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**Family Planning and its Association with
Nutritional Status of Women: Investigation in Select
South Asian Countries**

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and
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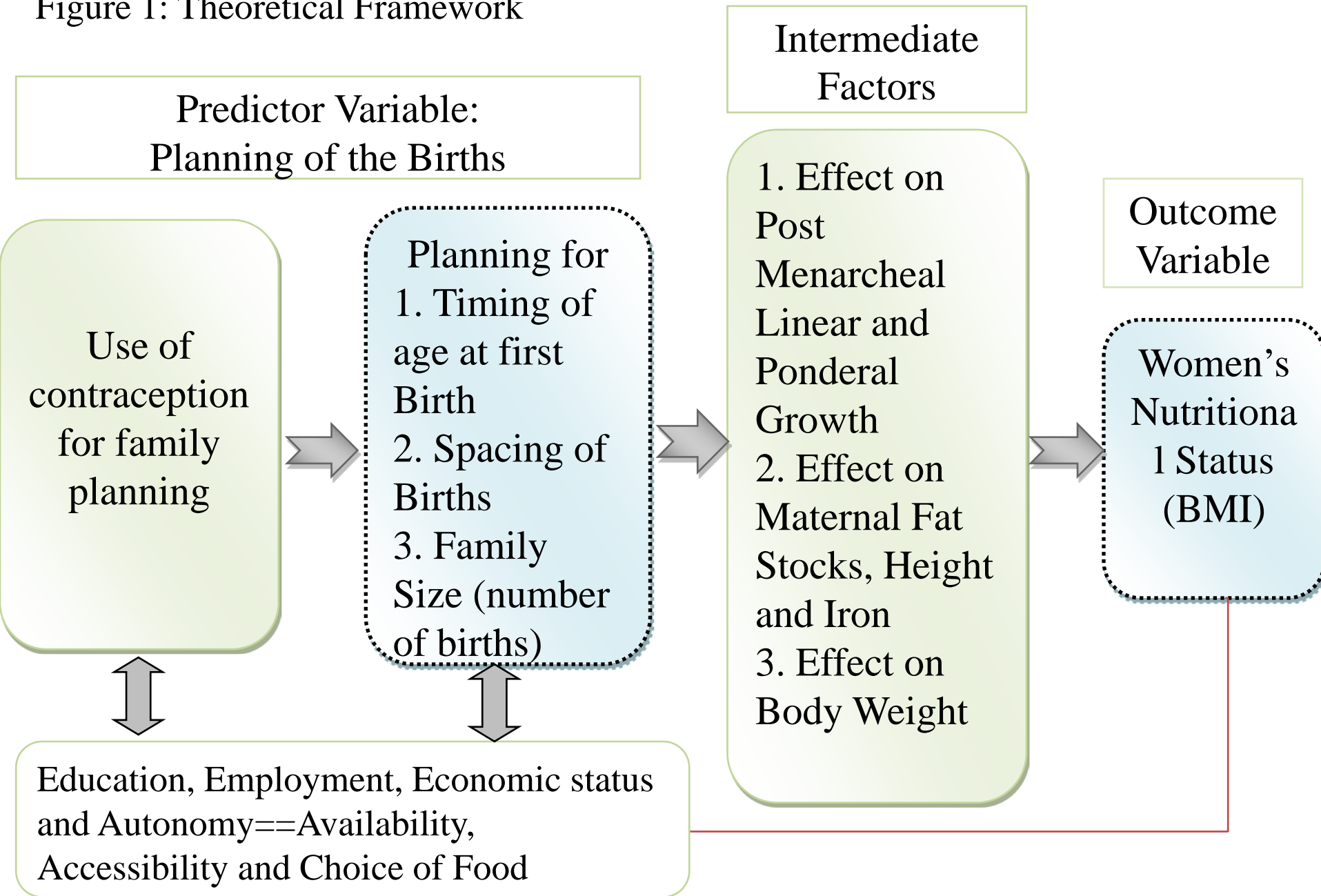
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Returns of Family Planning [FP]

FP helps:

- To reduce unintended pregnancy and unsafe abortion.
- To maintain mother's body weight, postmenarcheal linear and ponderal growth and reduce the risk of the depletion of maternal fat stocks, cessation of iron and other micronutrients.
- To increase the birth interval while the short birth interval curb the chances of nutrients (e.g. iron, folate) recovery in mother's body to fulfil the needs of pregnancy and lactation.

Figure 1: Theoretical Framework



Background

- About **222 million women** in developing countries are not using any method of family planning but they would like to postpone or stop childbearing.
- More than half of the women have an unmet need for modern contraception in Africa while one fourth in Asia and Latin America.
- South Asia is one of the backward region in the world in terms of nutritional status of women and children and also child marriage.

Objective

To evaluate the effects of family planning (planning of births) on nutritional status (BMI) of women in selected South Asian countries.

Data and Sample

Sample Size of women at age group 15-49 in selected south Asian countries

Countries	India (2005-06)	Bangladesh (2011)	Nepal (2011)	Pakistan (2012-13)	Total
Total number of sample surveyed	124385	17842	12674	13558	168459
Final sample size used in DHS reports ¹	111781	16024	5800	4170	137775
Final sample size used in current study ²	49354	8557	2550	4117	64578

¹ Excludes pregnant women and women with a birth in the preceding 2 months

² Includes only those women who have at least one child

Variables and Methods

Type of Variables	Variables	Statistical Model
Dependant	BMI (Women) [thin; normal; and overweight]	Multinomial Logistic Regression and MCA conversion model. Predicted probability were estimated and converted into percentage.
Predictor (Planning of births)	Birth order 1 (<12 months of IBMFB; 12-24 months; 24-36 months; and >36 months) Birth order 2-3 (<24 months of IBBSB; and >24 months) Birth order >3 (<24 months of IBBSB; and >24 months)	
Covariates	Place of residence (rural; and urban), age at marriage (<20 years; and 20 years and above), Women's and partner's educational status (illiterate; primary; secondary; and higher), Household's wealth quintiles (poorest; poorer; middle; richer; and richest), Exposure to mass media (yes; and no), Country dummy (India; Bangladesh; Nepal; and Pakistan)	

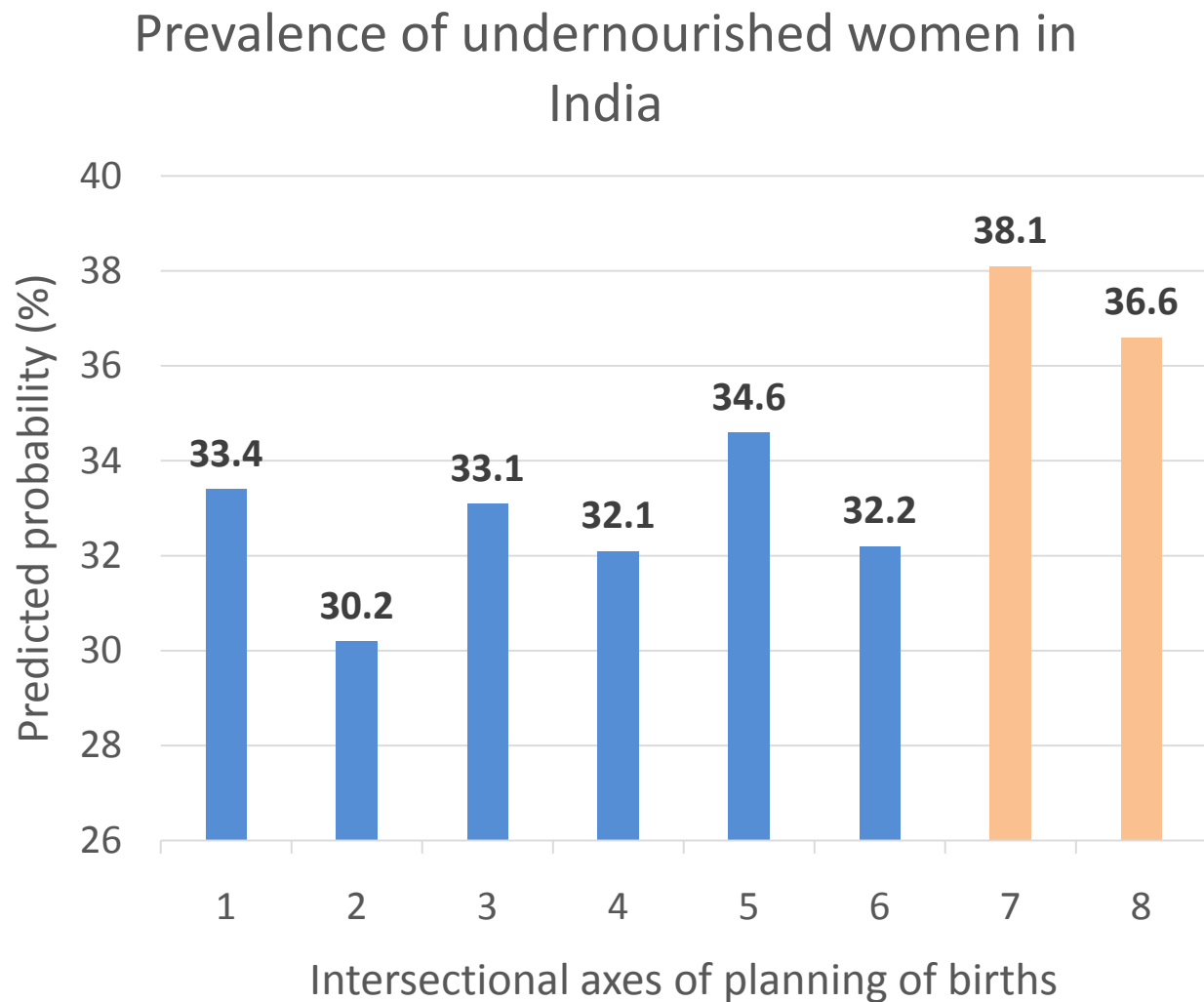
Note: IBMFB=Interval Between Marriage and First Birth; IBBSB=Interval Between Births and Subsequent Births

Descriptive Statistics

Variables	India (n= 49358)	Bangladesh (n= 8557)	Nepal (n= 2550)	Pakistan (n= 4117)	All countries (n= 64578)
<i>Women Body Mass Index</i>					
Thin (BMI <18.5)	38.8	27.6	19.3	14.6	35.2
Normal (BMI 18.5-25.0)	54.2	60.8	71.1	54.2	55.6
Obese (BMI >25.0)	7.0	11.6	9.5	31.1	9.2
<i>Birth Order and IBMFB and IBBSB</i>					
Order 1 and <1 year IBMFB	1.4	2.9	1.7	1.6	1.6
Order 1 and 1-2 year IBMFB	11.3	12.4	14.9	9.4	11.5
Order 1 and 2-3 year IBMFB	8.5	8.9	9.1	5.9	8.5
Order 1 and >3 years IBMFB	9.3	11.4	10.3	6.0	9.4
Order 2-3 and <24 months IBBSB	14.0	6.2	10.6	16.1	13.1
Order 2-3 and >24 months IBBSB	29.2	39.8	31.6	20.9	30.1
Order >3 and <24 months IBBSB	8.2	2.9	5.6	14.8	7.9
Order >3 and >24 months IBBSB	18.0	15.5	16.3	25.2	18.1
<i>Age at Marriage</i>					
<20 years	23.8	25.8	14.6	8.0	22.7
20-29 years	76.2	74.2	85.4	92.0	77.3
<i>Place of Residence</i>					
Urban	24.6	22.2	8.8	29.4	24.0
Rural	75.4	87.8	91.2	70.6	76.0
<i>Women's Education</i>					
Illiterate	49.5	20.4	47.6	56.7	46.2
Primary	14.2	30.8	20.0	17.0	16.7
Secondary	31.3	42.0	27.1	17.7	31.7
Higher	4.9	6.8	5.2	8.6	5.4

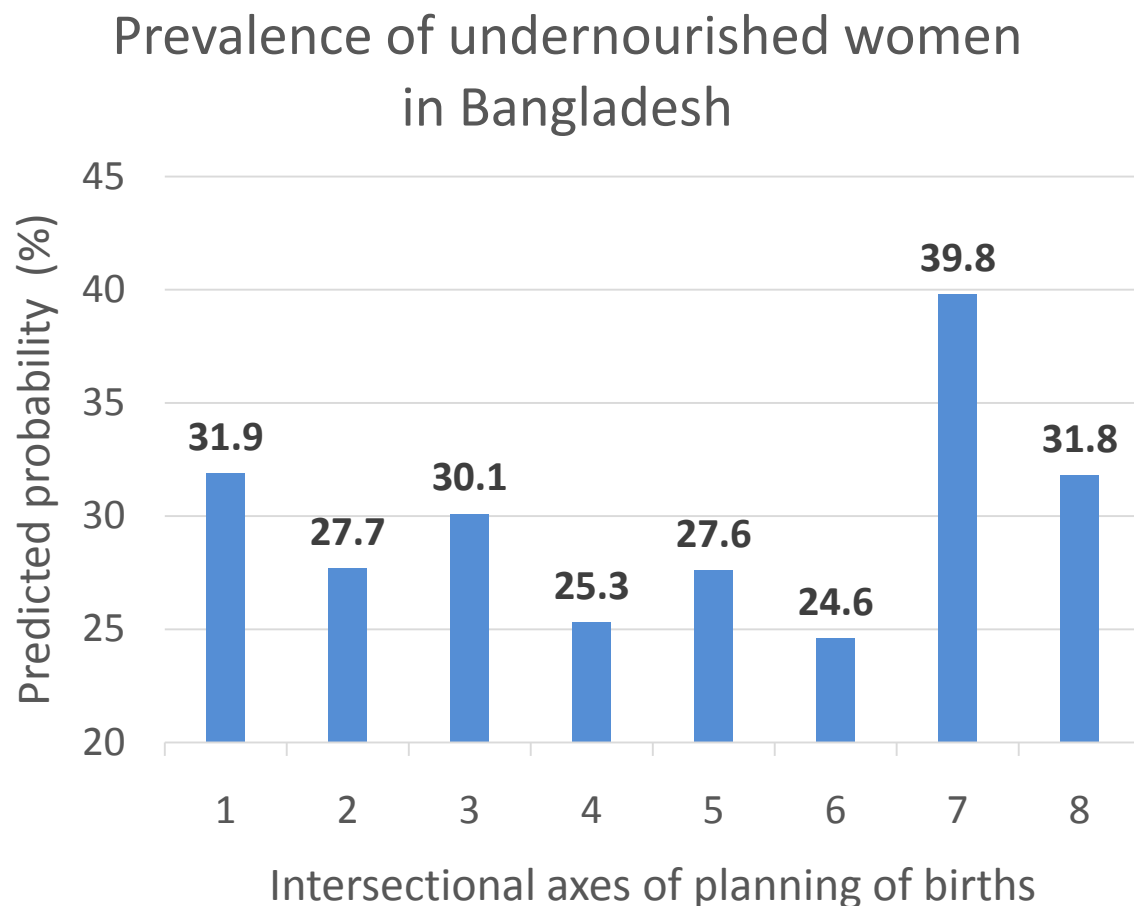
Variables	India (n= 49358)	Bangladesh (n= 8557)	Nepal (n= 2550)	Pakistan (n= 4117)	All countries (n= 64578)
<i>Partner's Education</i>					
Illiterate	29.0	29.8	23.3	32.4	29.1
Primary	15.4	29.2	24.1	18.3	17.6
Secondary	45.7	28.7	42.7	32.9	17.6
Higher	9.8	12.3	9.8	16.5	17.6
<i>Women's Working Status</i>					
Not Working	70.6	90.4	45.8	72.6	72.0
Working	29.6	9.6	56.2	27.4	28.0
<i>Household Wealth Quintiles</i>					
Poorest	25.4	23.5	25.4	23.8	25.0
Poorer	22.5	20.6	20.8	21.5	22.1
Middle	20.0	19.4	23.4	17.8	20.0
Richer	18.0	19.2	17.1	21.2	18.3
Richest	14.1	17.3	13.4	15.7	14.6
<i>Exposure to Mass Media</i>					
Not Exposure	32.3	37.3	14.1	31.5	32.2
Exposure	67.7	62.7	85.9	68.5	67.8
<i>Countries</i>					
India	-	-	-	-	77.6
Bangladesh	-	-	-	-	12.5
Nepal	-	-	-	-	3.8
Pakistan	-	-	-	-	6.2

Results from Multinomial Logistic Regression model



- 1 Birth order 1 and <12 months of IBMFB
- 2 Birth order 1 and 12-24 months of IBMFB
- 3 Birth order 1 and 24-36 months of IBMFB
- 4 Birth order 1 and >36 months of IBMFB
- 5 Birth order 2-3 and <24 months of IBBSB
- 6 Birth order 2-3 and >24 months of IBBSB
- 7 Birth order >3 and <24 months of IBBSB
- 8 Birth order >3 and >24 months of IBBSB

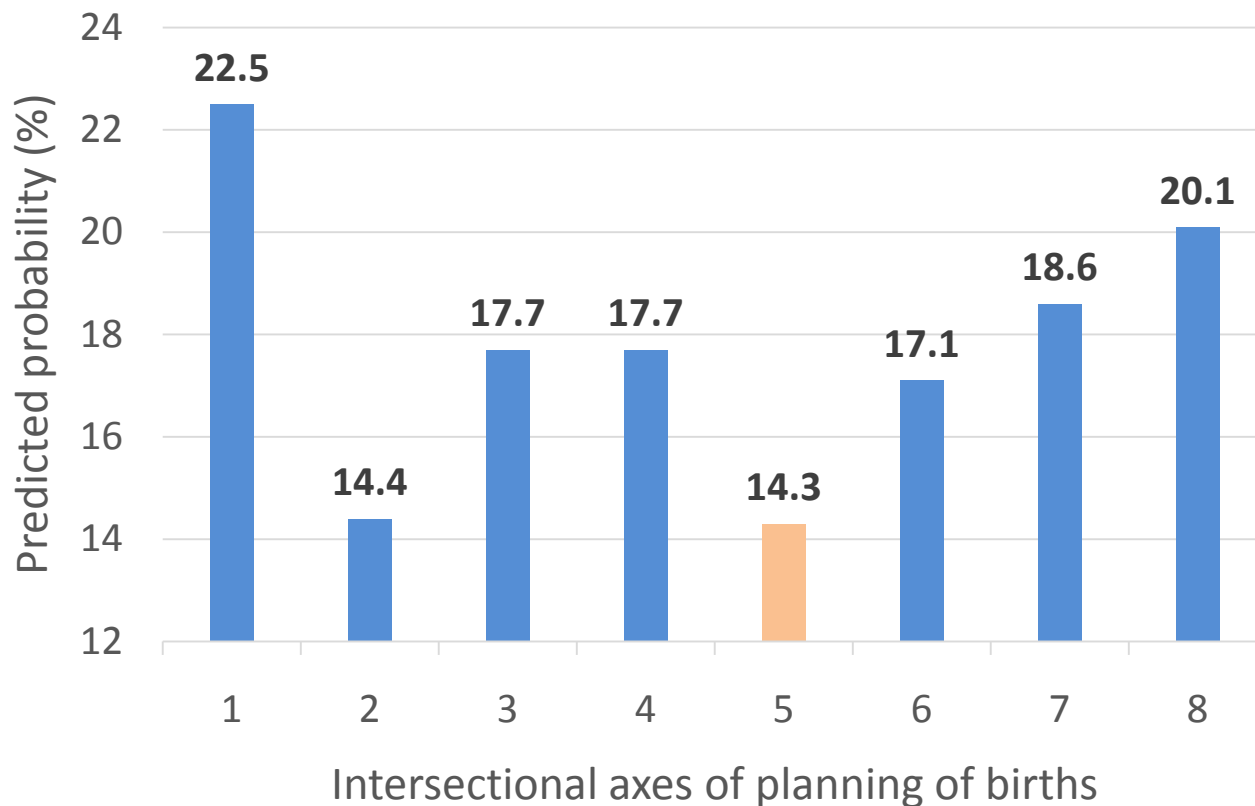
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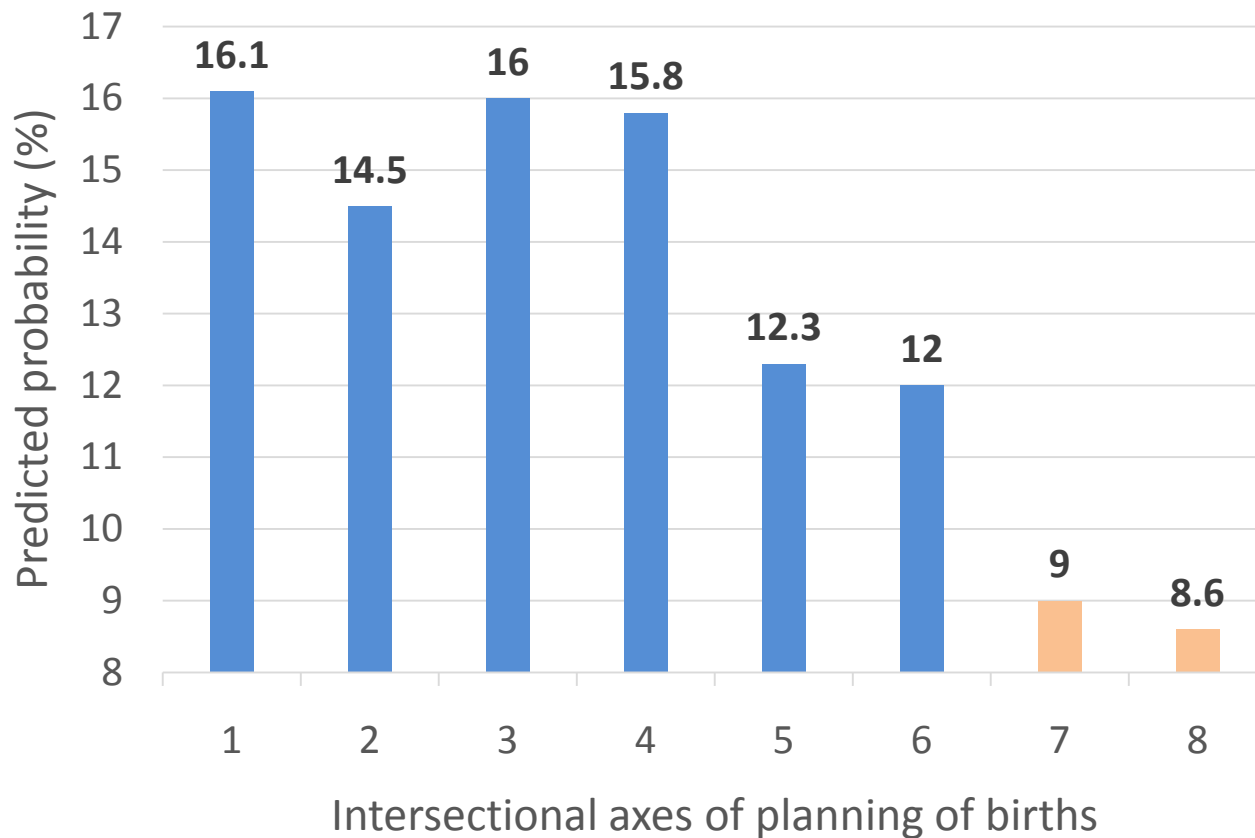
Prevalence of undernourished women in Nepal



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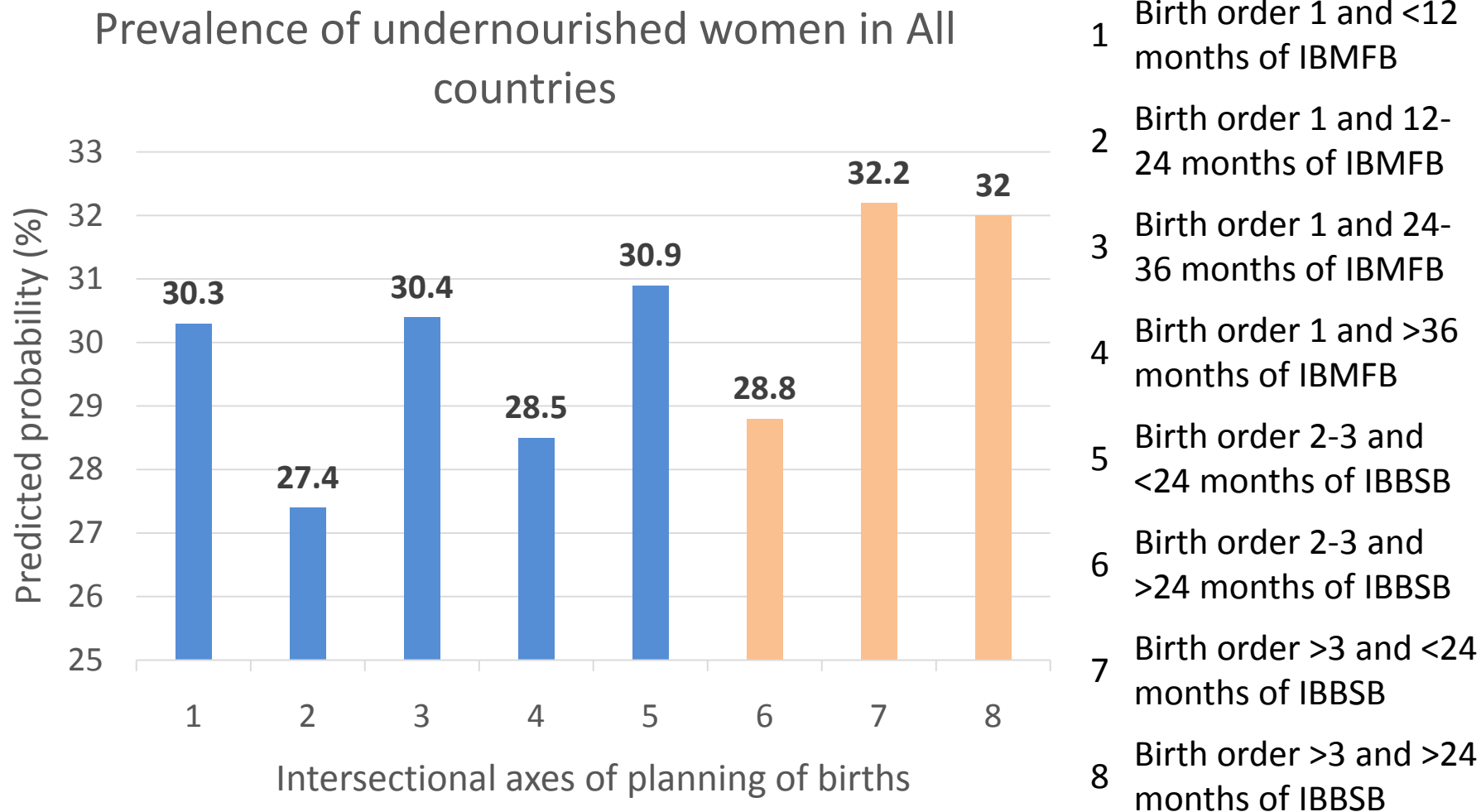
Results from Multinomial Logistic Regression model

Prevalence of undernourished women in Pakistan



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Results from Multinomial Logistic Regression model



Concluding remarks

Three components of planning of births

- Timing
- Spacing
- Limiting

Concluding remarks

- Integration of family planning and nutritional interventions can be mutually beneficial for mothers and their children as well.
- A global strategy to improve maternal nutrition need to promote family planning as a key strategy.
- This strategy becomes more important in a regional perspective because both the prevalence of malnutrition and unmet need for planning is quite high along with high level of child marriage in South Asian countries.
- By providing the modern family planning facilities, malnutrition of women will be checked in large proportion.

Thank you