



**A PILOT STUDY TO ASSESS THE EFFECTIVENESS
OF STRUCTURED TEACHING PROGRAMME
REGARDING THE EFFECTS OF CONSANGUINEOUS
MARRIAGE ON PREGNANCY OUTCOME AMONG
MEN AND WOMEN AT RURAL AND URBAN AREAS
OF THENI DISTRICT**

**S.Palniammal¹, Dr.T.RadhabaiPrabu², Dr.S.Nalini³,
Dr.A.R.Barathi⁴**

¹ Research Scholar, Meenakshi Academy of Higher Education and Research,
West K.K.Nagar, Chennai, Tamil Nadu, India

² Guide, Former HOD, Department of Obstetrics and Gynaecology,
Meenakshi Medical College, Kancheepuram, Tamilnadu, India

³ Co –Guide, Former Assistant Professor of Physiology Department, Govt.
Theni Medical College, Theni, India

⁴ Co-Guide, Former Principal, Meenakshi College of Nursing, Mangadu,
Chennai, Tamil Nadu, India

Abstract

Marriage with in blood related persons is called as consanguineous marriage. This type of marriage can cause more effects on fetus and also on pregnancy. Health teaching regarding consanguineous marriage and its complications are needed to create awareness among people at village areas in south side of Tamil Nadu. **Objectives:** To Assess the knowledge regarding effects of consanguineous marriage on pregnancy outcome among women and men, to determine the effectiveness of structured teaching program regarding effects of consanguineous marriage on pregnancy outcome among women and men, to determine the association between knowledge of women and men with selected demographic variables. **Research Methodology:** Quantitative and evaluative approach was used in this study. One group pre-test-post-test research design, which belongs to pre-experimental design was used to collect data from 20 people with the age group of 15-60 years to conduct pilot study. First day study was explained to the subjects and an informed consent will be taken before starting the study. Pre-test was conducted by administering a structured knowledge questionnaire. On the same day, the STP was administered for 45 minutes by using visual aids and lecture cum discussion method. The post-test was conducted after 7th day. **Result:** The mean post test knowledge scores of women and men attending structured teaching program are highly significant than that of their pre-test knowledge scores. (**P=0.01**) **DF= 18**. Rural men and women are benefitted 29.25% after STP. Urban men and women are benefitted 32.50% after STP.

Keywords: Structured Teaching Program, Pregnancy Outcome, Abortion, Pre Term, Still Birth, Congenital Anomaly, Consanguineous Marriage

1. Introduction

Marriage with in blood related persons is called as consanguineous marriage. This type of marriage can cause more effects on fetus and also on pregnancy.

Premarital Health Counseling (PMHC) is emerging as a growing trend worldwide. The couples are provided with accurate and unbiased information and assistance, who are planning to get marry with the aim of screening, educating, and counseling about nutritional disorders, communicable diseases, medical conditions, hereditary/ genetic disorders, and guiding for a healthy pregnancy. Premarital screening and adequate counseling are essential for changing attitudes toward consanguineous marriage particularly in places where consanguineous and "tribal" marriages are common, resulting in a high incidence of genetic disorders. Although making PMHC obligatory in India may appear to be a very exciting and promising proposal, its implementation still has various ethical issues and other barriers that need to be addressed. (Puri, S., Dhiman, A., & Bansal, S. (2016). Premarital health counseling: A must. *Indian Journal of Public Health*, 60(4). <https://doi.org/10.4103/0019-557X.195860>). Consanguineous union is higher in tamilnadu 38%, followed by Andrapradesh 30%, Maharashtra 29% and Karnataka 28% respectively.

2. Need for the study

International: -According to the reports of work shop which was conducted at Geneva 20% of people with history of consanguinity and 8.5% of children have the consanguineous parents. 1.1 billion marriages are consanguineous one and 1 in 3 in between cousins.

National: According to the reports of national health survey 2015 to 2016, 9.9% marriages were consanguineous in India among 4,56,646 married women between 15 to 49 years. As per religion Hindu-9.91%, Muslims-14.62%, Others-8.47%.

State: As per a study was conducted at Melur Taluk of Madurai which is nearest district of Theni among 750 women 294 had consanguineous marriage that is 39.2% of over all prevalence, first cousin marriage (16.6%) - III° consanguinity. Uncle with niece marriage - 19.7%. II° consanguinity and positive association present between consanguinity and congenital anomaly, prenatal and postnatal loss.

Researcher is seeing so many of them marry their relatives in her neighborhood. Many of them have given birth to babies with congenital anomaly, preterm, low birth weight and genetic disorders. Women with history of abortion and still birth who married their first cousin and maternal uncle. So the researcher is in need to select this study to create awareness among people living in rural and urban areas of Theni District to prevent the complications of consanguineous union.

3. Objectives of the study

- To Assess the knowledge regarding effects of consanguineous marriage on pregnancy outcome among women and men.
- To determine the effectiveness of structured teaching program regarding effects of consanguineous marriage on pregnancy outcome among women and men.
- To determine the association between knowledge of women and men with selected demographic variables.

4. Hypothesis

H₁: The mean post test knowledge scores of women and men attending structured teaching program are significantly higher than that of their pre-test knowledge scores.

H₂: There is no relationship between knowledge scores of women and men with demographic variables.

5. Assumptions

- Planned health education is a mode of action that is selected for modifying the behavior of adult women and men.
- Knowledge has strong influence on adoption of practice.
- Women have little basic knowledge regarding effects of consanguineous marriage on pregnancy outcome.
- Structured teaching program is an accepted teaching strategy to create awareness among the subjects.

6. Review of literature

A literature review involves the systematic identification, location, scrutiny and summary of written materials that contain information in research problem. This chapter presents a review of literature related to the research topic.

- Incidence and prevalence of consanguineous marriage.
- Effects of consanguineous marriage on pregnancy outcome.
- Socio demographic correlates of consanguineous marriage.
- Case report on consanguineous marriage.
- Literature related to STP.

Incidence and prevalence of consanguineous marriage

- A study was conducted by International Institute for Population Sciences (IIPS), Mumbai, India, "Has the long-predicted decline in consanguineous marriage in India occurred?". To an extent the question posed in the title of this paper can simply be answered. Based on the extensive data available from the National Family Health Survey-1 (NFHS-1) conducted in 1992–93 and NFHS-4 in 2015–16 there has been a significant overall decline of some 19% in the prevalence of consanguineous marriage in India.

Literature related to prevalence

- A study conducted on "Prevalence of Consanguineous Marriages In A Rural Community And Its Effect On Pregnancy Outcome" The findings showed that the frequency of consanguinity in the study was 36% which is less than that observed in other studies in South India. Muslims showed a higher frequency of consanguinity as compared to Hindus. The most frequent type of consanguineous marriage in the study was between first cousins (54.44%). All the cousin marriages were between cross cousins. Foetal losses before 28th weeks were higher in consanguineous group as compared to non consanguineous group, and this difference was statistically significant.

- A population-based cross-sectional study on consanguineous marriages in rural Tamil Nadu, India. This study has been carried out to estimate the prevalence of consanguineous marriages and its types among women aged between 15 and 49 years and to assess the association between consanguineous marriage and pregnancy outcome. Of the 750 women studied, 294 had consanguineous marriage and the overall prevalence rate of consanguineous marriage was 39.2%. The most common type of consanguineous marriage was first cousin marriage (61.6%) and 19.7% had married their maternal uncle. Statistically significant positive association was found between the consanguinity and congenital anomaly, prenatal and postnatal loss except in the case of childhood deaths (1–5years).

Literature related to effects .

- A study was conducted on “A review of the reproductive consequences of consanguinity” Consanguinity continues to be practiced worldwide and in some countries rates are increasing. The main reason for the practice appears to be socio cultural and socioeconomic although religious beliefs is a contributory factor. The most significant effects on reproductive outcomes are mostly due to autosomal recessive inherited conditions and inborn errors of metabolism.
- A Community Genetics Perspective on Consanguineous Marriage A.H. Bittles, Edith Cowan University and Centre for Comparative Genomics, Murdoch University, Perth , Australia. It is note worthy that a significant number of patients' parents had consanguineous marriages in the current work (41.4%). This could be considered a cultural risk factor in Iran, which was similar to Southern and Western Asian and North African countries, while the rate of consanguinity was less than 0.5% in European countries (21,22). Jalili et al. (19) evaluated 774 patients with CHD to identify the frequency of different types of the disease and the possible risk factors.
- A Palestinian rural study interpreted that prevalence rate of consanguineous marriages in the present study was 61%, where first-cousin marriages representing 34.8% of all marriages. The genitourinary system was the most common malformation, where was reported by 17.4% of the 305 consanguineous married parents, and 15.2% of the 105 non-consanguineous married parents. The gastrointestinal system defects was the second most affected anatomical system in frequency in 6.2% of the 305 consanguineous married parents, and 13.3% of the 105 non-consanguineous married parents. The study revealed that consanguinity has adverse health consequences on offspring of consanguineous couples. There is a need for genetic counseling to increase the awareness of the health consequences of consanguineous marriage.
- A study was conducted on review of the reproductive consequences of consanguinity. All relevant publications up to March 2015 were reviewed. Consanguinity is practiced by up to 10% of the world's population with rates ranging from 80.6% in certain provinces in the Middle East to less than 1% in western societies. Congenital malformations have long been established to be higher in consanguineous couples above the background rate

(4.5% Vs 1%). Consanguinity increases the incidence of multifactorial disorders such as diabetes, cardiovascular disorders, obesity and certain types of cancers. These may in turn affect reproductive outcomes. It may also affect fertility rates. Pregnancy outcomes like increased pregnancy wastages and preterm labor have been reported with consanguinity.

Socio demographic correlates of consanguineous marriage

- A study was conducted on incidence of congenital anomalies in newborn in tertiary care hospital at Department of Paediatrics, Government Mohan Kumaramangalam Medical College Hospital, Salem, Tamil Nadu, India . Of the five thousand consecutive deliveries 48 deliveries were multiple delivers and a number of stillbirths were 108. The incidence of congenital anomalies was 30.4 per 1000 live birth (152 cases). Major malformations were present in 20.8 per 1000 (104 cases) while minor malformations were 9.6 per 1000 (48 cases).

7. Research methodology

Quantitative and evaluative approach was used in this study. One group pre-test-post-test research design, which belongs to pre-experimental design was used to collect data from 20 people with the age group of 15-60 years who are living in both rural and urban area of Theni district by using purposive sampling technique. Inclusion criteria of this study was people with 15-60 years of old, who are willing to participate in the study and who are available at the time of data collection. Who did not understand Tamil and Who have previously received information through formal programmes on effects of Consanguineous marriage on pregnancy outcome were excluded for this study.

8. Description of the tool

A structured knowledge questionnaire was selected to assess the knowledge . Preparation of the blueprint: A blue print of the items will be prepared based on the three domains of learning, mainly, knowledge 25 items (62.5 %), understanding 9 items (22.5%) and application 6 items (15%). The tool consists of section 'A' and 'B' Section -A: Demographic data consisting of items seeking information about background data such as age, marital status, Married siblings, Religion, Area of residence, etc., Section-B: Tool consist of Knowledge on Consanguineous marriage (11) Knowledge on Gene (2), Effects of Consanguineous marriage on pregnancy outcome (15), Management and prevention of effects of Consanguineous marriage on pregnancy outcome. (12)

Description of STP:- The STP was titled "Effects of consanguineous marriage on pregnancy outcome" It included

General objectives, Specific objectives

Introduction

Content organized in the following aspects

Knowledge on Consanguineous marriage

Knowledge on Gene, knowledge of consanguinity management and prevention of its complications..

9. Procedure for data collection

First day study was explained to the subjects and an informed consent will be taken before starting the study. pre-test was conducted by administering a structured knowledge questionnaire.

On the same day, the STP was administered for 45 minutes by using visual aids and lecture cum discussion method. The post test was conducted at the 7th day of the intervention.

10. Data analysis and interpretation.

Table-1 Demographic profile

Demographic variables		Group			
		Rural(n=10)		Urban(n=10)	
		n	%	n	%
Age	15-24 years	4	40.00%	1	10%
	25 -34 years	2	20.00%	5	50%
	35 -44 years	3	30.00%	2	20%
	45 -54 years	1	10.00%	1	10%
	55 -60 years	0	0.00%	1	10%
Sex	Male	5	50.00%	5	50%
	Female	5	50.00%	5	50%
Educational status	1 to 5 std	2	20.00%	0	0.00%
	6 to 10 std	2	20.00%	1	10%
	10 th to 12 th std	2	20.00%	2	20%
	Degree or Diploma	3	30%	7	70%
	Non formal education	1	10%	0	0.00%
Marital status	Married	9	90%	10	100%
	Unmarried	1	10%	0	0.00%
If yes type of marriage	consanguineous	4	50%	4	40%
	non consanguineous	4	50%	6	60%
If consanguineous specify the relationship	uncle-neice	1	33.33%	1	25%
	brother-sister	0	0.00%	1	25%
	first cousin	2	66.67%	1	25%
	second cousin	0	0.00%	1	25%
Number of children	One	3	33.33%	3	30%
	Two	4	44.44%	7	70%
	> Two	2	22.22%	0	0.00%
	No issue	0	0.00%	0	0.00%
Children health status	congenital defects	2	22.22%	2	20%
	abortion	0	0.00%	0	0.00%

	preterm	0	0.00%	0	0.00%
	dead born	1	11.11%	0	0.00%
	healthy child	6	66.67%	8	80%
if child affected with any problem order of birth	Ist child	2	100%	1	50%
	II child	0	0.00%	1	50%
	III child	0	0.00%	0	0.00%
	IVth child	0	0.00%	0	0.00%
Sex of the affected child	Male	0	0.00%	1	50%
	Female	2	100%	1	50%
Religion	Hindu	10	100%	7	70%
	Muslim	0	0.00%	1	10%
	Christian	0	0.00%	2	20%
Residential area	Rural	10	100%	0	0.00%
	Urban	0	0.00%	10	100%
Family type	Nuclear family	5	50.00%	2	20%
	Joint family	4	40.00%	5	50%
	Extended family	1	10%	3	30%
Family history of consanguineous marriage	Yes	4	40.00%	4	40%
	No	6	60.00%	6	60%
if yes mention the relationship	Uncle-niece	2	33.33%	3	75%
	Own Brother- sister	0	0.00%	0	0.00%
	First cousin	4	66.67%	1	25%
	Second cousin	0	0.00%	0	0%
If consanguineous marriage any history of abnormality	abortion	2	33.33%	0	0%
	Still birth	0	0.00%	0	0%
	pre term	0	0.00%	0	0%
	congenital	0	0.00%	2	50%
	Nil	4	66.67%	2	50%
	anomalies				
If there is any relative to do consanguineous marriage	Yes	3	30.00%	0	0.00%
	No	7	70.00%	10	100%
Do you have an idea to do have an idea to do consanguineous marriage	Yes	1	10.00%	0	0.00%
	No	9	90.00%	10	100%

Table 2: Both rural and urban area people knowledge score in pre test

Domains	Group	Mean Difference	Mann Whitney U-test
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		Rural		Urban			
		Mean	SD	Mean	SD		
1	Knowledge on consanguineous marriage	4.70	2.11	4.4	2.22	0.30	z=0.31 p=0.76(NS)
2	Knowledge about 'gene'	.30	.48	.30	.50	0.00	z=0.00 p=1.00(NS)
3	Effects of consanguineous marriage on pregnancy outcome	6.80	1.69	6.9	1.60	-0.10	z=0.16 p=0.87(NS)
4	Prevention and Management	3.50	2.68	4.3	2.16	-0.80	z=0.77 p=0.44(NS)
	Total	15.30	6.02	15.9	5.30	-0.60	z=0.19 p=0.85(NS)

Table3:Rural and urban people knowledge score in post test

	Domains	Group				Mean difference	Mann Whitney U-test
		Rural		Urban			
		Mean	SD	Mean	SD		
1	Knowledge on consanguineous marriage	8.40	1.35	8.60	1.96	-0.20	z=0.04 p=0.97(NS)
2	Knowledge about 'gene'	1.20	.63	1.60	.52	-0.40	z=1.45 p=0.14(NS)
3	consanguineous marriage effects on pregnancy outcome	8.80	2.25	9.40	1.07	-0.60	z=0.77 p=0.45(NS)
4	Prevention and Management	8.60	2.41	9.30	1.16	-0.70	z=0.47 p=0.64(NS)
	Total	27.00	4.57	28.9	2.96	-1.90	z=1.03 p=0.30(NS)

Mean value of rural people is 27 but the mean value of urban people is 28.9 in the domain wise knowledge score in post test. Urban people gained more knowledge than rural people.

Table4:Pretest knowledge score between men and women

	Domains	Group		Mean difference	Mann Whitney U-test
		Men	Women		

		Mean	SD	Mean	SD		
1	Knowledge on consanguineous Marriage	4.20	1.3	4.60	2.77	0.30	$z=0.17$ $p=0.6$
2	Knowledge about 'gene'	1.00	.90	.80	.55	0.00	$z=0.60$ $p=0.55$
3	consanguineous marriage effects on pregnancy outcome	6.20	.45	6.40	1.30	-0.10	$z=0.46$ $p=0.6$
4	Prevention and Management	3.80	.89	4.02	1.65	-0.80	$z=0.37$ $p=0.71$
	Total	15.20	2.89	16.00	2.87	-0.60	$z=0.34$ $p=0.74$

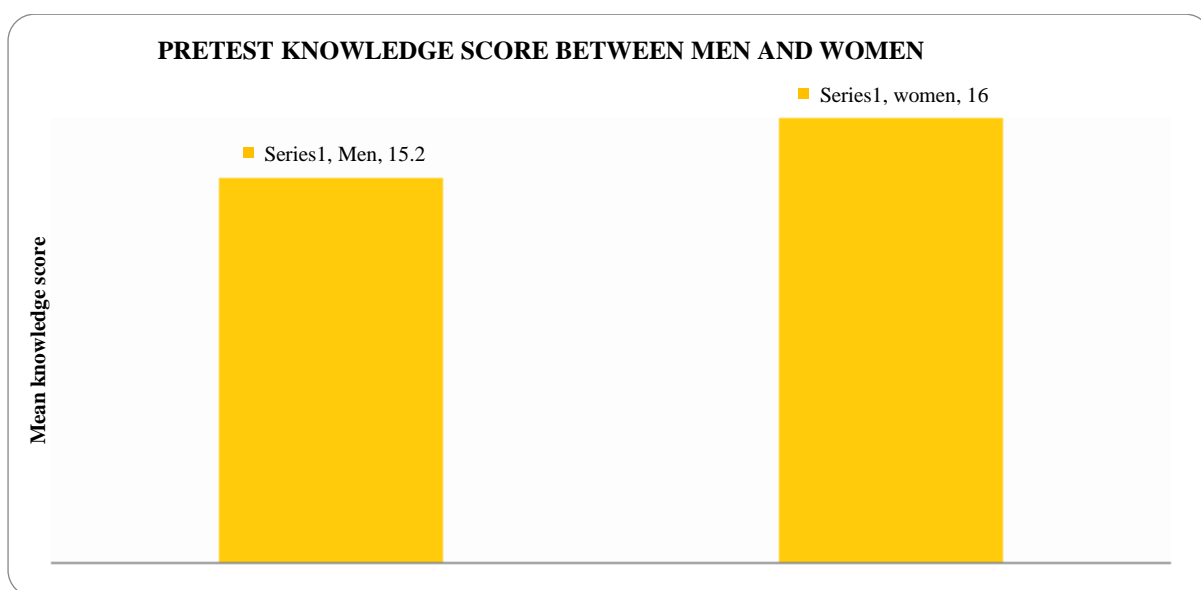


Fig-1

Table5: Domain wise post-test knowledge score between men and women

Domains	Group				Mean Difference	Mann Whitney U-test
	Men		Women			
	Mean	SD	Mean	SD		

1	Knowledge on consanguineous marriage	7.80	.84	9.00	1.58	-1.20	z=2.12 p=0.05*(S)
2	Knowledge about 'gene'.	1.00	.70	1.20	.45	-0.20	z=0.76 p=0.46(NS)
3	Effects of consanguineous marriage on pregnancy outcome	8.20	1.79	9.40	2.70	-1.20	z=1.37 p=0.17(NS)
4	Prevention and Management	9.20	3.08	10.20	1.64	-1.10	z=0.91 p=0.38(NS)
	Total	26.10	3.87	29.80	3.01	-3.70	z=2.95 p=0.01**(S)

P value-0.05 and it is highly significant of men and women Knowledge domain score on consanguineous marriage.

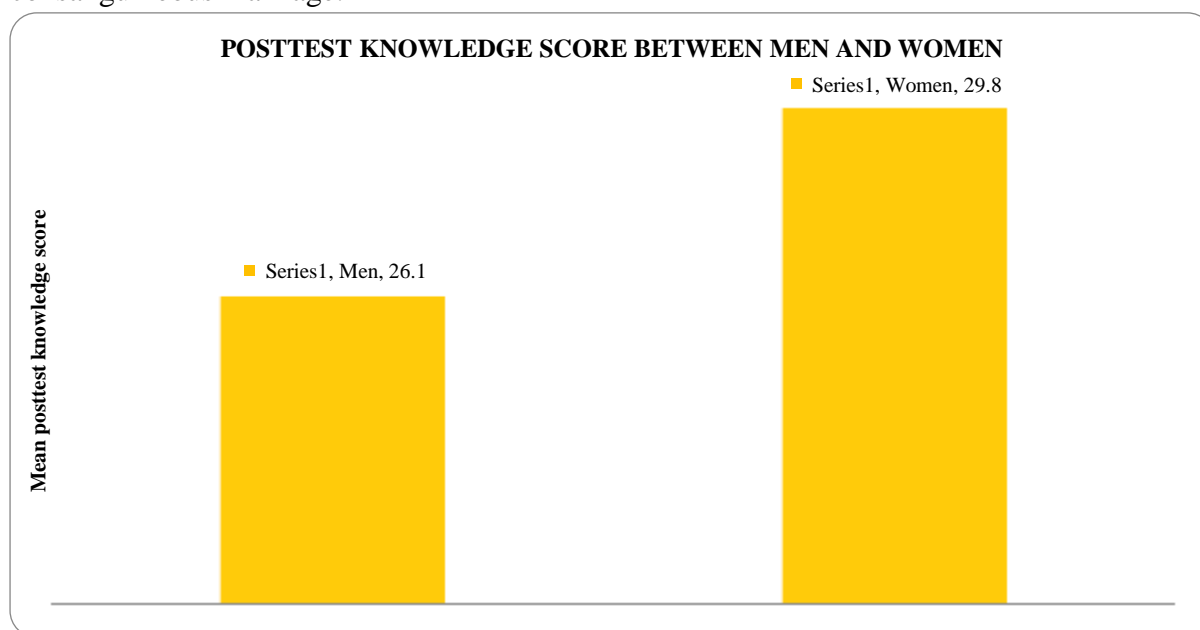


Fig -2

Table 6: Knowledge score before STP among men and women

Knowledge level	Men		Women		chi square value
	N	%	n	%	
Inadequate	8	80%	7	70.00%	$\chi^2=1.25$ p=.26
Moderate	2	20%	3	30.00%	
Adequate	0	0%	0	0%	
Total	10	100%	10	100%	

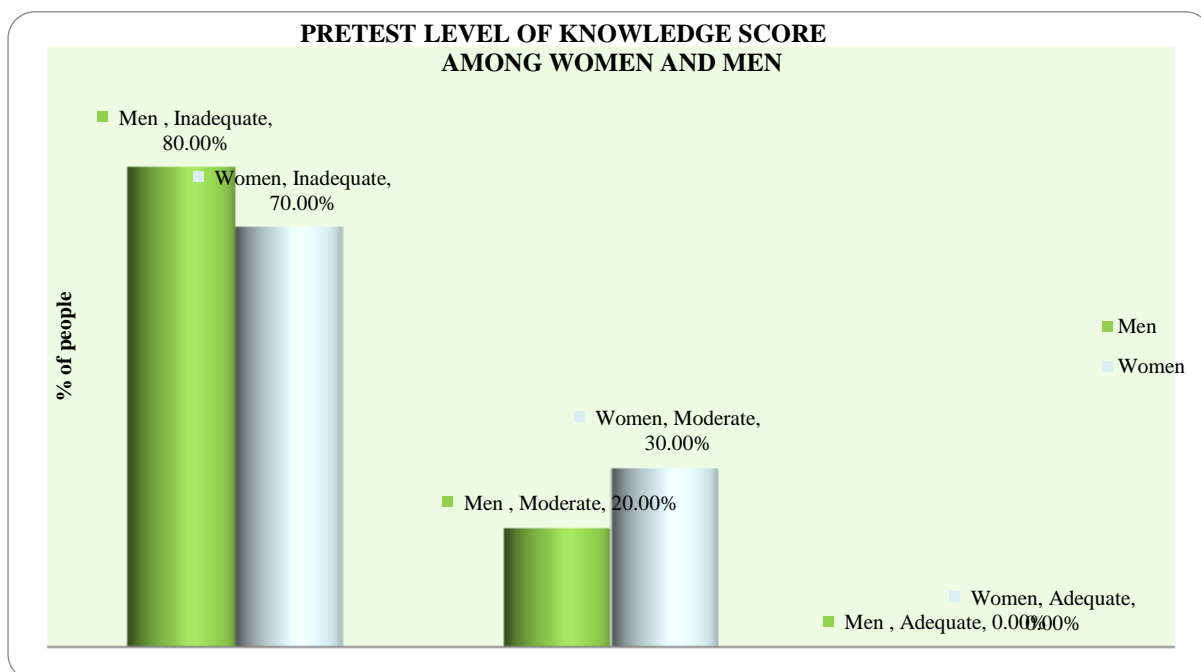


Fig-3

Table 7: Knowledge level after STP among men and women

Knowledge level	Men		Women		Chi square test
	N	%	N	%	
Not adequate	0	0.00%	0	0.00%	$\chi^2=3.20$ p=0.07(NS)
Moderate	7	70.00%	3	30.00%	
Adequate	3	30.00%	7	70.00%	
Total	30	100%	30	100.00%	

P value 0.07 . It is nil significant.

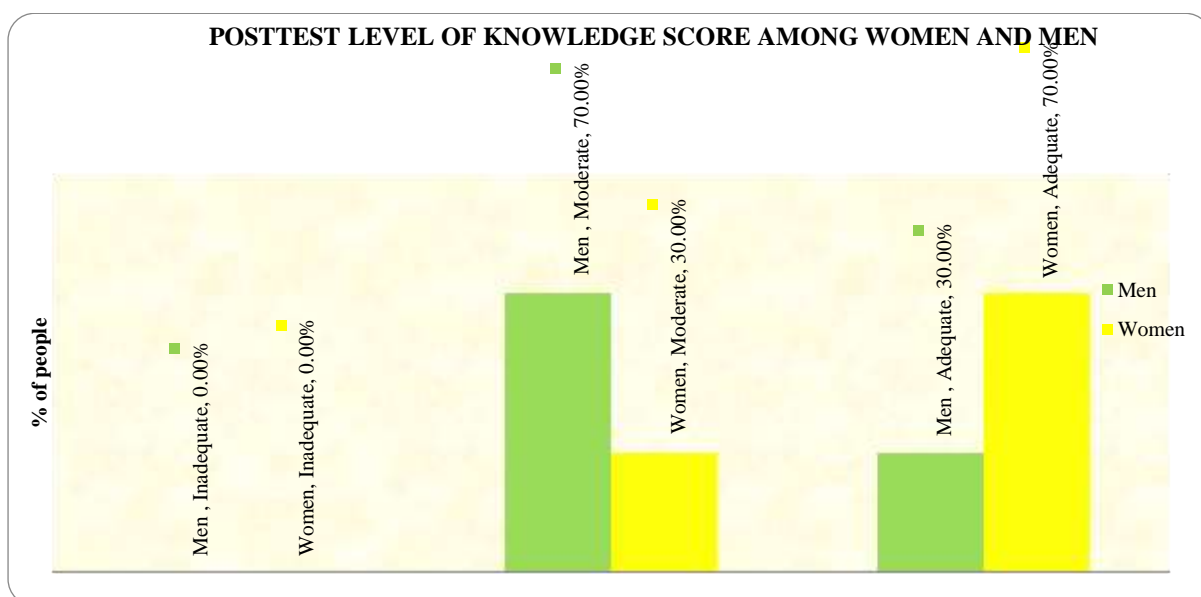


Fig -4

Table 8: Knowledge score of urban and rural area people before STP

Knowledge score	URBAN		RURAL		chisquare value
	N	Percentage	n	%	
Not adequate	7	70%	8	80%	$\chi^2 = 0.23$ P=.61
Moderate	3	30%	2	20.00%	
Adequate	0	0%	0	0%	
Total	10	100%	10	100%	

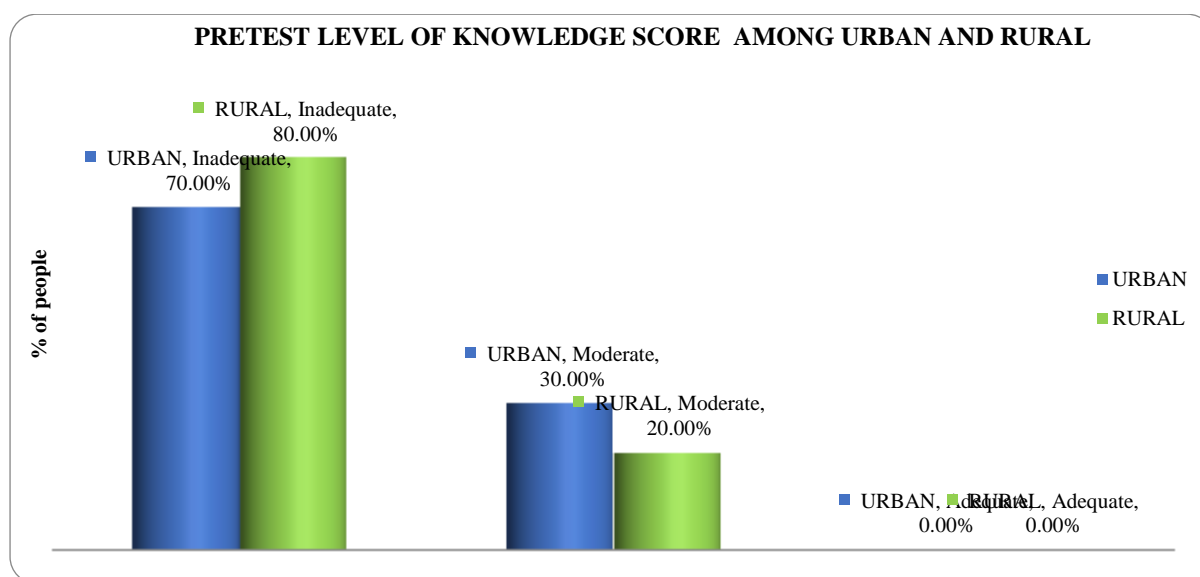


Fig -5

Table 9: knowledge level among urban and rural area people after STP

Knowledge level	URBAN		RURAL		chi square value
	n	%	n	%	
Not adequate	0	0	0	0	$\chi^2=.83$ P value=0.36(NS)
Moderate	3	30%	5	50.00%	
Adequate	7	70%	5	50.%	
	10	100%	10	100%	

After STP P value is 0.36 and nil significant result between the knowledge score of rural and urban area after STP.

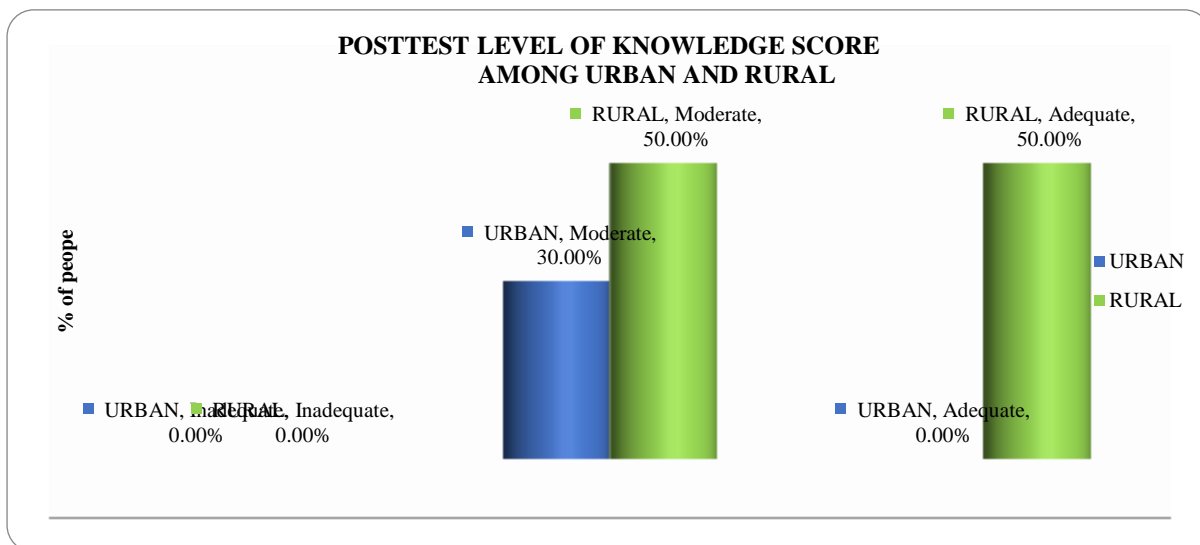


Fig-6

Table 10: MEAN KNOWLEDGE SCORE AMONG MEN AND WOMEN

	No. of people	Men		Women		Mean Difference	Mann Whitney U-test
		Mean	SD	Mean	SD		
Pretest	10	15.20	2.89	16.00	2.87	0.80	$z=0.56$ $P=0.57$ not Significant
Posttest	10	26.10	3.87	29.80	3.01	3.70	$z=2.02$ $P=0.05$ Significant

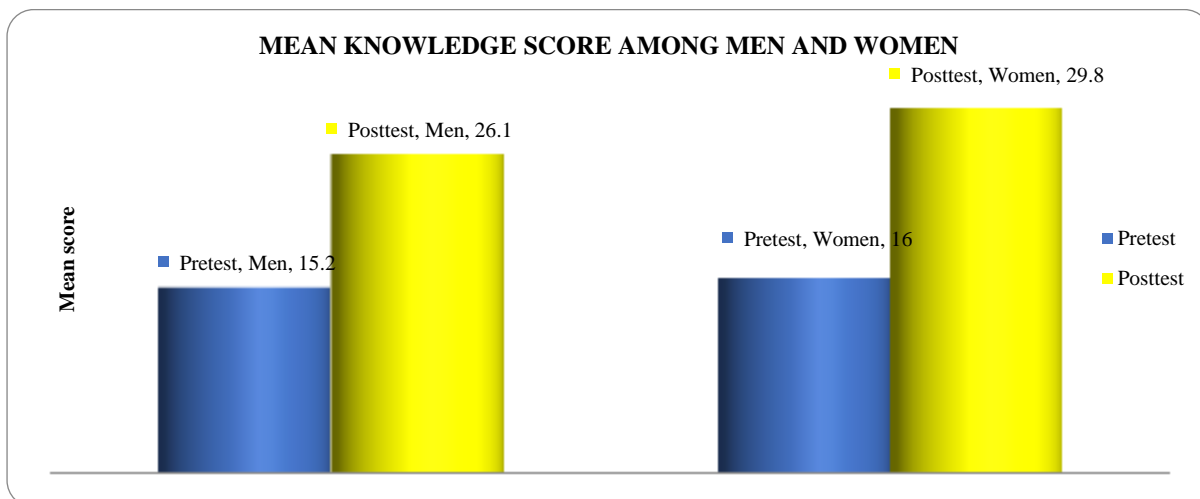


Fig-7

Table 11: Effectiveness of STP regarding the effects of consanguineous marriage on pregnancy outcome among rural and urban area people

Group	Assessment	Max score	Mean value	Percentage	Knowledge gained percentage
Rural	Pre-test	40	15.30	38.25%	29.25%

	Post-test	40	27.00	67.50%	
Urban	Pre-test	40	15.90	39.75%	32.50%
	Post-test	40	28.90	72.25%	

Rural area people are benefitted 29.25% after STP and Urban are benefitted 32.50% after STP. Urban people are benefitted more than rural people by the teaching program.

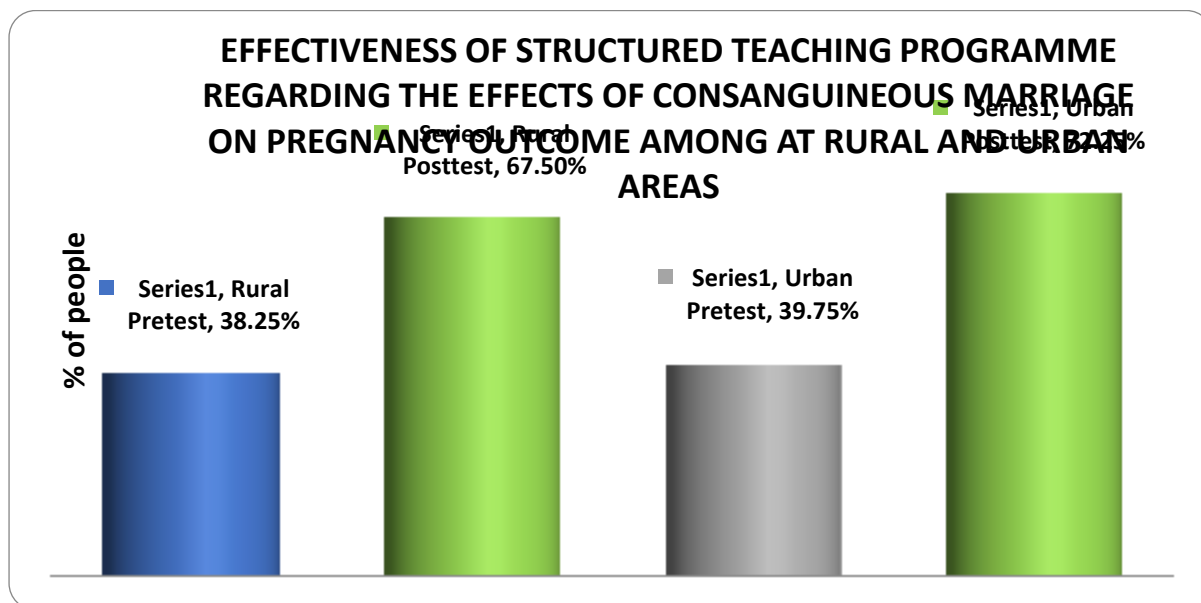


Fig-8

11. Discussion:

Pretest knowledge score between rural and urban

No difference in rural & urban area people knowledge level. calculated by non parametric mann whitneyU-test.

Pre-test knowledge level between men and women

Rural area result shows 80% inadequate knowledge, 20% moderate knowledge and 0% adequate level of knowledge .

In Urban area result shows 70% inadequate knowledge score, 30% moderate knowledge and 0% adequate knowledge .

Post-test knowledge level between men and women

When I analysed the post test inadequate level of knowledge score 0 percentage, 70% of moderate knowledge score and 30% of adequate knowledge score in men.

When analysed the result of women 0 percent inadequate knowledge score, 30% of moderate knowledge score and 70% of adequate knowledge score.

Result shows there is a significant difference between Knowledge score of women and men regarding consanguineous marriage and also significant difference between men and women in overall Knowledge score.

In Urban area, 70% of inadequate knowledge score, 30% of moderate knowledge score and 0 percentage of adequate knowledge score.

In Rural area, 80% of inadequate knowledge score, 20% of moderate knowledge score and none of adequate level of knowledge score.

Pre-test level of knowledge score among women and men at urban and rural areas.

80% of men were got inadequate knowledge , 20% moderate knowledge and nobody has got adequate knowledge .

In general 60% inadequate level of knowledge , 40% of moderate level of knowledge and nobody has got adequate level of knowledge .

Post -test knowledge score of people in urban area.

In men, 60% of moderate level of knowledge score and 40% of them are having adequate level of knowledge score.

In women, 40% of moderate level of knowledge and 60% of adequate level of knowledge score.

When compares the overall knowledge score before and after the administration of structured teaching programme.

In pre-test, men are having 15.20 score and women are having 16.00 , mean difference score is 0.80 score, this difference is small and it is statistically not significant.

In post-test, men are having 26.10 score and women are having 29.80 score, so the mean difference score is 3.70 score, this difference is large and it is statistically significant.

In rural , significant difference between pre-test and post-test knowledge score of men and women.

Urban and rural area wise knowledge score.

Men are benefitted 28.50% after STP. Women are benefitted 36.50% after STP. So women are benefited more than men.

Rural people are benefitted 29.25% after STP. Urban people are benefitted 32.50% after STP. So urban are benefited more than rural.

12. Result

The mean post test knowledge scores of women and men attending structured teaching program are significantly higher than that of their pre-test knowledge scores. (**P=0.01**) **DF= 18**. Rural men and women are benefitted 29.25% after STP. Urban men and women are benefitted 32.50% after STP.

13. Conclusion

Structured teaching program is more effective in creating awareness regarding the effects of consanguineous marriage and community people gained more knowledge after STP. People need more awareness regarding the effects of consanguineous marriage. If we give premarital counseling , we can change the practice of consanguineous marriage in rural society.

14. Recommendations

Future studies will be conducted with larger samples for better results. Future studies will be conducted with comparison of consanguineous and non consanguineous and its effects of pregnancy outcome and will be conducted in other settings.

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