



***ASSESSING MATERNAL HEALTH
AND
CATASTROPHIC EXPENDITURE***

(Evidence from Logar, Kabul, Wardak, Nangrahar and Kapisa, Afghanistan)

By:

Abdul Majeed Stanikzai

A Thesis

**Presented to the MA Program
of the OSCE Academy in Bishkek**

**in Partial Fulfillment of the Requirements for the Degree of
Master of Economic Governance and Development**

November 2019

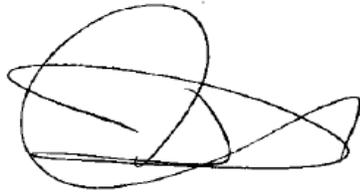
Certificate of Approval

I certify that I have read Assessing Maternal Health Catastrophic and Expenditure by Abdul Majeed Stanikzai, and that in my opinion this work meets the criteria for approving a thesis submitted in partial fulfillment of the requirement for the BSc Economics at the Institute of Management Sciences, Peshawar.

Supervisor

Name: David Grant

Designation: Professor

A handwritten signature in black ink, consisting of several overlapping loops and a long horizontal stroke extending to the right.

Signature: _____

DECLARATION

I hereby declare that the research submitted to OSCE Academy Bishkek is my own original work. I am aware of the fact that in case my work is found to be plagiarized or not genuine, OSCE Academy has full authority to cancel my research work and I am liable to penal action.

Student Name: Abdul Majeed Stanikzai

Date: November 18, 2019

Dedication

I humbly dedicate this research work to My Parents, My Wife, my supervisor, and my Teachers specially Professor Nazgul Jenish as they have shown me the way of enlightenment and enabled me to obtain my MA. Economic Governance and Development Degree that will pave the path to my future success.

Student Name: Abdul Majeed

Date: November 18, 2019

Acknowledgement

First of all, I want to thank Almighty Allah who gave me the courage to work on this research. This research would not have been possible without the munificent guidance and Infinite grace of Allah the merciful and beneficent.

Secondly, my special thanks go to all the faculty members of the OSCE Academy especially to those who remained my instructors and have a hand in assisting me to reach this stage. My thanks are extended to the OSCE Academy and its employees for their valuable guidance and support. Most importantly, I thank my research supervisor and instructor Professor David Grant and Nazgul Jenish, respected from the bottom of my heart, who have been influential figure in the completion and preparation of this report. Their encouragement, guidance and support from the initial to the final stage enabled me to develop an understanding of the project.

Meanwhile, I would like to offer my thanks and appreciation to my parents, wife, friends and classmates whose prayers and support helped my success and enabled me to complete my assigned task. They are worth to mention here for strengthening my hand and helping me throughout the academic years with their advice and encouragement.

Lastly, I offer my regards and blessing to all of those who supported and helped me in any respect during the completion of the project, especially the families and female trainers in five provinces in Afghanistan for their time in filling the questionnaires. I am thankful to all those who generously contributed their knowledge and expertise. Without their help, this work would have never been possible.

Preface

As a compulsory requirement of MA. Economic Governance and Development, I selected to write a research report focusing on Assessing Maternal Health and Catastrophic “A study conducted in five provinces Logar, Kabul, Nangrahar, Kapisa, and Wardak, in Afghanistan”, to fulfill the subject requirement.

Catastrophic expenditure has emerged as one of the most dominant areas in health economics. As the student of health economics trying to understand the particulars of the quality health system, numerous aspects of the health have come to the front. A leading phenomenon among them is that of Maternal Health and Catastrophic Expenditure which has reflective consequences for the health care system and how the households view and cope with it. The level of catastrophe in households dictates the attitudes towards the health condition that household have and by extension their healthcare and productivity.

The main theme of this research is Assessing Maternal Health and Catastrophic Expenditure to see its impact on food expenditure, education of the children, non-food expenditure and in short to see its impact on daily routine activities.

The reason for choosing five provinces in Afghanistan is that it is my home country and keeping in mind the current situation of Afghanistan I could access and collect data easily. Also, the phenomenon of Maternal Health and Catastrophic Expenditure has not been the subject of research work in Afghanistan focusing on Logar, Kabul, Kapisa, Nangrahar, and Wardak. Like many other phenomenon Maternal Health and Catastrophic Expenditure have been ignored. Besides a handful of research papers, nothing much has been written about the phenomenon in the context of Afghanistan. The research dealing with it in Afghanistan is limited to the work NGOs are doing and to my knowledge, no such study is conducted in Afghanistan which can Assess Maternal Health and Catastrophic Expenditure until now, which is the most important issue in a war-hit country to be addressed for making the female and the family healthy. I tried my best to cover up all the aspects of the research which is conducted in five provinces in Logar, Kabul, Kapisa, Nangrahar, and Wardak, Afghanistan for Assessing Maternal Health and Catastrophic Expenditure.

Abstract

Assessing maternal health in conflict zones has always been an area of interest for researchers around the globe. However, evidence from such settings have been scare due to unfavorable security conditions. This study aimed at looking into accessibility & utilization of maternal health care and out of pocket spending in five provinces including, Logar, Kabul, Wardak, Kapisa, and Nangrahar in Afghanistan. By using purposive sampling technique, the study adopted a cross sectional mixed methods research design to derive results using a semi structure questionnaire. Logistic model was used to analyze cost related to maternal health including average monthly expenditure, child medical cost, intervention needed before and after the birth of the child, and catastrophic expenditure. A total of 350 sample size was used for the descriptive and model analysis. The study revealed that out of the total number of households in all five provinces in Afghanistan, 40% suffered from health catastrophe particularly for lower socio-economic status groups and those with higher out of pocket spending. 64% of the respondents in all five provinces didn't have money on hand while visiting the doctor. Moreover, 38% of the respondents in five provinces had to use their saving, 18.86% of the respondents had to sell their livestock, 28.28% respondents borrowed from friends, land lords or relatives, whereas 13.43% of the respondents had to sell their land to cover the costs associated with utilization of maternal care. Around 33% of the respondents revealed that they never visited a doctor during pregnancy due to issues in accessibility and high cost of transportation and 10 % of the expecting mothers had still births due to unsuccessful delivery outcomes. Apart from the financial constraints, the qualitative component of the research revealed issues related to poor nutrition during pregnancy, lacking access to basic immunization for infants and better health care for infants and children during illness. The study suggests designing health care financing interventions with a focus on community-based health promotion and utilization programs to reduce the burden of out of pocket spending and improving the accessibility to maternal health care. Moreover, upgrading the existing health care facilities in the area will also help in improving the situation in the target area.

Key Words: Catastrophic Expenditures, Maternal health, Utilization patterns, Afghanistan.

Contents

Chapter 1.....	1
Introduction	1
1.1 What is catastrophic health expenditure and why it should be concerned?	1
1.2 When does catastrophic health expenditure occur?	2
1.3 Health system Financing	2
1.4 The importance of Maternal Health (Good Health and Wellbeing)	4
1.5 Research Statement	8
1.6 Scope of the study	8
1.7 Significance of the study	8
1.8 Objectives of the study	8
Chapter 2.....	9
Literature Review	9
Chapter 3.....	14
Research Methodology.....	14
3.1 Introduction.....	14
3.2 Research design	14
3.3 Study site:	14
3.3.1 Logar province:	14
3.3.2 Kabul province:.....	15
3.3.3 Kapisa province:.....	15
3.3.4 Wardak province:.....	16
3.3.5 Nangahar province:.....	16
3.4 Ethical Approval	17
3.5 Logistic model for the statistical analysis:	17
3.5.1 Description of independent variables:	18
3.6 Description of the Sample	19
3.7 Research instrument	20
3.8 Data collection instrument	21
3.9 Data collection procedure	21
3.10 Analytical tool.....	21

3.11 Conclusion	21
Chapter 4.....	22
Results & Discussion	22
4.1 Introduction.....	22
4.2 Result and Discussion.....	22
4.3 Section-A.....	22
4.3.1 Catastrophic Health Expenditure:	22
4.3.2 Average Age of Marriage:	24
4.3.3 Average Age of a female household in first Child.....	25
4.3.4 Female who worked for money	26
4.3.5 Household that lives Rural/Urban	27
4.3.6 Family Size.....	27
4.3.7 Number of Pregnancies	29
4.3.8 Outcomes of the Previous Delivery	31
4.3.9 Services Used for Previous Delivery.....	32
4.3.10 Family Type	35
4.3.11 Primary Source of Income.....	37
4.3.12 Awareness regarding cost associated with maternal health	40
4.3.13 Effect of cost associated with maternal health on daily expenditure	40
4.3.14 Availability of fund	43
4.3.15 Arrangement of Fund	43
4.3.16 Satisfaction level from the provision of healthcare.....	47
4.4 Section - B.....	47
4.4.1 Logistic Regression result.....	48
4.5 Section-C.....	52
4.5.1 Qualitative analysis	52
4.5.2 Themes derived from Qualitative analysis.....	53
4.5.3 Income constraint	53
4.5.4 Issues in accessibility	53
4.5.5 Dependency.....	53
4.5.6 Access to the health facility	54
4.5.7 Rigidity	54

4.5.8 Proper Nutrition:	54
4.5.9 Further Discussions on results	54
Chapter 5	57
Conclusion	57
5.1 Limitation of the Study:	58
5.2 Recommendations	59
5.3 Further Research Required	60
References	61
Questionnaire	65

Table of Figures

Figure 3.1 Sampling Framework

Figure 4.1 Catastrophic Health Expenditure

Figure 4.2 Average Age of Marriage

Figure 4.3 Average age of a Mother Having Frist Child.

Figure 4.4 Number of Female who work for money.

Figure 4.5 Average Family Size in five provinces

Figure 4.6 Average number of pregnancies of female member of the household who was interviewed in five provinces (Logar, Kabul, Wardak, Kapisa, and Nangrahar).

Figure 4.7 Percentage of unsuccessful deliveries in all five province and as well as individual provinces in Afghanistan.

Figure 4.8 Services used for maternal healthcare services by the female member of the household for Previous Delivery in all five provinces.

Figure 4.9 show the percentage of service used for previous delivery per province

Figure 4.10 Family Type

Figure 4.11 Family Type per province.

Figure 4.12 Primary Source of Income for all province.

Figure 4.13 illustrate Source of income per province

Figure 4.14 Effects on daily expenditure in all five provinces

Figure 4.15 illustrate percentage of source of income per province

Figure 4.16 illustrate percentage of fund management for all provinces.

Figure 4.17 illustrate percentage of fun management per province

Figure 4.18 Result of the STATA

Chapter 1 Introduction

1.1 What is catastrophic health expenditure and why it should be concerned?

According to Ke Xu et al, catastrophic health expenditure (CE) is not just simply caused by high cost of medical expenditure or intervention. Even a small payment can be named as catastrophic to a low-income household, which force them to reduce consumption on basic needs like, food, shelter or children's education. Similarly, for the high-income household large payments on health care can lead to bankruptcy and CE. Though there is not any specific threshold for CE, most of experts are agreed that CE should be measured in relation to a household's capacity to pay. Non-subsistence (food spending related with household taking the average food share in the total household spending in the country) of a household's health service is considered as capacity to pay. 40% of household's disposable income spending on health issue is considered as health CE. It is caused by out of pocket payments directly for health services received. The payments include consultation fees, laboratory tests and diagnostic expenses, medicine purchases and hospital bills¹. CE is a concerned for the health policy makers. Because they need to protect people from the financial disaster and poverty as the result of use of the health services.

Furthermore, according to The World Health Organization (WHO), it is important to increase the availability of health care services to every individual of the society. However, if receiving health care requires an individual to pay for their health care from out of pocket payment OOP where financial risk protections are missing, the household may be face financial burden or catastrophic payments. In order to avoid this CE, special care is required to vulnerable households. There is a need for an assistance scheme in order to provide financial risk protection².

¹ Ke Xu, Evans, Carrin, Aguilar-Rivera, Musgrove, "Protecting Households from Catastrophic Health Spending," *Health Affairs* Vo.26, No.24 (2007), <https://www.healthaffairs.org/doi/full/10.1377/hlthaff.26.4.972>,

² World Health Organization, "Health system improving performance," *World Health Organization Provincial Agenda item 3, A53/4, 2000* Accessed on 14th, April, 2019, http://apps.who.int/gb/archive/pdf_files/WHA53/ea4.pdf

1.2 When does catastrophic health expenditure occur?

Based on WHO report, there are three factors which lead a household to CE; healthcare service which require OOP payment; households with low capacity of paying for health services; and with the absence of prepayments (pooled money through taxes and insurance) for healthcare system. Taxes and insurance can protect households from some financial risks of ill health if the household or individual has access to health services which are partly funded via the tax or insurance when it is required³.

Furthermore, according to Jonathan Cylu, Sarah Thomson and Tamás Evetovits, CE can arise in countries in all stages of development. In some countries of Organization for Economic Co-operation and Development (OECD), for instance, to develop the healthcare system and financial risk pooling takes years. Although some country has well-developed financial risk safety, some people still faces catastrophic payments.⁴ In addition, in middle-income countries, where the health services has been developing fast, the expansion of financial risk protection is lagging behind⁵.

In general, according to Steven Buigut, Remare Ettarh and Djesika D Amendah, CE occurs when, payments for health services are large as compared to the household's income and consequently the household maybe pushed to poverty if they are not protected. Furthermore, the effect of large amount of financial loss for healthcare is more when the effected member of the household is the one who is sole earner of the family. In such cases the household is dragged into impoverishment and leads to equity concerns.⁶

1.3 Health system Financing

Healthcare system (HS) in any country comprises of individuals and operations whose main objective is to indorse and reinstate the health system. According to, Sharifa Ezat Wan Puteh and Yasmin Almuallm added that, HS...

³ ibid

⁴ Cylu Jonathan, Thomson Sarah and Evetovits Tamás, "Catastrophic health spending in Europe: equity and policy implications of different calculation methods," *Bullion of the World Health Organization*, 2018, accessed on 26th, 08,2019, <https://www.who.int/bulletin/volumes/96/9/18-209031.pdf>,

⁵ ibid

⁶ Buigut Steven, Ettarh Remare and Amendah Djesika D, "Catastrophic health expenditure and its determinant in Kenya slum communities," *International Journal for Equity in Health*, (2015) 14:46 DOI 10.1186/s12939-015-0168-9, accessed on 31st, 08, 2019, <https://equityhealthj.biomedcentral.com/track/pdf/10.1186/s12939-015-0168-9>,

“Includes efforts to influence determinants of health as well as more direct health-improving activities. A successful health system is a one that responds to its population needs through improving the health status of individuals and communities, protect the population against health threats, guard the people from catastrophic health expenditure, have equitable access to healthcare and allow people to make decisions that affect their health”.⁷

The main purpose of every HS is to add more to the quality healthcare, health fairness, and to use the scarce resources adequately. In addition, there are other goals of HS which to expand and quality access to the HS without compromising the quantity, quality and safety of the HS.

The term universal health coverage is explained by WHO, that every individual has full access to quality healthcare services to prevent, cure and rehabilitate healthcare whenever it is needed with affordable price. This also refer to the situation where people pay according to their willingness to pay irrespective for people fall ill. This implies that, financing for HS must be paid in advance and collective finance contribution and without paying for healthcare at the time of acquiring healthcare services⁸.

Inadequate healthcare policy makes people acquire healthcare only when they need it. Furthermore, poor healthcare policy also leads to charge fees at the counter for healthcare services, every individual pays the same amount irrespective of their level of income. Moreover, according to, Sharifa Ezat Wan Puteh and Yasmin Almuallm, the provision of the HS to the general public is done through four main categories. First, Government-funded, government fund the HS in every country through taxes collected from the household, businesses and taxes gathered from the provision of the governmental services. Second, social insurance, which is funded by the payroll, taxes and/ or direct contribution. Third, OOP payment, payments which are not covered by the insurance or government and people pay it to the healthcare services at the time of

⁷ Wan Puteh and Almuallm Yasmin, “Catastrophic Health Expenditure among Developing countries,” *Health Systems and Policy Research*, 2017, 4:1, doi:10.21767/2254-9137,100069, accessed on 26th, 08, 2019, <http://www.hsprj.com/health-maintanance/catastrophic-health-expenditure-among-developing-countries.php?aid=18514>

⁸ World Health Organization, “What is Universal Health Coverage,” December, 2014, accessed on 26th, 08, 2019, https://www.who.int/features/qa/universal_health_coverage/en/,

visiting the doctor. Fourth, private insurance, based on the different packages which are provided to their customers covers the full or partial requirement of their beneficiaries. In countries around the globe their HS depends on their economic situation⁹. Many poor people suffer CE since they do not have health insurance and all services are charges. While on the other hand, countries with poor economy with high inflation, unemployment and uncertainties, their HS is also poor and cannot satisfy the needs of their population. And the poor the economy of a country the more people are spend out of their pocket.

1.4 The importance of Maternal Health (Good Health and Wellbeing)

An individual's health condition at any point of life can affect different other stages of life and affect the coming generations as well. According to WHO, "Women who remain healthy during pregnancy and after birth are more likely to stay healthy later in life and have better birth outcomes, influencing infancy, childhood and adulthood."¹⁰ That is why the health condition of a women at any stage of life is important to society, and to the country and mother's health is also considered to be essential for the Sustainable Development Goals (SDGs). Therefore, it is very important in every sector and policy makers eliminate any kind of hurdles for a quality healthcare of a women and a mother.

Based on SDGs 3.1 and 3.2,

"By 2030, reduce the global maternal mortality ratio to less than 70 per 100 000 live births. **3.2** By 2030, end preventable deaths of newborns and children under 5 years of age, with all countries aiming to reduce neonatal mortality to at least as low as 12 per 1000 live births and under-5 mortality to at least as low as 25 per 1000 live births."¹¹

⁹ ibid

¹⁰ World Health Organization (WHO), "Fact sheets on sustainable development goals: health targets Maternal health," *World Health Organization Regional Office for Europe*, 2017, accessed on 3rd, 09, 2019, http://www.euro.who.int/_data/assets/pdf_file/0006/354921/3.1-SDG-Fact-sheet-Maternal-Health.pdf?ua=1,

¹¹ World Health Organization, "SDG 3: Ensure healthy lives and promote wellbeing for all at all ages," *Sustainable Development Goals*, accessed on 4th, 09,2019, <https://www.who.int/sdg/targets/en/>,

During the pregnancy mothers need continuous care in order to ensure that, their pregnancy, child birth, child health, and most importantly mother's health, do not face any complications. According to WHO report,

“Every day, approximately 830 women die from preventable causes related to pregnancy and childbirth. 99% of all maternal deaths occur in developing countries. Maternal mortality is higher in women living in rural areas and among poorer communities. Young adolescents face a higher risk of complications and death as a result of pregnancy than other women. Skilled care before, during and after childbirth can save the lives of women and newborn babies. Between 1990 and 2015, maternal mortality worldwide dropped by about 44%. Between 2016 and 2030, as part of the Sustainable Development Goals, the target is to reduce the global maternal mortality ratio to less than 70 per 100 000 live births.”¹²

Developing countries (DC) faces many challenges in the case of provision of quality HS to their people. The development of HS is another challenge to the people of DC. This development in quality HS is also a big concern and complicated in countries like Afghanistan. According to John R. Acerra, Kara Iskyan, Zubair A. Qureshi, and Rahul K. Sharma conditions “that plague post-conflict countries including an unstable political system, poor economy, poor baseline health indices, and ongoing violence. Progress has been made in Afghanistan with the implementation of the Basic Package of Health Service (BPHS) by the Ministry of Public Health (MPH) in an effort to provide healthcare that would have the most cost-effective impact on common health problems”¹³

Moreover, United States Agency for International Development (USAID) reported that, despite significant improvement and progress in more than a decade, in Afghanistan, child mortality and maternal rate are among the highest in the world. Skilled

¹² World Health Organization, “Maternal Mortality,” *World Health Organization*, 2018, accessed on 4th, 09, 2019, <https://www.who.int/en/news-room/fact-sheets/detail/maternal-mortality>,

¹³ Acerra John R, Iskyan Kara, Qureshi Zubair A., and Sharma Rahul K., “Rebuilding the health care system in Afghanistan: an overview of primary care and emergency services,” *International Journal for Emergency Medicine*, 2009 Jun; 2(2): 77–82, accessed on 3rd, 2019, <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2700223/>,

birth attendants, for instance, trained midwives or Qabilah, played an important role in providing quality services for the mother and pregnant women and to preventing mother and child deaths at the time of delivery.¹⁴

In addition, according to WHO regional office for the Mediterranean, in the last decade there has been a significant increase in the use of skilled birth attendance (SBA) and antenatal care (ANC). A significant increase from 31 percent to 64 percent in ANC in year 2007/8 and 24 percent to 59 percent increase in SBA¹⁵. Furthermore, according to WHO, “Under-5 child, infant and neonatal mortalities have reduced respectively from 175, 119 and 74 per 1,000 live births in 1990 (IGME) to 68, 52 and 39 in 2018”¹⁶.

According to the article 52 of the constitution of Afghanistan “The state is responsible to provide healthcare, medical treatment and proper health facilities to all citizen of the country in accordance to law”. This also defines the political commitment of government officials to improve the health status. Ministry of Public Health (MoPH) has made its Health and Nutrition Sector Strategy (2018-2021) to set up the mission and vision of improving the quality of health of all the citizen of Afghanistan.¹⁷

Being a signatory of the SDGs, it is the obligation of the government of Afghanistan to provide basic facilities to its citizens including, education, health and security as per the demand of SDGs. But unfortunately, Afghanistan’s health status is one of the worst in the world. Years of civil war and conflicts has left behind a worse medical infrastructure and health challenges that are most serious for women and children. Less attention has been given to the health sector and improvement in the existing condition of this important sector has been ignored. That is why Afghanistan has a lot of issues in achieving the required health facilities as compared to other countries and the country is still not in a position to achieve the required health related targets of Millennium Development Goals (MDGs).

¹⁴ United States Agency for International Development (USAID), “MATERNAL HEALTH IN AFGHANISTAN,” USAID from American People, 2017, accessed on 31st, 08, 2019, <https://www.usaid.gov/actingonthecall/stories/afghanistan>.

¹⁵ World Health Organization (WHO), “Reproductive, maternal, newborn, child and adolescent health,” (2018), accessed on 31st, 08, 2019, <http://www.emro.who.int/afg/programmes/maternal-child-health.html>,

¹⁶ *ibid*

¹⁷ Reproductive Health Task Force Ministry of Public Health, “National Productive Health Strategy,” *Ministry of Public Health, 2012-16*,

Moreover, according to The World Bank (WB), despite the aforementioned hurdles, healthcare in Afghanistan has significant gains in the last one and a half decades with decrease in the MH, infant and child mortality rates. The MoPH is continuously extending the capacity of its coverage of Basic Health Services and Essential Hospital Service, particularly the poor¹⁸

There are two ways of offering healthcare services to the general public in different provinces of Afghanistan. BPHS (Basic Packages of Health services) and EPHS (Essential Packages of Health Services). Under BPHS there are CHW (Community Health Workers), HP (Health Post which is the combination of one male and one female CHW), SHC (Sub health centers), BHC (Basic health centers) and CHC (Comprehensive health centers). Under EPHS there are DH (District hospitals), PH (provincial hospital), Zonal hospital and specialized hospital.

There is a long contract list of NGOs working in the provinces in helping with BPHS and EPHS. Among them, CAF (Charities Aid Foundation) which is helping the EPHS essential package of hospital services in Logar province.

Along with inadequate availability of PH, households also do not have access to private healthcare that's why people of the area refer their patients to paramedical technicians but unfortunately most of them are non-qualified. In some cases, due to the work or these non-qualified doctors, minor issue of health are converted to a more serious sickness or even result in the death of the patient.

Therefore, observing and keeping in mind the existing situation of HS, specifically in five provinces Kabul, Logar, Wardak, Kapisa, and Nangrahar of Afghanistan, this study aims at assessing maternal health and catastrophic expenditures (MHCE) and its socio-economic consequences. This study will help Government and non-Governmental organizations to understand the health-related problems of this particular area and to take necessary steps to resolve the matter of financial barriers for the population of the area.

¹⁸ The World Bank, "Afghanistan Builds Capacity to Meet Healthcare Challenges," 2015, accessed on 31st, 08, 2019, <https://www.worldbank.org/en/news/feature/2015/12/22/afghanistan-builds-capacity-meet-healthcare-challenges>.

1.5 Research Statement

To assess costs associated with maternal health, catastrophic expenditures and its socio-economic consequences on households in five provinces in Afghanistan.

1.6 Scope of the study

The scope of this research is limited to the female members of the families in five provinces, Logar, Kabul, Wardak, Kapisa, and Nangrahar in Afghanistan.

1.7 Significance of the study

The findings from this study will facilitate through giving a clear image of maternal health and catastrophic expenditure in Afghanistan. The study suggests possible solutions for the stakeholders to come up with certain policies, procedures and strategies to improve maternal health and related services in all provinces of Afghanistan and to assist families in easing the burden of catastrophic expenditures incurred due to maternal health issues.

1.8 Objectives of the study

The specific objectives of this study are;

- To examine the maternal health and catastrophic expenditure of Logar, Kabul, Nangrahar, Kapisa, and Wardak, Afghanistan.
- To find out the impact of maternal health and catastrophic expenditure on the socio-economic status of the household.

Chapter 2

Literature Review

There has been an overwhelming amount of literature available on the problem of CE and its economic consequences. Some of the studies, more related and specific to my research question have been reviewed below. Many studies have analyzed the problem in many countries in different periods using a range of methodologies.

Xu et al, concluded that, when household or the individual has to pay for healthcare and the amount can be high in relation with income which result in financial catastrophe. These high expenditures on healthcare mean that households cut down on basic necessities including clothing, food or even inability to pay for their children's—' education. Almost 44 million households or 150 million individuals every year in the world face financial catastrophe (FC), and 25 million household or more than 100 million individuals are dragged into poverty just because they have to pay for health services. Furthermore, the causes of OOP expenditure on healthcare goes outside the catastrophic spending alone. Many individuals may choose not to use the services because they couldn't afford either the direct cost, including consultation, medicines and laboratory test, or the indirect cost which consists of special food and transport. People with low income are most likely to go further into poverty because of the adverse effect of their sickness on their earning and welfare. Policy makers aim at guarding people from impoverishment and FC resulting from OOP for these health care services¹⁹.

According to Owen O'Donnell et al, there are some important consequences for household living standards. Welfare is reduced by the uncertainty of medical expenditure. For covering the unexpected medical expenditure, household may borrow some amount of money but at the risk of being trapped in long-term debt. As a result, opportunities of reducing poverty through investment in human capital may possibly be lost. Whenever there is a lack of access to credit, normally less developed countries particularly binding for investing in health, medical expenses are always covered by the current budget or from the wealth. A number of households might be able to finance their medical

¹⁹ Owen O'Donnell, Ravindra P. Rannan-Eliya, Aparnaa Somanathan, Shiva Raj Adhikari, "Catastrophic Expenditure for healthcare in Asia," *Health Economics* Vol. 16, issue 11 (2007): 1159-1184, https://www.researchgate.net/publication/6495065_Catastrophic_Payments_for_Health_Care_in_Asia,

expenditure from saving, by selling their assets or by cutting back on expendable items of consumption. Majority of economically constrained household may be pushed back to the poverty and consequently forced back to subsistence level. Thus, sickness makes the house hold to face a tradeoff between spending on health care and other expenditure i.e. the household either spends on health care or does not acquire the health services at the expense of health²⁰.

A study by Diana N. Kimani, Dr. Mercy G. Mugo, Dr. Urbanus M. Kioko to identify the burden of out of pocket payment, catastrophic expenditure and impoverishment in Kenya, using the household expenditure and Utilization Survey data of 2007 concluded that, 11.7 percent of the respondents reported and experienced catastrophic expenditure, 4 percent of respondents have been dragged into poverty because of the high level healthcare cost. Furthermore, about 2.5 million individuals were pushed back into poverty due to the high level of healthcare cost. To conclude, the household of the targeted area has experienced high level of catastrophic expenditure.²¹

Using cross-sectional data with 9643 households, multilevel linear regression to quantify the burden of maternal health care in India and to examine the levels of expenditure in both public and private healthcare providers at national and provincial level, Tiziana Leone, K.S. James, Sabu S. Padmadas concluded that, more than 80 percent of the respondents are paying for maternal healthcare service, and those who used private healthcare services pay four times more than the people who used public maternal healthcare system. The result of multilevel regression analysis shows that there is high level of maternal healthcare expenditure²².

Furthermore, according to Nadia Akseerl, Zaid Bhatti Arjuman Rizvi, Ahmad S. Salehi, Taufiq Mashall and Zulfiqar A. Bhutta, they have assessed coverage the level socioeconomic inequalities, using data from Afghanistan multiple indicator cluster survey 2010/11 by community based interventions by 90%, they have concluded that rich people

²⁰ Ibid

²¹ Diana N. Kimani, Dr. Mercy G. Mugo, Dr. Urbanus M. Kioko, "Catastrophic Expenditures and Impoverishment In Kenya," *European Scientific Journal* May 2016, vol.12, No.15 ISSN: 1857 – 7881 (Print) e - ISSN 1857- 7431, <https://eujournal.org/index.php/esj/article/view/7518>.

²² Tiziana Leone, K.S. James, Sabu S., "The burden of maternal healthcare expenditure in India: Multilevel analysis of National Data" *Maternal and Child Health Journal*, 17 (9). 1622-1630. ISSN 1092-7875

who had more money had access to more comprehensive healthcare system as compared to the people who had less money or considered to be poor. They suggested that if they could scale up the coverage of healthcare system up to 90%, they would have saved up to 7700 new born children.²³

In addition, Christoph Kronenberg, Pedro Pita Barros from Portugal, assess the level of catastrophic expenditure which would lead the people to poverty even in a country where there exists a proper National Health Service like Portugal. They used the Household Budget Survey using logistic regression model, with a sample size of 10020 households. They concluded that, out of pocket payment is a big issue in Portugal and suggested that there should be a system through which they can reduce the level of out of pocket expenditure for healthcare system. When the household had to spend money on the health which they cannot even afford it leads the household to financial disaster. This affects the subsistence and non-subsistence expenditure of the household, and some cases it has also some effect on the education of children of the families²⁴.

Moreover, according to Moe Myint, Laibusetrakul, Htay, Wai, Sunby and Bjertness in Myanmar, with research question to assess impoverishment and the level of catastrophic expenditure because of the financial burden in antenatal and delivery care, using community based cross sectional survey among females who had given birth to a child in last 12 months with three stage cluster sampling including 759 females. It has been observed from this study that poverty has increased among the women with antenatal up to 4.3% and those who are using delivery healthcare, about 1.3% people were pushed back to poverty. And about 6.1% were pushed to poverty when using both.²⁵

Furthermore, according to Sekhar Bonu, Indu Bhushan, Manju Rani and Ian Anderson in India, their study “investigate the incidence and correlates the maternal

²³ Nadia Akseerl, Zaid Bhatti Arjuman Rizvi, Ahmad S. Salehi, Taufiq Mashall and Zulfiqar A. Bhutta, Aching Maternal and Child Health Gains in Afghanistan, *Global Health*, Vol 4:6, (2016), [https://www.thelancet.com/journals/langlo/article/PIIS2214-109X\(16\)30002-X/fulltext#articleInformation](https://www.thelancet.com/journals/langlo/article/PIIS2214-109X(16)30002-X/fulltext#articleInformation),

²⁴ Christoph Kronenberg Pedro Pita Barros, “Catastrophic healthcare expenditure – Drivers and protection: The Portuguese case,” *Health Policy*, 115 (2014) 44–51,

²⁵ Aye Nyein Moe Myint, Tippawan Liabsuetrakul, Thein Thein Htay, Myint Myint Wai, Johanne Sundby, Espen Bjertness, “Inequity in the utilization of antenatal and delivery care in Yangon region, Myanmar: a cross-sectional study, *International Journal for Equity in Health*, Vol 17:63, (2018), <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5964903/>,

health and catastrophic expenditure, and to assess its policy implication”, using multivariate logistic regression model through questionnaire with a total of 73868 sample size, concluded that, families face distress due to expenditure on maternal health, particularly for women who are poor and this makes it difficult for the women to use maternal health services at time when it is needed just because they need money on hand to spend on their maternal health while any intervention is needed during the pregnancy. This study also suggests that, there should be direct cash transfer to the poor families while they need maternal healthcare system at the time of intervention. They also suggest that there should be efforts to improve the regulation and as well as the cooperation between the private and public health sector who provide the maternal health services they should be considered as the policy options in the future.²⁶

In addition, according to Saradiya Mukherjee, Aditya Sing, and Rakesh Chandra, their study tried to investigate and measure the incidence of catastrophic and maternal healthcare expenditure and to assess its socio-economic consequences in the urban and rural areas in India. They also examine the effect of maternal healthcare on the poverty and to study its impact on the impoverishment due to the high maternal healthcare. For this study they used binary logistic regression model with the household sample size of 73868 using questionnaire. They concluded that, maternal healthcare expenditure was higher in urban as compared to the rural areas, the magnitude was almost doubled. They also concluded that more than one third of the households in the targeted areas suffered from the catastrophic payments in both rural and urban areas²⁷.

Abdul-ur-Rehman & et, using cross sectional study average cost on delivery was assessed in both public and private sector of rural Khanewal. Total 257 women who had delivered in the last year were included to assess maternal health care expenditure and its sociodemographic predictors in rural Khanewal, Punjab, Pakistan. Analysis showed that “69.3% of mothers were illiterate, 56.8% sought antenatal care in public health unit and

²⁶ Sekhar Bonu, Indu Bhushan, Manju Rani and Ian Anderson, Incidence and correlates of 'catastrophic' maternal health care expenditure in India, *Health Policy and Plan*, 24(6):445-56. doi: 10.1093/heapol/czp032. Epub 2009 Aug 17. <https://www.ncbi.nlm.nih.gov/pubmed/19687135>.

²⁷ Mukherjee, Saradiya, Aditya Singh and Rakesh Chandra. “Maternity or catastrophe: A study of household expenditure on maternal health care in India.” *Biomedical & Life Sciences*, Vol.5 No.1, 2013, <https://www.scirp.org/journal/PaperInformation.aspx?PaperID=26974>,

43.2% in a private health care facility, 49.8% delivered in a public health unit and 50.2% in private health care facility. Total expense on antenatal care and delivery was found to be less than 4,000PKR (<\$38.16) in 55.6% (reportedly in a public health care unit) and was more than 16,000PKR (>\$152.65) in 23.3% (reportedly in a private health care facility).”²⁸ They concluded that, high financial cost exist on maternal healthcare in both private and public healthcare centers in the rural area of Khanewal. In addition, some of the families in the targeted areas are pushed into the poverty because of the higher cost on the maternal health and consequently higher cost of health led the household to cut their day to day consumption.

²⁸ Abdul-ur-Rehman, Muhammad Adnan, Hina Mehmood, Mahmoodul Hasan, Ayesha Humayun, “Maternal Healthcare Expenditure among women in Rural Areas of Pakistan,” ANNALS of KEMU. 23. 245-9. 10.21649/akemu.v23i2.1587, 2017, accessed on 4th, 09, 2019, <file:///C:/Users/majeedstanikzai/Desktop/Research/Maternal Health Care Expenditure among Women in Ru.pdf>,

Chapter 3

Research Methodology

3.1 Introduction

This section briefly discusses methodology. Qualitative research approach is used. Data is collected through semi-structured questionnaire and interview are also conducted to support the argument of maternal health and catastrophic expenditure which is described in sub section of this chapter.

3.2 Research design

This study is based on cross sectional primary data, which is collected from different households from the Hesarak village of Puli-e-Alam District with 108,039 population, Logar, Kabul District with 4.5 million population, Kabul, Char Wardak with 83,376 population, Wardak, Nijrab district Kapisa with 114,726 population, and Sherzad District with 63,232 population, Wardak, Afghanistan.

3.3 Study site:

3.3.1 Logar province:

According to demographic data and profile of Logar province, Afghanistan, Logar province is located in central Afghanistan and the center of the province is Puli Alam, 60 km south of Kabul province. Logar province is surrounded by Kabul and Nangrahar in north, Paktia in southeast and Wardak and Ghazni in west. It consists of 7 districts namely, Baraki Barak, Charkh, Khoshi, Kharwar, Mohammad Agha, Azroo and Puli Alam. 5 out of 7 district has the 60 percent cultivated land in the province. Logar province is known for its quality production of Corn, Yogurt and Wool. The inhabitants of this area opt different activities for earnings, men and women are involved in dry fruits, government jobs, labor and remittances. 35 percent of the rural population rely on agriculture, 28 percent household income in rural area derives from trade and services. 26 percent of the rural area earned income is from non-farming related labor. 11 percent of the rural area are also busy in livestock. According to its social and economic factors, per capita consumption is 1,082 Afn Literacy rate is 30.3 percent but Kuchi people has a relatively low literacy rate. 5.6 percent of men. Child labor consist 9.2 percent of the total

population, school enrolment is about 45.3 percent. Female literacy rate is 3.1 percent and total female share in active population is 29.8 percent²⁹.

3.3.2 Kabul province:

Kabul, which is the capital and located in the central part of Afghanistan. The surrounding provinces of Kabul are, Logar, Lagh-man, Kapisa, Wardak, Parwan. The capital of this province is Kabul City. The population of Kabul is 4 million where 80 percent of this population is living in the urban area of Kabul province. Kabul had 14 provinces including, Khak-i-Jabar district, Kabul City, Surobi District, Dehsabz District, Bagrami District, Kalakan District, Qarabagh District, Shakardara District, Istalif District, Paghman District, Char Asiab District, Mir Bachakot District, Mussahi District, Farza District. Based on different reports, Kabul has witnessed 10 percent annual growth over the last decade. The inhabitants of Kabul opt different activities for earnings, men and women are involved in services (Telecommunication, Financial Services), government jobs, labor and remittances. Furthermore, more than 40 percent of the population living Kabul are not from Kabul, they have come to Kabul from different part of the country for a better life, and they are busy in aforementioned professions. People living in Kabul are from the different ethnicities including, Tajiks, Uzbek, Hazara, Pashtons Imaq, Pashaye and Noristani, who have come from different part of the country for jobs and better life to live.

3.3.3 Kapisa province:

Kapisa is one of the 34 provinces which is considered to be in central and north-east region of Afghanistan. Based on Kapisa Province Socio-Demographic and Economic Survey Highlights, the population of Kapisa is reaching to 360,000 people. It is also considered to be the smallest province in the country with 1,842 km square. The most popular and densely populated province in the region³⁰. The main district of this province is Nijrab. The main source of income in the province is agriculture, clinic service,

²⁹ Logar, "Demographic and Province profile," 2008, accessed on 31st, 08, 2019, <https://afghanag.ucdavis.edu/country-info/province/files/social-Logar.pdf>,

³⁰ Kapisa Province Socio-Demographic and Economic Survey Highlights, "Central Statistics Organization of Afghanistan," 2015, accessed on 3rd, 09, 2019, <https://afghanistan.unfpa.org/sites/default/files/pub-pdf/SDES-Highlights-Kapisa-English.pdf>,

government jobs, labor, and remittances. People of this province are living with subsistence level, means that, they money they are earning they cannot save. They spend what they earn. Furthermore, inhabitants of the province sell their livestock, borrow, and sell their land in order to finance their medical expenditure. Furthermore, people of this province are focusing on education with 115 primary, international, and other educational institutes³¹. Pashtuns, Tajik and Pashaye people are living in this province. where people are living a simple live with basic needs.

3.3.4 Wardak province:

Wardak or some people also call it Maidan Wardag, is located in the central part of Afghanistan. There are 9 district in this province including, Chaki Wardak District, Day Mirdad District, Hesa Awal Behsood District, Jaghatu District, Jalrez District, Maidan Shar District, Markazi Bihsud District, Nirkh District, and Saydabad District. The center of the province is Maidan-Shar and the most populated district of the prince is Saydabad District. The total population of Wardak 567,600 as per 2013 data. Compare to other provinces of the country, it has fewer natural resources but enough water to cultivate most part of its territory of the province. Roughly around, 80 percent of the population is living the Urban area of the province. Population of this province is busy with agriculture, services, and government jobs. Maidan Wardak province covers an area of 9,934 km² with greater agriculture land. 30 to 40 percent of the population is educated which is considered to be better compare to other provinces in the country. According to, Regional Rural Economic Regeneration Strategies (RRERS), “Wheat is mostly grown on rainfed land and on irrigated land wheat, potato, maize, rice, barley, beans, onion, carrots, tomato and fodder like barseem, clover, sorghum is grown. Approximately on 50% of irrigate land orchards are grown. Apple is the most common fruit tree grown and other fruit trees are peach, pear, quince, grapes and plum.”³²

3.3.5 Nangahar province:

Nanagrahar is located in the eastern part of Afghanistan. Which has border with Kyber Paskhtun Khwa (KPK) Pakistan. Nangrahar has high quality Marbles which is

³¹ ibid

³² Regional Rural Economic Regeneration Strategies (RRERS), “Provincial profile of Wardak,” accessed on 3rd, 09,1 2019, <https://afghanag.ucdavis.edu/country-info/province/files/gov-Wardak.pdf>,

used both locally and also internationally. It has water resource and also in 24 districts in 11 of them it has forest. According Regnal Rural Economic Recognition strategy (RRERS), “more than 60% of the population migrated to Pakistan during the war and roughly 45% of them have permanently returned. Back and forth movement of people from Nangrahar to KPK is very common due to free access along the border”³³. Jalalabad which is the capital of this province is a major and busy city and many people are coming from the different part of the province for the search of jobs. People living in this province are mainly busy with agriculture, service, government jobs, labor work, and fisheries are the main source of income for the people of Nangrahar. It is very famous about Nangrahar that it is “Food basket for the whole Afghanistan”, because most of the daily use products are produced in this province and farmers export this these products to other provinces as well. No exact data is available on the population size of the province but according to some source the population is above one million. Same as rest of the country two main languages are used in Nangrahar as well which are, Pashto and Dari.

3.4 Ethical Approval

Ethical approval was obtained from thesis supervisor and OSCE Academy administration. Interview, questions technique and field process were included in the ethical approval. Interviews were conducted in an informal consensus section identifying the purpose, process, confidentiality and use of the study. The respondent was informed before interviewing and questionnaire to be filed by the respondent that participation in the study was completely voluntary. After informing the respondent, verbal and written interview questions and questionnaire data was obtained and documented by the interviewer.

3.5 Logistic model for the statistical analysis:

This model is taken from Ke Xu³⁴

³³ Regnal Rural Economic Recognition Strategy, “Provincial Profile of Nangrahar,” accessed on 4th, 09, 2019, <https://afghanag.ucdavis.edu/country-info/province/files/gov-Nangrahar.pdf>,

³⁴ Xu Ke, “Distribution of health payment and catastrophic expenditure,” *World Health Organization Geneva 2005*, EIP/HSF/DP.05.2,

$$\begin{aligned}
\text{logitCE} = & \alpha + \beta_1 \text{LogYincome} + \beta_2 \text{LogYexp} + \beta_3 \text{PublicHospital} + \beta_4 \text{Homebased} \\
& + \beta_5 \text{PrivateHopital} + \beta_6 \text{HigherSecondary} + \beta_7 \text{Master} \\
& + \beta_8 \text{Primary} + \beta_9 \text{Bachelor} + \beta_{10} \text{LogTC} + \beta_{11} \text{LogChildMC} \\
& + \beta_{12} \text{Agesqrt} + \beta_{13} \text{Age} + \beta_{14} \text{Fsiz} + \varepsilon i
\end{aligned}$$

$$P(\text{cataexp} = 1|X) = f(X'\beta)$$

$$\text{cataexp} = \begin{cases} 1 & \text{if } \text{cataexp} * > 0 \\ 0 & \text{if } \text{cataexp} * \leq 0 \end{cases}$$

$$\text{cataexp} * = \sum X' \beta + \varepsilon$$

The dependent variable in the analysis is “Catastrophic Expenditure” coded “0” for non-catastrophic expenditure and “1” for catastrophic expenditure.

3.5.1 Description of independent variables:

$\beta_1 \text{LogYincome}$ = Log of income

$\beta_2 \text{LogYexp}$ = Log of household expenditure

$\beta_3 \text{PublicHospital}$ = Services used for previous delivery (Public hospital)

$\beta_4 \text{Homebased}$ = Services used for previous delivery (Home based Delivery)

$\beta_5 \text{PrivateHopital}$ = Services used for previous delivery (Private Hospital)

$\beta_6 \text{HigherSecondary}$ = Schooling of the female member of the household

$\beta_7 \text{Master}$ = Schooling of female member of the household.

$\beta_8 \text{Primary}$ = Schooling of the female member of the household.

$\beta_9 \text{Bachelor}$ = Schooling of the female member of the household.

$\beta_{10} \text{LogTC}$ = Log of the total cost (travel cost, Medical cost, Laboratory cost, doctor fees cost)

$\beta_{11} \text{LogChildMC}$ = Cost related to the child occurred at the time of birth.

$\beta_{12} \text{Agesqrt}$ = Square of the age of the respondents

$\beta_{13} \text{Age}$ = Age of the respondents

$\beta_{14} \text{Fsiz}$ = Family size of the respondents

The independent variables included in the analysis are, social group, educational attainment of women, the age of women, monthly per capita consumption expenditure,

and household's previous delivery, medical cost during and after the pregnancy, and cost associated with the health of child after the birth till first 2 years.

3.6 Description of the Sample

Primary data has been collected from 350 households of five provinces in Afghanistan. Puli Alam district i.e. Burhan-u-Deen Village Logar, Chak District, Wardak, Kabul District, Kabul, Nijrab District, Kapisa province, Hesarak District, Sherzad district Nangrahar province, Afghanistan, through purposive sampling technique. A total of 99 respondents were from Logar province, 63 from Kabul, 60 from Warak province, 77 from Kapisa province, and 51 from Nangrahar.

Each district in the provinces and each village in the district was divided into four regions North, South, East and West. Data was collected from households in the North 25 region of the village, 25 households in South, 25 households in East and 24 households in West of the village Logar province sampling framework is illustrated as an example. And same process has been done for the rest of the provinces as well. 63 sample size is taken from Kabul province, 60 respondents from Wardak province, 77 respondents from Kapisa province, and 51 respondents from Nangrahar province.

The following is the sampling map illustrated for one province (Logar).

Sampling Framework

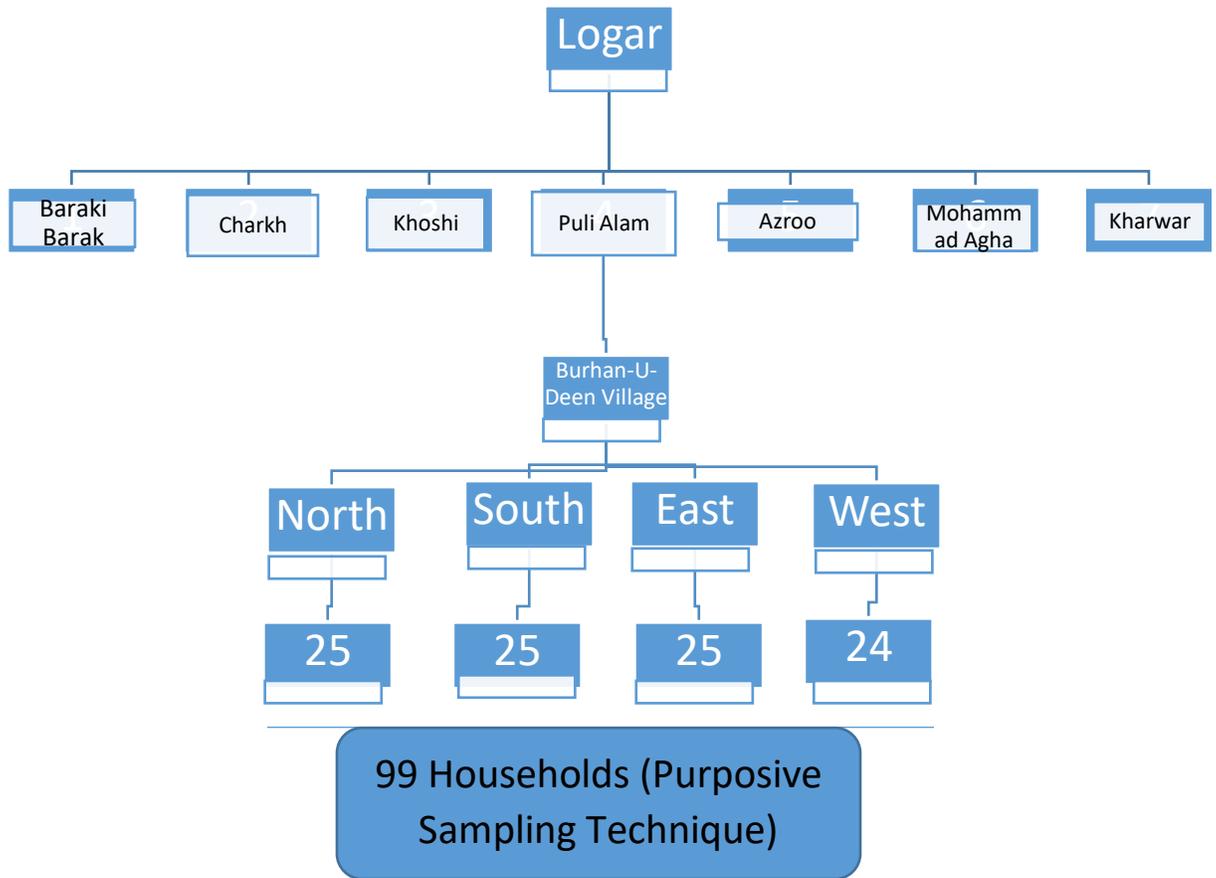


Figure 3.1 Sampling Framework

3.7 Research instrument

The questionnaire is semi-structured comprised of both open ended and closed questions. Questionnaire include several important questions which were related to the household information like age, education, family size, source of income, monthly income, average expenditure, demography of household and number of children. The questionnaire also emphasized on health issues faced by household like availability of public and private health care centers and the quality of available medical facilities in the area. Quality control was implemented through random checkup of the areas from where the data was collected.

3.8 Data collection instrument

Study variables that are included in our questionnaire are the respondent's age, age of marriage, age at first child birth, services used previously for pregnancy, family type (nuclear or joint), family size, monthly income, the availability of the basic health facility, medical intervention during the pregnancy, education, pregnancies or deliveries cost beyond the means of the respondents, cost associated with child medical cost, average monthly expenditure, and the total cost occurred in visiting the doctor.

3.9 Data collection procedure

Data was collected through questionnaire circulated by trained people in person and distributed among the household in five provinces, Logar, Kabul, Wardak, Kapisa, and Nangrahar in Afghanistan. For making this research effective, efforts were made to collect data from as many respondents as possible. The researcher himself trained two females' nurses to collect the data. Female of the household was approached and requested for their participation in the study and filling the questionnaire. Upon approval of head of the household, questionnaires were distributed, detail information about the research and questionnaire were given to them. This method was adopted to ensure that the respondents understand the questionnaire and respond correctly to the survey instrument. And can be provided with further clarification in case of need. A total of 500 questionnaires were distributed among respondents, from which only 350 were filled. In addition, after checking the questionnaire, it was found that 50 questionnaires were not filled properly after revisiting the household they were corrected and refilled the questionnaire which means that a total of 350 questionnaires were ready for analysis.

3.10 Analytical tool

STATA 14 and Microsoft excel was used for recording of the data, analytical tool and descriptive statistics.

3.11 Conclusion

Using qualitative research, descriptive statistics, Village based cross sectional research designed, through semi-structured questionnaire data was collected. Sampling for this research was done thorough purposive and the study site were Logar, Kabul, Wardak, Kapisa and Nangrahar provinces in Afghanistan.

Chapter 4

Results & Discussion

4.1 Introduction

All responses received were analyzed to study the maternal health and catastrophic expenditure. A total of 350 questionnaires were filled using cross sectional study technique. It was found that, 40% of the respondents were victims of catastrophic health expenditure because of the higher medical cost during the pregnancies and at the time of delivery in the five provinces (Logar, Kabul, Wardank, Nangrahar, Kapisa) in Afghanistan. Meanwhile logistic model was used to analyze the impact of average yearly expenditure, yearly income, total cost (includes, traveling cost, medicine cost, doctor fees, laboratory cost), family size, level of education, and services used for previous delivery on catastrophic expenditures and its economic consequences on the household.

4.2 Result and Discussion

The result of the study is divided into three sections. Section - A which deals with result of the quantitative data graphs and figures obtained from the questionnaire, Section-B, deals with results obtained from the logistic model. Section - C deals with interviews with the respondents through phone calls.

4.3 Section-A

This section will show the result of quantitative data graphs and figures obtained from questionnaire.

4.3.1 Catastrophic Health Expenditure:

Catastrophic Expenditure is defined as when health expenditure of a household exceeds a certain level (10%-40%) of disposable income or level of household capacity to pay³⁵. From the data collected through questionnaire, it has been observed that, 40% of the respondents in five provinces (Logar, Kabul, Wardak, Kapisa, and Nangrahar) are in catastrophic health expenditure. In other words, from 350 respondents, 210 respondents

³⁵ Choi JW, Kim TH, Jang SI, *et al*, "Catastrophic health expenditure according to employment status in South Korea: a population-based panel study," *BMJ Open* 2016;**6**:e011747, accessed on 29th, 09, 2019, <https://bmjopen.bmj.com/content/6/7/e011747>,

were in catastrophe. Means that their healthcare expenditure exceeds 40% or equal to 40% of their disposable income.

Kabul: 100 questionnaires were distributed in Kabul province from which only 63 respondents replied and was successfully completed. It was analyzed that, 15.87% of 63 respondents were in catastrophic health expenditure. Furthermore, from the responses of the respondents it was observed that, 10 respondent's health care expenditure were more than or equal to 40 % of their disposable income. As indicated in Figure 4.1

Logar: In Logar province 100 questionnaire were distributed from which 99 of them filled the form and responded to the questionnaire. From the analysis of the questionnaire it was observed that 61.62% of the respondents were in catastrophic health expenditure in this province. In other words, it was observed that 61 respondents' healthcare expenditure were more than 40% or equal to 40% of their disposable income. As illustrated in Figure-1

Wardak: From 100 distributed questionnaire in Wardak province only 60 questionnaires were filled. From 60 respondents 36.67% of the respondents were in catastrophic health expenditure. In other words, from 60 respondents in this province 22 respondent's healthcare expenditure exceeds 40% or equal to 40% of their disposable income which leads them to the catastrophic health expenditure. As indicated in Figur-1.

Kapisa: 77 questionnaires were filled from 100 distributed questionnaires in Kapisa province. From questionnaire it was observed that 20.78% of the respondents were in catastrophic health expenditure. In other words, from 77 only 16 respondent's healthcare expenditure were equal or more than 40% of their disposable income which leads them to the catastrophic health expenditure. As illustrated in the Figure-1.

Nangrahar: From 100 distributed questionnaire in Nangrahar province only 51 respondents responded. The lower number of respondents are just because of the security reasons in the province which means that, 31 respondent's healthcare expenditure were more than or equal to 40% of their disposable income which leads then to the catastrophic health expenditure. As indicated in Fogure-1.

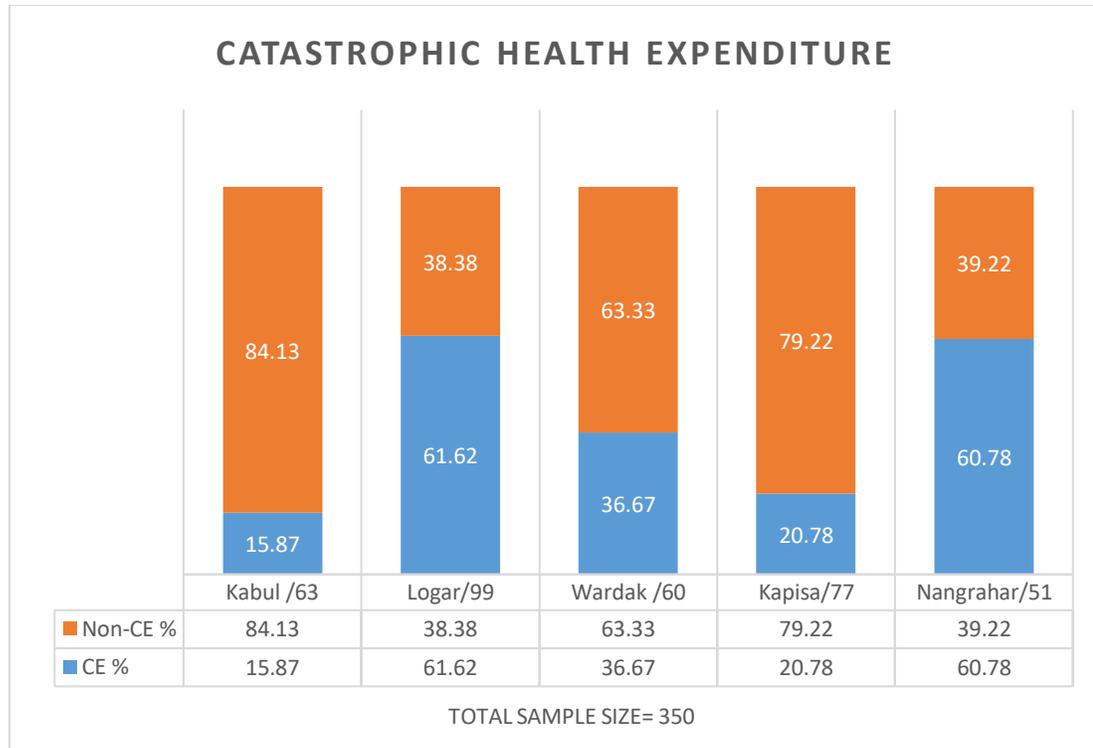


Figure 4.1 Catastrophic Health Expenditure

4.3.2 Average Age of Marriage:

From the responses of the 350 respondents it has been observed that the average age of marriage of female member of the household in five provinces in Afghanistan is 19.74 years old. From the respondents in each province it has been observed that, in Logar the average age is 19.5 years old. Furthermore, the average age of marriage in Kabul is 21.7 years old, in Wardak the average age of the female member of the household at the time of marriage is 19.8 years old, the average age of marriage in Kapisa province is 18.8 years old, and 19.7 years is the average age of marriage of female member of the household in the Nangrahar province. For better understanding, below Figure 4.2 indicate the average age of marriage in the all five provinces in Afghanistan and also individual provinces average age marriage in the targeted areas.

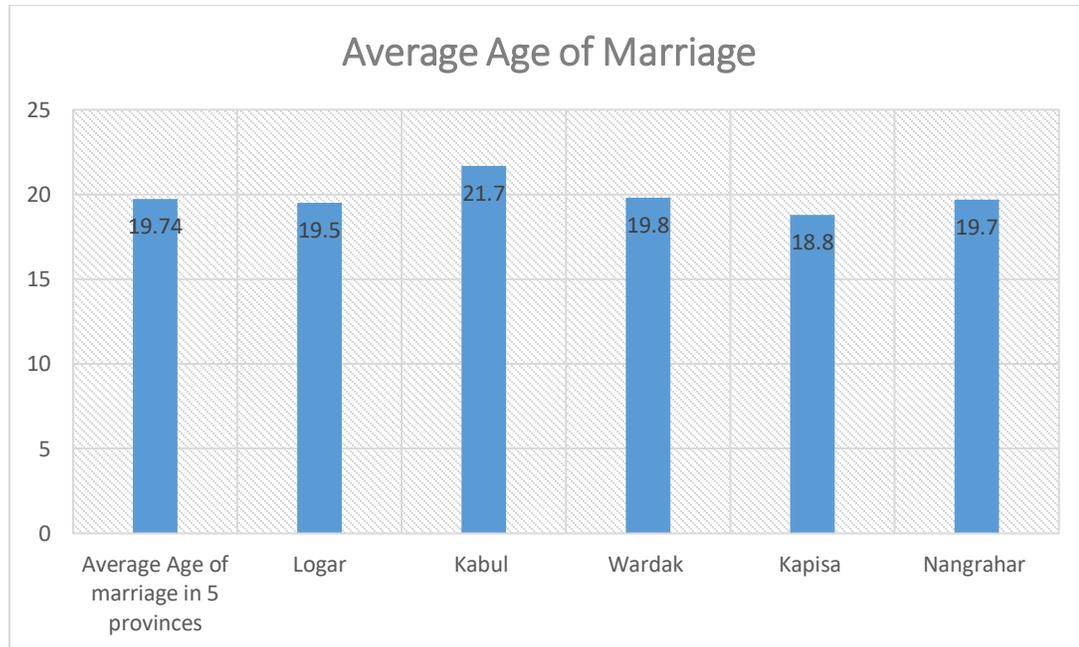


Figure 4.2 Average Age of Marriage

4.3.3 Average Age of a female household in first Child

It has been observed from 350 respondents that, the average age of a female member of household in having their first child in targeted area is 21.2 years old. Moreover, in Logar the average age of female member of the household while having their first child is 20.8 years. Similarly, the average age of a mother for their first child inn Kabul province is 22.8 years old comparatively to other provinces the average age of the female member of the household in this province is higher than the rest of the provinces. In addition, the average age of a mother in Wardak province while having their first child is 21.6 years old. Furthermore, in Kapisa province the average age of a mother with first child is 20.2 years old. Finally, the average age of the female member of the household in the target area of Nangrahar province is 21.2 years old. For better understanding the average age of female member of the household of all provinces and individual province is illustrated in the Figure 4.3.

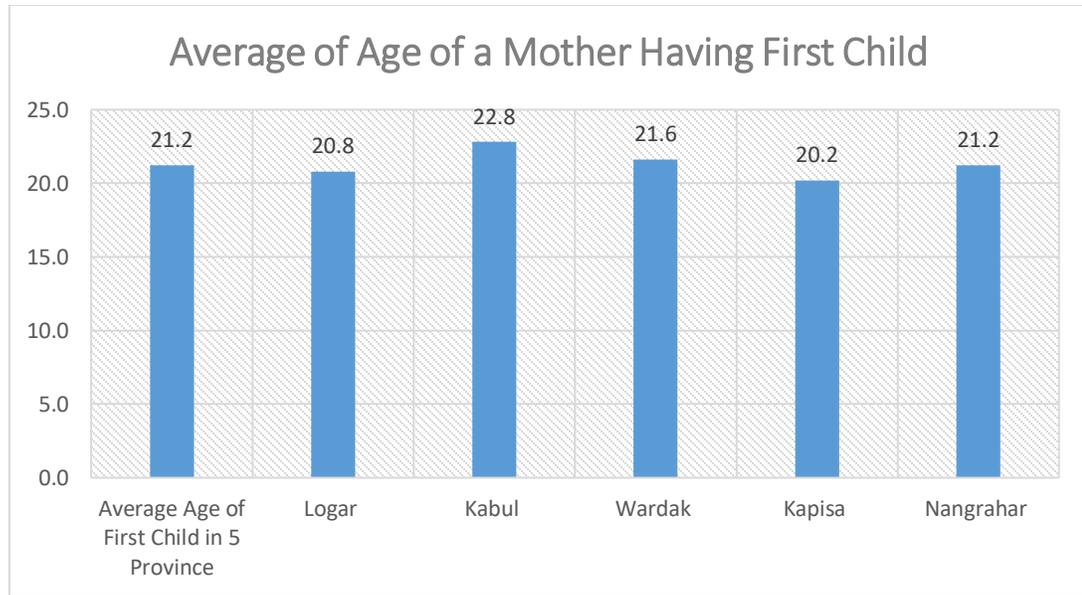


Figure 4.3 Average age of a Mother Having Frist Child.

4.3.4 Female who worked for money

It has been identified that 96 respondents which makes 27.4% from the total 350 respondents who worked outside of home for money. It was also observed that these respondents worked as public servant, as nurse in the hospital, as a teacher, as a hairdresser, restaurant owner, and part time workers at NGOs. While on provincial level, from 99 respondents in Logar province only 3 of them worked for money which makes only 3.03% of the total number of the respondents. In Kabul 35 respondents from the total 63 respondents which makes 55.6% of the total go to work or worked for money outside their home. Among the other province Kabul has a greater percentage of female member of the household who works for money outside of home which indeed is a great sign of women participation in the economy. Moreover, from total 60 respondents in Wardak province only 7 respondents which makes 11.7% female member who work for money outside of their home. Furthermore, in Kapisa province only 33 respondents or 42.9 % of the total respondents which 77 go to work to earn money to contribute to the household over all goodwill. Lastly, in Nangrahar only 18 respondents or 35.3% work for money from the total 51 respondents. For the better understating it is illustrated in Figure-4.

In country like Afghanistan, which is affected by decades of war and ongoing violence the aforementioned is a plausible number of female members who work for money outside of their home. It's worth mentioning that, despite the hurdles in family, norms, and cultural believe female member of the household makes it to their work and contribute to the betterment of the country and overall economy.

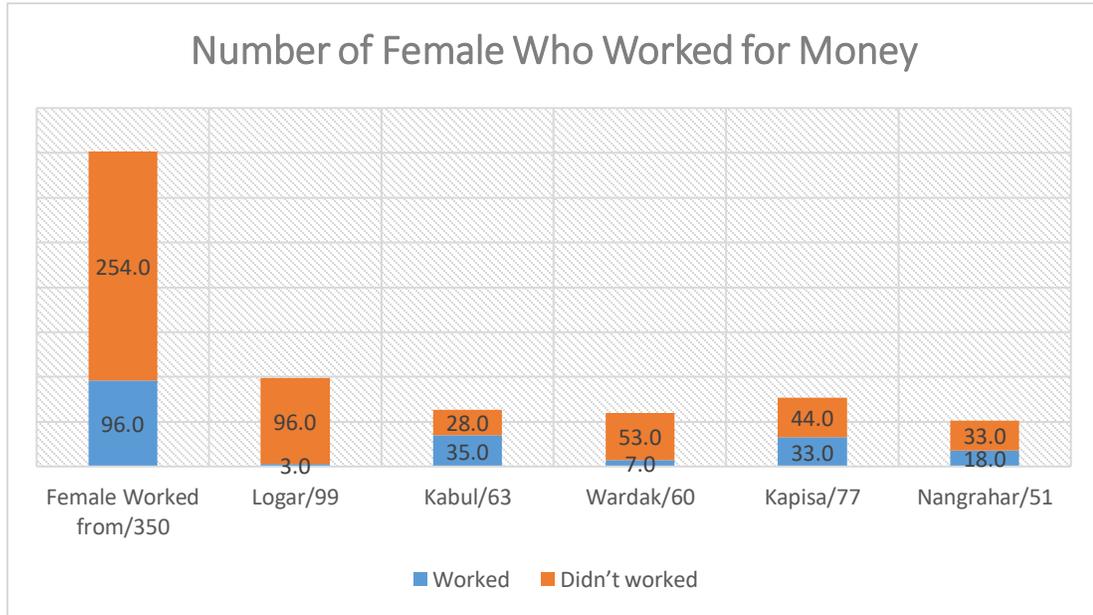


Figure 4.4 Number of Female who work for money.

4.3.5 Household that lives Rural/Urban

From the respondents it has been observed that 36% which makes 126 respondents from the total of 350 respondent were living in rural areas of the targeted provinces in Afghanistan. It is worth mentioning that people who are living in the rural part of the province have more access to the quality healthcare system. Furthermore, people who are living in the rural areas of these provinces (Kabul, Logar, Wardak, Kapisa, and Nangrahar) pay more on healthcare system because most of them prefer private clinic and hospital for their maternal health and new born child. In addition, private clinics charge more as compared to the public healthcare system.

4.3.6 Family Size

It was observed that the average family size in five provinces (Kabul, Logar, Wardak, Kapisa, and Nangrahar) in Afghanistan is 9 people in a house. Which include

their children, the women who were interviewed with her husband, and in-laws of the female member of the household who were interviewed. The maximum number of the people living in a household was 23 people in a family in five provinces in Afghanistan while on the other hand the minimum number of the family living in one house is 3, which included the women who were interviewed, her husband and the child they had.

Moreover, on provincial level, the average number of people living in one house in Logar province is 10 people with maximum number of 23 people living in a house. While the minimum number of the family in a house is 3 people. Furthermore, in Kabul the average number of family member of a household is 8 people. Maximum number of people living in household in Kabul was 22 people with minimum number of 3 people. The average number of the people living in one house in Wardak province is 8 with maximum number of 16 people under one roof, while the minimum number is 3 people. In addition, the average number of the people living in a house in Kapisa province is 7 people. Where the maximum number of the people living in a house is 16 people and the minimum number is 3. Lastly, the maximum number of people living in a house is 20 in Nangrahar province with 5 minimum people. Furthermore, the average age female member of the family in one house is 9 people. Figure 4.5 indicated the Average Family size of family in all five provinces.

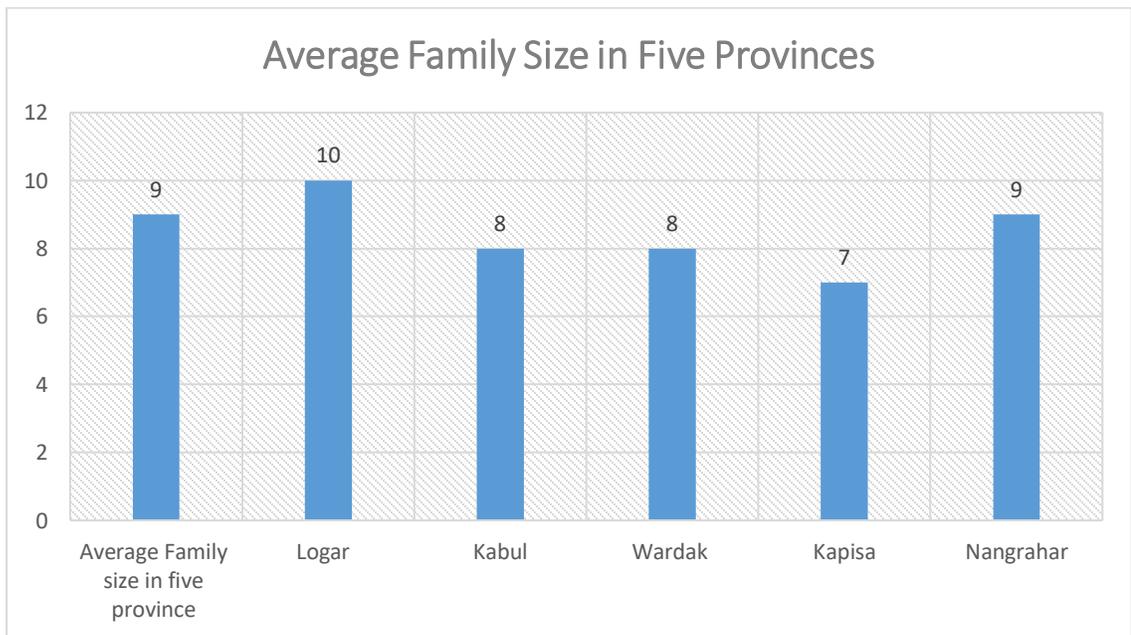


Figure 4.5 Average Family Size in five provinces (Logar, Kabul, Wardak, Kapisa, and Nangrahr)

4.3.7 Number of Pregnancies

From the 350 respondents it was observed that the average number of pregnancies in these five provinces is 3 children per households. In addition, the maximum number of pregnancies in these five provinces is 12 children, which include both daughters and sons. 1 kid is the minimum number of kids in targeted area.

In Logar province the average number of pregnancies of a female member of the household who was interviewed are 4 children in total response of 99 respondents. The maximum number of children in a household is 11 children and the minimum number of children is 1 per household. In addition, from the respondent it was also observed that, two respondents had 11 children including both daughter and sons, one of the respondent had 10 children, three respondents had 9 children, nine respondents had 8 children, four respondent had seven children, nine respondents said they had 6 children including 4 sons and 2 daughter, eighteen respondents responded that they have 5 children which they did not specify the genders, fifteen respondents had said that they have 4 children, 11 respondents had responded that they had 3 children, from 12 respondents it was observed that they had 2 children, and fifteen of the respondents responded that they have 1 child.

In Kabul province from the total of 63 respondents it has been observed that, the average number of children in a house is 3 children with a minimum 1 and maximum of 12 children. In addition, it was observed that 13 of the interviewed female members of the household reported at least one unsuccessful delivery. And 7 of them reported complicated delivery. Furthermore, one respondent reported that she had 12 children, another one respondent responded 9 children in a family, where 5 respondents reported 6 children, and about 20 respondents reported 1 child.

In Wardak province from total 60 respondents it has been observed that the average children in a house is 4 children with a maximum of 8 and minimum of 1 child in a house. The maximum number of children in a house is 8 children with minimum of 1 child in a house. In addition, six respondents reported 6 children in a house, 13 respondents reported 4 children in a house, where 12 respondents reported 2 children in a house, 7 respondents reported 5 children in a house, and 9 respondents reported 3

children in a house. Moreover, 5 respondents reported unsuccessful deliveries and 3 respondents reported complicated deliveries.

In Kapisa province the average number of children in a house from a total of 77 responded is 3 children per house with a maximum of 8 children and minimum of one child. It was also observed that, 10 respondents had 2 unsuccessful with 8 complicated deliveries. In addition, 2 of the respondents reported 8 children, 3 reported 6 children in house, 9 respondents reported 5 children in a house, and 12 respondents reported 4 children, 23 respondents reported that they have 2 children with majority of one daughter and one son, and 8 respondents reported 1 child in their home.

In Nangrahar province the average number of children is 2 from a total number of 51 respondents. Where the minimum number of children is 1 with maximum of 6 children in house. 13 respondents reported 1 child in their home, 20 respondents reported 2 children in their home, where 8 respondents reported 3 children in their home, and 6 respondents reported 4 children in their home, 3 reported 5 children in their home and one reported 6 children in their home.

For better understanding of average number of the children in these five provinces (Logar, Kabul Wardak, Kapisa, and Nangrahar) please see below Figure 4.6.

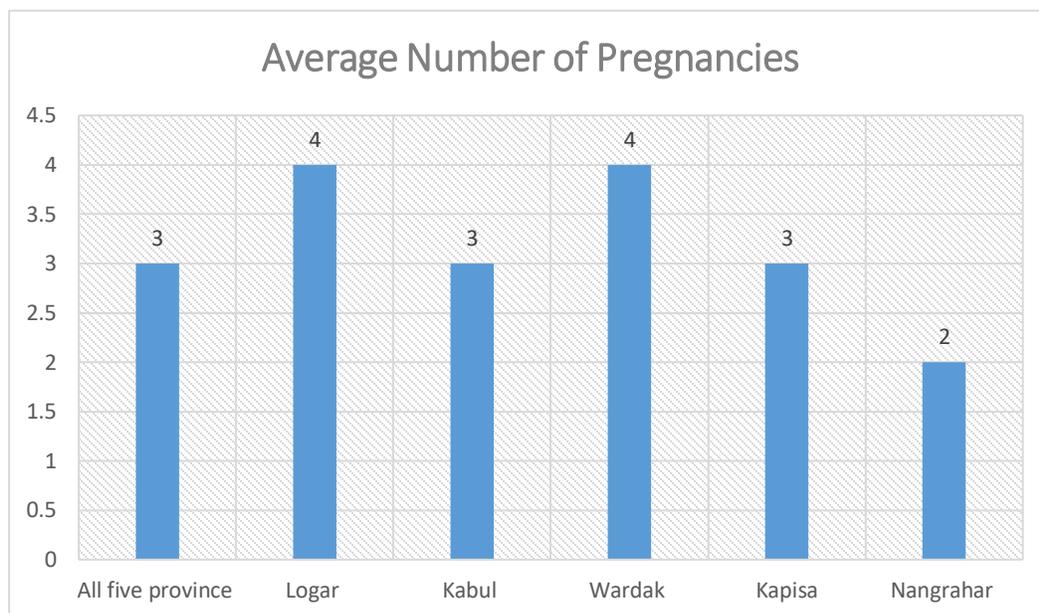


Figure 4.6

Average number of pregnancies of female member of the household who was interviewed in five provinces (Logar, Kabul, Wardak, Kapisa, and Nangrahar).

4.3.8 Outcomes of the Previous Delivery

From the responses of the respondents of five provinces in Afghanistan it was observed that, from total 350 respondent only 35 respondents reported unsuccessful last deliveries which is 35%. In addition, 315 respondents reported successful last deliveries.

Moreover, in Logar province it was observed that, from the total number of 99 respondents only 16 reported unsuccessful last delivery which is 16.16%. In addition, in Kabul province only 5 respondents which is 7.93% reported unsuccessful last delivery from a total number of 63 respondents. In Wardak province 4 respondents which is 6.6% of the total 60 respondents reported unsuccessful last deliveries. In Kapisa province from 77 respondents only 8 respondents which is 10.39% reported unsuccessful last delivery. Lastly, in Nangrahar province only 2 respondents which is 4% of the total 51 respondents reported unsuccessful last delivery.

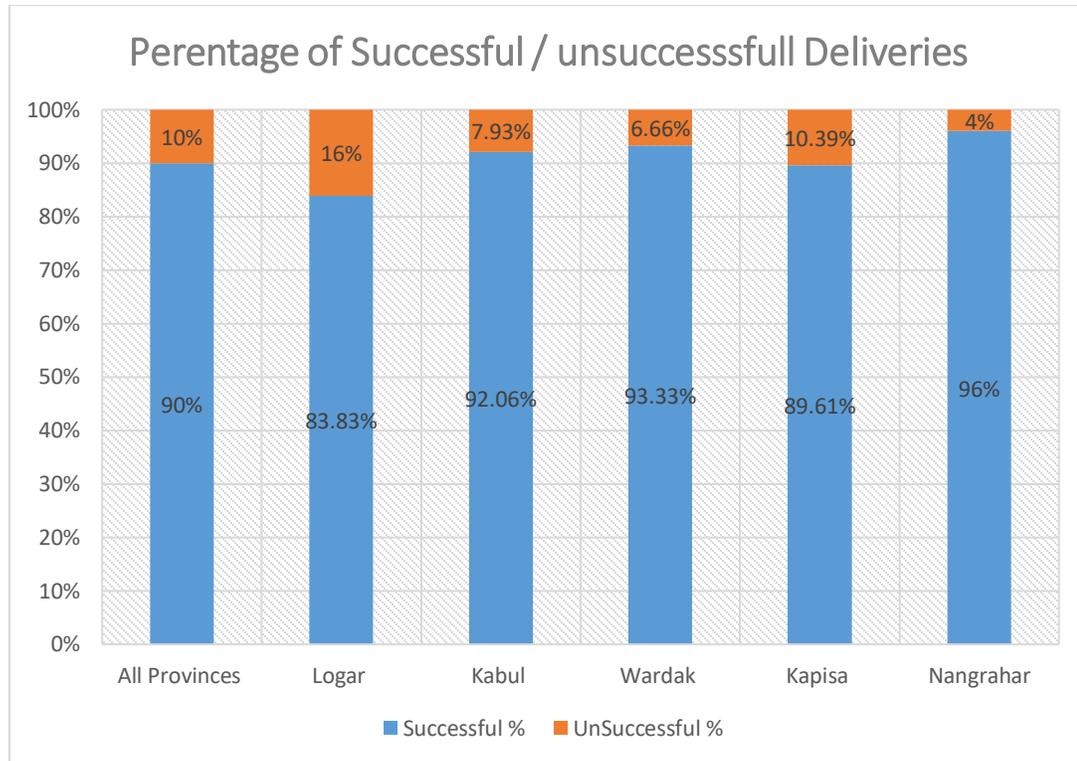


Figure 4.7 Percentage of unsuccessful deliveries in all five province and as well as individual provinces in Afghanistan.

4.3.9 Services Used for Previous Delivery

It was observed that, the people from five provinces (Logar, Kabul, Wardak, Kapisa, and Nangrahar) used different services for their last delivery. For instance, from total number of 350 respondents, 91 respondents which is 26% of the total respondents reported that, they are using private clinic. In addition, 31 of the respondents reported that they are using private clinic because their husband is a doctor or some of their close relatives are doctors in private clinic. It was also observed that 20 respondents didn't trust the public hospital services they used private clinics for their maternal healthcare. 15 of the respondents said that they used the private clinic services for maternal healthcare because they can afford the cost and it is more reliable than the public. 25 respondents reported that they used private clinic because they had complicated case and miscarriage.

Furthermore, 212 respondents used public hospital which is 60.57% of the total respondents in five provinces. 90 respondents reported that they used public hospital for their maternal health because private clinics are too far away from their home to get on

time quality maternal healthcare service at the time of delivery as well as at the time when it was needed. 100 respondents reported that they used public hospital because of poverty they couldn't afford the cost of maternal health service that private clinic charge.

From a total of 350 respondents only 43 respondent which is 10.86% reported that, their last delivery was home based. They used a number of reasons for home-based delivery for instance, 10 of the respondents reported that, they used home based delivery because they couldn't afford transportation to both public or private clinic and hospital. 23 of the respondents reported that their husband didn't allow them to do to the doctor at all. In addition, such cases led to miscarriage or complication in the delivery and as well as during the pregnancies.

It was also reported that 4 respondents which is 2.57%, used other services provided by the maid in the targeted areas of these five provinces. Figure 4.8 indicates the number of the respondents with their percentage used different services for their last delivery. The following figure-8 show services used for previous delivery in all 5 provinces.

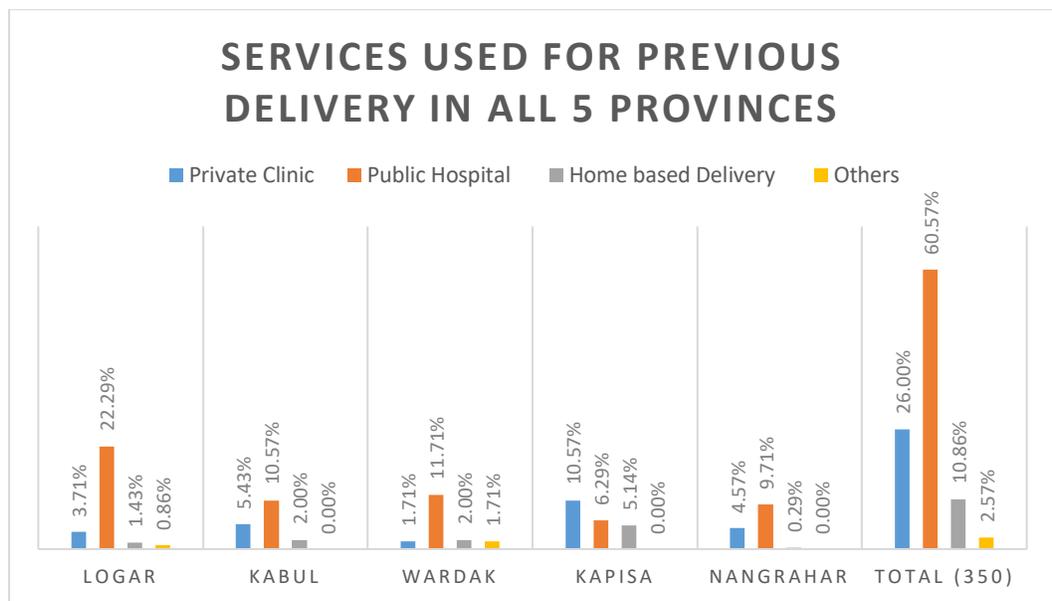


Figure 4.8 Services used for maternal healthcare services by the female member of the household for Previous Delivery in all five provinces.

In Logar province it has been observed that 13 female member of the household or 13% from a total of 99 respondent used private clinic as service for their previous delivery. A total of 78 respondents used public hospital services for their previous

delivery. The reason of higher number of female members of the household in using public hospital services for their last delivery is their satisfaction from the public hospital. In addition, 5 respondents give birth at home and other elder family member (Mother-in-law) of the household helped to give birth at home. Lastly, 3 respondents used other source for their last pregnancies like used local maid.

In Kabul province 30.16% or 19 from a total of 63 respondents reported that they are using private clinic for their previous delivery. In addition, 58.73% or 37 female member of the household who were interviewed reported that they used public hospital service for their last delivery. And they are very happy with the services provided by the public hospital. Moreover, 11.11% or 7 respondents reported that they are used home based delivery for their last delivery. The average and number of female members of the household who used different services for their last delivery is indicated in Figure 4.9

In Wardak province from the total number of 60 respondents, 6 respondents reported that they used private clinic for their last delivery. Moreover, 41 respondents which 68.33%, used public clinic. In addition, 7 respondents which is 11.67% of the total number of the female member of the household who was interviewed used home-based delivery for their last deliver. Figure 4.9 indicates services used for previous delivery by the female member of the household who were interviewed.

In Kapisa province in total number of 77 respondents 37 respondents reported that they used private clinic for their previous delivery. Moreover, 22 respondents which is 28.57% of the total respondents used public hospital services for previous delivery. Lastly, a total of 18 respondents used home based delivery for their previous delivery. Figure 4.9 indicated numbers and percentages of the respondents who used different services for their last delivery in Kapisa province.

It has been observed in Nangrahar province that 16 respondents from a total number of 51 respondents reported that they are using private clinic. Moreover, 66.67% of the total number of the respondents used public hospital services for their last delivery. In addition, 1 respondent used home-based delivery, where maid help her in delivering their last kid. Figure 4.9 illustrate a detailed analysis of the respondents (female member

of the household) who used different services for their last delivery. It was observed that most people prefer public hospital for the maternal health services.

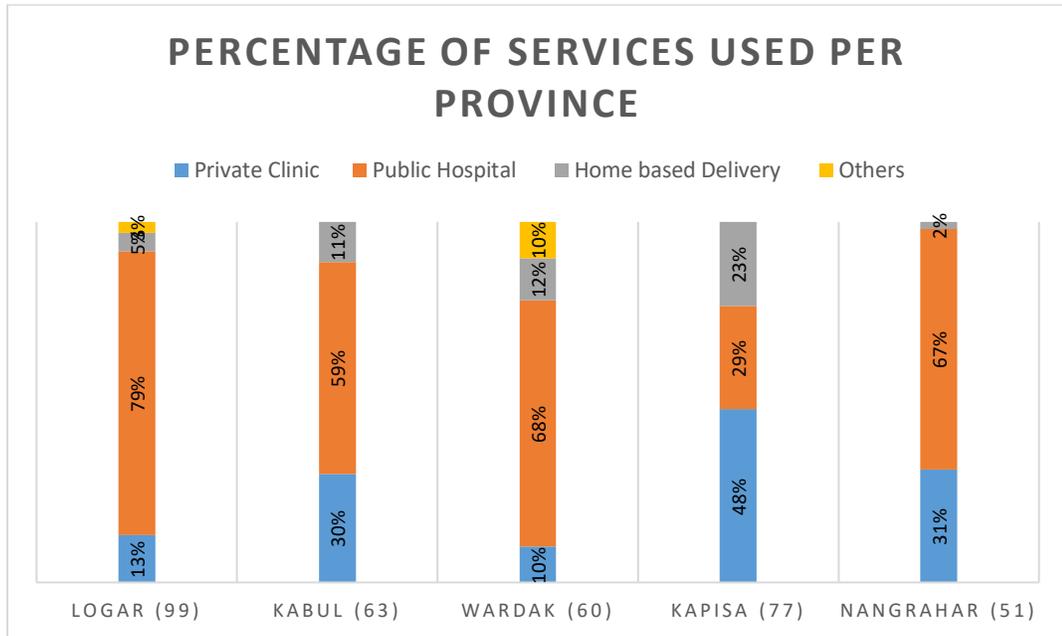


Figure 4.9 show the percentage of service used for previous delivery per province

From the respondents in there five provinces it was observed that they used home based delivery for the delivery of their last child was because of different reasons. For instance, some of the respondents reported that they didn't had transport in order to go to a private clinic or to use the public hospital services for their maternal health. In addition, due to the far away clinics and hospital from the village of interviewed female member of the household they were not able to use or have access to a proper healthcare service during the pregnancies or at the time of delivery. 20% of the respondent from a total of 350 respondents in all five provinces reported that, due to the security reasons they were not able to go to the doctor in the private or public hospital.

4.3.10 Family Type

Nuclear family is defined as couple and their immediate children living in one under one roof. Joint family is the extension of the nuclear family where a couple have their children and grandchildren from their sons' side is living with them under one roof. And for the purpose of this study the daughter in law of the family or female member of the couple was interviewed. From the total number of 351 respondents, 236 respondents

which is 67.42%, reported that they are living in a joint family. Moreover, 114 respondents which is 32.57% of the total reported that they are living as a nuclear family in the five provinces namely Logar, Kabul, Wardak, Kapisa, and Nangrahar, in Afghanistan. Figure 4.10 indicates number of the families living in joint family or nuclear families.

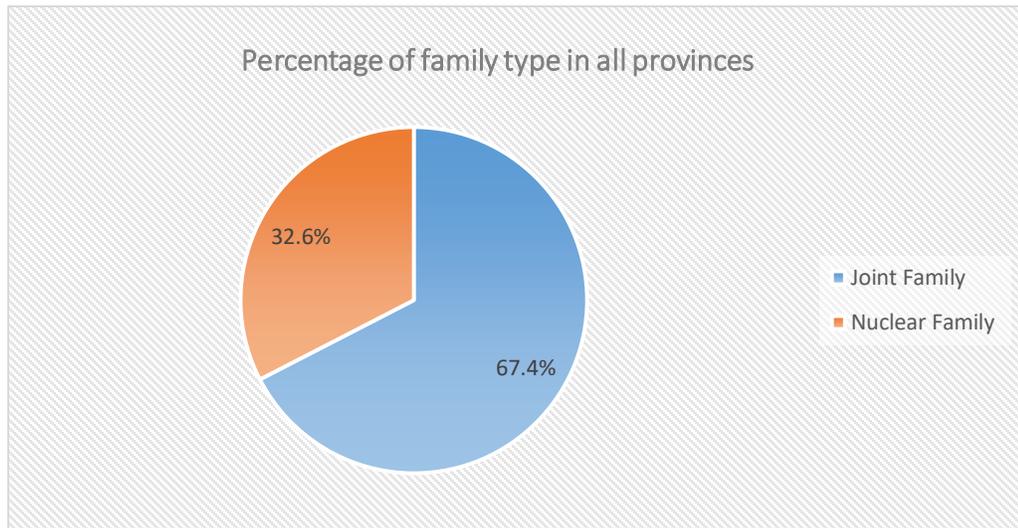


Figure 4.10 Family Type

Based on provincial level from total number of 99 respondents in Logar province 62 respondents which is 63% reported that they are living in a joint family while 37 respondents are living as a nuclear family. Moreover, in Kabul province 39 respondents which is 62% of the total 63 respondents are living in a joint family. Only 24 respondents are living as a nuclear family. In Wardak province from total number of 60 respondents only 21 respondents were living as nuclear family while 39 of them were living as a joint 65% respondents are living as joint family. Furthermore, in Kapisa province 45 respondents which is 58. % of the total 77 are living as joint family and the rest 32 of them are living as nuclear family. Lastly, from a total 51 respondents in Nangrahar province all of them are which were interviewed were living as a joint family. Figure 4.11 indicates family types in all five provinces as individual level living as a joint or nuclear family.

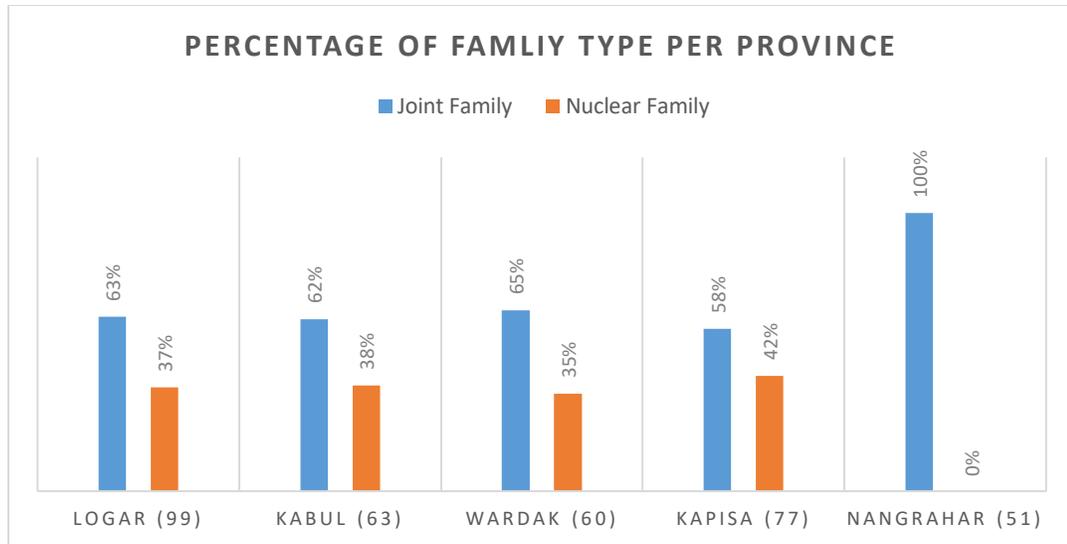


Figure 4.11 Family Type per province.

4.3.11 Primary Source of Income

Main source of income in five provinces Logar, Kabul, Wardak, Kapisa, and Nangrahar in Afghanistan are from Agriculture, Business or self-employed, Remittances, Labour, Government employment. For instance, main source of income of 135 respondents which is 38.57% of the total 350 in these five provinces is Agriculture. In addition, 36 respondents or 10.29% source of income is Business of self-employed. They have small retail shops in the village of in the center part of the province. 21 respondents reported that they get remittance and they don't have any other source of income. Husband or brother of the respondent was in Saudi Arabia, Qatar, Pakistan, and Iran or in Dubai and they sent money. Furthermore, 77 respondents which is 22% of the total reported that their source of income is being a Labor. It was observed that a total of 73 respondents' source of income is from the Government means that they are public servant with is 20.86% of the total respondents. Figure 4.12 illustrate the primary source of income of all five provinces in Afghanistan collectively. The number of respondents and the percentages are clearly mentioned in the bellow figure.

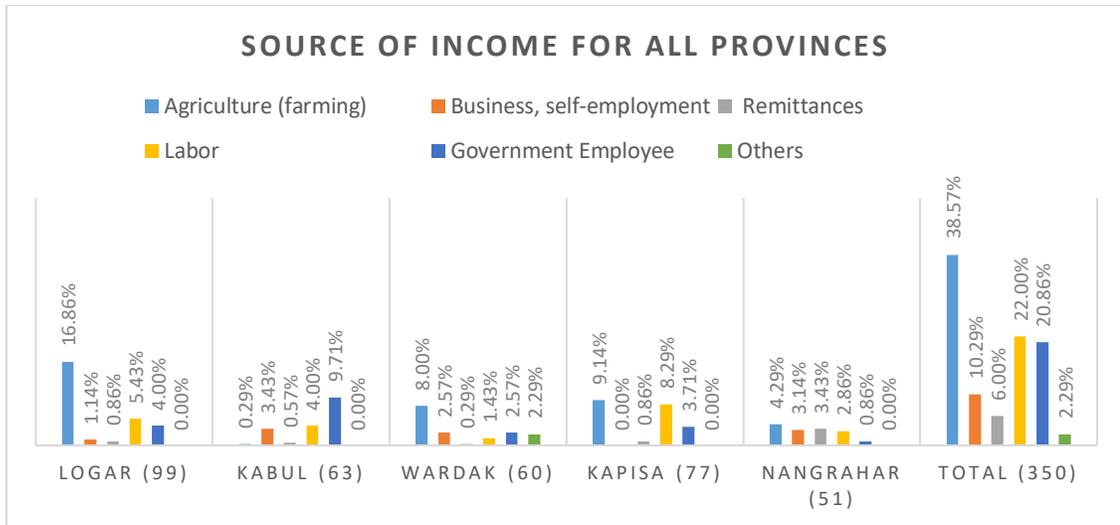


Figure 4.12 Primary Source of Income for all province.

In provisional level, respondents from Logar province are also busy with different profession and earning their income. For example, 59 respondents which is 59.60% of the total 99 respondents' main source of income is agriculture or from farming. In addition, 19 respondents reported that their main source of income is working as a labor. Moreover, 14 respondents reported that their main source of income is from the government. Means that they are public servant. 4 respondents reported that their main source of income is their own small shops or small business in the village or in the center of the province. Furthermore, 3 respondents reported that they receive remittance once a month from different countries such as, Pakistan, India, Iran, Saudi Arabia, Qatar, Dubai and European countries. Mostly the respondent's husband was abroad and was sending them the monthly money. Figure_13 illustrate Logar province source of income. There respondents of this particular province are in large number busy in farming.

In Kabul province it was observed that respondents are earning their income through different sources. For instance, 1 respondent which makes 1.59% of the total 63 respondents in Kabul province. Secondly, 12 respondents are earning through Businesses or they have retail shops inside the village of in the center of the province. Third, 3.17% of the respondents are earning through remittances. It was observed that these respondents receive their remittances from UAE, United Kingdom and European countries. Mostly the respondent husband was abroad and sending money home. Fourth,

53.97% of the respondents' source of income is from government as public servant. Figure_13 illustrate the numbers and percentages of the respondents earning from different source of income in Kabul province, Afghanistan.

In Wardak province it was observed that people used different channels of obtaining money for their daily consumption. For instance, from total number of 60 respondents 46.67% of them obtain their income from agriculture. In addition, 15% of respondents' source of income is their small business or a retail shop in the village or in the center of the province. 1.67% of the respondents' source of income is remittances. Furthermore, 8.33% of the respondents' source of income is labor work in the center of the province. 9% of the respondents' source of income in Wardak province is government. They work at the government agencies, like in army, the profession they have in army is, driver, a front-line soldier or a public servant in other institution like, ministry of finance, ministry of economy and etc. Moreover, in this province about 13.33% of the respondents obtain their income from other sources. For instance, they are Imam Masjid (Mulla), a Jihadi or a teacher. Figure_13 illustrate a detailed number and percentage of the respondents' source of income in Wardak province.

In Kapisa province from total number of 77 respondents 41.56% of the respondents' source of income is agriculture. Zero percent of the respondents from this province are earning through business activity or self-employed. In addition, 3.9% of the total respondents are obtaining their income through remittances. 37.66% of the respondents are obtaining through labor work in the village or in the center of the province. It was also observed that 16.88% of the total respondents obtain their income from government. It means that they have jobs in different government sectors. Figure_13 illustrate number and percentages of the respondents in Wardak province, Afghanistan and their source of income.

In Nangrahar province from total 51 respondents 29.41% of them are obtaining their income from agriculture. And 21.57% of the respondents are getting their income from business or they are self-employed. Means that, the head of the household have a small retail shop in the village or in the center of the province. Furthermore, it was also observed that 19.61% of the total respondent in Nangrahar province busy in labor work

or day to day activity in the canter of the province. From the data it was also observed that the people of the targeted area in this province also obtain their income from government. Means that, they have a government job. Figure 4.13 illustrate the total number and percentages of the people and their source of income in Nangrahar province.

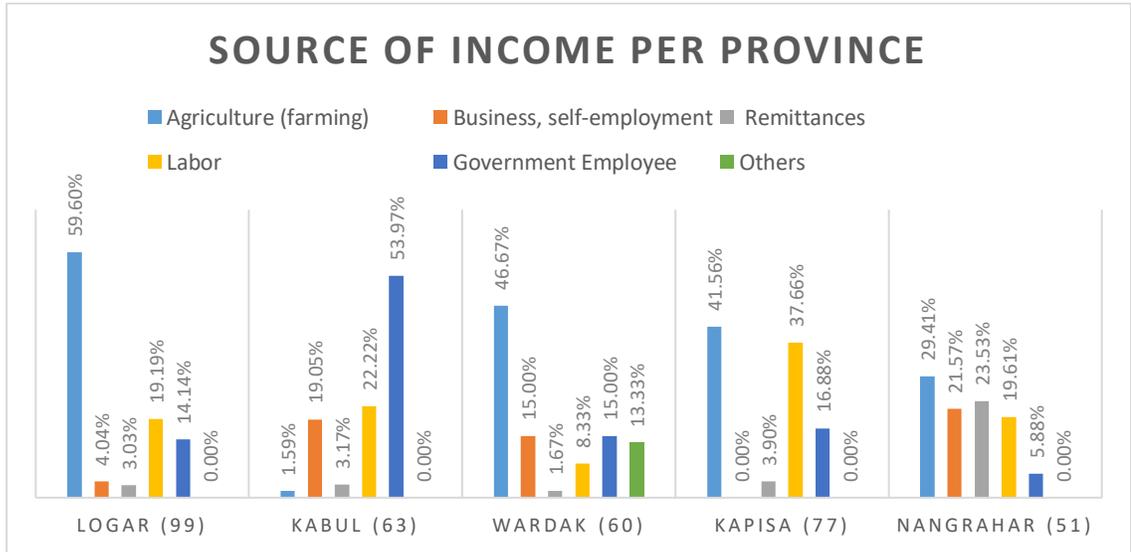


Figure 4.13 illustrate Source of income per province

4.3.12 Awareness regarding cost associated with maternal health

From the respondents of all five provinces it was observed that 80.86% of the total 350 respondents were aware of the cost associated with maternal health and catastrophic expenditure. In addition, the respondents reported that high maternal cost made the household to reduce their daily expenditure in order to finance the maternal health expenditure. Figure-23 illustrate the percentage of the respondents that reduces their food expenditure in order to finance their cost associated with maternal healthcare. And sometime the high maternal health care cost pushed the household further to the poverty.

4.3.13 Effect of cost associated with maternal health on daily expenditure

From the total 350 respondents in five provinces it was reported that 12.57% of the total number which 34 respondents was cutting their food expenditure in order to finance their cost associated with maternal health. In addition, about 4.57% of the total respondents reported that they avoid sending their children to school because they cannot afford it. When the children are not going to school, they are mostly busy with their

parents in agriculture, small business they have, or they are busy with livestock. About 6.29% of the total respondents cut their non-food expenditure. Furthermore, about 76.57% of the total respondents reported that they cut all their three of them just to finance their cost associated with maternal health. It means that, household who faces high maternal health cost cut their food expenditure, avoid sending their kids for to school and cut their non-food expenditure in order to finance their maternal health. Figure 4.14 illustrate the number and the average values of the respondents on the cost associated with maternal health in all five provinces.

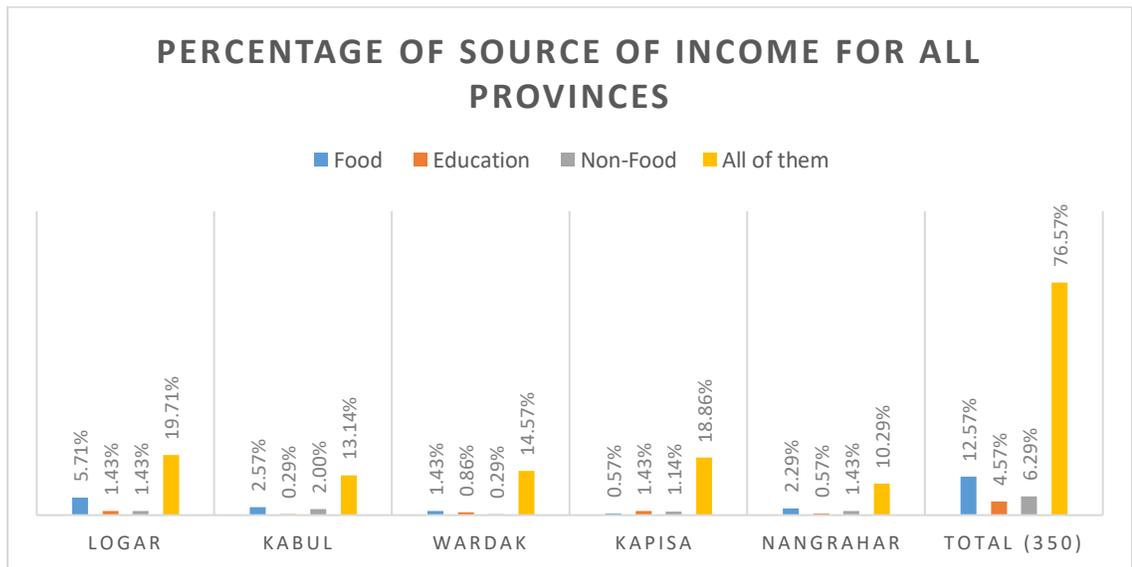


Figure 4.14 Effects on daily expenditure in all five provinces

In Logar province it was observed that 20.20% of the total 99 respondents was reducing their food expenditure in order to finance cost associated with maternal healthcare. In addition, about 5.05% of the respondents in Logar province reported that they were not sending their children to school because they couldn't afford it. Furthermore about 5.05% of the respondents reported that reduces non-food expenditure in order to finance their cost associated with maternal health. Lastly, 69.70% which is 69 respondents from a total number of 99 respondents reported that they reduce all three of them. For instance, if they household want to finance cost associated with maternal health, they have to reduce their daily food consumption, they children education and also non-food expenditure. Figure-25 illustrate the percentage and the total number of the

respondents who reduces their daily food, non-food and education of their children when are facing high maternal healthcare cost.

In Kabul Province it was observed that the total number of 9 which is 14.29% of the total 63 respondents reported that they cut their food expenditure in order to finance their cost associated with maternal health. This maternal health care cost includes both during the pregnancies and at the time of delivery. Moreover, 1.59% of the total respondents in Kabul avoided sending their children to school because of the high maternal healthcare cost. 11.11% of the total respondents reported that effect of high maternal healthcare cost is in non-food expenditure. In addition, 73.02% of the total respondents that because of the high maternal healthcare cost the household cut all three (Food expenditure, Non-food expenditure and education) of their daily expenditure. Figure- 15 indicates the total number of the respondents in percentage who cut their daily expenditure in order of finance their maternal healthcare cost.

In Wardak province 8.33% of the total respondents reported they cut their food expenditure in order to finance cost associated with maternal healthcare. In addition, 5% of the total 60 respondents reported that they avoid sending their children to school while there is high maternal healthcare cost. 85% of the total respondent reported that they cut all three (food, Non-food, and Education) in order to finance cost associated with maternal healthcare cost. Figure- 27 illustrate the total number with its percentage.

In Kapisa province on average 2.60% of the people cut their food expenditure in order to finance their high maternal healthcare cost. In addition, 6.49% of targeted people failed to send their kids to school because they cannot afford it any more. They needed to send their children to work or the kids were busy with their parents in agriculture or in the small business they have. 66 respondents of 85.7% of the total respondents reported that they cut all three (food, non-food, and education) in order to finance the cost associated with maternal healthcare. Figure-15 illustrate the percentages and number of the total respondents who had to face challenges while they have high maternal healthcare cost.

In Nangrahar province in total 51 respondents 8 respondents reported that they cut their daily food expenditure in order to finance the high maternal healthcare cost. In

addition, about 3.92% of the total respondents stopped sending their children to school because they couldn't afford it. Furthermore, 36 respondents which is 70.59% of the total respondents reported that they cut all three (food, Non-food, and education) of their children and family in order to finance their high maternal healthcare cost. Figure 4.15 indicate the percentage and total number of respondents that who cut their food, non-food expenditure in order to finance high maternal healthcare cost.

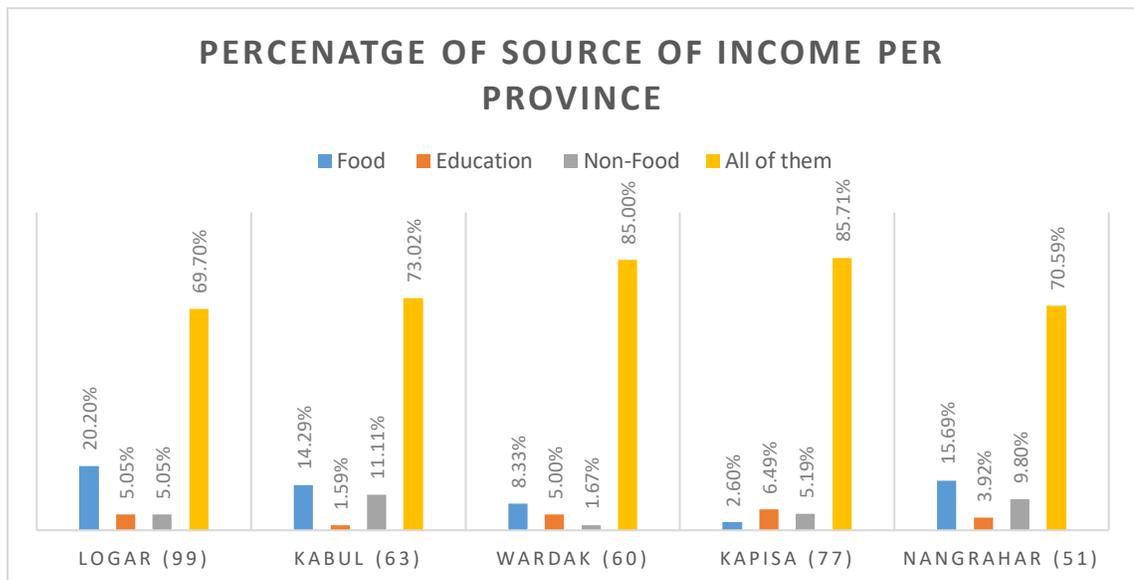


Figure 4.15 illustrate percentage of source of income per province

4.3.14 Availability of fund

From the total 350 respondents, 126 which is 36% of the total respondents reported that they had money on hand while they were facing any cost related to maternal healthcare. In other words, the respondents had money in saving or the salary they get was enough to finance cost associated with maternal healthcare. Respondents also reported that 226 or 64% of the total respondents did not had money in hand while they were facing high maternal healthcare cost.

4.3.15 Arrangement of Fund

From the total 350 respondents in five provinces it was observed that, 32.6% of the total respondents used their saving while there was cost associated with maternal healthcare. In addition, 24.3% of the total respondents reported that they sold their livestock in order to finance the cost associated with maternal healthcare. In order to be

clear that, the livestock they sold was the only source of their income. Because these household was earning with selling the milk of these livestock. 99 respondents reported that they got loan from their relatives while there were facing high maternal healthcare cost. Where most of the respondents couldn't pay back to the relatives the borrowed money, they were forced to give their livestock of their land to repay the amount they borrowed. Furthermore, 13.7% of the total respondents sold their land in order to finance the cost associated with maternal healthcare cost. 1.1% of the total respondents used other source just to finance their maternal healthcare cost. For instance, the doctors helped them with the payment, or NGOs help them with cost associated with maternal healthcare cost. Figure 4.16 shows percentages and number of the total respondents in the five provinces and how they managed their cost for maternal healthcare.

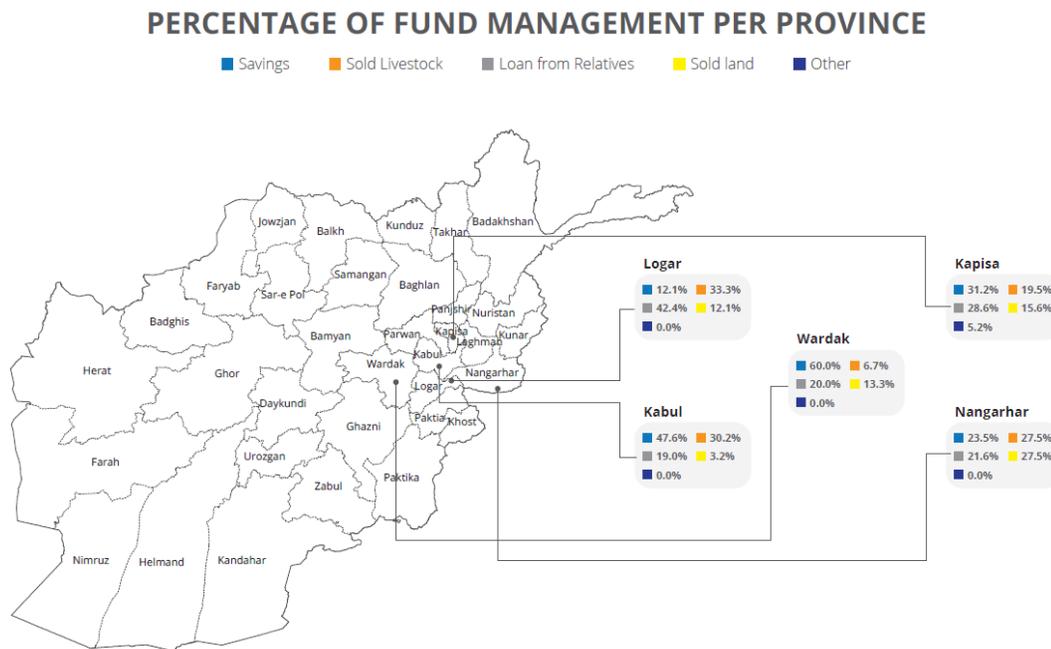


Figure 4.16 illustrate percentage of fund management for all provinces.

From the total respondent of 99 in Logar province reported that 81 respondents did not had enough money on hand while they were facing high maternal healthcare cost. Where 18 of the respondents reported that they had money while they were facing high maternal healthcare cost. In addition, the respondents who faced high maternal healthcare cost they managed the cost through different sources. For instance, 12.1% of the

respondents reported that they used their savings in order to finance their high maternal healthcare cost. 33.33% of the total respondents reported that sold their livestock in order to finance their maternal healthcare cost. 42 which is 42.4% of the respondents reported that they took loan from their relatives in order to finance the cost which is associated with maternal healthcare cost. Moreover, 12.1% of the total respondents in the Logar province reported that sold their land in order to finance their healthcare cost. No to forget, that these respondents used the sold land for their daily use and they were earning from these lands. Figure 4.17 indicates the total percentages and total number of the respondents who used different form of finances in order to pay for their high maternal healthcare cost. Figure 4.17 illustrate required fund management for household who faced high maternal healthcare cost during the pregnancy or at the time delivery.

From the total 63 respondents in Kabul province it was observed that 43 respondents needed money during the pregnancies and at the time of pregnancies which they didn't had in hand. These respondents used different sources in order to finance the cost associated with maternal healthcare. For instance, in Kabul Province 30 respondents which is 47.6% of the total respondents reported that they used their saving in order to finance the cost associated with maternal healthcare. It means that the household income was not sufficient to finance the cost on the spot. In addition, 30.2% of the total respondents reported that they sold their livestock in order to finance their cost associated with maternal healthcare. In addition, 19. % of the respondents reported that they got loan from their relatives in order to finance the cost which is occurred to the household during the pregnancy or at the time of delivery. 3.2% of the respondents in Kabul has reported that they sold their land because of high cost associated with maternal healthcare. It's worth mentioning that the land they sold was the source of income of these specific households. Figure 4.17 illustrate the number and percentages of Kabul province respondents that used different source of the finance for the cost associated with maternal healthcare.

From the total 60 respondents in the Wardak province it was observed that 39 respondents did not had enough money on hand in order to finance the high cost of maternal healthcare. They used different source of financing. For instance, 60% of the

total respondents used their savings to finance the cost associated maternal healthcare, during the pregnancies or at the time of delivery. It was also observed that 6.67% of the total respondents in Wardak province reported that they sold their livestock to finance the cost associated with maternal healthcare. The household who sold their livestock for their maternal health further they faced many problems because these livestock were their source of income. Moreover, 12 respondents which is 20% of the total respondents in Wardak province reported that they took loan from their relatives to finance the cost associated with maternal healthcare. In addition, 13.33% of the respondents sold their land for financing the cost associated with maternal healthcare. Figure 4.17 illustrate the percentages and number of the respondents in Wardak province who used different source of finance in order to pay for the cost which is associated with maternal healthcare.

From 77 respondents in Kapisa province it was observed that 63 respondents did not had enough money on hand to finance the cost associated with maternal healthcare, at the time of delivery or at the time of the whole pregnancies. The household used different source of fund management in order to finance the required fund for financing maternal healthcare. For instance, 24 respondents which is 31.2% of the total respondents in Kapisa province used their saving to finance the required amount for maternal healthcare. In addition, 19.5% of the respondents reported that they sold their livestock for financing their maternal healthcare. 28.57% of the respondents took loan from their relative in order to finance maternal healthcare. 15.58% of the total respondents reported that they sold their land to finance the cost associated with maternal healthcare. Figure 4.17 illustrate the percentages and total number of the respondents who used different source of finance when they were facing high maternal healthcare cost.

From the total 51 respondents in Nangrahar province 12 reported that they didn't had enough money in hand while they were facing high maternal healthcare cost. To finance the cost related to maternal healthcare the respondents of the targeted area used. For example, to finance the cost associated with maternal healthcare the respondents in the Nangrahar province 23.53% of the used their saving while they were facing high maternal healthcare. In addition, 27.54% of the total respondents sold their livestock just

to finance the cost associated with maternal healthcare. Moreover, 21.6% of the respondents in the targeted areas of the province took loan from their relatives in order to finance the maternal healthcare cost. 27.5% of the respondents sold their land in order to finance the maternal healthcare cost. Figure 4.17 indicates the total number of the respondents who used different source of financing to pay for the cost which is occurred due to the high maternal healthcare.

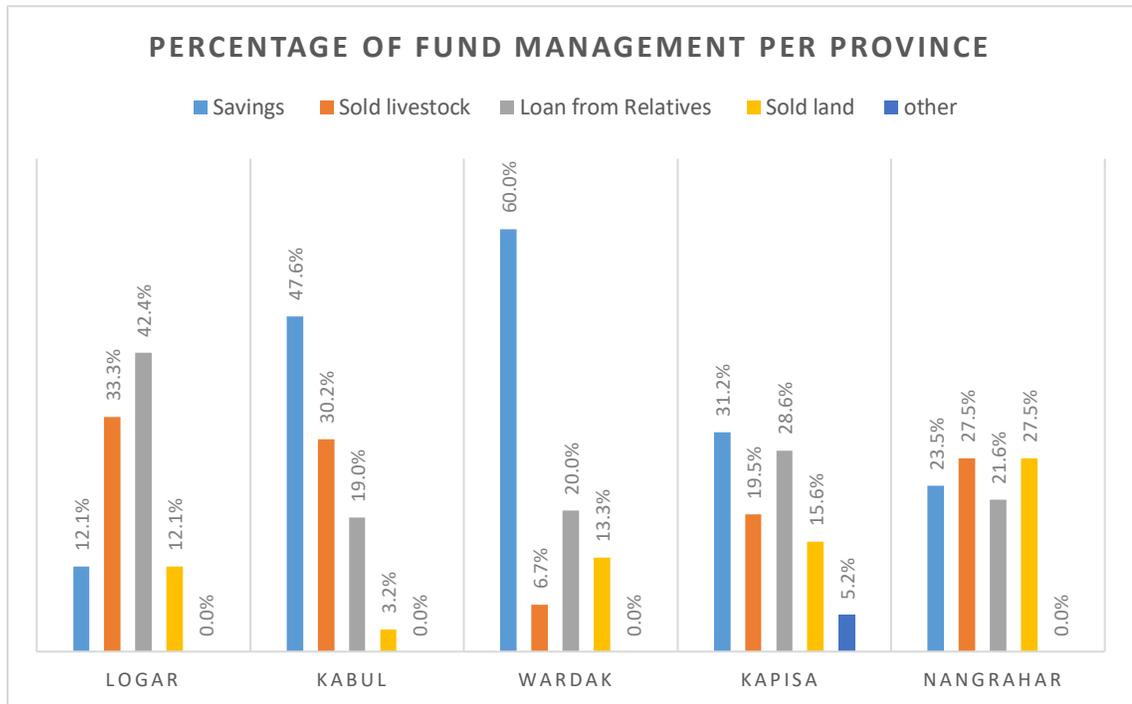


Figure 4.17 illustrate percentage of fun management per province

4.3.16 Satisfaction level from the provision of healthcare

It was observed from the total 350 in five provinces (Logar, Kabul, Wardak, Kapisa, and Nangrahr) in Afghanistan 120 respondents was not happy or satisfy from the healthcare services which was provided to them by private of public clinic or hospitals.

4.4 Section - B

This section will show the result obtained from the model. First the result of logistic regression analysis, second the result of simple regression, or OLS, ordinary least square. Logistic regression analysis will find the main findings of the study to see the where the families in five provinces including Logar, Kabul, Wardak, Nangrahar, and Kapisa provinces in Afghanistan are in the catastrophic health expenditure or not and to see the

magnitude of the coefficients. The second regression it about the effect of child medical cost, total cost effect on the food expenditure.

4.4.1 Logistic Regression result

$$\begin{aligned} \text{logitCE} = & \alpha + \beta_1 \text{LogYincome} + \beta_2 \text{LogYexp} + \beta_3 \text{PublicHospital} + \beta_4 \text{Homebased} \\ & + \beta_5 \text{PrivateHopital} + \beta_6 \text{HigherSecondary} + \beta_7 \text{Master} \\ & + \beta_8 \text{Primary} + \beta_9 \text{Bachelor} + \beta_{10} \text{LogTC} + \beta_{11} \text{LogChildMC} \\ & + \beta_{12} \text{Agesqrt} + \beta_{13} \text{Age} + \beta_{14} \text{Fsiz} + \epsilon_i \end{aligned}$$

This model was used to analyze the effect of yearly income, household yearly expenditure, services used for previously used for last delivery, education, family size, total cost, age, age square, child, and medical cost on catastrophic expenditure.

R-square of the model is 0.6768 which means that 67.68% variation in the dependent variable CE is due to the independent variables. Which also shows the goodness of the model. It is greater than 50% and closer to one. So, the model is good to use to see the effect of these independent variables on dependent variables.

After running the regression on STATA 14, the following result were obtained. Variable LogYinom (Log of yearly income), the coefficient is -13.47922 with a negative sign which is significant, because p-value 0.000 which is less than 0.05 significant level. So, we reject the null hypothesis and conclude that one percent increase in LogYincome will decrease CE by -13.47922. Which means that when the income of a household increases the CE decrease because now the households have more money to spend on maternal health. In addition, more income means more spending in daily expenditure and a better health expenditure. The household will be able to easily spend on health without hesitation.

The second variable which is log of average yearly expenditure (LogYexp), the coefficient is, 10.19938 with positive value, is also significant because, the p-value is 0.000 which is less than 0.05 significance level. So, we reject the null hypothesis and conclude that, one percent increase in the average expenditure will positively affect CE. Moreover, when the average expenditure of a family increases the family does not have more money left to spend on health therefore high daily expenditure leads the family to

CE. Consequently, the household is pushed in to further poverty, because people living in the rural areas are living on subsistence level.

The third variable LogTC, Log of Total cost which is the sum of (Cost of traveling per visit, Cost medicines, Cost of lab and Cost of doctor services) the coefficient is 2.298944 is also significant, because the p-value is 0.000 which is less than 0.05. Therefore, we can conclude that one percent increase in total cost will increase the CE by 2.298944 positive effect. Which economically also make sense, because when a family has higher medical cost on maternal health and have no money usually that lead them to CE. To fill the gap for financial need they usually borrow money from friends, relatives or they also sell their land to finance the remaining money, or sometime they also use their saving, where not all of the household in the rural area have saving. In some cases, they even sell their livestock to finance the health care finance, which all means that they have to pay the health care out of their pocket. The government is not covering the maternal healthcare cost for them.

LogChildMC, another variable which the log of child medical cost. Child MC is the cost which a household has to bier after the birth of the child. Most of the children that born in these five provinces were not well they needed immediate medical intervention that caused families to pay more on child health. The coefficient is 0.6796091 with positive value, is also significant. Because the p-value is 0.005 which is less than 0.05. So, we reject the null hypothesis and conclude that one percent increase in LogChildMC will positively increase the CE with 0.6796091. Moreover, it also makes sense, because when after paying the bills on maternal healthcare cost out of pocket, then when the child is born and the child is sick, the household has to pay more from the pocket which he or she does not have on the hand when the child is born. So, it further pushes the household to the CE. People living in the targeted areas are mostly facing these problems. There are two cases associated when the new baby is born. First, based on the study most of the family do not have money in hand the kid dies because the household cannot afford cost. Second, due to the inadequate doctor and sometimes kids are not treated well consequently they baby end up with having more sickness.

So when the household is in CE, the household in the study area usually, cut their current food expenditure, does not send their children to school, non-food expenditure, and some time, some of the household even cut all of the above mentioned expenses, it is because the household now have to spend more on the health and they don't have money left with them to send their children to school or to provide them with proper nutrition.

The household of the study area goes for borrowing from (land lords, family friends, and relatives), selling their land, and selling their livestock to finance their health care expenses. These results are very true in the five provinces in Afghanistan, Kabul, Logar, Wardak, Kapisa, and Nangrahar. The sensitivity of the CE is very severe in Logar and Wardak province in Afghanistan. Because the wage they get is very low, and they spend more money on health as compared to Kabul, Kapisa and Nangrahar. The case in these provinces are is very different than to Kabul, because at the time interviewing it was observed the some cases with females at the time when are pregnant was very complicated, which made them not to have normal delivery, they had to go for operations and which of course they didn't had money on hand and the hospital did not cover the cost they had to borrow or sell their land to finance the money. If they did not do the operation, they would lose the baby and in some cases the mother as well. In some case it was observed that, to keep the mother alive the doctor had to lose the child. Which is of course not acceptable to any family. This is a huge lost for the family, because they have spent a lot of money while the female member of the family which is pregnant was sick during the pregnancy period.

The effect of the model is illustrated in the following logistic regression result. Where the interpretation of the model is already done in the above paragraphed. The result of the STATA is shown below.

Logistic regression	Number of obs	=	350
	LR chi2(14)	=	318.86
	Prob > chi2	=	0.0000
Log likelihood = -76.123342	Pseudo R2	=	0.6768

CE	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
Age	.5372384	.411458	1.31	0.192	-.2692045	1.343681
Fsize	.035054	.0627578	0.56	0.576	-.087949	.158057
LogYincome	-13.47922	1.641623	-8.21	0.000	-16.69674	-10.26169
Primary	-1.044455	.5702236	-1.83	0.067	-2.162072	.0731632
HigherSecondary	-.4850926	.6945102	-0.70	0.485	-1.846308	.8761224
Bachelor	-.261078	.7647677	-0.34	0.733	-1.759995	1.237839
Master	-4.031556	3.11539	-1.29	0.196	-10.13761	2.074495
PublicHospital	1.358799	1.484548	0.92	0.360	-1.550862	4.268459
Homebased	1.58065	1.634236	0.97	0.333	-1.622393	4.783692
LogTC	2.298944	.4032966	5.70	0.000	1.508497	3.08939
LogChildMC	.6796091	.242697	2.80	0.005	.2039317	1.155287
Agesqrt	-6.128647	4.654761	-1.32	0.188	-15.25181	2.994516
LogYexp	10.19938	1.323574	7.71	0.000	7.605221	12.79354
PrivateHospital	.9500811	1.566697	0.61	0.544	-2.120589	4.020751
_cons	32.17547	14.91479	2.16	0.031	2.943015	61.40792

Figure 4.18 Result of the STATA

4.5 Section-C

4.5.1 Qualitative analysis

Along with the structured Questionnaire distributed among different households to ask about their maternal health and catastrophic expenditure. We had the chance to interview some of the households through phone calls in five province Logar, Kabul Wardak, Nangrahar and Kapisa in Afghanistan to ask about their cost associated with maternal health during the pregnancy and at the time of child delivery. The answers we got from interviewees was different in two ways from the answers we got from the questionnaire. First, I got a clear understanding of situation of the female member of the household who was pregnant and faces complication or any other sickness for which she should consult a doctor and why they didn't visit the doctor on regular basis. From the questionnaire the reasons of not visiting doctor on regular basis was not clear it was just mentioned that the respondent did not visit the doctor. Second, the reason for miscarriage and complication of pregnant respondent was not clear. In addition, from the interview call I got full understanding of the situation why the female member of the household who was pregnant had complication of the last delivery and how did they deal with it? A total of 100 telephone calls were made from which 40 of the respondents didn't answer or they didn't want to talk to the interviewer. A total of 12 calls per province were made, 60 calls in total.

Extracting the accurate and relevant information was still one of the main issues to get from the respondents. Five females were trained by me about what kind questions should be asked from interviewee. Because in a conservative society like Afghanistan it is hard to talk to female member of the household and ask questions about their maternal health. However, a total 12 female member of the households who had last successful delivery in Logar province was interviewed by me the rest 48 of the respondents from four other provinces where were interviewed by the other females who trained by me. Majority of the respondents which were interviewed had the age between the 15 and 28 years. Most of the respondent had responded similarly regarding the strict rules of the family and their rigidity which did not allow their females to visit the doctor and to keep meeting the doctor on a regular bases for checkup. Beside these hurdles, they had also to

face low income, dependency, transportation, large family size and minimum accessibility to health service.

4.5.2 Themes derived from Qualitative analysis

From the interviewed respondents, the following themes were obtained.

4.5.3 Income constraint

Majority of the respondent from the study had to face the problem of low income. Where they are unable to provide quality healthcare for their family. From the different respondent interviewed, we are taking one of them as an example.

“I am a housewife. My husband is a driver. We didn’t had money to visit the doctor. And people did not lend us money because my husband is a driver and we faced lot difficulties during the pregnancy. I have four kids. Two boys and two girls. None of my kids are vaccinated.” (Respondent: Nazifa, age 22)

4.5.4 Issues in accessibility

Majority of the respondents were facing the problem of limited transportation in the area. These household are living in the distanced area from the center of the province and couldn’t get the transport facility when needed. The following is one of the examples of people interviewed.

“I am a housewife. My husband is labor. I got sick during my pregnancy period, but due to lack of transport facility and the financial crisis, couldn’t get the chance to visit the doctor on time. I visited the doctor and wrote me a prescription with a long list of medicine but due to the financial crisis, I couldn’t afford to buy all of them.” (Respondent Palwasha, age 20)

4.5.5 Dependency

Most of the respondents interviewed had to say that they were financially dependent on their parents. The respondents were also dependent on decision of others mostly in visiting the doctor, meeting with people, decision about their children. The following interview is taken as one of the examples.

“My husband is a drug addict. I live with my father and my father is supporting me, my husband and my six kids. All of my children were born in my father’s home. I have lots of financial problem.” (Respondent Bibi, age 25)

4.5.6 Access to the health facility

Accessibility to the health sector was an issue that the majority of the respondent had to face. Because of the limited access to the health facility most of female couldn't visit the doctor on time which caused them with loss of a child. And because of the limited access to the health facility during the pregnancy majority of the females consulted Tabibs. The following example is taken as sample.

“My husband is a drug addict. I have four children. All of them were born at home because of limited availability of hospitals and they did not receive proper vaccination. And my children do not have proper nutrition too.” (Respondent Karima age 25).

4.5.7 Rigidity

Majority of the households interviewed had to face the problem like; strict rules, norms of the family and rigidity of the head of the household. Which did not allow females to go out and visit the doctor. The following is the exact words of one the respondent interviewed.

“My husband is a bus driver (Meli bus). With all the sickness I had during the pregnancy I couldn't visit the doctor because my in laws did not allow me to go to the doctor.” (Respondent Abida, age 25)

4.5.8 Proper Nutrition:

The availability of proper nutrition for mother and children was also one of the issues that most of the respondent had to face. The following is one of the examples. “My husband borrowed 10000 Afn and sold his land to deal with the sickness that I had during my pregnancy. I was pressurized that I am the cause of poverty and all the difficulties in life. I lost one of my children because of not having proper nutrition.” (Respondent Amina age 18)

4.5.9 Further Discussions on results

This research is conducted to assess maternal health and catastrophic expenditure in five provinces namely, Logar, Kabul, Wardak, Kapisa, and Nangrahar, Afghanistan. This study found that 40% of the household in these five provinces suffered from health catastrophe because of the high maternal healthcare cost.

The main challenges to provide quality health care to the respondents in the targeted areas of these five provinces are, lack of awareness, insecurity, and lack of access to facilities, a lack of human resources capacity and capability, and the poor quality of services. A specific consideration is needed to be given to the role of decision makers and need of women and girls.

The international community need to make long term funding commitments in health sector with projects focusing on increasing the quality not the quantity of services and is disbursed with the primary objective of meeting the local people's need and alleviating poverty rather than serving political or security goals.

This study indicates that about 64% percent of the respondents did not have money on hand when there was any kind of sickness related to maternal health, which increases their catastrophic expenditure if they went to cover the health cost through precautionary measures, selling livestock and loan from relatives, friends and land lords because they have to pay back the borrowed money along with some amount in access. A similar study conducted by Sauerborn R et al. (1996) finds that people sell their livestock for covering their health care costs. In case of our study area household consider selling of their assets to be the last option for treatment of their patients because they are mainly dependent on livestock³⁶.

All of the respondents from this research were of the opinion that, the respondents avail healthcare for the patients either through using cash in hand, precautionary measures or taking loans. A similar study conducted in India Marta Quintussi et al. (2015) reported that, in the absence of insurance and financial assets households decides to forego the essential healthcare treatment³⁷.

Kimani et al. (2016) study conducted in Kenya and concluded that healthcare costs have negative effects on routine consumption of the household³⁸. While this study

³⁶ R.Sauerborn· A.Adams, M.Hien, "Households Strategies to cope with the economic costs of illness," *Health Policy Volume 43, Issue 3, August 1996, Pages 291-301*, accessed on 6th, 11,2019,

³⁷ Quintussi, M., Van de Poel, E., Panda, P. *et al.* Economic consequences of ill-health for households in northern rural India. *BMC Health Serv Res* **15**, 179 (2015) doi:10.1186/s12913-015-0833-0

³⁸ Diana Kimani, University of Nairobi and Thomas Maina, "Catastrophic Health Expenditure and Impoverishment in Kenya," *USAID Health policy Project, 2015 Washington, DC: Futures Group*, accessed on 6th, 11, 2019

also shows that healthcare costs have effects on the routine consumption of the household including food expenditure, education of their children and non-food consumption. In this study area about 80.86% of the total respondents in the five provinces reported that healthcare cost affects their routine consumption pattern.

Our study indicates that, 64% of the respondent's costs were beyond their potential, meanwhile the rest of 36% of the respondents had the cost covered. A similar study conducted in Kenya, Kimani et al. (2016) finds that 49.18 % of the household's cost were beyond their potential while paying for health care. And the rest had different ways of covering the cost occurred³⁹.

Padmadas et al. (2014) Study in India has concluded that, 85 percent of the respondents have paid some amount of money for delivery care. While 35.8 percent of the respondents have paid more than 1000 INR or more. Providing of maternal healthcare in India is free of charge, the figures shows the opposite to be true⁴⁰. While this study shows that 80 percent of the household have access to the healthcare facility and have paid a good fortune of money and the 20 percent have no access to the health facility.

³⁹ Diana N. Kimani, Mercy G. Mugo, Urbanus M. Kioko, "Catastrophic Health Expenditure and Impoverishment in Kenya," *European Scientific Journal* Vol 12, No 15 (2016), accessed on 6th, 11, 2019

⁴⁰ Leone T, James KS, Padmadas SS, "The burden of maternal health care expenditure in India: multilevel analysis of national data," *Matern Child Health J.* 2013 Nov;17(9):1622-30. doi: 10.1007/s10995-012-1174-9, accessed on 6th, 11, 2019

Chapter 5

Conclusion

The study was conducted between July and November 2019 on a sample of 350 households across five provinces in Afghanistan including, Logar, Kabul, Wardak, Kapisa, and Nangrahar provinces. All 34 provinces could be included however due to the lack of resources and in difficult locations where on provincial level I couldn't work, even in the five provinces team specific to these difficult areas were employed and trained. Less than 50 questionnaires were filled incorrect after revisiting the household and through phone calls the questionnaires were refilled.

Based on the study the current essential maternal healthcare and infant health services are not satisfactory and low in Afghanistan especially in the targeted provinces, and it's worth mentioning that the socioeconomic inequalities are prevalent. Interventions based on facility including maternal healthcare and skilled birth attendance are unequally distributed, where vaccination and breastfeeding of the children are least inequitable. Moreover, wealth inequality, geographical remoteness/cultural barriers, instability, and insecurity pose a threat to achieve quality healthcare system interventions especially in maternal healthcare in these five provinces in Afghanistan; these barriers should be further understood and targeted for effective interventions. This study focused on analyzing maternal health catastrophic expenditure and its economic consequences. Data for this research was collected through semi-structured questionnaires by using cross sectional method.

Respondents in these five provinces used different source of fund in order to finance their cost associated with MH. For instance, in logar province 42.4% of the respondents took loan from friends, relatives or other family members. In addition, in Kabul province 47.65 of the respondents used their savings to finance cost associated with MH. While 60% of respondents in Wardak province used saving to finance the cost associated with MH. 31% of the respondents in Kapisa province used saving, and 27.5 of the respondents in Wardak province sold their land to finance their MH cost. The comparison indicated the magnitude of CE in five provinces of Afghanistan. From the result we can obtain that people suffer a lot from high cost associates with MH.

From total 350 respondents in five provinces because of the high MH expenditure 12.57% of the respondents reduced their food expenditure, 4.57% of the respondents avoid sending their children to school, 76.57% of the respondents reported that they cut all three (food, Non-food, and education) in order to finance the cost associated with MH. From the result we can conclude that, detaining children from not doing to school or cutting their food expenditure leads the families into further CE and long-term poverty.

38.57% of the respondents in all five provinces were earning their income from agriculture, 10.29% of the respondents had their own small retail business and earning their income from it. 6% of the respondents were receiving remittances for their monthly expenditure, 22% of the respondents were doing labor work for their income and 20.80% of the respondents were public servant and earning their income. From the result we can understand that the people living in the rural areas of Afghanistan especially in these five provinces are earning their income from agriculture. And the agriculture product doesn't have a proper market. The government need be providing and facilitate the local farmers. It has been also observed that, 64% of the respondents cost associated with MH was beyond their protentional, they either avoid going to doctor to acquire quality HC or the borrowed money, sold their land, or sold their livestock. This further push household to CE. Great government health spending or social support to focus on the areas or groups where CE is greatest.

It has been concluded from this study, that the incident of the catastrophe is very common in the targeted area. This issue should be addressed and applicable polices should be devised. Factors for high catastrophic expenditure in the area were found to be lower family income, higher health cost and large family size. The routine consumption including food, education and transportation also is one of other aspects of the households' higher expenditure. Reasons for poor maternal health in the study area were found be strict and ridged family rules, poverty and poor nutrition. All the factors and reasons aforementioned caused to bind them in to the poverty traps.

5.1 Limitation of the Study:

The main limitations beside the time were data collection, reaching the female members of families and travelling to five different provinces in Afghanistan. Because in

the prevailing social norms, it is very difficult for research students to collect data from female members of families. The study is based on data collected from those families only who gave their consent regarding sharing their information. It would be better to have a large sample size in order to have a clear image of the situation, furthermore the scope of the study is limited to just five provinces, so it will be much better to take more or all provinces as well. In addition, head of the household should be interviewed as well, because the head of the household might have a greater understanding of their economic situation and as well the spending per month on the expenditure. Last but not the least, selecting the middle-class household is one of other limitation of the study.

5.2 Recommendations

The following recommendations are based on the findings of the study. These recommendations can be implemented with the help of Government institutions, NGOs, and international community. Based on the result of the study there is immediate need to the international community assistance and intervention in order to overcome the issue related to the maternal health in Afghanistan.

If there is no access to public health services, government should expand the span of their services to the remote areas, this will be helping availability of the services and also CE. Also improve the capacity of the health facilities and health personnel so that people are not required to travel to other provinces or even other countries which leads to CE.

The government must create markets for the agriculture products of the household who are busy earning their income through agriculture or farming. This will help the household to earn more money and fulfill the need of more people with the help of government.

It is also recommended that if the government make a Health Card for female member of the family who faces high MH cost. And this Health Card should cover the cost associated with MH.

Inequalities should be reduced and must be fundamental to international and national programs and policy makers to expand maternal healthcare system and survival of mothers and infant at the time of delivery and strategies must be made based on the

evidence to reduce the gaps. The availability of health workers must be improved, increase availability of mobile hospitals and clinics, and introduce safety nets for the mother and child during and at the time of delivery.

Health coverage needs to be provided to poor households in order to save them from catastrophic health expenditure. Community based health promotion programs needs to be designed more to create awareness and to reduce different disease and increase preventive measures for them. Updating and developing national strategies and polices, service delivery guidelines, clinical standards and training packages for health care providers.

Building child health and development of the capacity of health sector to implement, monitor and evaluate plans and policies to improve maternal health. Strengthening child and teenage health through school-based programs and enhancing friendly health care services. There should be efforts to improve the regulation and as well as the cooperation between the private and public health sector who provide the maternal health services they should be considered as the policy options.

5.3 Further Research Required

I believe that the current research does not provide a satisfactory account of the causes of this phenomenon “maternal healthcare and catastrophic expenditure” in the five provinces in Afghanistan and we cannot conclude based on five provinces on the whole country level. In order to resolve and understand the full picture we need to further investigate this phenomenon which is a problem of the whole country. This study also did not cover the infant death. This issue should be included in the further study because a high risk of infant death is the cost to families and society is far too high. The questionnaire which is used for the current study also misses some key aspect of this phenomenon.

Therefore, for further research it is suggested to have more provinces included in the study. Moreover, to include other aspect of the study such infant health and immunization should be included in order to have a clear and more comprehensive result. The questionnaire should further furnish and add more variables in order to cover more causes of maternal and catastrophic health expenditure particularly in Afghanistan.

References

Abdul-ur-Rehman. Muhammad Adnan. Hina Mehmood. Mahmoodul Hasan. Ayesha Humayun. “Maternal Healthcare Expenditure among women in Rural Areas of Pakistan.” *ANNALS of KEMU*. 23. 245-9. 10.21649/akemu. v23i2.1587. 2017. accessed on 4th. 09. 2019.

Aye Nyein Moe Myint. Tippawan Liabsuetrakul. Thein Thein Htay. Myint Myint Wai. Johanne Sundby. Espen Bjertness. “Inequity in the utilization of antenatal and delivery care in Yangon region. Myanmar: a cross-sectional study.” *International Journal for Equity in Health*. Vol 17:63. (2018).
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5964903/>.

Choi JW, Kim TH, Jang SI, *et al*, “Catastrophic health expenditure according to employment status in South Korea: a population-based panel study,” *BMJ Open* 2016;**6**:e011747, accessed on 29th, 09, 2019,
<https://bmjopen.bmj.com/content/6/7/e011747>,

Diana Kimani, University of Nairobi and Thomas Maina, “Catastrophic Health Expenditure and Impoverishment in Kenya,” *USAID Health policy Project, 2015 Washington, DC: Futures Group*, accessed on 6th, 11, 2019

Diana N. Kimani, Mercy G. Mugo, Urbanus M. Kioko, “Catastrophic Health Expenditure and Impoverishment in Kenya,” *European Scientific Journal Vol 12, No 15 (2016)*, accessed on 6th, 11,2019

Diana N. Kimani. Dr. Mercy G. Mugo. Dr. Urbanus M. Kioko. “Catastrophic Expenditures and Impoverishment in Kenya.” *European Scientific Journal* May 2016. Vol.12. No.15 ISSN: 1857 – 7881 (Print) e - ISSN 1857- 7431.
<https://eujournal.org/index.php/esj/article/view/7518>.

Jonathan Cylu. Sarah Thomson and Tamás Evetovits. “Catastrophic health spending in Europe: equity and policy implications of different calculation methods.” *Bullion of the World Health Organization*. 2018. accessed on 26th. 08.2019.
<https://www.who.int/bulletin/volumes/96/9/18-209031.pdf>.

Kapisa Province Socio-Demographic and Economic Survey Highlights. “Central Statistics Organization of Afghanistan.” 2015. Accessed on 3rd. 09. 2019.
<https://afghanistan.unfpa.org/sites/default/files/pub-pdf/SDES-Highlights-Kapisa-English.pdf>.

Ke Xu. “Distribution of health payment and catastrophic expenditure.” *World Health Organization Geneva 2005*. EIP/HSF/DP.05.2PDF

Kronenberg Christoph. Pita Barros Pedro. “Catastrophic healthcare expenditure – Drivers and protection: The Portuguese case.” *Health Policy*. 115 (2014) 44–51.

Leone T, James KS, Padmadas SS, "The burden of maternal health care expenditure in India: multilevel analysis of national data," *Matern Child Health J.* 2013 Nov;17(9):1622-30. doi: 10.1007/s10995-012-1174-9, accessed on 6th, 11, 2019

Logar. "Demographic and Province profile." 2008. Accessed on 31st. 08. 2019. <https://afghanag.ucdavis.edu/country-info/province/files/social-Logar.pdf>.

Mukherjee. Saradiya. Aditya Singh and Rakesh Chandra. "Maternity or catastrophe: A study of household expenditure on maternal health care in India." *Biomedical & Life Sciences, Vol.5 No.1, 2013.* <https://www.scirp.org/journal/PaperInformation.aspx?PaperID=26974>.

Nadia Akseerl. Zaid Bhatti. Arjuman Rizvi. Ahmad S. Salehi. Taufiq Mashall and Zulfiqar A. Bhutta, Achiving. Maternal and Child Health Gains in Afghanistan. *Global Health.* Vol 4:6, (2016). [https://www.thelancet.com/journals/langlo/article/PIIS2214-109X\(16\)30002-X/fulltext#articleInformation](https://www.thelancet.com/journals/langlo/article/PIIS2214-109X(16)30002-X/fulltext#articleInformation).

Owen O'Donnell, Ravindra P. Rannan-Eliya. Aparnaa Somanathan. Shiva Raj Adhikari. "Catastrophic Expenditure for healthcare in Asia." *Health Economics* Vol. 16. Issue 11 (2007): 1159-1184. https://www.researchgate.net/publication/6495065_Catastrophic_Payments_for_Health_Care_in_Asia

Quintussi, M., Van de Poel, E., Panda, P. *et al.* Economic consequences of ill-health for households in northern rural India. *BMC Health Serv Res* **15**, 179 (2015) doi:10.1186/s12913-015-0833-0

R.Sauerborn, A.Adams, M.Hien, "Households Strategies to cope with the economic costs of illness," *Health Policy Volume 43, Issue 3, August 1996, Pages 291-301*, accessed on 6th, 11,2019,

Regional Rural Economic Regeneration Strategies (RRERS). "Provincial profile of Wardak." accessed on 3rd. 09. 2019. <https://afghanag.ucdavis.edu/country-info/province/files/gov-Wardak.pdf>.

Regnal Rural Economic Recognition Strategy. "Provincial Profile of Nangrahar." accessed on 4th. 09. 2019. <https://afghanag.ucdavis.edu/country-info/province/files/gov-Nangarhar.pdf>.

Reproductive Health Task Force Ministry of Public Health. "National Productive Health Strategy." *Ministry of Public Health, 2012-16.*

Sekhar Bonu. Indu Bhushan. Manju Rani and Ian Anderson. Incidence and correlates of 'catastrophic' maternal health care expenditure in India. "*Health Policy and*

Plan. ” 24(6):445-56. doi: 10.1093/heapol/czp032. Epub 2009 Aug 17.
<https://www.ncbi.nlm.nih.gov/pubmed/19687135>.

Sharifa Wan Puteh and Yasmin Almualm. “Catastrophic Health Expenditure among Developing countries.” *Health Systems and Policy Research*. 2017. 4:1. doi:10.21767/2254-9137.100069. Accessed on 26th, 08, 2019.
<http://www.hsprj.com/health-maintanance/catastrophic-health-expenditure-among-developing-countries.php?aid=18514>.

Steven Buigut, Remare Ettarh and Djesika D Amendah. “Catastrophic health expenditure and its determinant in Kenya slum communities.” *International Journal for Equity in Health*. (2015). 14:46 DOI 10.1186/s12939-015-0168-9. accessed on 31st. 08, 2019. <https://equityhealthj.biomedcentral.com/track/pdf/10.1186/s12939-015-0168-9>.

The World Bank. “Afghanistan Builds Capacity to Meet Healthcare Challenges.” 2015. accessed on 31st. 08. 2019.
<https://www.worldbank.org/en/news/feature/2015/12/22/afghanistan-builds-capacity-meet-healthcare-challenges>.

Tiziana Leone, K.S. James, Sabu S. “The burden of maternal healthcare expenditure in India: Multilevel analysis of National Data.” *Maternal and Child Health Journal*. 17 (9). 1622-1630. ISSN 1092-7875

United States Agency for International Development (USAID). “MATERNAL HEALTH IN AFGHANISTAN.” USAID from American People. 2017. Accessed on 31st. 08. 2019. <https://www.usaid.gov/actingonthecall/stories/afghanistan>.

World Health Organization (WHO). “Fact sheets on sustainable development goals: health targets Maternal health.” *World Health Organization Regional Office for Europe*. 2017. accessed on 3rd. 09. 2019.
http://www.euro.who.int/_data/assets/pdf_file/0006/354921/3.1-SDG-Fact-sheet-Maternal-Health.pdf?ua=1.

World Health Organization. “Health system improving performance.” *World Health Organization Provincial Agenda item 3. A53/4*.
apps.who.int/gb/archive/pdf_files/WHA53/ea4.pdf.

World Health Organization. “Maternal Mortality.” *World Health Organization*. 2018. Accessed on 4th. 09. 2019. <https://www.who.int/en/news-room/fact-sheets/detail/maternal-mortality>.

World Health Organization. “SDG 3: Ensure healthy lives and promote wellbeing for all at all ages.” *Sustainable Development Goals*. accessed on 4th. 09. 2019.
<https://www.who.int/sdg/targets/en/>

World Health Organization. "What is Universal Health Coverage." December. 2014. Accessed on 26th. 08. 2019.
https://www.who.int/features/qa/universal_health_coverage/en/.

Xu Ke, Evans David B, Carrin Guido, Aguilar-Rivera Ana Mylena, Musgrove Philip. "Protecting Households from Catastrophic Health Spending." *Health Affairs* Vo.26, No.24 (2007). <https://www.healthaffairs.org/doi/full/10.1377/hlthaff.26.4.972>.

Questionnaire

ASSESSING MATERNAL HEALTH AND CATASTROPHIC EXPENDITURES

A case study of five Provinces in Afghanistan

(Kabul, Logar, Wardak, Kapisa, Nangrahar)

My name is Abdul Majeed Stanikzai. I am a student of MA. Economic Governance and Development Program at OSCE Academy Bishkek. This questionnaire must be filled by Women who had last successful child birth. The information gathered from this survey will be only for academic purposes, answers are recorded anonymous and information will be kept confidential and not to be disclosed to any party.

a. Name _____ **b. Age (years)**

c. What is the level of education?

1. Primary **2. Higher Secondary** **3. Bachelor** **4. Masters**

d. Have you ever worked outside of family, for paid work?

e. Rural/Urban _____

f. Number of people living at home _____

1. How old were you when you were married? _____

2. How old were you when you had your first child? _____

3. No. of Pregnancies _____

4. Outcome: successful _____ Otherwise _____

5. The place the last delivery took place:

a) Private clinic b) Public hospital c) Home based delivery d) Other

5a. if c) and d) Reason not in a clinic or hospital:

6. Family type

a) Joint b) Nuclear

7. Primary source of income

a) Agriculture (farming) b) Business / self-employment c) Remittances

d) Wage labor in private sector. e) Govt / public sector wage work

f) Other (specify) _____

8. What is your family monthly income (in Afghani / per month?)
 a) 15000-25000 b) 25000-35000 c) 35000-45000 d) above 45000
9. Average monthly food expenditure (in Afghani).

10. Availability of basic health facilities (Yes=1/No=0)

11. Provide details on your children [aged 0-18] as asked below:

Child	Age	Any major problem during the pregnancy that needed medical intervention?	Any major problem during the delivery that required medical intervention?	Did any of your pregnancies or deliveries incur cost that were beyond your means?	How did fund the extra costs? (e.g. 1) borrowed money; 2) sold assets; [more options?])
1					
2					
3					

12. Were you aware of the cost accessing maternal health [before you visited a medical service] in your last pregnancy?

Yes _____ No _____

12a. If yes, with whom did you discuss it?
 Husband _____ Mother-in-law _____ Doctor _____ Others (specify) _____

13. Did you have a say on the decision-making process? Yes _____ No _____

13a. if No who did make a decision? Husband _____ Mother-in-law _____
 Doctor _____ Other) _____

14. Total cost of previous Pregnancy (Afghani) _____

15. Number of visits to the doctor during the pregnancy? _____

16. Cost of traveling per visit (Afghani)

- a) 0-1000 b) 1000-1500 c) 1500-3000 d) above 3000

17. Cost of medicines (AFG)

- a) 100-1000 b) 1000-2000 c) 2000-3000 d) above 3000

18. Cost of lab tests during the last pregnancy (AFG) _____

19. Cost of doctor services during the last pregnancy (AFG) _____

20. Any medical intervention for child at the time of delivery? a) Yes b) No

21. What is the cost for the medical intervention for the child (AFG)?

19. Do you think that spending on maternal health forced you to reduce the family's usual expenditures?

- a) Yes (1) b) no (0)

19a. If yes how it has affected your daily consumption and expenditures?

- a) Has affected our food expenditure
b) has affected the education of children
c) has affected our non-food expenditures
d) all of the above

20. Did you have enough money in hand for accessing maternal health for (previous/all) pregnancies?

- a) Yes b) No

21. If no from where you have managed the required money?

- a) Savings b) Sold livestock c) loan from relatives d) Sold land e)
other.....

22. Are you satisfied from the quality of available medical facilities in your area?
(Yes=1, No=0)

- a) Yes b) no

23. What are your suggestions for the improvement of health care facilities in your area?

Thanks for your cooperation