A Study To Assess The Effect Of Awareness, Financial Assistance, Availability and Accessibility of Health Services On Utilization Of Maternal Health Services in Jhabua District .

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INTRODUCTION

- "Janani Suraksha Yojana (JSY)," was launched in 2005 with an aim to increase poor women's access to maternal health care services.

- The state of Madhya Pradesh reorganized its public health system resources, established new delivery points in remote areas, contracted with private providers to implement the scheme in high priority districts and ensure that its benefits reach the last mile.

- This study investigates the role of JSY/government assistance, and other health care sector and household factors in predicting rural women's utilization of maternal health services in the Jhabua district.

Factors considered under study

- Health care sector factors included
  - receipt of JSY payment,
  - availability of a health center with round-the-clock services, and
  - connection to a health facility by an all weather road.
- Household factors included maternal education.
- Use of three maternal health care services was examined:
  - adequate antenatal care,
  - institutional delivery and
  - Caesarean section.

PROBLEM STATEMENT

- Madhya Pradesh ranks **first** in the country in ***infant mortality rate*** (IMR) and **sixth** highest in ***Maternal Mortality Ratio*** (MMR) (221/ 100,000 live births).

- The majority of these maternal deaths are preventable through primary prevention, such as family planning, antenatal care, sanitation and adequate nutrition, as well as early diagnosis and timely treatment when a complication occurs.

- Programmatic issues at the state and local levels include problems in the planning and implementation of state and local interventions, ineffective implementation of evidence-based programs and emphasis on supply-side interventions.

- As a result, health facilities and equipment are often underutilized, newly acquired skills of providers are lost and program goals are not achieved despite their efficient implementation.

RATIONALE

- Operational aspects of financial management influence the service delivery and use of maternal health services. The proportion of the target population that receives financial benefits is a good indicator of how well a program such as JSY is implemented.
- A functional health facility requires the availability of both a physical infrastructure and skilled health care providers to provide services round-the-clock. Availability of a health facility and skilled health care providers round the clock increased utilization of maternal health care services including institutional deliveries.

- Physical distance from the nearest health facility plays a role in maternal health service use. Lack of affordable transport can make access to safe childbirth difficult for rural women.
- Lack of education and socioeconomic dependency makes women more vulnerable to physical and sexual abuse, as well as adverse pregnancy outcomes. Maternal and paternal education are powerful determinants of health status, and particularly maternal and child health.

OBJECTIVES

1. To determine the effect of financial assistance from JSY, availability of a health facility providing services round-the-clock, connection to a health facility by an all-weather road and maternal education on utilization of adequate antenatal care services.
2. To determine the effect of financial assistance from JSY, availability of a health facility providing services round-the-clock, connection to a health facility by an all-weather road and maternal education on utilization of an institutional delivery services.
3. To determine the effect of financial assistance from JSY, availability of a health facility providing services round-the-clock, connection to a health facility by an all-weather road and maternal education on utilization of a public institutional Caesarean section services.

RESEARCH QUESTIONS and HYPOTHESIS

1. Does receiving financial assistance from JSY, availability of a health facility providing services round-the-clock, connection to a health facility by an all-weather road and maternal education significantly affect utilization of adequate antenatal care?

Hypothesis:

1A) Mothers who have received financial assistance from JSY or a government scheme are more likely to receive adequate antenatal care than mothers who do not receive such financial assistance.

1B) Mothers who have access to a health facility providing services round-the-clock are more likely to receive adequate antenatal care than mothers who lack such access.

1C) Mothers who have connection to a health facility by an all-weather road are more likely to receive adequate antenatal care than mothers who lack such access.

1D) Mothers with more education are more likely to receive adequate antenatal care than mothers with less education.

2. Does receiving financial assistance from JSY, availability of a health facility providing services round-the-clock, connection to a health facility by an all-weather road and maternal education significantly affect utilization of an institutional delivery?

Hypothesis:

2A) Mothers who have received financial assistance from JSY or a government scheme are more likely to have an institutional delivery than mothers who did not receive such financial assistance.

2B) Mothers who have access to a health facility providing services round-the-clock are more likely to have an institutional delivery than mothers who lack such access.

2C) Mothers who have connection to a health facility by an all-weather road are more likely to have an institutional delivery than mothers who lack such access.

2D) Mothers with more education are more likely to have an institutional delivery than mothers with less education.

3. Does receiving financial assistance from JSY, availability of a health facility providing services round-the-clock, connection to a health facility by an all-weather road and maternal education significantly affect utilization of a public institutional Caesarean section services?

Hypothesis:

3A) Mothers who have received financial assistance from JSY or a government scheme are more likely to have a Cesarean section done in a public facility than mothers who did not receive such financial assistance.

3B) Mothers who have access to a health facility providing services round-the-clock are more likely to have a Caesarean section done in a public facility than mothers who lack such access.

3C) Mothers who have connection to a health facility by an all-weather road are more likely to have a Caesarean section done in a public facility than mothers whose lack such access.

3D) Mothers with more education are more likely to have a Caesarean section done in a public facility than mothers with less education.

METHODOLOGY

- STUDY TYPE: Descriptive cross sectional study.
- STUDY AREA: Jhabua district of Madhya Pradesh.
- STUDY DURATION: February 2016 to May 2016.
- SAMPLING TECHNIQUE:
- *For facility survey*

  Two stage random sampling.

  First stage : Twelve L2/L3 facilities were selected randomly from 32 facilities.

  Second stage: in addition to these 12 facilities, out of a total of 210 Sub Health Centers at the L2/L3facilities, 30 Sub Health centers were randomly selected.(12 +30)

  Sample Frame: 242 Health facilities.

  Sample Size: 42 Health facilities.

- *For Household survey:*

  Sampling Design: Random Sampling.

  Sample size: 350 women (considering approx. 10% nonresponse).

  Study respondents: all ever married women whose last baby was delivered within last two years.

STUDY VARIABLES

Independent Variables

- Receipt of financial assistance from JSY or a government scheme: Receipt of any financial assistance from JSY or any other government schemes during the last childbirth. It is a *binary variable*.
- Availability of a PHC providing services round-the-clock: Presence of a health center providing 24-7 services in case of L2/L3 facilities and as per norms at L1 facilities. It is a *binary variable*.
- Connection to a health facility by an all-weather road: Village of residence connected throughout the year by a road to a sub-center, primary health center, community health center, district hospital .It is a *binary variable*.
- Maternal education: Mother's total years of schooling was obtained and placed in one of four categories: Uneducated, less than five years of education, five to nine years of education and ten or more years of education.

Dependent variables

- Adequate antenatal care: Mother having an antenatal visit in the first trimester, at least three antenatal visits and 100 or more iron folic acid (IFA) tablets and Tetanus Toxoid. It is a *binary variable*. All of the conditions need to be satisfied for a "yes."
- Institutional delivery: Mother having a delivery in a government facility. Government facilities include sub center (SC), primary health center (PHC), community health center (CHC), district hospital (DH). Institutional delivery is a *binary variable*.
- Caesarean section: Any delivery other than normal (vaginal delivery without use of instruments) is considered as a C-section delivery because the number of other operative deliveries is very low for the analytic sample. Use of Cesarean section is a *binary variable*.

DATA- ANALYSIS

Ever married women assessment

- Descriptive statistics for all independent and dependent variables were generated to summarize the sample's demographics and maternal services utilization data .
- Logistic regression was selected as the appropriate statistical model to apply to this study because all of the dependent variables are binary.
  - Bivariate analyses using binary logistic regression were conducted to examine the relationships among all independent and dependent variables.
  - To test the hypotheses, multiple logistic regression analyses were used to determine the degree to which the independent variables are predictors of the three dependent maternal health service utilization variables.
- Three separate regression analyses were carried
- Statistical software SPSS 16 was used in the statistical data analyses.

Facility Assessment

- The standards and facility analysis includes descriptions of percentage of financial benefits delivered , human resource availability and related infrastructure practices in the selected facilities.
- Facility assessment is carried out using advance Excel.

Descriptive Statistics for Jhabua District

Table below presents characteristics of the study cohort.

VARIABLE	JHABUA
Receipt of financial assistance from JSY/govt. scheme	
Received financial assistance	60.24%
Did not receive financial assistance	39.76%
Availability of PHC providing services round-the-clock	
Health facility available	78.26%
Health facility not available	21.74%
Connected to a health facility by an all-weather road	
Connection available	99%
Connection not available	1%
Maternal education	
Uneducated	72%
Less than 5 years	12.23%
5-9 years	11.22%
10 or more years	4.55%
Adequate antenatal care	
Yes	9.05%
No	90.95%
Institutional delivery	
Yes	82.33%
No	17.67%
Use of C-section	
Yes	2.2%
No	97.8%

Bivariate Analysis

- Bivariate analyses was used to examine relationships between the independent variables and the three dependent variables and to select variables to use as predictors in the multivariate analysis.
- All variables having significant relationship (p value < 0.10) with at least one of the three dependent measures of health services utilization were included in the regression model for multivariate analysis. .
- Findings reveal that all of the independent variables, including receiving financial assistance from JSY or a government scheme, access to a Health facility providing round the-clock services, connection by an all-weather road and maternal education were significantly related to at least one health service utilization variable in Jhabua.

Bivariate Analysis

	Adequate Antenatal Care		Institutional Delivery		Use of C-section	
Independent Variables	Unadj. OR	p value	Unadj. OR	p value	Unadj. OR	p value
Receipt of financial assistance from JSY/govt. scheme	0.86	0.66	4.23	0.00***	1.40	0.08*
Access to a Health facility providing services round-the-clock	1.56	0.09*	2.25	0.45	1.14	0.63
Connection by an all-weather road to a health facility	0.99	0.97	1.40	0.02**	0.71	0.28
Maternal education						
Uneducated	Ref.					
Less than 5 years	1.33	0.42	0.97	0.88	0.74	0.90
5-9 years	1.30	0.33	1.26	0.11	1.02	0.34
10 or more years	2.86	0.02**	1.52	0.21	1.14	0.51

Multivariate Analysis

Following table presents results of the multivariate analyses for receiving adequate antenatal care; adjusted odds ratios and 95% confidence intervals.

Multivariate Analyses for Receipt of Adequate Antenatal Care

Independent Variable	Adjusted Odds Ratio	95% CI	P value
Receipt of financial assistance from JSY/govt. scheme	1.60	0.87-2.93	0.13
Availability of Health facility providing services round-the-clock	2.97	1.08-8.21	0.04**
Connected to a health facility by an allweather road	1.04	0.62-1.75	0.89
Maternal Education			
Uneducated	Ref.		
Less than 5 years	1.18	0.54-2.59	0.67
5-9 years	2.34	1.32-4.15	0.00***
10 or more years	2.97	1.08-8.21	0.04**

Multivariate Analyses for Use of Institutional Delivery

Independent Variable	Adjusted Odds Ratio	95% CI	P value
Receipt of financial assistance from JSY/govt. scheme	1.42	1.06-1.90	0.02**
Availability of Health facility providing services round-the-clock	1.04	0.83-1.31	0.72
Connected to a health facility by an allweather road	1.42	1.06-1.90	0.02**
Maternal Education			
Uneducated	Ref.		
Less than 5 years	1.18	0.43-1.67	0.67
5-9 years	1.01	0.74-1.38	0.95
10 or more years	2.34	1.32-4.15	0.00***

Multivariate Analyses for Use of Cesarean Section

Independent Variable	Adjusted Odds Ratio	95% CI	P value
Receipt of financial assistance from JSY/govt. scheme	1.66	1.01-2.70	0.04**
Availability of Health facility providing services round-the-clock	1.59	0.90-2.8	0.11
Connected to a health facility by an all-weather road	0.44	0.14-1.31	0.14
Maternal Education			
Uneducated	Ref.		
Less than 5 years	0.80	0.30-2.11	0.65
5-9 years	1.57	0.78-3.18	0.21
10 or more years	1.99	0.83-4.79	0.12

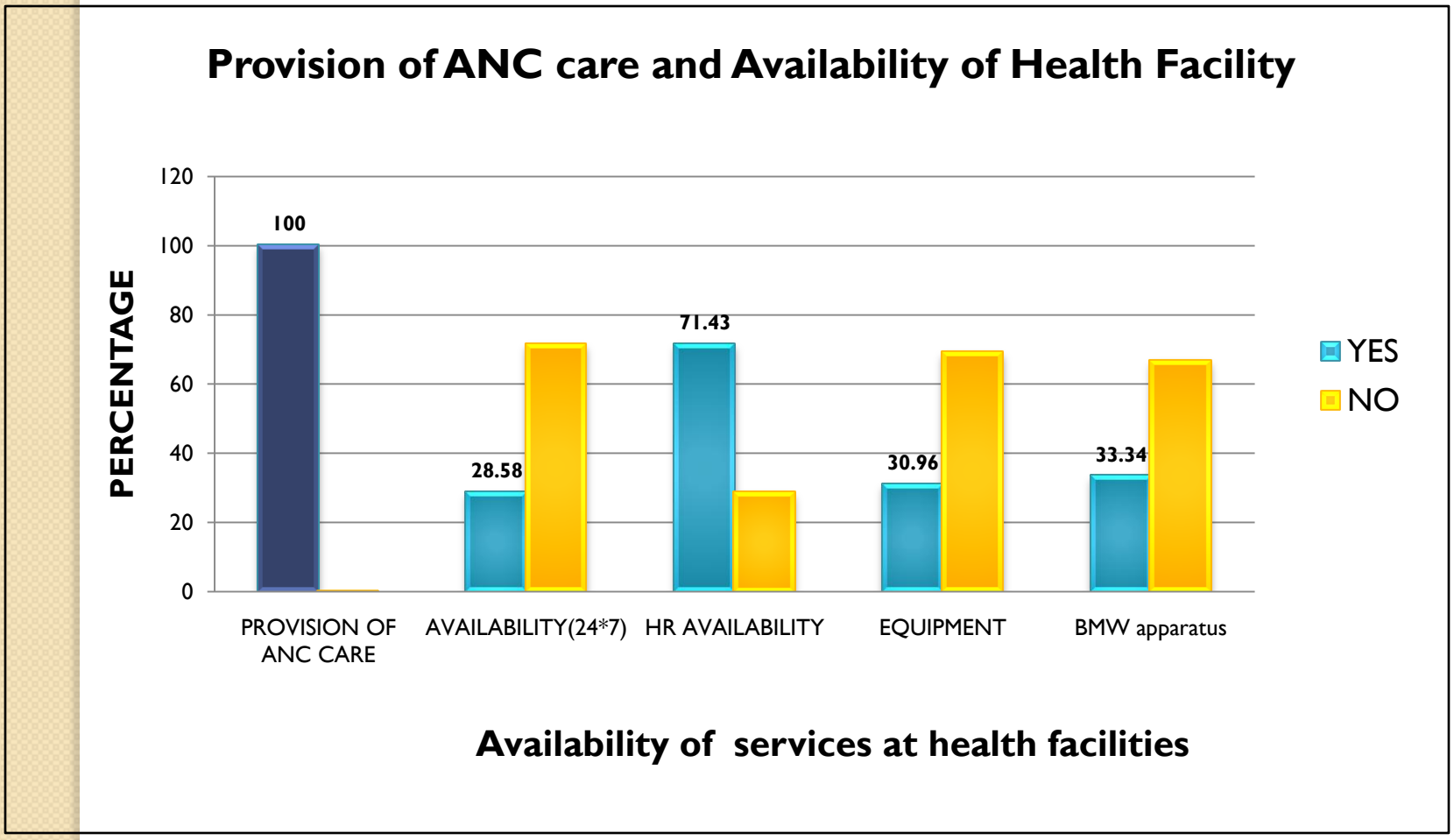
SUMMARY RESULTS

S.No.	Hypothesis	Results
1A)	Mothers who have received financial assistance from JSY or a government scheme are more likely to receive adequate antenatal care than mothers who do not receive such financial assistance.	NOT SUPPORTED
1B)	Mothers who have access to a health facility providing services round-the-clock are more likely to receive adequate antenatal care than mothers who lack such access.	SUPPORTED
1C)	Mothers who have connection to a health facility by an all-weather road are more likely to receive adequate antenatal care than mothers who lack such access.	NOT SUPPORTED
1D)	Mothers with more education are more likely to receive adequate antenatal care than mothers with less education.	SUPPORTED
2A)	Mothers who have received financial assistance from JSY or a government scheme are more likely to have an institutional delivery than mothers who did not receive such financial assistance.	SUPPORTED
2B)	Mothers who have access to a health facility providing services round-the-clock are more likely to have an institutional delivery than mothers who lack such access.	NOT SUPPORTED

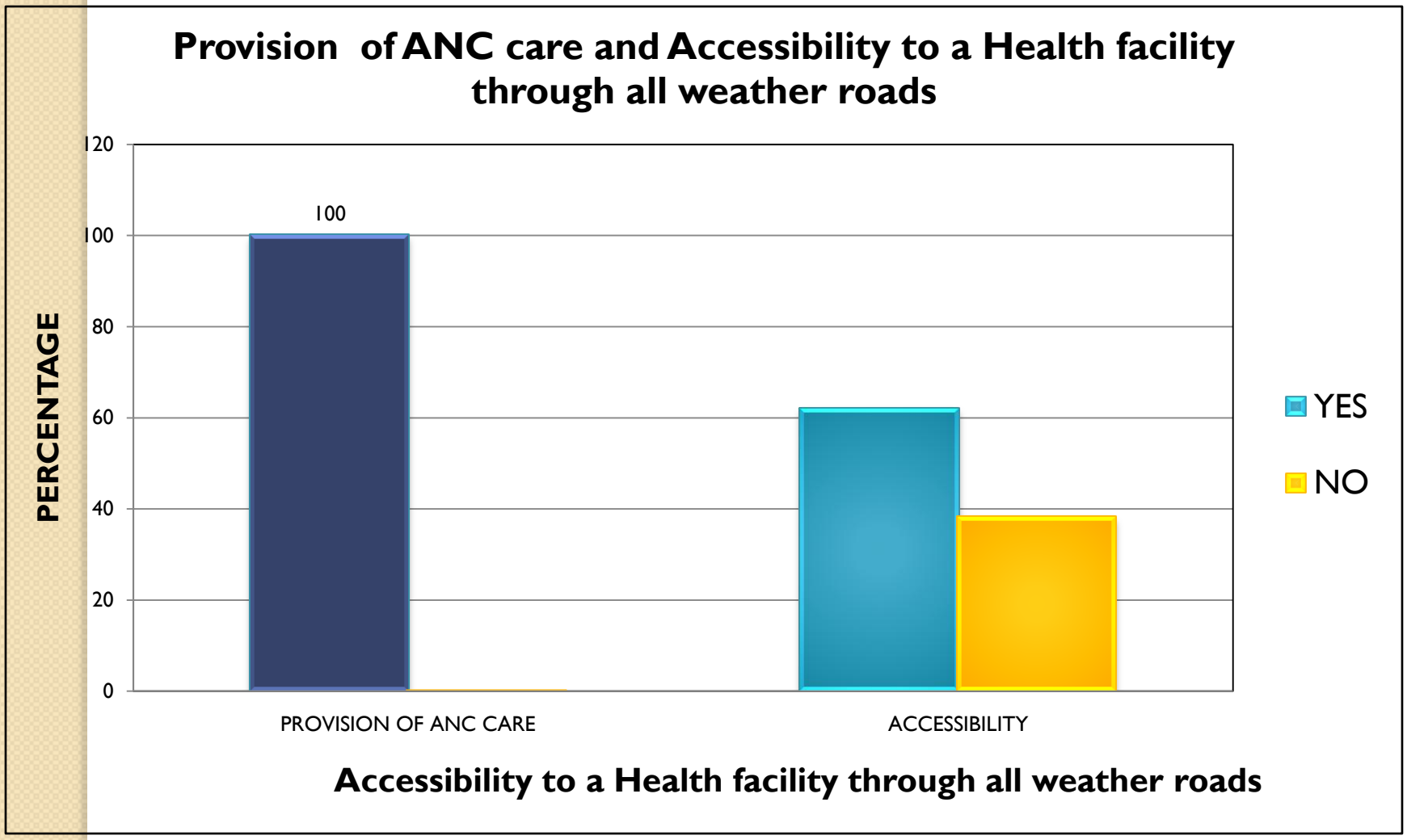
2C)	**Mothers who have connection to a health facility by an all-weather road are more likely to have an institutional delivery than mothers who lack such access.**	**SUPPORTED**
2D)	Mothers with more education are more likely to have an institutional delivery than mothers with less education.	SUPPORTED for those women who have more than 10 years of education.
3A)	Mothers who have received financial assistance from JSY or a government scheme are more likely to have a Cesarean section done in a public facility than mothers who did not receive such financial assistance.	SUPPORTED
3B)	Mothers who have access to a health facility providing services round-the-clock are more likely to have a Caesarean section done in a public facility than mothers who lack such access.	NOT SUPPORTED
3C)	Mothers who have connection to a health facility by an all-weather road are more likely to have a Caesarean section done in a public facility than mothers whose lack such access.	NOT SUPPORTED
3D)	Mothers with more education are more likely to have a Caesarean section done in a public facility than mothers with less education.	NOT SUPPORTED

Findings of Facility Survey

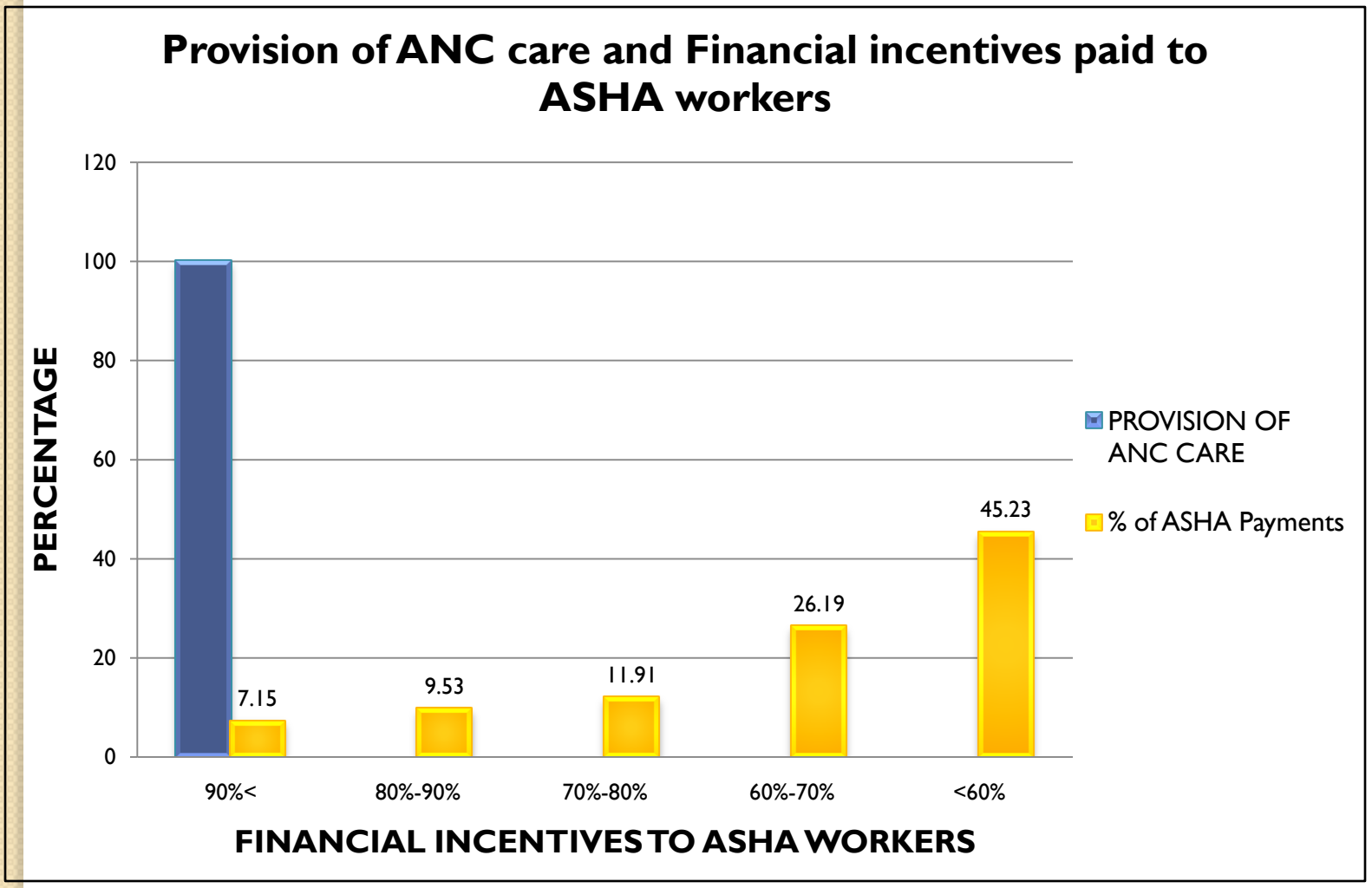
As per the state norms provision of ANC services is provided in all the 42 facilities surveyed.



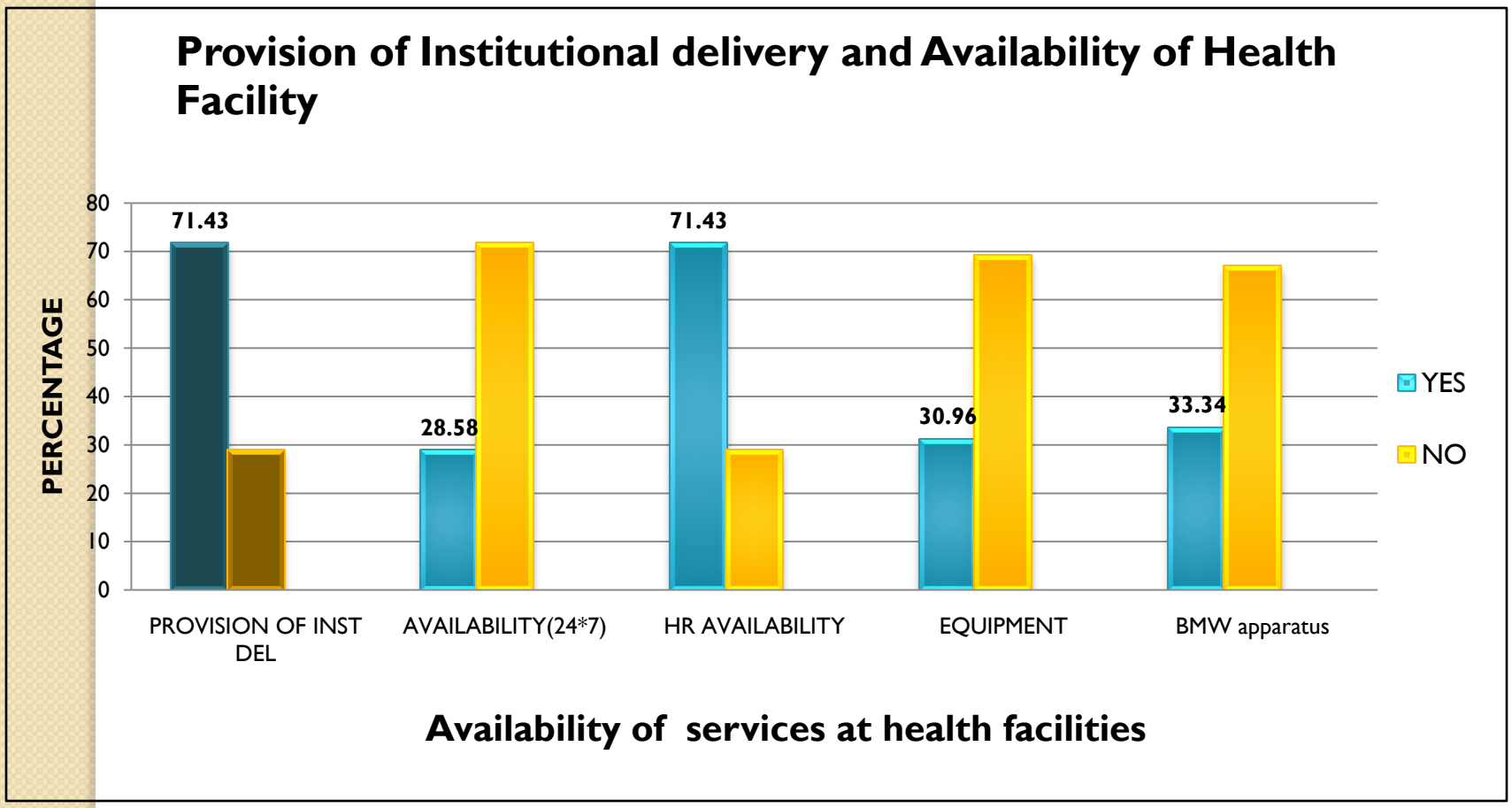
ANC care services are available in all the facilities surveyed but only 28% of the facilities provided services as per the schedule.
Only 60 % of these facilities (surveyed) are accessible through an all weather roads.



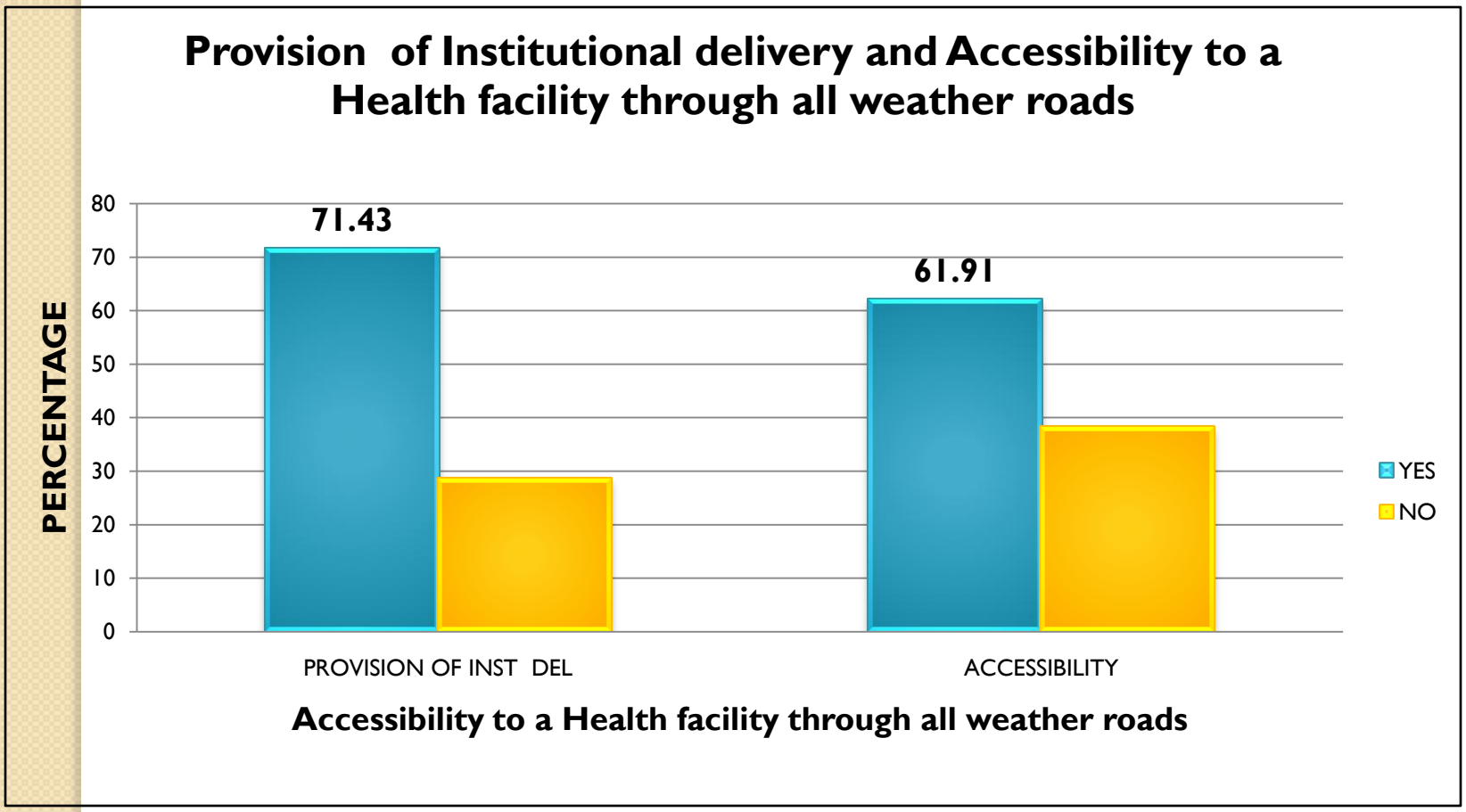
As per the state policies, ASHA receive an amount of Rs 300/- for mobilizing mothers to receive ANC. But still 45% of the facilities disburse less than sixty percent of the targeted payments.



Seventy one percent of the facilities surveyed provides institutional delivery services. But only 28% of these facilities provide services as per the norms. Also, major gap is found in the availability of bio medical waste apparatus. Only 33% of the facilities are equipped with adequate BMW apparatus.

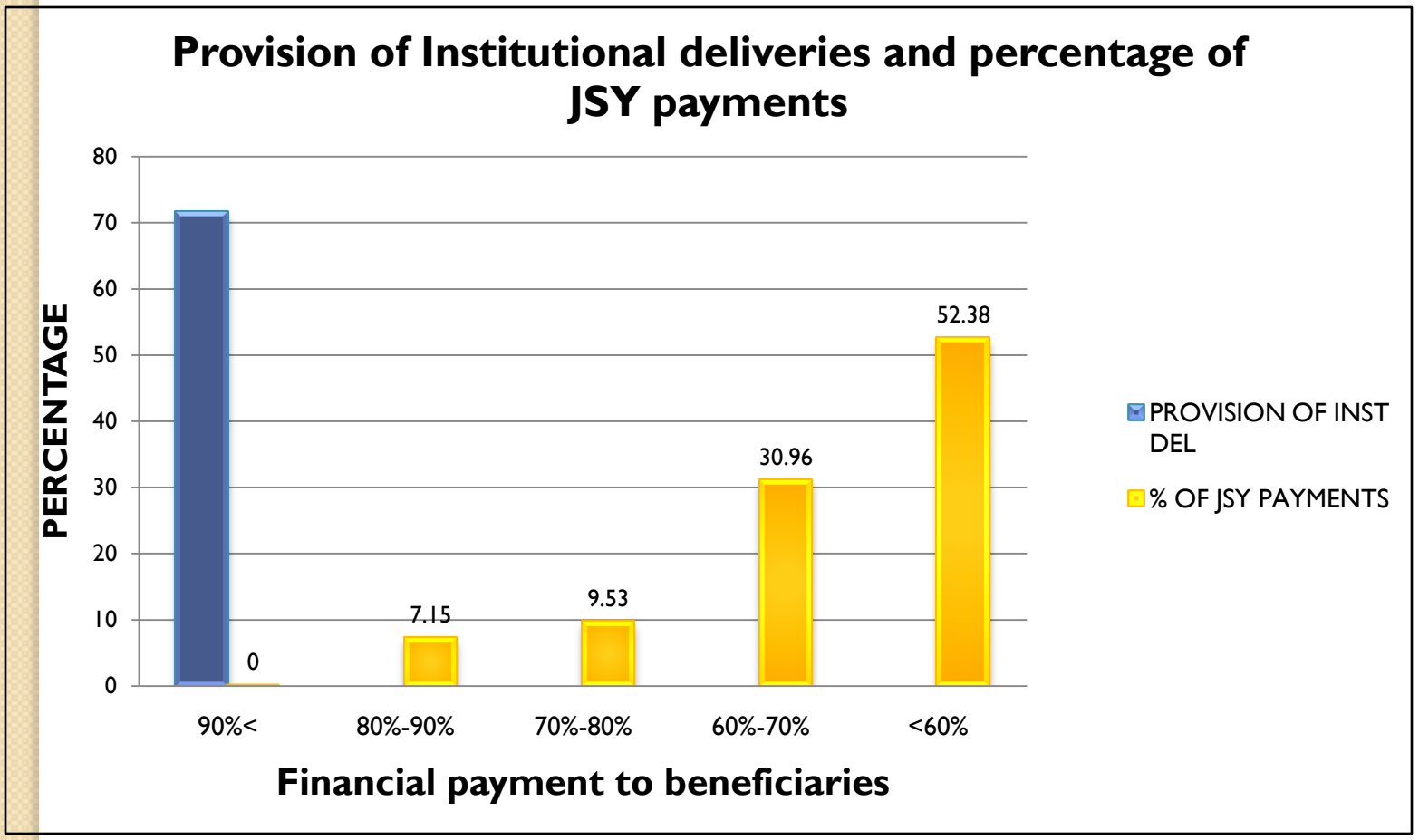


The following graph depicts that 71.43% of the facilities provide Institutional deliveries while 61.91% of the facilities are accessible by an all weather roads in Jhabua.



Percentage of JSY payments done at the facilities surveyed.

In the analysis it was found that almost 52% of the facilities (more than half) give incentives to less than 60% of the beneficiaries at their respective facilities.



DISCUSSION

- **ANC services**

Obtaining a sufficient number of antenatal care visits and receiving appropriate antenatal care facilitates women's preparation for a safe childbirth. It was hypothesized that all three health care sector factors and maternal education would be significantly related to ANC care but contrary to expectations only availability of a health facility round the clock and maternal education were found to be significantly associated.

- **Institutional Delivery**

The principal goal of the JSY scheme is to incentivize institutional delivery. Historically, increasing women's access to health facilities that have the capability to provide emergency obstetric care has contributed substantially to the reduction in maternal mortality. Current findings indicate that institutional delivery was the most utilized maternal health care service in this study showing significant association with receiving financial incentives from JSY or a government scheme, accessibility to a health facility by an all weather road and maternal education.

- **C-sections**

Use of Cesarean section is a United Nations indicator of access to maternal health care. A higher percentage of C-sections indicates better availability of obstetric care, offered primarily in institutional facilities.. As expected, receiving financial assistance under JSY or any government scheme is the only variable that is significantly associated with use of C-sections . The other variables accessibility by an all weather road, availability round the clock and maternal education show no significant association with this variable.

FACILITY SURVEY

- Though the provision of ANC care is available at all the facilities, lack of availability of facilities round the clock, lack in availability of equipment and bio medical waste apparatus may adversely hamper the utilization of the service. Regular monitoring and check visits to these facilities for stock verification and infection control mechanisms may help analyze the existing gaps. Corrective measures can then be planned and implemented under strict supervision so as to ensure better service delivery.

- Incentivizing ASHA workers on time may increase their motivation to mobilize the local women for increased uptake of the service.

- Collaborating with Gram Kalyan Samitis to help pregnant women open a bank account at the first ANC check-up. This would ensure timely payments under JSY/any other government scheme.

THANKYOU