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"A study to asses effectiveness of planned teaching program on knowledge regarding congenital anomalies and its prevention among eligible couples in selected area".

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ABSTRACT

Background: *Congenital disorders can be defined as structural or functional anomalies that occur during intrauterine life. Also called birth defects, congenital anomalies or congenital malformations, these conditions develop prenatally and may be identified before or at birth, or later in life.*

An estimated 6% of babies worldwide are born with a congenital disorder, resulting in hundreds of thousands of associated deaths. However, the true number of cases may be much higher because statistics do not often consider terminated pregnancies and stillbirths.

Some congenital disorders can be treated with surgical and non-surgical options, such as cleft lip and palate, clubfoot and hernias. Others, including heart defects, neural tube defects, and down syndrome, can cause lifelong impacts.

Congenital anomalies comprise a wide range of abnormalities of body structure or function that are present at birth and are of prenatal origin. For efficiency and practicality, the focus is commonly on major structural anomalies. These are defined as structural changes that have significant medical, social or cosmetic consequences for the affected individual, and typically require medical intervention. Examples include cleft lip and spina bifida.

Aim: *To Find the effectiveness of planned teaching program on knowledge regarding congenital anomalies and its prevention among eligible couples.*

Objective:

1. To assess the pre-existing knowledge regarding congenital Anomalies from selected community area

2. To assess the effectiveness of planned teaching program related to prevention of congenital anomalies among eligible couples.

3. To find out association between sociodemographic variables and level of knowledge regarding congenital anomalies and its prevention

Material and Method

AGE

Table showing distribution of demographic variable i.e., age, 20 (66.67%) sample belong to age group of 26 to 30 Years, 6 (20%) sample belong to age of 31 to 35 Years and 04 (13.33%) sample belong to age group of 20 to 25 Years.

MARRIAGE

Table showing distribution of demographic variable i.e., Marriage, Sample belong to marriage 24 months, 13 (43.33%) sample belong to Marriage 12 months, 11 (36.67%) Sample belong to marriage below 12 months 04 (13.33) and sample belong to marriage of 36 months 02 (6.67%).

RELIGION

Table showing distribution of demographic variable i.e., religion, 20 (66.67%) sample were Hindu, 8 (26.67%) students were Muslim and 2 (6.67%) students were Christian.

OCCUPATION

Table showing distribution of demographic variable i.e., Occupation, 16 (53.33%) sample were having service, 12 (40%) sample were farmer and 2 (6.67%) sample were working as labour.

TYPE OF FAMILY

Table showing distribution of demographic variable i.e., Type of family, 18 (60%) sample belong to Joint family and 12 (44%) sample belong to Nuclear Family.

EDUCATION

Table showing distribution of demographic variable i.e., Education, 19 (63.33%) samples were graduated, 7 (23.33%) samples were having secondary education and 2 (6.67%) sample were educated till primary and other level of education accordingly.

MONTHLY INCOME

Table showing distribution of demographic variable i.e., Monthly Income, 11 (36.67%) sample's monthly income were 30,000 & Above 30,000 accordingly, 5 (16.67%) sample's monthly income were 20,000 and 3 (10%) sample's monthly income where <10,000.

DO YOU HAVE ANY PAST MEDICAL HISTORY?

Table showing distribution of demographic variable i.e., Their past medical history, 16 (53.33%) samples were having past medical history of other diseases, 9 (30%) samples were having past medical history of Hypertension, 3 (10%) samples were having past medical history of Diabetes mellitus and 2 (6.67%) samples were having past medical history of Hyperthyroidism.

ARE YOU MARRIED IN RELATION?

Table showing distribution of demographic variable i.e., Married in relation, 23 (76.67%) sample were no married in relation and 7 (23.33%) sample were married in relation.

ANY TYPE OF FAMILY HISTORY OF BIRTH DEFECT?

Table showing distribution of demographic variable i.e., Family history of birth defect, 26 (86.67%) sample were not having family history of birth defect and 4 (13.33%) sample were having family history of birth defect.

PART III

Effectiveness of planned teaching program related to prevention of congenital anomalies among eligible couples.

Post-test level of knowledge regarding prevention of congenital anomalies among eligible couples according to frequency and percentage.

Table presents in post-test 28 (93.33%) sample were having good knowledge level and 2 (6.67%) sample were having average knowledge level regarding prevention of congenital anomalies among eligible couples.

Post-test level of knowledge regarding prevention of congenital anomalies among eligible couples according to Mean and SD.

Table presents in post-test mean score knowledge regarding prevention of congenital anomalies among eligible couples was 25.86 and SD was 3.203.

Comparison of Pre-test and Post-Test level of knowledge regarding prevention of congenital anomalies among eligible couples according to frequency and percentage.

Table shows that there was significant increase in post test scores of eligible couples. The mean post-test knowledge score 25.86 (SD=3.203) of eligible couples was significantly higher than their pre-test knowledge score 7.93 (SD=3.269). The paired ‘t’ test statistic value is 18.797. Since, the p value for the test is less than 0.05, the research hypothesis accepted at 95% confidence level it shows that the planned teaching programme was effective method for improving the knowledge of congenital anomalies among eligible couples.

Part IV

Association between sociodemographic variables and level of knowledge regarding congenital anomalies and its prevention.

The table presents that there was no significant association between sociodemographic variable and pre-test level of knowledge regarding prevention of congenital anomalies among eligible couples expect occupation.

In above table occupation is significantly associated with level of knowledge regarding prevention of congenital anomalies among eligible couples expect occupation after application of chi square test.

Chi square value was 14.766 and p value was 0.0020 so there is significant association between occupation and Level of knowledge regarding prevention of congenital anomalies among eligible couples.

INTRODUCTION

Congenital disorders can be defined as structural or functional anomalies that occur during intrauterine life. Also called birth defects, congenital anomalies or congenital malformations, these conditions develop prenatally and may be identified before or at birth, or later in life.

An estimated 6% of babies worldwide are born with a congenital disorder, resulting in hundreds of thousands of associated deaths. However, the true number of cases may be much higher because statistics do not often consider terminated pregnancies and stillbirths.

Some congenital disorders can be treated with surgical and non-surgical options, such as cleft lip and palate, clubfoot and hernias. Others, including heart defects, neural tube defects, and down syndrome, can cause lifelong impacts.

Congenital disorders are one of the main causes of the global burden of disease, and low- and middle-income countries are disproportionately affected. These areas are also less likely to have facilities to treat reversible conditions such as clubfoot, leading to more pronounced and long-lasting effects.

Researchers have identified thousands of different congenital anomalies, and some are more disruptive than others. If not detected and treated quickly, some can be fatal or cause lifelong disabilities. Currently, the Centers for Disease Control and Prevention notes that congenital anomalies are the leading cause of death for infants during the first year of life.

CATEGORIES OF CONGENITAL ABNORMALITIES

Chromosome Abnormalities

Chromosomes are structures that carry genetic material inherited from one generation to the next. Twenty-three come from the father; twenty-three come from the mother. The genes carried on the chromosomes determine how the baby will grow, what she will look like, and to a certain extent, how she will function.

When a child is born without 46 chromosomes, or when pieces of the chromosomes are missing or duplicated, she may look and behave differently from others her age and may develop serious health problems (e.g. Down syndrome).

Single-Gene Abnormalities

Sometimes the chromosomes are normal in number, but one or more of the genes on them are abnormal.

Autosomal dominant inheritance is a genetic abnormality that can be passed on to the child if one of the parents has the same abnormality.

Autosomal recessive inheritance is a genetic abnormality that can be passed on to the child only if both parents carry the same defective gene (e.g. Cystic fibrosis, Tay-Sachs disease, sickle cell anemia). In these cases, both parents are normal, but 1 in 4 of their children would be expected to be affected.

- X-linked conditions are genetic abnormalities that mainly occur in males (e.g. hemophilia, color blindness, forms of muscular dystrophy). Females may carry the abnormal gene that causes X-linked recessive disorders, but they may not show the actual disease.
- X-linked dominant conditions occur in both males and females; however, they are more severe in males (e.g. certain neurological conditions affecting the brain, skin disorders and types of skeletal or craniofacial disorders).

CAUSES AND RISK FACTORS

GENETIC

- A minority of congenital disorders are caused by genetic abnormalities i.e. chromosomal abnormalities (for example Down syndrome or trisomy 21) or single gene defects (for example cystic fibrosis).
- Consanguinity (when parents are related by blood) also increases the prevalence of rare genetic congenital disorders and nearly doubles the risk for neonatal and childhood death, intellectual disability and other anomalies.

SOCIOECONOMIC AND DEMOGRAPHIC FACTORS

- Low-income may be an indirect determinant of congenital disorders, with a higher frequency among resource-constrained families and countries. It is estimated that about 94% of severe congenital disorders occur in low- and middle-income countries. An indirect determinant, this higher risk relates to a possible lack of access to sufficient nutritious foods by pregnant women, an increased exposure to agents or factors such as infection and alcohol, or poorer access to health care and screening.
- Maternal age is also a risk factor for abnormal intrauterine fetal development. Advanced maternal age increases the risk of chromosomal abnormalities, including Down syndrome.

ENVIRONMENTAL FACTORS INCLUDING INFECTIONS

- Others occur because of environmental factors like maternal infections (syphilis, rubella, Zika), exposure to radiation, certain pollutants, maternal nutritional deficiencies (e.g., iodine, folate deficiency), illness (maternal diabetes) or certain drugs (alcohol, phenytoin).

NEED FOR STUDY

Congenital anomalies are structural, behavioral, functional, or metabolic defects that occur before the birth of a baby, and their nature and type are highly dependent on the causative agent. It refers to changes in embryonic or fetal development caused by genetic, environmental, or unknown factors that result in physical and/or mental impairment. It has been estimated that about 15 to 25% of congenital anomalies are due to recognized genetic conditions, 8 to 12% to environmental factors, and 20 to 25% to multifactorial inheritance. The majority of congenital anomalies, 40 to 60% are unexplained. Another consequence of birth defects is the high death rate within the first year of life. Infant mortality is an important indicator of a country's or community's health,

Studying congenital anomalies is crucial because they are a leading cause of infant mortality, can result in lifelong disabilities if not detected and treated early, and understanding their causes and mechanisms can lead to potential prevention strategies, improved diagnosis, and better treatment options for affected individuals throughout their lives. So I found as a researcher to assess effectiveness of planned teaching program on knowledge regarding congenital anomalies and its prevention among eligible couples in selected area. Birth defects are common. Every four and a half minutes, a baby in the United States is born with a birth defect. This equals 1 out of every 33 babies born or 120,000 babies each year.

Congenital anomalies comprise a wide range of abnormalities of body structure or function that are present at birth and are of prenatal origin. For efficiency and practicality, the focus is commonly on major structural anomalies. These are defined as structural changes that have significant medical, social or cosmetic consequences for the affected individual, and typically require medical intervention. Examples include cleft lip and spina bifida.

Symptoms of birth defects range from mild to severe. They can affect almost any part of the body like your bones and organs. During pregnancy, a healthcare provider will use screening tests to look for signs of birth defects. Signs of a birth defect during pregnancy can include:

- Protein levels from a blood test that are higher or lower than expected.
- Extra fluid behind a fetus' neck during an ultrasound.
- Structural abnormalities of a fetus' internal organs, like the heart, during a fetal echocardiogram.
- Some birth defects won't be present until a child is born or shortly after birth. Common signs and symptoms of birth defects among infants and toddlers include:
- An abnormal rhythm of their heart.
- Difficulty breathing on their own.
- Not responding to their name being called or loud noises.
- Their eyes don't follow you or an object in front of them.
- Difficulty feeding.
- Their head, face, eyes, ears or mouth have unique characteristics.
- They don't meet developmental milestones for their age.

Part I

Distribution of Socio-demographic variables according to frequency and percentage.

1) **Age**

Age	Frequency	Percentage
a) 20 to 25 Years	04	13.33
b) 26 to 30 Years	20	66.67
c) 31 to 35 Years	06	20.00
d) Above 35 Year	00	0.00

Table showing distribution of demographic variable i.e., age, 20 (66.67%) sample belong to age group of 26 to 30 Years, 6 (20%) sample belong to age of 31 to 35 Years and 04 (13.33%) sample belong to age group of 20 to 25 Years.

2) **Duration of Marriage**

Duration of Marriage	Frequency	Percentage
a) Below 12 Months	04	13.33
b) 12 Months	11	36.67
c) 24 Months	13	43.33
d) 36 Months	02	6.67

3) **Religion**

Religion	Frequency	Percentage
a) Hindu	20	66.67
b) Muslim	08	26.67
c) Christian	02	6.67
d) Other	00	0.00

Table showing distribution of demographic variable i.e., religion, 20 (66.67%) sample were Hindu, 8 (26.67%) students were Muslim and 2 (6.67%) students were Christian.

4) **Occupation**

Occupation	Frequency	Percentage
a) Labour	2	6.67
b) Service	16	53.33
c) Farmer	12	40.00
d) Other	00	0.00

Table showing distribution of demographic variable i.e., Occupation, 16 (53.33%) sample were having service, 12 (40%) sample were farmer and 2 (6.67%) sample were working as labour.

5) **Type of Family**

Type of Family	Frequency	Percentage
a) Joint Family	18	60.00
b) Nuclear Family	12	40.00

Table showing distribution of demographic variable i.e., Type of family, 18 (60%) sample belong to Joint family and 12 (44%) sample belong to Nuclear Family.

6) Education

Education	Frequency	Percentage
a) Primary	02	6.67
b) Secondary	07	23.33
c) Graduate	19	63.33
d) Other	02	6.67

Table showing distribution of demographic variable i.e., Education, 19 (63.33%) samples were graduated, 7 (23.33%) samples were having secondary education and 2 (6.67%) sample were educated till primary and other level of education accordingly.

7) Monthly Income

Annual Income	Frequency	Percentage
a) <10,000/-	03	10.00
b) 20,000/-	05	16.67
c) 30,000/-	11	36.67
d) Above 30,000/-	11	36.67

Table showing distribution of demographic variable i.e., Monthly Income, 11 (36.67%) sample's monthly income were 30,000 & Above 30,000 accordingly, 5 (16.67%) sample's monthly income were 20,000 and 3 (10%) sample's monthly income where <10,000.

8) Do you have any Past medical history?

Do you have any Past medical history?	Frequency	Percentage
a) Hypertension	09	30.00
b) Diabetes Mellitus	03	10.00
c) Hyperthyroidism	02	6.67
d) Any Other (specify)	16	53.33

Table showing distribution of demographic variable i.e., Their past medical history, 16 (53.33%) samples were having past medical history of other diseases, 9 (30%) samples were having past medical history of Hypertension, 3 (10%) samples were having past medical history of Diabetes mellitus and 2 (6.67%) samples were having past medical history of Hyperthyroidism.

9) Are you married in relation?

Are you married in relation?	Frequency	Percentage
a) Yes	07	23.33
b) No	23	76.67

Table showing distribution of demographic variable i.e., Married in relation, 23 (76.67%) sample were no married in relation and 7 (23.33%) sample were married in relation.

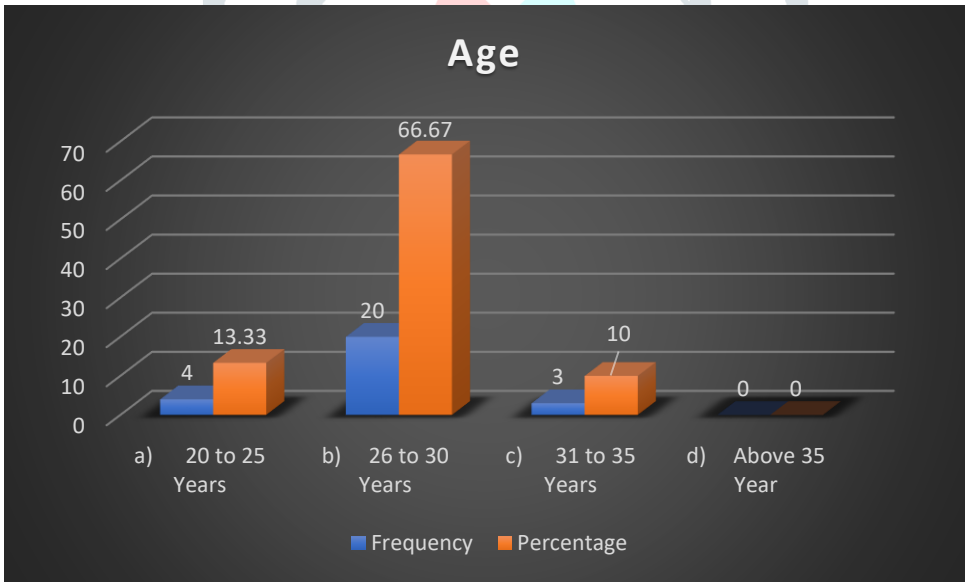
10) Any type of family history of birth defect?

Any type of family history of birth defect?	Frequency	Percentage
a) Yes	04	13.33
b) No	26	86.67

Table showing distribution of demographic variable i.e., Family history of birth defect, 26 (86.67%) sample were not having family history of birth defect and 4 (13.33%) sample were having family history of birth defect.

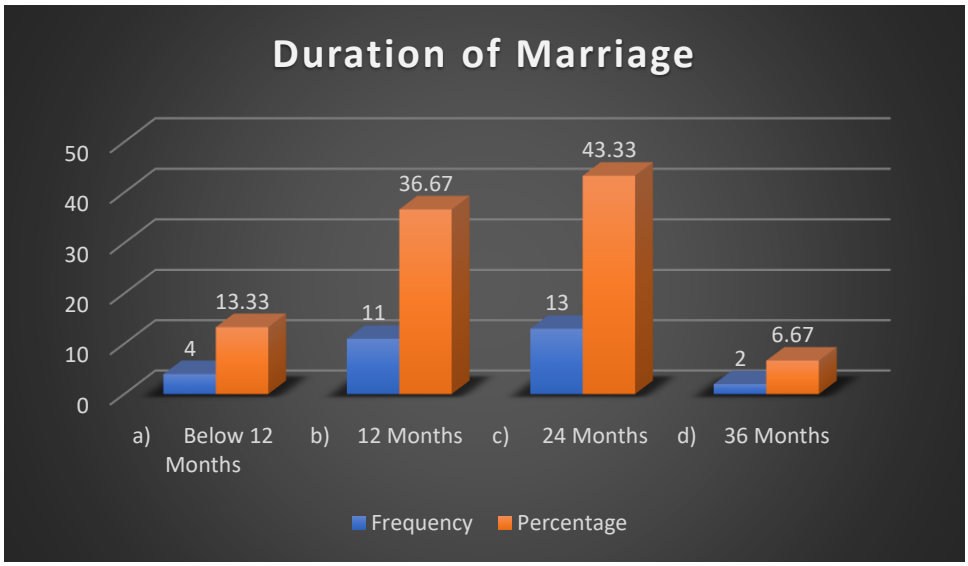
Graphical presentation of distribution of Socio-demographic variables according to frequency and percentage.

1) Age



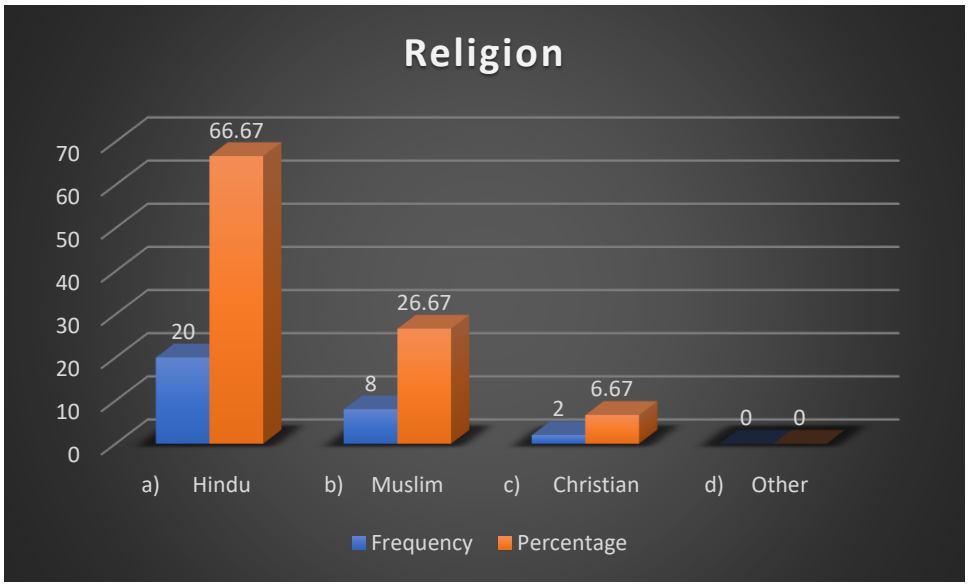
Graphical presentation of distribution of Socio-demographic variables i.e. Age, according to frequency and percentage.

2) Duration of Marriage



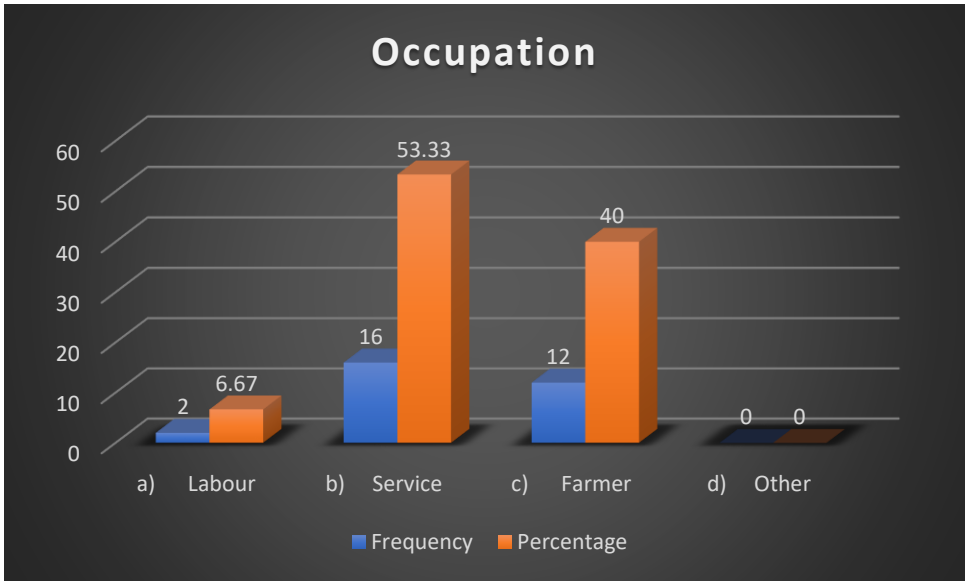
Graphical presentation of distribution of Socio-demographic variables i.e. Duration of marriage, according to frequency and percentage.

3) Religion



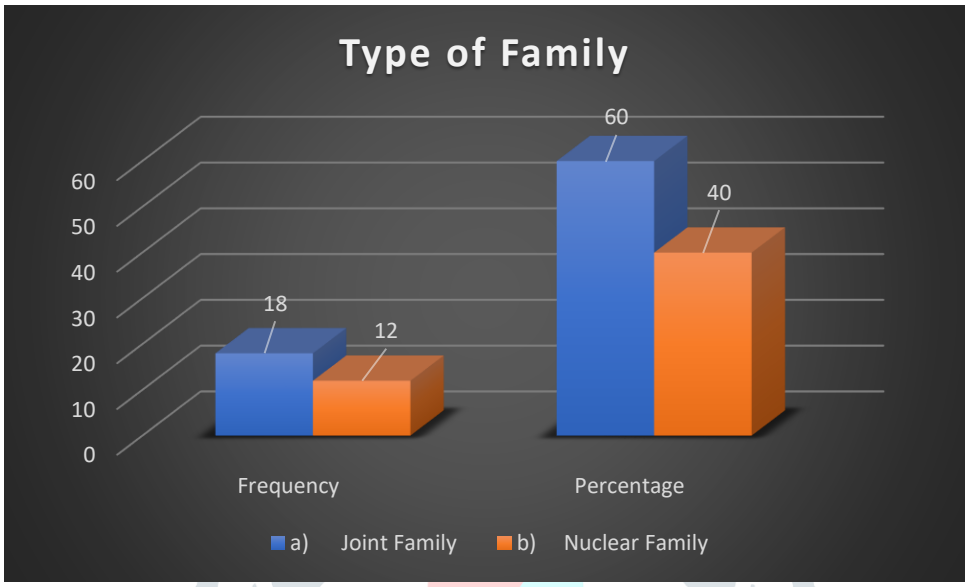
Graphical presentation of distribution of Socio-demographic variables i.e. Religion, according to frequency and percentage.

4) Occupation



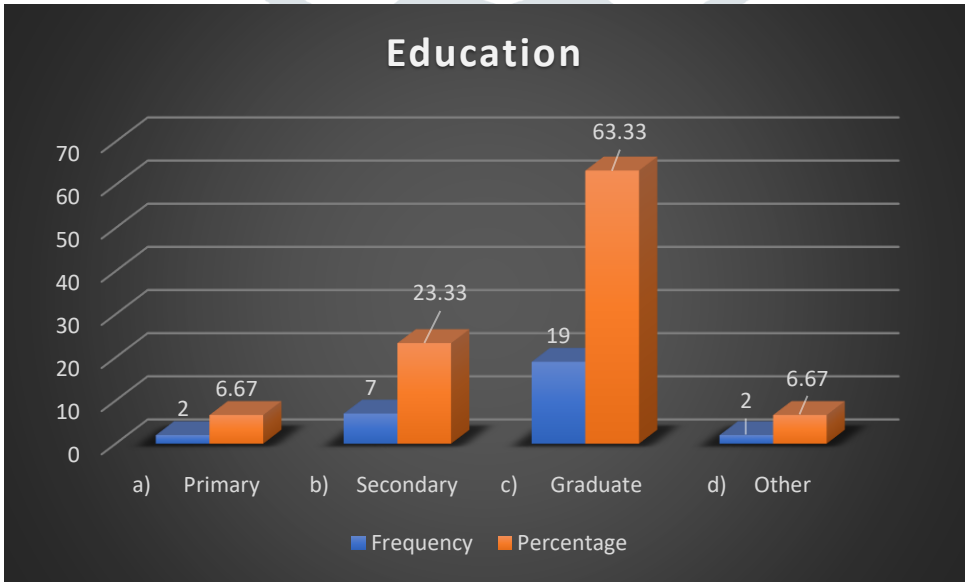
Graphical presentation of distribution of Socio-demographic variables i.e. Occupation, according to frequency and percentage.

5) Type of Family



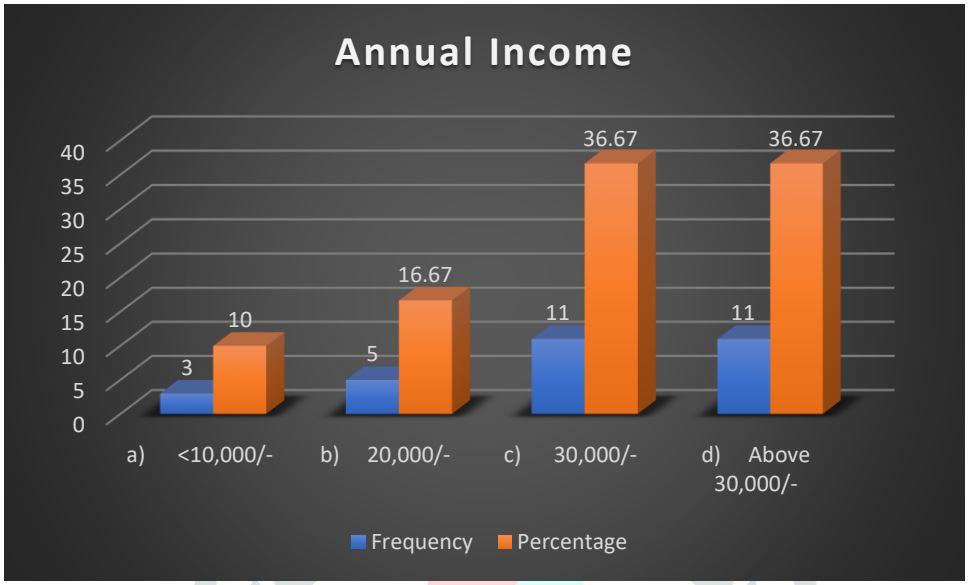
Graphical presentation of distribution of Socio-demographic variables i.e. Type of family, according to frequency and percentage.

6) Education



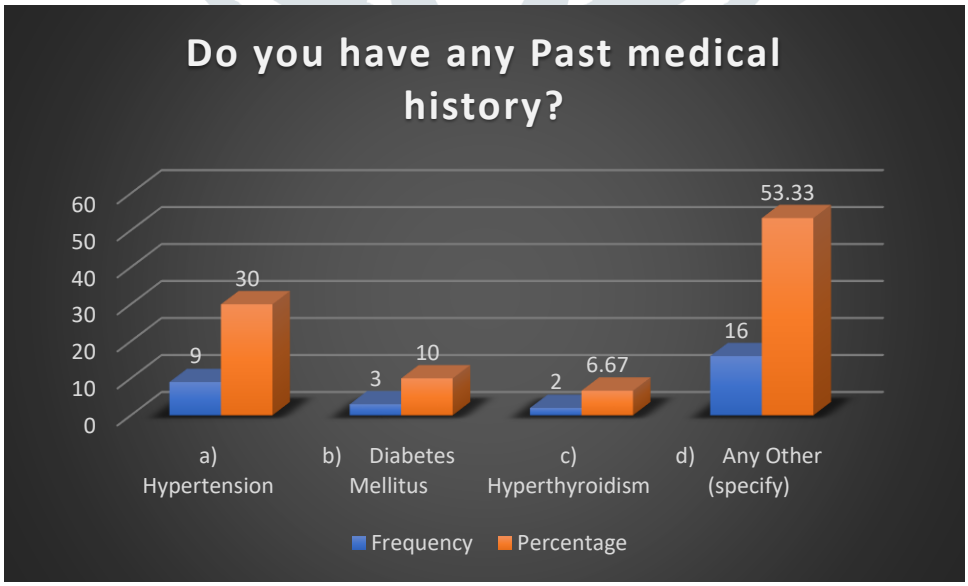
Graphical presentation of distribution of Socio-demographic variables i.e. Education, according to frequency and percentage.

7) Monthly Income



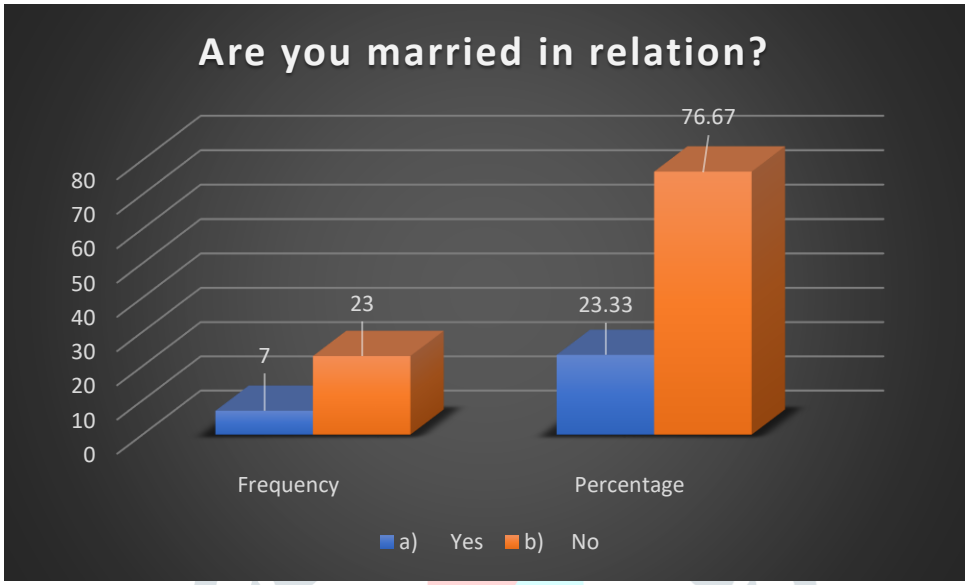
Graphical presentation of distribution of Socio-demographic variables i.e. Monthly Income, according to frequency and percentage.

8) Do you have any Past medical history?



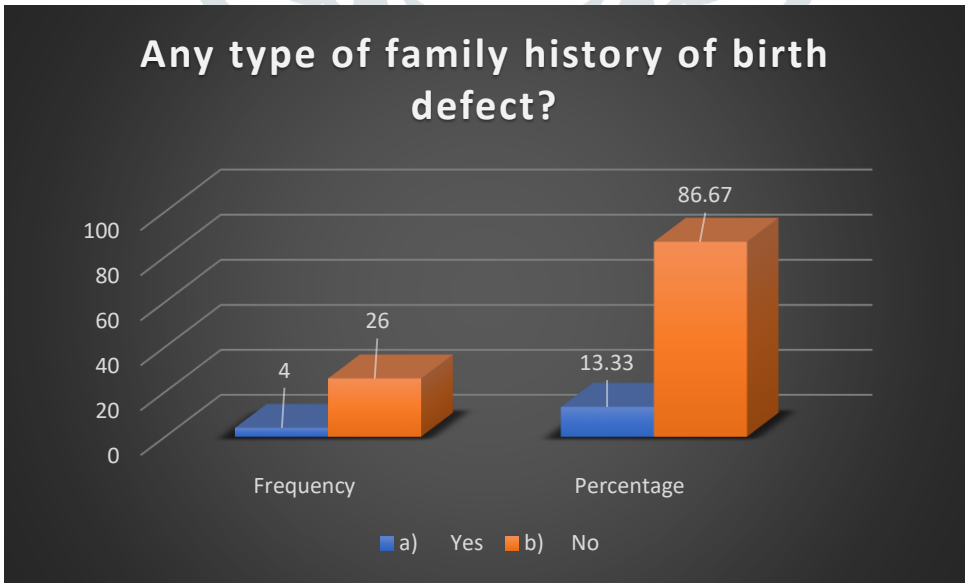
Graphical presentation of distribution of Socio-demographic variables i.e. Past medical history, according to frequency and percentage.

9) Are you married in relation?



Graphical presentation of distribution of Socio-demographic variables i.e. Married in relation, according to frequency and percentage.

10) Any type of family history of birth defect?



Graphical presentation of distribution of Socio-demographic variables i.e. History of birth defect, according to frequency and percentage.

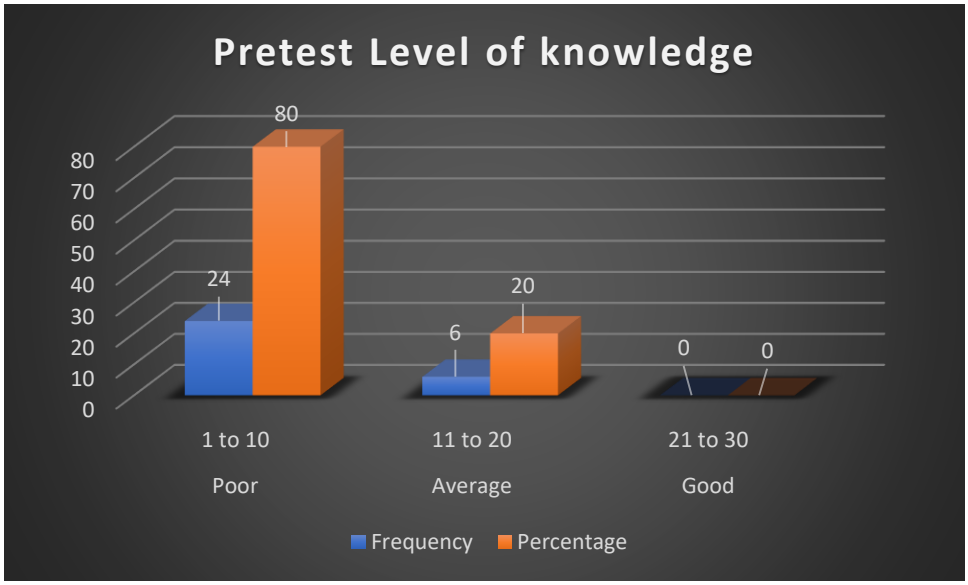
Part II

Assessment of the pre-test level of knowledge regarding congenital anomalies and its prevention among eligible couples in selected area.

Pre-Test level of knowledge regarding congenital anomalies and its prevention among eligible couples in selected area according to frequency and percentage.

Level of Knowledge	Scoring	Frequency	Percentage
Poor	1 to 10	24	80
Average	11 to 20	6	20
Good	21 to 30	00	0

Table presents in pre-test 24 (80%) sample were having poor knowledge level and 6 (20%) students were having average knowledge level regarding congenital anomalies and its prevention among eligible couples in selected area.

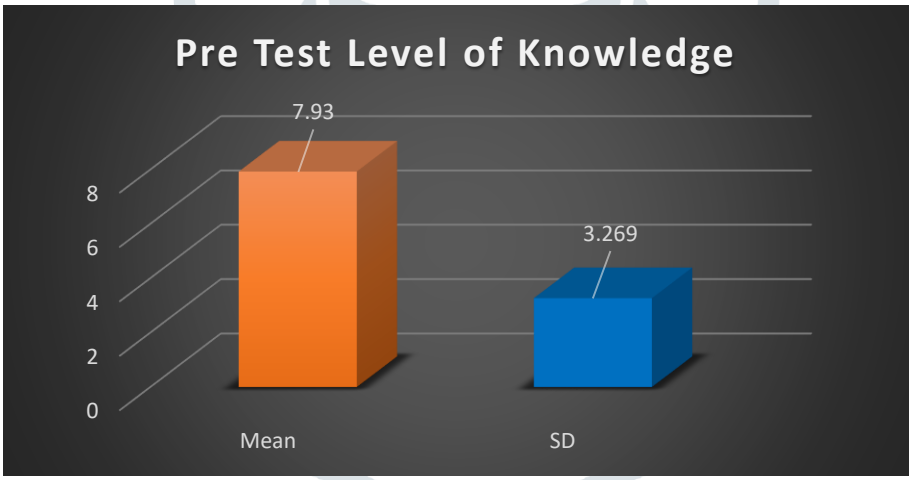


Graphical Distribution Pre-test level of knowledge regarding congenital anomalies and its prevention among eligible couples in selected area.

Pre-Test level of knowledge regarding congenital anomalies and its prevention among eligible couples in selected area according to Mean and SD.

Level of Knowledge	Scoring	Mean	SD
Poor	1 to 10	7.93	3.269
Average	11 to 20		
Good	21 to 30		

Table presents in pre-test mean score about knowledge level regarding congenital anomalies and its prevention was 793 and SD was 3.269.



Graphical Distribution Pre-test level of knowledge regarding congenital anomalies and its prevention according to Mean and SD.

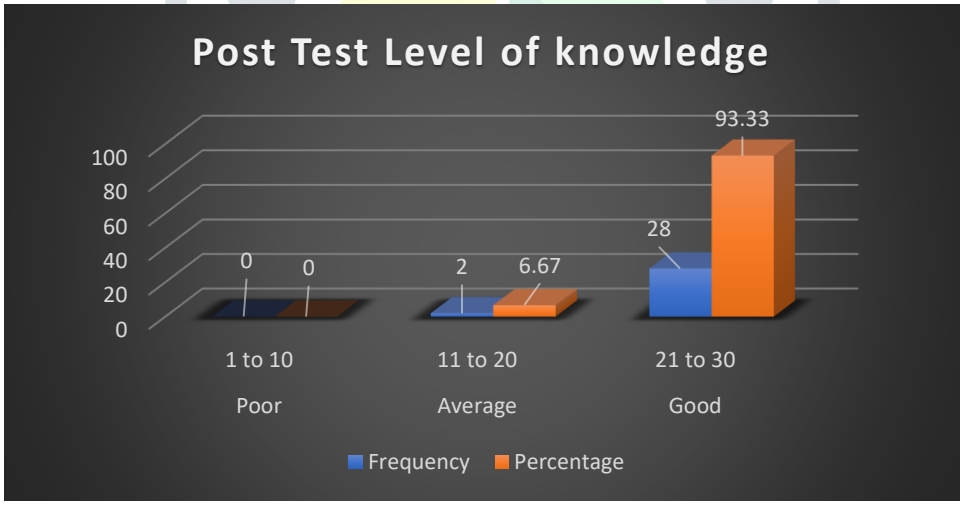
Part III

Effectiveness of planned teaching program related to prevention of congenital anomalies among eligible couples.

Post-test level of knowledge regarding prevention of congenital anomalies among eligible couples according to frequency and percentage.

Level of Knowledge	Scoring	Frequency	Percentage
Poor	1 to 10	00	0.00
Average	11 to 20	02	6.67
Good	21 to 30	28	93.33

Table presents in post-test 28 (93.33%) sample were having good knowledge level and 2 (6.67%) sample were having average knowledge level regarding prevention of congenital anomalies among eligible couples.

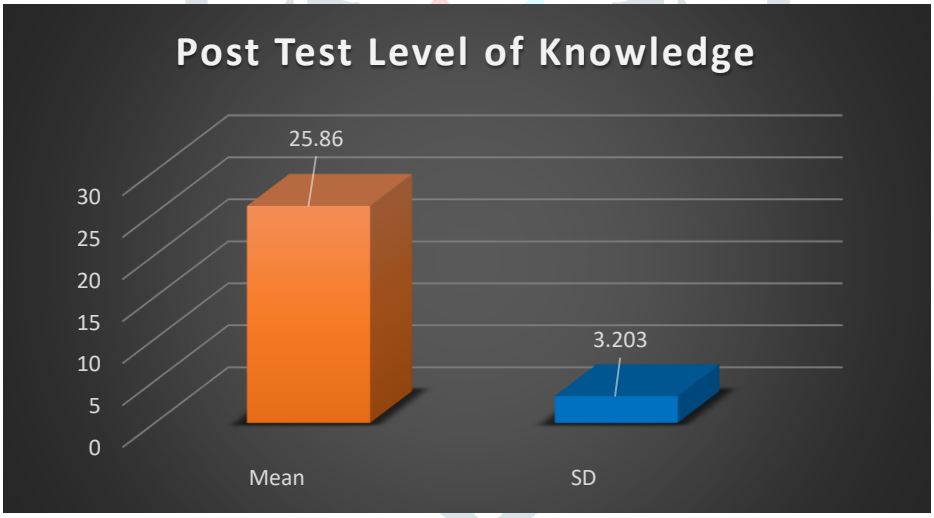


Graphical Distribution Post-test level of knowledge regarding prevention of congenital anomalies among eligible couples according to frequency and percentage.

Post-test level of knowledge regarding prevention of congenital anomalies among eligible couples according to Mean and SD.

Level of Knowledge	Scoring	Mean	SD
Poor	1 to 10	25.86	3.203
Average	11 to 20		
Good	21 to 30		

Table presents in post-test mean score knowledge regarding prevention of congenital anomalies among eligible couples was 25.86 and SD was 3.203.

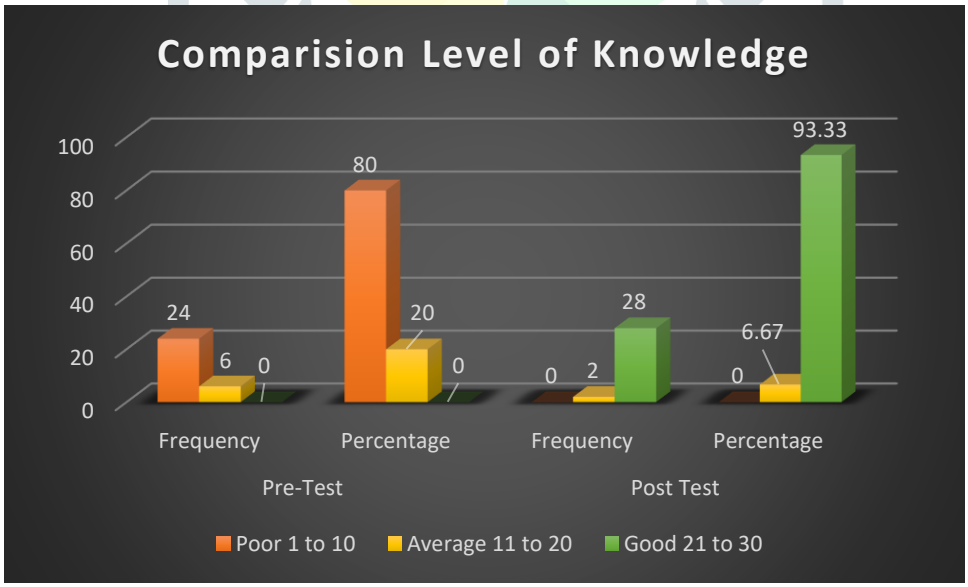


Graphical Distribution Pre-test level of knowledge regarding prevention of congenital anomalies among eligible couples according Mean and SD.

Comparison of Pre-test and Post-Test level of knowledge regarding prevention of congenital anomalies among eligible couples according to frequency and percentage.

Level of Knowledge	Scoring	Pre-Test		Post Test	
		Frequency	Percentage	Frequency	Percentage
Poor	1 to 10	24	80	00	0.00
Average	11 to 20	6	20	02	6.67
Good	21 to 30	00	0	28	93.33

The able presents that eligible couples were grouped in three categories according to their knowledge scores as poor, average and good scores obtained in pre and post assessment. In pre-test majority of sample 24 (80%) were in poor category and 6 (20%) sample were in average category of Knowledge scores. Where as in post-test after planned teaching programme majority of 28 (93.33%) sample were in the category of good knowledge scores and 2 (6.67%) sample were in the category of average knowledge scores.

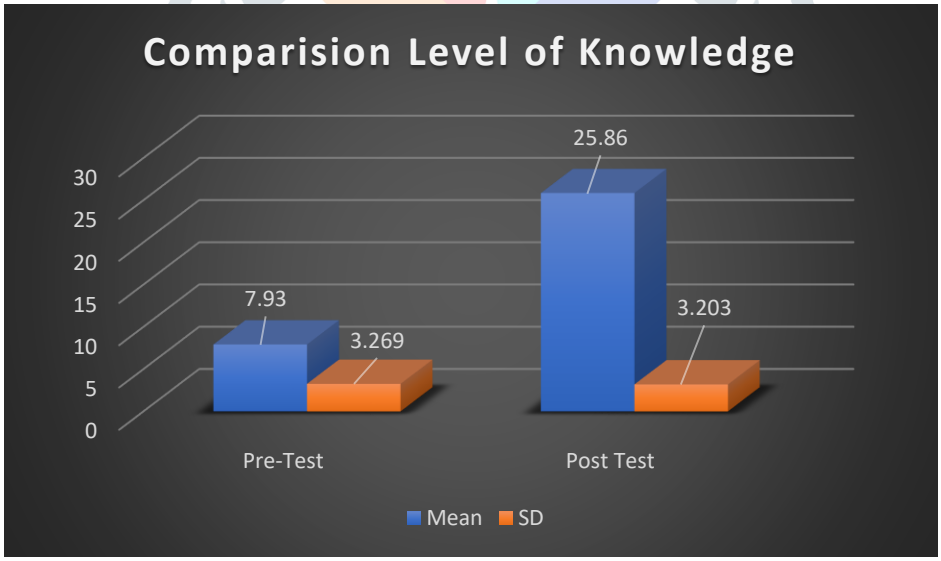


Graphical Distribution of comparison of Pre-test and Post-Test level of knowledge score regarding prevention of congenital anomalies among eligible couples according Frequency and Percentage.

Comparison of Pre-test and Post-Test level of knowledge score regarding prevention of congenital anomalies among eligible couples according to Mean and SD.

	Pre-Test	Post Test	Mean Difference	Paired t Test
Mean	7.93	25.86	17.933	P Value = 0.0001
SD	3.269	3.203		t Value = 18.797

Table shows that there was significant increase in post test scores of eligible couples. The mean post-test knowledge score 25.86 (SD=3.203) of eligible couples was significantly higher than their pre-test knowledge score 7.93 (SD=3.269). The paired 't' test statistic value is 18.797. Since, the p value for the test is less than 0.05, the research hypothesis accepted at 95% confidence level it shows that the planned teaching programme was effective method for improving the knowledge of congenital anomalies among eligible couples.



Graphical Distribution of comparison of Pre-test and Post-Test level of knowledge score regarding prevention of congenital anomalies among eligible couples according to Mean and SD.

Part IV

Association between sociodemographic variables and level of knowledge regarding congenital anomalies and its prevention.

Demographic Variables	Level of Knowledge			Chi Square Value	P Value	Interpretation
	Poor	Average	Good			
1) Age						
a) 20 to 25 Years	03	01	00	0.1042	0.9492	NA
b) 26 to 30 Years	16	04	00			
c) 31 to 35 Years	05	01	00			
d) Above 35 Year	00	00	00			
2) Duration of Marriage						
a) Below 12 Months	02	02	00	3.645	0.3024	NA
b) 12 Months	10	01	00			
c) 24 Months	10	03	00			
d) Others	02	00	00			
3) Religion						
a) Hindu	15	05	00	1.094	0.5788	NA
b) Muslim	07	01	00			
c) Christian	02	00	00			
d) Others	00	00	00			
4) Occupation						
a) Labour	02	00	00	14.766	0.0020	SA*
b) Service	13	03	00			
c) Farmer	09	00	00			
d) Other	00	03	00			
5) Type of Family						
a) Joint Family	13	05	00	1.701	0.1921	NA
b) Nuclear Family	11	01	00			
6) Education						
a) Primary	02	00	00	1.617	0.6556	NA
b) Secondary	06	01	00			
c) Graduate	14	05	00			
d) Other	02	00	00			
7) Annual Income						
a) <10,000/-	03	00	00	1.136	0.7683	NA

b) 20,000/-	**04**	**01**	**00**			
c) 30,000/-	**09**	**02**	**00**			
d) Above 30,000/-	**08**	**03**	**00**			
8) Do you have any Past medical history?						
a) Hypertension	**07**	**02**	**00**	**1.528**	**0.6759**	**NA**
b) Diabetes Mellitus	**03**	**00**	**00**			
c) Hyperthyroidism	**02**	**00**	**00**			
d) Any Other (specify)	**12**	**04**	**00**			
9) Are you married in relation?						
a) Yes	**06**	**01**	**00**	**0.1863**	**0.6660**	**NA**
b) No	**18**	**05**	**00**			
10) Any type of family history of birth defect?						
a) Yes	**03**	**01**	**00**	**0.0721**	**0.7883**	**NA**
b) No	**21**	**05**	**00**			

The table presents that there was no significant association between sociodemographic variable and pre-test level of knowledge regarding prevention of congenital anomalies among eligible couples expect occupation.

*In above table occupation is significantly associated with level of knowledge regarding prevention of congenital anomalies among eligible couples expect occupation after application of chi square test.

Chi square value was 14.766 and p value was 0.0020 so there is significant association between occupation and Level of knowledge regarding prevention of congenital anomalies among eligible couples.

Part I

Distribution of Socio-demographic variables according to frequency and percentage.

1) Age

Age	Frequency	Percentage
e) 20 to 25 Years	04	13.33
f) 26 to 30 Years	20	66.67
g) 31 to 35 Years	06	20.00
h) Above 35 Year	00	0.00

Table showing distribution of demographic variable i.e., age, 20 (66.67%) sample belong to age group of 26 to 30 Years, 6 (20%) sample belong to age of 31 to 35 Years and 04 (13.33%) sample belong to age group of 20 to 25 Years.

2) Duration of Marriage

Duration of Marriage	Frequency	Percentage
e) Below 12 Months	04	13.33
f) 12 Months	11	36.67
g) 24 Months	13	43.33
h) 36 Months	02	6.67

Table showing distribution of demographic variable i.e., Marriage, Sample belong to marriage 24 months, 13 (43.33%) sample belong to Marriage 12 months, 11 (36.67%) Sample belong to marriage below 12 months 04 (13.33) and sample belong to marriage of 36 months 02 (6.67%).

3) Religion

Religion	Frequency	Percentage
e) Hindu	20	66.67
f) Muslim	08	26.67
g) Christian	02	6.67
h) Other	00	0.00

Table showing distribution of demographic variable i.e., religion, 20 (66.67%) sample were Hindu, 8 (26.67%) students were Muslim and 2 (6.67%) students were Christian.

4) Occupation

Occupation	Frequency	Percentage
e) Labour	2	6.67
f) Service	16	53.33
g) Farmer	12	40.00
h) Other	00	0.00

Table showing distribution of demographic variable i.e., Occupation, 16 (53.33%) sample were having service, 12 (40%) sample were farmer and 2 (6.67%) sample were working as labour.

5) Type of Family

Type of Family	Frequency	Percentage
c) Joint Family	18	60.00
d) Nuclear Family	12	40.00

Table showing distribution of demographic variable i.e., Type of family, 18 (60%) sample belong to Joint family and 12 (44%) sample belong to Nuclear Family.

6) Education

Education	Frequency	Percentage
e) Primary	02	6.67
f) Secondary	07	23.33
g) Graduate	19	63.33
h) Other	02	6.67

Table showing distribution of demographic variable i.e., Education, 19 (63.33%) samples were graduated, 7 (23.33%) samples were having secondary education and 2 (6.67%) sample were educated till primary and other level of education accordingly.

7) Monthly Income

Annual Income	Frequency	Percentage
e) <10,000/-	03	10.00
f) 20,000/-	05	16.67
g) 30,000/-	11	36.67
h) Above 30,000/-	11	36.67

Table showing distribution of demographic variable i.e., Monthly Income, 11 (36.67%) sample's monthly income were 30,000 & Above 30,000 accordingly, 5 (16.67%) sample's monthly income were 20,000 and 3 (10%) sample's monthly income where <10,000.

8) Do you have any Past medical history?

Do you have any Past medical history?	Frequency	Percentage
e) Hypertension	09	30.00
f) Diabetes Mellitus	03	10.00
g) Hyperthyroidism	02	6.67
h) Any Other (specify)	16	53.33

Table showing distribution of demographic variable i.e., Their past medical history, 16 (53.33%) samples were having past medical history of other diseases, 9 (30%) samples were having past medical history of Hypertension, 3 (10%) samples were having past medical history of Diabetes mellitus and 2 (6.67%) samples were having past medical history of Hyperthyroidism.

9) Are you married in relation?

Are you married in relation?	Frequency	Percentage
c) Yes	07	23.33
d) No	23	76.67

Table showing distribution of demographic variable i.e., Married in relation, 23 (76.67%) sample were no married in relation and 7 (23.33%) sample were married in relation.

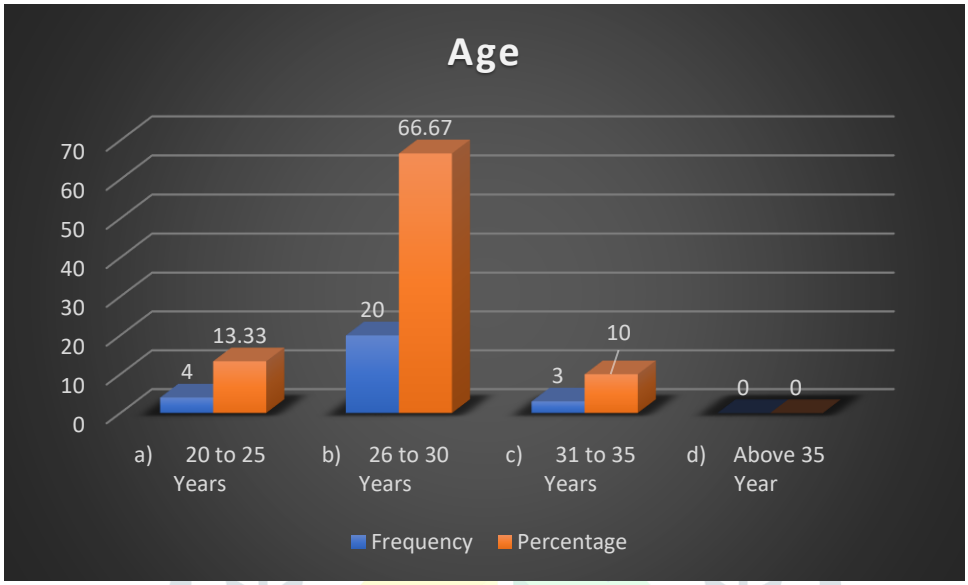
10) Any type of family history of birth defect?

Any type of family history of birth defect?	Frequency	Percentage
c) Yes	04	13.33
d) No	26	86.67

Table showing distribution of demographic variable i.e., Family history of birth defect, 26 (86.67%) sample were not having family history of birth defect and 4 (13.33%) sample were having family history of birth defect.

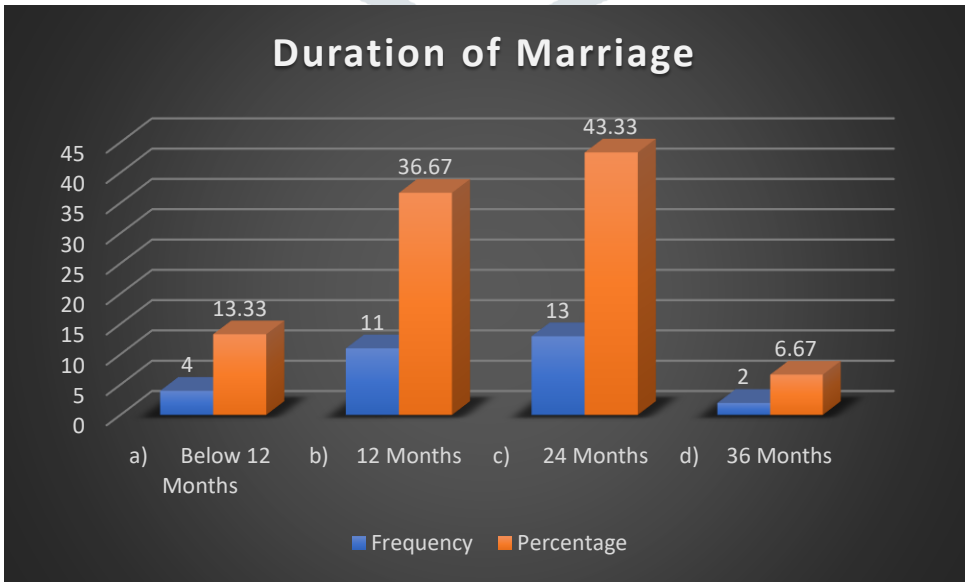
Graphical presentation of distribution of Socio-demographic variables according to frequency and percentage.

11) Age



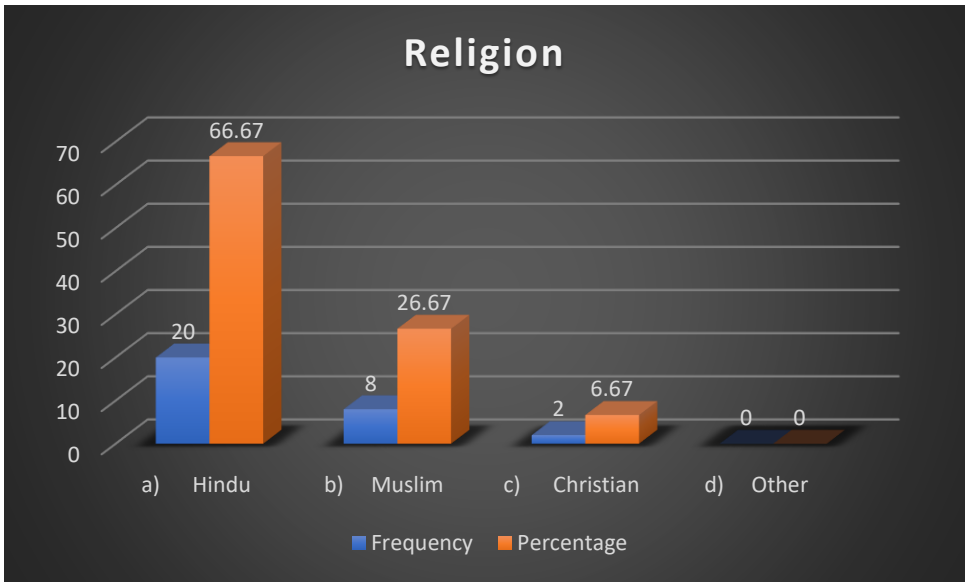
Graphical presentation of distribution of Socio-demographic variables i.e. Age, according to frequency and percentage.

12) Duration of Marriage



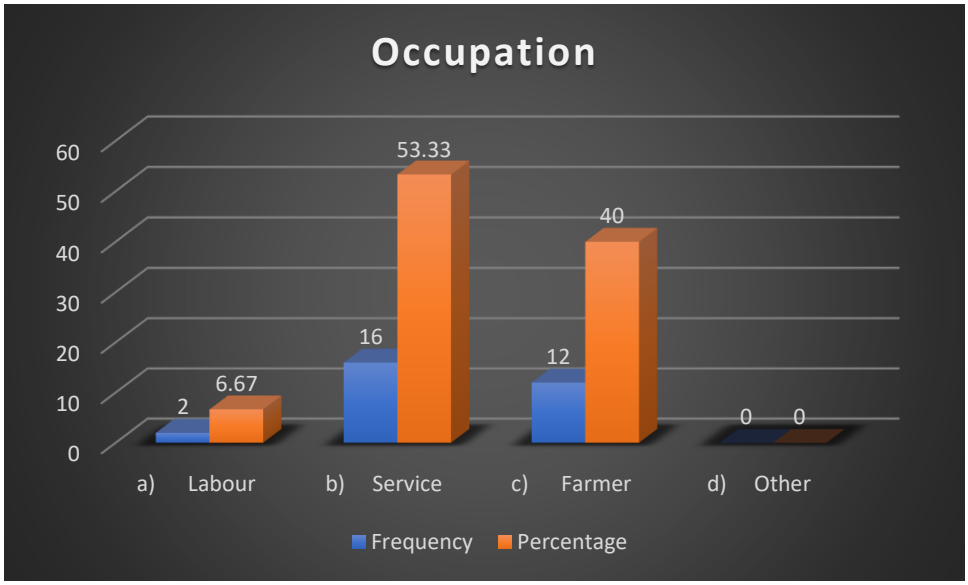
Graphical presentation of distribution of Socio-demographic variables i.e. Duration of marriage, according to frequency and percentage.

13) Religion



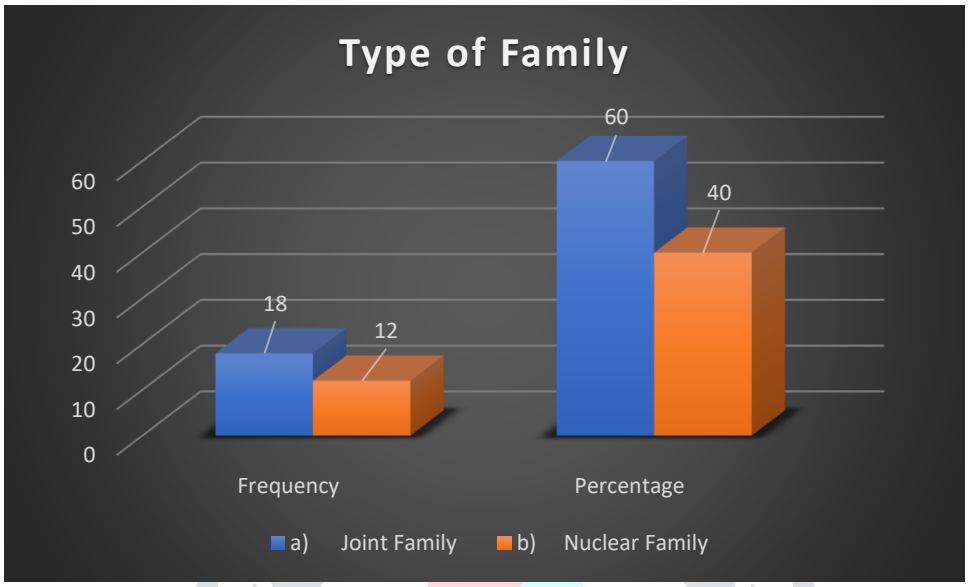
Graphical presentation of distribution of Socio-demographic variables i.e. Religion, according to frequency and percentage.

14) Occupation



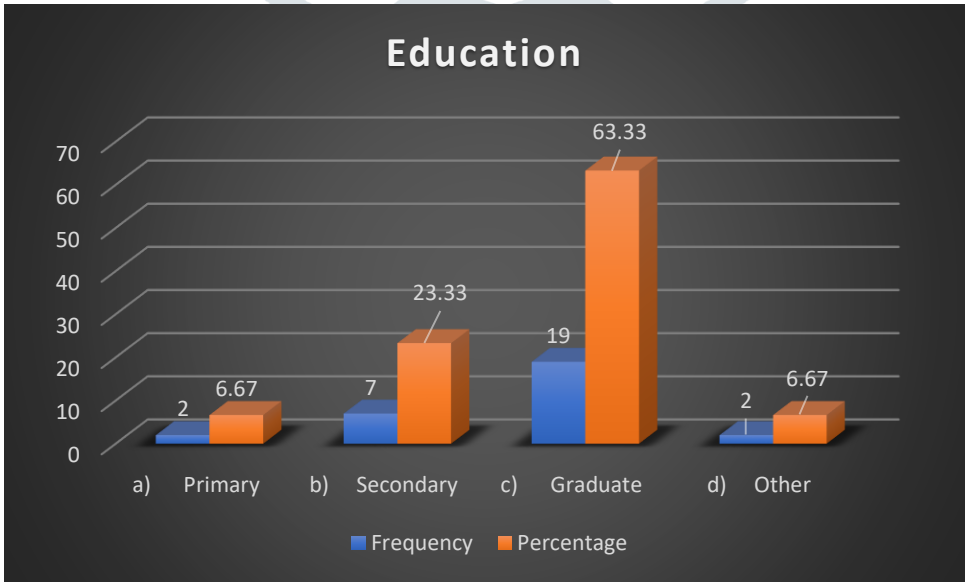
Graphical presentation of distribution of Socio-demographic variables i.e. Occupation, according to frequency and percentage.

15) Type of Family



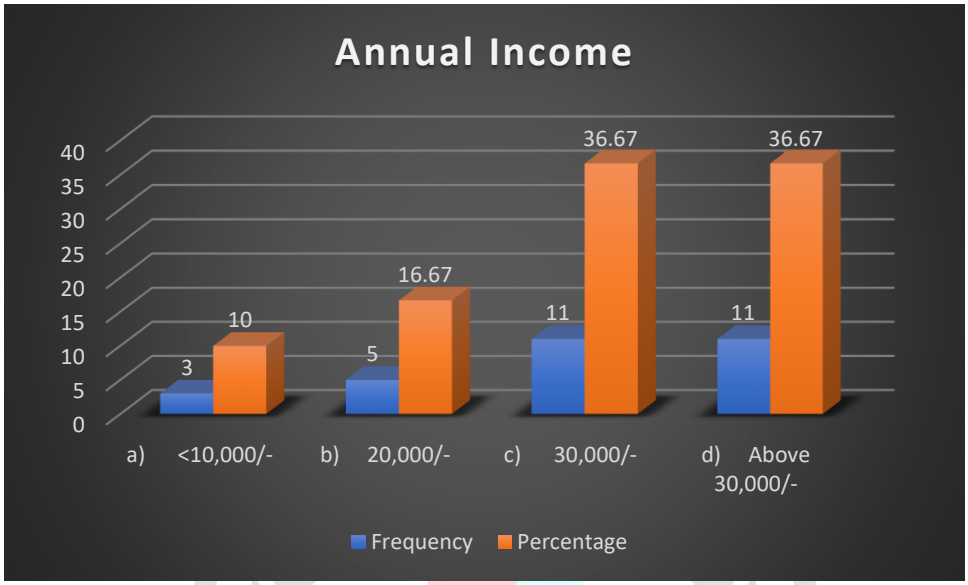
Graphical presentation of distribution of Socio-demographic variables i.e. Type of family, according to frequency and percentage.

16) Education



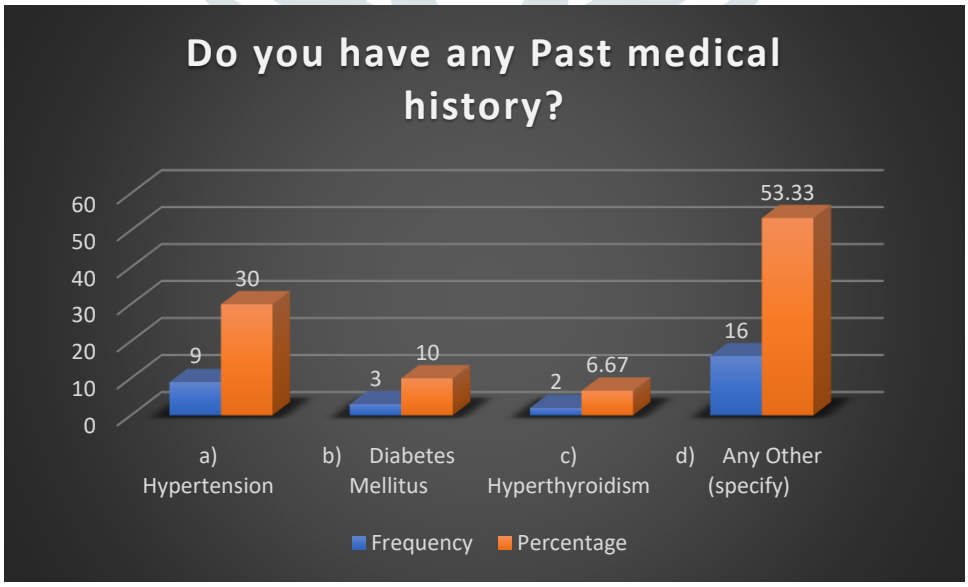
Graphical presentation of distribution of Socio-demographic variables i.e. Education, according to frequency and percentage.

17) Monthly Income



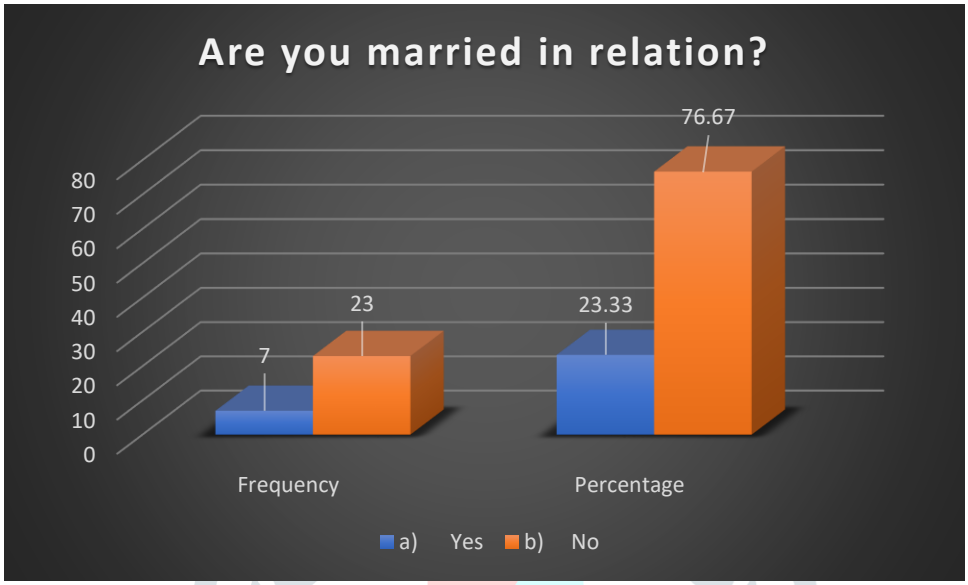
Graphical presentation of distribution of Socio-demographic variables i.e. Monthly Income, according to frequency and percentage.

18) Do you have any Past medical history?



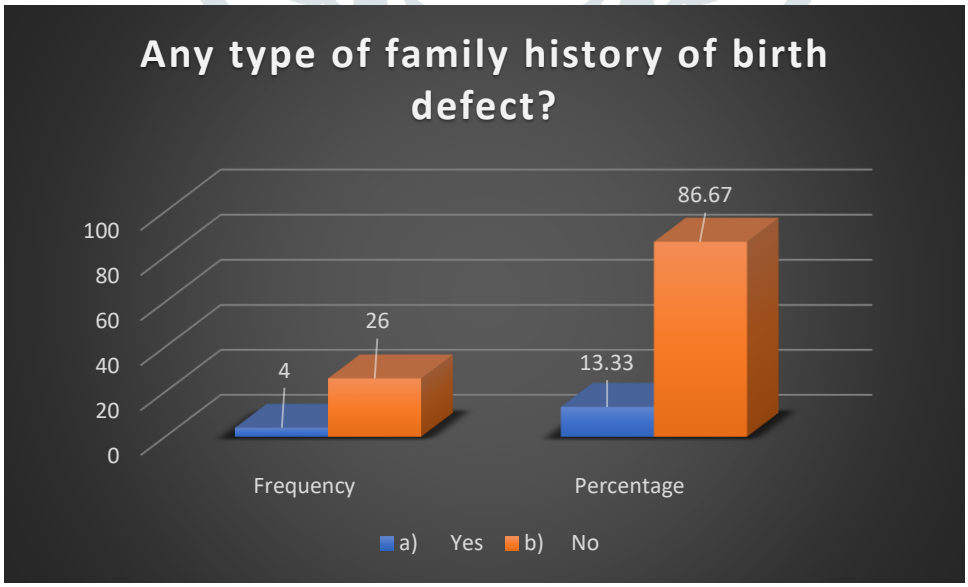
Graphical presentation of distribution of Socio-demographic variables i.e. Past medical history, according to frequency and percentage.

19) Are you married in relation?



Graphical presentation of distribution of Socio-demographic variables i.e. Married in relation, according to frequency and percentage.

20) Any type of family history of birth defect?



Graphical presentation of distribution of Socio-demographic variables i.e. History of birth defect, according to frequency and percentage.

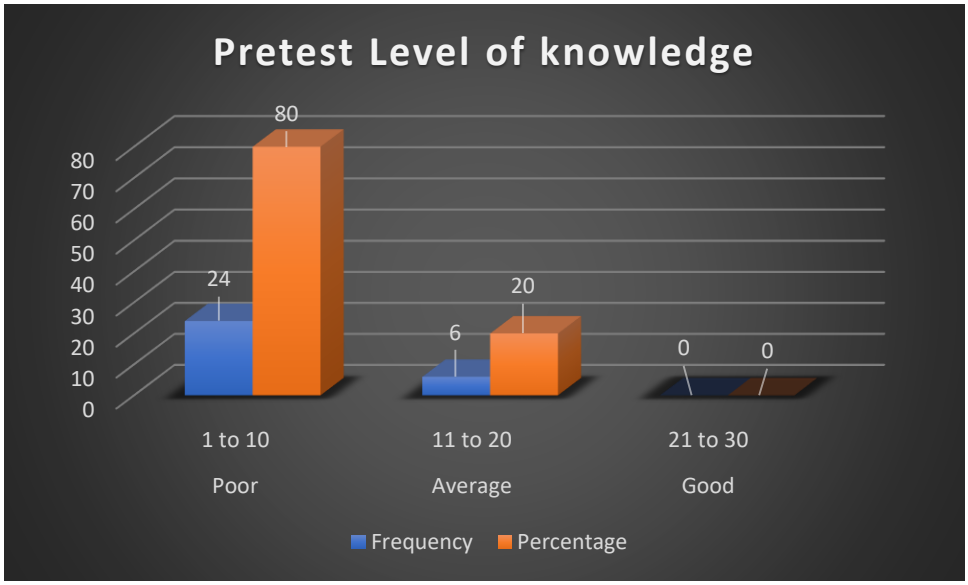
Part II

Assessment of the pre-test level of knowledge regarding congenital anomalies and its prevention among eligible couples in selected area.

Pre-Test level of knowledge regarding congenital anomalies and its prevention among eligible couples in selected area according to frequency and percentage.

Level of Knowledge	Scoring	Frequency	Percentage
Poor	1 to 10	24	80
Average	11 to 20	6	20
Good	21 to 30	00	0

Table presents in pre-test 24 (80%) sample were having poor knowledge level and 6 (20%) students were having average knowledge level regarding congenital anomalies and its prevention among eligible couples in selected area.

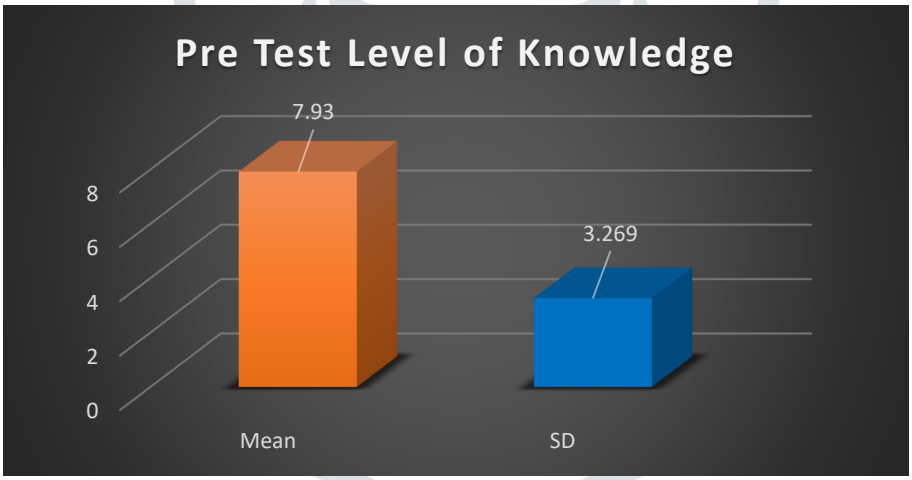


Graphical Distribution Pre-test level of knowledge regarding congenital anomalies and its prevention among eligible couples in selected area.

Pre-Test level of knowledge regarding congenital anomalies and its prevention among eligible couples in selected area according to Mean and SD.

Level of Knowledge	Scoring	Mean	SD
Poor	1 to 10	7.93	3.269
Average	11 to 20		
Good	21 to 30		

Table presents in pre-test mean score about knowledge level regarding congenital anomalies and its prevention was 793 and SD was 3.269.



Graphical Distribution Pre-test level of knowledge regarding congenital anomalies and its prevention according to Mean and SD.

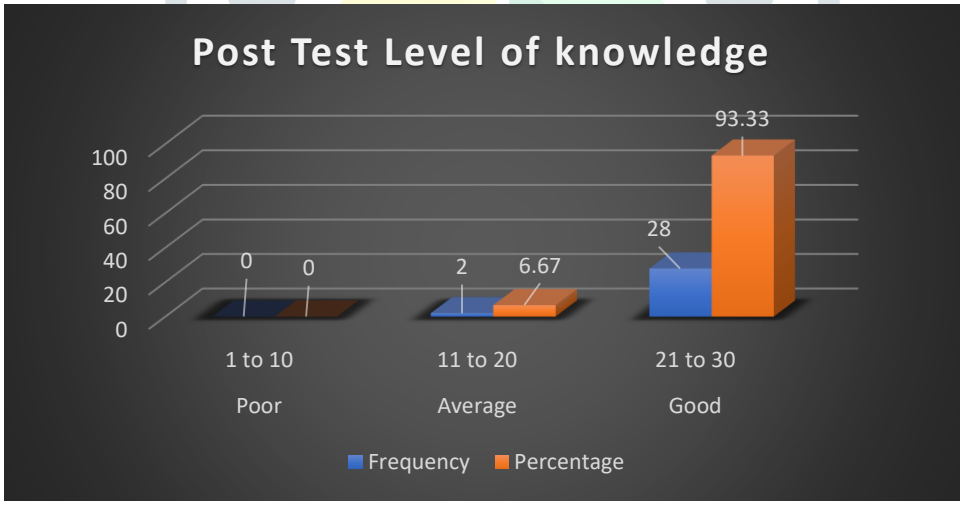
Part III

Effectiveness of planned teaching program related to prevention of congenital anomalies among eligible couples.

Post-test level of knowledge regarding prevention of congenital anomalies among eligible couples according to frequency and percentage.

Level of Knowledge	Scoring	Frequency	Percentage
Poor	1 to 10	00	0.00
Average	11 to 20	02	6.67
Good	21 to 30	28	93.33

Table presents in post-test 28 (93.33%) sample were having good knowledge level and 2 (6.67%) sample were having average knowledge level regarding prevention of congenital anomalies among eligible couples.

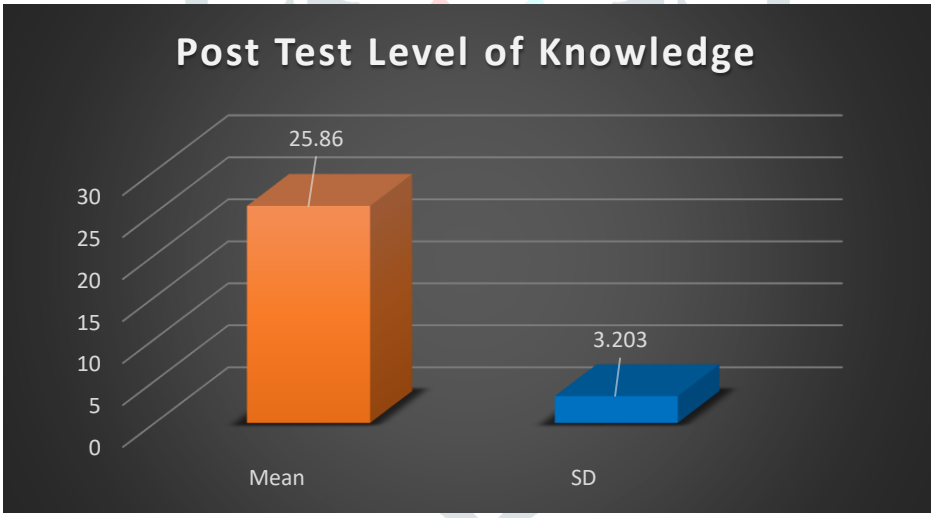


Graphical Distribution Post-test level of knowledge regarding prevention of congenital anomalies among eligible couples according to frequency and percentage.

Post-test level of knowledge regarding prevention of congenital anomalies among eligible couples according to Mean and SD.

Level of Knowledge	Scoring	Mean	SD
Poor	1 to 10	25.86	3.203
Average	11 to 20		
Good	21 to 30		

Table presents in post-test mean score knowledge regarding prevention of congenital anomalies among eligible couples was 25.86 and SD was 3.203.

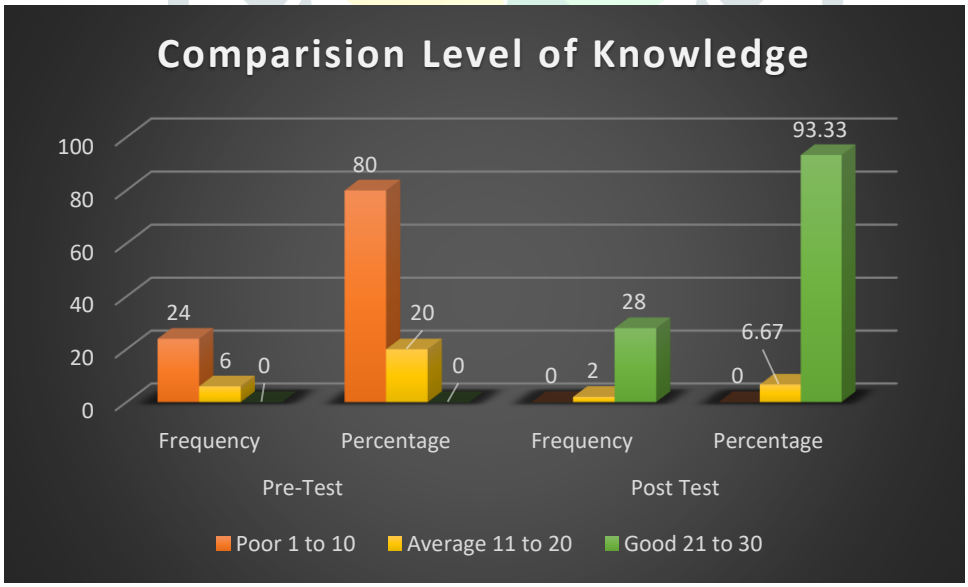


Graphical Distribution Pre-test level of knowledge regarding prevention of congenital anomalies among eligible couples according Mean and SD.

Comparison of Pre-test and Post-Test level of knowledge regarding prevention of congenital anomalies among eligible couples according to frequency and percentage.

Level of Knowledge	Scoring	Pre-Test		Post Test	
		Frequency	Percentage	Frequency	Percentage
Poor	1 to 10	24	80	00	0.00
Average	11 to 20	6	20	02	6.67
Good	21 to 30	00	0	28	93.33

The able presents that eligible couples were grouped in three categories according to their knowledge scores as poor, average and good scores obtained in pre and post assessment. In pre-test majority of sample 24 (80%) were in poor category and 6 (20%) sample were in average category of Knowledge scores. Where as in post-test after planned teaching programme majority of 28 (93.33%) sample were in the category of good knowledge scores and 2 (6.67%) sample were in the category of average knowledge scores.

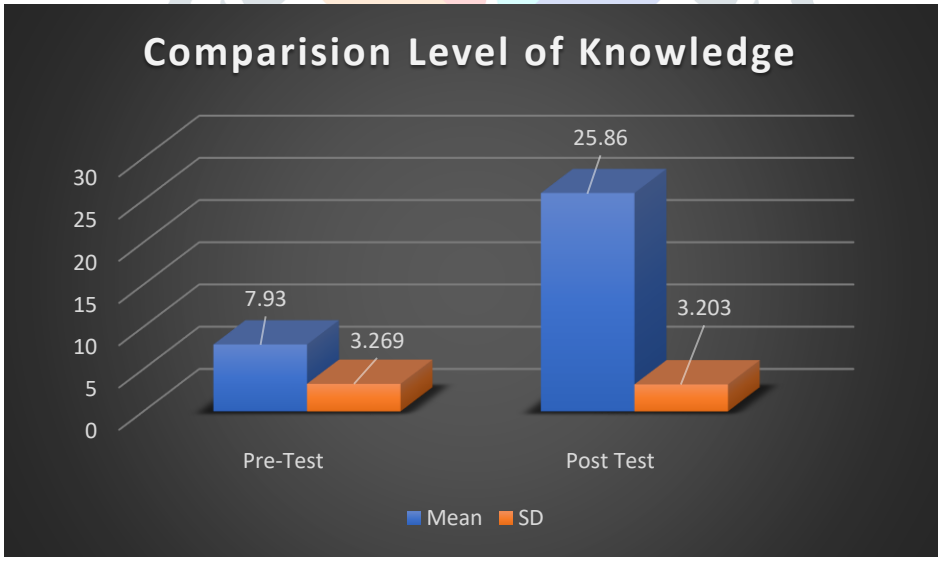


Graphical Distribution of comparison of Pre-test and Post-Test level of knowledge score regarding prevention of congenital anomalies among eligible couples according Frequency and Percentage.

Comparison of Pre-test and Post-Test level of knowledge score regarding prevention of congenital anomalies among eligible couples according to Mean and SD.

	Pre-Test	Post Test	Mean Difference	Paired t Test
Mean	7.93	25.86	17.933	P Value = 0.0001
SD	3.269	3.203		t Value = 18.797

Table shows that there was significant increase in post test scores of eligible couples. The mean post-test knowledge score 25.86 (SD=3.203) of eligible couples was significantly higher than their pre-test knowledge score 7.93 (SD=3.269). The paired 't' test statistic value is 18.797. Since, the p value for the test is less than 0.05, the research hypothesis accepted at 95% confidence level it shows that the planned teaching programme was effective method for improving the knowledge of congenital anomalies among eligible couples.



Graphical Distribution of comparison of Pre-test and Post-Test level of knowledge score regarding prevention of congenital anomalies among eligible couples according to Mean and SD.

Part IV

Association between sociodemographic variables and level of knowledge regarding congenital anomalies and its prevention.

Demographic Variables	Level of Knowledge			Chi Square Value	P Value	Interpretation
	Poor	Average	Good			
10) Age						
e) 20 to 25 Years	03	01	00	0.1042	0.9492	NA
f) 26 to 30 Years	16	04	00			
g) 31 to 35 Years	05	01	00			
h) Above 35 Year	00	00	00			
11) Duration of Marriage						
e) Below 12 Months	02	02	00	3.645	0.3024	NA
f) 12 Months	10	01	00			
g) 24 Months	10	03	00			
h) Others	02	00	00			
12) Religion						
e) Hindu	15	05	00	1.094	0.5788	NA
f) Muslim	07	01	00			
g) Christian	02	00	00			
h) Others	00	00	00			
13) Occupation						
e) Labour	02	00	00	14.766	0.0020	SA*
f) Service	13	03	00			
g) Farmer	09	00	00			
h) Other	00	03	00			
14) Type of Family						
c) Joint Family	13	05	00	1.701	0.1921	NA
d) Nuclear Family	11	01	00			
15) Education						
e) Primary	02	00	00	1.617	0.6556	NA
f) Secondary	06	01	00			
g) Graduate	14	05	00			
h) Other	02	00	00			
16) Annual Income						
e) <10,000/-	03	00	00	1.136	0.7683	NA

f) 20,000/-	**04**	**01**	**00**			
g) 30,000/-	**09**	**02**	**00**			
h) Above 30,000/-	**08**	**03**	**00**			
17) Do you have any Past medical history?						
e) Hypertension	**07**	**02**	**00**	**1.528**	**0.6759**	**NA**
f) Diabetes Mellitus	**03**	**00**	**00**			
g) Hyperthyroidism	**02**	**00**	**00**			
h) Any Other (specify)	**12**	**04**	**00**			
18) Are you married in relation?						
c) Yes	**06**	**01**	**00**	**0.1863**	**0.6660**	**NA**
d) No	**18**	**05**	**00**			
11) Any type of family history of birth defect?						
c) Yes	**03**	**01**	**00**	**0.0721**	**0.7883**	**NA**
d) No	**21**	**05**	**00**			

The table presents that there was no significant association between sociodemographic variable and pre-test level of knowledge regarding prevention of congenital anomalies among eligible couples expect occupation.

*In above table occupation is significantly associated with level of knowledge regarding prevention of congenital anomalies among eligible couples expect occupation after application of chi square test.

Chi square value was 14.766 and p value was 0.0020 so there is significant association between occupation and Level of knowledge regarding prevention of congenital anomalies among eligible couples.

DISCUSSION

AGE

Table showing distribution of demographic variable i.e., age, 20 (66.67%) sample belong to age group of 26 to 30 Years, 6 (20%) sample belong to age of 31 to 35 Years and 04 (13.33%) sample belong to age group of 20 to 25 Years.

MARRIAGE

Table showing distribution of demographic variable i.e., Marriage, Sample belong to marriage 24 months, 13 (43.33%) sample belong to Marriage 12 months, 11 (36.67%) Sample belong to marriage below 12 months 04 (13.33) and sample belong to marriage of 36 months 02 (6.67%).

RELIGION

Table showing distribution of demographic variable i.e., religion, 20 (66.67%) sample were Hindu, 8 (26.67%) students were Muslim and 2 (6.67%) students were Christian.

OCCUPATION

Table showing distribution of demographic variable i.e., Occupation, 16 (53.33%) sample were having service, 12 (40%) sample were farmer and 2 (6.67%) sample were working as labour.

TYPE OF FAMILY

Table showing distribution of demographic variable i.e., Type of family, 18 (60%) sample belong to Joint family and 12 (44%) sample belong to Nuclear Family.

EDUCATION

Table showing distribution of demographic variable i.e., Education, 19 (63.33%) samples were graduated, 7 (23.33%) samples were having secondary education and 2 (6.67%) sample were educated till primary and other level of education accordingly.

MONTHLY INCOME

Table showing distribution of demographic variable i.e., Monthly Income, 11 (36.67%) sample's monthly income were 30,000 & Above 30,000 accordingly, 5 (16.67%) sample's monthly income were 20,000 and 3 (10%) sample's monthly income where <10,000.

DO YOU HAVE ANY PAST MEDICAL HISTORY?

Table showing distribution of demographic variable i.e., Their past medical history, 16 (53.33%) samples were having past medical history of other diseases, 9 (30%) samples were having past medical history of Hypertension, 3 (10%) samples were having past medical history of Diabetes mellitus and 2 (6.67%) samples were having past medical history of Hyperthyroidism.

ARE YOU MARRIED IN RELATION?

Table showing distribution of demographic variable i.e., Married in relation, 23 (76.67%) sample were no married in relation and 7 (23.33%) sample were married in relation.

ANY TYPE OF FAMILY HISTORY OF BIRTH DEFECT?

Table showing distribution of demographic variable i.e., Family history of birth defect, 26 (86.67%) sample were not having family history of birth defect and 4 (13.33%) sample were having family history of birth defect.

PART III

Effectiveness of planned teaching program related to prevention of congenital anomalies among eligible couples.

Post-test level of knowledge regarding prevention of congenital anomalies among eligible couples according to frequency and percentage.

Table presents in post-test 28 (93.33%) sample were having good knowledge level and 2 (6.67%) sample were having average knowledge level regarding prevention of congenital anomalies among eligible couples.

Post-test level of knowledge regarding prevention of congenital anomalies among eligible couples according to Mean and SD.

Table presents in post-test mean score knowledge regarding prevention of congenital anomalies among eligible couples was 25.86 and SD was 3.203.

Comparison of Pre-test and Post-Test level of knowledge regarding prevention of congenital anomalies among eligible couples according to frequency and percentage.

Table shows that there was significant increase in post test scores of eligible couples. The mean post-test knowledge score 25.86 (SD=3.203) of eligible couples was significantly higher than their pre-test knowledge score 7.93 (SD=3.269). The paired 't' test statistic value is 18.797. Since, the p value for the test is less than 0.05, the research hypothesis accepted at 95% confidence level it shows that the planned teaching programme was effective method for improving the knowledge of congenital anomalies among eligible couples.

Part IV

Association between sociodemographic variables and level of knowledge regarding congenital anomalies and its prevention.

The table presents that there was no significant association between sociodemographic variable and pre-test level of knowledge regarding prevention of congenital anomalies among eligible couples expect occupation.

In above table occupation is significantly associated with level of knowledge regarding prevention of congenital anomalies among eligible couples expect occupation after application of chi square test.

Chi square value was 14.766 and p value was 0.0020 so there is significant association between occupation and Level of knowledge regarding prevention of congenital anomalies among eligible couples.

CONCLUSION AND RECOMMENDATIONS

- Congenital anomalies are a major cause of miscarriages and infant mortality.
- The most frequent birth defect was cleft lip and/or palate followed by congenital heart diseases, hydrocephalus, myelomeningocele, ambiguous genitalia, and anorectal malformations.
- The study of birth defects in underdeveloped countries should continue.
- The identification of occurrence, risk factors, and significances are important for planning defensive measures and effective treatments.
- To control the factors underlying the various types of congenital abnormality encountered in this area more research is needed.

- Developed maternal health, pre-conception care including folic acid supplementation, and early diagnosis of most of these anomalies are recommended.

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