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Original Research Article

Effectiveness of health communication programme on knowledge regarding prevention of congenital anomalies among parents: a pre-experimental study

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ABSTRACT

Background: Most commonly severe congenital anomalies (CA) are heart defects, neural tube defects, and Down syndrome where some CA can be prevented. The present study was aimed to improve the knowledge regarding the prevention of CA using a health communication programme (HCP) among parents in selected community area at Udaipur.
Methods: Evaluative research approach and pre-experimental, one-group pre-test - post-test research designs were adopted for this study. Using a non-probability, convenient sampling technique, sixty parents were recruited from the selected community area at Udaipur city. Tools include demographic data and a self-structured knowledge questionnaire. Data were analyzed using descriptive and inferential values by IBM statistical package for social sciences (SPSS; version 23) software.
Results: Data revealed that there is a lack of knowledge regarding the prevention of CA among parents and this knowledge can be increased by administering HCP on prevention of CA. The mean and standard deviation of post-test knowledge score 23.63±10.5 was higher than the mean and standard deviation of pre-test knowledge score 9.97±13.1.
Conclusions: It is required to focus on HCP to improve the knowledge regarding the prevention of CA among parents in the community.

Keywords: Congenital anomalies, Health communication programme, Knowledge, Parents, Prevention

INTRODUCTION

Around 295 000 newborns die worldwide due to CA. Important causes of infant and childhood deaths, chronic illness, and disability are CA. In 2010, one of the all resolutions on birth defects (BD) of the sixty-third world health assembly, member States agreed to promote primary prevention from CA by strengthening research and studies on etiology, diagnosis, and prevention.[1]

A prenatal origin wide range of abnormalities of the body structure as well as function is comprised by CA that are present at birth and typically required medical intervention for example cleft lip and spina bifida.[2] Major structural anomalies lead to most of the deaths, morbidity, and disability related to CA. In contrast, minor CA leads to no significant health problem in the neonatal period and tend to have limited social or cosmetic consequences for the affected individual such as single palmar crease and clinodactyly.[2]

These CA occur during intrauterine life which can be identified prenatally, at birth, or later in life. In 2010, According to the world health organization, due to CA an

estimated 270 000 deaths during the first 28 days of life were reported globally. A global report by March of Dimes (MOD) on BD reported that 7.9 (6%) million births occur annually worldwide with serious BD while 94% of these births occur in middle and low-income countries. It was jointly reported by WHO and MOD meetings that BD accounts for 7% of all neonatal mortality and 3.3 million under-five deaths. In 2006 as per MOD report, India has a 6-7% prevalence of birth defect and commonly includes congenital heart disease, congenital deafness, and neural tube defects as 8-10 per 1000 live births, 5.6-10 per 1000 live births, and 4-11.4 per 1000 live births respectively. In 2014, formulated India newborn action plan (INAP), has integrated the approaches for the prevention and care of the newborn with CA into primary health care, with an emphasis on maternal and child health.[3]

It was revealed that out of 1057 neonatal admissions 67 were found with CA that gives a prevalence of 6.3 percentage where cardiovascular and digestive systems were the most common.[4] It was found that three hundred and fifty antenatal mothers were surveyed using a pretested, self-administered questionnaire whereas the average scores of knowledges on BD, associated factors, and prevention and management of BD were 57.6%, 55.1%, and 58.8% respectively. Overall average knowledge was found to be moderate.[5]

There is a need for public awareness programs to increase knowledge about CA among people.[6] So, the present study was aimed to improve the knowledge regarding the prevention of CA using an HCP among parents in selected community area at Udaipur.

METHODS

Study design and setting

The present study used evaluative approach, a pre-experimental, one-group, pre-test- post-test designs to assess the effectiveness of HCP on knowledge regarding the prevention of CA among parents at selected village Umarda, Udaipur, Rajasthan. Baseline data were collected before and after HCP. The study conducted by exercising interviews among parents by the researcher during October 2019-May 2020.

Study participants

The sixty participants were selected conveniently from the community areas constituted both male and female parents living in the same area with the rural background at village Umarda of Udaipur, Rajasthan. Sixty parents have participated with inclusion criteria of those parents who are willing to participate, married, both male and female and those who can speak and understand both Hindi and English.

Ethical clearance

Ethical approval was obtained from the institutional ethics committee vide letter no. TCN/UDR/2019-20-114 dated 13 Jan. 2020. The purpose of study was informed to all the study participants prior to data collection along with agreeing to informed written consent, and data were anonymized by personal identification details.

Development of the tool

The content validity of the self-structured knowledge questionnaire and HCP for knowledge on prevention of CA was determined by sending them to the panel of experts. Whereas HCP includes the anatomy and physiology of the uterus, pre-embryonic, embryonic stage, fertilization and foetus, foetal development during the first trimester, second trimester, and third trimester, the factors influencing the foetal development, and the prevention of CA. After seeking their valuable comments and suggestions, tools were modified. The structured questionnaire consisted of thirty multiple-choice questions under six aspects such as definitions, anatomy, and physiology of uterus, foetal development, and factors influencing foetal development, factors affecting foetal development and preventive measures for CA. The test-retest method was used for the reliability of the data and it was found 0.83 which suggests that tool was highly reliable.

Data collection procedure

Structured interview schedule

Formal permission was obtained from the Gram Sarpanch of the selected village Umarda. All parents who were willing to participate were eligible for inclusion in the interview for knowledge assessment on the prevention of CA. The researcher approached all parents of the village, described the study and its structured interview schedule process, emphasizing its privacy and confidentiality, and their consent to participate was requested, utilizing a structured consent form in the parent's preferred language as Hindi. Parents were recruited until the necessary sample sizes were reached from the village Umarda. A total of sixty parents consented to participate. Structured interviews were conducted at the homes of each parent by interviewers trained in the study procedures to ensure that parent's privacy was maintained. The questionnaires examine parent's demographic and household characteristics including their socio-economic status and thirty self-structured knowledge items, the pre-test questionnaire was given to the participants and demographic data and knowledge on prevention of CA were assessed. The next day HCP was given on prevention of CA. After seven days investigator administered a post-test on knowledge questionnaire.

Data analysis

Data collected were collated, and subjected to statistical analysis using SPSS 23 version. Descriptive statistics viz. mean, standard deviation, percentage, and frequency were used to describe the demographic characteristics of the study participants. Used a chi-square test for association between socio-demographic variables and knowledge score on prevention of CA and a t test to compare the baseline data of the participants. We set the statistical significance level at $p<0.05$ and 95% confidence interval. Results presented using Tables and Figures.

RESULTS

A half number of participants 30 (50%) were in the age group of 26-35 years, very a smaller number of participants 6 (10%) were in the age group of 36-45 years. Majority of the participants 31 (51.67%) were male, 35 (58.33%) were Hindu, 50 (83.33%) family were nuclear, 23 (38.34%) were having upper primary education, 37 (61.67%) were dependent on agriculture, 22 (36.67%) family income were 5001-10000 Rs, 21 (35%) were getting information through mass media, and 28 (46.67%) were having 1 child. While least no. of participants 29 (48.33%) were females, 5 (8.33%) were in both Muslim and other religion each, 10 (16.67%) family were jointly living, 5 (8.33) graduates/postgraduates, 5 (8.33%) were government employees, 6 (10%) family income were above 15001 rupees, (11.67%) were getting information from all these available sources, and 2 (3.33%) were having >3 children (Table 1).

Table 1: Demographic profile of participants.

Characteristics	Frequency, (n=60)	Percentage (%), (n=60)
Age (Years)		
<25	17	28.33
26-35	30	50.00
36-45	6	10.00
46 and above	7	11.67
Gender		
Male	31	51.67
Female	29	48.33
Religion		
Hindu	35	58.33
Christian	5	8.33
Muslim	15	25.00
Any others	5	8.33
Type of family		
Nuclear	50	83.33
Joint	10	16.67
Educational qualification		
Primary	18	30.00
Upper primary	23	38.33
Higher secondary	14	23.33
Graduate/post-graduate	5	8.33
Occupation		
Govt. employee	5	8.33
Agriculture	37	61.67
Labour	12	20.00
Skilled worker	6	10.00
Monthly income of family (Rs.)		
Below 5,000	14	23.33
5,001-10,000	22	36.67
10,001-15,000	18	30.00
Above 15,000	6	10.00
Source of knowledge		
Family members	18	30.00
Health personnel	14	23.33
Mass media -TV/Radio	21	35.00
All of above	7	11.67
No. of children in family		
1 Child	28	46.67
2 Children	21	35.00
3 Children	9	15.00
More than 3 children	2	3.33

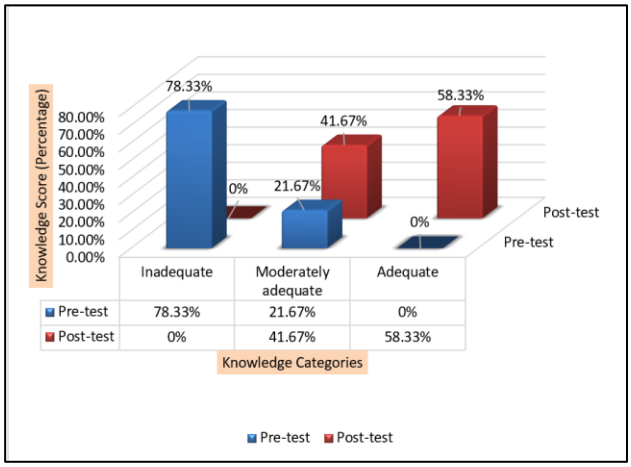

Figure 1: Comparison of knowledge score of participants on prevention of CA.

In the pre-test knowledge score, majority of the participants 78.33% had inadequate knowledge scores and none of the participants had adequate knowledge score while in post-test majority of participants 58.33% had adequate knowledge and none of the participants had inadequate knowledge (Figure 1).

The mean post-test knowledge score on prevention of CA, 23.63 (73.1 %) was higher than the mean pre-test knowledge score of 9.97 (31.1%). The calculated 't' value of 23.13 ($p \leq 0.05$) showed that there is a significant difference between the pre and post-test knowledge scores (Table 2).

Table 2: Effectiveness of HCP regarding knowledge on prevention of CA.

Area	Mean±SD, (n=60)	Paired t test
Knowledge		
Pre-test	9.97±13.1	23.13
Post test	23.63±10.5	

Significant at $p \leq 0.05$.

There is no association between knowledge and selected demographic variables like age, gender, religion, type of family, education, occupation, monthly income, source of knowledge, and no. of children (Table 3).

Table 3: Association between selected demographic variables and pre-test knowledge score.

Demographic variables	Frequency	Pre-test knowledge score, (n=60)		df	Chi square	Table value (Sig.)
		Moderately adequate knowledge	Inadequate knowledge			
Age (years)						
<25	17	5	12	3	3.6	7.81 NS
26-35	30	3	27			
36-45	6	2	4			
Above 45	7	3	4			
Gender						
Male	31	8	23	1	0.65	3.84 NS
Female	29	5	24			
Religion						
Hindu	35	5	30	3	0.52	7.81 NS
Christian	5	4	1			
Muslim	15	2	13			
Any others	5	2	3			
Type of family						
Nuclear	50	10	40	1	2.09	3.84 NS
Joint	10	3	7			
Educational qualification						
Primary	18	5	13	3	0.02	7.81 NS
Upper primary	23	7	16			
Higher secondary	14	1	13			
Graduate/postgraduate	5	0	5			
Occupation						
Govt. employee	5	1	4	3	1.41	7.81 NS
Agriculture	37	9	28			
Labour	12	2	10			
Skilled worker	6	1	5			
Monthly income (Rs)						
Below 5,000	14	6	8	3	0.45	7.81 NS
5,001-10,000	22	5	17			
10,001-15,000	18	1	17			

Continued.

Demographic	Frequency	Pre-test knowledge score, (n=60)		df	Chi	Table
Above 15,001	6	1	5			
Source of knowledge						
Family members	18	4	14	3	2.65	7.81 NS
Health personnel	14	4	10			
Mass media-TV/Radio	21	3	18			
All of above	7	2	5			
No. of children in family						
1 Child	28	7	21	3	0.25	7.81 NS
2 Children	21	3	18			
3 Children	9	1	8			
More than 3 children	2	2	0			

NS-No significant, Sig-Significant

DISCUSSION

In the present study, we assessed the self-developed interventional tool HCP for knowledge on the prevention of CA. The HCP on the prevention of CA helps to increase the knowledge among parents in the community.

The present study shows an increase in knowledge among parents regarding the prevention of CA. Reviewing the literature, Ahmed et al 70.8% of mothers in Beni-Suef having unsatisfactory knowledge regarding CA among children compared to 52% in Menofia and the rest have satisfactory knowledge.[7]

However, it was identified that the overall knowledge score of the participants after administration of HCP on knowledge of CA was significantly increased compared with the scores of a pre-test. These results support that HCP for knowledge on the prevention of CA was effective in improving knowledge among parents in the community. After reviewing the literature, Ladouceur et al. reported that there is a significant improvement of knowledge in the adolescent group after the education program where the range of increase was 23% to 44%.[8] Bello et al also support planning a similar awareness campaign.[9]

The present study shows that there is no association between knowledge with selected demographic variables like age, gender, religion, type of family, education, occupation, monthly income, and source of knowledge, No. of children. While reviewing the literature, a similar study from Masoumeh et al finding reveals that there is a significant association between selected demographic variables viz. age and the level of education.[6] Ahmed et al revealed that there are significant associations between knowledge with age and education.[7] Ladouceur et al reported that there is no influence by the age, sex, and the education on the knowledge of the participants.[8] Bello et al also reported that there is no association between knowledge with selected demographic variables viz. age, education, and no. of pregnancies.[9]

The present study revealed that there was a major increase in knowledge score in post-test after administering the HCP regarding knowledge on prevention of CA among parents. So, the HCP is an effective interventional tool and it must be administered to parents on a regular awareness campaign basis.[11]

The present study has a few limitations which are required to be considered viz. participants were recruited conveniently and those who were willing to participate in the study.

CONCLUSION

HCP is good means of awareness to improve the knowledge regarding the prevention of CA among parents in the community area. HCP was found significantly effective to improve the knowledge regarding the prevention of CA among parents. HCP must be an integral part of the health care delivery system at a peripheral level to effectively increase the knowledge of parents and to prevent CA.

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Ethical approval: The study was approved by the Institutional Ethics Committee

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