

Dissertation

Assessment of Prevalence of anaemia and associated factors among women of Reproductive Age in Rajasthan

Guided By:

Dr. Arindam Das

Associate Professor,

The IIHMR University, Jaipur

Presented By:

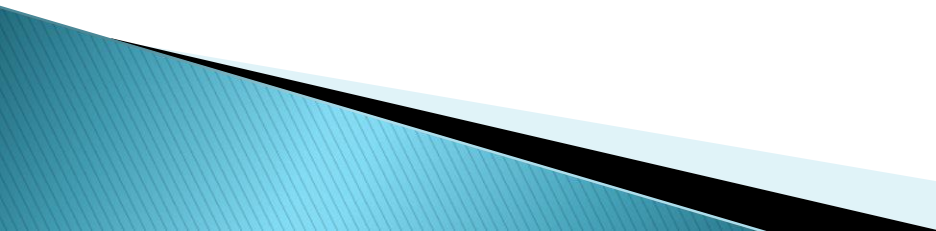
Dr. Priyanka Sharma

Roll number-0806

MBA HM-23 (Health)

Introduction

- ▶ Anaemia is decreased number of RBCs or decreased haemoglobin concentration within these cells.
- ▶ Iron deficiency is the leading cause of anaemia and results in about half of all anaemia cases worldwide
- ▶ Other causes of anaemia includes deficiency of vitamin A and B12, folic acid, haemorrhage, parasitic infections like malaria and hookworms, inherited conditions such as sickle cell disease and thalassaemia and chronic disease like renal failure
- ▶ The high-risk population groups for anaemia are: children less than 5 years of age, particularly those who are less than 2 years of age, adolescents, pregnant women and women of age group 15–49 years
- ▶ According to the recent estimates of 2016 , 33 percent of women aged 15-49 years are anaemic which is around 613 million women in reproductive age group worldwide.

- ▶ According to NFHS-4, out of 699,686 women (15-49 years), 53 percent of women are anaemic.
 - ▶ In Rajasthan, out of 41,965 women (15-49 years), 47 percent of women are anaemic.
 - ▶ Anaemia is an important public health issue in Rajasthan, particularly in women and children.
 - ▶ Adolescents and women of reproductive age are at higher risk of developing nutritional deficiencies especially iron deficiency which leads to anaemia.
 - ▶ Anaemia is diagnosed by haemoglobin level (<12 g/dl for non-pregnant women and <11g/dl for pregnant women)
 - ▶ In women, anaemia can result in weakness, decreased mental and physical capacity, increased morbidity due to infectious diseases, increased risk of maternal as well as perinatal deaths, preterm delivery, low weight at birth, insufficient iron stores for new-born.
- 

Rationale

- ▶ In Rajasthan, as stated earlier, 47 percent of women among 15-49 years of age group are anaemic.
- ▶ This study aims at identifying the districts of Rajasthan with higher prevalence rates of anaemia and determining plausible social, economic, demographic and health factors leading anaemia.
- ▶ Thus this will help to choose the high risk population groups and related factors to improve the implementation of appropriate control measures for reducing the problem of anaemia.

Research Question

Is prevalence of anaemia associated with social, economic, demographic and health factors among women of reproductive age in Rajasthan?

Objectives

- ▶ To show the prevalence of anaemia in various districts of Rajasthan.
- ▶ To determine some common factors leading anaemia
- ▶ To examine the strength of association of anaemia with the identified factors

Research Methodology

Study Design and setting:

- ▶ Secondary analysis using NFHS-4 cross-sectional dataset was conducted for the state of Rajasthan, India.

Study population:

- ▶ 41,965 women of reproductive age group (15-49 years), taken from NFHS-4 dataset from the state of Rajasthan used for this study

Sampling Method:

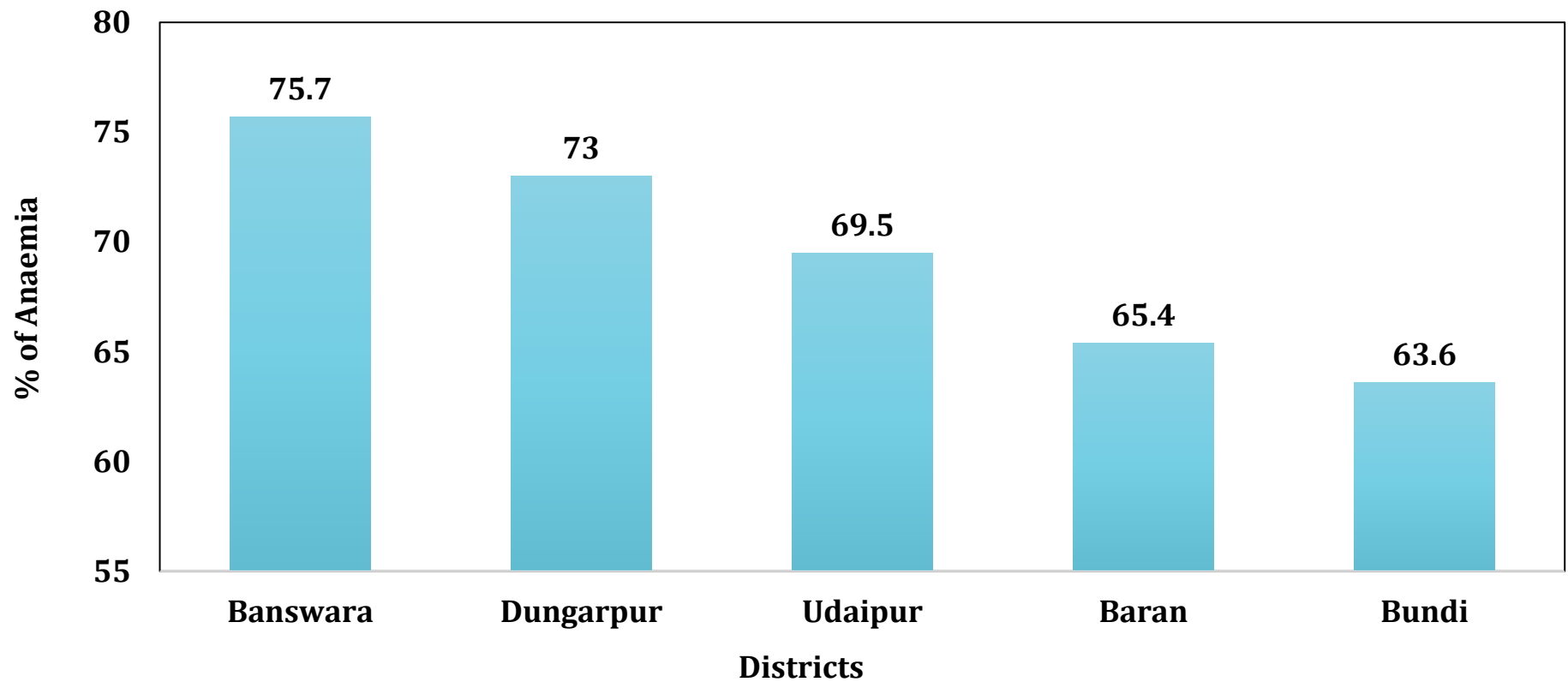
- ▶ In NFHS-4, sample was stratified two-stage sample.

Ethical Considerations:

- ▶ As secondary data from NFHS 4 was used for this study, no separate ethical clearance was obtained.

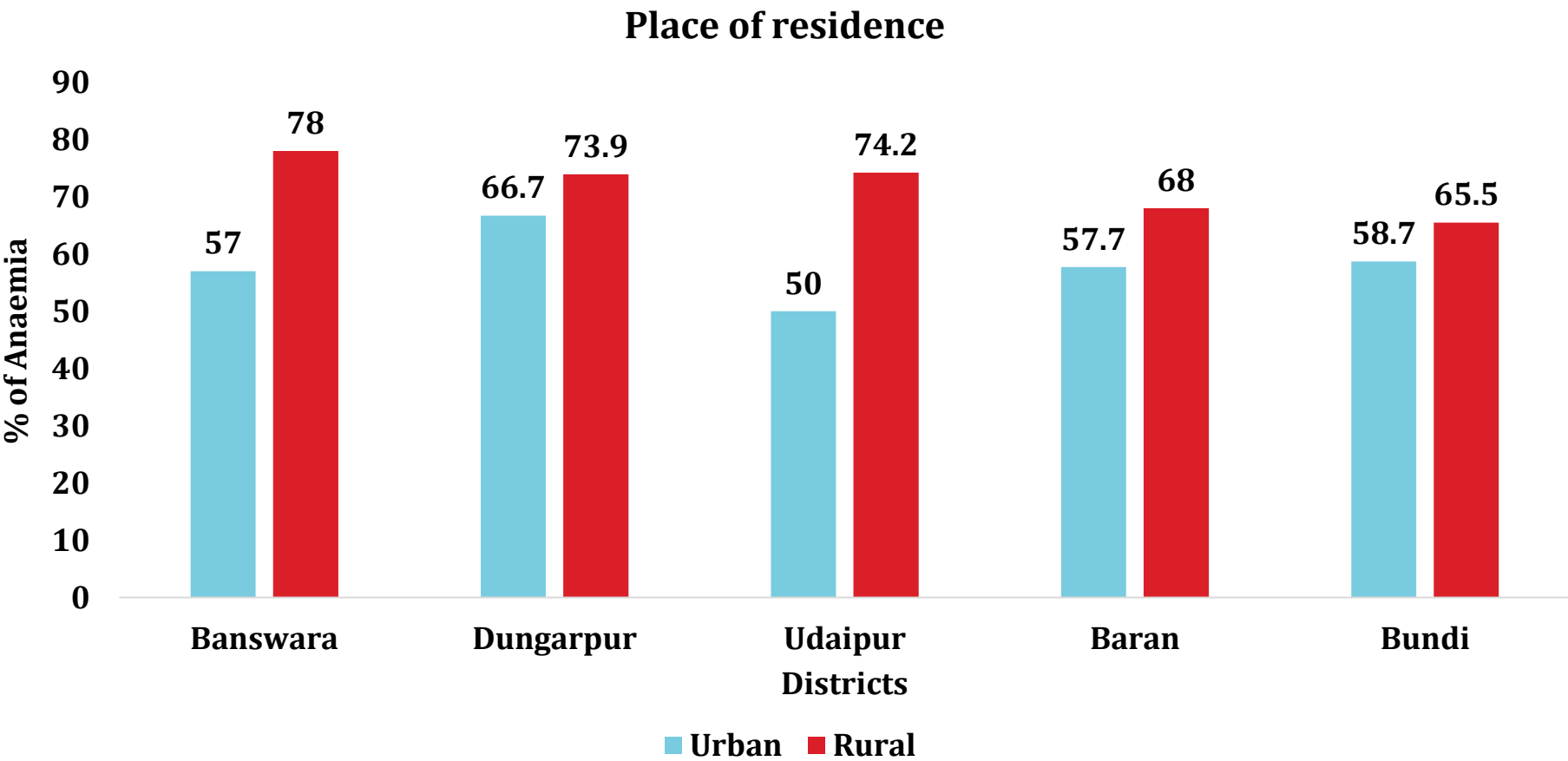
Analysis and Results

Districts of Rajasthan having highest prevalence of anaemia among women of Reproductive age



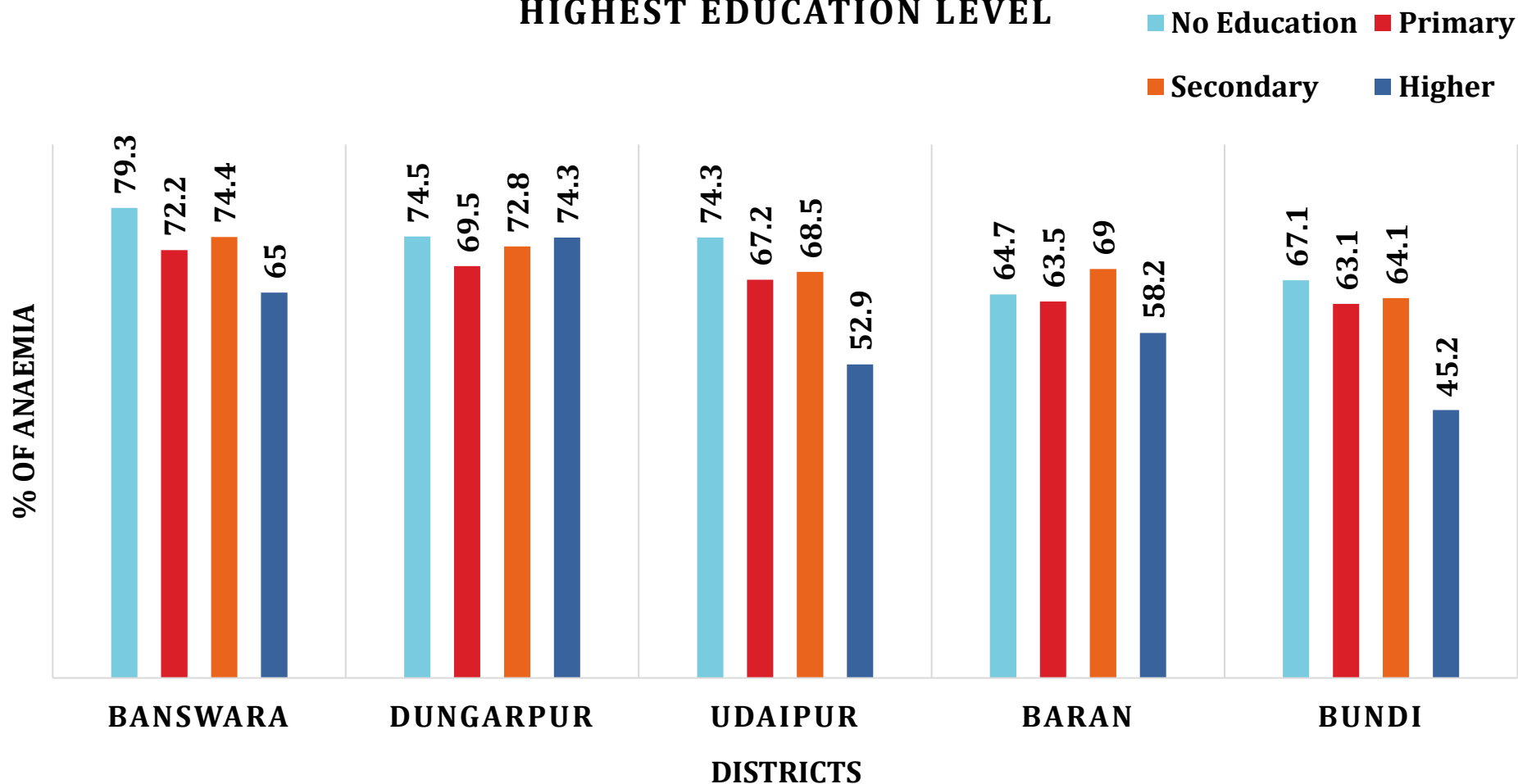
Factors leading higher prevalence of anaemia among women of reproductive age in the districts

Place of residence of women in various districts



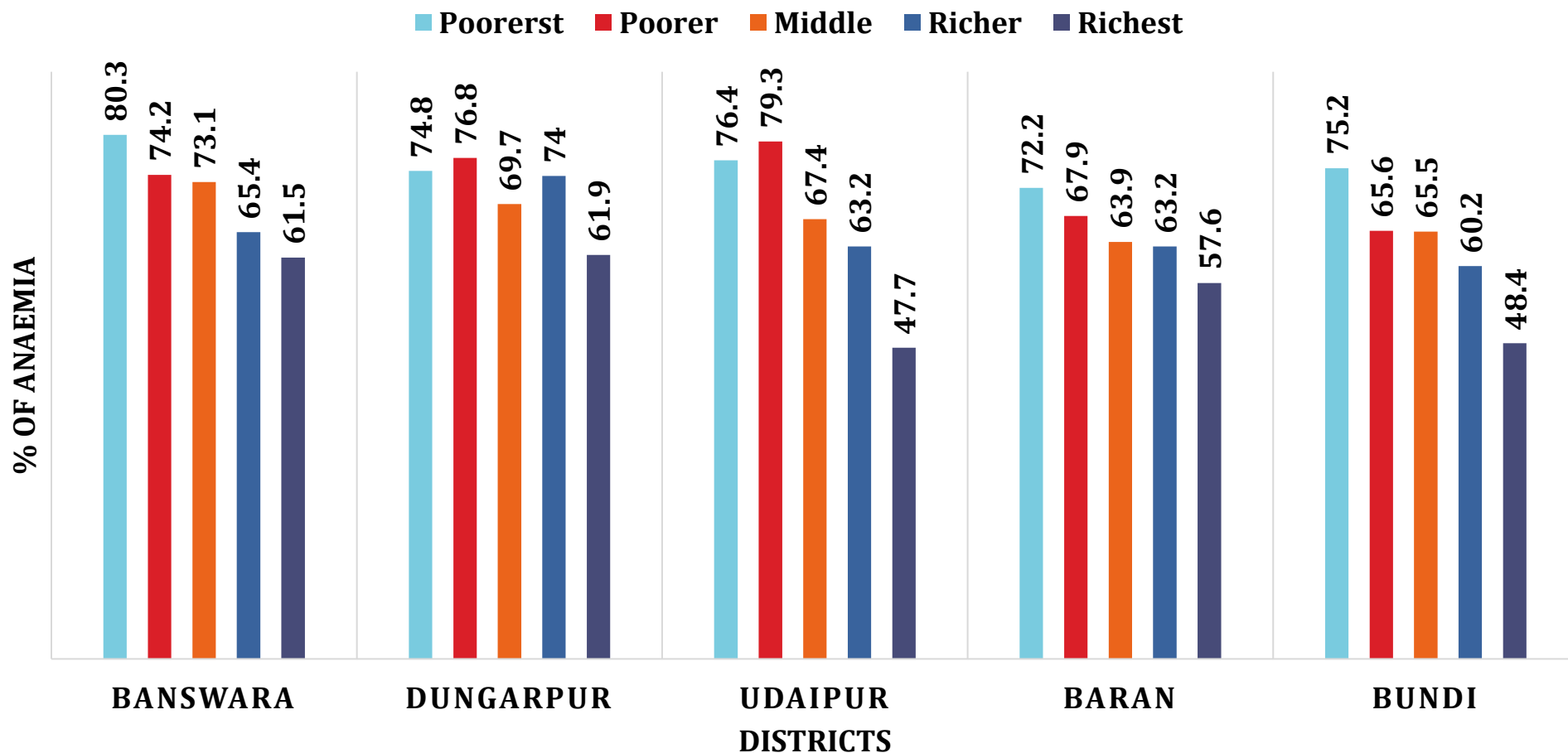
Highest education level of women in various districts

HIGHEST EDUCATION LEVEL

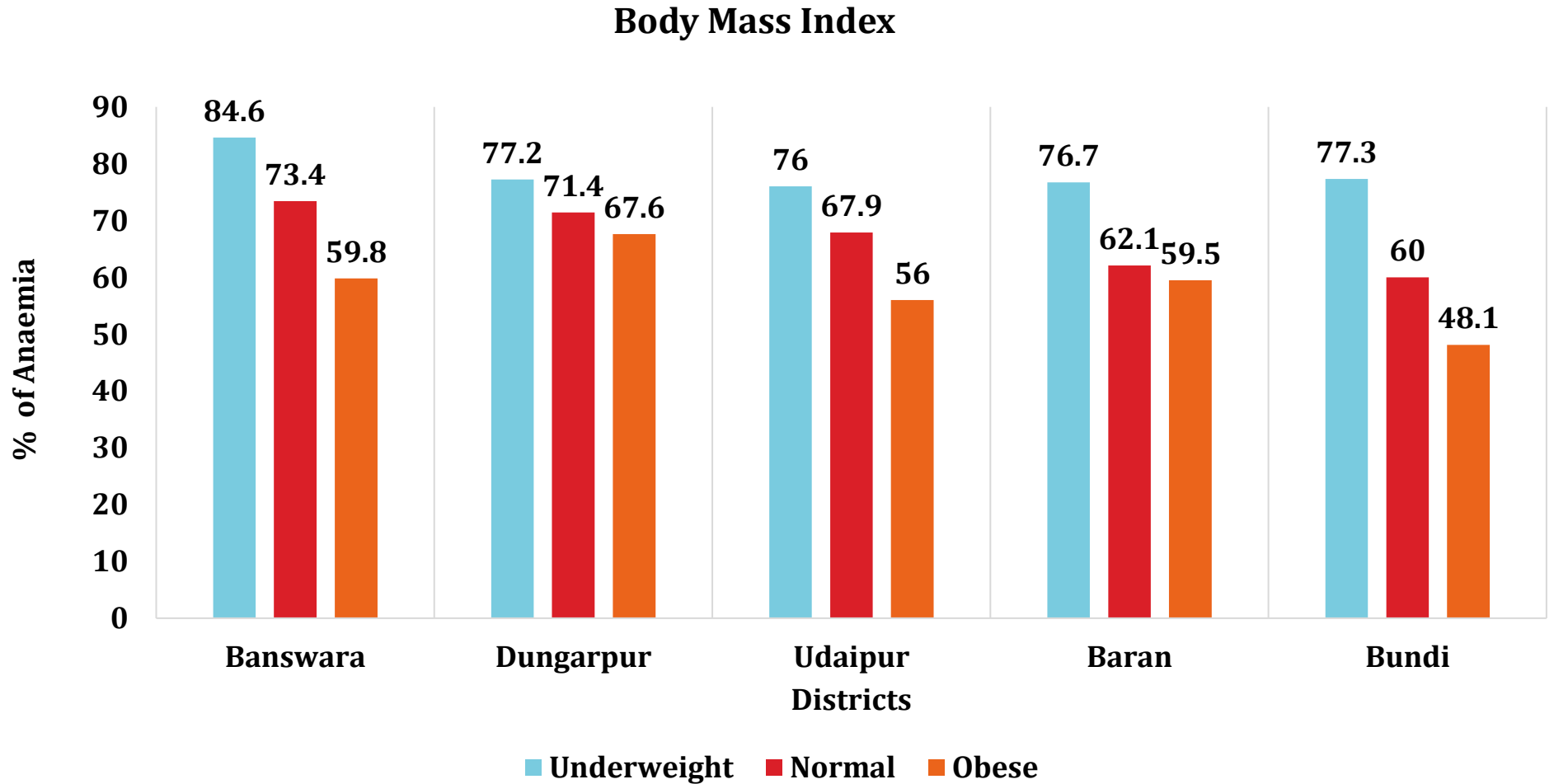


Wealth Index of women in various districts

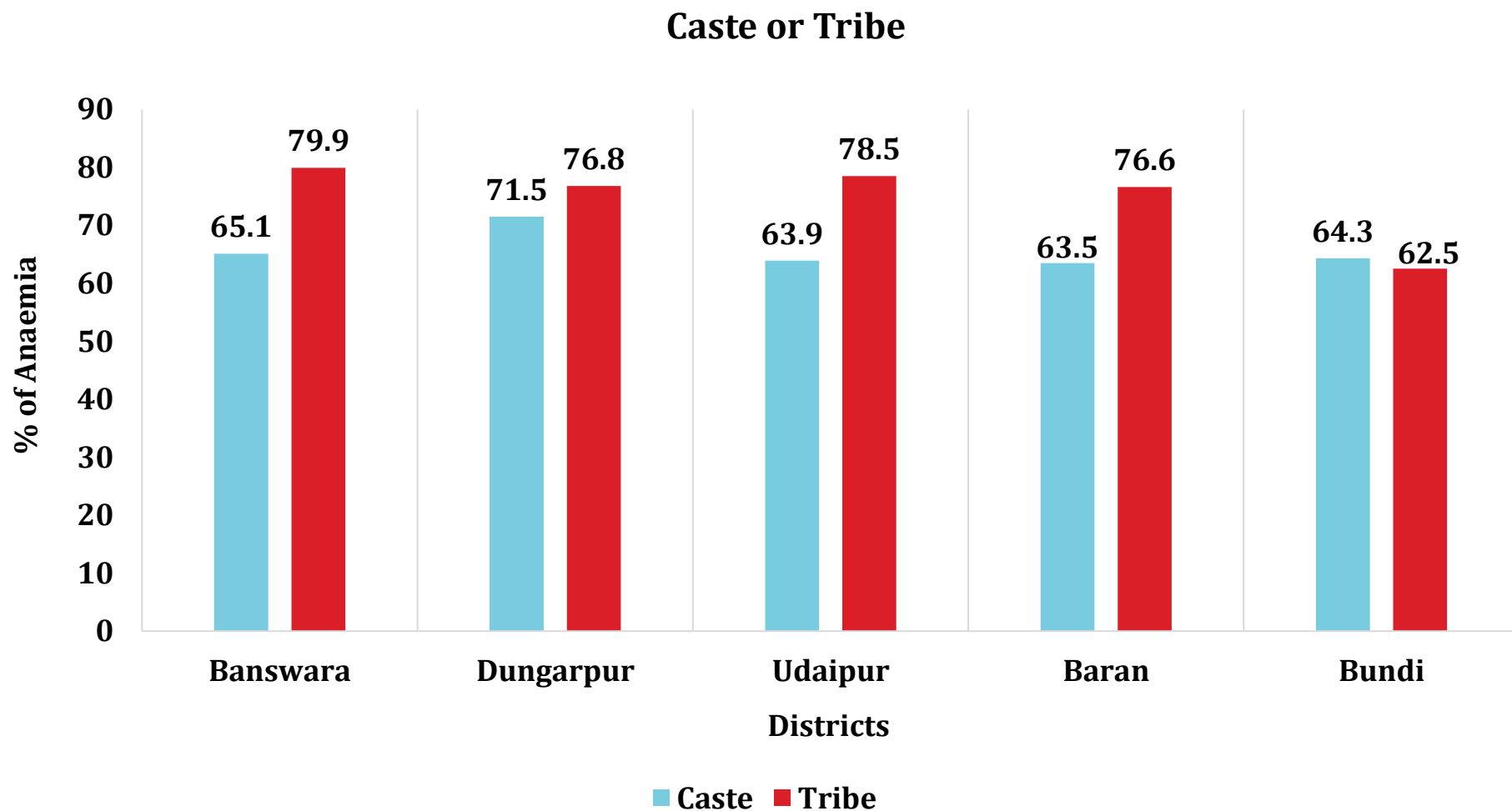
WEALTH INDEX



Body Mass Index of women in various districts

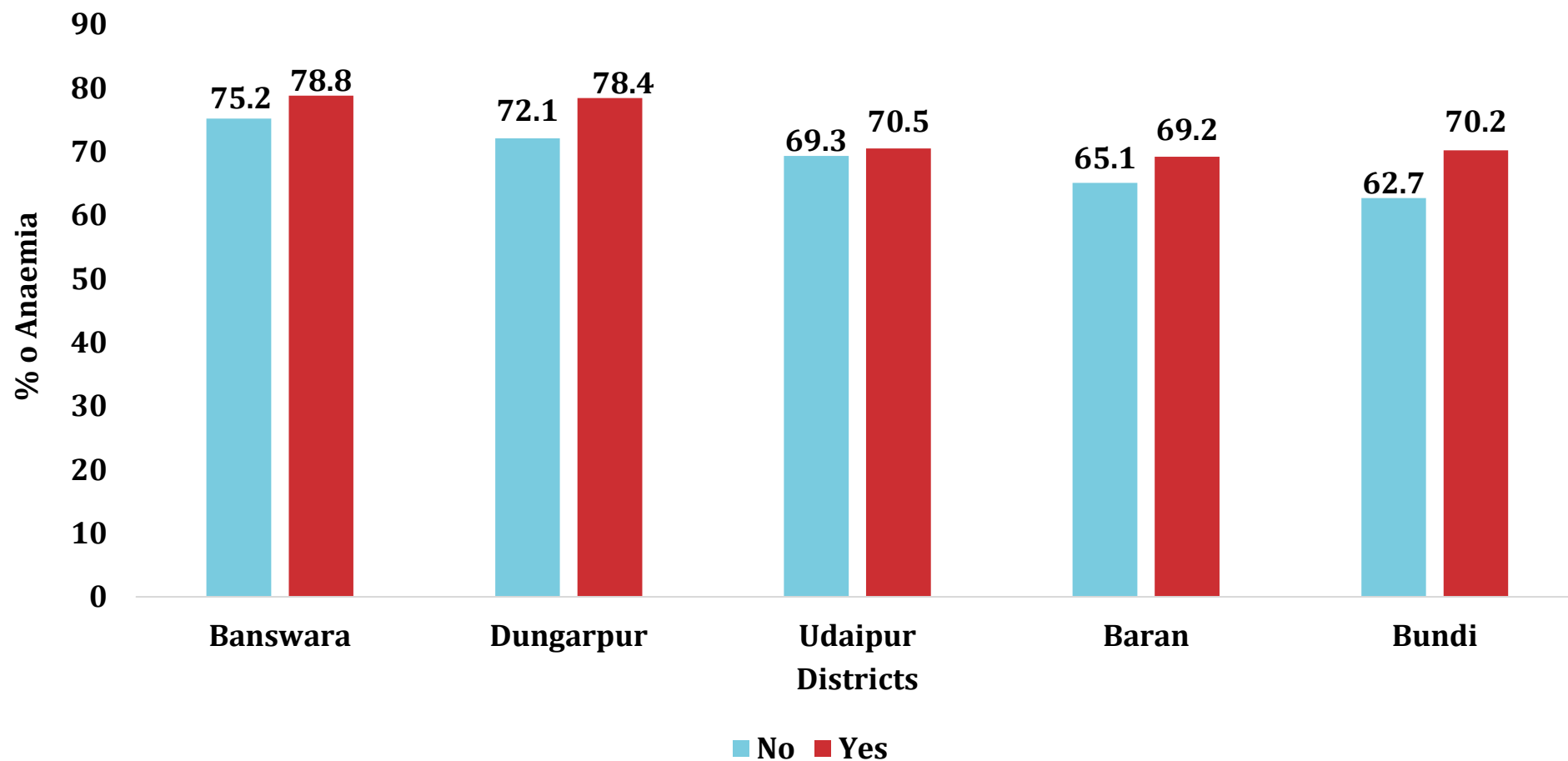


Caste or tribe of women in various districts



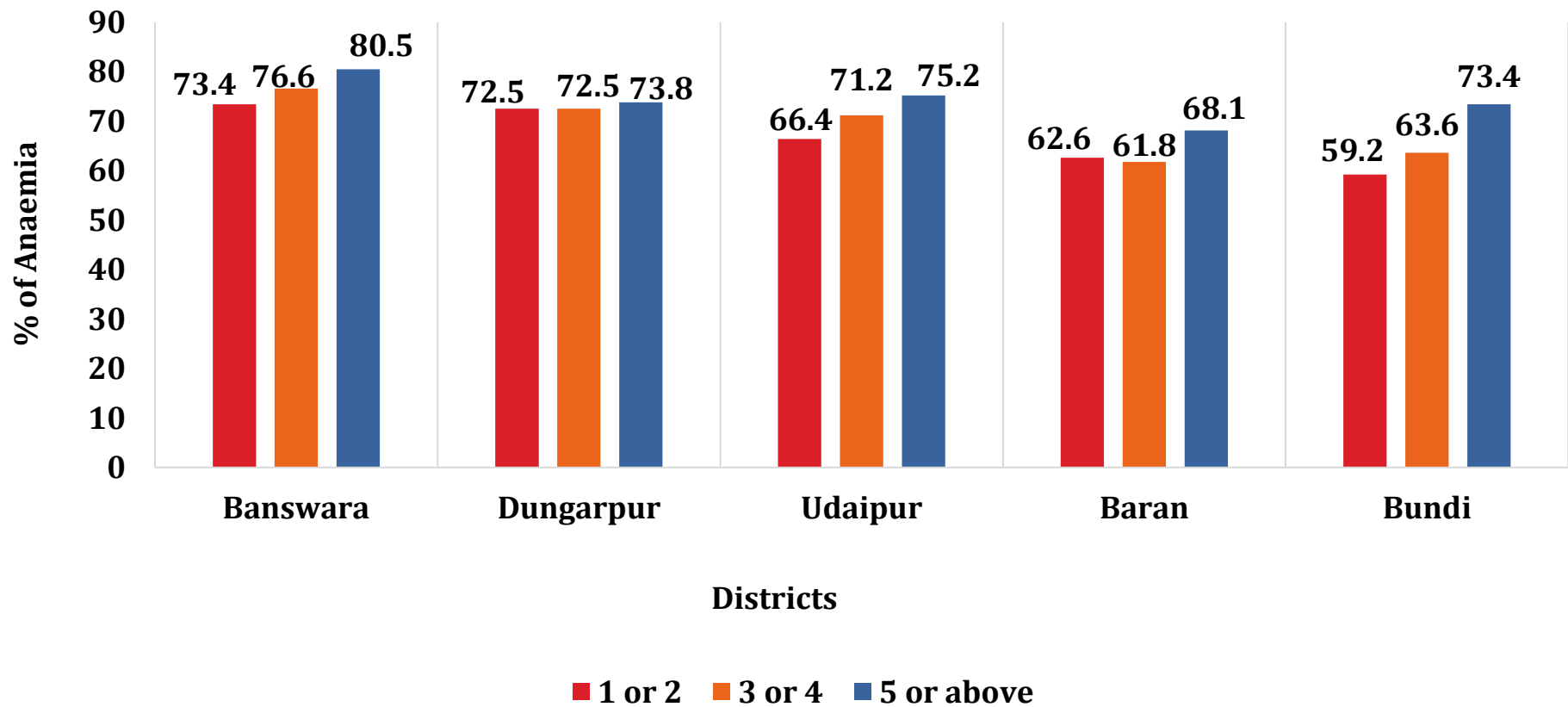
Currently Breastfeeding women in various districts

Currently Breastfeeding



Total children ever born

Total children ever born



Factors leading anaemia in Rajasthan

- ▶ Binary logistic regression analysis was used to identify the factors leading anaemia.
- ▶ Results of logistic regression was provided in the form of Odds Ratio with corresponding 95% C.I. to show the strength of association.
- ▶ A variable with $p \text{ value} < 0.05$ was considered statistically significant.
- ▶ The first category was taken as the reference group for all the variables.

Dependent variable:

- ▶ The main outcome variable was Anaemia level. It was created as dichotomous variable: 0=Non anaemia
1=Anaemic (mild, moderate, and severe)

Independent variables:

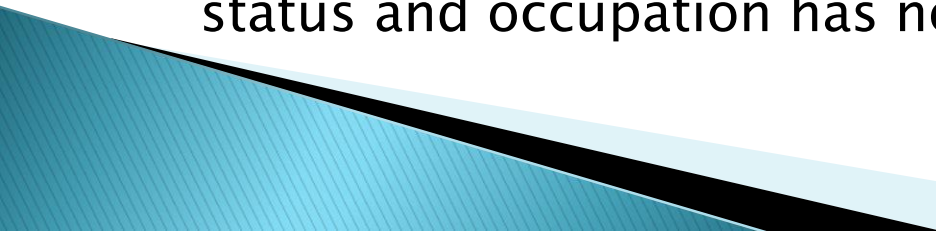
- ▶ The social, economic, demographic and health covariates included in the analysis were age groups, place of residence, highest educational level, wealth index, currently pregnant, respondent's occupation(grouped),BMI, total children ever born based on review of the existing literature

Logistic regression analysis of anaemia on predictor variables

Variables	P-value	Odd's Ratio	95% C.I. for Odd's Ratio	
			Lower	Upper
Age group (15-19)	.373			
20-24	.659	1.043	.865	1.257
25-29	.378	.902	.715	1.139
30-34	.465	.910	.707	1.172
35-39	.098	.799	.613	1.042
40-44	.400	.887	.670	1.174
45-49	.679	.941	.704	1.257
Place of residence(Urban)				
Rural	.640	.969	.850	1.105
Educational status(Uneducated)	.017			
Primary educated	.045	1.178	1.003	1.382
Secondary educated	.057	1.155	.996	1.339
Higher Educated	.465	.921	.737	1.149
Wealth (Poorest)	.000			
Poorer	.005	.788	.667	.932
Middle	.000	.585	.491	.696
Richer	.000	.613	.509	.738
Richest	.000	.504	.408	.622

Logistic regression analysis continued..

Variables	P-value	Odd's Ratio	95% C.I. for Odd's Ratio	
			Lower	Upper
Currently Pregnant(No/Unsure) Yes	.294	.881	.694	1.117
Respondent's Occupation (No)	.212			
Technical/managerial	.242	1.271	.851	1.898
Clerical	.850	1.159	.251	5.350
Sales	.350	1.294	.753	2.224
Agricultural	.709	.974	.847	1.120
Domestic	.663	1.095	.728	1.648
Manual	.076	1.203	.981	1.475
Don't know	.046	.046	1.011	3.369
BMI (Underweight)	.000			
Normal	.000	.732	.651	.824
Pre-obese	.000	.613	.506	.742
Obese	.000	.367	.279	.483
Total children ever born (0)	.081			
1-2	.499	1.064	.889	1.274
3-4	.092	1.205	.970	1.496
5 or more	.023	1.359	1.043	1.770
Constant	.000	1.786		

- ▶ The mean haemoglobin concentration for women of 15–49 years of age in Rajasthan is 122.89 g/l with Standard deviation 68.41 g/l.
 - ▶ Results of the study shows that the factors leading anaemia such as Highest Educational level, BMI, Wealth Index, Total children ever born are statistically significant (Table).
 - ▶ It was found that women having no education, primary education and secondary education women are at greater risk of anaemia than women having higher education with odds ratio of 1.178, 1.155 and 0.921 respectively.
 - ▶ Wealth index shows that poorer women are more prone to be anaemic as compared to richer women.
 - ▶ The higher prevalence of anaemia was seen in underweight women as compared to normal and obese women.
 - ▶ Women having more number of children are at higher risk with Odds ratio of 1.359.
 - ▶ The factors such as age group, place of residence, pregnancy status and occupation has not been found to be significant.
- 

Conclusion

- ▶ Overall prevalence rate of anaemia among women of age group 15–49 years in Rajasthan is 47.8 percent with the highest prevalence in Banswara (75.7%), Dungarpur (73%), Udaipur (69.5%), Baran(65.4%) and Bundi(63.6%) districts.
- ▶ This clearly showed that anaemia is a significant problem in women of reproductive age group.
- ▶ There is a need of further research studies to determine prevalence as well as causes of anaemia and other nutritional deficiencies
- ▶ Educational level and socio-economic status of all women should be improved.
- ▶ Strategies for new programs are required to improve the overall nutritional status of the women of reproductive age group.
- ▶ Anaemia Surveillance and intervention programs including periodic deworming, IFA supplementation and food fortification are required especially for high risk population.

Thank You...