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FACTORS AFFECTING MATERNAL HEALTH UTILIZATION IN THE PHILIPPINES¹

by
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ABSTRACT

Some 1,400 women die every day around the world from problems related to pregnancy and childbirth. Tens of thousand more experience complications during pregnancy, many of which are life-threatening for the women and their children if not leave them sever disabilities.

The dangers of childbearing can be greatly reduced it a woman is healthy and well nourished before becoming pregnant. This study could serve as an insight for the modification of plans and policies for future development regarding maternal care.

The study aims to determine the factors that affect the utilization of pre and postnatal care, including the place of delivery. The data to be utilized in this study was taken form the 5th series of Maternal and child Health survey conducted on the year 2002 by the National Statistics Office.

A combination of descriptive and logistic regression analysis will be employed to the gathered data to understand the prevailing situation and to assess the differentials in utilization of maternal care services.

I. INTRODUCTION

The knowledge road to health has many pitfalls – and women in less developed countries particularly those who are poor, illiterate and unemployed, face crucial tradeoffs when they attempt to fulfill their biological, social, physiological and other needs. In almost all developing countries, maternal health has been recognized to be of great importance since the satisfaction of the basic needs of children at every phase of their life is closely linked to the well being of the mother. The dependence being greatest during pregnancy and continuous during infancy.

In this context, the primary health care is seen as means for less developed countries to bring 'health without wealth' to the people. Thus, during the last decade or so, many developing countries have been able to put new knowledge into action by improving education and health services in isolated communities.

The dangers of childbearing can be greatly reduced if a woman is healthy and well nourished before becoming pregnant, if she has a health checkup by a trained health worker during her pregnancy, and if a skilled birth attendant assists the birth. The woman should also be checked during the 12 hours after delivery until six weeks after giving birth.

¹ The views expressed in this paper are of the authors' and not of the NSO

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The government has a particular responsibility to make prenatal and postnatal services available, to train health workers to assist at birth, and to provide special care and referral services for women who have serious problems during pregnancy and childbirth.

Maternity care aims to ensure that every expectant and nursing mother maintain good health, learns the art of child care, has normal delivery and bears healthy children. Maternal health care begins from the time of conception of the child, therefore, the pre and postnatal care of the expectant mother is included in the health care system. The prenatal care ensures that the health of expectant mothers more especially their nutritional status is safe guarded and avoidable complications of pregnancy are prevented or treated. The natal care also includes the care for expectant mothers during childbirth, preferably by a trained health worker or a doctor. The postnatal care covers maternal health care services after delivery.

Historically, the principal duty of women has been viewed as bearing children and serving as the foundations of families. Health is a basic need of a human being and therefore, denying women their health needs has affected seriously their productive and reproductive roles.

Women play an enormous part in maintaining the health care system through their caring work at home, in the family, in the neighborhood and in the nation. At present, more than ever, the health services depend on the caring work of women and their skills and capabilities.

This study could serve as insight for the modifications of plans and policies for future development regarding maternal care.

OBJECTIVE

The primary objective of the study is to assess the practices of Filipino women 15 to 49 years old during pregnancy, childbirth and post partum period. Specifically, the study aims to estimate the probability that a woman of childbearing age would utilize maternal health care taking into consideration its socio-demographic characteristics.

II. DATA AND METHODOLOGY

A. Data

This study uses the results of the 2002 Maternal and Child Health Survey (MCHS), a nationwide sample survey conducted by the National Statistics Office as a rider to the April 2002 round of the Labor Force Survey (LFS). It involved interviewing all female members aged 15 to 49 years in the sample household in the LFS, with surviving children below five years of age. Funding assistance for MCHS as well as the Family Planning Survey (FPS) is being provided by the United States Agency for International Development (USAID). In addition, technical assistance in the sampling estimation was provided by the International

Program Center of the U.S. Bureau of Census. The women interviewed were selected to be representative of all Filipino women of reproductive age with at least one surviving child under age 5.

As a rider to the LFS, its sample households were obtained using the new master sample design of the LFS. A multi-stage sampling design was utilized which involved the selection of sample barangays for the first stage, sample enumeration areas (Eas) for the second stage, and sample households for the third stage. In each sample household, eligible respondents (ERs) for the 2002 MCHS were identified using the LFS Household Questionnaire. These were women of childbearing age, that is 15 to 49 years old, regardless of marital status, who were usual members of the household.

A total of 8,299 eligible respondents from the 8,199 sample households were covered in this undertaking. The samples were deemed sufficient to allow the generation of estimates of key program indicators at the regional as well as the national level.

B. Methods

During the past decade, maternal health has been one of the major focuses of the health program in the Philippines. The results of the 2002 MCHS will serve as guide to look at trends across time of key maternal care indicators.

The unit of analysis for this study is women who had at least one live birth in the five years preceding the survey. If women had more than one live birth in the past five years, only care received for the most recent live birth is considered. The response category was collapsed to create a dichotomous variable on the basis of whether or not the woman had received maternal health care. Since the interest was in identifying women at risk because they did not receive care, the outcome variables were coded as '1' if the women received prenatal care and '0' if she did not receive prenatal care. The same coding procedure was applied for the delivery care and postnatal care.

Logistic regression was used since the variables of interest are binary in nature. The logistic model considers the relationship between a binary dependent variable and a set of independent variables. The logistic model for K independent variables ($x_1, x_2, x_3, \dots, x_k$) is given as:

$$\text{Logit } p(x) = \alpha + \sum \beta_i x_i$$

$\text{Exp}(\beta_i)$ = odds ratio for a person having characteristic i versus not having characteristic i

β = Regression coefficient

α = constant

The following are the description for its inclusion.

Variable	Description
Age of Respondent	It is represented by a continuous variable ranging from 15 to 49 years old. The age could be a contributing factor in the utilization of maternal health practices of women.
Education	This variable measures the level of education the individual has attained. It had been sub-divided into primary, secondary and tertiary education.
Work Status	The work status include all forms of women's occupation in the labor force whether formal and informal work, inside or outside the home and work for payment in cash or in kind. This is a dichotomous variable where gainfully employed is coded '1' and not gainfully employed is coded '0'
Children Ever Born	This variable will indicate if the number of previous pregnancies plays an important factor in deciding about the consumption of maternal care services.
Urbanity	The location of the household matters in the utilization of maternal health care. A dichotomous variable where '1' is for urban and '0' for rural

III. RESULTS AND DISCUSSION

A. Descriptive Analysis

Early and regular checkups by trained medical providers are very important in assessing the physical status of women during pregnancy. Table 1 presents the results from the 2002 MCHS on the coverage of prenatal care services, assistance during delivery and postnatal services for births taking place five years prior the survey. A birth is considered to have received regular care if the mother said that she had made at least four prenatal care visits, i.e., a visit to a trained medical provider for care for the pregnancy. Table 1 presents the summary percentages of maternal health care services utilization in the Philippines by background characteristics.

Ninety-four percent of women who had at least one birth in the five years preceding the survey received prenatal care from a doctor, nurse, or midwife for their most recent birth. The use of professional assistance during delivery is generally low for the Philippines. Only sixty percent of women who delivered in the last five years preceding the survey were assisted by a health professional for their most recent pregnancy while seventy percent of women received postnatal care. Utilization of maternal care is lowest in the Autonomous Region of Muslim Mindanao (ARMM) with only eighty-five percent for prenatal care, twenty-one percent received professional delivery assistance and forty-eight percent obtained postnatal care. Meanwhile, the National Capital Region (NCR) accounts for the highest percentage of maternal health utilization with ninety-seven percent for both prenatal and delivery care and seventy-six percent for postnatal services. Ninety-six percent of women from the urban areas received professional prenatal care while seventy-nine percent were assisted by professionals during childbirth and sixty-two percent obtained postnatal care. On the other hand, the rural

counterparts have the following percentages in terms of maternal health usage, ninety-three percent for prenatal care, fifty-six percent for assistance in delivery and half of the women had postnatal care. The use of prenatal care is highest for the age group 30-34 years old with ninety-five percent while it is lowest at 15-19 years of age with only eighty-seven percent. In terms of delivery care, a little difference in the percentage was obtained. Also, there is little difference in utilization of postnatal care by age. Women's education is highly associated with use of maternal care in Philippines. As the degree of education increases, maternal health care utilization also increases. Ninety-eight percent of women with college degree received prenatal care compared with ninety-five percent of women with secondary education and eighty-eight percent with primary education. A similar pattern is seen for delivery care and postnatal care. The work status of the mother yields no significant impact on the utilization of maternal health care since the results shows parallelism. Meanwhile, mothers with one live birth are more likely to use maternal health services for first births than for second and higher order births. Utilization of maternal health services is generally lower among mothers of birth order five and higher.

Table 1. Percentage of women who had live birth in the five years preceding the survey who received prenatal care, delivery care and postnatal care from a health professional (doctor, nurse or midwife), by background characteristics

Background Characteristic	Percentage Who Received Prenatal Care	Percentage Who Received Delivery Care	Percentage Who Received Postnatal Care
Age Group			
15-19	87.4	69.5	50.3
20-24	92.8	71.0	55.8
25-29	93.7	65.6	55.4
30-34	95.3	67.1	56.8
35-39	94.9	64.3	56.4
40-44	91.4	66.6	52.9
45-49	92.5	60.8	52.9
Highest Grade Completed			
Primary Education	88.4	51.4	44.6
Secondary Education	95.1	70.4	54.0
Tertiary Education	98.2	79.3	72.0
Occupation			
Gainful	93.4	62.6	54.2
Non-Gainful	93.9	67.7	55.9
Children Ever Born			
1	94.8	84.8	59.8
2	93.5	74.2	51.8
3	86.9	69.4	51.6
4	82.2	63.5	48.2
5 or more	44.0	64.4	44.0
Urbanity			
Urban	95.8	79.1	62.3
Rural	92.7	56.0	49.8
Regional Grouping			
NCR	96.7	96.5	75.1
CAR	89.5	76.3	53.7
Region 1	91.1	83.9	51.8
Region 2	91.7	54.7	56.7
Region 3	94.4	89.5	52.9
Region 4	94.7	90.2	58.2
Region 5	92.1	75.2	53.4
Region 6	94.5	50.5	51.6
Region 7	95.8	48.2	55.4
Region 8	92.8	45.5	47.3
Region 9	93.2	41.0	51.0
Region 10	93.4	36.6	47.9
Region 11	95.7	52.1	57.6
Region 12	90.2	41.2	43.5
ARMM	84.8	20.6	47.5
CARAGA	95.7	57.6	55.2
TOTAL	94.1	60.4	69.8

Source: National Statistics Office, 2002 Maternal and Health Survey

B. Logistic Regression

Prenatal Care

Ideally, prenatal care functions to identify and monitor women at risk of future complications, to detect and treat pre-existing and concurrent illnesses of pregnancy, to provide preventive care and information to women and their families, and to establish a relationship between providers and women early in pregnancy.

Prenatal care services are part of primary health care services or pregnant women which include regular medical checkups, medical advice regarding health, hygiene, nutrition, etc. related to pregnancy and child bearing. Pregnant women who were registered for prenatal care and who visit on a regular basis usually receive iron and folic acid tablets and they are vaccinated against tetanus.

Results of the logistic regression reinforce the importance of women's education as the most important determinant of prenatal care. With women having tertiary level of education is six times more likely to access prenatal care than women with primary education and twice more likely than women who reached secondary level of education. The logistic regression identified a number of variables, including urbanity, parity, age of the woman and work status, as significant and independent predictors for the use of prenatal care services in the Philippines. In terms of urbanity, women in urban areas are 0.88 times more likely to avail prenatal care services than their rural counterpart. Regarding parity, the study revealed that there is little difference in the likelihood of use of prenatal services among women. The odds of having prenatal care decreases as the number of children increases. On the other hand, women who are 15 to 19 years old are twice as likely to access maternal care as the 45-49 years old women.

Results of Prenatal Care

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1	URBANITY(1)	-.253	.000	5.0E+10	1	.000	.776
	OCC(1)	-.045	.000	1.3E+09	1	.000	.956
	TCHILD			4.0E+11	4	.000	
	TCHILD(1)	-3.375	.000	7.0E+10	1	.000	.034
	TCHILD(2)	-3.218	.000	6.4E+10	1	.000	.040
	TCHILD(3)	-2.424	.000	3.6E+10	1	.000	.089
	TCHILD(4)	-1.952	.000	2.0E+10	1	.000	.142
	AGEREV			2.6E+11	6	.000	
	AGEREV(1)	.937	.000	6.9E+10	1	.000	2.552
	AGEREV(2)	.284	.000	9.1E+09	1	.000	1.328
	AGEREV(3)	.080	.000	7.8E+08	1	.000	1.084
	AGEREV(4)	-.206	.000	5.0E+09	1	.000	.814
	AGEREV(5)	-.112	.000	1.5E+09	1	.000	.894
	AGEREV(6)	.271	.000	8.5E+09	1	.000	1.311
	HGCREV			1.2E+12	2	.000	
	HGCREV(1)	1.789	.000	8.6E+11	1	.000	5.983
	HGCREV(2)	.876	.000	2.0E+11	1	.000	2.401
	Constant	-.589	.000	2.0E+09	1	.000	.555

Delivery Care

Though most women experience no major problems during labor and delivery, complications that do occur can be unpredictable and in sudden onset, requiring immediate action. Maternal and perinatal outcome in such instances are improved when such complications occur in the presence of a trained attendant. Provision for adequate medical attention during delivery is important for the well-being of mother and child. Absence of such care and lack of hygienic conditions at the time of birth may lead to complications that would increase the risk of death of the mother or child or both.

In the same way as with prenatal care, delivery care is taken as dependent variable, and age of respondent, number of children, level of education, work status, and urbanity were taken as independent variables. The dependent variable is categorized as '0' for not having delivery care and '1' for having delivery care or assisted by a health professional such as doctor, nurse or midwife.

Age of respondent, number of children, level of education, work status, and urbanity are significant variables for delivery care as shown in the logistic regression output. Parity has a negative association with delivery care. With an increase in birth order, the odds of delivering to a health professional compared to the reference category (i.e. one child) decreases. It revealed that women with higher birth order have utilized professional delivery care to a lesser extent than first births. This may be due to the fact that these women might not have experienced any problems during earlier pregnancies or might be aware of appropriate care to be taken during pregnancy and delivery. Incurring more care

and expenditure at the time of first or second birth is an old practice more than the subsequent ones.

Results of Delivery Care

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1	URBANITY(1)	.878	.000	2.4E+12	1	.000	2.406
	OCC(1)	-.177	.000	7.6E+10	1	.000	.838
	TCHILD			1.2E+11	4	.000	
	TCHILD(1)	-3.591	.000	4.9E+09	1	.000	.028
	TCHILD(2)	-3.783	.000	5.4E+09	1	.000	.023
	TCHILD(3)	-3.746	.000	5.3E+09	1	.000	.024
	TCHILD(4)	-3.312	.000	4.1E+09	1	.000	.036
	AGEREV			6.4E+10	6	.000	
	AGEREV(1)	-.081	.000	1.3E+09	1	.000	.922
	AGEREV(2)	.043	.000	6.9E+08	1	.000	1.044
	AGEREV(3)	-.146	.000	8.8E+09	1	.000	.864
	AGEREV(4)	-.076	.000	2.4E+09	1	.000	.927
	AGEREV(5)	-.122	.000	6.1E+09	1	.000	.885
	AGEREV(6)	.011	.000	4.2E+07	1	.000	1.011
	HGCREV			1.9E+12	2	.000	
	HGCREV(1)	-.966	.000	1.6E+12	1	.000	.381
	HGCREV(2)	-.289	.000	1.6E+11	1	.000	.749
	Constant	4.583	.000	7.9E+09	1	.000	97.811

Postnatal Care

A number of the problems women experience surrounding childbirth occur in the postpartum period, the six weeks following delivery. Such problems can be detected and treated through proper follow-up visits for women in the postpartum period. Postnatal registration is especially vital in order to receive appropriate medical advice to regain health after the strains of child bearing of mother and proper care for the well-being of the newborn baby. Postnatal care includes advice regarding nutrition, breastfeeding, receiving free medicine, tonic, other vitamins, food supplements, etc. Treatment of complications that might have occurred during delivery requires attention of trained professional.

Similar to the procedure done in prenatal and delivery care, postnatal care was considered as the dependent variable with the same set of independent variables. The same results were derived for the postnatal care.

Results of Postnatal Care

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1	URBANITY(1)	.311	.000	3.6E+11	1	.000	1.364
	OCC(1)	-.012	.000	3.6E+08	1	.000	.989
	TCHILD			2.3E+11	4	.000	
	TCHILD(1)	.394	.000	9.7E+08	1	.000	1.483
	TCHILD(2)	.142	.000	1.3E+08	1	.000	1.153
	TCHILD(3)	.139	.000	1.2E+08	1	.000	1.150
	TCHILD(4)	-.021	.000	2444748	1	.000	.979
	AGEREV			7.2E+10	6	.000	
	AGEREV(1)	-.274	.000	1.8E+10	1	.000	.760
	AGEREV(2)	-.092	.000	3.7E+09	1	.000	.912
	AGEREV(3)	-.038	.000	6.6E+08	1	.000	.963
	AGEREV(4)	.040	.000	7.5E+08	1	.000	1.041
	AGEREV(5)	.041	.000	7.6E+08	1	.000	1.042
	AGEREV(6)	.045	.000	8.4E+08	1	.000	1.046
	HGCREV			2.2E+12	2	.000	
	HGCREV(1)	-1.058	.000	2.2E+12	1	.000	.347
	HGCREV(2)	-.739	.000	1.3E+12	1	.000	.477
	Constant	.503	.000	1.6E+09	1	.000	1.654

IV. CONCLUSION AND RECOMMENDATIONS

Despite the difficulty in exploring trends in the utilization of maternity care services using cross-sectional survey, this study was attempted. In general, coverage of utilization of maternity care services (prenatal, delivery, postnatal) shows a consistent trend over the years.

Access to trained prenatal care providers is much greater among women with some college education than among those with lower education. The choice of attendant during delivery is associated with the mother's characteristics particularly the age and parity. Urbanity, age and parity are the most significant factors affecting the utilization of postnatal services.

The data suffered from a number of limitations that must be noted. First, the survey did not collect information on service availability/accessibility, thus limiting the practical utility of the results. Second, the questions on the use of maternal health services is focused only on the most recent pregnancy/birth in the five years preceding the survey, it was not possible to investigate the behavioral consistency in the use of these services between successive births from the same woman. Third, for some women, the motives behind attending prenatal care could be in relation to a health problem rather than for preventive reasons. Since questions on reasons for seeking care during pregnancy were not included in this survey, it is difficult to distinguish between prenatal and curative care during pregnancy. Fourth, limited independent variables were considered for this study since most of the variables indicated in the literature that could be a significant indicator for the utilization of maternal care is not covered in the survey.

The quality of health care remains wanting in many areas. Some health facilities have deteriorated and poor quality services exist. Low quality drugs and medicines are present in the market. These have been attributed partly to the weak enforcement of health regulations. In this regard, a quality improvement program for all health facilities and services at all levels of the health care system must be pursued. Regulatory capabilities, systems and procedures will be upgraded and strengthened. The support of all stakeholders in the initiatives to attain quality care should also be strengthened and sustained. Government and non-governmental agencies must expand services, improve their quality and tailor them to meet the needs of women and communities by ensuring that health facilities are accessible with adequate trained staff, continuous supply of drugs and equipment and are linked to hospitals by an emergency transport and referral system. Also, enforcing standards and protocols for service delivery, management and supervision, and using them to monitor and evaluate the quality of services, along with feedback from clients and health providers. Moreover, by providing free or affordable maternal and infant health services that manage any complications as well as offer routine care. Finally, educating women and communities about the importance of maternal health and appropriate services.