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Research Article

A STUDY TO EVALUATE THE EFFECTIVENESS OF PLANNED TEACHING PROGRAM ON KNOWLEDGE REGARDING EFFECTS OF ENVIRONMENTAL TOXINS AND LIFESTYLE FACTORS ON MALE FERTILITY AMONG MALE DEGREE STUDENTS FROM SELECTED COLLEGES IN BANGALORE

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A R T I C L E I N F O

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A B S T R A C T

Infertility is one of the major trending problems faced by the couples all over the world. The recent growth of the Indian population currently is over one billion and is expected to touch 2 billion by 2035. Even though curtailing population growth is a major concern, mean while substantial numbers of infertile couples in India have an equally great concern.

Methods and Materials: A pre experimental research design was used to accomplish the objective. Study was undertaken on 60 male degree students studying in different colleges in Bangalore by using purposive sampling technique. Structured knowledge questionnaire was used to assess the knowledge.

Results: In the pre-test the subjects had inadequate knowledge of 13.63% whereas in post-test there was significant gain in mean percentage knowledge score of about 23.38%. The mean difference shows 9.75% with the result of 34.71 at 0.001 level of significance which is highly significant and effective. There is no significant association was not found between the demographic variables.

Conclusion: From this study it is concluded that majority of the males are unaware about male infertility and develop an unhealthy lifestyle. Through the planned teaching program information had been given hoping to reduce the rate of infertility.

INTRODUCTION

In the context of human society, a group of people affiliated either by consanguinity, affinity, or co-residence or some combination of these called family. Kid's play an important role in the family.[1] The culture to which we belong has always wanted to have kids to carryon the name of the family. Fertility is the ability of a person to produce offspring. Estimates suggest that nearly 72.4million couples globally experience fertility problems. Infertility affects approximately1 out of every 6couples. Fertility rates of Uttar Pradesh, Bihar and Kerala are sown as 2.74, 3.41 and 1.56 respectively.[2] Male in fertility factors contribute to approximately 30%ofallinfertilitycases, and male in fertility alone accounts for approximately one-fifth of all in fertility cases. A healthy diet rich in fresh fruits, vegetables, and whole grains, and regular exercise should be followed as they have their positive effects on male fertility and sperm health.[3] A nurse has an important role and responsibility and play as an inspirational role in treating the infertility.

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Therefore, it's the need of the hour to look in to the factors which are causing such a rise in male in fertility by educating the prospective fat he ri.e. the youths.[4]

Objectives

1. Assess the knowledge on the effects of environmental toxin and life style factors on male fertility among male degree students before the administration of planned teaching program.
2. Assess the knowledge on the effects of environmental toxins and lifestyle factor son male fertility among male degree students after the administration of planned teaching program.
3. Evaluate the effectiveness of planned teaching program on the effects of environmental toxins and lifestyle factors on male fertility among male degree students by comparing the pre-test and post-test knowledge score.
4. Find the association between pre-test knowledge score of male degree students regarding environmental toxins and lifestyle factors on male fertility among male degree students with their selected demographic variables.

REVIEW OF LITERATURE

Studies Related to Causes of Male Infertility

EY Adashi, *et al.,* conducted a meta-analytic study to determine the association between cigarette smoking and sperm density. The logarithm of the ratio of mean sperm density for smokers to that for non-smokers for the studies included in this meta- analysis was regressed against a constant, an indicator of study population source, minimum number of cigarettes smoked per day among smokers, exclusion of a zoospermicmen, number of semen specimens analysed, and blind in go flaboratory per sonnel to the smoking status of the study participants. Results revealed that cigarette smoking is associated with lo were dsperm density. [5]

Studies Related to Effects of Environmental Toxins

F Namvar, *et al,* conducted a meta-analytic study was to examine the impact of air pollution on the quality ofsperm.Atotalof11articleswereultimately included in a meta-analysis to exam in the impact of air pollution on sperm parameters. The results of this meta-analysis showed that airpollution reduces sperm motility.[6]

Studies Related to Effects on Lifestyle Factors

Chinnaswamy P Muthusami KR conducted a non-probability purposive clinical study to evaluate the effects of chronic alcoholism on the male fertility hormones and quality of semen. Semen volume, sperm count, motility, and number of morphologically normal sperm were significantly decreased. The study concluded that chronic alcohol consumption has a detrimental effect on male reproductive hormones and on semen quality.[7]

Studies Related to Knowledge on Male Infertility

AA Alabdrabalnabi, *et al,* conducted across sectional study to assess the knowledge and attitudes of infertile and fertile Saudi participant son infertility, possible risk factors, and social consequences; and to determine the practices of infertile Saudi couples to promote their fertility. Results found out that poor level of knowledge (59%) and a neutral attitude (76%) toward infertility, supernatural causes (58.8%), black magic (67.5%), intrauterine devices (71.3%), and contraceptive pills (42.9%), the primary and secondary preference or infertility treatment by 6.7% and 44.2% of IVF patients, respectively. The study concluded that couples need to follow some interventions to conceive.

RESEARCH METHODOLOGY

Research Approach*:* Quantitative research approach

Research Design*:* Pre- experimental research design

Research Variables: Planned teaching program

Demographic Variables*:* Age, educational status, occupation of father, occupation of mother, religion, family income, source of information, place of residence, duration of usage of mobile phone, place to keep mobile phones and mode of transport to college.

Setting Of The Study*:* Male degree colleges in selected areas of Bangalore {Eben-Ezer degree college and Far an college of management, Bangalore}

Sample: male degree student s who are studying in selected colleges in Bangalore, who fulfil the inclusion criteria.

Sample Size*:* 60

Sample Technique*:* Random sampling technique

Tools: Structured questionnaires

Technique*:* Lesson plan

RESULTS

Section I: Frequency and percentage distribution of respondents according to the demographic variables.

Table 1 Demographic Profile

Demographic information		No. of students	%
Age	19 years	25	41.7%
	20 years	15	25.0%
	21 years	20	33.3%
Education	1st year	25	41.7%
	2nd year	15	25.0%
	3rd year	20	33.3%
Occupation of father	Government employee	12	20.0%
	Private employee	15	25.0%
	Businessman	14	23.3%
	Labourer	19	31.7%
Occupation of mother	Government employee	10	16.7%
	Housewife	26	43.3%
	Labourer	14	23.3%
	Private employee	10	16.7%
Income of the family	< Rs.15,000	26	43.3%
	Rs.15,000-Rs.30,000	13	21.7%
	Rs. 30,000-Rs.45,000	13	21.7%
	> Rs.45,000	8	13.3%
Religion	Hindu	23	38.3%
	Muslim	10	16.7%
	Christian	27	45.0%
Have you received any information about infertility in past?	Yes	60	100.0%
	No	0	0.0%
Sources of information	Books and magazines	26	43.3%
	Internet	27	45.0%
	Health care professionals	2	3.3%
	Newspaper	5	8.4%
Place of residence	Urban	22	36.6%
	Rural	12	20.0%
	Sub rural	13	21.7%
	Sub urban	13	21.7%
Duration of usage of mobile phones per day	No mobile phone	0	0.0%
	less than 2hours per day	23	38.4%
	5 hours per day	29	48.3%
	> 10 hours per day	8	13.3%
Place to keep mobile phones while travelling	Shirt pocket	19	31.6%
	Front pant pocket	27	45.0%
	Back pant pocket	7	11.7%
	Bag	7	11.7%
Mode of transport to college	By walk	32	53.4%
	Bus	17	28.3%
	Bike	11	18.3%
	Cycle	0	0.0%

Section II: Findings related to pre-test knowledge scores of male degree students regarding effects of environmental toxins and life style factors on male fertility*.*

The data presented shows the classification of male degree students with regard to their pre test knowledge level on effects of environmental toxins and lifestyle factor son male fertility. It is found that 73.3% had inadequate level of knowledge, 26.7% of them had moderate knowledge and none of them who participated in the study had adequate knowledge regarding effects of environmental toxins and lifestyle factors On male fertility.

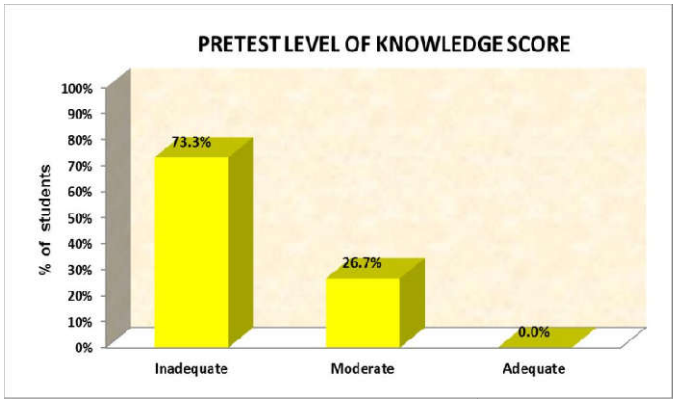

Figure 1 Graph Representing Distribution of Respondents On Pre Test Knowledge Level On Effects Of Environmental toxins and life style factors On male Fertility

Section III

This section deals with the findings related to post test knowledge scores of male degree students on effects of environmental toxins and lifestyle factors

The data depicted shows the classification of male degree students with regard to their post test knowledge level on effects of environmental toxins and lifestyle factor son male fertility. It was found that majority76.7%of respondents had adequate knowledge level and remaining23.3 %of them have obtained moderate knowledge. It is seen that in the post test that n one of the sample were having in adequate knowledge regarding effects of environmental toxins and lifestyle factors on male fertility.

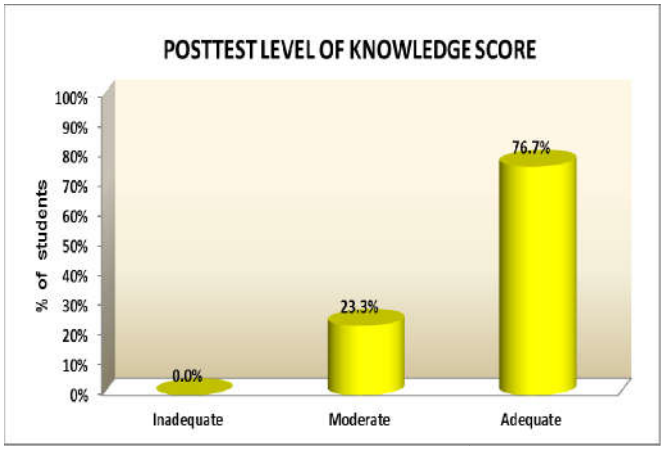

Figure 2 Graph Representing Distribution of Respondents On posttest Knowledge level on effects of Environmental toxins and life style factors on male Fertility

Section IV

This section deals with comparison of mean pre-test and post test knowledge scores to evaluate the effectiveness of planned teaching program on knowledge regarding effects of environmental toxins and lifestyle factors on male fertility.

To evaluate the effectiveness of the planned teaching program on knowledge regarding effects of environmental toxins and lifestyle factors on male fertility among male degree students in selected colleges in Bangalore, null hypothesis (**H01**), was developed that is, there is no significant change in the mean post test knowledge scores of male degree students regarding effects of environmental toxins and lifestyle factors on male fertility. The level of significance was set at 0.05 levels. Inorderto test the effectiveness of PTP a paired 't' test was computed.

The data depicted in the above shows that the mean post test knowledge score (23.38) were significantly higher than the mean pre-test knowledge score (13.63) at 0.05%level of significance.

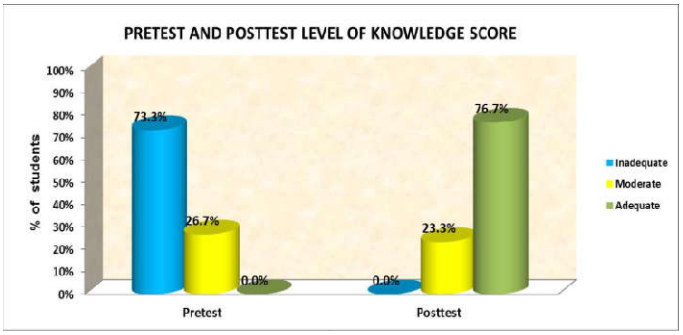

Figure 3 Graph representing Distribution of respondents According To overall pretest and post test mean Knowledge level on Effects of Environmental toxins and Life style factors on Male fertility

For general information on effects of environmental toxins and life style factors on male fertility among male degree students, the obtained 't' value is 34.71anditis found to be significant at 0.05 level t=1.96(59df). In the area of general information on male fertility, the obtained't'value24.25 is also found to be significant at 0.05 level t=1.96(59df). Regarding the effects of environmental toxins and life style factors on male fertility, the obtained 't' value is 17.46 which is also found to be significant at 0.001 level t=1.96(59df) and for prevention of decreased male fertility 't' value is 25.82 is also found to be significant at 0.001level t=1.96(59df). From the above statistical information, it is evident that the planned teaching program was significantly effective in improving the knowledge on effects of environmental toxins and lifestyle factor son male fertility among male degree students.

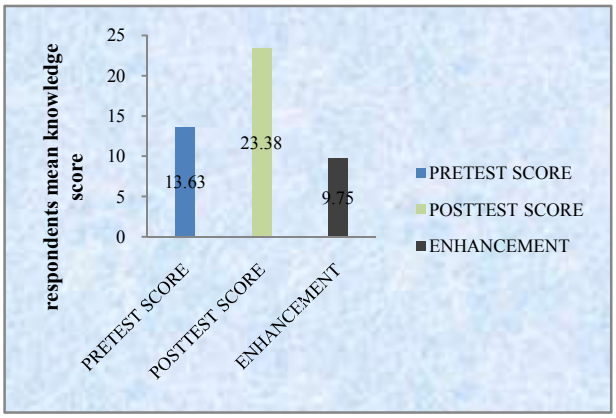

Figure 4 Graph Representing Distribution of respondents According To aspect wise mean pre test post test Knowledge score on effects of Environmental toxins and Lifestyle factors on Male fertility

Section V: This section deals with association of mean pre-test knowledge score of male degree students regarding effects of environmental toxins and lifestyle factors on male fertility.

Table 2 Association between Demographic variables and Pre-test Knowledge level on effects of environmental toxins and lifestyle factors on male fertility among male degree students

Demographic variables		Pre-test level of knowledge score						N	Chi square test
		Inadequate		Moderate		Adequate			
		n	%	n	%	n	%		
Age	19 years	21	84.0%	4	16.0%	0	0.0%	25	χ2=5.23 P=0.07 (NS)
	20 years	12	80.0%	3	20.0%	0	0.0%	15	
	21 years	11	55.0%	9	45.0%	0	0.0%	20	
Education	1st year	21	84.0%	4	16.0%	0	0.0%	25	χ2=5.23 P=0.07 (NS)
	2nd year	12	80.0%	3	20.0%	0	0.0%	15	
	3rd year	11	55.0%	9	45.0%	0	0.0%	20	
Occupation of father	Government employee	11	91.7%	1	8.3%	0	0.0%	12	χ2=6.27 P=0.08 (NS)
	Private employee	12	80.0%	3	20.0%	0	0.0%	15	
	Businessman	11	78.6%	3	21.4%	0	0.0%	14	
	labourer	10	52.6%	9	47.4%	0	0.0%	19	
Occupation of mother	Government employee	9	90.0%	1	10.0%	0	0.0%	10	χ2=4.40 P=0.22 (NS)
	Housewife	19	73.1%	7	26.9%	0	0.0%	26	
	Labourer	11	78.6%	3	21.4%	0	0.0%	14	
	Private employee	5	50.0%	5	50.0%	0	0.0%	10	
Income of the family	< RS.15,000	21	80.8%	5	19.2%	0	0.0%	26	χ2=3.35 P=0.33 (NS)
	Rs.15,000-Rs.30,000	10	76.9%	3	23.1%	0	0.0%	13	
	Rs. 30,000-Rs.45,000	7	53.8%	6	46.2%	0	0.0%	13	
	> Rs.45,000	6	75.0%	2	25.0%	0	0.0%	8	
Religion	Hindu	19	82.6%	4	17.4%	0	0.0%	23	χ2=2.72 P=0.25 (NS)
	Muslim	8	80.0%	2	20.0%	0	0.0%	10	
	Christian	17	63.0%	10	37.0%	0	0.0%	27	
Have you received any information about infertility in past?	Yes	44	73.3%	16	26.7%	0	0.0%	60	χ2=0.00 P=1.00 (NS)
	No	0	0.0%	0	0.0%	0	0.0%	0	
Sources of information	Books and magazines	23	88.5%	3	11.5%	0	0.0%	26	χ2=6.44 P=0.09 (NS)
	Internet	16	59.3%	11	40.7%	0	0.0%	27	
	Health care professionals	1	50.0%	1	50.0%	0	0.0%	2	
	Newspaper	4	80.0%	1	20.0%	0	0.0%	5	
Place of residence	Urban	19	86.4%	3	13.6%	0	0.0%	22	χ2=5.97 P=0.11 (NS)
	Rural	10	83.3%	2	16.7%	0	0.0%	12	
	Sub rural	7	53.8%	6	46.2%	0	0.0%	13	
	Sub urban	8	61.5%	5	38.5%	0	0.0%	13	
Duration of usage of mobile phones per day	No mobile phone	0	0.0%	0	0.0%	0	0.0%	0	χ2=1.77 P=0.42 (NS)
	less than 2hours per day	19	82.6%	4	17.4%	0	0.0%	23	
	5 hours per day	20	69.0%	9	31.0%	0	0.0%	29	
	> 10 hours per day	5	62.5%	3	37.5%	0	0.0%	8	
Place to keep mobile phones while travelling	Shirt pocket	13	68.4%	6	31.6%	0	0.0%	19	χ2=4.05 P=0.25 (NS)
	Front pant pocket	23	85.2%	4	14.8%	0	0.0%	27	
	Back pant pocket	4	57.1%	3	42.9%	0	0.0%	7	
	Bag	4	57.1%	3	42.9%	0	0.0%	7	
Mode of transport to college	By walk	26	81.2%	6	19.8%	0	0.0%	32	χ2=2.20 P=0.33 (NS)
	Bus	11	64.7%	6	35.3%	0	0.0%	17	
	Bike	7	63.6%	4	36.4%	0	0.0%	11	
	Cycle	0	0.0%	0	0.0%	0	0.0%	0	

Table 6 shows the association between pretest level of knowledge and their demographic variables. None of the demographic variables are significantly associated with their pretest level of knowledge score. Statistical significance was calculated using pear son chi square test.

Have you received any information about infertility in past?	**Yes**	**60**	**44**	**73.3**	**16**	**0**	**0.0 NS**	**P>0.001 (5.991)**
	No	**0**	**0**	**0**	**0**	**0**		
Sources of information	Books and magazines	26	23	88.5	3	11.5	6.44 NS	P>0.001 (7.815)
	Internet	27	16	59.3	11	40.7		
	Health care professionals	2	1	50	1	50		
	Newspaper	5	4	80	1	20		
Place of residence	Urban	22	19	86.4	3	13.6	5.97 NS	P>0.001 (7.815)
	Rural	12	10	83.3	2	16.7		
	Sub rural	13	7	53.8	6	46.2		
	Sub urban	13	8	61.5	5	38.5		
Duration of use of mobile phones per day	No mobile phones	0	0	0	0	0	1.77 NS	P>0.001 (7.815)
	<2hours	23	19	82.6	4	17.4		
	5 hours	29	20	69	9	31		
	>10 hours	0	5	62.5	3	37.5		
Place to keep mobile phones per day	Shirt pocket	19	13	68.4	6	31.6	4.05 NS	P>0.001 (7.815)
	Front pant pocket	27	23	85.2	4	14.8		
	Back pant pocket	7	4	57.1	3	42.9		
	Bag	7	4	57.1	3	42.9		
Mode of transport to college	By walk	32	26	81.2	6	19.8	2.20 NS	P>0.001 (7.815)
	Bus	17	11	64.7	6	35..3		
	Bike	11	7	63.6	4	36.4		
	Cycle	0	0	0	0	0		

* Significant at 5%Level, NS :Non-significant

CONCLUSION

From this study, it is observed that the mean pre-test knowledge score of male degree student son knowledge regarding the effects of environmental toxins and lifestyle factors, out of 60 samples majority of the samples 44(73.3%) had in adequate level of knowledge,16(26.7%) of them had mode rate knowledge and none of them who participated in the study had adequate knowledge regarding effects of environmental toxins and lifestyle factors on male fertility. But the post test knowledge score, out of 60samplesmajority 46(76.7%) of respondents had adequate knowledge level and remaining 14(23.3%)of them have obtained mode rate knowledge. The comparison of overall pretest and post test mean knowledge score of male degree students shows an enhancement mean of 9.75.The observe Mean percentage enhancement score is found to be32.50%.When a paired't' test was done, the obtained 't' value is34.71% [($p<0.05$,59df)= 1.96]. From this it can be inferred that the planned teaching program is effective in enhancing the knowledge of male degree students on effects of environmental toxins and life style factor son male fertility.

In the present study, the comparison of overall pre-test and post test mean knowledge score of male degree student son effects of environmental toxins and life style factors on male fertility shows an enhancement mean of 9.75. The observe Mean percentage enhancement score isfoundtobe32.50%.When a paired 't' test was done, the obtained 't' value is34.71%[($p<0.05$,59df)= 1.96].From this it can be inferred that the planned teaching program is effective in enhancing the knowledge of male degree students on effects of environmental toxins and lifestyle factors on male fertility.

Study shows no association between the knowledge scores and selected demographic variables. Thus this study gives the area of enhancing the knowledge. Therefore, further information need to be conveyed to the male degree students to improve their knowledge.

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