

Effects of Consanguineous Marriage on Pregnancy Outcome in Rural Areas of Theni District -A Comparative and Descriptive Study.

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Keywords

consanguineous marriage, non consanguineous marriage, still birth, Abortion, effects, Genetic disorders.

Abstract

Objectives:

To assess the effects of consanguineous marriage on pregnancy outcome.

To compare the effects of consanguineous and nonconsanguineous marriage on pregnancy outcome.

To identify the association between the effects of consanguineous marriage with degree, age, religion, sex of the baby and birth order.

Methodology: Nonrandomized convenient sampling technique was used to select the samples of 160 women and men between the age group of 15-60.

Result: Consanguineous married mothers are having 17.07% of Congenital anomaly/abortion/still birth whereas Non consanguineous mothers are having only 2.56% Consanguineous married mothers are having 21.95% of Genetic disorders whereas Non consanguineous mothers are having only 3.85% Consanguineous married mothers are having 60.98% of healthy pregnancy outcome whereas Non consanguineous mothers are having 93.59%. This difference is statistically significant. Statistically there is a significant difference between Consanguineous and nonConsanguineous married mothers pregnancy outcome. It was observed using chi square test. Consanguineous married mothers are having 9.3 times risk of having pregnancy outcome problems. . It was observed using odds ratio with 95% confidence interval.

1. Introduction

“Knowledge is the Key to Healthier Life and Education is a Powerful Medicine.”

K.Park

BLOOD RELATED marriages are called consanguineous marriages –sanguine meaning blood. According to the World Health Organization Guidelines, a consanguineous marriage is defined as a marriage between people who are second cousins or more closely related. When you marry biologically related or blood relatives then it is consanguineous marriage. Most commonly in our part of the world, first cousins - uncle's son marries

auntie's daughter or vice versa. However another type of marriage is where maternal uncle marries his niece (sister's daughter). Theoretical risk of having a genetic defect child is higher in the latter type of marriage than the former. Prenatal mortality and infant mortality are important indicators of community health.(kavitha-2007)

The occurrence of consanguineous marriages is more predominant in the states of southern India and among the socioeconomically disadvantaged groups. Moreover, the women in consanguineous union are more likely to have adverse pregnancy outcomes including stillbirths (RR=1.59, p-value < 0.01), abortions (RR = 3.03, p-value < 0.01),

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miscarriages (RR=1.94, p-value < 0.01) and spontaneous miscarriages (RR=1.70, p-value < 0.01) than non-consanguineous marriage. The consanguineous marriages continue to be a critical predictor of adverse pregnancy outcomes in India. In order to avoid wastage of pregnancy and related reproductive health problems in India, it is imperative to initiate awareness creation measures regarding the adverse effect of consanguineous marriages, particularly in those regions where it is still dominantly prevalent (**Shrikant Kuntla**-31 August, 2013).

According to the study conducted at salem kumaramangalam hospital ,salem 80.25% of babies with congenital malformations have been born of consanguineous marriage.(Dr.N.Manivannan2010)

According to the study conducted at salem district ,there is a significant raise in congenital anomaly due to consanguineous marriages .38.81% among second degree consanguinity,28.8% among third degree consanguinity(Dr.V.Narmadha,M.Nirmala-2019).

According to national family health survey conducted on 2015-2016 in India the consanguineous marriage rate is high in south India .Tamilnadu shows 29.5% of consanguineous marriage percentage. (NFHS-2015-2016).

National family health survey2015-2016

Region	State	Consanguinity %
North region	Delhi	5.1%
	Haryana	3.6%
	Himachel Pradesh	0.1%
	Sikkim	0.2%
	Thripura	0.9%
	Goa	5.7%
	Gujarat	6.6%
	Maharashtrira	12.2%
South region	Karnataka	24.6%
	Tamilnadu	29.5%
	Kerala	3%
	Andrapradesh	26.6%

2. Need for the Study: -

International: - 20% of the human population live in world with a history of consanguineous marriage and that at least 8.5% of children have consanguineous parent .Approximately 1.1 billion

marriages are consanguineous marriages and one in three is between cousins. International Consanguinity Workshop was conducted from May 3, 2010, to May 7, 2010 at Geneva to discuss the known and presumptive risks and benefits of close

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relative marriages and to identify important future areas for research on consanguinity.

National: Prevalence and determinants of consanguineous marriage and its types in India was provided by National Family Health Survey-4, 2015-2016 (July 2020-Journal of Bio social science). 4,56,646 ever married women aged between 15 to 49 years were analysed

- Prevalence of consanguineous marriage was 9.9% in all over India.
- In south east region- 23%
- North east region-3.1%
- Western region-14.8%
- Eastern region-23.4%
- Central region-22%
- North region-13.1%
- South region-23.6%

State: A study was conducted by Dr. Prakasam.C.P at Chidambaram Tehsil at TamilNadu in 2018. He collected data from 2665 house hold and covering 8 sample villages. Results reveals the prevalence of consanguineous marriages found to be **26.79%** and **7.6%** women experienced spontaneous abortion, Still births are found to be higher in consanguineous marriage. 5.3% disability was observed among consanguineous marriage.

A population based cross sectional study on consanguineous marriage at rural areas near by Theni District of

Tamil Nadu was conducted in 2015. 750 married women aged between 15 and 49 years selected from Melur

Taluk. Among 750 women 294 had consanguineous union - 39.2%. Firstcousin marriage (16.6%) **III° consanguinity**. Uncle with niece marriage-19.7%. **II° consanguinity**. Statistically possitive association was found between the consanguinity and congenital anomaly, prenatal and postnatal loss.

So many people follow the same way of study. But I want to do some thing unique in my study. As a researcher I want to make the society to understand about the complications of consanguineous marriage and to avoid it. I found lot of consanguineous marriages due to upholding family structure, local tradition, low educational status and for the safety of women and for keeping property and money within the family. I am very much worrying about the people who are not aware of the complications and I want to inform the society about the comp

3. Objectives

Statement of the problem: “Effects of consanguineous marriage on pregnancy outcome in rural areas of Theni District” A comparative and descriptive study.

Objectives of the study:

1. To assess the effects of consanguineous marriage on pregnancy outcome.
2. To compare the effects of consanguineous and non consanguineous marriage on pregnancy outcome.
3. To identify the association between the effects of consanguineous marriage with degree, age, relegion, sex of the baby and birth order.

Operational definition:

Assess: To judge or form an opinion about effects of consanguineous marriage on pregnancy outcome.

- 1. Consanguineous marriage:** Consanguineous marriage is the union of individuals having a common ancestor.
- 2. Pregnancy outcome:** congenital malformations preterm, low birth weight, Fetal loss, and still birth.
- 3. Effects of consanguineous marriage on pregnancy outcome:** Refers to effects of consanguineous marriage on pregnancy outcome such as congenital malformations, Abortion, still birth and genetic disorder.

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4. Methodology

Descriptive-comparative research design was adopted. The study was conducted at selected rural areas of Theni District, having total population of 13,00,000 in that 15-60of age group women and men were selected based on inclusion criteria , Non randomized convenient sampling technique was used to select the samples of 160 women and men between the age group of 15-60.

5. Tools for data collection

Tool consist of 10 multiple choice questions includes socio demographic and pregnancy outcome.

6. Date Collection Procedure

The necessary administrative Permission was obtained for conducting the study. After getting the informed consent, the data were collected by using structured interview schedule. The women and men were interviewed separately. Time limit of 10 to 15 minutes were taken to collect data from each sample.

7. Data Analysis and Interpretation

Section I-To assess the effects of consanguineous marriage on pregnancy outcome.

Section II- To compare the effects of consanguineous and non consanguineous marriage on pregnancy outcome

Section III-To identify the association between the effects of consanguineous marriage with degree, age, religion, sex of the baby and birth orders

8. Major Findings

Table 1: Shows the Demographic Profile

Demographic variables		n	%
Age	15 to 24years	56	35.00%
	25 to 34years	74	46.25%
	35 to 44years	27	16.88%
	45 to 54years	3	1.88%
	55 to 60years	0	0.00%
Sex	Male	72	45.00%
	Female	88	55.00%
Educational status	1 to 5th standard	13	8.13%
	6th to 10th std	40	25.00%
	11th to 12th std	45	28.13%
	Graduate or diploma	49	30.63%
	Non formal education	13	8.13%

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Religion	Hindu	148	92.50%
	Muslim	8	5.00%
	Christian	4	2.50%
Type of marriage	Consanguineous	82	51.25%
	Non consanguineous	78	48.75%
If consanguineous degree of consanguinity	Ist degree	1	1.22%
	IIInd degree	24	29.27%
	IIIInd degree	30	36.58%
	IV th degree	27	32.93%
No of children	One	54	33.75%
	Two	80	50.00%
	Three	16	10.00%
	More than three	8	5.00%
	None	2	1.25%
Health status of the children	Congenital anomaly	5	3.13%
	Abortion	8	5.00%
	Still birth	3	1.88%
	Intra uterine death	21	13.13%
	Genetic disorders	121	75.63%
	Healthy	2	1.25%
If any health related problem sex of the child	Male	13	8.13%
	Female	13	8.13%
		121	75.62%

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Birth order of affected child			
Nil			
First	15	9.38%	
Second	24	15.00%	
Three	0	0.00%	
Fourth	0	0.00%	
Fifth	0	0.00%	

Table2: Shows the Age Wise Sex Distribution

SEX	N	Mean age years	Std. Deviation	Student independent t-test
Male	72	32.58	7.48	t=5.58 p=0.001significant
Female	88	27.42	3.98	

Males mean age is 32.58 years and females mean age is 27.42 years. Overall mean age is

29.75 years and SD is 6.34 years



Figure 1: Simple bar diagram with 2 standard deviation shows the sex wise age Distribution.

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Table 3: Shows Consanguineous Marriage and Pregnancy Outcome

	Type of marriage				Chi square test	Odds ratio(95% CI)
	Consanguineous		Non consanguineous			
Health status of the children	n	%	n	%		
Healthy	50	40.65%	73	59.35%	$\chi^2=23.92$ $p=0.001^{***}(S)$	9.3(3.4-25.6)
With problem	32	86.49%	5	13.51%		
Total	82		78			

Statistically there is a significant difference between Consanguineous and non

Consanguineous married mothers pregnancy outcome. It was observed using chi square test. Consanguineous married mothers are having 9.3

times risk of having pregnancy outcome problems. . It was observed using odds ratio with 95% confidence interval.

Table 4: Shows Health Status of the Children

Health status of the children	Type of marriage			
	Consanguineous		Non consanguineous	
	n	%	n	%
Congenital anomaly	3	3.66%	2	2.56%
Abortion	8	9.76%	0	0.00%
Still birth	3	3.66%	0	0.00%
Genetic disorders	18	21.95%	3	3.85%
Healthy	50	60.98%	73	93.59%
Total	82		78	

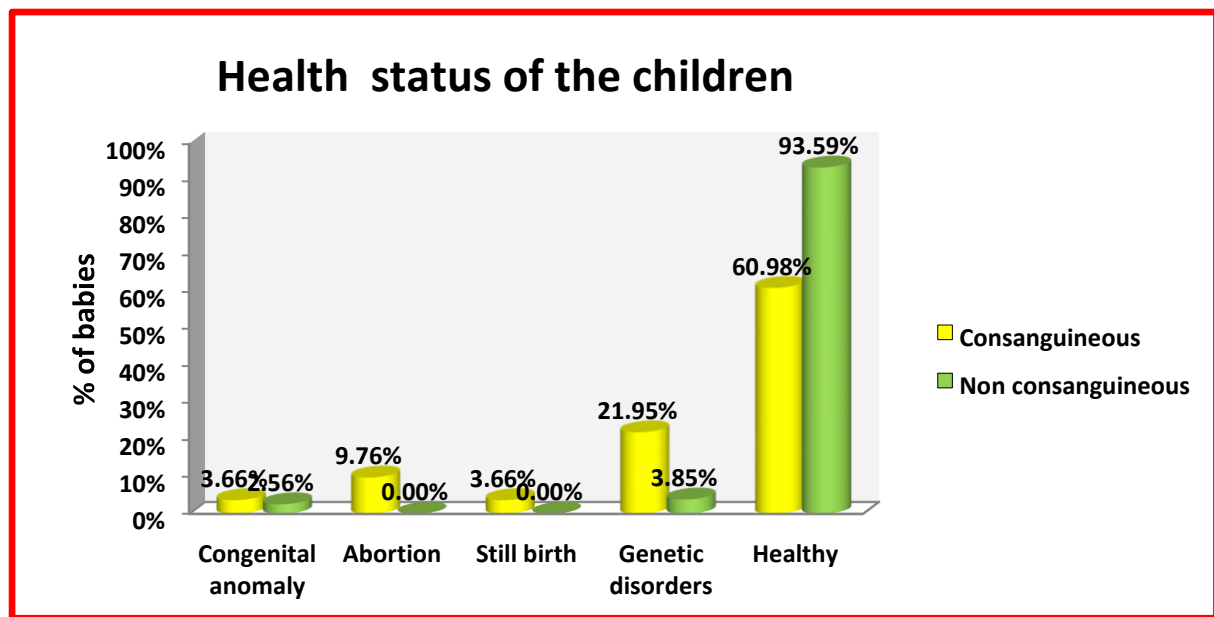


Figure 2: Multiple bar diagram shows the health status of children between Consanguineous and Non consanguineous marriage.

Table 5: SHOWS TYPE OF MARRIAGE AND HEALTH STATUS OF CHILDREN

Health status of the children	Type of marriage				Chi square test
	Consanguineous		Non consanguineous		
	n	%	n	%	
Congenital anomaly/abortion/still birth	14	17.07%	2	2.56%	□ 2=23.93 p=0.001***(S)
Genetic disorders	18	21.95%	3	3.85%	
Healthy	50	60.98%	73	93.59%	
Total	82		78		

Consanguineous married mothers are having 17.07% of Congenital anomaly/abortion/still birth whereas Non consanguineous mothers are having only 2.56%

Consanguineous married mothers are having 21.95% of Genetic disorders whereas Non consanguineous mothers are having only 3.85%

Consanguineous married mothers are having 60.98% of healthy pregnancy outcome whereas Non consanguineous mothers are having 93.59%

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This difference is statistically significant. It was calculated by using chi square test.

Table 6: Association between the effects of consanguineous marriage with Demographic variables

Demographic variables		Type of marriage			
		Consanguineous		Non consanguineous	
		n	%	n	%
Age	15 to 24years	33	40.24%	23	29.49%
	25 to 34years	37	45.12%	37	47.44%
	35 to 44years	12	14.63%	15	19.23%
	45 to 54years	0	0.00%	3	3.85%
	55 to 60years	0	0.00%	0	0.00%
Sex	Male	32	44.44%	40	55.56%
	Female	50	56.81%	38	43.19%
Educational status	1 to 5th standard	6	7.32%	7	8.97%
	6th to 10th std	19	23.17%	21	26.92%
	11th to 12th std	28	34.15%	17	21.79%
	Graduate or diploma	23	28.05%	26	33.33%
	Non formal education	6	7.32%	7	8.97%
Religion	Hindu	79	96.34%	69	88.46%
	Muslim	2	2.44%	6	7.69%
	Christian	1	1.22%	3	3.85%
If consanguineous degree of consanguinity	Ist degree	1	1.22%	0	0.00%
	IIInd degree	24	29.27%	0	0.00%

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	IIIInd degree	30	36.59%	0	0.00%
	IV th degree	27	32.93%	0	0.00%
No of children	One	31	37.80%	23	29.49%
	Two	36	43.90%	44	56.41%
	Three	9	10.98%	7	8.97%
	More than three	5	6.10%	3	3.85%
	None	1	1.22%	1	1.28%
Health status of the children	Congenital anomaly	3	3.66%	2	2.56%
	Abortion	8	9.76%	0	0.00%
	Still birth	3	3.66%	0	0.00%
	Genetic disorders	18	21.95%	3	3.85%
	Healthy	50	60.98%	73	93.59%
If any health related problem sex of the child	Male	10	31.25%	5	100.00%
	Female	22	68.75%	0	0.00%
Birth order of affected child	First	9	60.00%	6	40.00%
	Second	21	87.50%	3	42.50%
	Three	0	0.00%	0	0.00%
	Fourth	0	0.00%	0	0.00%
	Fifth	0	0.00%	0	0.00%

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Table7: Association between the effects of consanguineous marriage with Demographic variables

Demographic variables		Type of marriage				n	Chi square test/yates corrected chi square test
		Consanguineous(n=82)		Non consanguineous(n=78)			
		n	%	n	%		
Age	15 to 25years	33	58.93%	23	41.07%	56	$\chi^2=2.54$ p=0.11(NS)
	>25years	49	47.11%	58	52.89%	104	
Sex	Male	32	44.44%	40	55.56%	72	$\chi^2=2.43$ p=0.12(NS)
	Female	50	56.81%	38	43.19%	88	
Educational status	Upto school	59	46.15%	52	53.85%	111	$\chi^2=0.53$ p=0.47(NS)
	Graduate or diploma	23	46.94%	26	53.06%	49	
Religion	Hindu	79	53.38%	69	46.62%	148	$\chi^2=3.57$ p=0.07(NS)
	Muslim &Christian	3	25.00%	9	75.00%	12	
If consanguineous degree of consanguinity	Istand						$\chi^2=0.00$ p=1.00(NS)
	IIIndegree	25	100.00%	0	0.00%	25	
No of children	III and IVth degree	57	100.00%	0	0.00%	57	$\chi^2=1.24$ p=0.27(NS)
	One	31	57.41%	23	42.59%	54	
Health status of the children	Two	51	48.11%	55	51.89%	106	$\chi^2=23.93$ p=0.001*** (S)
	Healthy	50	40.65%	73	59.35%	123	
If any health related problem sex of the child	With problem	32	86.49%	5	13.51%	37	$\chi^2=1.50$ p=0.21(NS)
	Male	10	76.92%	3	23.08%	13	
Birth order of affected child	Female	13	100.00%	0	0.00%	13	$\chi^2=3.93$ p=0.05* (S)
	First	9	60.00%	6	40.00%	15	
	Second	21	87.50%	3	42.50%	24	

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Health problems are more in consanguineous marriage.

Children with second order of birth are affected more due to consanguineous marriage

9. Conclusion

Consanguineous married mothers are having higher rate of Congenital anomaly/abortion/still birth than non consanguineous mothers. Consanguineous married mothers are having higher percentage of birth to children with genetic disorders than Non consanguineous mothers. Consanguineous married mothers are having poor pregnancy outcome than Non consanguineous mothers. In a country like India where about one-fifth of all marriages are still between blood relatives, the findings of this study assume importance not only for socio cultural reasons but also to understand the reproductive health outcomes. At the policy level, this study recommends the need for educating people on the health risks associated with consanguineous.

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