Prevalence of Adverse Pregnancy Outcomes in the state of Assam and the factor associated with it: Findings from the National Family Health Survey 4 (2015-16)

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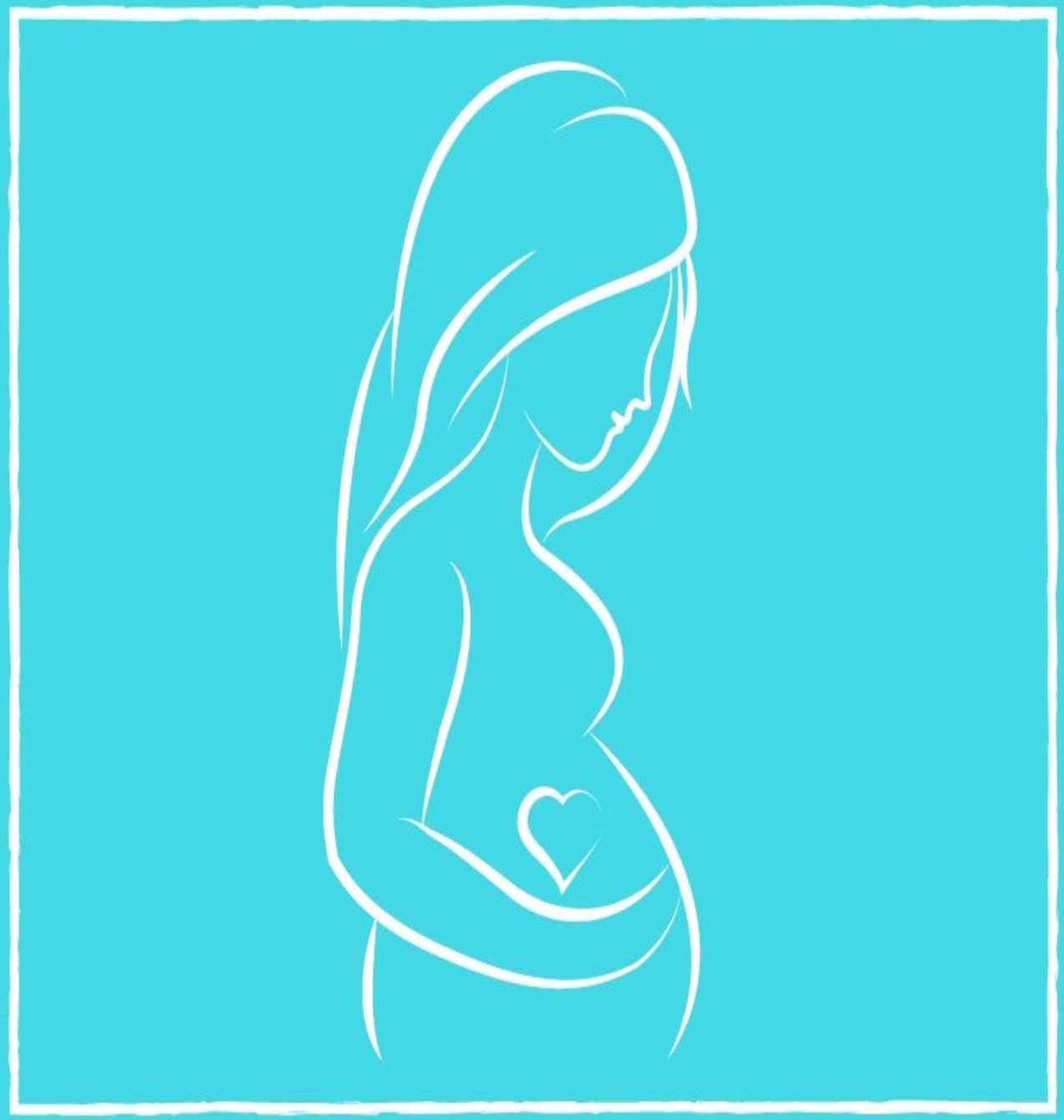
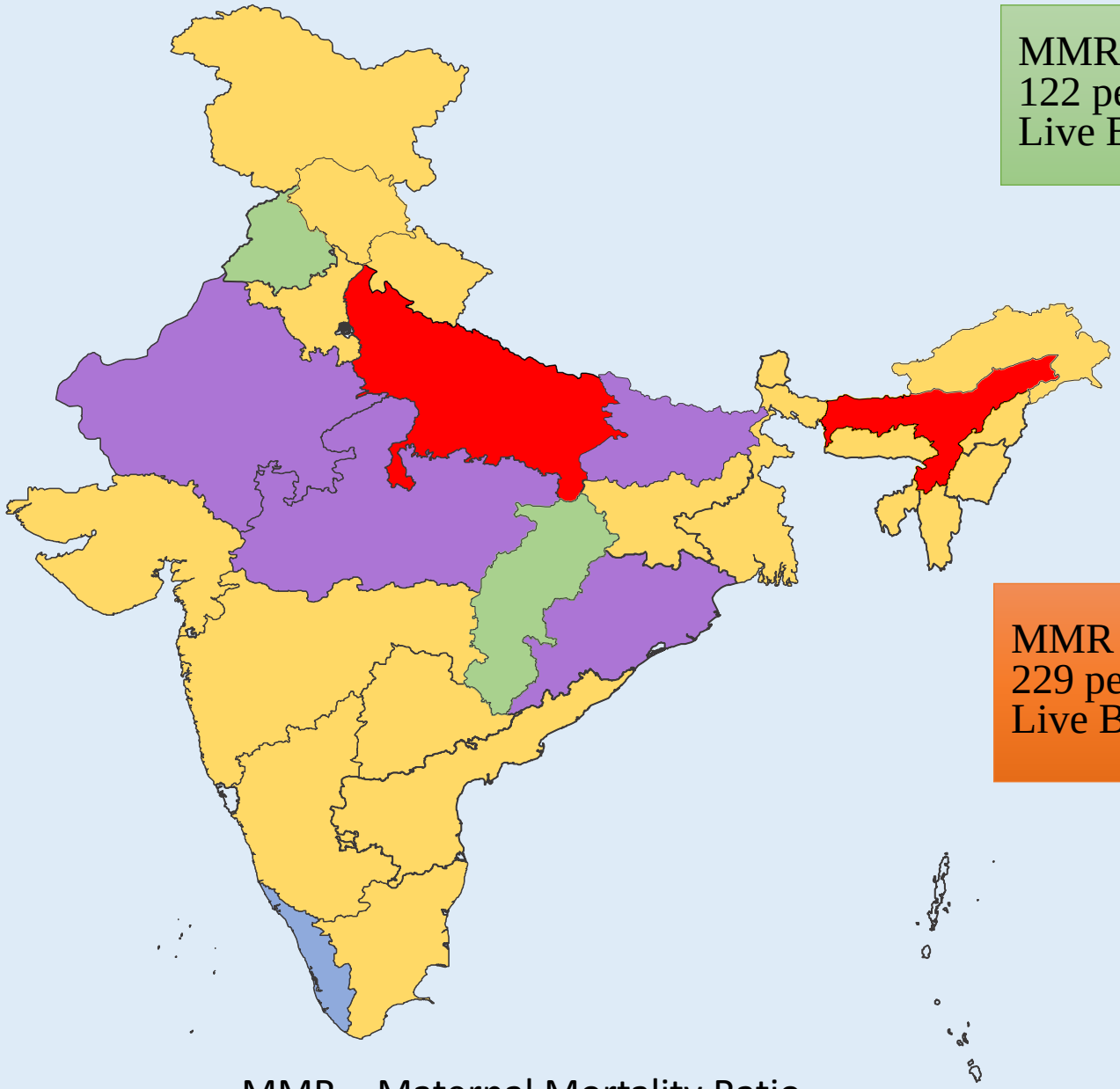
TABLE OF CONTENTS

INTRODUCTION

- Maternal death is a serious concern for all the countries. If we talk about a country like India with population of 1.3 billion, maternal death is a paramount problem.
- Many programs like Reproductive and Child Health program (RCH) were launched back in the year 1997 when our maternal death rate was 398 per 100000 live births.
- We have come a long way from RCH to RMNCH+A and our MMR has reduced to 122 per 100000 live births but the major concern for maternal death still remain the same.
- Among all the state of India, Assam has the highest MMR (229 per 100000 live births). Adverse Pregnancy Outcome is also a major concern as it ultimately leads to maternal deaths.
- The number of still birth babies born every year is 2.6 million and of which three- fourth occurred in the south Asian and sub Saharan region.
- World data on Abortion shows that one in five pregnancy results into unsafe abortion.



Comparative Statistics of India and Assam



MMR – Maternal Mortality Ratio

MMR of India: 122 per 100000 Live Birth

MMR of Assam: 229 per 100000 Live Birth

9.8%

India’s pregnancy end into miscarriage, abortion and still births

10.4%

Assam’s pregnancy ends into miscarriage, abortion and still births

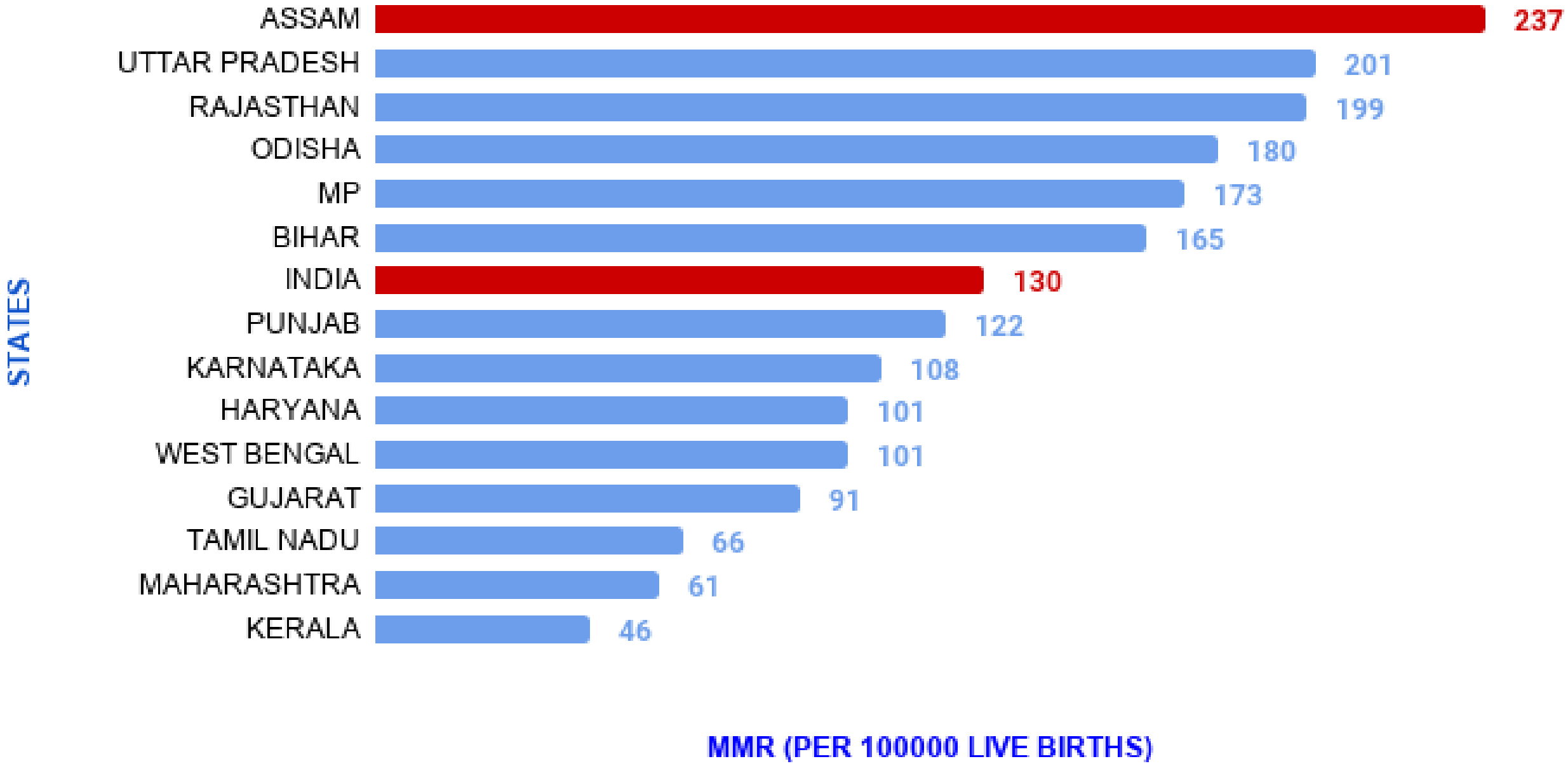
Aim of the study:

The primary aim of the study was to assess the prevalence of adverse pregnancy outcomes in the state of Assam with the help of the NFHS 4 data and to find the factors which are associated with it. The other aim was to find the relationship between demographic and socioeconomic factors with pregnancy outcomes.

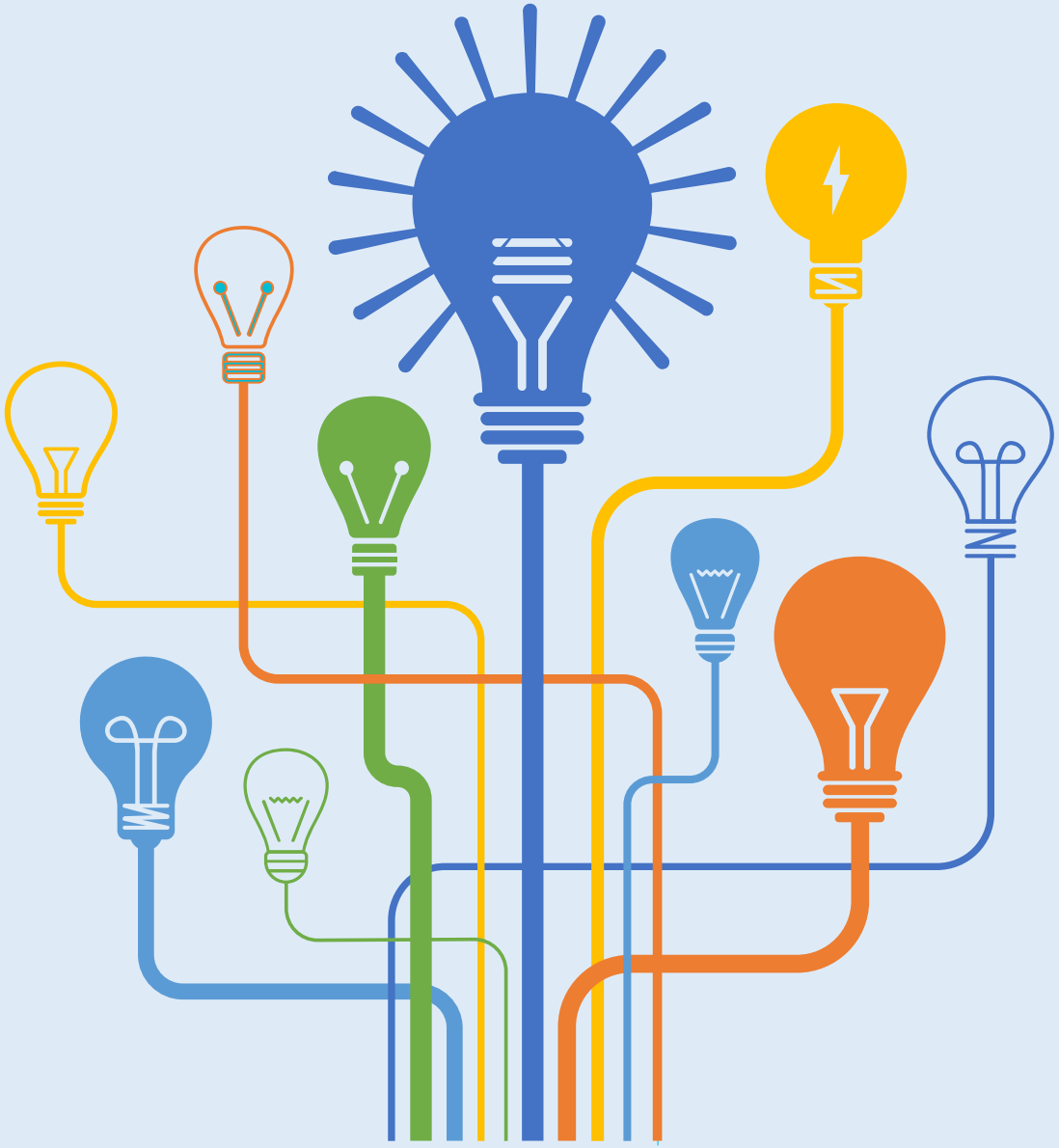
Rationale:

As the maternal death of India is very high and especially in the state of Assam (229 per 100000 live births). There is a strong association of adverse pregnancy outcomes with maternal deaths. So it is very important to find the factors associated with it and to formulate policy and health intervention accordingly.

MMR (PER 100000 LIVE BIRTHS) OF MAJOR STATES OF INDIA (2014-16)



Research Question:



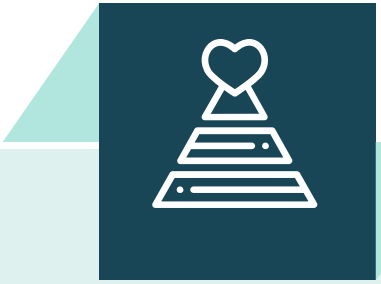
What is the Prevalence of adverse pregnancy outcome in the state of Assam?

Is maternal age is associated with adverse pregnancy outcome?

What are the factors associated with adverse pregnancy outcome?

STUDY OBJECTIVES

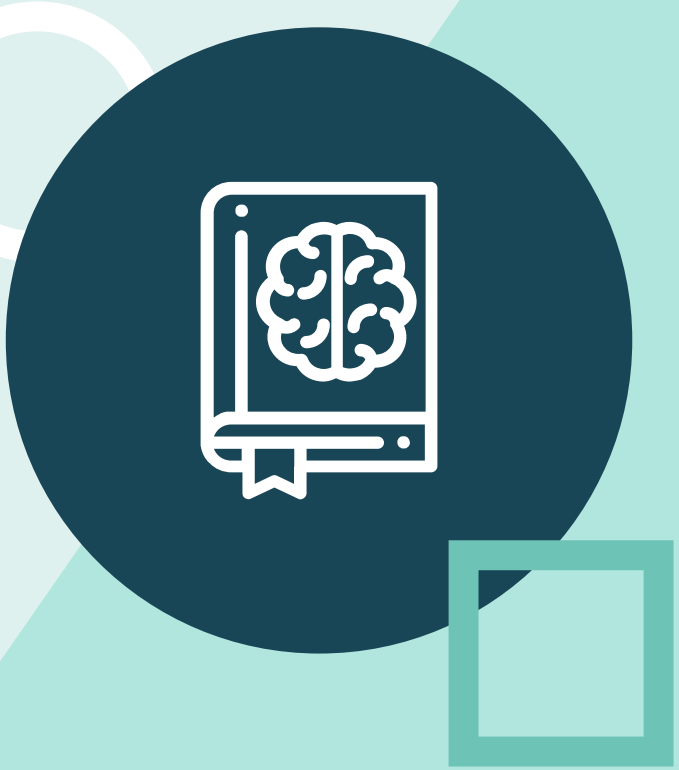
To assess the Prevalence of adverse pregnancy outcomes in the state of Assam



To examine the factors associated with adverse pregnancy outcomes.

To find the association of maternal age and adverse pregnancy outcomes.

LITERATURE REVIEW



THEORY 1

One of the study on examining the prevalence and co relation of tobacco use during pregnancy in rural area of India suggested that there is very poor knowledge about the adverse health effects due to tobacco use. Overall, 15% of the women used tobacco during their pregnancy (Singh S et al).

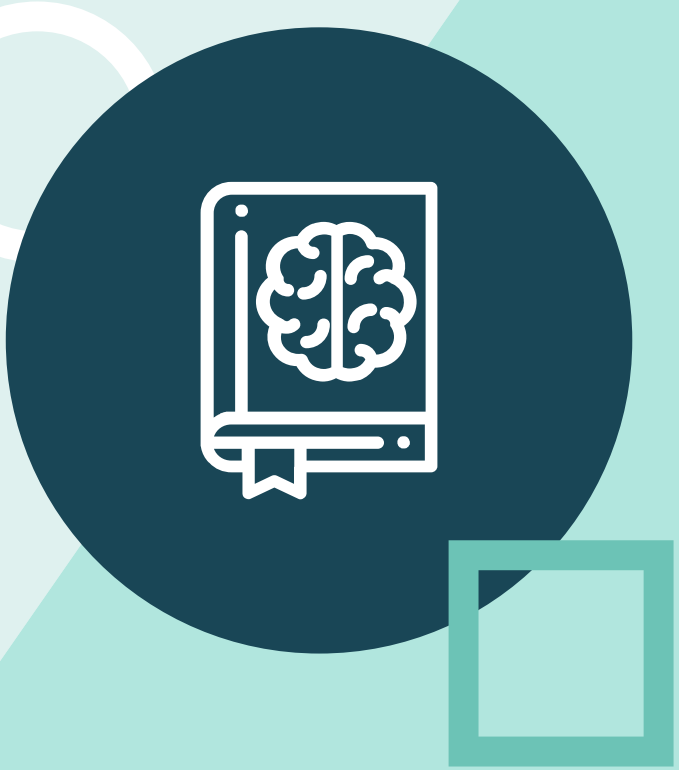
THEORY 2

Population based estimates of still birth, abortion and miscarriage in the state of Bihar suggested that highest level of education received by the female and her husband plays a major role in pregnancy outcome. Apart from that place of residence also influence in miscarriage and abortion (Kochar PS et al).

THEORY 3

There is a strong association of early age and old age pregnancy with adverse pregnancy outcome and living in rural area also plays major role in adverse pregnancy outcome (Mungoba TN et al).

LITERATURE REVIEW



THEORY 4

According to an epidemiological study based on co relation between alcohol and tobacco consumption among tea garden workers of Assam suggested that non-smoke tobacco is very common among the females and the respondents are multi user of both tobacco and alcohol. (Medhi GK et al)

THEORY 5

Risk factors associated with pregnancy outcomes are delayed commencement of antenatal care. There was poor perception of adverse pregnancy outcomes. The study recommended frequent community health talks, early commencement of antenatal and Utilization of Family planning services (Sadiq AA et al).

THEORY 6

Factors associated with adverse pregnancy outcome suggested that there is a strong association of socioeconomic and demographic factors on pregnancy outcomes. Mother with no education have higher chance of having adverse pregnancy outcome in comparison to educated mother. (Kebede AS et el).

Research Methodology

Study Design: Secondary analysis of cross sectional data from National Family Health Survey (2014-16)

Data Source: The data source used for the study was NFHS4 data that was requested and then downloaded from DHS website.

Sample: The NFHS survey gathered sample from 6, 99,686 females. As our study needs the data of Assam and we only require the data of female who became pregnant in the last five year, so we have selected Birth Recode (BR) file. It consist of sample of 51,952 women of Assam.

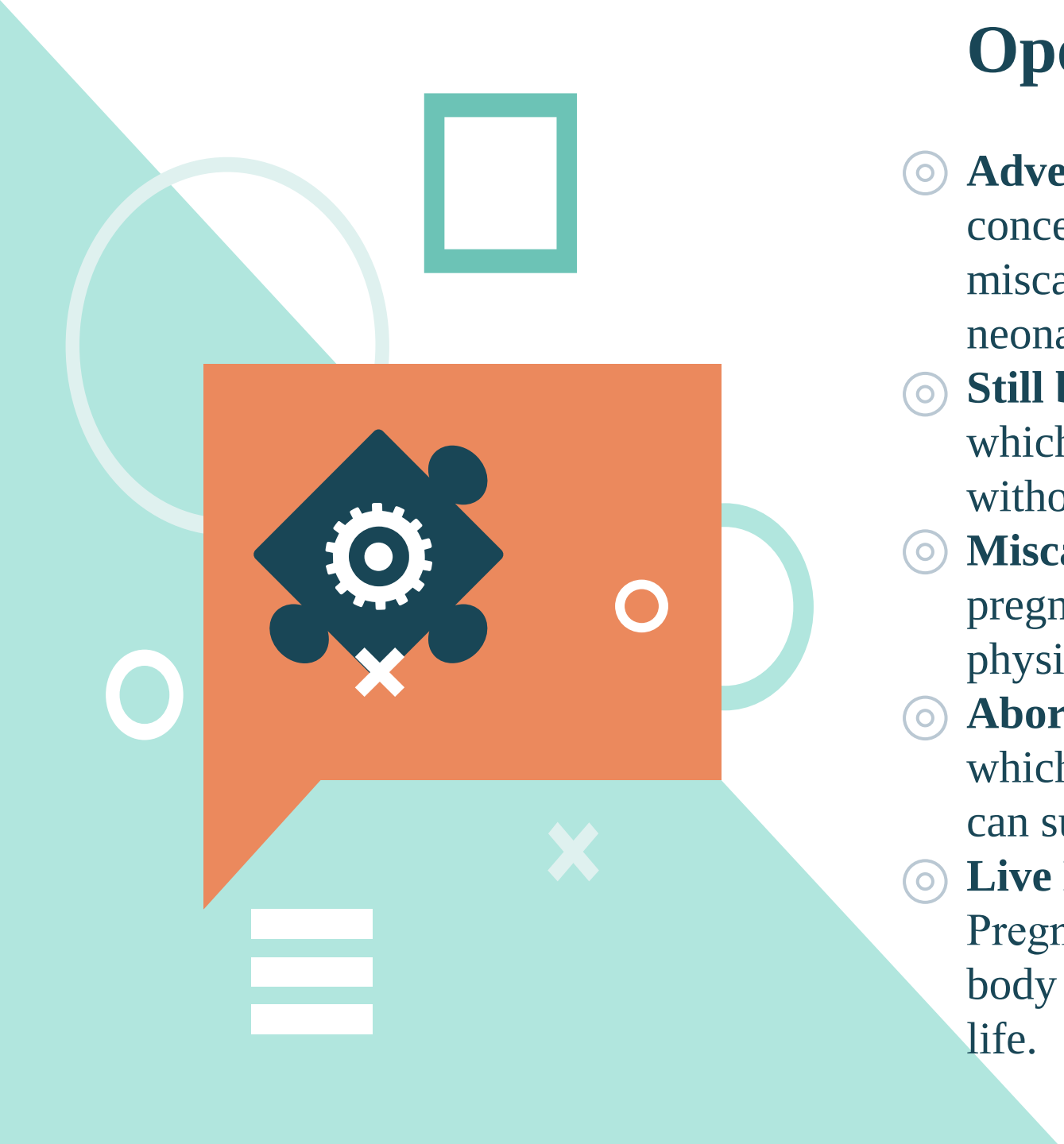
Variables:

Dependent Variable: Women with Adverse Pregnancy outcome

Independent Variable:

- Socio-demographic variables: Age of the female, female's education, religion of the female, place of residence, Wealth Index
- Behavioural variables: Alcohol and Tobacco consumption status, smoking in presence of the female
- Other Variables: anaemic status, number of ANC visits, time of first ANC visit

Statistical Analysis: For analysis SPSS version 22 was used. Different cross-tabulations were run and frequency tables were made to find the potential factors. A bivariate logistic regression was applied to see the association between all the potential variables and adverse pregnancy outcomes.

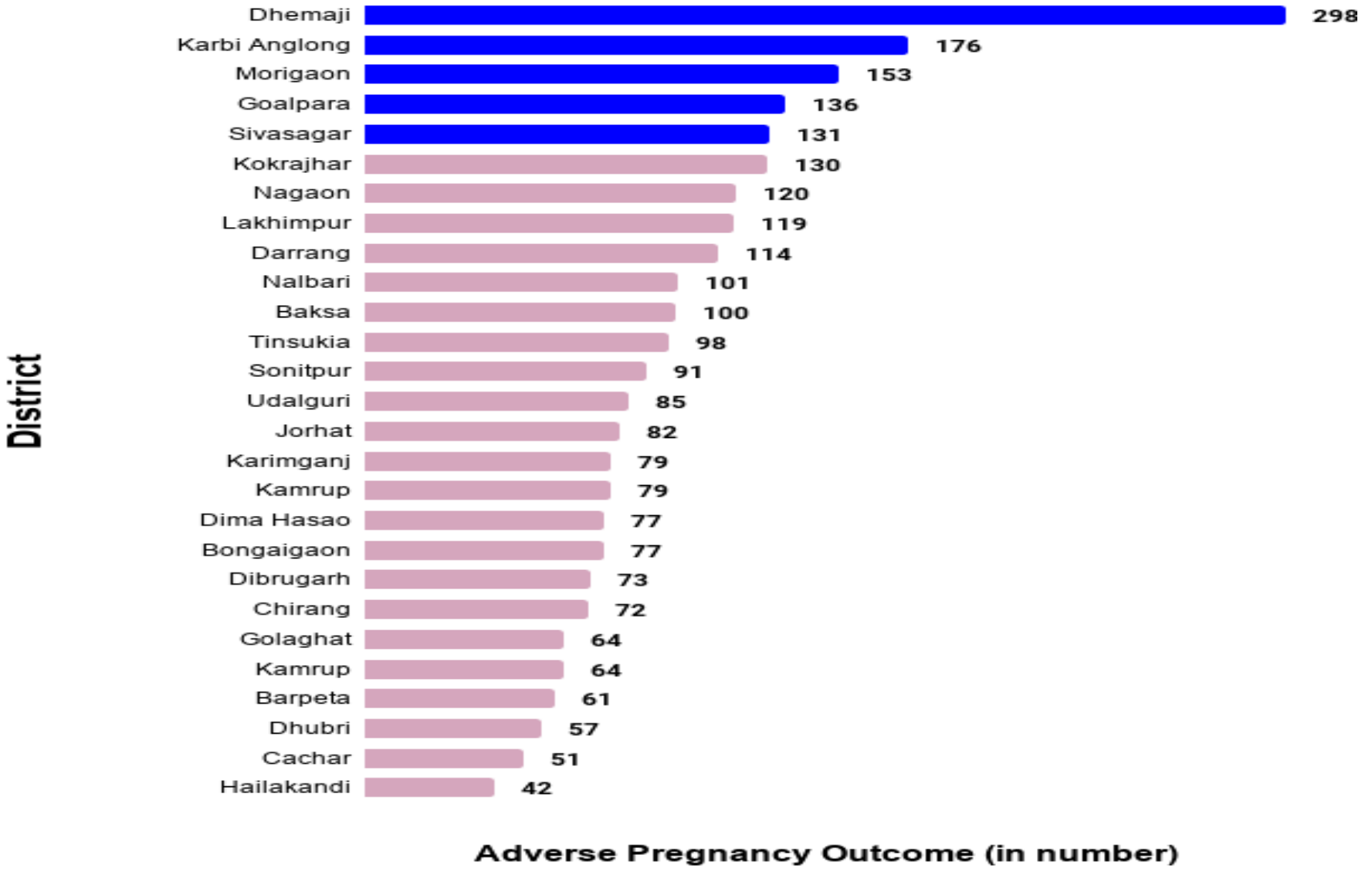


Operational Definitions:

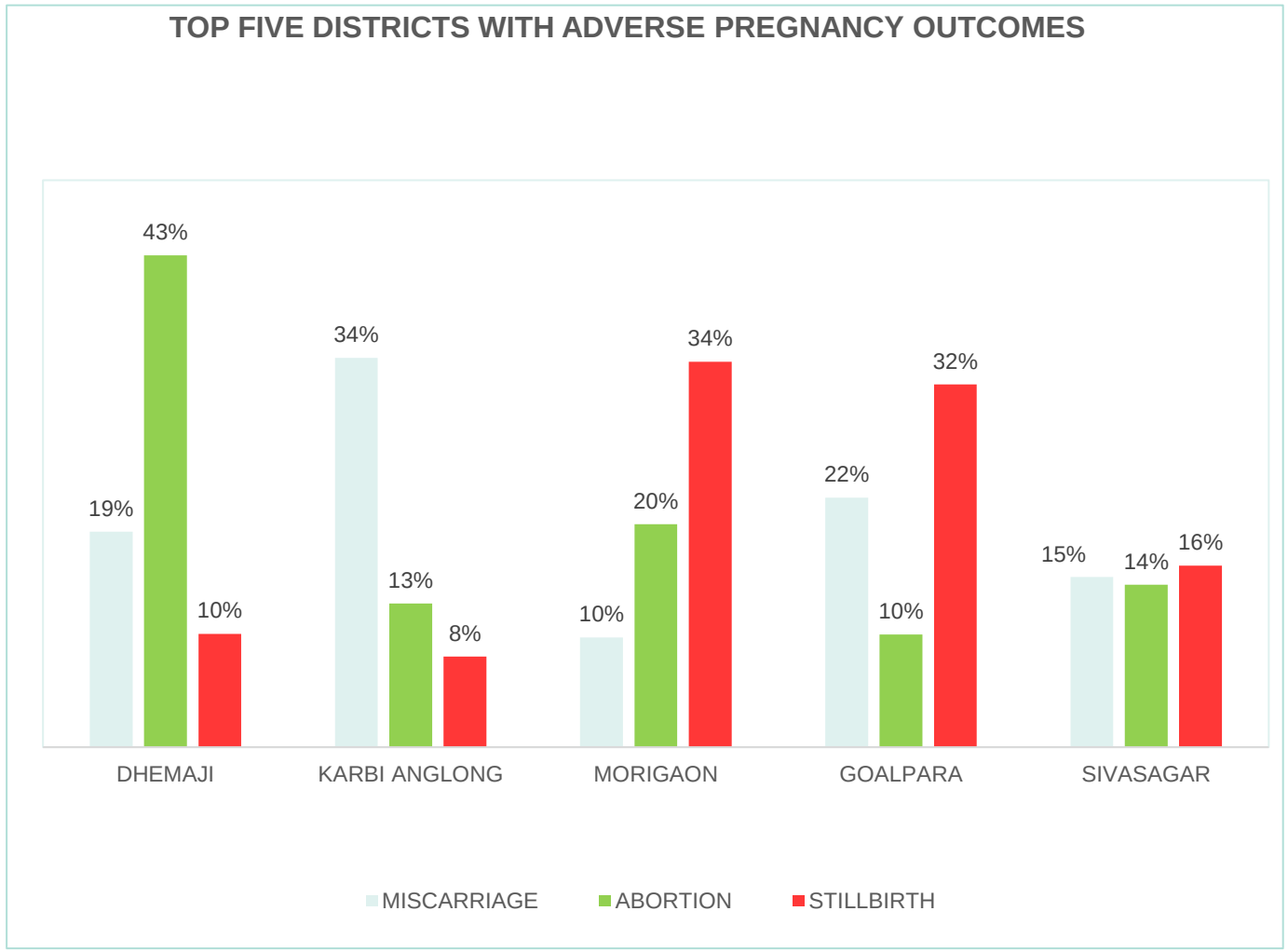
- **Adverse Pregnancy outcome** are the result of conception which include other than live birth i.e. miscarriage, stillbirth and abortion and results into neonatal death, maternal death, etc.
- **Still birth:** Stillbirth is an outcome in pregnancy in which a baby is born at or after 28 weeks of gestation without any sign of life.
- **Miscarriage:** The spontaneous loss of a woman's pregnancy before the twentieth week that can be both physically and emotionally painful.
- **Abortion:** Abortion is another outcome in pregnancy in which the embryo is removed from the uterus before it can survive without it.
- **Live Birth:** Live Birth is one of the outcome of Pregnancy in which foetus is extracted from mother’s body irrespective of its gestational age and shows sign of life.

RESULTS

District wise Prevalence of Adverse Pregnancy Outcome in Assam



RESULTS ANALYSIS



Dhemaji has 43% of cases which is the highest percentage of abortion cases.

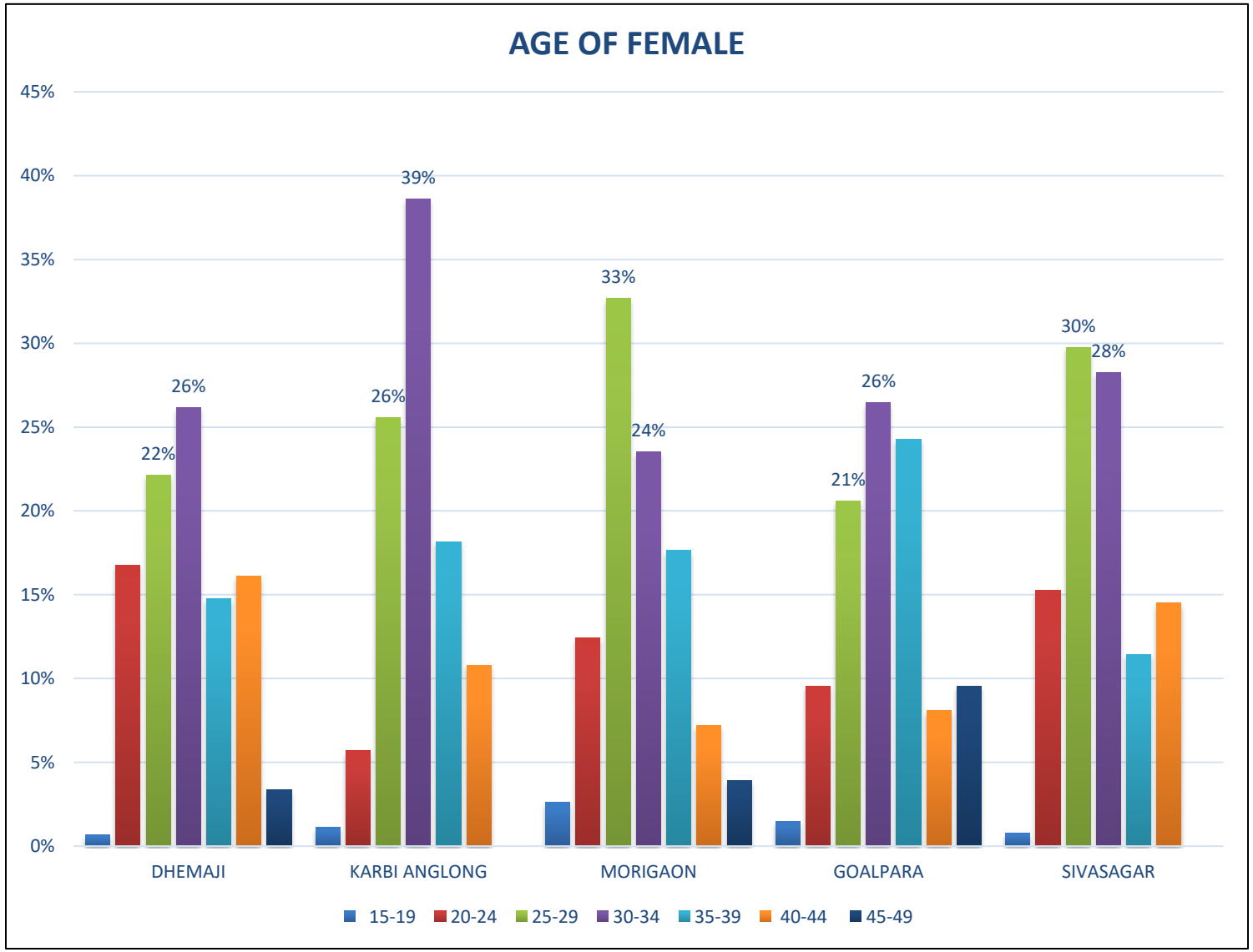
Karbi Anglong has the highest miscarriage cases (34%)

Morigaon has 34% of still birth cases which is highest among all the districts.

RESULTS ANALYSIS

Around 90% of the population from all the five districts stays in rural area whereas the remaining population stays in urban areas

RESULTS ANALYSIS

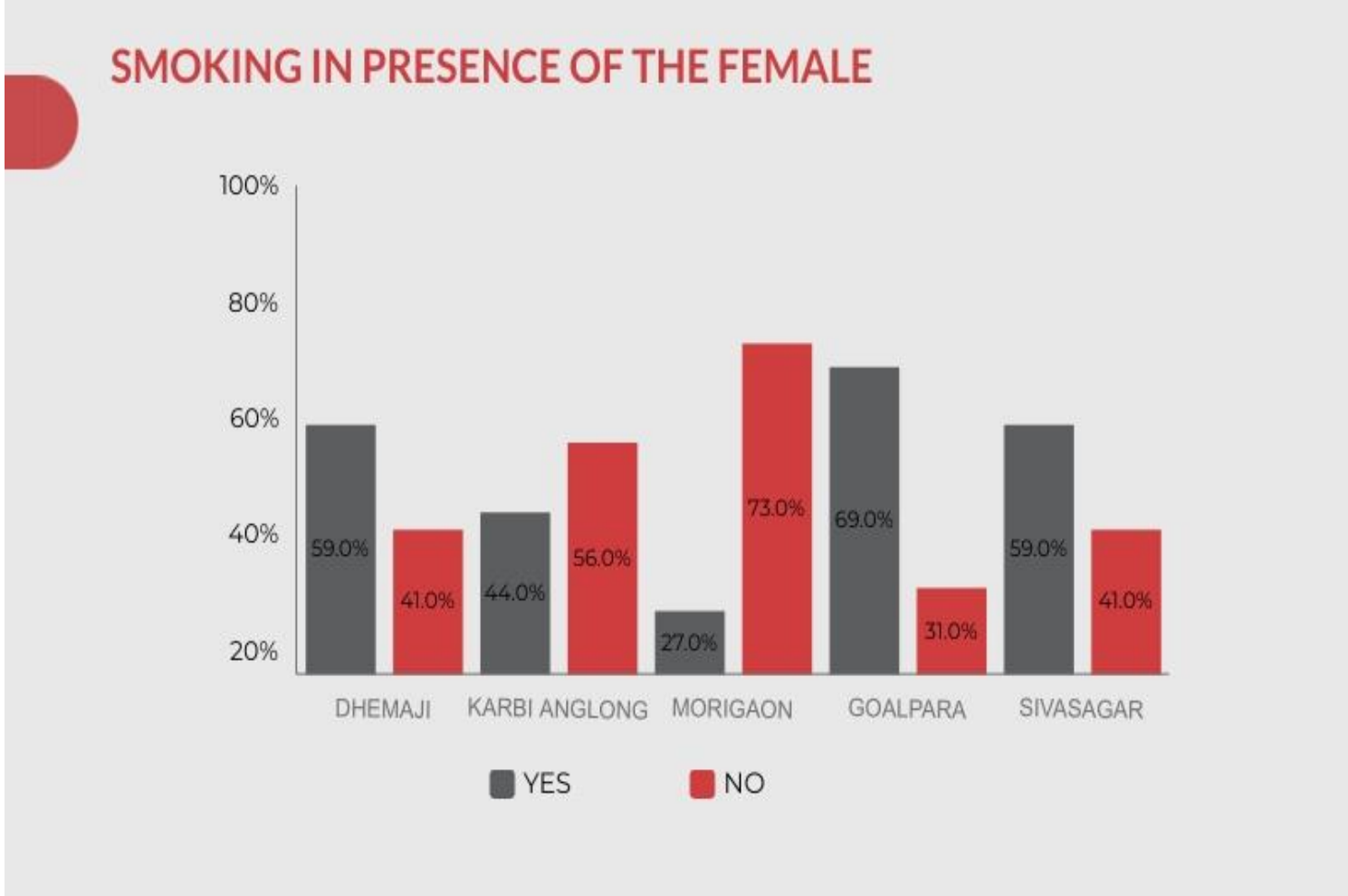


26% of female of Dhemaji is of 30-34 year of age

39% of female of Karbi Anglong is of 30-34 year of age.

In Morigaon and Sivasagar the highest percentage of women are of 25-29 age group.

RESULTS ANALYSIS

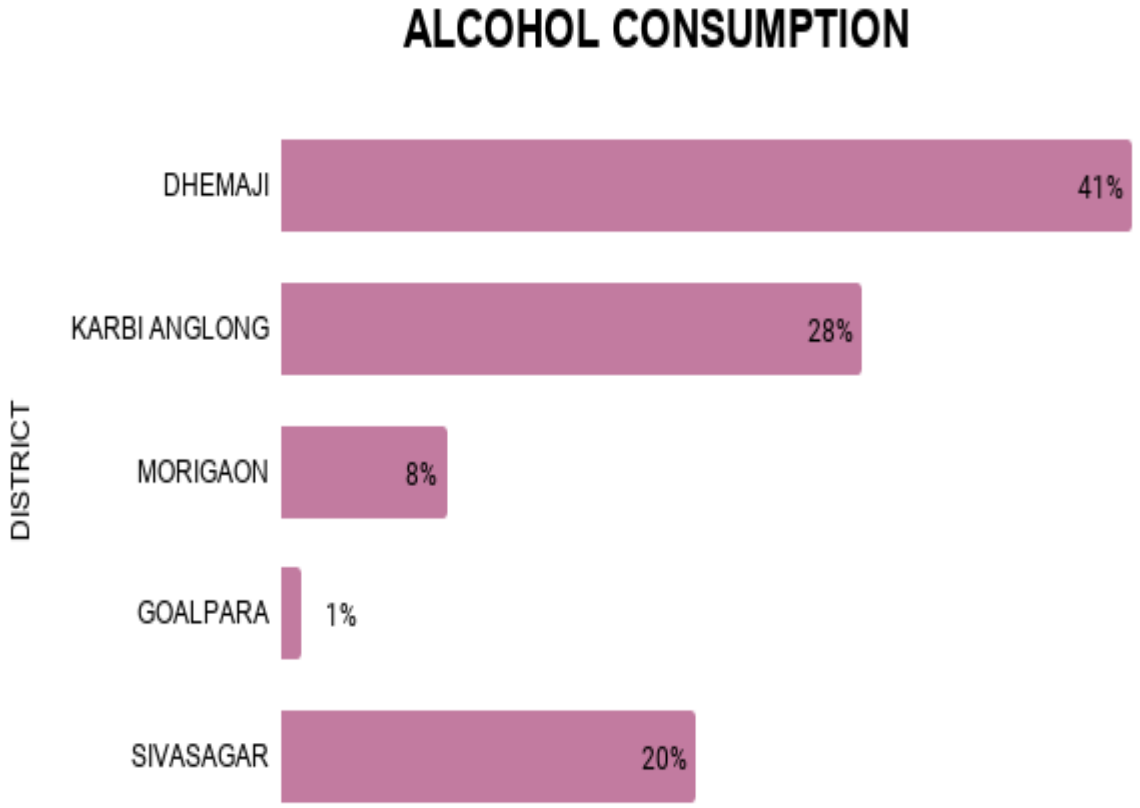


- The figure above shows passive smoking or smoking in presence of the female either by their family member or in their surroundings.
- 59% of the female were expose to smoking in the Dhemaji district.
- 69% of the female of Goalpara district were exposed to smoking.

RESULTS ANALYSIS

- The figure shows that around 28% of female of Dhemaji district were consuming tobacco either in the form of smoke or chewing.
- 33% of female of Karbi Angling district were consuming tobacco.

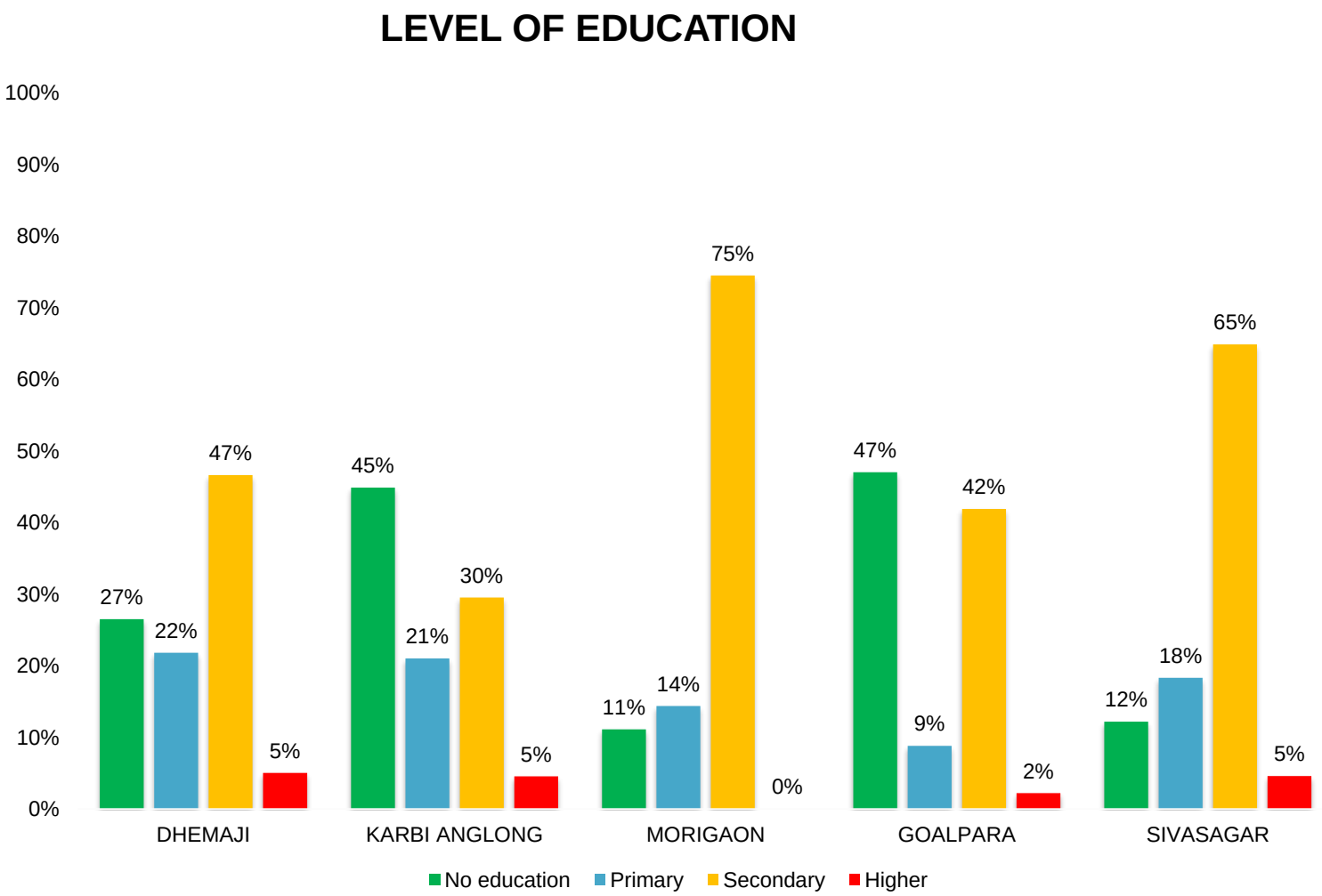
RESULTS ANALYSIS



The figure shows that around 41% of the sample women with adverse pregnancy outcome of the Dhemaji district were consuming alcohol.

Around 28% and 20% of female of Karbi Anglong and Sivasagar district were consuming alcohol.

RESULTS ANALYSIS



- The figure above shows that very few female have received education above secondary level.
- Most of the female of Karbi Anglong and Goalpara district are illiterate
- No female of Morigaon have received any higher education or professional degree.
- A study on the marriage and higher education among the Mishing tribe and Deori tribe of Assam suggested that the most of the females are illiterate and early marriage takes place among them.
- Family burden, household chores are the main reason of their school dropout.
- Mishing tribe are mostly resident of this districts.

DISCUSSION

DISTRICT	MISCARRIAGE	ABORTION	STILLBIRTH	TOTAL
DHEMAJI	6%	26%	1%	33%
KARBI ANGLONG	12%	8%	0%	20%
MORIGAON	3%	12%	1%	16%
GOALPARA	7%	6%	2%	15%
SIVASAGAR	5%	9%	1%	15%

Table*: Percentage of Miscarriage, abortion and stillbirths of 5 districts*

DISCUSSION

- As the age increases the odds of getting an abortion, miscarriage and stillbirth are more likely (P<0.001).
- The age group 25-29 year and 30-34 year have higher odds of getting an abortion, miscarriage, and stillbirth in comparison to 15-19year and 20-24year.
- The odds of having adverse pregnancy outcome is higher in illiterate female than an educated female.
- The odds of having adverse pregnancy outcome is higher in the female who consumes alcohol than in female who doesn't consume alcohol.
- Odds of having an adverse outcome are not significantly associated with the wealth index. The richer section has more chances of getting an abortion than the poorest class.
- Odds of having an adverse outcome are not significantly associated with religion, tobacco consumption, occupation, and the number of ANC visits.
- The major factors which we found are more associated with adverse pregnancy outcome in the district of Assam from the NFHS4 data area age factor, education, alcohol consumption, wealth index.
- Many socio cultural beliefs and myths are also associated with in various tribes like Bodos, Mishing, deori regarding food intake, household works. The females are not allowed to take many nutritional food due to cultural myths and this hamper health outcome in pregnant women. Bodos, Mishing and Deori tribe are mainly settled in Dhemaji, Karbi Anglong, Sivasagar, and etc. districts of Assam.

CONCLUSION:

- The NFHS data provide insight about the different factors and their association with the Pregnancy outcome (miscarriage, abortion, and stillbirth).
- The majorly affected districts that we found from our study from adverse pregnancy outcomes are Dhemaji, Karbi Anglong, Sivasagar, Morigaon and Goalpara
- The number of government health facilities in this districts are very less in comparison to other districts in the state. The number of CHC, PHC, and Sub-centres in Dhemaji district are 4, 22 and 98. There is no Sub-divisional Hospital in the district. Maybe this districts have less pressure on the government for setting health facilities.
- Lack of awareness and information should be addressed at all the sub-districts level and among the general public regarding stillbirth, miscarriage, and abortion with the help of effective health intervention, programs, and schemes.

CONCLUSION:

- The finding of this study provides a framework for formulating health programs and bringing some changes in the policy.
- It suggest that adverse pregnancy outcome is more common in illiterate females and those who consumes alcohol during pregnancy.
- It suggests that approaching the illiterate females of the society should be the main concern of the grass-root health workers and things to be taken care of, as they are the most unaware sector of the society.
- The poor sector should be made aware of the different schemes, proper counselling should be provided to ensure complete maternal health facility utilization.
- Community engagement is necessary to reduce maternal mortality. All the stakeholders should be engaged while formulating and implementing programs.

RECOMMENDATIONS:

- More health facilities should be set up in the majorly affected districts.
- IEC materials regarding food habits during pregnancy, harmful effects of alcohol and tobacco consumption during pregnancy, etc. should be developed in local languages.
- Community engagement activities should be designed for Illiterate Tribal women and their family members regarding the food habits during pregnancy, harmful effects of alcohol and tobacco consumption during pregnancy, etc.
- Street plays, local games, jingles, meetings should be arranged with informative messages regarding the health information by the frontline healthcare workers or local NGOs can be hired to perform these activities.
- Education and marriage at right age should be promoted to reduce adverse pregnancy outcome.

References

- World Health Organization. International statistical classification of diseases and related health problems. World Health Organization; 2004.
- Sedgh G, Singh S, Shah IH, Åhman E, Henshaw SK, Bankole A. Induced abortion: incidence and trends worldwide from 1995 to 2008. The Lancet. 2012 Feb 18;379(9816):625-32.
- Hure AJ, Powers JR, Mishra GD, Herbert DL, Byles JE, Loxton D. Miscarriage, preterm delivery, and stillbirth: large variations in rates within a cohort of Australian women. PLoS One. 2012;7(5).
- Library M. India - National Family Health Survey. 2017:1-15. http://rchiips.org/NFHS/NFHS-4Reports/India.pdf. Accessed January 28, 2018.
- Singh S, Mini GK, Thankappan KR. Tobacco use during pregnancy in rural Jharkhand, India. International Journal of Gynecology & Obstetrics. 2015 Nov 1; 131(2):170-3.
- Kochar PS, Dandona R, Kumar GA, Dandona L. Population-based estimates of still birth, induced abortion and miscarriage in the Indian state of Bihar. BMC pregnancy and childbirth. 2014 Dec 1; 14(1):413.
- Nair M, Choudhury MK, Choudhury SS, Kakoty SD, Sarma UC, Webster P, Knight M. Association between maternal anaemia and pregnancy outcomes: a cohort study in Assam, India. BMJ Global Health. 2016 Apr 1;1(1):e000026.
- Shankar P, Pathania V. Epidemiological predictor variables in relation to the outcome of pregnancy in an urban setting. International Journal of Community Medicine and Public Health. 2018 Oct;5(10):4489.
- Altijani N, Carson C, Choudhury SS, Rani A, Sarma UC, Knight M, Nair M. Stillbirth among women in nine states in India: rate and risk factors in study of 886,505 women from the annual health survey. BMJ open. 2018 Nov 1;8(11):e022583.
- Nykjaer C, Alwan NA, Greenwood DC, Simpson NA, Hay AW, White KL, Cade JE. Maternal alcohol intake prior to and during pregnancy and risk of adverse birth outcomes: evidence from a British cohort. J Epidemiol Community Health. 2014 Jun 1;68(6):542-9.

References

- Medhi GK, Hazarika NC, Mahanta J. Correlates of alcohol consumption and tobacco use among tea industry workers of Assam. Substance use & misuse. 2006 Jan 1;41(5):691-706.
- George SJ. The Bodo movement in Assam: unrest to accord. Asian Survey. 1994 Oct 1;34(10):878-92.
- Nath A. Inter District Disparities in Health Care Service of Assam. Retrieved September. 2010;25:2013.
- Kebede AS, Muche AA, Alene AG. Factors associated with adverse pregnancy outcome in Debre Tabor town, Northwest Ethiopia: a case control study. BMC research notes. 2018 Dec 1;11(1):820.
- Sadiq AA, Poggensee G, Nguku P, Sabitu K, Abubakar A, Puone T. Factors associated with adverse pregnancy outcomes and perceptions of risk factors among reproductive age women in Soba LGA, Kaduna State 2013. The Pan African Medical Journal. 2016;25.
- Mungoba TN, Mitonga HK, David SA, Musekiwa A, Nakale T. Factors associated with adverse pregnancy outcomes among women who delivered at intermediate hospital oshakati, Namibia.
- Goel MK, Roy P, Rasania SK, Roy S, Kumar Y, Kumar A. Wealth index and maternal health care: Revisiting NFHS-3. Indian journal of public health. 2015 Jul 1; 59(3):217.
- Gogoi M. Taboos and myths associated with pregnancy among the Bodos of Assam. International Journal for Innovative Research in Multidisciplinary Field. 2016;2(10):4.
- Pal S, Hazarika L. Marriage and higher education of Mishing and Deori women in Assam. research journal of social sciences. 2018 May;9(5).

THANK YOU !