



**Faculty of Medicine and Health Sciences**

**Estimation of Out-of-Pocket Expenditure on Utilization of Delivery and Postpartum Services in Public and Private Health Care Facilities- Study in a Rural District of Pakistan**

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Estimation of Out-of-Pocket Expenditure on Utilization of Delivery and Postpartum Services in Public and Private Health Care Facilities- Study in a Rural District of Pakistan

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## DECLARATION

I declare that the work in this thesis was carried out in accordance with the regulations of Universiti Malaysia Sarawak. Except where due acknowledgements have been made, the work is that of the author alone. The thesis has not been accepted for any degree and is not concurrently submitted in candidature of any other degree.



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## ABSTRACT

Maternal health is considered a significant public health challenge in most developing countries. Over the last two decades, Pakistan witnessed a significant improvement in maternal healthcare infrastructure and maternal health outcomes during the past two decades. However, persistent urban-rural and socio-economic inequalities exist in access to maternal healthcare services across the country. These inequities are reflected in the utilization of maternal healthcare services and out-of-pocket expenditures (OOPEs) between urban vs. rural women and between the public vs. private healthcare sector. This cross-sectional study was conducted in Rajan Pur, a predominantly rural district in Punjab province. The district's maternal healthcare utilization and outcomes remain lower compared to other districts in the province. The overall objectives of this research were divided into two parts. Part 1 aims to study the utilization pattern and socio-economic factors determining the choice of healthcare institutions for delivery and postnatal care. Part 2 aims to estimate OOPEs on delivery and postnatal care and sources of financing OOPEs. The findings of this study make some significant contributions to understanding OOPEs in utilizing delivery and postnatal care by women in a rural district of Pakistan. The study was based on 368 randomly selected mothers who had childbirths from 1<sup>st</sup> October to 31<sup>st</sup> December 2020. Multi-stage random sampling technique was used to select the study participants. The results showed that about two-thirds of mothers preferred public hospitals for most recent delivery. The percentage of cesarean deliveries conducted in private hospitals (43.8%) was 4.7 times higher than in public hospitals (9.3%). This rate is almost three times the WHO recommended limit of 10% to 15%. Further, 70% of mothers who had childbirths in private hospitals sought postnatal care, in contrast to 56% of mothers in the public healthcare sector. The logistic regression analysis results showed that the use of public healthcare facilities for

delivery care increases with increasing maternal education, monthly household income, and distance to healthcare facilities. The results also showed that mothers' occupation and distance to healthcare facilities positively influence the decision to utilize public hospitals for postnatal care. About 99% of mothers incurred OOPE during delivery and postnatal care, and the mean OOPE incurred during delivery care was PKR 2840 in public hospitals and PKR 25596.3 in private hospitals. A significant difference in OOPE was observed between public versus private hospitals and normal versus cesarean deliveries. OOPE on cesarean delivery in private hospitals was 2.5 times higher than the public hospitals, whereas OOPE on normal delivery care in private hospitals was 9.5 times higher than OOPE in public hospitals. Overall, the mean OOPE on both delivery and postnatal care sought in public hospitals was PKR 3856.70, and in private hospitals, it was PKR 27288.40. The mothers who availed of postnatal care incurred a mean OOPE of PKR 1022.20 in public hospitals and PKR 1692.10 in private hospitals. The study showed that savings and current income were the primary sources of financing OOPE by 90% of participants. Further, 35% of low-income households borrowed money from friends and relatives to cope with the current expenditure on delivery and postnatal care. The research findings would add a significant dimension to addressing the barriers and challenges affecting the utilization of maternal healthcare services beyond individual and contextual perspectives. The findings of the research would also provide some direction for interventions aimed at scaling up the existing maternal healthcare programs at the district level. Finally, the findings and recommendations drawn from the research would provide some insights to health policymakers and planners in developing an integrated and viable maternal healthcare program in Pakistan.

**Keywords:** Delivery care, postnatal care, out-of-pocket expenditure, public sector, private sector

***Anggaran Perbelanjaan Luar Saku untuk Penggunaan Perkhidmatan Bersalin dan Selepas Bersalin di Institut Perubatan Awam dan Swasta: Kajian di Daerah Luar Bandar Pakistan***

**ABSTRAK**

*Kesihatan ibu bersalin dianggap sebagai cabaran di kebanyakan negara membangun. Sepanjang dua dekad yang lalu, Pakistan menyaksikan peningkatan ketara dalam infrastruktur penjagaan kesihatan ibu dan hasil kesihatan ibu. Walau bagaimanapun, ketidaksamaan bandar-luar bandar dan sosio-ekonomi yang berterusan wujud dalam akses kepada perkhidmatan penjagaan kesihatan ibu bersalin di seluruh negara. Ketidaksamaan ini dicerminkan dalam penggunaan perkhidmatan penjagaan kesihatan ibu dan perbelanjaan luar saku (OOPE) antara wanita bandar dan luar bandar dan antara sektor penjagaan kesihatan awam dan swasta. Kajian keratan rentas ini dijalankan di Rajan Pur, Punjab. Penggunaan dan hasil penjagaan kesihatan ibu kekal lebih rendah berbanding dengan daerah lain di Punjab. Objektif keseluruhan penyelidikan ini dibahagikan kepada dua bahagian. Bahagian 1 bertujuan untuk mengkaji corak penggunaan dan faktor sosio-ekonomi yang menentukan pilihan institusi perubatan untuk bersalin dan penjagaan selepas bersalin. Bahagian 2 bertujuan untuk menganggarkan OOPE untuk bersalin dan penjagaan selepas bersalin serta sumber pembiayaan OOPE. Penemuan kajian ini memberi beberapa sumbangan penting untuk memahami OOPE dalam menggunakan penjagaan bersalin dan selepas bersalin oleh wanita di daerah luar bandar di Pakistan. Kajian ini berdasarkan 368 ibu yang dipilih secara rawak yang bersalin dari 1 Oktober hingga 31 Disember 2020. Kajian ini menggunakan teknik persampelan rawak berbilang peringkat untuk memilih peserta kajian. Keputusan menunjukkan bahawa kira-kira dua pertiga daripada ibu memilih hospital awam untuk bersalin terbaharu. Peratusan bersalin secara cesarean yang*

dijalankan di hospital swasta (43.8%) adalah 4.7 kali lebih tinggi daripada di hospital awam (9.3%). Kadar ini hampir tiga kali ganda had yang disyorkan WHO iaitu 10% hingga 15%. Selanjutnya, 70% ibu yang bersalin di hospital swasta mendapatkan penjagaan selepas bersalin, berbeza dengan 56% ibu dalam sektor penjagaan kesihatan awam. Keputusan analisis regresi logistik menunjukkan bahawa penggunaan kemudahan penjagaan kesihatan awam untuk penjagaan bersalin meningkat dengan peningkatan pendidikan ibu, pendapatan isi rumah bulanan, dan jarak ke fasiliti penjagaan kesihatan. Keputusan juga menunjukkan bahawa pekerjaan ibu dan jarak ke fasiliti penjagaan kesihatan secara positif mempengaruhi keputusan untuk menggunakan hospital awam untuk penjagaan selepas bersalin. Kira-kira 99% ibu mengalami OOPE semasa bersalin dan penjagaan selepas bersalin, dan purata OOPE yang ditanggung semasa penjagaan bersalin ialah PKR 2840 di hospital awam dan PKR 25596.3 di hospital swasta. Perbezaan ketara dalam OOPE diperhatikan antara hospital awam berbanding hospital swasta dan bersalin normal berbanding caesarian. OOPE untuk bersalin secara caesar di hospital swasta adalah 2.5 kali lebih tinggi daripada hospital awam, manakala OOPE yang ditanggung untuk rawatan bersalin normal di hospital swasta adalah 9.5 kali lebih tinggi daripada OOPE di hospital awam. Secara keseluruhan, purata OOPE bagi kedua-dua bersalin dan penjagaan selepas bersalin di hospital awam ialah PKR 3856.70, dan di hospital swasta, ia adalah PKR 27288.40. Ibu-ibu yang mendapat rawatan selepas bersalin menanggung purata OOPE PKR 1022.20 di hospital awam dan PKR 1692.10 di hospital swasta. Kajian menunjukkan bahawa simpanan dan pendapatan semasa adalah sumber utama pembiayaan OOPE oleh 90% peserta. Tambahan pula, 35% isi rumah berpendapatan rendah meminjam wang daripada rakan dan saudara mara untuk menampung perbelanjaan semasa bersalin dan penjagaan selepas bersalin. Penemuan penyelidikan menambah dimensi penting untuk menangani halangan dan cabaran yang mempengaruhi penggunaan perkhidmatan



*penjagaan kesihatan ibu melangkaui perspektif individu dan kontekstual. Penemuan penyelidikan juga akan menyediakan beberapa hala tuju untuk intervensi langsung dan tidak langsung yang bertujuan untuk meningkatkan program penjagaan kesihatan ibu sedia ada di peringkat daerah. Akhirnya, penemuan dan cadangan yang diperolehi daripada penyelidikan itu akan memberikan beberapa pandangan kepada penggubal dasar dan perancang kesihatan dalam membangunkan program penjagaan kesihatan ibu yang bersepadu dan berdaya maju di Pakistan.*

**Kata kunci:** *Penjagaan penghantaran, penjagaan selepas bersalin, perbelanjaan di luar poket, sektor awam, sektor swasta*

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## LIST OF ABBREVIATIONS

ANC	Ante Natal Care
B-EmONC	Basic Emergency Obstetric and Newborn Care
B & C-EmONC	Basic and comprehensive emergency obstetric and newborn care
BHU	Basic Health Unit
C-EmONC	Comprehensive Emergency Obstetric and Newborn Care
DHQ	District Headquarter Hospital
EmONC	Emergency Obstetric and neonatal Care
EMOC	Emergency Obstetric Care
FP	Family Planning
GDP	Gross Domestic Product
IMR	Infant Mortality Rate
LHV	Lady Health Visitor
LHW	Lady Health Worker
MCHC	Maternal and Child Health Center
MDGs	Millennium Development Goals
MICS	Multiple Indicator Cluster Survey
MMR	Maternal Mortality Ratio
MNCH	Maternal, Newborn and Child Health
NGO	Non-Government Organization
OOP	Out-of-Pocket
OOPE	Out of Pocket Expenditure
PDHS	Pakistan Demographic and Health Survey
Ph.D.	Doctor of Philosophy

PHSRP	Punjab Health Sector Reforms Program
PKR	Pakistan Rupee
RHC	Rural Health Center
SBA	Skilled Birth Attendance
THQ	Tehsil Headquarter Hospitals
UHC	Universal Health Coverage
U5MR	Under-five Mortality Rate

# **CHAPTER 1**

## **INTRODUCTION**

### **1.1 Context**

This chapter presents the present healthcare delivery system in Pakistan. It gives an overview of the maternal health care system and government initiatives to improve maternal healthcare delivery. It also gives an account of the utilization of maternal health services, including OOPes incurred by the families while seeking maternal healthcare services in Pakistan. The statement of problem, justification of the study, the significance of the study, research questions, study objectives, and limitations are also part of this chapter. The last part of this chapter gives the research and conceptual frameworks of the study.

### **1.2 Background**

Maternal health is considered a significant public health challenge in most developing countries (WHO, 2015). About 295 000 women in the world died owing to reasons associated with pregnancies and delivery in 2017 (WHO, 2017). Nearly 830 women die every day from causes associated with pregnancy and childbirth globally (WHO, 2019). It is estimated that 99 % of maternal deaths occur in developing countries, and out of these, one-third of deaths occur in south Asia (WHO, 2019). Also, the Maternal Mortality Ratio (MMR) is considerably higher in women who belong to impoverished communities and live in rural areas than in urban areas (WHO, 2019). On average, in developing countries, women tend to have more pregnancies, and their lifetime risk of death due to pregnancy is higher compared to developed countries (WHO, 2017).

Despite much improvement in maternal healthcare globally, Sub-Saharan Africa and Southern Asia regions reported about 86% of the estimated global maternal deaths in 2017. Although there has been a reduction in MMR across South Asia, maternal mortality remains

high in many countries, including Pakistan, Afghanistan and Nepal (Akseer et al., 2017). Except for Pakistan and Afghanistan, there was almost a 50% or more significant decline in maternal mortality in most other South Asian countries between 1990 and 2008 (Hogan et al., 2010). The leading causes of maternal deaths in most countries include maternal hemorrhage, obstructed labor, hypertensive disorders, abortion and uterine rupture, miscarriage, or ectopic pregnancy (Akseer et al., 2017). These complications are also a source of disability among women of childbearing age (WHO, 2016).

There is a lack of adequate healthcare services for millions of women in developing countries, which results in poor overall health in women (WHO, UNICEF 2013). Besides, there are many barriers, including physical distance, out-of-pocket expenditures (OOPEs), and familial influences (Riaz et al., 2015). Whereas poor functionality of health centers in rural areas is another significant barrier.

The shreds of evidence suggest that by improving access to Skilled Birth Attendance (SBA), maternal deaths can be reduced by 33% in developing countries (Adegoke & Van den Broek, 2009). It is also suggested that the availability of comprehensive maternal healthcare services with skilled healthcare providers delivering emergency obstetric care can reduce maternal mortality and improve the quality of maternal health outcomes (Jha et al., 2008; Campbell & Graham, 2006).

High MMR levels remain a significant public health challenge in Pakistan. Despite the country's mission to reduce MMR by two-thirds between 1990 and 2015, as endorsed in the Millennium Development Goals (MDGs) number 5, the MMR remains high in Pakistan (Rizvi et al., 2015). One of the reasons for this state of affairs is the failure of maternal healthcare programs to recognize and address the various barriers that restrict access to maternal healthcare services for women living in poor socio-economic societies (Mumtaz et

al., 2014). The Pakistan Demographic and Health Survey (PDHS) (2017-2018) indicates that women in urban areas are more likely to benefit from maternal healthcare services than women in rural areas. The report also shows the persistence of urban-rural and socio-economic inequalities in access to maternal healthcare services and maternal health outcomes (PDHS, 2017-2018). Such inequities are reflected in the utilization of maternal healthcare services and OOPes between urban vs. rural women and between the public vs. private health sector (ADB, 2012; Zahito & Fatmi, 2018).

### **1.3 Healthcare System in Pakistan**

The population of Pakistan was 200 million in 2017, with 61% living in rural areas (PBS,2018). Health indicators for Pakistan are by no means satisfactory. The country has an under-five mortality rate of 74.9 per 1000 live births against the global average of 39 (WHO, 2019). The MMR of 178 per 100,000 live births is the highest among the neighboring countries (WHO, 2019a). According to the World Bank, 29.5 % population lives below the poverty line (World Bank, 2019). The poor, particularly in rural areas with lower incomes, poor sanitary living conditions, and low access to public healthcare, are likely to have high morbidity and mortality rates but tend to have lower utilization of healthcare services than those who are better off (WHO, 2021). They also spend higher proportions of their incomes on healthcare that they access (WHO & World Bank, 2019). Uncertainty related to health and the catastrophic nature of health expenditures often renders even non-poor households into cycles of poverty (WHO & World Bank, 2019).

Healthcare in the country is mainly financed by the private sector, which accounts for about 63.4% of aggregate healthcare spending, and out of this, 91% are household OOPes (PBS, 2018). In 2015-16, per capita health expenditure (\$ 45) was one of the lowest among the Asian countries and below the figures of Sri Lanka (US\$118) and Iran (US\$ 366)

(WHO, 2018). Pakistan's total healthcare expenditure as a share of Gross Domestic Product (GDP) in 2015-16 was 2.7, one of the lowest among Asian countries (WHO, 2018).

### **1.3.1 Public Healthcare System in Pakistan**

Pakistan has a decentralized public healthcare delivery system managed at the district level. With the abolition of the Ministry of Health in 2011, all responsibilities related to health, including health planning and resource allocation, were devolved to provincial levels (PBS, 2018). Healthcare services delivery has been the primary responsibility of the Provincial Government, with the Federal Government playing a supportive and coordinating role. All Federal Government-funded vertical health programs such as the extended Program of Immunization, Primary Health Care, Family Planning, National Tuberculosis Control Program, and National AIDS Control Program are implemented at the provincial and district levels.

In Pakistan, primary healthcare is delivered through Basic Health Units (BHUs), Rural Health Centres (RHCs), Maternal and Child Health Centres (MCHCs), and Dispensaries. Every BHU covers about 10000 to 15000 population, and every RHC covers between 5-10 BHUs (WHO, 2007). BHUs deliver preventive care and promotive healthcare services, including immunization, maternal & child health services, malaria control, and diarrheal disease control. BHU also provides mental healthcare services, prevention & control of locally endemic diseases, school health services, and essential drugs (PBS, 2018). Each RHC covers 25,000 to 50,000 population. It mainly provides preventive, promotive, and curative services for common diseases (PBS, 2018). MCHCs are part of the integrated healthcare system, focusing on maternal and child healthcare. First and secondary level referral healthcare facilities deliver acute, ambulatory, and inpatient care through Tehsil Headquarter Hospitals (THQs) and District Headquarter Hospitals (DHQs). THQs and