

**ASSESSING THE COSTS BORNE BY HOUSEHOLDS FOR EMERGENCY
OBSTETRIC CARE IN RURAL GAMBIA**



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ABSTRACT

Background: Previously, the costs of maternity care services in public health facilities in The Gambia was a one-time standard fee of D5(US\$0.18) payable on registration. Normal vaginal delivery at an institution and caesarean sections entails additional costs of D50 and D100. These fees were meant to cover drugs, medical supplies, admissions and other services including blood transfusion during pregnancy, delivery and immediate postpartum. In an effort to improve access to maternity care and subsequently reduce maternal mortality, the government of The Gambia declared in August 2007, to abolish user fees for maternal and child health care services at all public health facilities.

Skilled attendants are present at 57% of deliveries and only one in five women with obstetric emergencies report to a medical facility for assistance. Thus, a great proportion of women requiring life-saving emergency obstetric care services are not getting it. Interviewing women, who have survived maternal complications, provides an opportunity to learn about their care seeking efforts and detailed aspects of costs when care is received at the tertiary level. This study intends to assess the costs borne by households to pay for emergency obstetric care in two rural hospitals of The Gambia.

Objectives: To estimate the various costs women and their family pay for emergency obstetric care services and identify strategies that households use in meeting the costs face in case of needing emergency obstetric care in rural Gambia.

Material and methods: The study was a hospital based retrospective quantitative study with women who were pregnant and had obstetric complications needing emergency obstetric care in AFPRC and Bansang Hospitals. Newly admitted women were identified in the registers, and as soon their health status allowed, the information sheet would be read to them and signed, on a voluntary basis. All the interviews were conducted at the time of discharge, often with the husband or other household members present who could provide supplementary information. The main outcome measure for this study is the total costs of emergency obstetric care, and we will estimate the mean cost in our study and describe the variation.

Results: There were considerable variation in costs from D50 and D3000. This included costs on medicines, transport, blood transfusions, food and drinks.

Conclusion: Our findings showed that despite government's recently launched policy of abolishing user fees for maternal care, women with serious obstetric complications are burdened with high costs due to their need for emergency obstetric care. Source of financial protection for poor women and households is essential as they suffer the greatest impact of payments and thus likely to deter them from seeking care.

Key Words: costs, emergency obstetric care, access, The Gambia

Abbreviations

AFPRC	Armed Forces Provincial Ruling Council
BEMOC	Basic Emergency Obstetric Care
BI	Bamako Initiative
CEMOC	Comprehensive Emergency Obstetric Care
CHN	Community Health Nurse
DOSH	Department of State for Health
EMOC	Emergency Obstetric Care
EPI	Expanded Programme of Immunization
MCH/FP	Maternal and Child Health and Family Planning
MDG	Millennium Development Goal
MOH	Ministry of health
NGO's	Non-Governmental Organization's
RHT's	Regional Health Teams
RVTH	Royal Victoria Teaching Hospital
TBA's	Traditional Birth Attendant
UNDP	United Nations Development Fund
UNFPA	United Nations Funds for Population Affairs
UNICEF	United Nations International Children Emergency Fund
VDC	Village Development Committee
VHS	Village Health Services
VHW	Village health Worker
WB	World Bank
WHO	World Health Organization

DEDICATION

Dedicated to my entire family in The Gambia; my wife Awa Beyai, Son Yankuba and Fatou Bintou. I sincerely expressed my heart-full gratitude to you for your patience and as gate keeper of the family while away for career development.

This thesis is also dedicated to my late father who could not witness this milestone of development in his family. May the Almighty continue to grant his Soul to rest in eternal peace.

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CHAPTER 1: INTRODUCTION

1.1. Background

The Millennium Development Goals (MDG) set a target of reducing maternal mortality ratios (MMR) by three quarters between 1990 and 2015. [1] This in itself is one of the highest global health challenges for many reasons. Global efforts to reduce maternal morbidity and mortality focus on two strategies that complement each other [2] :- ensuring that pregnant women have a skilled attendant at delivery, and timely access to appropriate medical attention. [3] The World Health Organization estimates that 356,000 women died in 2008 from pregnancy related causes, of which 99% occurred in developing countries (ibid). Costs in maternal care, especially when complications arise, could be a driving force plunging households into poverty. The Gambia is a low income country with an estimated maternal mortality ratio of 400/100,000. [4] Access to adequate health services for pregnant women is essential in order to reduce maternal morbidity and mortality. Complications to deliveries are often unpredictable and may very fast become life-threatening. The term “skilled attendant” refers exclusively to people with midwifery skills:- doctors, midwives, nurses, who have been trained to proficiency in the skills necessary to, manage normal deliveries, and diagnose, manage or refer complications. They should be able to perform the six signal functions of basic emergency obstetric care¹. The presence of a skilled birth attendant is a commonly used indicator for the quality and accessibility of reproductive health services and has been adopted as a leading indicator for maternal health. Currently in Gambia only 57% of the women deliver with a skilled attendant and the proportion of deliveries that take place in institutional delivery is 54.5%. [5] This low rate of delivery at a health facility may be attributed to many factors, including quality of care, accessibility to health facilities, out

¹ UNFPA-Country Technical Services Team for South & West Asia- A Skilled Birth Attendant at every birth....consensus & concerns, Regional Workshop on SBA in South & West Asia, 19-24th April 2004, Islamabad, Pakistan

of pocket cost for drugs and supplies, user fees, cost incurred in paying transport, or a belief that delivery is not risky and thus a desire to stay at home. Institutional births refer to the process by which a woman is provided with adequate and competent care during labour, delivery and early postpartum². In an effort to reduce improve access to maternity care and subsequently reduce maternal mortality, like several other countries in the sub-region, the government of The Gambia declared in August 2007, to abolish user fees for maternal and child care services, including in-facility deliveries³. The women were to be exempted from user fees in all public health facilities, including hospitals. How and to what extent this has been implemented in practice is less clear. We therefore set out to assess the costs borne by households to pay for emergency obstetric care in two rural hospitals in The Gambia.

1.2. Country Context

1.2.1. Geography & Climate

The Gambia is located on the West African coast and extends about 400 km inland, with a population density of 127 persons per square kilometer. The width of the country varies from 50 to 35kilometers and has a land area of 11,689 square kilometers. It is bordered on the east, north and south by the Republic of Senegal and on the west by the Atlantic Ocean (740 km length border with Senegal and 80 km coastline). The land is generally low lying, with the highest point less than fifty meters above sea level. The country has a tropical climate characterized by

² -Safe Motherhood Interagency Group (2000b) Skilled Birth Attendance at Delivery: A review of evidence (Draft) New York. Family Care International

³ Memo-To All DHT's-Free Maternal & Child Health Services- Permanent Secretary; Department of State for Health, Medical & Health Headquarters', Quadrangles, Banjul, 2007

two seasons, rainy season June-October and dry season November-May. During the cool season, November to May, the harmattan, a hot, dry, dusty wind, blows from the Sahara. Temperatures range from 16°C (60°F) in winter to 43°C (110°F) in summer. The rainy season lasts from June to October. The average annual rainfall is about 1,020 mm (about 40 in).

Figure1. Map of The Gambia showing divisions/regions



1.2.2. Demographics

According to the demographic profile 2003, the population of The Gambia is estimated at 1.3 million and by the year 2015 it is estimated to reach 1.7 million with an estimated growth rate of 2.7%. About 60% of the population lives in the rural area. The crude birth rate is 46 per 1000 inhabitants, while the total fertility rate is 6.04 births per woman. The high fertility level has resulted in a very youthful population structure. According to the 1993 Census, nearly 45% of the population is below 15 years and 19% are between the ages 15 to 24. The country has an overall population density of 129 persons per sq km (334 per square miles). The 2003 Integrated Household Survey showed that, about 58% of the population lived below the poverty line i.e.

US\$ 1 per day. The illiteracy rate among women is very high. Gross primary school enrollment has expanded rapidly, notably in rural areas, reaching 77% in 2008 (92% including Madrasa enrollments). The gender gap has also narrowed from 13 to 6 % at the lower basic level and from 16 to 1 % at the upper basic level, although access, quality and gender equity at higher levels need improvement. [6] In The Gambia 90 percent of the people are Muslim and most practice polygamy; 9 percent are Christians; and 1 percent follows traditional religions. Christians are of different denominations including Anglicans, Methodists, and Roman Catholics. The majority of Gambians are strict in their religious practices. There is, however, no fanaticism and religious tolerance prevails between religious and ethnic groups. Female genital mutilation is common though the practice is fading away in most regions of the country with pressure groups and gender activist campaigning and advocating for legislative measures to abolish the practice. English is the official language, but each ethnic group has its own language.

1.2.3. Economy

The country's Human Development Index is 0.39, ranking it 151 out of 169 countries. [7] Human Development Index (HDI) is an alternative to conventional measures of national development such as level of income and rate of economic growth. The agricultural sector has the largest workforce with 75% of the population depending on agriculture as a source of income. [8] It contributes 20% of the country's gross domestic products. Gambia has no natural minerals but highly depends on agriculture, farming and fishing and tourism industries.

1.2.4. Politics

The Gambia holds election every five years for the president and national assembly members. There are forty-eight national assembly members' seats that are contested by an average of five political parties. The head of state has the power to appoint and fire ministers who are political leaders of government departments. Health is the main priority for all the political parties in the country. Local government has been divided into seven administrative regions; with two municipalities (Banjul & Kanifing) headed by governors and majors. Majors and councilors are elected by people while the governors are appointed from the public services by the head of state. They preside over local development as well as representing central government at the regional level. The regions are subdivided into districts headed by district chiefs. There are 39 chieftaincy districts in the country. The Alkalos are the village heads who assist the Chief and Governors in the administration of the Division.

1.2.5. Health Status of the population

Infant and under five mortality rate is estimated 93 and 131 per 1000 live births, [9] mainly attributable to malaria, diarrheal diseases and respiratory tract infections. The maternal mortality rate is estimated at 400/100,000 live births [4] and are largely due to haemorrhage, eclampsia and sepsis. A recent survey reported a slightly higher maternal mortality rate 556/100,000 live birth [10], but did not include deliveries in hospitals and health facilities. The contraceptive prevalence rate among reproductive-age women is 18 per cent. Resistance to family planning is attributed to religious conceptions and traditional cultural values of a largely Muslim population. Non-communicable diseases such as hypertension, diabetes, cancer and asthma are on the increase due to change in lifestyles, thus becoming a public health burden. Communicable

diseases such as malaria, tuberculosis, and HIV are the main causes of morbidity and mortality in the adult population. Malaria constitutes 40% of outpatient consultation, diarrhoeal and acute respiratory tract infections forming 25%. [9] Proportion of smear positive tuberculosis cases increase from 56% in 2004 to 66.7% in 2005. The HIV prevalence rate is 2.8% (sentinel surveillance 2006. Progress has been registered in the expanded programme of immunization (EPI) with increases in national coverage for fully immunized children to 79% for under one year olds and 85% for the two years olds. [11]

Table 1 – Health Indicators

Indicator	Both Sex	Male	Females	Sources/Year
Life expectancy	64 years	63 years	65 years	2003 census
Crude mortality rate	7.55/1000	-	-	2003 census
Under 5 mortality rate	99/1000	-	-	2003 census
Maternal mortality rate	-	-	400/100,000LB 556/100,000LB	Sept, 2010 WHO,UNFPA,WB Fistula Survey, 2007[10]
HIV/AIDS Prevalence	2.8%	-	-	Sentinel Report 2006
% Safe water access	84%	-	-	MICS III 2006

1.3. Health Care Delivery System

The public health service is under the responsibility of the Minister of Health and the Director of Health Services (DoSH). Management has been decentralized to the Regional Health Teams (RHT) in six health administrative areas. The RHT's are responsible for the administration, management and supervision of primary (village health services) and secondary level (major and

health centers and dispensaries). The government of the Gambia adopted the primary health care strategy after the Almata Declaration of 1978, to make health care more accessible to the rural poor. The government is the major provider of health services and the public health service delivery system is a three tier system comprising the primary, secondary and the tertiary levels. Health care services are funded by the Government through its annual budgetary allocation to the health sector. Donor partners such as UNICEF, WHO, UNDP, UNFPA, also give substantial support to the health sector through programmes and projects' support.

1.3.1. Primary Health care

The primary level includes the Village Health Services and community clinics; Primary health care villages are generally selected from those with a population of more than 400. Village health workers (VHWs) and traditional birth attendants (TBAs) are selected by Village Development Committee's (VDC). They are given 6 to 8 weeks of formal training by the ministry of health and regional health management teams, with some of these trainings receiving assistance from Non-Governmental Organizations (NGO's) in recent years. These workers are issued a start-up supply of drugs and equipment (minimal) at the Government's expense. A fee of D0.75 (US\$0.03) is charged for each patient seen. This money is paid to the VDC treasurer to be used for the purchase of additional drugs and supplies as needed. The VDC and other village authorities are supposed to assist the VHWs with farm work, to enable them to take time to attend to the community's health needs. However, this does not always happen. The traditional birth attendants (TBAs) assist in deliveries, identify and refer at-risk mothers to health facilities at the tertiary level. They function as TBAs, antenatal and postnatal advisers, family planning distributors and health educators. VHWs and TBAs are supervised and given continuing

education by VHS/Community Health Nurses (VHS/CHN) who are charged to oversee 4 to 10 PHC villages. These VHS/CHNs in turn report through their nearest Basic Health Services (BHS) facilities that are supervised by the head of that facility and by the Divisional Health Team. There are 492 PHC villages organized into 69 circuits. The CHNs are provided with motorbikes to enhance travelling in various their circuits. The village health services are complemented by the Reproductive and Child Health (RCH) monitoring visits from the health centre. The RCH team provides; antenatal care, child immunizations, weight monitoring and limited treatments for sick children. The VHS/CHNs are essential for the successful functioning of primary health care in The Gambia.

1.3.2. Secondary Level

The major health centre's (Secondary Level) have a bed capacity of about 20-50 patients. They serve as the referral health facilities for minor health centre's for such services of obstetric emergencies, essential surgical services, and further medical care. Major health centres also serve as blood transfusion points for the area. Antenatal care is provided by mobile reproductive and child health clinics from the surrounding health centres (secondary level) and hospitals (tertiary level).

1.3.2.1. Tertiary Level

The general hospitals (Tertiary Level) are the regional referral points. They have bigger bed capacities of up to 250 beds, and provide additional services not available at the regional hospital level. At the tertiary level, health services are currently provided by the five government

hospitals. These hospitals are located in Banjul, Serekunda, Bwiam, Farafenni and Bansang. The Royal Victoria Teaching Hospital (RVTH), located in Banjul, is the main referral and teaching hospital offering specialist consultant services. This is the most advanced referral health facility in The Gambia. Conditions that cannot be handled at this health facility have to be referred overseas, the nearest being in Senegal. Farafenni (AFPRC) Hospital provides referral services to people of the North Bank Region and adjacent rural area, and provides most specialist services. Sulayman Junkung Hospital at Bwiam also provides referral services to surrounding villages in both the Western Region and some parts of the Lower River Region. Bansang Hospital, the oldest rural hospital, serves the eastern part of the country with the catchment area covering about a third of the country's population. In addition to operating as a referral hospital, it also has an outpatient department. The public health system is complemented by over 60 other special private, NGO and community managed health facilities. These facilities are also supported by a number of donors and NGOs. NGOs and private practitioners also provide services though most of them are located in the Greater Banjul Area. In addition, there are a large number of private pharmacies, drug sellers, and traditional healers that deliver health services of various kinds.

1.3.3. Human Resources

The Human Resource for Health in the Ministry of Health is a critical component of The Gambia Health System. Grossly affected by high attrition rates, acute staff shortages, low staff morale, motivation and retention are key issues enshrined in the National Health Policy (2001-2005), the Public Expenditure Review-PERS (2001) and the Human Resource for Health Situational

Analysis Report- HRHSAR (2003). Role conflicts, linkages and relationships between public and private sector have not been clearly defined. Currently public health services are provided by Cuban expatriates as the Gambia University Medical faculty is in its infancy. Doctor per population ratio stood at 1/5679 reported in 2001, [12] with substantial urban and rural differences. Midwives per population were also reported to be 1/1964, with a higher density in the urban than rural area.

1.4.1. GAMBIA MATERNAL HEALTH POLICY

Relevant policy documents were endorsed by cabinet in 2002 for onward implementation to improve the quality of reproductive life for all persons living in the Gambia. The government of The Gambia has demonstrated strong commitment to attaining a significant reduction in maternal mortality since the Safe Motherhood Conference in 1987 and has set up strategic plans of interventions. These include upgrading of strategically located health facilities to the status of Comprehensive Emergency Obstetric Care facilities; training of special cadre of health personnel on life-saving skills; and strengthening of the referral system through the provision of both road and river ambulance for prompt evacuation of patients to the tertiary level. [13] In the effort to attain the Millennium Development Goals for reducing child and maternal mortality, the Government of The Gambia with its partners developed a “Gambian Road Map to accelerate the reduction of Maternal and Newborn Morbidity and Mortality”. In this road map, “evidence-based approach is one of its key guiding principles”, [14] with emphasis that reliable and up-to-date evidence on the epidemiology of maternal and newborn morbidity and mortality in The Gambia will be used in selecting the most appropriate intervention. This strategy however, has never been implemented, as funds were not allocated to it for implementation. There have been some

attempts to upgrade six major health centers with equipments and personnel to be able to perform Emergency Obstetric Care (EmOC) within the regions, and two more hospitals in North Bank Region and Western Region were built to increase accessibility and reduce long distance referrals. There are five Comprehensive Emergency Obstetric Care facilities and eight Basic Emergency Obstetric Care health facilities in the Gambia and unmet need for EmOC ranged from 3.5% to 31%. [23] New ambulances, both river and road, have been provided to facilitate evacuation of patients to higher level for care. Training of nurse midwives in advanced midwifery to enable them to provide adequate and appropriate care to obstetric emergencies has taken place. There still exists poor and declining budgetary allocation on health for the reproductive health program, as well as a signs of donor fatigue from the various donor communities. According to Cham in 2003, the failure to initiate the Safe Motherhood initiative to policy can be attributed to the failure of training Traditional Birth Attendants (TBA's), political will and commitment, lack of availability and accessibility of emergency obstetric care and health system failure. Thus, the likelihood of delivering at home in poorly fit units with or without basic skilled attendance at birth is very high. [14]

1.4.2. Maternal Health Services

The Maternal Health and Family Planning (MCH/FP) program was initiated around 1978. It was set on the premise to improve the health and wellbeing of women of child bearing age (15-49 years) and children under the age of five through the provision of antenatal care, safe delivery, postnatal care, family planning, nutrition education, child welfare services including immunization, and growth monitoring and development. Currently there has been a paradigm

shift from MCH/FP to Reproductive Health so as to reach everyone. Services are provided throughout the six health regions of the country and compose of both static and mobile clinics for preventive and curative care. Services are provided in 38 static health facilities and in over 188 outreach stations. [15] The outreach stations/trekking posts are visited by the mobile team regularly every month and are commonly visited by almost all women that are pregnant or have small children, as well as newborns starting infant welfare care.

1.5. Health Financing

Health financing is concerned with how financial resources are generated, individually and collectively in a health system. It includes how and where to raise sufficient funds for health, how to overcome financial barriers that may exclude the poor from accessing health care, as well as how to provide an equitable and affordable health services. For good performance of the health system, appropriate amount of revenue has to be generated within the country so as to create incentives for providers and allocate resources for effective, efficient and equitable interventions and health services. In 2006, households in The Gambia financed 29.3% of the total health expenditure. Thus households need to produce funds most of the time when seeking health care, which can be a barrier to accessing care and can therefore threaten the financial status of the household thus pushing them further into poverty. [15] Another source is from parastatetals who provide some sort of medical cover for their employees through private clinics or self operated clinics or paying premiums to health insurance schemes. Recently international donors, ; including bi-lateral and multi-lateral agencies like the Global Fund against AIDS, Tuberculosis, and Malaria, and the Global Alliance for Vaccine Initiative (GAVI) also contribute

to health financing in the Gambia. Local Government authorities also contribute to health financing. Donor spending on health as a percentage of the total health expenditure in 2006 was 40% compared to 22% in the region and 26% in other low income. [16]

1.5.1. Drug Revolving Fund

The Drug Revolving Fund (DRF) was established in 1988 as a way of supplementing government expenditure in health, as well as adjustments made as part of the Economic Recovery Programme (ERP) of the 1980s. The public pays at the service delivery point in the hope of recovering cost of drugs, medical supplies and services. Cost in maternity care services in public health facilities was low with a one-time standard fee of D5 (D, US\$0.18) payable on registration. Normal vaginal delivery at an institution, and caesarean sections, entail additional costs of D50 and D100. [17] Payment of these fees are meant to cover drugs, medical supplies, overnight admission and other services including blood transfusion during pregnancy, delivery and immediate postpartum care. There is no payment required in advance of an admission or care. Interestingly, it is not uncommon for patients to be handed prescriptions to buy items when not available in the hospital. In an effort to reduce and improve access to maternity care and subsequently reduce maternal mortality, the government of The Gambia declared in August 2007, to abolish user fees for maternal and child health care services at all public health facilities.

1.5.2. The Bamako Initiative (B.I)

The Bamako Initiative was adopted by African Health Ministers in 1987 with support from UNICEF after the World Bank's 1987 Agenda Reform. [18] Its main aim was to solidify the gains made in primary health care, with focus on strengthening the link between community participation in managing and improving the use of essential drugs and basic services. The B.I. introduced formally in The Gambia in 1993 in 10 health facilities with community ownership, registered some few successes in certain communities, but generally was unable to improve the availability of drugs in the piloted health facilities. [19]

2.0. User fees and Access

User fees are official payments made at the point of service by patients. Although many different arguments were made for introducing them, the main reason for their growth and continued use is that they filled a revenue gap for underfunded public services. User fees impede access to health care as they add costs of health services faced by patients, especially the poor and vulnerable groups to the extent of not seeking care appropriately when sick. Surveys in low income countries reported significant proportion of the population not seeking care even if life threatening, citing financial costs of health care as a cause. [20] A study of user fees and access to maternity services found that admissions and deliveries in hospitals fell after the introduction of fees, and that the mortality rate of babies born outside the hospitals increased. [21] In the Gambia, women do not have access to or control over household resources and must rely on men to meet costs for obstetric care. With the continued unfavorable maternal health indicators of the Gambia, and home deliveries usually supervised by a traditional birth attendant or a relative, only one in five with obstetric complications reports to a health facility for assistance. [22] Lack of financial autonomy has been reported as causing profound anxiety for women ending in social tension, marital breakdown, especially when faced with obstetric complications. [23, 24] Paying for an obstetric complication is largely determined by place of delivery, type and extents of the complications.

Barriers to maternity care are of two types; physical and financial, as well as the density of health infrastructure, equipped and adequately staff with skilled, available and committed personnel is low in low income countries. [25] Similarly expressed by Thaddeus and Maine in

their study that it means facilities are “too far to walk”; in the consequence women prefer to deliver at home rather than going on a long, expensive and painful journey for poorly equipped health centres to sub-standard district hospitals. [26] If a woman or household decide to seek maternal care, the next obstacle is the costs of the services. In many instances, women have to pay out-of- pocket fees that may result in delay to care, sometimes fatal and catastrophic expenditure. [27] Long-term investment in health systems must be addressed urgently to increase coverage of maternal health services.

A multi-variable analysis of 40 low income countries reported that government health expenditure as total health expenditure was strongly associated with utilization of skilled birth attendants and caesarean section rates. This supports the fact that public subsidies of various types may likely improved access and skilled attendance. [28] In a systematic review of the Cochrane in 12 low and middle income countries: reducing or removing user fees increases the utilization of certain health care services. However, introducing or increasing fees can have a negative impact on health services utilization, although some evidence suggests that when implemented with quality improvements these interventions could be beneficial. [29]

Women face higher access to costs and barriers (lack of control over cash), than men in many regions of the world as women benefit disproportionately for measures that reduces costs that they face in maternity services. [30] However, some studies found that distance and user fees deterred women from seeking care to a greater degree than that of men. [31] Maternity costs, especially when complications arises, can be very expensive and are associated with catastrophic costs which can plunge a household into poverty or force to rely on risky coping strategies. [32] Thus from a poverty reduction perspective, there is a good reasons for exempting maternity care

from user fees. To what extent such a strategy should focus on a segment of the population (women and children) or if user-fee exemptions should be universal depends on context. We are aware that financial barriers are not the only barriers; social, cultural, quality and physical barriers should also be addressed at the same time.

3.0. Literature Review

It is estimated that every year, up to 9 million women suffer from severe complications during childbirth that includes haemorrhage, dystocia, infections, hypertensive disorders such as eclampsia or pre-eclampsia and anaemia. [33] The reliance on out of pocket fees to pay for emergency obstetric care means that such complications often pose an immediate financial burden on women and households. The costs that women and households pay when obstetric complications arise has not been studied in the Gambia, however Cham in 2008, revealed the need for transfusion or treatment for hypertensive pregnancy disorders as cost ‘inflated 18 times than the usual fees’. [34] Storeng et al in 2008, found costs significantly higher in emergency obstetric care than normal vaginal delivery in Burkina Faso. [24] Similarly, Borghi et al in 2003 also found the economic burden of hospital-based delivery care likely to deter or delay women’s’ use of health services. [33] Studies that estimate the hidden costs of ‘free’ care are few. In Bangladesh, free maternity care was found to involve considerable hidden cost which may be a major contributor to low utilization of maternity services, especially among low income groups. [35, 36] Evaluation of two national policy schemes exempting women from user fees for deliveries in Ghana and Senegal, reported some reduction in the cost for caesarean section and normal vaginal deliveries for both countries. [37] Ability to pay for deliveries was believed to be one factor restricting access to care (ibid). An article of the same study revealed that the policy scheme in Senegal was patchy and unclear, as respondents interviewed reported that only certain costs were covered by the policy. Drugs and transport were major costs to household as it was not covered by the scheme and thus likely to deter household access to maternity care. [38]

In the Gambia, there are signs that availability of and access to high quality maternal health services may remain constrained, as the policy shift away from user fees for maternal health care has not involved increased funding to replenish lost revenue from user-fees. [34] There are overwhelming indications of the burden of pregnancy related complications in the Gambia as indicated by various studies. For every maternal death in the Gambia, five women survive severe acute maternal morbidity. [22] In this study obstetric complications will include five categories of severe obstetric complications, defined according to disease specific criteria based on its management or clinical signs and symptoms. These obstetric complications include: haemorrhage at any stage of pregnancy; pregnancy induced hypertension including pre-eclampsia and eclampsia; puerperal sepsis; obstructed labour or mal-presentation (leading to caesarean section, instrumental or assisted delivery) and severe anaemia.

Emergency obstetric care costs a lot and may affect households especially the poor households. They not only spend large amounts of money and resources on medical care, but they are also unable to earn during the period of illness. [39] To make matters worse, women and households have to borrow funds at high interest rates to meet the costs borne, or they may be forced to decrease assets or to sell goods to cope with health care costs. [40] This situation of ill maternal health can lead households into excessive debts and further push them to poverty.

World Health Organization estimates that 15% of all pregnant women will develop direct obstetric complications such as haemorrhage, obstructed or prolonged labour, pre-eclampsia or eclampsia, sepsis, ruptured uterus, ectopic pregnancy and complications of abortion. If left untreated, these conditions will lead to death or severe disability. [41] Paxton was cautious with the UN process indicator for minimum percentage of birth in EmOC facilities to be misunderstood, as country context differs. [42] Countries should set their own target for this

indicator based on its maternity care policy. Maternal mortality and morbidity can only be reduced by ensuring women with obstetric complications receive good-quality medical treatment without delay.

Global target of reducing maternal mortality by 75% by 2015 is a key United Nation Millennium Development Goal. As complications cannot be predicted, pregnant women need access to good quality emergency obstetric care. Generally speaking, safe delivery is a human right. Preker in WHO, reports of 1.3 billion people with very low income globally still not having access to effective and affordable drugs, surgeries and other interventions because of health system failures. [43] According to the World Health Organization, households spending more than 40% of their disposable income are considered to suffer financial catastrophes. [44] Households may be forced into coping strategies of reducing expenditure on essential items such as housing, clothing, feeding and education. [45]

Debates continue around the world, in achieving the MDG's 4 and 5, through sustained health sector financing. One key indicator agreed internationally for MDG's Goal 5: increased skilled attendance at birth, which can only be achieved through improved access to maternity care. Financial and transport costs for obstetric care emerged as barriers in different settings. [46, 23, 33] In China, a study that identified factors inhibiting access and utilization of hospital delivery, reports of multiple barriers that included economic, geographical and poor quality of health services that prevented women using services for births. [47] In Uganda following fee abolishment, access increased in terms of outpatient utilization with strong indications that the poor benefitted most. [48, 49, 50, 51] Similarly, Madagascar and South Africa also abolished user fees, but the former was quick to re-introduce it again as drug availability for the poor and vulnerable was compromised as it was affected by supply and demand factors. [52, 53] Based on

these experiences and their adverse effects on user fees health care in many countries, organizations and initiatives emerged to advocate for the removal of user fees. Few examples were EQINET (a South African equity research and advocacy network), Save the Children UK, and UN Millennium Project, DfiD, UNICEF and other development agencies adopted a blanket policy in favor of free user fee, supporting those countries that remove user fees. The World Health Organization urges pre-payment schemes as a more equitable solution than relying on out of pocket expenditure. [54, 55] Time has revealed this possibility, as the Abuja target, agreed by Africa Health Ministers pledging 15% of their national budgets to health care service delivery a far fetch achievement after nine years. A score card was developed, out of 6 of the 53 African Union Member States (Rwanda, Botswana, Niger, Zambia and Burkina Faso) meets the target, The Gambia staggering at 11.2%. [56] These targets were set by African Ministers of Health, but they are not the driving force, donor agencies still control and direct the agenda. World Bank and the Group of 8 leader's pledges are having only a trickle effect. Without supportive actions, fee removals can itself affect health system performance. Revenue loss should be replaced by increasing funds for health care.

Progress towards the reduction of MDG's 5, is unfavorable [57] and targeting maternal health interventions to the most vulnerable, especially the rural poor is considered essential for achieving this goal. [58] Effective strategies are known to reduce maternal mortality. Access to skilled birth attendance and emergency obstetric care are two priority interventions to prevention of avoidable maternal death. [58, 59]

Various studies dictate that the main priority for developing countries is to ensure that women deliver in health facilities [60, 61] and having skilled birth attendant present at birth could reduce maternal death by 13 to 33%. [62] Programs currently aimed at improving maternal health have

been found to be ineffective and often fail to reach the poor [63]. There still exist substantial financial barriers from transport and time loss, formal and informal fees in public health services for poor women and households to access maternal health services. [64]

To tackle financial barriers to access emergency obstetric care, demand-side approaches has to be sought to finance health care that subsidize consumers directly. Voucher schemes are considered effective as a means of targeting health services to specific populations. [65, 66, 67, 68]

The World Health Organization, declared for countries in the region to resist temptations of relying on user fees. [69] User fees were introduced due to economic and austerity measures of the World Bank in the early 1980s, now the advocacy is on free user fees. For some conditions rarely are user fee abolition base on proper planning with ministries of health.

Abolition of user fees is usually decided at the top level of governments; in Uganda, South Africa and Madagascar the policy changes were declared by their presidents. [69] Among these countries, only Uganda had preparatory stages for implementation, [70] but lacks the political power to implement. [70] In other countries, funding agencies were interested; Ghana [71] and Uganda [72] were against the background to fight for poverty alleviation strategies. User fee abolition is usually sudden and in highly politicized context. In South Africa, came after the first post-apartheid government. [73, 74] Free user fees, targets certain services: Uganda-includes all services, Kenya includes all services except laboratory services, South Africa; includes primary health care services and Ghana all services related to childbirth.

Free user fees effect is well known, but there are gaps in knowing how it should be done and management procedures to be put in place. Are health facilities going to be pre-financed or reimbursed for services used so as to offset revenue loss? If demands increase and supplies go

down for health care services, it increases the consequences for professional mal-practice and quality of services. Countries wishing to abolish user fees need to seek information on how much it will cost the country and estimate the cost-benefit-ratio of abolition. Sadly, the real costs of this measure is as yet unknown. [75] Regarding the population, further findings should be done about households' health expenses that could be high and continue to be a driving force that discourages service utilization. Despite the abolition of direct fees for maternity and child care, financial barriers have still not been entirely explored in the Gambia.

The Bamako Initiative where local management committees are set up to allow health facilities to retain revenue generated and use them locally, the issue of user fees abolition raises further challenges. [76] This is the case for countries with community financing schemes for the past decade. Learning from the Uganda case sets the pace to study the effects of community financing schemes especially in West Africa, where countries are beginning to abolish user fees. [75] The past decades have witnessed abolishing payment for certain services in the Sub-region; South Africa, followed by others in East and Southern Africa. Funding agencies and global leaders are ready to support countries interested in making similar decisions, likewise the Global Campaign for Health and Millennium Development Goals. The need to reflect on the relevance of such a measure and how it should be organized needs to be further explored. The literature review herein, lacks some of those, therefore merits attention, thus this study was assessing costs borne by households for emergency obstetric care in rural Gambia.

3.1. PURPOSE OF THE STUDY

The study intends to assess the costs borne by households in seeking emergency obstetric care in the rural hospitals of the Gambia and strategies that households use to manage these costs.

3.2. OBJECTIVES OF THE STUDY

- To estimate the various costs women and her family pays for emergency obstetric care services.
- Identify strategies that households use in meeting the costs faced in case of needing emergency obstetric care.

Variables

Variables of interest include background information about the woman, direct and indirect expenses for care such as expenditure on drugs, test, and blood transfusion, intervention surgery, food, transport, as well as informal fees, and socio-demographic characteristics. Data collection also includes household expenditures on goods and services, hospitalizations and health care costs, as well as access to health care, and mobility.

Table 2: Box 1. Definition of terms

- Emergency Obstetric Care (EmOC): - a UNFPA strategy developed to ensure timely access to care for pregnant women experiencing complications.
- Cost to EmOC- refers to expenditures on items that are required to provide treatment for a pregnancy- related complication
- Household- families living under one roof and sharing food cooked from the same pots.
- Severe Acute Maternal Morbidity (SAMM)-is defined as ‘any woman who suffered acute obstetric condition, at any period in pregnancy to six weeks postpartum, severe enough to end in a maternal death’.
- Haemorrhage:- excess vaginal bleeding at any stage of pregnancy
- Pregnancy induced hypertensions (including pre-eclampsia and eclampsia) high blood pressure during pregnancy measured with a blood pressure machine with a minimum diastolic of 110 millimeters of mercury
- Puerperal sepsis (offensive vaginal discharge, peritonitis or septicaemia); temperature <38.5 centigrade
- Obstructed labour or mal-presentation - is the failure of the presenting part to descend in spite of uterine contractions.
- Severe anaemia- haemoglobin of <6gdl - according to national guidelines. [76].

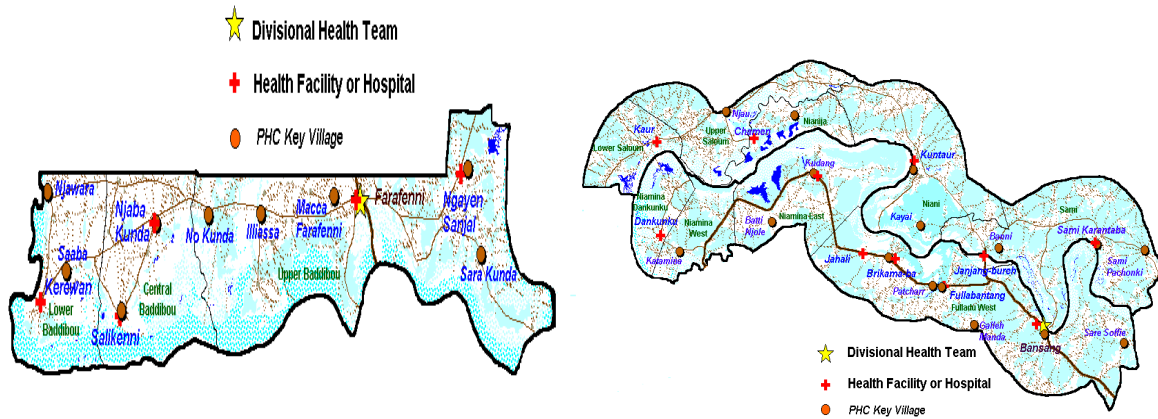
CHAPTER 4

METHODOLOGY

4.1. STUDY SETTING

The study was carried out in Bansang and AFPRC hospitals in Bansang and Farafenni. These two hospitals are located in the North and South bank of The Gambia in the two health regions.

Figure 2: Maps of the Study Sites – Farafenni (NBER) & Bansang (CRR)



North Bank Region East - Farafenni

Central River Region - Bansang

Bansang hospital is about 325 kilometers from the capital; Banjul and 24 kilometers from the Regional Administrative center (Janjanbureh). It is also located on the South Bank of The Gambia bordered on the South by the Cassamance province of Senegal. Bansang is the 2nd largest hospital in The Gambia, built in 1938 with a capacity of 200 beds. Farafenni (AFPRC) hospital, bed capacity of 150, is 150km from Banjul, with features of semi urban settings and surrounded by typical rural environment. It has recently benefitted from improved road networks for the North Bank Region and enhancing travelling to Senegal in the north and south. The inhabitants are mainly subsistent farmers and very poor. Comprehensive EmOC is provided

mainly by Cuban Medical Doctors. The two hospitals serve a population of nearly 600,000; with institutional births of 1, 519 [77] per annum, for the two hospitals and are referral centers for nearly 30 peripheral health centers or dispensaries. These peripheral health centers do not offer Basic Emergency Obstetric Care (BEmoC) services and refer women with obstetric complications to either the North Bank or South Bank to Bansang or the AFPRC hospitals.

Extreme poverty is more concentrated in the rural areas. In the Central River Region (CRR) and North Bank Region (NBR), more than 41% are living in poverty and the lowest capita per income has been measured here. [78, 79] These two regions have some of the worst health outcomes in the country; infant mortality, maternal mortality and total fertility rates are among the highest. They have also the lowest proportion of deliveries attended by skilled personnel. [79] The core of this study is to assess the costs borne by women and households for emergency obstetric care in rural Gambia. Thus it is natural to conduct the study in the rural areas of the country with the most vulnerable population; where more mothers are dying or suffered maternal morbidities than any other part of the Gambia. Their poor socio-economic status makes them to deliver at home simply because they can't overcome hurdles of direct and indirect costs for emergency obstetric care.

4.2. Study Design

This is was a hospital based retrospective quantitative study. Data was collected, using structured questionnaires to quantify costs. Data collection took place from June to December 2010. Pregnant women, who developed obstetric complications and sought care from any of these hospitals, and met the inclusion criteria and consented, were included. Severe obstetric

complications are pregnancies complicated by events that need obstetric interventions. Obstetric complications for this study include five categories: haemorrhage at any stage of pregnancy; pregnancy induced hypertension (pre-eclampsia and eclampsia); puerperal sepsis; obstructed labour or mal-presentation (leading to caesarean section, instrumental or assisted delivery) and severe anaemia. Haemorrhage; vaginal bleeding at any stage of pregnancy, pregnancy induced hypertension (including pre-eclampsia and eclampsia) is elevated blood pressure during pregnancy measured with a blood pressure machine with a minimum diastolic value of 110 millimeters of mercury. Puerperal sepsis includes any post natal woman with offensive vaginal discharge, peritonitis or septicemia or fever during or after delivery, obstructed labour or mal-presentation - the failure of the presenting part to descend in spite of uterine contractions, and anaemia is women in the postnatal period with a hemoglobin of <6gdl.[76]

4.3. Recruitment Criteria

Participant's recruitment was on maternity records that included case notes, delivery, referral, and admission registers, and then an information sheet was read to them and sign or thumb print on voluntary basis. The research questionnaire was administered at the time of being discharge. Methods that have used to evaluate costs varied across different earlier studies. Mostly, women are followed and expenditures are tracked during their stay in hospital which is considered the most reliable method of estimating costs. [35, 36, 80, 81, 82] This is the method we have chosen, as it has the advantage of comparing reported expenditure with hospital charges, as well as ability to identify and talk to all those involved in making payments. They also represent a direct source of the information the study was after, as payments made were fresh in their minds (small risk of recall bias); other household members are likely to be present and can provide

supplementary information; women that are targeted for the study stay in hospital for some time, thus making this the optimal setting for recruiting participants.

The key difference between quantitative and qualitative methods is the amount of flexibility. Generally, quantitative methods are fairly inflexible. With quantitative methods such as surveys and questionnaires, for example, participants are asked identical questions in the same order. The response categories from which participants may choose are closed-ended or fixed. The advantage of inflexibility is that it allows for meaningful comparison of responses across participants and study sites. However, it requires a thorough understanding of the important questions to ask, the best way to ask them, and the range of possible responses. Qualitative methods are more flexible – that is, they allow greater spontaneity and adaptation of interaction between the researcher and the study participant. For example, qualitative methods ask open-ended questions that are not necessarily worded in exactly the same way with each participant. With open-ended questions, participants are free to respond in their own words, and these responses tend to be more complex than simply “yes” or “no”.

The risk of recall error increases as the time lag between settings and interviewing increases and also the likelihood of all those involved in contributing to the costs for the complication may not be present at the time of interview. Costs for obstetric care in hospital settings, have shown to be significant. With the combination of official user charges, informal fees, transport costs and time costs, can result in catastrophic expenditures and debt, particularly in the event of obstetric complications. Home deliveries do not reflect transport costs, time costs, as well as giving more time for households to pay at their own time, thus contributing to household preferences for home delivery in the absence of complications.

The framework for this research study will focus on the demand supply model of Ensor and Cooper in a review article. [39] Demand side determinants are those factors that influence demand, and operate at the individual, household or community level. These determinants may in turn generate barriers to utilization that arise when factors influence these determinants in a way that reduces utilization of services. It is strongly argued that demand side barriers deter patients from obtaining treatment. Yet, little attention is given by policy makers or researchers to ways of minimizing their effects. The poor and other vulnerable groups are seriously affected by such barriers, where the costs for access, lack of information and cultural barriers impede them from benefitting public spending. Demand is influenced by financial barriers to care-seeking that interact with geographical and cultural barriers, assessment of quality of care in the formal sector which may also influence service use. [83] Thus, user fees removal should factor in high demand for services and ensure adequate level of staffing, drugs and supplies. Fee removal can be effective with requisite financial investment.

4.4. Study Population

Gambian women who were admitted in AFPRC and Bansang hospitals with an obstetric complication were eligible for participation. Relatives from the same household were also interviewed in order to obtain information on health care expenses. Women, who had normal spontaneous delivery and non- Gambians, were excluded from the study.

4.5. Data Collection Methods

Prior to data collection, the study sites were visited to familiarize and formally meet the authorities of the two hospitals. Meetings were held at the two research sites, where the Principal Investigator (PI), discussed the project, design and duration, as well as clarifying any issues or concern raise about the research. The two hospital authorities helped with identification and selection of research assistants. This also gave the opportunity to meet and discuss with the research assistants, and to introduce the projects aim and objectives and the required data collection tool.

Two research assistants were selected before the start of the data collection. One of the research assistant had to leave for postgraduate education. Arrangements were made for a replacement, and the PI had to train a new assistant. The PI continued with the new research assistant, to enhance her skills for two days and collects data with her for the next three days, before finally punching and storing the data. The training was focused on sensitizing them on the purpose and objectives of the study whiles introducing the research questionnaire and recruitment process. We recruited participants on admissions and if they agreed, the information sheet would be read to them and signed. Most often the signature or thumb print was witnessed by the husband or nearest relative. Relatives from the same household were also interviewed if available to quantify costs. The questionnaire covers socio- demographic characteristics, type of obstetric complications, outcome of delivery, type of transport used, total expenditures for that treatment, costs of any food purchased within or outside the hospital, medical costs of drugs and medical supplies charged to the participant and those purchased outside the hospital, as well as strategies in place to cover costs. Total expenditure includes costs on transport, food and drinks, medicines, and blood transfusions.

4.6. Data Processing and Analysis

Data was collected by the research assistants and the PI. Within one week, the research assistant and the PI went through the completed questionnaire and checked it for accuracy and clarity to ascertain that proper and correct recording of the required information was done before storage on daily basis. Each participant in the study was given a code to ease recording and sorting. The records were securely put under lock and key the same day it was completed, accessible only by the research team. After the completed form has been reviewed, the PI then took over storing of the form, again under lock and key.

Women that fit the inclusion criteria were selected through the admission registers in the postnatal ward. The information sheet was read to the participant to participate in the study while admitted; we were cognizant of stressful situation of recent experience of serious obstetric complication or severe pain. We allowed time until participant recovers before being asked to participate. All the interviews were conducted at the time of discharge, where the research questionnaire was administered in an office within the postnatal ward. It was here that the interviews were conducted. In most instances, relatives were invited to quantify costs all the way from their village, during admission and through discharge. The main outcome measure for this study is the total costs of emergency obstetric care, and we will estimate the mean costs in our study and describe the variation. The analysis of costs borne by women and their household for emergency obstetric care will make it possible to appreciate the costs burden to households for such care and to value the distribution of these costs within the study sites. Opportunity costs of travel and time spent at the hospital were not included. Information on the ownership of household goods and amenities (assets) was not collected as well as size of household. Actual data collection was in the rainy season; June-December, a period when households experience

less income and there is less possibility of extra income earning. Based on these factors, income calculation was a challenge, as well as opportunity cost. The pre-coded questionnaires were entered into the software package for Predictive Analytics Software (PASW) Statistics Version 18.0. The data was not accessible by anyone except the PI, and descriptive analyses were employed.

4.7. Data collection Tool

The data was collected through a structured questionnaire with mainly closed questions. Some elements of the questionnaire were inspired by a study that estimated the costs of normal deliveries in rural facilities. [84] Prior to data collection, the instrument was pre-tested. This was done at the Royal Victoria Teaching Hospital (RVTH) during the month of July, and 10 women that fit the inclusion criteria were interviewed. The pilot gave us the opportunity to review and check for instrument clarity, acceptability, make amendments and most importantly its usability.

4.8. Validity

Validity refers to the degree to which an instrument measures what is supposed to measure. [85] To overcome problems of missing data during interviews by the research assistants, the PI conducted reviews of the interviews under observations to compliment the process with what was documented.

In this study validation testing was not done, but the PI was in the field and involved in the data collection process and also checked for consistencies between interviews conducted by the research assistants in the two hospitals. I believe this enhances the validity of the study results.

4.8.1. External Validity

External validity entails the degree to which the study can be generalized to the entire population or settings and be able to produce unbiased results for the target population. In the current study, the sample size was small and statistically unrepresentative (no random sampling), but the results can still be applicable to some other settings that are experiencing similar problems. However, there is need to be cautious when applying our findings in settings other than the one where we conduct the study.

4.8.2. Internal Validity

The research team's background as midwives with previous working experience in both hospitals might have influenced our results. Most households knew some of the research assistants and this may have altered their behaviours to perform as expected, consequently providing invalid results. Women and households might have felt freer to respond accurately had they been interviewed in their home settings.

4.9. Reliability

Reliability indicates the extent to which a measure of a concept would be able to deliver the exact results no matter how many times it will be repeated. Training of the research assistants on the data collection and pre-testing the questionnaire avails us the opportunity to adjust, adopt and amend it according to the outcome of the results. Continuous checking of the collected data by the PI with the research assistants before final punching of the data into the computer also likely enhances the reliability of the findings of this study.

4.9.1. Ethical Consideration

Participation to the study was completely voluntary and free from any coercion. None declined to take part. The purpose, objectives and the possible benefit of the study were comprehensively explained to the participants using a language they understood upon which they made their decision. Naturally, participants could withdraw at any time. Most women are not literate in The Gambia. Therefore, the information sheet was read to participants and signed with relatives or caregivers present. Data collection was highly confidential and the completed questionnaires as well as the computer on which the data was entered were kept under lock at all times, except when transported personally by the PI. Approval was sought from the Gambia Government and Medical Research Council Ethical Committee, Chief Executive Officers of the hospitals and the Ethical Review Committee, Norway, before the commencement of the study.

4.9.2. Limitations

- Chances of not interviewing patients referred for obstetric complications during late hours and who did not survive (maternal deaths). These were not interviewed.
- Data collection was done through one interview only, which may imply a risk of missing some costs, for instance cost that were forgotten or considered irrelevant to mention by the participants.
- Due to time restriction and funding frame, it was not possible to add qualitative methods in the study. As in most studies on maternal costs, focus group discussions and in-depth interviews with women in their own settings would have generated more information and a greater understanding of the problem.
- The study was conducted over six months, during the rainy season, seasonal variations could have influenced the costs and thus not make the results representative for the costs in the other half of the year.

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CHAPTER 5: SUMMARY OF MAIN FINDINGS

Paper one

Assessing the costs borne by households for emergency obstetric care in rural Gambia

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Abstract

Objectives: We estimated the various costs women and their families' pays for emergency obstetric care services and identified strategies that households use in meeting the costs faced when needing emergency obstetric care.

Methods: Hospital based retrospective quantitative study with women who were pregnant and had obstetric complications needing emergency obstetric care in AFPRC and Bansang Hospitals, The Gambia. Newly admitted women were identified in the registers, and as soon their health status allowed, the information sheet would be read to them and signed, on a voluntary basis. All the interviews were conducted at the time of discharge, often with the husband or other household members present who could provide supplementary information.

Results: Of the 120 women we identified from July to December 2010, needing emergency obstetric care at the two rural hospitals of the Gambia. All faced direct and / or indirect costs they had to cover through out of pocket payments. The median costs amounted to D375 (range D50 to D3000). The women and their families usually managed these unexpected expenses by making use of savings and through borrowing money.

Conclusion: Our findings show that despite the government's recently launched policy of abolishing user fees for maternal care, women with serious obstetric complications are burdened with high costs that can be catastrophic, due to their need for emergency obstetric care. Targeting women with severe obstetric complications for financial or social interventions as well as improving household's access to cash in emergencies may reduce the burden of care.

Key Words: costs, emergency obstetric care, access, The Gambia

Background

The Millennium Development Goals (MDGs) set a target of reducing maternal mortality ratios (MMR) by three quarters between 1990 and 2015.[1] Global efforts to reduce maternal morbidity and mortality focus mainly on two strategies that complement each other: - ensuring that pregnant women have a skilled attendant at delivery, and timely access to appropriate medical attention.[2,3] The World Health Organization (WHO) estimated that 353,000 women died in 2008 from pregnancy related causes, of which 99% occurred in developing countries. [3] Costs for maternal care, especially when complications arise, can be high. The Gambia is a low income country with an estimated maternal mortality ratio of 400/100,000. [3] The presence of a skilled birth attendant is a commonly used indicator for the quality and accessibility of reproductive health services as for practical purposes, skilled birth attendance usually entails giving birth at a health facility. Currently in Gambia only 57% of the women deliver with a skilled attendant and institutional deliveries comprise 54.5% of all deliveries. [4] This low rate may be attributed to many factors, including quality of care, accessibility to health facilities, out of pocket cost for drugs and supplies, user fees, costs incurred for transport, or a belief that delivery is not risky and thus a desire to stay at home. In an effort to improve access to maternity care and subsequently reduce maternal mortality, the government of The Gambia declared in August 2007, the abolishment of all user fees for maternal and child care services, including in-facility deliveries. [5] How and to what extent this has been implemented in practice is less clear. We therefore set out to assess the costs borne by households to pay for emergency obstetric care in two rural hospitals in The Gambia.

Methods

We conducted our study from June to December 2010 in Bansang and Farafenni (AFPRC) hospitals respectively, located in the Central River Region and North Bank East Region in The Gambia. In these areas the maternal mortality and total fertility rates are among the highest in the country [6] and these regions also have the lowest proportions of deliveries attended by skilled personnel. [7] The two hospitals serve a population of nearly 600,000; have around 1,600 institutional births per year, [8] and are referral centers for nearly 30 peripheral health centers or dispensaries. These peripheral health centers do not offer Basic Emergency Obstetric Care services.

Study participants and data collection

Any Gambian woman who was hospitalized for an obstetric complication was eligible for participation. We excluded non-Gambians as these are not exempted from user-fees. Women who were registered with one of the following diagnoses were regarded as having an obstetric complication: haemorrhage at any stage of pregnancy; pregnancy-induced hypertension including pre-eclampsia and eclampsia; puerperal sepsis; obstructed labour or mal-presentation (leading to caesarean section, instrumental or assisted delivery); or severe anaemia.

Newly admitted women were identified in the hospital registries, and were asked to participate in the study as soon as they recovered. An information sheet was read to them and signed, on a voluntary basis (see Attachment 1). Most often the information sheet was signed or thumb printed by the woman and her husband or nearest relative. The interviews were conducted at the

time of discharge. This took place in an office within the postnatal ward, often with the husband or other household members present who provided supplementary information.

Data collection methods

Data was collected by one of the authors (BN) and assisted by two research assistants who were midwives. The questionnaire covers socio-demographic characteristics, type of obstetric complication, delivery outcome, type of transport used, total expenditure for treatment of that complication, costs of any food purchased within or outside the hospital, medical costs of drugs and medical supplies charged to the participant and those purchased outside the hospital, as well as strategies in place to cover costs. Some elements of the questionnaire were inspired by a study that estimated costs of normal deliveries in rural facilities. [9] (see Attachment 2) Piloting of the data tool was done at the Royal Victoria Teaching Hospital (RVTH) where we interviewed 10 women that fit the inclusion criteria.

Data Processing and Analysis

Each questionnaire was put under lock and key the same day as it was completed, accessible only by research team. After one week of data collection, the research assistants and the principal investigator (PI) went through the completed questionnaires together and checked them for accuracy and clarity. Each participant in the study was given a code to ease recording and sorting. After this, BN took over storing of the forms, again under lock and key. The pre-coded

questionnaires were entered into the software package for Predictive Analytics Software (PASW) version 18.0

Ethical considerations

Most women are not literate in The Gambia; therefore, verbal consent was sought. This entailed an explanation of the purpose of the study and a guarantee of confidentiality. Participation was voluntary and those who took part were free to withdraw from the study at any time. Assurance was given that withdrawing would not have any negative bearing on the availability and provision of health care to them or their families. Data collection was highly confidential as it was conducted in a separate room and our handling of the completed questionnaires made it practically impossible to link a questionnaire with a particular participant.

Our study was approved by the Gambia Government and Medical Research Council Ethical Committee, the Chief Executive Officers of the two hospitals and the Ethical Review Committee, Norway, before the commencement of the study.

Results

We recruited 120 women into the study, 59 from AFPRC and 61 from Bansang hospitals. All the women we asked agreed to participate in our study. The mean age among the participants was 25 years (range 13 to 45 years). See table 1 for further characteristics of the women who took part.

The total costs borne by these women and their families in connection with their need for emergency obstetric care ranged from D50 to D3000 with a median cost of D375. In Figure 1 we display the distribution of total costs faced among the women we interviewed.

The contribution of transport costs were from D50 to D 300. Those who used ambulance for transportation were not charged for this.

The majority of the women (77%) reported having had to pay for drugs prescribed to them that were not available within the hospital and thus had to be bought in private pharmacies.

Of the 120 women, 111(92%) reported spending money on food and drinks, with a median cost of D200, and a maximum of D3000. This included food and drinks bought within and outside the hospital for both patient and the caregiver who stayed with her. Nineteen per cent of the women required blood transfusion. The costs of the needed number of blood bags ranged from D50 to D1650. More detailed reporting of the costs is found in Tables 2 to 6.

Our respondents reported using a variety of strategies to cope with the costs they faced as a result of the obstetric emergency (see fig.2). Almost half of the households had savings they could use, but many depended on borrowing money, usually from friends and relatives (15%) or money lenders (8%).

Discussion

Findings in context

Our findings showed that despite government's recently launched policy of abolishing user fees for maternal care, women with serious obstetric complications are burdened with high costs due to their need for emergency care.

All of the 120 women we identified who, from June to December 2010, needed emergency obstetric care at two rural hospitals of the Gambia faced direct and / or indirect costs they had to cover through out of pocket payments. The median cost amounted to: D375 (range: D50 to D3000). The women and their families usually managed these unexpected expenses by making use of savings and through borrowing money.

We did not gather information about the socioeconomic status of our respondents and therefore cannot estimate directly to what extent these costs impacted on their ability to cover their daily essential expenses. Health expenditures that exceed 40% of the total expenditure or income are often classified as 'catastrophic'. [10] Su et al in the same study, argue that there is no blue print or consensus about this value and he used different thresholds of catastrophic health expenditures and found that even expenditures of 5-16% of total income had catastrophic consequences. In the current study, four women reported facing 40% or more of the average gross household income in Gambia. Thus, even if we do not know the generalizability of our findings to other Gambian hospitals, it seems highly likely that emergency obstetric care leads to catastrophic health expenditures for a substantial number of families, thus driving them into deeper poverty.

The high costs of care in public hospitals is widely recognized, as pointed out in a recent editorial in an online Gambian newspaper where also the 'hidden'- , indirect costs were

emphasized: ' The family is paying D250.00 (two hundred and fifty Dalasis) daily excluding purchase of medications'. The costs of maintaining a patient in hospital is inestimable. Aside from cost of hospitalization and medication, there is the hidden cost of having family members in the hospital to assist the patient and endless visits of family members and concerned persons.'[11] Not only was delivery in public health facilities not available for many women but the costs of public health services and travelling to access them is prohibitive. [12]

The impact of user fees on access to health services have been reported in a systematic review where was an increase in the use of preventive and curative health care services from small to large increase when user fees were decreased. Interestingly, when user fees were removed, no immediate impact was observed in the use of preventive health care services. Reducing or removing user fees increases the utilization of certain health care services when implemented with quality of care as these improvements could be beneficial. [13] However, the authors opined uncertainties about the effects of user fees on health service use. Several other African countries have recently declared that user fees shall no longer be demanded for maternal health care services. In Uganda following fee abolishment, access increased in outpatient utilization with strong indications that the poor benefitted most. [14,15,16,17] Similarly, Madagascar and South Africa also abolished user fees, but the former country was quick to re-introduce user fees as drug availability for the poor and vulnerable was compromised following the new policy. [18, 19] In China, a study that identifies factors inhibiting access and utilization of hospital delivery reported of multiple barriers that include economic, geographic and poor quality of health services that prevents women using services for births. [20]

Strengths and limitations of our study

Informal fees (under-the –table-payments) were reported by only four of the 120 participants. This may reflect potential weakness of our study design, namely our use of research assistants who were nurse midwives at the same hospital. It is possible that this can have influenced the answers that were given to us. The site of the interviews might also have influenced our answers, as women may have felt freer to respond accurately in their home settings.

Some elements of recall bias among our respondents are also possible as they were asked to list the costs they had during their stay at the hospital. However, the women who took part in the study were invited to participate at an early stage of their hospital stay, and informed about what type of information we were going to ask them later. Thus, we believe that their recollection of costs borne is likely to be reasonably precise. The findings from our study are not necessarily applicable to The Gambia in general as we collected information from a selected group of women from only two hospitals.

Conclusion

Despite user fee abolition, the study reports unofficial costs, transport costs, costs for drugs and blood transfusions, and food costs that are likely to result in catastrophic expenditures. Sources of financial protection for women and households are essential as they suffer great impact of such payments that likely deter them from lifesaving care.

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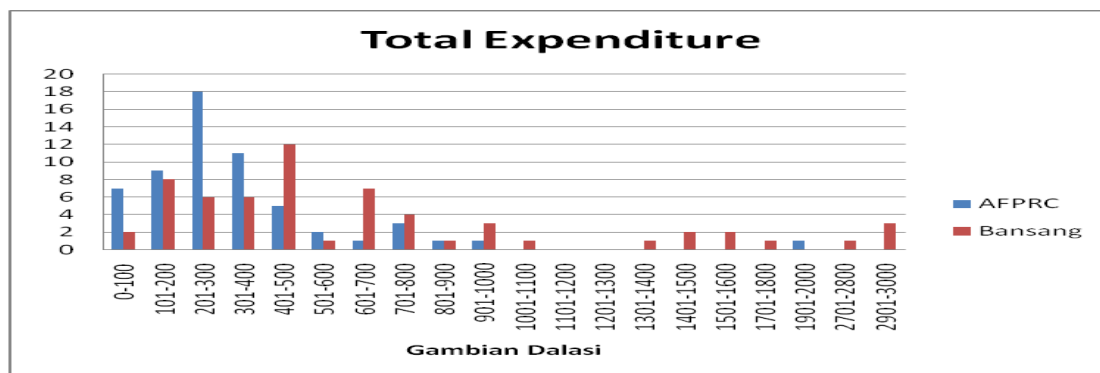
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Appendixes

Table 1: Participant's characteristics

Characteristics	Total n (%)	AFPRC n (%)	Bansang n (%)
Marital status			
Married	115 (95.8)	55(93.3)	60(98.4)
Level of Education			
No education	39(32.5)	25(42.2)	14(23.0)
Primary-partly	17(14.2)	10(16.9)	7(11.5)
Primary-complete	2(1.7)	0	2(3.3)
Secondary-partly	11(9.2)	3(5.1)	8(13.1)
Secondary-complete	5(4.2)	2(3.4)	3(4.9)
Koranic	43(37.5)	18(30.5)	27(44.3)
others	1(0.8)	1(1.7)	0
Severe obstetric complications			
Vaginal bleeding	42(43.3)	27(45.8)	15(24.6)
Pre-eclampsia	32(32.5)	13(22.0)	19(31.1)
Obstructed labor	23(19.2)	6(10.2)	17(27.9)
Puerperal sepsis	12(10.0)	11(18.6)	1(1.6)
Severe anaemia	53(44.2)	30(50.8)	23(37.7)
Pregnancy outcomes			
Live births	58(48.3)	19(32.2)	39(63.9)
Stillbirths	39(32.5)	28(47.5)	11(18.0)
abortion	5(4.2)	4(6.8)	1(1.6)



¹Gambian Dalasi

Figure: 2- Coping strategies by women and households when meeting costs for emergency obstetric care

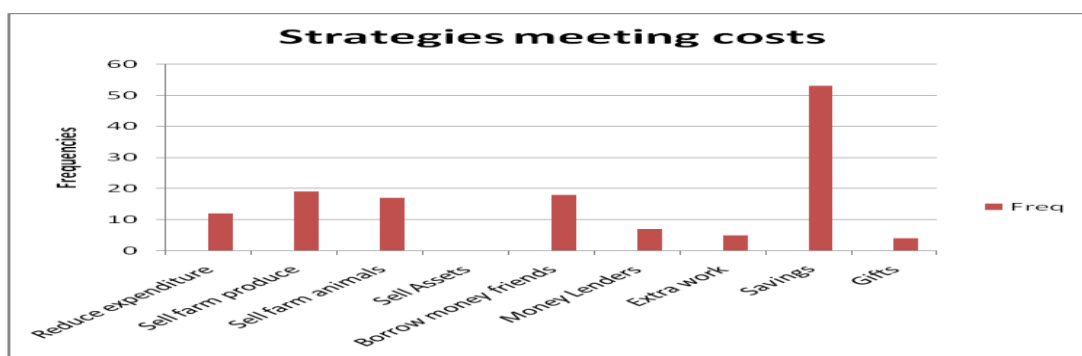


Table 3 : Costs for food & drinks- AFPRC and Bansang Hospital

Dalasi	Total	AFPRC Freq	Bansang Freq
0-500	95(79.5)	53(89.9)	42(68.9)
501-1100	21(17.5)	5(8.5)	16(26.2)
1101-1700	2(1.7)	1(1.7)	1(1.6)
2301-3000	2(1.7)	0	2(3.3)
Total	120(100%)	59(100%)	61(100%)

Table 4 : Cost for transport-AFPRC and Bansang Hospital

Dalasi		AFPRC	Bansang
Total		Freq	Freq
0-100	101(84.2%)	50 (84.4%)	51 (83.6%)
101-250	10 (8.3%)	6 (10.2%)	4 (6.6%)
251-300	9 (7.5%)	3 (5.1 %)	6 (9.8%)
Total	120(100%)	59 (100%)	61 (100%)

Table 5: Costs paid for Blood transfusion by women

Dalasi	Total	AFPRC	Bansang
		Freq	Freq
0-50	98(84.5%)	47 (79.7%)	51 (89.5%)
51-100	4(3.4%)	4 (6.8%)	0
101-200	3(2.6%)	2 (3.4%)	1 (1.8%)
201-300	4(3.4%)	3 (5.1%)	1 (1.8%)
301-500	6(5.2%)	2 (3.4%)	4 (7.0%)
701-900	1(0.9%)	1 (1.7%)	0
Total	120(100 %)	59 (100 %)	57(100 %)

Attachment 1: Information sheet

INFORMATION SHEET

ASSESSING THE COST BORNE BY HOUSEHOLD FOR EMERGENCY OBSTETRIC CARE IN RURAL GAMBIA

Introduction- ‘My name is, I am a Nurse researcher from The Gambia and University of Oslo, Norway. We are interviewing women that have complications from pregnancy to six weeks after delivery in 2010 about the cost paid to get care. We think of costs all the way from your house to the hospital. It is therefore important to assess if the cost of using the hospital act as a barrier for women in this area. You are eligible to participate in this study and I want to ask if you wish and have the opportunity to participate. Confidentiality is fully assured.

Read the form for informed consent aloud.

Agreed to participant: Yes No

Reason for refusal [if given].....

.....

Sign/ Thumb print by Participant

Sign / Thumb print by Husband/ Caregiver

If the participant agrees to participate, decide together a time that is convenient for her. Remember, there are questions regarding household finances, and it may be requiring the presence of the household head to help her answer these questions.

In case a new appointment is needed: Time

Attachment 2: Questionnaire

QUESTIONNAIRE

ASSESSING THE COSTS BORNE BY HOUSEHOLDS FOR EMERGENCY OBSTETRIC CARE IN RURAL GAMBIA

QUESTIONNAIRE IDENTIFICATION NUMBER

--	--	--

INTERVIEWER

HOSPITAL

WOMAN'S BACKGROUND

- 1. How old were you at your last birthday? / _____/ years.

- 2. a) Are you a Gambian? No /____/ (0) Yes (1) /____/

- b) If no, how long have you lived in the Gambia? / _____/ years

- 3. a) Are you married? No /____/ (0) Yes (1) /____/

- b) If yes, how many wives does your husband have in total? /_____/wives

- 4. What is your level of education?
 No education (0) Primary- partly (1) Primary-completed (2)
 Secondary-partly (3) Secondary-completed (4) Post- Secondary (5)
 Koranic (6) others, please specify..... (7)

- 5. What is the level of education of the household head?
 No Education (0) Primary (1) Secondary(2) Koranic (3)

6. a) what is your main source of work / employment?

Unemployed (0) Farmer (1) Petty trader (2) Housewife (3)

Others, please specify.....(4)

INFORMATION RELATED TO THE DELIVERY

7. When was your last delivery?

January (1) February (2) March (3) April (4) May (5) June (6)

July (7) August (8) September (9) October (10) November (11)

December (12)

8. Obstetric complications: What was / were the obstetric complications you experience during this pregnancy?

		YES (0)	No (1)
1	Haemorrhage- antepartum, intrapartum/ postpartum		
2	Eclampsia/ Severe Pre-Eclampsia		
3	Obstructed Labour		
4	Puerperal Sepsis		
5	Severe Anaemia – Haemoglobin 6g/dl		

9. What was the outcome of this pregnancy?

		YES (0)	NO (1)
1	Abortion		
2	Live birth		
3	Still birth		
4	Not delivered		

10. Who took the decision that this delivery needed skilled attendance?

Nurses (0) Mother (1) Mother In-Law (2) Husband (3) Others (4)

11. Did you encounter any difficulties getting to the hospital No (0) Yes (1)

b) If yes: what were the difficulties.....

12. How far is it to the Hospital from your home? /____/ km

13. Did you travel night or day? Day (0) Night(1)

14. What kind of transport did you use to reach the Hospital?

By foot (0) by bus (1) Own car (2) Borrowed car (3) Taxi (4)

Donkey or Horse cart (5) Ambulance (6)

Others please specify (7)

15. How long did it take you to reach the Hospital? /___/ hour and /___/ minutes.

16. How much did you pay for transport to the hospital (including accompanying person(s)? If more than one health facility, calculate the cost.

Zero Dalasi (0) 50-100(1) 150-200 (2) 200-250(3) 300-350(4)

Others please specify (5)

17. How long did you spend in this hospital? /___/days

18. What was the total expenditure for this delivery? /____/Dalasi

19. How much did you pay additionally for any of these items? Prices in Dalasi

- a) Dressings and bandages No Yes /____/
- b) Needles and syringes No Yes /____/
- c) Medicines No Yes /____/
- d) Food & drinks- both woman and accompanying person(s) No Yes /__/
- e) Blood transfusion No Yes /____/
- f) Operations(CS) No Yes /____/
- g) Other medical materials- sutures, IV sets etc /____/
- h) Others, please specify:...../____/ Total/____/

20. Were you asked by anybody to pay fees? o (0) s (1)

If no, go to question 22

b) If yes, did you pay? No (0) Yes (1)

c) If yes, why did you pay the fee? (Unprompted, tick the appropriate answer (s))

- I was told that I had to pay (0)
- I was told that I/my wife would receive some benefits (1)
- They refuse to care for me / my wife if I didn't pay (2)
- They didn't tell me why I had to pay (3)
- Other, please specify :.....(4)

d) Did you pay to more than one person? No (0) Yes (1)

e) What was the total sum of this fee? /____/ Dalasi

f) Did you get a receipt? No (0) Yes (1)

g) Was there a written price list? No (0) Yes (1)

22a). to gather money to pay for the cost of the delivery, did the household.....?

1	Reduce expenditure and consumption in anticipation of the cost	No (0) <input type="checkbox"/> Yes (1) <input type="checkbox"/>
2	Sell farm produce	No (0) <input type="checkbox"/> Yes (1) <input type="checkbox"/>
3	Sell farm animals (if yes, ask b)	No (0) <input type="checkbox"/> Yes (1) <input type="checkbox"/>
4	Sell other assets (if yes, ask c)	No (0) <input type="checkbox"/> Yes (1) <input type="checkbox"/>
5	Borrow money from friends and relatives (if yes, ask d)	No (0) <input type="checkbox"/> Yes (1) <input type="checkbox"/>
6	Borrow money from money lenders (if yes, ask d)	No (0) <input type="checkbox"/> Yes (1) <input type="checkbox"/>
7	Take on extra work	No (0) <input type="checkbox"/> Yes (1) <input type="checkbox"/>
8	Use available cash and savings	No (0) <input type="checkbox"/> Yes (1) <input type="checkbox"/>
9	Use gifts and handouts	No (0) <input type="checkbox"/> Yes (1) <input type="checkbox"/>
10	Other, please specify:	No (0) <input type="checkbox"/> Yes (1) <input type="checkbox"/>

If answer yes to 3-6, ask the appropriate follow up question:

b) Have you been able to buy back the animals that you had to sell? No (0) Yes (1)

c) Have you been able to buy back the items that you had to sell? No (0) Yes(1)

d) Have you been able to repay the money you borrowed? No (0) Yes(1)

Thank you very much for your time!

