 61 women who's education level is bachelor receive post-natal care while those who are illiterate or education up to metric are 23. Most (104) of the women in the reproductive age who's education are intermediate did not receive post-natal care.

Table 31: Association between education level and receiving post-natal care

	illiterate	up to metric	Intermediate	Bachelor	master	Total
yes	23	23	44	61	0	151
no	17	0	104	82	46	249
Total	78	23	148	105	46	400

Less (17) women who are the head of the household receive post-natal care while those who are not the head of the household and receive post-natal care are 134. Similarly, 169 women in the reproductive age and are not the head of the household do not receive post-natal care.

Table 32: Association between household Head and receiving post-natal care

	yes	No	Total
yes	17	134	151
no	80	169	249
Total	97	303	400

Post-natal care are receive more by unemployed (77) women in reproductive age than employed (74). Similarly, those who do not receive post-natal are more belongs to unemployed category as compare to employed women.

Table 33: Association between employment status and receiving post-natal care

	Employed	Unemployed	Total
Yes	74	77	151
No	99	150	249
Total	173	227	400

Table 34 shows that those women in the reproductive age who experience previous pregnancy loss are less to receive post-natal care than those who do not receive post-natal care. Similar is the trend for those women who do not experience previous pregnancy loss.

Table 34: Association between pregnancy loss and receiving post-natal care

	yes	No	Total
yes	27	124	151
no	57	192	249
Total	84	316	400

This is much unexpected results given in table 35, where very less women (17) who have knowledge about pregnancy complications receive post-natal care as opposed to those who have no knowledge of pregnancy complications. The same pattern could be seen for those who do not receive post-natal care.

Table 35: Association between Knowledge about pregnancy complications and receiving post-natal care

	yes	No	Total
Y	17	134	151
e	46	203	249
no			
Total	63	337	400

Women in the reproductive age belongs to family size of 5-7 are more to receive post-natal care and similar is the case for those who do not receive post-natal care.

Table 36: Association between family size and receiving post-natal care

	1-4	5-7	above 7	Total
Y S	33	101	17	151
e	95	154	0	249
no				
Total	128	255	17	400

The association between post-natal care and average income per month are shown in table 37, where more women (95) in the reproductive age whose average income are in the range of (14001-30000) receive post-natal care. There are 145 women in the reproductive age who do not receive post-natal care fall in the income range of less than 14000.

Table 37: Association between average income per month and receiving post-natal care

	14000	14001-30000	30001-45000	45001-60000	Total
Yes	33	95	23	0	151
No	145	58	23	23	249
Total	178	153	46	23	400

Among those women who do not receive post-natal care, 87 have no treatment cost while 107 who receive post-natal care fall in the treatment cost range of 2000-4999. Most of the women (104) in the reproductive age fall in the no cost range.

Table 38: Association between Treatment cost and receiving post-natal care

	no cost	<1000	1000-1999	2000-4999	5000 and above	could not remember	Total
Yes	17	10	17	107	0	0	151
no	87	36	57	23	23	23	249
Total	104	46	74	130	23	23	400

The association between home visit by health workers and receiving post-natal care is given in table 39. 95 out of 151 are those who receive post-natal care along with lady health worker visit to their home.

Table 39: Association between home visits by health worker and receiving post-natal care

	yes	No	Total
Yes	95	55	151
No	118	131	249
Total	213	186	382

4.2.5 Bivariate Analysis of prenatal care and its determinants

The association between prenatal care and its determinants are provided in tables from 40 to 49. Regarding age it could be noted from table 40 that age and receiving pre-natal care are about equally distributed with one exception for the age group of 32-39. Similar, is the case for those women who do not receive prenatal care. Most of the women in the reproductive age group fall in the age group of 32-39.

Table 40: Association between age and receiving post-natal care

	15-23	24-31	32-39	40-49	Total
Yes	48	67	94	41	250
No	23	41	70	16	150
Total	71	108	164	57	400

Those women in the reproductive age who have intermediate level education are highest in the number in both receiving and not receiving prenatal care, which is followed by bachelor and then illiterate.

Table 41: Association between education level and receiving post-natal care

	illiterate	up to metric	intermediate	bachelor	Master	Total
Yes	40	10	98	73	29	250
No	38	13	50	32	17	150
Total	78	23	148	105	46	400

Those who are the head of the household but did not receive prenatal care are 195 out of 250. Those who are not the head of the household nor receive prenatal care are 108.

Table 42: Association between household head and receiving post-natal care

	Yes	No	Total
Yes	55	195	250
No	42	108	150
Total	97	303	400

Receiving prenatal care and unemployed are 162 out of total of 250 and unemployed but not receiving prenatal care are 65 out of 150. Table 43: Association between employment status and receiving post-natal care

	Employed	Unemployed	Total
Yes	88	162	250
No	85	65	150
Total	173	227	400

Those who do not experience previous pregnancy loss but receive prenatal care are 207 out of 250 and 109 out of 150 who do not receive prenatal care. Those who do not experience pregnancy loss are higher (316) than those who experience (84) pregnancy loss.

Table 44: Association between Pregnancy loss and receiving post-natal care

	Yes	No	Total
Yes	43	207	250
No	41	109	150
Total	84	316	400

More of the women in the reproductive age (216) out of 250 do not have knowledge about pregnancy complications but receive prenatal care. And similarly, those who neither knowledge about pregnancy complications nor receive prenatal care are 121 out of 150.

Table 45: Association between knowledge about pregnancy complications and receiving post-natal care

	Yes	No	Total
Yes	34	216	250
No	29	121	150
Total	63	337	400

Most (170) of the women in the reproductive age who receive prenatal care belongs to household with family size of 5-7 while less (76) to family size of 1-4.

Table 46: Association between family size and receiving post-natal care

	1-4	5-7	above 7	Total
Yes	76	170	4	250
No	52	85	13	150
Total	128	255	17	400

Surprisingly more women (148) having less income (14000) receive prenatal care, while less women (19) having more income (45001-60000) receive prenatal care. The opposite trend could be seen for those who do not receive prenatal care.

Table 47: Association between average income per month and receiving post-natal care

	14000	14001-30000	30001-45000	45001-60000	Total
Yes	148	63	20	19	250
No	30	90	26	4	150
Total	178	153	46	23	400

Most of the women (90) in the reproductive age are those who receive pre-natal care and have no treatment cost. Among the total 150 women who did not receive pre-natal care 67 are those whose treatment cost lies in the range of 2000-4999. Also most of the women (130) in the reproductive age fall in this range.

Table 48: Association between treatment cost and receiving post-natal care	no cost	<1000	1000-1999	2000-4999	5000 and above	could not remember	Total
Yes	90	22	35	63	19	21	250
No	14	24	39	67	4	2	150
Total	104	46	74	130	23	23	400

The association between home visit by health workers and receiving pre-natal care is given in table 49. 170 out of 177 are those who receive pre-natal care but lady health worker did not visit to their home. In contrast 214 out of 223 who do not receive prenatal care, health worker also did not visit to their home.

Table 49: Association between home visits by health worker and receiving post-natal care

	Yes	No	Total
yes	7	170	177
no	9	214	223
Total	16	284	400

4.2.6 Evidence from Logistic Regression

In this section, the health seeking behavior (both ante natal and post-natal) of reproductive women are assessed by using multivariate logistic regression analysis. The application of the logistic regression is justified in the ground that it governs the probability of health seeking behavior of the reproductive women for the factors discussed earlier. As the estimation of the parameters through ordinary least squares (OLS)[2] is not categorical in case of binary dependent variable therefore, the study estimate the two models through logistic regression.

As this study aims to determine the likely impact of determinants on health seeking behavior of reproductive women, the results of the logistic regression show that how the socioeconomic and other factors influence the probability of maternal health seeking behavior in Islamabad. These results are presented in Table 50 and 51. The study measure the response of ante-natal care and post-natal care to one level change in independent variables. The researcher reports the coefficients of the model, odd ratio, significance level and confidence interval from logit regression results. The coefficients tell about the probability of health seeking behavior due to change in regressor. Similarly, the odd ratios are interpreted that as compare to reference[3] category how many times the probability or the odd of health seeking behavior (both ANC & PNC) is higher for the remaining categories. Table 50 and 51 demonstrate the results of the antenatal care and post-natal care, most of the coefficients are significant (all the p-values are equal to or less than 5 percent) having correct theoretical signs.

[2] Studenmund (2001) highlight that the OLS model can be rejected due to several reasons.
The probability of labour force participation rate should neither be negative nor greater than 1 which may happen in case of unrestricted OLS. Because of the likely heteroscedasticity in the error terms, the OLS estimates may be less efficient than the logit estimates. The parameters of the logit model are estimated through maximum likelihood (ML) which gives efficient and consistent parameters as opposed to OLS which gives inconsistent standard errors.

3 Reference or base category is that category to which we want to compare the remaining categories results. All RC in the results of logistic regressions represents reference category or base category.

Table 50: Multivariate logistic regression analysis results of ANC

	coefficient	Sig.	odd-ratio	95% C.I.for EXP(B)	
				Lower	Upper
Age					
(15-23)	1.66	0.00	1.23	0.07	0.61
(24-31)	1.87	0.00	3.14	0.08	0.20
(32-39)	0.98	0.10	1.32	0.01	0.79
(40-49)(RC)					
education level					
Illiterate (RC)					
Up to metric	2.46	0.09	1.28	0.50	0.54
Intermediate	0.23	0.02	5.74	0.20	0.94
Bachler	0.46	0.08	2.33		
Master	0.68	0.73	1.49	0.01	0.08
Household Head					
Yes	-4.33	0.00	1.01	0.52	0.81
No (RC)					
Employment Status					
Employed	2.08	0.07	1.46	0.73	1.98
Unemployed(RC)					
Previous Pregnancy loss					
Yes	3.23	0.00	1.50	0.01	0.12
No (RC)					
Knowledge about pregnancy complications					
Yes	4.15	0.04	1.47	0.04	0.12
No (RC)					
Family size					
1-4	1.41	0.01	3.71	0.04	1.40
5-7	3.24	0.00	1.94		
Above 7 (RC)					
Average income per month					
14000 (RC)					
14001-30000	2.75	0.00	2.68	0.01	0.24
30001-45000	2.17	0.03	1.81	0.50	0.51
45000-60000	1.89	0.21	3.17	0.32	0.82
Greater than 60000	3.12	0.09	1.53	0.25	0.40
Average cost of treatment					
No cost (RC)					
Less than 1000	0.87	0.15	1.12	0.72	8.03
1000-1999	-0.86	0.00	1.49	1.46	3.83
2000-4999	-0.57	0.02	2.68	0.34	0.93
5000 and above	-0.63	0.09	1.28	1.82	6.09
Could not remember	2.78	0.23	1.72	0.56	2.37
Home visit from health worker					
Yes	-8.19	0.00	2.85	2.31	13.53
No (RC)					
Constant	1.54	0.23	3.74	1.64	9.32

The positive sign associated with the coefficients of age, predict that young age reproductive women as compare to old age women are more likely to care for their health. Age has an important role in health seeking behavior, might be a symbol of experience and should carry the meaning of power and respect (Laila, 2006). Health seeking behavior of women with young age are positively and significantly associated with ante-natal but in case of post-natal care (see Table 51) the age group (24-31) and (32-39) are statistically insignificant. This significant association of young age women with ante-natal care shows that young age women are less experienced and therefore required more care and are more prone to health seeking behaviour as compare to old age women (the reference category).Similarly, the odd ratio for age variable mean that the probability of seeking prenatal care is 1.23, 3.14 and 1.32times high for young women in the age of (15-23, 24-31 and 32-39) respectively as compare to the base category (40-49). The rest of the odd ratios are interpreted in the same way. The education is having a positive effect on maternal health seeking behaviour. Table 50 reveals that those women who had education are positively and significantly associated with maternal health seeking behaviour as compare to those who do not have education (the reference category). Similarly, the educated women are more likely to go for post-natal care (see table 51) as compare to uneducated women. This show that education has a direct effect on post-natal care visits. The higher the education the more the chances to obtain post-natal care.

Table 51: Results of Multivariate logistic regression for PNC

	Coefficient	Sig.	Odd-ratio	95% C.I.for EXP(B)	
				Lower	Upper
Age					
(15-23)	1.56	0.00	2.47	0.07	0.61
(24-31)	2.34	1.32	5.03	0.08	0.20
(32-39)	3.21	1.74	1.38	0.50	0.79
(40-49) (RC)					
education level					
Illiterate (RC)					
Up to metric	2.46	0.00	8.36	0.01	0.50
Intermediate	0.23	0.01	2.17	0.00	3.94
Bachelor	0.68	0.07	1.17	0.00	28.02
Master	4.10	0.03	1.67		
Household Head					
Yes	-4.33	0.00	0.96	0.00	0.08
No (RC)					

Employment Status					
Employed	2.08	0.04	1.00	0.00	1.98
Unemployed (RC)					
Previous Pregnancy loss					
Yes	1.23	0.01	1.06	0.01	0.12
No (RC)					
Knowledge about pregnancy complications					
Yes	3.24	0.12	1.00	0.24	0.82
No (RC)					
Family size					
1-4	-1.41	0.11	3.49	0.04	1.40
5-7	-2.23	0.32	1.62	0.25	2.40
Above 7 (RC)					
Average income per month					
14000 (RC)					
14001-30000	2.17	0.03	1.89	0.50	13.51
30001-45000	2.31	0.01	2.04	0.56	1.07
45000-60000	2.65	0.00	2.24	1.45	1.62
Greater than 60000	1.23	0.09	1.65	1.23	1.87
Average cost of treatment					
No cost (RC)					
Less than 1000	-0.87	0.15	1.05	0.72	8.03
1000-1999	-0.07	0.06	1.53	0.58	1.96
2000-4999	-0.57	0.02	2.13	0.34	0.93
5000 and above	-1.36	0.05	0.18	0.03	1.70
Could not remember	0.37	0.71	2.15	0.31	0.96
Home visit from health worker					
Yes	-1.99	0.00	2.25	0.30	0.61
No (RC)					
Constant	4.70	0.53	1.39	0.02	0.25

Those reproductive women who are the head of their household has less chances to seek health care (both ante-natal and post-natal) because these women had less time to care of their health as well as they try to save money for other expenses of the house. Therefore, because of burden of responsibility and lack of enough resources they are less prone to health seeking behaviour in comparison to those who are not the head of their house.

Similarly, the employed women as opposed to unemployed are positively and significantly related with health seeking behavior both (ante-natal and post-natal) because employed women are more knowledgeable as well good health are necessary for their job career. Moreover, they are also independent in resources and can easily get healthcare services. Employed women are not restricted to their houses meaning that there

are no restriction on their visit to health centre without their male counterpart etc. Thus they are more cautious about their health as compare to unemployed along with they also enjoy the benefit of health insurance from their concerned department (organizations).

Regarding previous pregnancy loss, it is evident from table 50 and 51 that women who had previous pregnancy loss in comparison with those who do not have such experience are more likely to get health services. Previous pregnancy loss make women more sensitive to health seeking behavior as they do not want again a miscarriage and do not take risk again, they become health cautious because of their previous loss experience. Similarly, although those women who had knowledge about pregnancy complication are more prone to ante-natal care as compare to those women who had no knowledge about pregnancy complications. But the relation is insignificant in case of post-natal care. This insignificant relation might be because knowledge about pregnancy complications has nothing to do with post-natal care.

The size of family members has a direct significant effect on maternal health seeking behaviour (see table 50 and 51). The maternal health seeking behaviour (both ante-natal and post-natal) care is increases for the family member 1-4 as compare to more than 7 family members. The smaller the family size the keener are the reproductive women get health services. The higher chances of health care for the reproductive women belongs to smaller family size is might be due to time availability, because the reproductive women belong to larger family size has more responsibility on their shoulder as well as they have lesser resources left to spent on health care.

Income is an important factor in determination of health seeking behavior. Because higher income means the women's in the reproductive age can get access to better health services. In household matters monthly income play very crucial role. Status and living standard are measure through higher income. Higher the household income high will be the probability of getting health services (in our case ante-natal and post-natal care). That is why we have positive sign with the coefficient of income of the household (see Table 50 and 51) that family's high household income has more chances of seeking for health care as compared to those have less household income. The households in the income group of 14000 and above more likely

to visit health centers to get health services as compare to those whose average monthly income is less than 14000.

Regarding treatment cost, table 50 and 51 shows that maternal health seeking behavior is negatively associated with higher treatment cost in case of both ante-natal and post-natal care as compare to those who have no treatment cost. The visit of the lady health workers is very crucial variable in determining health seeking behaviour of the reproductive women. The awareness regarding health care through lady health worker is the most effective way that educate the reproductive women to get health services. This is evident from table 50 and 51 that lady health worker visit is negatively associated with health seeking behaviour of the reproductive women. This is very unexpected results and might be because of low visit (4 percent) of the lady health workers.

CHAPTER5

Limitations, Conclusions and Policy Outcomes

5.1. Limitations of the study

Our study findings is not free of limitation and probably the ease of these limitations along with certain other extensions might improve the study results. Although this study include the income and expenditure variables, but did not construct the wealth index variable which is also an important variable of determining health seeking behavior and utilization. One broader limitation of the study is that, the results cannot be generalize to the whole population of Pakistan because the sample were limited only to the women in reproductive age living in slums of Islamabad. A sample from slums in Islamabad is not a representative sample of the whole Pakistan. The study is unable to explain causality and trends over the time because of the study variables is only at a point in time. The study is not based on longitudinal survey design rather than it is a survey research on maternal health seeking behavior. The study cover women only in the reproductive age (15-49) and therefore the results cannot be generalized beyond this range.

5.2. Conclusions

This study is an effort to explore and bring into discussion the maternal health issues of the reproductive women in slums of Islamabad. For this purpose, the investigation carried out in this study is based on pre-design questionnaire for women in reproductive age of 15-49. The questions were design in such a way to address the issues comprises of socioeconomic, income and spending, housing environment and health seeking behaviour. The major outcomes of the study are as follows:

Results found that most of the reproductive women has low level of education along with high unemployed rate. The high pregnancy loss of 20.9% might be due to poor knowledge on pregnancy complications and its dangerous signs. The health care utilization by women in the reproductive age measured by ANC were higher than measured by PNC.The major reasons behind low utilization of ANC and PNC was low income of the household, large family size, low education level of women, less awareness about ANC and PNC along with rare knowledge about pregnancy complications, cultural barriers and low health worker visits

among others. Houses are mostly occupied by the slum dwellers with average size of around 3 to 4 Marla's having 2 to 3 living rooms. About all the houses had kuccha dwelling material and the major water source (from cooking to bathing) is tube well. Most of the slum-dwellers uses pit toilet in their houses and garbage are disposed at fixed place in slum. Government Polyclinic was identified as the major source of healthcare services of the slum dwellers because of its low treatment cost. Responses showed that lady health worker did not visit their homes and delivery was taken place mostly in government hospitals. The multivariate logistic regression results show that income level, household head, employment status, previous pregnancy loss, Knowledge about pregnancy complications, treatment cost, lady health workers visit, level of education, age and family size are the factors that influence maternal health seeking behavior (both ANC & PNC).

5.3 Recommendations

The maternal healthcare utilization can be increased by reducing health treatment costs, and intervention to aware the reproductive women about benefits of ANC and PNC visits. These awareness includes knowledge about pregnancy complications, dangerous signs of pregnancy and family planning. The female attendants at door step to reproductive women can reduce the cultural barriers, because 13 percent of women did not seek health care because of cultural barriers, most of the home deliveries are attended by unskilled attendant with less equipment tools.

- Strengthening the public health service delivery. The findings of this study reveal that women are more likely to go to public hospitals because of low cost treatment. Improving quality, access, deployment of professional midwives and primary birth attendant are pre-requisite for strengthening the public health delivery services.
- Access to safe and clean drinking water through filters
- Increases the health workers home visits to educate the reproductive women concerning their health issues i.e. pregnancy complications, dangerous signs of pregnancy and family planning among others.
- It is maintained that equity, skilled birth attendant and home visit by the health worker to educate women in reproductive about maternal issues is pivotal for reduction of morbidity and mortality along with to achieve the maternal and child health related SDGs. Therefore, it is the need of the time for the women in the reproductive age in Pakistan and specifically in slums of Islamabad to have full access to skilled care services. These services must also be delivered in a way which is culturally responsive, sensitive socially and appropriate medically.
- Improve waste collection and disposal process, because slum areas had high exposure to environmental hazards.

5.4. Future Research:

Future research and extension of this study is based on relaxing the limitations of the study. First study findings can be improved by constructing wealth index of the women in the reproductive age because wealth index is a significant variable of maternal health seeking behavior and utilization. The most important extension of the study is in the direction of analysis of maternal health seeking behavior through multinomial logistic regression by increasing one level more of the dependent variable i.e. safe delivery. One could also measure the income inequality within the slums of Islamabad by including more relevant variables of income and expenditure. The study could be generalizing to more cities and beyond the range of women in reproductive age by including suitable representative sample. In order to explain causality and trends over time one needs to collect data from same population and reassess the results.

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ANNEXURE 1: Draft of Questionnaire for survey data collection in this study

Sector: ……...

Sector: ……...

1). **Area**. ……..

2). **Name of Respondent**: _____

Individual determinants

1. **What is your age?**

15-23

24-31

32-39

40-49

2. **What's is your education?**

Illiterate

Up to Metric

Intermediate

Bachelor

Masters

3. **Are you the head of your house?**

1. Yes
2. No

4. **Are you employed?**

1. Employed
2. Not employed (skip to next section)

5. Occupation if Employed

1. Elementary
2. Plant and machine operators, and assemblers
3. Craft and related trades workers
4. Skilled agricultural, forestry and fishery workers
5. Service and sales workers
6. Clerical support workers
7. Technicians and associate professionals
8. Professionals
9. Managers
10. Self Employed (specify business) _____
11. Any other ……. [please specify]

6. Do you have previous pregnancy loss?

Yes

No

7. Do you have knowledge about pregnancy complications?

Yes

NO

8. Do you have knowledge on danger signs of pregnancy?

Better knowledge

Poor knowledge

Measurement of health care behaviour (dependent variables)

Antenatal care is measured by an index of (at least three)

9. Blood test during pregnancy

Yes

No

10. Tetanus injections

Yes

No

11. Urine tests

Yes

No

12. Iron tablets intake

Yes

No

Receiving postnatal care (Yes/No)

13. Did you obtained postnatal care from any trained healthcare worker within 42 days of delivery?

Yes

No

Household Variables

14. Family size

1-4

5-7

Above 7

15. How many members of household are employed:

No member employed

1-2 members employed

2-3 members employed

3-4 members employed

Above 4 members employed

16. **Average income of household per month (PKR in thousands):**

Less than 14,000

14,001 to 30,000

30,001 to 45,000

45,001 to 60,000

Greater than 60,000

17. **House ownership status**

Owned

Rented

Shared

Any other ……. (please specify)

Rent. ……(if Hired)……(imputed)

18. **Number of Living rooms**

1 Room

2 Rooms

3-5 Rooms

Above 5 rooms

19. **You are living in which type of house?**

Flat (in buildings)

Apartment (some housing societies e.g., DHA etc.)

House

Quarter

Other (specify):

20. Size (Area) of your house

Yards ……

Marla(s)…….

21. What is the dwelling materials of your house

Kucha

Pucca

22. What is the main wall materials of your house?

sack/polythene

Fence

CI sheet (Steel)

Brick wall

CI sheet + brick wall

23. What is the main roof materials of your house?

Polythene + fence

CI sheet

Brick+rod+cement

24. What is your source of drinking water?

Tube well

supply water

Electric motor/ pump water collected through tube well

Filter water

Others

25. What is your source of cooking water?

Tube well

supply water

Electric motor/ pump water collected through tube well

Filter water

Others

26. What is your source of bathing water?

Tube well

supply water

Electric motor/ pump water collected through tube well

Filter water

Others

27. What type of toilet you use?

Sanitary toilet

Pit latrine

Hanging toilet

Other…..

28. Average number of household per toilet

Write the number ……

29. What is the mean of garbage disposal?

City corporation dustbin

Fixed place in slum

No fixed place

Pot inside house cleaned by garbage man

Other

30. Which source you use for healthcare services?

PIMS

Government polyclinic hospital

Private hospital/clinic/nursing home

NGO clinic

Qualified doctor's chamber

Quack/homeopath/herbal/

Consulting a pharmacist at a drug store

Self-medication

Other

31. What was the cost of health care services?

No cost

Rs. <1000

Rs. 1000-1999

Rs. 2000-4999

Rs. 5000 or more

Could not remember

32. Reason(s) for choosing the particular healthcare facility?

Nearness of the facility

Service providers are cordial

Good service available

Short waiting time

Qualified doctors available

Low fees/low treatment cost

Good waiting arrangement

Confidentiality is maintained

Do not know where else to go

Medicine is also available

Availability of diagnostics services

Others

33. Are you satisfied from the healthcare facility you obtained?

Yes

No

34. Why if not satisfied?

Reason for dissatisfaction

Not cured/ineffective service

Negative side-effects of treatment

Treatment expensive

No cordial/sincere care

Had to go other places for diagnosis

Medicine not available/inadequate

Others

35. Does any health worker visit your home?

Yes

No

36. If visit what issues was discussed?

Family planning

Healthy life-style (using clean water for drinking

Advice for common illness

Necessity of vaccines for pregnant women

Children

Diet and nutrition

Others

No response

37. How many time you visit for ANC during last pregnancy?

Once

twice

3 times

4 times

>4 times

No ANC received

38. Why if no ANC visits?

Bad behavior of staff

Lack of privacy

Long waiting time

Religious barrier/superstition

Not needed

Others

Non response

39. TT injections during pregnancy?

Yes

No

40. What was your place of delivery?

Government Hospital

Private Hospital/clinic

NGO clinic

Own Residence

41. Who assist you in your home delivery?

Qualified doctor

Qualified Nurse/Midwife/Paramedic

Trained traditional birth attendant

Untrained traditional birth attendant

Quack (A doctor of questionable ability and reputation)

NGO worker

42. HH member/relative/neighbor Without any assistance What was the source of your PNC?

PIMS Hospital

Govt. Polyclinic Hospital

Private hospital/clinic/nursing home

NGO clinic

Qualified doctor's chamber

Quack/homeopath/herbal/

Pharmacist at a drug store

Self-medication

43. Did not seek PNC **Reason(s) for seeking no PNC**

Insufficient care

To travel a long distance for PNC

Long waiting time

PNC was expensive

Religious barrier/superstition

Not needed

Other

Did not cite any reason