Determinants of the Total Actual Cost of Reproductive Healthcare Services in Patna

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Abstract:
Reproductive health care is an essential component of basic care for women. There are direct and positive link among reproductive health, economic growth and development. It has been widely recognized that investment in the reproductive health of the poor can enhance growth and reduce poverty. There is strong empirical evidence suggesting significant correlation in between health and economic growth. Present study aims to analyze the total actual cost of reproductive healthcare services (TACRHS) in Patna which is capital of Bihar. It aims to identify the determinants which affect the total actual cost of reproductive healthcare Services (TCRHCS) with respect to pre-delivery, delivery and post delivery expenditure of the household which they actually incurred on reproductive healthcare services. The study found that total actual cost of reproductive healthcare services increases with the increase in caesarean delivery and in services of private hospitals. The study also found that expenditure on reproductive healthcare services increases with increase education, wife working status, households' monthly income, early delivery complications. While total actual expenditure on reproductive healthcare services decreases with increase in the birth order of children, expectation of the birth of girl child, increase in numbers of member in the family, in joint families and insurance awareness of the respondents.

Keywords: *Economic growth, Healthcare Services, Reproductive health, TACRHS, Total Actual Cost*

1. Introduction

The International Conference on Population and Development (ICPD) defines reproductive health as a state of complete physical, mental and social well-being and...not merely the absence of disease or infirmity, in all matters relating to the reproductive system and its functions and processes. Reproductive health therefore implies that people are able to have a satisfying and safe sex life and that they have the capability to reproduce and the freedom to decide if, when and how often to do so. Implicit in this last condition are the right of men and women to be informed [about] and to have access to safe, effective, affordable and acceptable methods of family planning of their choice, as well as other methods of birth control which are not against the law, and the right of access to appropriate health-care services that will enable women to go safely through pregnancy and childbirth and provide couples with the best chance of having a healthy infant. (ICPD Programme of Action, 1994).

Reproductive health care is an essential component of basic care for women. Women make up half of our population and shoulder key responsibilities for our future generations and our prosperity. Therefore, access to reproductive health services should be a central and established part of health care to ensure that women can attain good health, maintain it through their reproductive years and age well. There has been consensus among the medical and public health experts for decades that women must be healthy in order to have healthy pregnancies and babies (Chavkin,et.al,1999).

To improve maternal and new-born health by reducing mortality and morbidity related to pregnancy and child birth, it is essential to build continuum of care that increases access to and use of skilled care during pregnancy, birth and the post par took period. The continuum of care need to extend from care in the household to the care provided by a skilled health professional at the primary care level, to that provided at the referral facility for those women and new-born's with complications. Having a pool of skilled manpower for provision for this continuum of care is a major challenge for India towards improving its maternal health. Many states have incorporated strategies for improving preconception health into their health promotion plans (Boulet, et.al, 2006).

At present many countries are struggling to meet the United Nations Millennium Development Goals (MDGs), there is a growing trend worldwide to implement strategies designed to reduce financial barriers to reproductive healthcare. With developing country health systems focusing heavily on reducing child mortality and improving maternal health (MDGs 4 and 5), there is inevitable tension deciding between financing strategies that will bring fast improvements in specific indicator areas (such as reproductive health), and those that target the entire health care system and may be more sustainable in the long term. Healthcare costs associated with pregnancy and delivery and with the care of newborn infants are significant, they represent the two most expensive conditions requiring hospitalization (Wier, et al,2011). While a variety of tools is being employed to reduce the financial burden on households for health care, two of the most prominent are the expansion of free services policies and the expansion of health insurance (Kelley, et al.,2010).

There are direct and positive link among reproductive health, economic growth and development. It has been widely recognized that investment in the reproductive health of the poor can enhance growth and reduce poverty. There is strong empirical evidence suggesting significant correlation in between health and economic growth. Some studies have concluded that healthier people are more productive. Investment in the health of the poor raises their educational ability and productivity. It gives them both the assets they need to lift themselves from poverty and the immediate welfare gains of relief from physical sufferings (Wuensch & Poteat, 1998).

The objective of the present study is to identify the determinants which affect the total actual cost of reproductive healthcare Services (TCRHCS) with respect to pre-delivery, delivery and post delivery expenditure of the household which they actually incurred on reproductive healthcare in Patna.

The study aims to analyze the total actual cost of reproductive healthcare services (TACRHS) in Patna which is capital of Bihar. Bihar is the 12th largest state with geographical area of 94,163 square km. And with an increase in population of about 20.8 million in the last decade, Bihar is the third most populous state in India, after Uttar Pradesh and Maharashtra. According to 2011 census, the total population of Bihar stands at 103.8 million. The decadal growth rate of population of Bihar between 2001 and 2011 was 25.1 percent.

Description of Patna

Patna is the capital of Bihar and it is the second most populous districts of Bihar with population density of (1803 persons per sq. km) after Sheohar with population density (1882 persons per sq. km.). Patna is situated on the bank of the river Ganga.

Table 1. Description of Patna

City	Patna
Government	Municipal Corporation
Urban Agglomeration	Patna Metropolitan
State	Bihar

Table 2. Demographic profile of Patna

Patna City	Total	Male	Female
Population of Patna	1,683,200	894,158	789,042
Literacy Rate	1,264,523(84.71%)	694,580(87.71%)	569,943(81.33%)
Children (0-6)	190,496	102,208	88,288
Average Literacy (%)	84.71	87.71	81.33
Sex ratio	882 per 1000 male		
Child Sex ratio	864 per 1000 male child		

Source: Economic Survey of Bihar 2011

2. Objectives of the study

The objectives of the study are as follows:-

- To find out the total actual cost of the reproductive healthcare services of the respondents in Patna which include all the cost of reproductive healthcare services namely, pre-delivery, delivery and post delivery together.
- To find out the impact of age of the respondents on the total cost of reproductive healthcare services.
- To find out the impact of social and economic status of the respondent on the total cost of reproductive healthcare services.
- To find out the impact of reproductive healthcare services provided by government and private hospitals in Patna.

3. Hypothesis

- Total cost of reproductive healthcare services increases with the increase in the age of the respondent (pregnant women).
- Total cost of reproductive healthcare services is positively related to husband's education, wife working status, households monthly income, early delivery complications, type of delivery (in case of caesarean delivery),type of hospital visited(in case of private hospitals).
- Total cost of reproductive healthcare services is negatively related to joint family, insurance information to the respondents, birth order of children, expectation of the birth of girl child.

4. Survey

A Primary survey is conducted in the district of Patna, capital of Bihar. Face to face interview of 528 respondents are taken in form of questionnaire. The survey is conducted in the month of May, June and July 2011. All government hospitals and private maternity clinics are visited to conduct the interviews with the women who have given birth to their babies. The government hospitals providing maternity healthcare services which are visited during this period are Patna Medical College and Hospital (PMCH), Nalanda Medical College and Hospital(NMCH) and Guru Govind Singh College and Hospital. The Hospitals are visited frequently during the survey. Beside government hospitals all private maternity clinics, hospitals run by NGO's and missionaries in the district are also visited to conduct the interviews with the respondents. The survey is done on primary basis. Questions are asked from the women or her family (in case women are unable to answer) about their total cost of reproductive health care. The responses of the respondents are recorded properly and coding of response is done accordingly.

5. The Questionnaire

TACRHCS data are obtained by using a questionnaire. The content of the questionnaire are common to all sample. All respondents are asked how much they have paid to finance the present cost of RHCS. Both close ended and open ended questions are asked in the survey. On the cover letter of the questionnaire, the respondents are well informed that:

- Data collection and analysis are fully anonymous so that their private information would be completely protected.

- All the answers would be kept confidential processed statistically and would be used only for scientific study.
- Respondents could either participate of their own accord or refuse to participate.

Total 528 respondents are enquired about their total actual cost for RHCS. The questionnaires are given to the respondents who are educated, while illiterate respondents are asked to give the answers verbally. Respondents are given 15- 20 minutes time to answer the questions. The questionnaire includes age, socio-demographic and economic data, experiences with respect to different cost incurred in the RHCS and complications in her delivery, health behaviour etc. Both qualitative and qualitative data are required for testing the hypothesis. The questions in the survey consist of both multiple-choice form and open ended form. All statistical analyses are performed using statistics software SPSS ver.18.0 (SPSS Ltd., Chicago, USA).

6. Methodology

As per specified objectives the primary need is to estimate the total actual cost of reproductive healthcare services (TACRHCS). For achieving this objective the details of cost components vis-a-vis its determinants from the targeted women population in Patna are required. All expenditure related to RHCS like expenditure on consulting doctors, and visiting maternity clinics, expenditure on various tests related to pregnancy, monthly expenditure on medicines for the expecting mother, cost related to types of delivery namely normal delivery and caesarean delivery are examined, other post delivery related cost like immunization and vaccination etc are clubbed together so that total cost of reproductive healthcare service could be studied. Time cost, transport cost and other opportunity costs of the respondents and their attendants are not included in the present study.

Explanatory variables are age of respondent, family types, number of family members, husband education, household monthly income, number of earning members in the family, wife working status, own house, television, insurance information, delivery type, expectation of sex of child born, birth order of the child born, early delivery complication, types of reproductive health care service providers i.e. government hospitals and private hospitals for getting RHCS, financial benefits in government hospital delivery. For the statistical analysis some variables are dropped out, not taken into consideration as it create the problem of multicollinearity in the statistical analysis e.g. age of the couple at the time of marriage, number of members in the family and number of children in the family, household monthly income is taken as a proxy for wife working status, own house, television and level of education of husband and wife etc in which one of the variables is taken and other related variable is dropped out.
The information is collected through Primary survey. However the specified variables, their definitions and the empirical model are given below. An Ordinary Least Square regression is used to determine the relationship between the total actual cost of RHCS and the identified socio-economic and related determinants. The empirical specification of the model is as:

7. Model Specification

7.1 Dependent Variables

Total actual cost incurred on reproductive healthcare services.

$$TACRHCS = f(X_1+X_2+X_3+X_4+X_5+X_6+X_7+X_8+X_9+X_{10}+X_{11}+X_{12}+X_{13}+X_{14}+X_{15})$$

7.2 Explanatory Variables

Explanatory variables are defined as below.

- $\mathbf{X_1}$ = Age of the respondent in years (wife age at the time of pregnancy)
- $\mathbf{X_2}$ = Family type (Nuclear family =0, Joint family=1)
- $\mathbf{X_3}$ = Number of family members
- $\mathbf{X_4}$ = Husband's education (Illiterate=0, Primary school=1, High School=2, Graduate=3, More than graduate=4)

X5 = Household monthly income
X6 = Numbers of earning members in the family
X7 = Wife working status (No=0, Yes=1)
X8 = Own house of the household (No=0, Yes=1)
X9 = Access to television (No=0, Yes=1)
X10 = Insurance awareness among the households (No=0, Yes=1)
X11 = Delivery type (Normal delivery=0, Caesarean delivery=1)
X12 = Sex of child born (Boy=0, Girl=1)
X13 = Birth order of children
X14 = Early delivery complications (No=0, Yes=1)
X15 = Hospital type for RHCS (Government hospitals =0, Private hospital=1).

Following are the detail explanation for identifications and descriptions of the variables used in the study for finding the determinants of total actual cost incurred on reproductive healthcare services in Patna.

8. Description of Variables

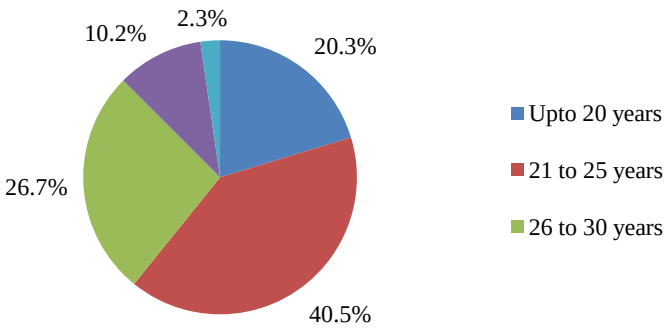
Age of the respondents: The study is conducted on the primary survey where questions are asked from 528 women who have given birth to her children. The age of the women vary from minimum age of 17 years to maximum age of 36 years. The statistical descriptions of age of respondents (women) are shown in the table and pie-chart given below.

Table 3. Description of the age of respondents (in Years)

Age of respondents in years	Frequency	Percent	Cumulative Percent
Up to 20	107	20.3	20.3
21 to 25	214	40.5	60.8
26 to 30	141	26.7	87.5
31 to 35	54	10.2	97.7
36 and above	12	2.3	100.0
Total	**528**	**100.0**	

Source: As per survey on determinants of the total actual cost of Reproductive Health Care Services in Patna

Figure 1. Age of the respondents (in Years)



Source: As per survey on determinants of the total actual cost of Reproductive Health Care Services in Patna

Marriage age of husband and wife: Following tables given below show the age of marriage of both husband and wife in the survey.

Table 4. Husband age of marriage

Husband age of marriage			
Age in years	**Frequency**	**Percent**	**Cumulative Percent**
up to 21years	107	20.3	20.3
22 - 25years	182	34.5	54.7
26 -30years	142	26.9	81.6
31 -35years	56	10.6	92.2
36 -40years	36	6.8	99.1
41 and above	5	.9	100.0
Total	**528**	**100.0**	

Source: As per survey on determinants of the total actual cost of Reproductive Health Care Services in Patna

Table 5. Wife age of marriage

Wife age of marriage			
Age in years	**Frequency**	**Percent**	**Cumulative Percent**
upto 18 years	161	30.5	30.5
19 to 25 years	280	53.0	83.5
26 to 30 years	45	8.5	92.0
31 and above	42	8.0	100.0
Total	**528**	**100.0**	

Source: As per survey on determinants of the total actual cost of Reproductive Health Care Services in Patna

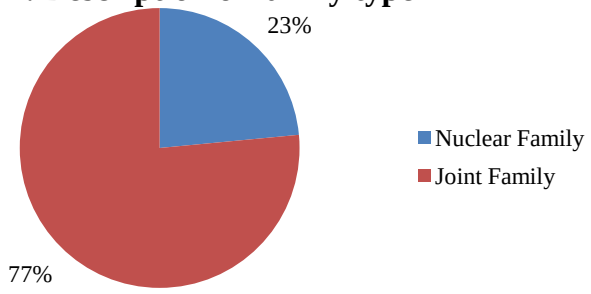
Family type: Following table and pie chart show that there are 124(23.5%) nuclear family where husband, wife and their unmarried children live together and 404(76.5%) joint family where father, mother, their children and their grand children live together and have food cooked in one kitchen.

Table 6. Description of Family type

Family type	Frequency	Percent	Cumulative Percent
Nuclear Family	124	23.5	23.5
Joint Family	404	76.5	100.0
Total	**528**	**100.0**	

Source: As per survey on determinants of the total actual cost of Reproductive Health Care Services in Patna.

Figure 2. Description of family type



Source: As per survey on determinants of the total actual cost of Reproductive Health Care Services in Patna.

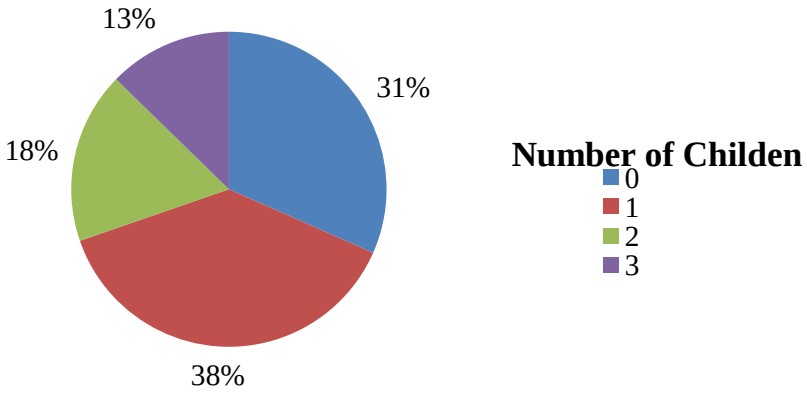
Number of children in the family: Number of children in the family vary from zero to three in the survey. Following table and pie chart show the statistical description of number of children in the family.

Table 7. Number of children in a family

Number of children	Frequency	Percent	Cumulative Percent
0	167	31.6	31.6
1	201	38.1	69.7
2	93	17.6	87.3
3	67	12.7	100.0
Total	**528**	**100.0**	

Source: As per survey on determinants of the total actual cost of Reproductive Health Care Services in Patna

Figure 3. Number of children in a family



Source: As per survey on determinants of the total actual cost of Reproductive HealthCare Services in Patna

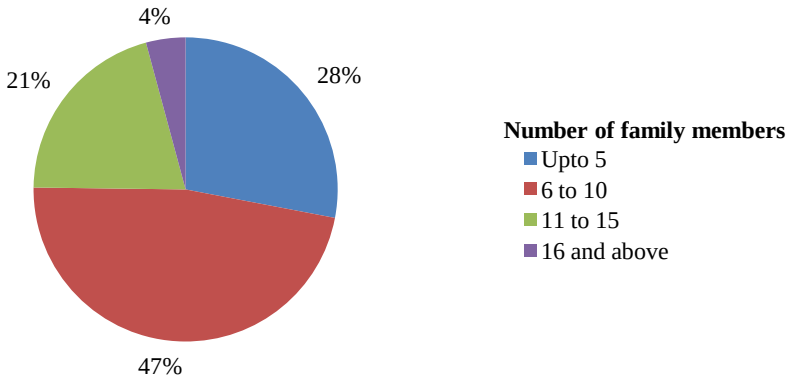
Number of members in the family: Following table and pie-chart showing the number of members in the family.

Table 8. Number of members in the family

Number of members	Frequency	Percent	Cumulative Percent
up to 5	148	28.0	28.0
6 to 10	249	47.2	75.2
11 to 15	109	20.6	95.8
16 and above	22	4.2	100.0
Total	**528**	**100.0**	

Source: As per survey on determinants of the total actual cost of Reproductive HealthCare Services in Patna

Figure 4. Number of members in the family



Source: As per survey on determinants of the total actual cost of Reproductive Health Care Services in Patna

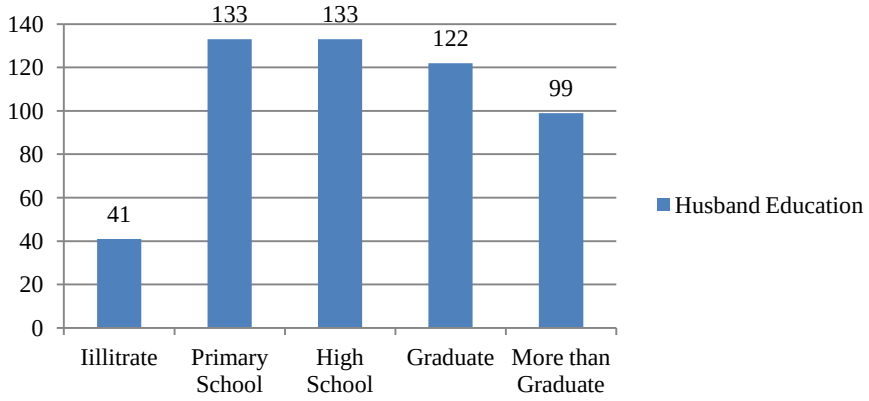
Level of husband's education: Following table and graph showing the level of husband's education in the survey.

Table 9. Level of husband's education

Level of education	Frequency	Percent	Cumulative Percent
Illiterate	41	7.8	7.8
Primary school	133	25.2	33.0
High school	133	25.2	58.1
Graduate	122	23.1	81.3
More than graduate	99	18.8	100.0
Total	**528**	**100.0**	

Source: As per survey on determinants of the total actual cost of Reproductive Health Care Services in Patna

Figure 5. Level of husband's education



Source: As per survey on determinants of the total actual cost of Reproductive Health Care Services in Patna

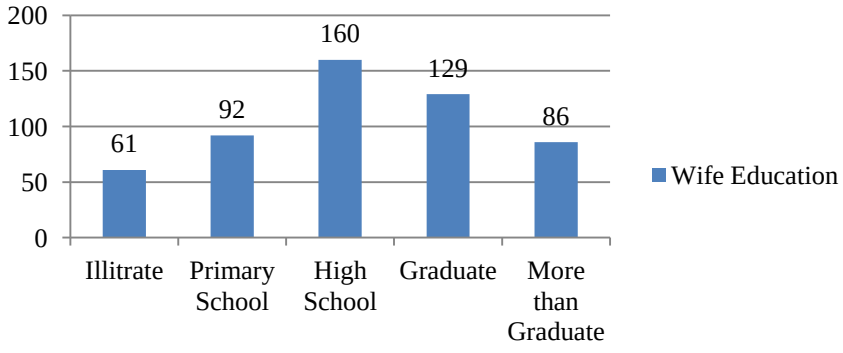
Level of wife's education: Following table and graph showing the level of wife's education in the survey.

Table 10. Level of wife's education

Level of education	Frequency	Percent	Cumulative Percent
Illiterate	61	11.6	11.6
Primary school	92	17.4	29.0
High school	160	30.3	59.3
Graduate	129	24.4	83.7
More than Graduate	86	16.3	100.0
Total	**528**	**100.0**	

Source: As per survey on determinants of the total actual cost of Reproductive Health Care Services in Patna

Figure 6. Level of wife's education



Source: As per survey on determinants of the total actual cost of Reproductive HealthCare Services in Patna

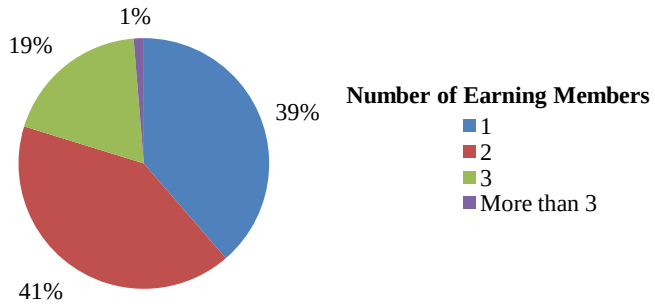
Number of earning members: Following table and pie-chart showing the number of earning members in the families.

Table 11. Number of earning members

Number of earning members in the family	Frequency	Percent	Cumulative Percent
1	204	38.6	38.6
2	217	41.1	79.7
3	100	18.9	98.7
More than 3	7	1.3	100.0
Total	**528**	**100.0**	

Source: As per survey on determinants of the total actual cost of Reproductive Health Care Services in Patna

Figure 7. Number of earning members



Source: As per survey on determinants of the total actual cost of Reproductive Health Care Services in Patna

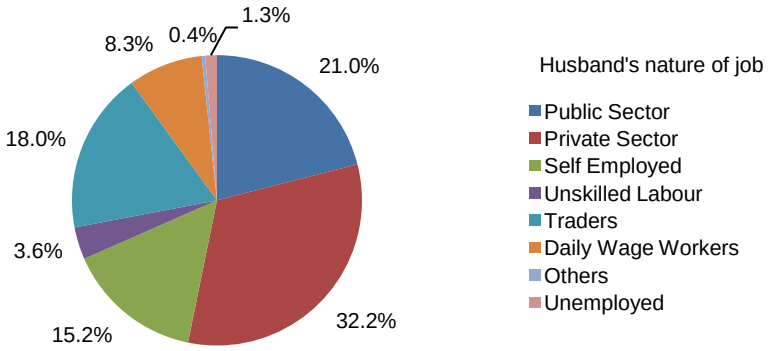
Husband job nature: Following table and pie chart showing the job nature of husband in the survey.

Table 12. Job nature of Husband

Job Profile	Frequency	Percent	Cumulative Percent
Public sector	111	21.0	21.0
Private sector	170	32.2	53.2
Self employed	80	15.2	68.4
Unskilled labour	19	3.6	72.0
Traders	95	18.0	90.0
Daily wage workers	44	8.3	98.3
Others	2	.4	98.7
Unemployed	7	1.3	100.0
Total	**528**	**100.0**	

Source: As per survey on determinants of the total actual cost of Reproductive Health Care Services in Patna

Figure 8. Job Nature of Husband



Source: As per survey on determinants of the total actual cost of Reproductive Health Care Services in Patna

Monthly salary of Husband: Following table shows monthly salary of husbands in the survey.

Table 13. Monthly salary of Husbands

Husband's salary	Frequency	Percent	Cumulative Percent
upto 2000	85	16.1	16.1
2001 to 10000	270	51.1	67.2
10001 to 20000	96	18.2	85.4
20001 to 30000	60	11.4	96.8
30001 to 40000	14	2.7	99.4
40001 and above	3	.6	100.0
Total	**528**	**100.0**	

Source: As per survey on determinants of the total actual cost of Reproductive Health Care Services in Patna

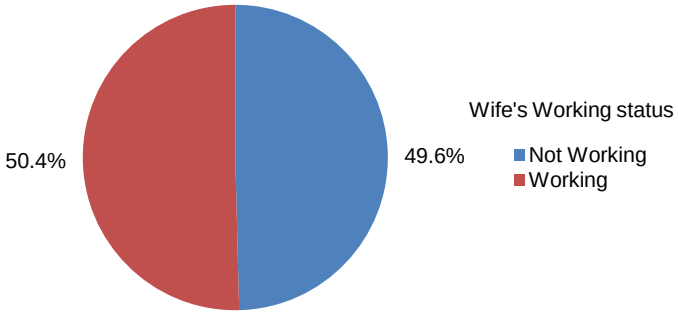
Wife's working status: Following table and pie-chart showing wife working status. In the study 50%of the wives are reported to be working in the sample.

Table 14. Wife's working status

Wife working status	Frequency	Percent	Cumulative Percent
Not working	262	49.6	49.6
Working	266	50.4	100.0
Total	**528**	**100.0**	

Source: As per survey on determinants of the total actual cost of Reproductive Health Care Services in Patna

Figure 9. Wife's working status



Source: As per survey on determinants of the total actual cost of Reproductive Health Care Services in Patna

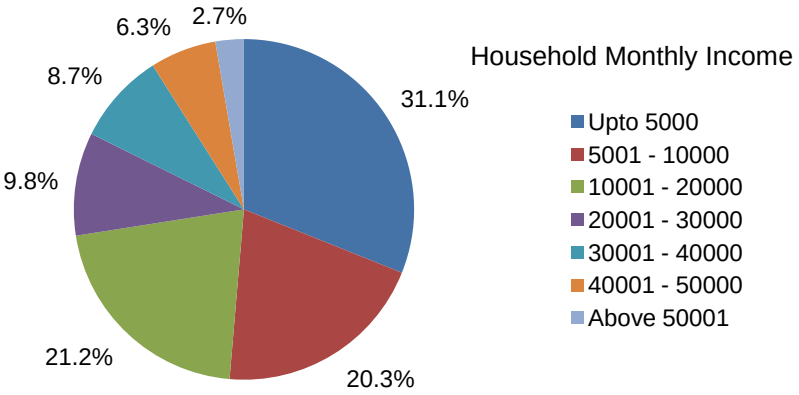
Household monthly income: Following table and pie-chart showing the statistics of households monthly income in the survey.

Table 15. Household monthly income

Household monthly income	Frequency	Percent	Cumulative Percent
Upto 5000	164	31.1	31.1
5001 – 10000	107	20.3	51.3
10001 – 20000	112	21.2	72.5
20001 – 30000	52	9.8	82.4
30001 – 40000	46	8.7	91.1
40001 – 50000	33	6.3	97.3
Above 50001	14	2.7	100.0
Total	528	100.0	

Source: As per survey on determinants of the total actual cost of Reproductive Health Care Services in Patna

Figure 10. Households Monthly Income



Source: As per survey on determinants of the tota actual cost of Reproductive Health Care Services in Patna

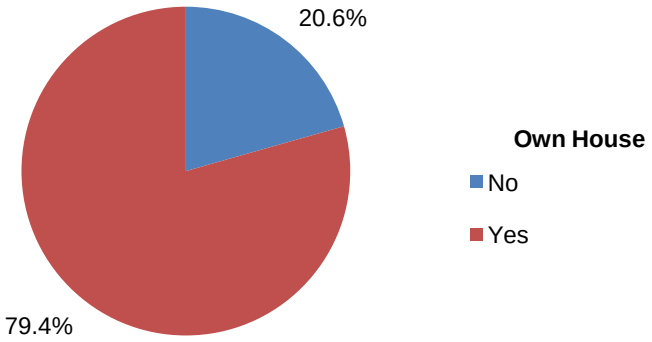
Ownership of house: Following table and pie-chart showing the ownership of house by the householders in the survey.

Table 16. Ownership of house by the households

Own House	Frequency	Percent	Cumulative Percent
No	109	20.6	20.6
Yes	419	79.4	100.0
Total	**528**	**100.0**	

Source: As per survey on determinants of the total actual cost of Reproductive Health Care Services in Patna

Figure 11. Ownership of house by the households



Source As per survey on determinants of the total actual cost of Reproductive Health Care Services in Patna

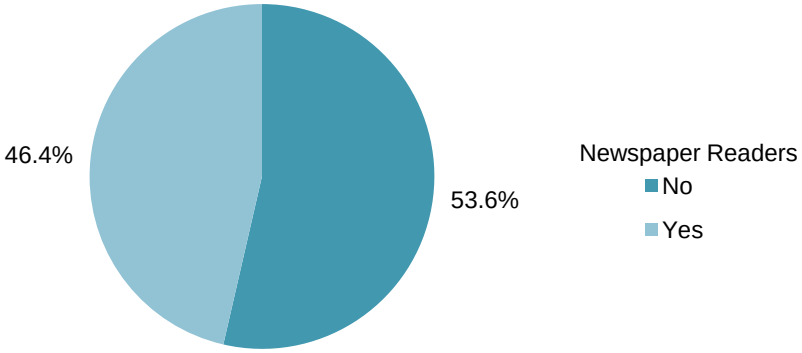
Reader of the news paper: Following table and pie-chart showing the numbers of newspaper readers in the survey.

Table 17. Household reader of the Newspaper

News Paper	Frequency	Percent	Cumulative Percent
No	283	53.6	53.6
Yes	245	46.4	100.0
Total	**528**	**100.0**	

Source: As per survey on determinants of the total actual cost of Reproductive Health Care Services in Patna

Figure 12. Household reader of the Newspaper



Source: As per survey on determinants of the total actual cost of Reproductive Health Care Services in Patna

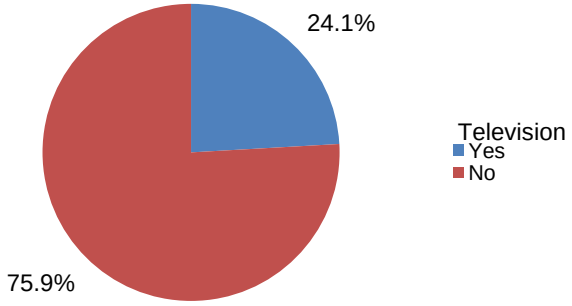
Television: Following table and pie-chart showing the number of households watching television as a source of information and entertainment in the survey.

Table 17. Households having Television

Television	Frequency	Percent	Cumulative Percent
Yes	127	24.1	24.1
No	401	75.9	100.0
Total	**528**	**100.0**	

Source: As per survey on determinants of the total actual cost of Reproductive Health Care Services in Patna

Figure 13. Households having Television



Source: *As per survey on determinants of the total actual cost of Reproductive Health Care Services in Patna*

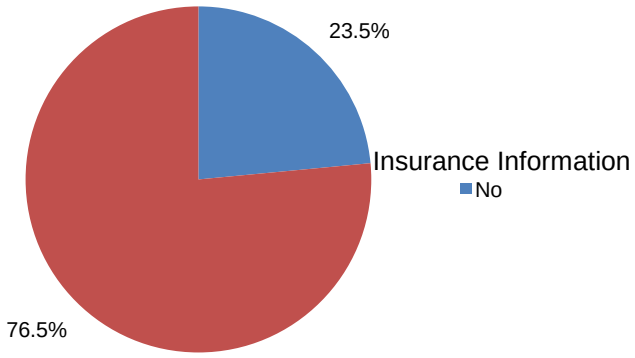
Insurance information: Following table and pie-chart showing the insurance information (awareness) among the household below.

Table 18. Insurance information among the households

Insurance information	Frequency	Percent	Cumulative Percent
No	124	23.5	23.5
Yes	404	76.5	100.0
Total	**528**	**100.0**	

Source: As per survey on determinants of the total actual cost of Reproductive Health Care Services in Patna

Figure 14. Insurance information among the households



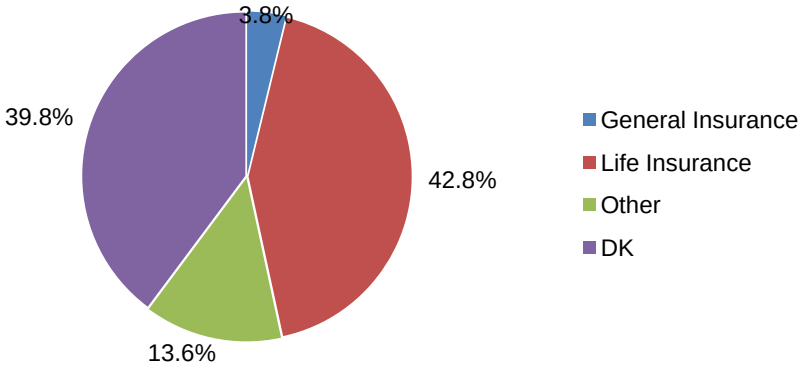
Source: As per survey on determinants of the total actual cost of Reproductive Health Care Services in Patna

Type of Insurance scheme: Following table and pie-chart showing different types of insurance scheme purchased by the householders.

Table 19. Types of Insurance Schemes purchased by the households

Type of Insurance scheme	Frequency	Percent	Cumulative Percent
General Insurance	20	3.8	3.8
Life Insurance	226	42.8	46.6
Other	72	13.6	60.2
Don't know	210	39.8	100.0
Total	**528**	**100.0**	

Figure 15. Types of Insurance Schemes purchased by the households.



Source: As per survey on determinants of the total actual cost of Reproductive Health Care Services in Patna

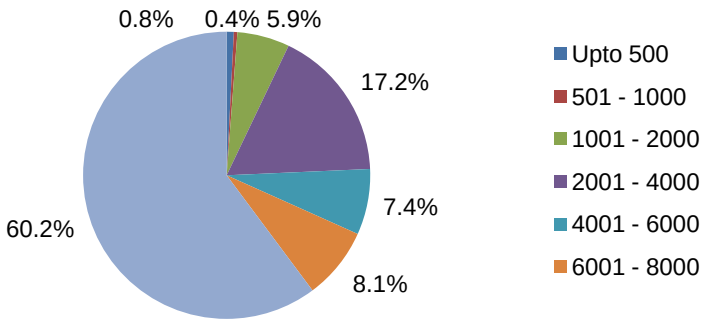
Total actual cost of reproductive healthcare services: Following table and pie-chart showing total actual cost incurred by the households on reproductive healthcare services in the present deliveries.

Table 20.Total Actual Cost of reproductive healthcare services (TACRHS) in the present deliveries

TACRHS(in Rupees)	Frequency	Percent	Cumulative Percent
upto 500	4	.8	.8
501 - 1000	2	.4	1.1
1001 - 2000	31	5.9	7.0
2001 - 4000	91	17.2	24.2
4001 - 6000	39	7.4	31.6
6001 - 8000	43	8.1	39.8
8001 and above	318	60.2	100.0
Total	**528**	**100.0**	

Source: As per survey on determinants of the total actual cost of Reproductive Health Care Services in Patna

Figure 16. Total actual cost of the household incurred on reproductive health services on the present deliveries



Source: As per survey on determinants of the total actual cost of Reproductive Health Care Services in Patna

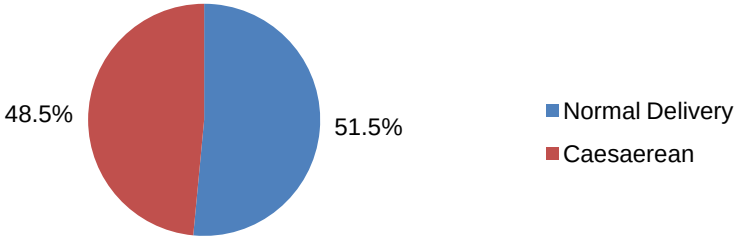
Delivery type: Following table and pie-chart showing the types of delivery.

Table 21. Delivery type

Delivery type	Frequency	Percent	Cumulative Percent
Normal delivery	272	51.5	51.5
Caesarean	256	48.5	100.0
Total	**528**	**100.0**	

Source: As per survey on determinants of the total actual cost of Reproductive Health Care Services in Patna

Figure 17. Delivery type



Source: As per survey on determinants of the tota actual cost of Reproductive Health Care Services in Patna

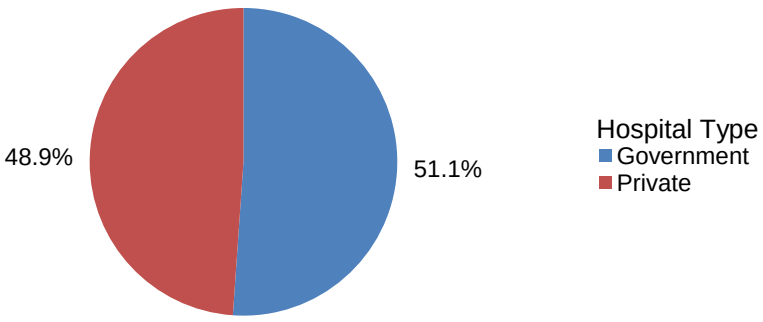
Hospital type: Following table and pie-chart showing the types of hospitals visited by the respondents for the reproductive healthcare services (RHCS) in her present delivery.

Table 22. Types of Hospital

Types of hospitals	Frequency	Percent	Cumulative Percent
Government	270	51.1	51.1
Private	258	48.9	100.0
Total	**528**	**100.0**	

Source: As per survey on determinants of the total actual cost of Reproductive Health Care Services in Patna

Figure 18. Types of Hospital for delivery of the child



Source: As per survey on determinants of the total actual cost of Reproductive Health Care Services in Patna

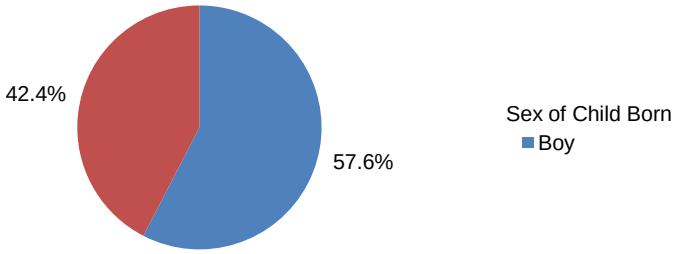
Sex of child born: Following table and pie-chart showing the expectation of sex of the child born.

Table 23. Expectation of the Sex of Child born

Gender	Frequency	Percent	Cumulative Percent
Boy	304	57.6	57.6
Girl	224	42.4	100.0
Total	**528**	**100.0**	

Source: As per survey on determinants of the total actual cost of Reproductive Health Care Services in Patna

Figure 19. Expectation of the Sex of Child Born



Source: As per survey on determinants of the total actual cost of Reproductive Health Care Services in Patna

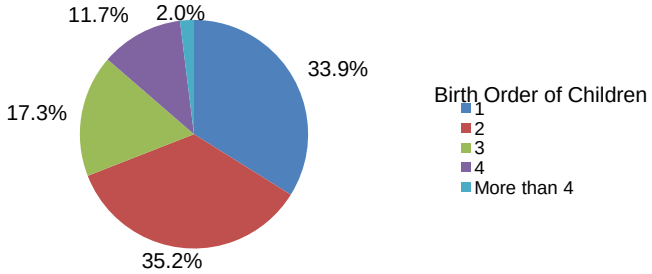
Birth order of the children: Following table and pie chart showing the birth order of the child (born) in the present delivery

Table 24. Birth Order of the Children

Birth order of children	Frequency	Percent	Cumulative Percent
First child	182	34.5	34.5
Second child	189	35.8	70.3
Third child	93	17.6	87.9
Forth child	63	11.9	99.8
Fifth child	1	.2	100.0
Total	**528**	**100.0**	

Source: As per survey on determinants of the total actual cost of Reproductive Health Care Services in Patna

Figure 20. Birth Order of the Children



Source: As per survey on determinants of the total actual cost of Reproductive Health Care Services in Patna

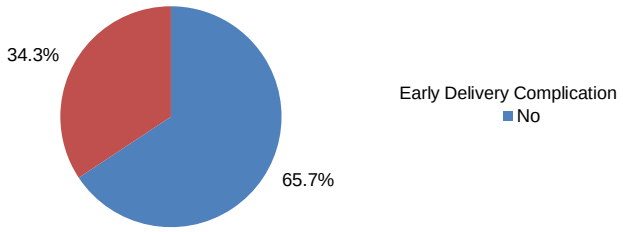
Early delivery complication: Following table and pie-chart showing delivery complications among women in her past/present delivery.

Table 25. Early Delivery Complication

Response	Frequency	Percent	Cumulative Percent
No	347	65.7	65.7
Yes	181	34.3	100.0
Total	**528**	**100.0**	

Source: As per survey on determinants of the total actual cost of Reproductive Health Care Services in Patna

Figure 21. Early delivery complication



Source: As per survey on determinants of the total actual cost of Reproductive Health Care Services in Patna

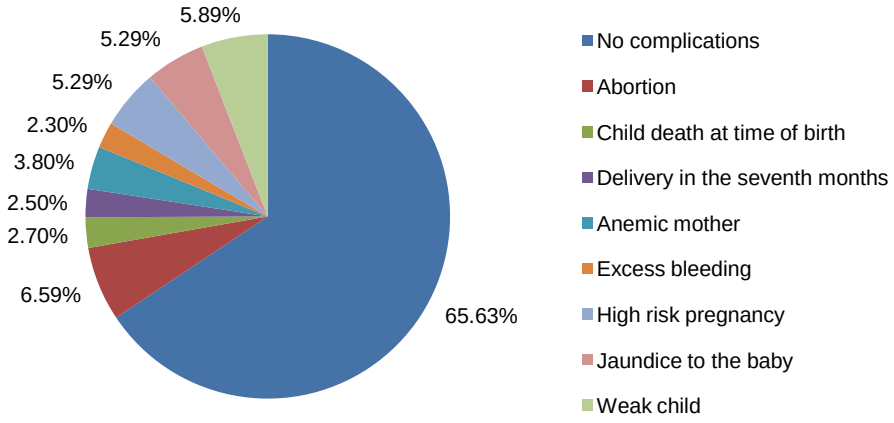
Types of delivery complication: Following table and pie-chart showing types of early delivery complications in the women.

Table 26. Types of Delivery Complication Types

Types of complication	Frequency	Percent	Cumulative Percent
No complications	347	65.7	65.7
Abortion	35	6.6	72.3
Child death at time of birth	14	2.7	75.0
Delivery in the seventh months	13	2.5	77.5
Anaemic mother	20	3.8	81.3
Excess bleeding	12	2.3	83.5
High risk pregnancy	28	5.3	88.8
Jaundice to the baby	28	5.3	94.1
Weak child	31	5.9	100.0
Total	**528**	**100.0**	

Source: As per survey on determinants of the total actual cost of Reproductive Health Care Services in Patna

Figure 22. Types of early delivery complications in the women



Source: As per survey on determinants of the total actual cost of Reproductive Health Care Services in Patna

Total Actual Cost of Reproductive Health Care services (TACRHS) in Patna: A statistical analysis.

Analysis of the total actual cost of reproductive healthcare services incurred in the present reproductive health care services.

Table 27. Explaining descriptive statistics of the variables for the analysis of the actual cost of reproductive healthcare services(TACRHCS)

Descriptive Statistics			
Particulars	**Mean**	**Std. Deviation**	**N**
Total cost of RHCS	16827.85	16111.226	528
Age of Respondent	24.95	4.867	528
Family Type	1.77	.424	528
Husband education	2.20	1.228	528
Household monthly income	16688.07	15047.975	528
Insurance information	.77	.424	528
Delivery Type	1.48	.500	528
Sex of child born	1.42	.495	528
Birth order of children	2.08	1.006	528
Early delivery complication	1.34	.475	528
Hospital type	1.49	.500	528

Source: As per survey on determinants of the total actual cost of Reproductive Health Care Services in Patna

Table 28. Determinants of the Total Actual Cost of Reproductive Healthcare Services (TACRHS)/ Determinants of expenditure incurred for TACRHCS

Coefficients					
Model	**Un standardized Coefficients**		**Standardized Coefficients**	**t**	**Sig.**
	B	**Std. Error**	**Beta**		
(Constant)	-14475.174	3664.342		-3.950	.000
Age of Respondent	645.212	97.657	.195	6.607	.000***
Family Type	-6368.238	953.967	-.168	-6.676	.000***
Husband education	800.600	531.031	.061	1.508	.132
Household monthly income	.374	.040	.349	9.371	.000***
Insurance information	-2195.560	1130.140	-.058	-1.943	.053**
Delivery type	3040.004	1044.619	.094	2.910	.004***
Sex of child born	-496.491	774.339	-.015	-.641	.522
Birth order of children	-212.006	392.051	-.013	-.541	.589
Delivery complication	4657.956	1185.643	.137	3.929	.000***
Hospital type	7061.352	999.561	.219	7.064	.000***
a. Dependent Variable: Actual cost of reproductive healthcare services					

indicates 10% level of significance, indicates 5% level of significance, *** indicates 1% level of significance*

Source: As per survey on Reproductive Health Care Services in Patna

The regression analysis table shows that TACRHS in the present delivery is directly or positively related to age of respondent, husband's education, household's monthly income, delivery type(caesarean), early delivery complication, hospital type(private hospitals). TACRHS is inversely or negatively related to family type(joint family), insurance information, expectation of sex of child born(girl),birth order of children in the present delivery. Here seven variables out of total ten variables are found to be significant in the above analysis.

Table 29. Test Statistics for the Regression Model for TACRHS

R	.857[a]
R squared	.735
Adjusted R square	.730
F	143.165
Significance of F	.000[a]
Degree of freedom	10
Durbin- Watson	1.809

Source: As per survey on determinants of the total actual cost of Reproductive Health Care Services in Patna

a. **Predictors**: (Constant), Hospital type, Birth order of children, Sex of child born, Family Type, Delivery Type, Age of Respondent, Insurance information, Delivery complication, Household monthly income, Husband education.

b. Dependent Variable: Total actual cost of reproductive health services (TACRHS) in the present delivery.

Table illustrates the test statistic of the regression result for the determinants of the Total Actual Cost of Reproductive Healthcare Services. The model is quite robust with F statistic value of 143.16 with over 99% level of confidence. The value of R-square (coefficient of determination) is estimated to be .735, i.e., 73% variation in the dependent variable (TACRHS) is explained by the variations in the independent variables. Adjusted R square value .730 gives us the idea of how well our model generalizes. Ideally we would like Adjusted R value to be the same or very close to the value of R square which is .735. R is the multiple correlation coefficients that tells us how strongly the multiple independent variables are related to the dependent variable. Regression coefficient R value is .857 shows that there is high positive correlation between the dependent variable TACRHS and all independent variables in the model.

Table 30. Test statistics of the Regression Model of TACRHS

Variable	Un standardized Coefficients	95% Confidence Interval for B		Col linearity statistics	
	B	Lower Bound	Upper Bound	Tolerance	VIF
(constant)	-14475.174	-21674.005	-7276.344		
Age of respondent	645.212	453.358	837.066	.590	1.696
Family Type(Joint family)	-6368.238	-8242.367	-4494.109	.813	1.230
Husband education	800.600	-242.643	1843.844	.313	3.190
Household monthly income	.374	.295	.452	.370	2.701
Insurance information	-2195.560	-4415.791	24.671	.579	1.726
Delivery Type(caesarean delivery)	3040.004	987.783	5092.225	.488	2.050
Sex of child born	-496.491	-2017.728	1024.746	.908	1.102
Birth order of children	-212.006	-982.214	558.202	.857	1.167
Delivery complication	4657.956	2328.685	6987.227	.420	2.382
Hospital type	7061.352	5097.651	9025.053	.533	1.878

Source: As per survey on determinants of the total actual cost of Reproductive Health Care Services in Patna

Table states test statistics of the regression model for TACRHS, in the given model Variance Inflation Factor (VIF) value is less than 10 and Tolerance level is more than 1 which show that given model is free from the problem of multi co linearity.

9. Conclusions

The empirical study on the total actual cost of reproductive healthcare services in Patna has proved the hypothesis as follows:

- Total cost of reproductive healthcare services increases with the increase in the age of the respondents.
- Husbands with higher education are ready to afford larger total cost of reproductive healthcare services.
- Household with higher monthly income can afford larger cost on reproductive health care services.
- Early delivery complication increases the total cost of reproductive healthcare services.
- With the increase of birth of additional child the amount spend on the total cost of reproductive healthcare services for next chid decreases.
- Total cost of RHCS is more in private hospitals than in government hospitals. This focused on the need for the spread of health facilities in government hospitals to increase the reproductive health in the state.
- The study shows the biasness for the birth of boy child in Patna as the expenditure on the reproductive healthcare services decreases on the expectation of the birth of girl child in present study.
- The study shows that insurance information among the respondents reduces the total actual cost of RHCS. The result focused on the need for the spread of health insurance among the people to reduce the actual total cost of reproductive health care services in future which can be an important tool of healthcare financing in the state.

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