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Original Article

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A Quasi Experimental Study to Assess the Effectiveness of Picture Book on Level of Anxiety and Post- Operative Quality of Recovery among Children Undergoing Surgery in Selected Hospitals, Chennai

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Abstract

The main aim of the of the study was to assess the effectiveness of picture book on level of anxiety and post- operative quality of recovery among children undergoing surgery in selected hospitals, Chennai. Quasi experimental pre-test and post-test design was adopted for this study. Using Non probability purposive sampling technique, 50 children for study group and 50 children for control group were allotted. Data collection was done for the period of one month. Picture book was provided after assessing the demographic variables and pre test level of anxiety before undergoing surgery. The anxiety level after surgery and the post operative quality of recovery was assessed post operatively. The comparison of pre test level of anxiety and post test level of anxiety among study shows t value of 19.656 and p= 0.001 which is statistically significant. The comparison of post lest level of post operative quality if recovery among children undergoing surgery in study and control group shows t value of 15.97 which is statistically significant at p=0.001 level.

Keywords: Picture Book; Anxiety; Quality of Recovery; Surgery.

Introduction

Hospitalization is a stressful experience for children. Illness and hospitalization are one of the crisis children may face. The unfamiliar settings and uncertainty about treatment seemed to create feelings of anxiety. They are also concerned and feared about investigations and operations in relation to possibility of harm, mutilation, pain and possible death.

Kain et al. has shown that children with higher levels of preoperative anxiety were at 3.5 times higher risk for showing immediate postoperative negative behavior as compared to less anxious children. Anesthetic induction may be one of the most stressful peri-operative experiences for children [1].

According to Nelson (1986), children's coping skills were dependent not only by memory, but also through a sense on their awareness and understanding of their previous experience. This developmental experience serves as the foundation for the children's appraisal and their responses in dealing with threatening situation. There is a need to identify interventions that are targeted according to the children's cognitive and psychological development, to assist them to develop appraisal coping skills to deal with stressors when hospitalized [2].

Good preparation can help children feel less anxious about the anesthesia and surgery and get

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through the recovery period faster. But, like parents health care professionals also probably uncertain about the best way to prepare the child [3].

Donna Koller conducted a study in Toroto, Ontario, Canada revealed that most children prepared for surgical procedures experience significantly lower level of fear and anxiety as compared to the children who are not prepared. Preparation also promotes long term coping and adjustment to the future medical challenges [4].

Picture book is a creative process to improve and enhance the physical, mental and emotional well being of individual of all ages. It is based on the belief that the creative process involved in artistic self-expression helps people to resolve conflict and problems, develop interpersonal skills, manage behavior, reduce stress, reduce anxiety, increase self-esteem for communication than simply having a conversation and talking about things [5].

Statement of the Problem

A Quasi experimental study to assess the effectiveness of picture book on level of anxiety and post- operative quality of recovery among children undergoing surgery in selected hospitals, Chennai

Objectives

1. To determine the effectiveness of picture book on the level of anxiety and post-operative quality of recovery among children undergoing surgery in study group and control group.
2. To correlate the post test level of anxiety with post operative quality of recovery among children undergoing surgery in study group and control group.
3. To associate the post test level of anxiety and post-operative quality of recovery among children undergoing surgery with their demographic variables in study and control group.

Methodology and Materials

Quantitative approach and quasi experimental pre-test and post-test design was used. The study was conducted at 2 hospitals, Kanchi Kamakotti Child Trust Hospital and Mehta Children's Hospitals Private Limited, Chennai. Using Non probability purposive sampling technique, 50 children for study group and 50 children for control group were allotted. Picture book and explanations were given only to study group. The ethical guidelines were followed throughout the study.

Development, Description of The Tools

Section A: Structured Questionnaires were used to elicit demographic variables.

Section B: 1.*Spence Anxiety Scale for Hospitalized Children*

This scale was developed by Dr.Susen H Spence.and Professor Ron Rapee in 1999. The scale assesses six domains of anxiety including generalized anxiety, panic/agoraphobia, social phobia, separation anxiety, obsessive compulsive disorder and physical injury fears. The scoring of the tool was grouped into 3 categories. Mild anxiety-25-50%, moderate anxiety – 51-75% and severe anxiety is 76- 100%.

Post-Operative Quality of Recovery Scale (QoR-40)

It is a short questionnaire developed in 1999 by Dr. P.S. Myles, 40 items questionnaire intended to measure the Quality of Recovery. The items were grouped according to various aspects (dimensions) of recovery: emotional state (n=9), physical comfort (n=12), psychological support (n=7) physical independence (n=5) and pain (n=7). The scoring of this tool was grouped into 4 categories. Less than 20% Very poor; 21% – 40% Poor; 41%– 60% Average; 61%– 80% Good; 81% - 100% Excellent post operative Quality of recovery.

Results and Discussion

The Collected Data was Analyzed with SPSS Version 11.5

The data pertaining to the demographic variables of the study group are with regards to age 22(44.0%) age were in 6 to 8 Yrs; With regards to gender, 27 (54%) children were male and 23(46.0%) were females. In terms of education, 15 (30.0%) children were in 2nd standard. Regarding religion, 42 (84.0%) children were belongs to Hindu religion; In terms of number of siblings, 41 (82.0%) had one sibling. Regarding birth order 24 (48.0%) children were first in order. With respect to type of family 32 (64.0%) children were from nuclear family. With respect to surgery done, 30 (60.0%) have undergone appendicectomy, 10 (20.0%) have undergone repair of hypospadias, 10 (20.0%) have undergone tonsillectomy.

The data pertaining to the demographic variables

of the control group are with regards to age 21(42.0%) age were in 6-8 Yrs; With regards to 28(56%) were males and 22(44.0%) children were females. In terms of education control group 13(26.0%) children were in 2nd standard. Regarding religion 38(76.0%) children were belongs to Hindu religion; In terms of number of siblings 45(90.0%) have one sibling; Regarding birth order 29 (58.0%) were first in order; With respect to type of family 24 (48.0%) were in nuclear family, 26 (52.0% were from joint family.With respect to surgery done, 30 (60.0%) have undergone appendicectomy, 10 20.0%) have undergone repair of hypospadias, 10(20.0%) have undergone tonsillectomy.

Table 1: Assessment of pre-test and post-test level of anxiety of children undergoing surgery in study and control group N=100

	Study Group (n=50)						Control Group (n=50)					
	Mild anxiety		Moderate anxiety		Severe anxiety		Mild anxiety		Moderate anxiety		Severe anxiety	
	n	%	n	%	n	%	n	%	n	%	n	%
Pre Test	14	28	36	72	0	0	12	24	38	76	0	0
Post Test	48	96	2	4	0	0	14	28	36	72	0	0

* significant at P≤0.05** highly significant at P≤0.01 *** very high significant at P≤0.001

Table 2: Assessment of post-test level of post operative quality of recovery children undergoing surgery in study and control group N=100

Post operative Quality of recovery	Study group (n=50)		Control group (n=50)	
	No. of Children	%	No. of children	%
Very poor	0	0	0	0
Poor	0	0	0	0
Average	0	0	0	0
Good	5	10	15	30
Excellent	45	90	35	70

* significant at P≤0.05 ** highly significant at P≤0.01 *** very high significant at P≤0.001

Table 3: Comparison of pre and post test level of anxiety among children undergoing surgery between study and control group N=100

Test	Group	Mean	SD	Unpaired 't' Test	'p' value
Pre Test	Study Group (n=50)	66.6	10.6		
	Control Group (n=50)	65.92	8.03	5.89	0.68
Post Test	Study Group (n=50)	40.96	3.88		0.001
	Control Group (n=50)	61.7	9.2	14.73	***

* significant at P≤0.05 ** highly significant at P≤0.01 *** very high significant at P≤0.001

Table 4: Comparison of pre test and post test level anxiety of children undergoing surgery in study group and control group N=100

Group	test	Mean	SD	Paired "t" test	"p" value
Study Group (n=50)	Pre-test	66.6	10.6	19.656	0.001 ***
	Post-test	40.96	3.88		
Control Group (n=50)	Pre-test	65.92	8.03	5.89	0.675
	Post-test	61.7	9.2		

* significant at P≤0.05 ** highly significant at P≤0.01 *** very high significant at P≤0.001

Table 5: Comparison of post test level post operative quality of recovery among children undergoing surgery in study and control group N=100

	Group	Mean	SD	Unpaired "t" test	"p" value
Post test	Study group	182.98	4.91	15.97	0.001***
	Control group	165.36	6.06		

* significant at P≤0.05 ** highly significant at P≤0.01 *** very high significant at P≤0.001

Table 6: Correlation between post test level of anxiety with post operative quality of recovery among children undergoing surgery in study and control group N=100

Group	Variables	Mean ± SD	Karl pearson correlation coefficient	Interpretation
Study group n=50	Anxiety Quality of recovery score	45.50±10.70 182.98±4.91	r = **-0.**44 p = 0.01**	**Moderate negative correlation** between post test level of anxiety and post operative quality of recovery among children undergoing surgery
Control group n=50	Anxiety Quality of recovery score	60.94±10.23 165.36±6.06	**r = - 0.19** p = 0.12	**Poor negative correlation** between post test level of anxiety and post operative quality of recovery among children undergoing surgery

The analysis depicted that in study group, pre test 14 (28%) children had mild anxiety; 36(72%) children had moderate anxiety and none of them had severe anxiety during hospitalization. In post-test 48(96%) of them had mild anxiety; 2(2%) children had moderate anxiety and none of them had severe anxiety.

The analysis depicted that in control group, pre test 12 (24%) children had mild anxiety; 38 (76%) children had moderate anxiety and none of them had severe anxiety during hospitalization. In post-test 14 (28%) of them had mild anxiety; 36 (72%) children had moderate anxiety and none of them had severe anxiety.

The analysis depicted that in study group, post test level of post operative Quality of recovery is 45 (90%) children had excellent post operative Quality of recovery and 5 (10%) children had good post operative quality of recovery. In control group 35 (70%) children had excellent post operative quality of recovery and 15 (30%) children had good post operative quality of recovery.

In pre test, the mean pre test level of anxiety for study group is 66.6 and the standard deviation is 10.6. For control group, mean pre test level of anxiety is 65.92 and the standard deviation is 8.03. The "t" value is 5.89, which suggest that there is no statistical significant difference in pre test level of anxiety between study and control groups at $P \leq 0.05$.

In post test, the mean post test level of anxiety for study group is 40.96 and the standard deviation is 3.88. For control group, mean post test score level of anxiety is 61.7 and the standard deviation is 9.2. The "t" value is 14.73, which is statistically significant at $p \leq 0.001$.

In study group, the pretest mean value of level of anxiety of children undergoing surgery is 66.6 with the standard deviation of 10.6. The mean value of post test level of anxiety of children undergoing surgery is 40.96 with the standard deviation of 3.88. The "t" value is 19.656 which is significant at $p \leq 0.001$.

In control group the pretest mean value of level of anxiety of children undergoing surgery is 65.92 with the standard deviation of 8.03.6. In post-test, the mean value of level of anxiety of children undergoing surgery is 61.7 with the standard deviation of 9.2. The "t" value is 5.89 which suggest there is no statistical significance in pre test and post test level of anxiety among children undergoing surgery in the control group at $P \leq 0.05$

In study group, the mean post test level of post operative quality of recovery is 182.98 and the standard deviation is 4.91. In control group, mean post test level of post operative quality of recovery is 165.36 and the standard deviation is 6.06. The "t" value is 15.97, which is statistically significant at $p \leq 0.001$

Table 6: Correlation between post test level of anxiety with post operative quality of recovery among children undergoing surgery in study and control group N=100

Group	Variables	Mean ± SD	Karl pearson correlation coefficient	Interpretation
Study group n=50	Anxiety Quality of recovery score	45.50±10.70 182.98±4.91	r = -0.44 p = 0.01**	**Moderate negative correlation** between post test level of anxiety and post operative quality of recovery among children undergoing surgery
Control group n=50	Anxiety Quality of recovery score	60.94±10.23 165.36±6.06	**r = - 0.19** p = 0.12	**Poor negative correlation** between post test level of anxiety and post operative quality of recovery among children undergoing surgery

* significant at P≤0.05** highly significant at P≤0.01 *** very high significant at P≤0.001

Table 7: Association between the post-test level of anxiety among children undergoing surgery in study group with their selected demographic variables n=50

Demographic variables		Post test level of anxiety score				total	Chi square
		mild		moderate			
		n	%	n	%		
Age	6 -8 yrs	14	63.6%	8	36.4%	22	**χ2=6.77**
	8 - 10 yrs	7	87.5%	1	12.5%	8	**p=0.03***
	10 -12 yrs	19	95.0%	1	5.0%	20	
Gender	Male	23	92.0%	2	8.0%	25	**χ2=4.50 p=0.03***
	Female	17	68.0%	8	32.0%	25	

Table 6 reveals that in study group, correlation coefficient between the post test level of anxiety and post operative quality of recovery r = - 0.44 which shows Moderate negative correlation P= 0.01which is statistically significant. In control group correlation coefficient between the post test level of

anxiety and post operative quality of recovery r = - 0.19 which shows Poor negative correlation between post test level of anxiety and post operative quality of recovery among children undergoing surgery. P= 0.12 which is not statistically significant.

Table 7 shows the association between post test level of anxiety among children undergoing surgery in study with their demographic variables. It reveals elder and male children are benefitted more than others. Statistical significance was calculated using chi square test.

Table 8 shows the association between post test level of post operative quality of recovery among children undergoing surgery in study group with their demographic variables. It reveals that elder and male gender are more benefitted. Statistical significance was calculated using chi square test.

Table 8: Association between the post-test level of post operative quality of recovery among children undergoing surgery in study group with their selected demographic variables n=50

Demographic variables		Post test level of post operative quality of recovery score					Chi square
		excellent		good		total	
		n	%	n	%		
Age	6 -8 yrs	5	22.7%	17	77.3%	22	
	8 - 10 yrs	0	0.0%	8	100.0%	8	$\chi 2=7.07$ p=0.05*
	10 -12 yrs	0	0.0%	20	100.0%	20	
Gender	Male	0	0.0%	25	100.0%	25	$\chi 2=8.05$ p=0.01**
	Female	5	20.0%	20	80.0%	25	

Discussion and Conclusion

A study was conducted on effectiveness of picture book on children's worries about surgery, were performed on 60 samples (30 samples in control group and 30 samples in experimental group) of age of 5-12 years, who were posted for surgery in a tertiary hospital in Karnataka state. A quasi experimental, pre test and post test control group design was used and child worries questionnaire related to surgery as a rating scale which is developed by faculty of university of murica, Spain. A statistical analysis of data revealed that picture book related to surgery was effective in reducing the worries of children about surgery t value=-2.318 and p value =<0.05. they conclude that, the child in experimental group, who received the picture book had reduced in their worries as compared to the control group [6].

A study on Effect of play intervention in the reduction of anxiety among pre-operative children admitted in preoperative wards of selected hospitals at Mangalore, the samples composed of 60 preoperative school age children of 6-12 yrs , in that 30 control group and 30 experimental group , who were selected by purposive sampling technique. The demographic Performa and numerical state anxiety scale were use for data collection. The study result showed the calculated t value (t=14.225) was greater than table value (t_{58}=1.67)at 0.05 level of significance. The findings of the study shows that the play intervention was effective in reducing the anxiety among pre-operative children [7].

In the study of the effect of performing preoperative preparation program on school age children's anxiety. A randomized controlled trail was performed on 122 children age of 7-12yrs of age (experimental group-61 and control group -61) in Aminkola paediatric hospital , Mazandaran. A single blind technique was used and randomized controlled trail, two group pretest and repeated post test, between subject design was used. The experimental group given a therapeutic play therapy. The statistical analysis showed that the mean and standard deviation of the state anxiety scores of children in experimental and control group before intervention were 35.52±6.99 and 34.98±6.78, after intervention 31.44±5.87 and 38.31±7.44 respectively. The state anxiety score was lower significantly in experimental group prior to postoperative surgery than the control group(P=0.000). This study conclude that therapeutic play intervention is an appropriate method for preparing children before surgery decreases their anxiety [8].

A dismantling approach is used to analyzing a family–centered preoperative intervention programme , the 96 children aged 2-10 yrs subjects were selected(who underwent anesthesia and surgery). A modified Yale preoperative anxiety scale was used to assess the anxiety of children. The measures used were baseline characteristics, parental adherence to the components of advance, and child and parent anxiety assessment. ANOVA is used to determine which components of intervention had significant impact on child anxiety. Statistical significance was accepted at P<0.05. the relationship of adherence to ADVANCE and anxiety, ANOVA indicates that children in a high parental adherence

group had significantly lower mYPAS score at mask introduction compared with children in the law adherence group [36.5(17.8) vs 52.8(25.7), P=0.01]. This study showed that greater parental adherence to the advance intervention was associated with lower child anxiety before surgery [9].

In the study, the effectiveness of a standardized preoperative preparation in reducing child and parent anxiety; a single blind randomized controlled trail study design was conducted at a tertiary referral hospital for children in Western Australia. 73 children and one of their care giver (usually a parent) were randomly assigned into two groups. The control group had standard practice with no specific preoperative education and the experimental group received preoperative preparation, including a photo file, demonstration of equipment using a role-modeling approach and a tour. The parent anxiety is assessed by STAI- standard measures of anxiety and children's anxiety by modified Yale preoperative anxiety scale (mYPAS). The statistical significance shows that pre-operative preparation reduced parent state anxiety significantly (-2.32,CI-4.06 to-0.56, p=0.009), but not the child anxiety (-0.59, CI-1.23 to 0.06, p=0.07). This study concludes that preoperative preparation was more efficient on parent than child. Although the preoperative preparation had limited effect on child anxiety, it permitted to decrease pain experience in the post operative period [10].

The interventional study was done to assess the effectiveness of picture book on level of anxiety and post- operative quality of recovery among children undergoing surgery in selected hospitals, Chennai. The analysis shows in study group the mean post test level of anxiety is 40.96 and the standard deviation is 3.88. In control group, mean post test score level of anxiety is 61.7 and the standard deviation is 9.2. The "t" value is 14.73, which is statistically significant at $p< 0.001$. The analysis reveals that in study group, correlation coefficient between the post test level of anxiety and post operative quality of recovery $r = - 0.44$ which shows Moderate negative correlation between post test level of anxiety and post operative quality of recovery among children undergoing surgery. P= 0.01 which is statistically significant. The analysis revealed that in study group, both for anxiety and post operative quality of recovery, elder and male children are benefitted more with picture book than others at p=0.05 level.

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Original Article

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Effect of Rhythmic Skin Tap on Pain During DPT Vaccination among Toddler

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Abstract

Vaccine injections are the most common reason for iatrogenic pain in childhood. With the steadily increasing number of recommended vaccinations, there has been a concomitant increase in concern regarding the adequacy of pain management. In view of this investigator aimed to assess the effect of rhythmic skin tap on pain During DPT vaccination among toddler. It was a quasi-experimental study; based on Kolcaba Comfort Theory. After getting informed consent from primary care givers, 60 toddler (30 each in experimental and control group) who attended the immunization OPD of Aswini Hospital was selected as samples. The demographic performa of the toddler was assessed from care giver, immunization card and procedural pain was assessed by standardized FLACC behavioural pain scale. The findings revealed that, the intervention of rhythmic skin tap was effective in reducing pain with $p = <0.001$ and there is a significant difference between the post-test pain score among toddlers with $p = <0.001$. Moreover the analysis states that there is no association between pain among toddlers with selected demographic variable. Study proved that rhythmic skin tap technique during the administration of DPT vaccination resulted in significant reduction in pain level in the experimental group than the control group. Hence it is clear that the rhythmic skin tap technique is an effective measure to reduce pain level during invasive procedure.

Keywords: Rhythmic Skin Tap; DPT Vaccination; Toddler; FLACC Scale.

Introduction

Background of the Study

Pain is a natural and unavoidable part of childhood. It is an unpleasant sensory and emotional experience associated with actual or potential tissue damage [1]. Vaccine injections are the most common reason for iatrogenic pain in childhood. With the steadily increasing number of recommended vaccinations, there has been a concomitant increase in concern regarding the adequacy of pain management [2].

Pain is a common and a ubiquitous sensation for children and adult. Every child has his or her own perception of pain [3]. A fundamental principle of responsible medical care is not 'do not hurt' but 'do not harm' since pain is harmful to children [4]. Non-pharmacological intervention improve the emotional security and reduce the pain perception. Non-pharmacological interventions are often an adjunct to pharmacological intervention [5].

Objectives

- To assess the pain level among toddler during DPT vaccination in control and experimental

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group

- To find out the effect of rhythmic skin tap among toddler during DPT vaccination in control and experimental group
- To associate the pain level of toddler during DPT vaccination and selected demographic variable

Methods and Materials

It was a quasi-experimental study; a quantitative approach, based on Kolcaba Comfort Theory. After getting informed consent from primary care givers, 60 toddler (30 each in experimental and control group) who attended the immunization OPD of Aswini Hospital for DPT vaccination was selected using non probability purposive sampling. The tool was consisted of section A: -The demographic performa of the toddler was assessed from care giver, immunization card and section B: -procedural pain was assessed by using standardized FLACC behavioural pain scale ranging from 0-no pain, 1-3 mild pain, 4-6 moderate and 7-10severe pain.Ethical clearance has been obtained in the prior from the ethical committee constituted by the institution. A formal permission to conduct the study was obtained from the Director Board of Aswini Hospital, Thrissur, The same information has communicated to the department of immunization OPD.

The details and need for the study was explained to parents and obtained written consent. During the first phase of data collection toddler who receives DPT vaccination is considered as control group till the sample size is achieved and followed by in the next phase toddler who receives DPT vaccination is considered as experimental group till the sample size is achieved. Pre and post-test pain score of control group is obtained by using FLACC behavioural pain scale. For experimental group, after the pre-test pain score assessment injection site were identified, followed by the investigator provided rhythmic skin tap during the administration of DPT vaccination. The level of pain of toddlers were assessed before and after the DPT vaccination in both experimental and control group.

Result

Section A:-Demographic Profile of the Toddler

- Among 30 samples in control group , 15(50.0%) were between age group of 18-23 months of age, 12(40.0%) was in the age group of 24-29 months, 3(10.0%) was in the age of 30-35 month, no samples was found in above 35 month. Whereas in experimental group 14(46.7%) belongs to 18-23 months, 11(36.7%) in the age of 24-29 months, 4(13.3%) of toddlers where in 30-35 months and only 1(3.3%) in above 35 month.
- Regarding the gender, in control group 18(60%) were male and 12(40%) were female. Male and female ratio was equal in experimental group 15(50%).
- On the basis of birth weight, in control group 4 (13.3%) belongs to 2000-2500gm. 11(36.7%) were in 2501-3000gm, 14 (47.7%) were in 3001- 3500gm and 1(3.3%) were in 3051 and above. Whereas in experimental group 8(26.7%)belongs to 2000-2500gm, 13(43.3%) in 2501-3000gm, 8(26.7%) in 3001-3500gm and 1(3.3%)in above 3500gm.
- Regarding gestational age in control group, 19(63.3%) were in the 36-37wk, 9 (30%) in 38-39 wks, and 2(6.7%) were in ≥40wks and in experimental group 12(40%) were belongs to 36-37wk, 15(50%) belongs to 38-39wks and 3(10%)were in ≥40wks.
- On the basis of birth order in the control group 13(43.3%) of toddlers belongs to first and second order. Whereas only 5(16.7%) in the third birth order. No samples was found in third and above. In the experimental group majority of toddlers 11(36.7%) belongs to both first and second birth order. 7(23.3%) were in third order and 1(3.3%) belongs to the above third.
- With regard to present weight in control group 9(30.0%) were having<8 kg, 11(36.7%) in the 8-10 kg, 10(33.3%) were between the weight of 11-13kg and no samples were in>13kg. and in experimental group 7(23.3%) were in the present weight of <8 kg, equal percentage of 11(36.7%) belongs to 8-10kg and 11-13 kg and only 1(3.3%) samples in the present weight of >13kg.
- Regarding to the length of the child, in the control group 15(50%) were having 75-80 cm of length, 10(33.3%) were in 81-85 cm, 5(16.7%) belongs to 86-90cm. In the experimental group 12(40%) were in 75-80 cm length, 14(46.7%) were belongs to 81-85cm and remaining 4(13.3%)were in 86-90 cm.
- With regards to when to start to crying, in the control group no one were crying before entering inside the room and 7(23.3%) were cried after entering the room, 9(30.0%) cried on the time of vaccination and 14(46.7%) were cried after vaccination. In experimental group 2(6.7%) were cried before entering inside the room, 6(20%) were cried after entering inside the room and on

vaccination, 15(50%) cried after vaccination, 1(13.3%) were in no crying.

- Regarding the duration of cry, in the control group1 (3.3%) cried for <30 seconds, 4(13.3%) whereas toddlers duration of cry was in between 30-sec to 1 minutes, 9(30%) belongs to 1-2 minutes and 16(53.3%) were in over 2 minutes. In experimental group, 12(40%) were cried under 30 seconds and 30 sec- 1minutes and 6(20%) were cried for between 1-2 minutes and no toddlers experienced cry for more than 2 minutes duration of cry.

Section B:-Pain Response of Toddler in Experimental and Control Group

In the pre-test pain score, majority of the samples in experimental and control group was in relaxed state 29(96.70%), 28(93.30%) respectively. The post-test pain score among the toddlers in control group and experimental group. In control group 4(13.3%) were having moderate pain, 26(86.7%) were experienced severe pain. None of the sample in control group was in the category of relaxed and mild state. With related to experimental group, 4(13.3%) were experienced severe pain, 23(76.7%) were experienced moderate. Only 3(10.0%) of samples experienced mild pain.

Section C: Effectiveness of Rhythmic Skin Tap Technique on Pain Responses of Toddlers

The comparison of mean post-test pain score between control and experimental group. The mean post-test in experimental group was 5.133 and in control group was 8.433. To assess the significance of rhythmic skin tap the independent t-test was applied. The calculated t- value for pain level was found to be 9.33 and the p value <0.001 which is significant at 0.01 level.

Section D:-Association of Post-Test Pain Score of Toddler in Experimental and Control Group Undergoing DPT Vaccination with Selected Demographic Variables

The result states that there is there is no association between the post- test level of score in experimental and control group with demographic variable like age, gender, birth order, gestational age, length, birth weight, present weight, duration of cry and when to start to cry. Spearman's rank correlation was done and value is not significant at the level of p< 0.05.

Table 1: Pre-test pain score of toddler in experimental and control group N=60

Level of pain	Experimental Group		Control Group	
	Frequency (n)	Percentage (%)	Frequency (n)	Percentage (%)
0 relaxed	29	96.7	28	93.30
1-3 mild	01	3.3	02	6.70
4-6 moderate	0	0	0	00
7-10 severe	0	0	0	00

Table 2: Post-test pain score of toddlers in experimental and control group N=60

Level of pain	Experimental Group		Control Group	
	Frequency (n)	Percentage (%)	Frequency (n)	Percentage (%)
0 relaxed	00	00	00	00
1-3 mild	03	10.0	00	00
4-6 moderate	23	76.7	4	13.30
7-10 severe	04	13.3	26	86.70

Table 3: Effectiveness of rhythmic skin tap technique on pain response of toddlers during DPT vaccination N=60

Group	n	Mean Score	SD	t-value	P-value
Experimental	30	5.133	1.432	9.33**	<0.001
Control	30	8.433	1.305		

** significant at 0.01 level

Discussion

Dissemination of the findings of evidence based practice through conference, seminars, publications in national nursing journals and world-wide web will benefit a wider community. Promote effective utilization of research finding help the nurses to reduce pain during DPT vaccination.

The investigator through the present study has proved that providing rhythmic skin tap technique,

which is a non-pharmacological intervention, during painful procedures like vaccination is effective for reducing the pain level. Hence rhythmic skin tap technique can be used as a simple and effective nursing intervention for the management of pain in toddler.

Nursing Implication

- The nursing curriculum should emphasize the supportive therapy of non–pharmacological intervention in effective management of pain among pediatric age group.
- The nurse educator should arrange an in-service education programme for staff nurses regarding rhythmic skin tap technique to reduce the level of pain during DPT vaccination.
- The nurse administrator can emphasize on promoting EBNP for effective pain management during immunization among toddlers by using non-pharmacological measures.
- The study finding could help the nurse administrator to make protocol for rhythmic skin tap technique to reduce level pain among children during vaccination

Limitations

- The study was conducted on a small group of toddler and thus limits the generalizability of the study finding.
- Researcher plan to conduct true experimental study design. But randomization is not possible in this study due to time constraints.
- The investigator could not assess the attitude of care givers regarding rhythmic skin tap technique

Recommendations

- The study can be replicated on a large sample in order to validate the finding and make generalization
- Similar study can be conducted among different developmental age group to elicit their pain level.
- A study can be conducted to assess the anxiety and perception of under-five mothers during the time of vaccination.

Conclusion

Rhythmic sin tap technique during the administration of DPT vaccination resulted in significant reduction in pain level in the experimental group.Study proved that there is a significant difference in the pain score in control and the experimental group. Hence it is clear that the toddlers in control group experiences more level of pain than the experimental group.The study also identified that, there is no significant association between the level of pain of toddlers with the selected demographic variables like age, gender, length, gestational age, birth weight, present weight, duration of cry and when to start to cry.

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Original Article

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Effectiveness of Structured Teaching Programme Regarding Pre-Conception Care among Undergraduate Students in Selected Colleges at Tripunithura Municipality

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Abstract

Pregnancy is a unique, exciting and often joyous time in a woman's life, as it highlights the woman's amazing creative and nurturing power. This amazing experience need to be planned well in advance which emphasizes the significance of preconception care[1]. *Materials and methods:* Research design used for this study was pre experimental one group pre test post test design. 30 undergraduate students belonging to the age group of 18-24 years were selected using non probability convenient sampling technique from an Arts College, Thripunithura. The tool used for data collection consisted of two parts. Part A included demographic profile and part B was a structured questionnaire which comprised of two main sections namely (1) pre pregnancy check up and (2) pregnancy including family planning. Pre-test was done which was followed by a structured teaching programme five days prior to the post-test. The pre-test and post-test values were compared by using paired t-test. *Result:* The findings showed that the mean post test knowledge score of the subjects 33.26 was higher than the mean pre-test score of 26.36. The calculated "t" value obtained from paired "t" test was 34.6 which is significant at $P \leq 0.05$ level showing that there is improvement in knowledge of under graduate students. The results of chi-square analysis indicated that there was no significant association between knowledge and demographic variables. *Conclusion:* The research conducted on undergraduate students of a selected college revealed that there was significant lack of knowledge regarding pre-conception care among the undergraduate students and the structured teaching programme had a remarkable role in improving their knowledge.

Keywords: Assess; Effectiveness; Knowledge; Preconception Care; Structured Teaching Programme; Undergraduate Students.

Introduction

Preconception health care is a means to identify the mothers at risk for delivering a preterm infant and to provide an array of available medical, nutritional, and educational interventions to reduce the risk of adverse pregnancy conditions and outcomes. It is given to a woman before pregnancy to manage conditions and behaviours which would be a risk to woman and baby [2].

In recent years, there has been increasing awareness of the persistent burden of maternal, new

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born and child mortality globally. Worldwide, over 3,50,000 women of child bearing age die every year due to complications of pregnancy and child birth, while over 15 million suffer long-term illness or disability. The risks of adverse pregnancy outcomes are much higher in poor countries as compared to developed countries of the world. The majority of maternal deaths occur during labour, delivery and the immediate post partum period, with obstetric haemorrhage being the main medical cause of death. Other causes of maternal mortality include hypertensive diseases, sepsis/infectious, obstructed labour and abortion [3].

A retrospective cohort study was conducted to determine the prevalence and association of obesity and gestational diabetes mellitus with adverse pregnancy outcomes among pregnant women in Fernandez Hospital, South India. Each woman underwent a standardized examination protocol. Women at risk for GDM were subjected to early screening. Among 3,201 pregnant women, the prevalence of GDM and obesity was 8.43% and 19.49% respectively. Results from the study indicated that gestational diabetes and obesity are increasingly important priorities for perinatal care in India [4].

Another major cause of concern is under nutrition among women of reproductive age. Maternal short stature and iron deficiency anaemia increases the risk of death of the mother during delivery, accounting for at least 20% of maternal mortality. Attention to nutrition through adequate dietary intake and supplementation with iron, folate and possible other micronutrients and calcium are likely to be of value [5].

Birth defects can be defined as structural or functional abnormalities, including metabolic disorders, which are present from birth. According to March of Dimes (MOD) Global Report on Birth defects, worldwide 7.9 million births occur annually with serious birth defects and 94% of these births occur in the middle and low income countries [6].

Major birth defects like congenital heart defects, neural tube defects (NTDs) , Down's syndrome, Hemoglobinopathies and Glucose - 6 Phosphate Dehydrogenase Deficiency, cause 20% of infant mortality. They are responsible for a substantial number of childhood hospitalizations. It has been estimated that 70% of birth defects are preventable. Many cost effective, preventive and care strategies are available for control of birth defects such as preconceptional folic acid supplementation for prevention of NTDs; early management of congenital hypothyroidism through neonatal screening, management of hemoglobinopathies through carrier screening & prenatal diagnosis etc. All these strategies demand reproductive and child care before or early in conception [9].

Preconception care can make a positive difference to the health of a mother and her baby. More & more evidence points to the fact that the way a baby is nourished and grown in mother's womb can have an important impact on the baby's health as an adult [10].

The aim of pre-conception care is to prepare a woman for pregnancy, birth and beyond. This preparation ideally should occur for at least four months prior to trying to be pregnant. If this is not possible, try for at least one month's preparation. Pre-conception care improves the chances of falling pregnant more easily, having a healthy pregnancy & healthy baby [11].

According to statistics, hardly 20% of mothers receive all the required components of prenatal care. A news release from the Institute of Medicine indicated the need to change the women's health focus from prenatal care to preconception care, a continuum of care starting before conception [12,13].

Preconception care includes helping a woman and her partner to assess the nutritional status ,to identify and treat any nutritional deficiencies if present, to treat conditions such as Obesity, DM, Hypertension, Epilepsy, Hypothyroidism, Hyperthyroidism ,to vaccinate against Rubella, Hepatitis B and Varicella, to screen for HIV/AIDS and other sexually transmitted infections, family planning for appropriate timing of pregnancies ,genetic risk assessment and pre-conception counselling to reduce the risk of birth defects.

An experimental study was conducted on preconception care and found out that woman's diet should be supplemented with 400 mg folic acid every day which helps in reducing neural tube defect in their babies up to 72%. Blood glucose controlled prior to conception helps in reducing the birth defects and pregnancy loss. Reducing the caffeine consumption can reduce the risk of miscarriage. Counselling given for the woman in this area was found to be effective [14].

The WHO recommends preconception care should include folic acid supplementation for primary prevention of birth defects in developing and developed countries. Epidemiological studies published document that prenatal supplementation with folic acid reduces the risk of neural tube defects, such as spine bifida and anencephaly. A study was conducted on effects and safety of preconceptional folate supplementation for preventing birth defects

in London. Random sampling technique was used for sample selection. Overall, the results were consistent in showing a protective effect of daily folic acid supplementation (alone or in combination with other vitamins and minerals) in preventing NTDs compared with no interventions/placebo or vitamins and minerals without folic acid [15].

Preconception care may be an efficacious tool to reduce risk factors for adverse pregnancy outcomes that are associated with lifestyles and health status before pregnancy. An experimental study was conducted on Indian women to find the effectiveness of structured teaching programme on knowledge and behaviour associated with risks for adverse pregnancy outcomes. Prevalence of risk factors and knowledge was assessed 6 months after the intervention. The finding showed that there was an improvement in knowledge about the preconception behaviours to prevent adverse pregnancy outcomes [16].

A descriptive study was carried out to assess the awareness of undergraduate students regarding preconception health.The results showed that the students demonstrated a low to moderate level of awareness. Students who had previously attended course containing motivation on pregnancy and ethical development correctly answered a greater percentage of items. Females have higher statistically significant awareness than males [17].

The present study is an attempt to assess the level of knowledge on preconception care among undergraduate students at selected colleges. The purpose of this paper is to present the effectiveness of structured teaching programme on preconception care which is tested by comparing the pre-test and post-test knowledge score of under graduate samples between the age group of 18-24 years.

Statement of Problem

"A study to assess the effectiveness of structured teaching programme regarding knowledge about preconception care among undergraduate students in selected colleges at Tripunithura Municipality"

Objectives

1. To assess the pre-test knowledge score regarding pre-conception care among undergraduate students in a selected college at Tripunithura Municipality.
2. To evaluate the effectiveness of structured teaching programme on pre-conception care in terms of gain in knowledge on the preconception care.
3. To find out the association between pre-test knowledge score and selected demographic variables among undergraduate students in a selected college at Tripunithura Municipality.

Hypotheses (At 0.05 Level of Significance)

H1: There will be a significant difference in pre-test and post test knowledge scores of the subject.

H2: There will be a significant association between mean pre-test knowledge score and selected demographic variables.

Materials and Methods

A quantitative research approach with pre experimental one group pre test post test research design was used for the study. The setting of the study was selected colleges in Thripunithura municipality in Ernakulam district.

Variables of the Study

1. Dependent Variable: Knowledge regarding preconceptional care among samples in a selected college at Thripunithura.
2. Independent Variable: Structured teaching programme on knowledge regarding preconceptional care.
3. Attribute Variables: Demographic Variables such as age, religion, socio economic status, type of family, area of residence and previous source of information.

A structured questionnaire, developed by the researchers was used to assess the knowledge of samples on preconception care. A pilot study was conducted.

The structured questionnaire comprised of 50 multiple choice questions with 4 options and the questionnaire was divided into two main sections: Section 1 comprised of items pertaining to demographic data and section 2 comprised of structured questionnaire with two parts that is, (1) items related to pre pregnancy assessment and (2) items related to pregnancy including family planning. Out of the 4 alternatives, three were distracters and one was the correct answer. The demographic data included were age, religion, family monthly income in rupees, educational status of parents, type of family, area of residence and previous source of information.

A structured teaching programme was developed

by the researcher which contained details about the preconception care such as definition, anatomy and physiology of female reproductive system, importance and frequency of pre pregnancy check-up, prevention and treatment of nutritional deficiencies including anaemia, iodine deficiency disorders, protein, vitamin and mineral deficiencies, treatment of pre-existing medical conditions including diabetes mellitus, hypertension, obesity, depression, epilepsy, polycystic ovarian disease, menstrual disorders. It also included menstrual hygiene, control of infectious disease through vaccination against Rubella, Hepatitis B, screening for HIV/AIDS and STD, genetic counselling, pregnancy , antenatal care, breast feeding, family planning and child care.

A formal permission was obtained from the principal of selected College, Thripunithura for data collection and 30 under graduate female samples who fulfilled the inclusion criteria were selected using non probability convenient sampling technique. The samples were assembled in the class room and informed written consent was taken after a thorough explanation about the procedure and they were ensured that confidentiality will be maintained. The investigators conducted the pre-test by distributing the tool (Structured questionnaire). 30 minutes were given to answer the questionnaire and the tool collected back by the investigators. Then the structured teaching programme was administered to the subjects for 1 hour after 10 minutes break. The samples were given opportunity to clarify the doubts after the class. Post test was done on the seventh day after the intervention.

Result

Distribution of Demographic Variables among Samples

From Table1, among the 30 samples, majority of the samples 23(77%), belonged to the age group of 18 - 20 years, Most of the samples 15 (50%) were Christians. All 30(100%) had family monthly income above Rs 6000. All the parents had collegiate education, 30 (100%). Considering the type of family, most of the under graduate samples 20 (67%) belonged to nuclear family & only 10 (23%) belonged to the joint family. When the area of residence was taken into consideration, majority of the samples

Table 1: Distribution of demographic variables among samples N = 30

Demographic variables	Classification	Frequency	Percentage
Age	a.18-20 years	23	77%
	b.20-22 years	7	23%
	c.22-24 years	0	0%
Religion	a. Hindu	10	33%
	b. Muslim	5	17%
	c. Christian	15	50%
	d. Others	0	0%
Family monthly in come in Rupees	a. < 3000	0	0%
		0	0%
Educational Status of the Parent	b. < 3001-6000	30	100%
	c. < 6000	0	0%
	a. Literature	0	0%
Type of Family	b. Primary education	0	0%
	c. Secondary education	30	100%
	d. Collegiate	20	67%
Areas of residence	a. Nuclear Family	10	33%
	b. Joint Family	0	0%
Previous Source of information	c. Extended Family	22	73%
	a. Urban	8	27%
	b. Rural	10	33%
	a. Parents	7	23%
	b. Books & Magazines	0	0%
	c. Neighbourhood	13	44%
	d. Media	0	0%
	e. Health Personnel		

Table 2: Frequency & percentage distribution of samples based on pre test knowledge regarding pre conception care

Knowledge Level	Frequency	Percentage
Poor < 46%	7	23.3%
Average 46% - 59%	16	53.4%
Good ≥ 59%	7	23.3%

Table 3: Frequency & percentage distribution of samples based on post test knowledge regarding pre conception care N=30

Knowledge Level	Frequency	Percentage
Average 46% - 59%	2	6%
Good ≥ 59%	8	27%
Poor < 46%	20	67%

Table 4: Mean, standard deviation, mean difference and paired 't'- value of knowledge regarding pre-conception care among samples. N=30

Variables	Mean	Standard deviation	Range	Mean difference	Paired 't'- value
Pre-test	26.36	3.2	1.3-40.4	6.9	34.6
Post test	33.26	2.6	.067-22		

22 (73%) were living in urban area. About the previous source of information, most of the samples 13 (44%) got information from the media & 10 (33%) from the parents & 7 (23%) from the books & magazines.

Distribution of Samples Based on Pre Test Knowledge Regarding Pre Conception Care

From pre-test data analysis it was found that out of 30 samples, 16 (53.4%) had average knowledge regarding pre conception care & 7(23.3%) had poor knowledge regarding pre conception care and 7(23.3%) had good knowledge and it is shown in table 2. This showed that samples were not having enough knowledge regarding pre conception care which clearly supported the need for teaching programme on the same aspect.

Distribution of Samples Based on Post Test Knowledge Regarding Pre Conception Care

The table 3 below shows that during the posttest, out of 30 samples, 20(67%) had average knowledge regarding pre conception care, 8(27%) had good knowledge and 2(6%) had poor knowledge. This indicated that the teaching programme improved the knowledge of samples in gaining needed information on pre-conception care, which would in turm help them to diagnose and detect risk factors during pre-conception period and treat at the earliest.

Effectiveness of Structured Teaching Programme on Pre-Conception Care by Comparing Pre and Post Test Scores among Samples

The figure 1 and table 4 below reveals that, the mean pre-test knowledge score was 26.36 and post test knowledge score was 33.26, which was higher than the pre-test score. The standard deviation of pre-test knowledge score was 3.2 and post test knowledge score was 2.6. The obtained paired t value was 34.6. Calculated value is less than table value at 0.05 level of significance. Hence the stated hypothesis H1 was accepted.

Association between the Knowledge on Pre-Conception care and Selected Demographic Variables among Samples

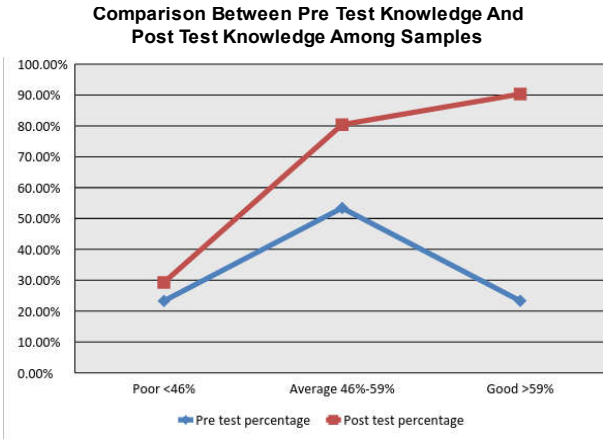

Fig. 1: Comparison between pretest and post test knowledge regarding preconception care among sample

There was no association between knowledge on preconception care and selected Socio-demographic variables of samples.

Discussion

Pre-Test Knowledge Score Regarding Pre-Conceptional Care among Samples

The findings of the pre-test score showed that out of 30 samples, 16(53.4%) had average knowledge regarding pre conception care & 7(23.3%) had poor knowledge regarding pre conception care and 7(23.3%) had good knowledge. The findings of this study are in conformity with the findings reported by Merlin MB that among 60 selected women 33 have inadequate knowledge regarding preconception care. Significant difference was seen in the pre-test mean score value and post-test mean score [18].

Post Test Knowledge Score Regarding Pre Conception Care Among Samples

The findings of the post-test study that out of 30 samples, 20 (67%) had average knowledge regarding

pre conception care, 8 (27%) had good knowledge and 2 (6%) had poor knowledge. This indicated that the teaching programme helped the samples in gaining needed information on pre-conception care, which would in turm help them to diagnose and detect any abnormalities if present during pre-conception period and treat earlier. A study was done among 60 primi gravidae in selected hospital of Erode, Tamilnadu. A structured interview schedule and a teaching programme was conducted. The majority of the primi gravidae mothers had inadequate knowledge regarding antenatal care. Significant difference was seen in the pretest mean score value 44.10 and post test mean score value 58.89 and obtained 't' value was 10.79. This indicated that structured teaching programme was effective [19].

Association between Knowledge and Selected Demographic Variables Regarding Pre Conception Care

The results of chi-square analysis indicated that there was no significant association between knowledge with age, religion, family monthly income in rupees, educational status of the parents, type of family, area of residence and previous source of information. A study done to evaluate the knowledge on preconception care among women of age group 18 to 45 years in a selected rural area, Chennai, India. Data was collected from 80 randomly selected samples by using the structured interview schedule. The paired 't'- value obtained was 17.69 with the $p<0.001$ which is highly significant, which indicated that there is no association of level of knowledge with that of age and education of women [20].

Conclusion

The findings of the study are suggestive of the effectiveness of structured teaching programme in improving the knowledge regarding pre- conception care and thereby reducing the neonatal problems and maternal complications. Improvement of knowledge on pre-conception care provides a better pregnancy outcome. These findings warrant the need of an active role of nurse in pre-conception care for women getting ready to conceive, and to educate them and to empower them for a safe pregnancy and thereby improving the pregnancy outcome. As the interventions have created awareness and brought changes in a group who is at risk for developing complications during pregnancy and child birth, the study has a role in the prevention of maternal and newborn complications in the future.

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Original Article

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Health Education Needs for Pregnancy A Study among Women Attending Primary Health Centers

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Abstract

Objective: To find out the level of health awareness related to pregnancy and the sources of information among parous women visiting the Primary Health Centers in Pandharpur taluka. *Methods:* This is a cross-sectional study conducted at three Primary Health Centers in Pandharpur taluka during Oct 2014. Five hundred and eighty one parous women who were eligible for the study were interviewed with the help of a questionnaire. *Results:* A large proportion of the women were well informed about certain health issues of pregnancy such as dietary intake of essential foods like dairy products (74.7%), Protein-rich foods (71.4%) and fruits (68.2%), the hours of daily rest necessary (81.9%), the need for exercise (83.6%), the importance and timing of antenatal visits, the risk of smoking in pregnancy (99.3%) and proper spacing of babies (97.7%). However, many women had no knowledge of the importance of taking high-fiber foods (55.1%) to avoid constipation, the required dietary changes in early pregnancy to prevent nausea and vomiting, and the ill-effects of maternal smoking on the fetus, Rubella infection and advancing maternal age on the fetus. They were also not aware of the importance of the various antenatal procedures such as blood examination, breast-care during pregnancy and immunizations to prevent Tetanus and Rubella infection. A higher literacy level of the women was significantly correlated with better knowledge on certain health parameters. Physicians and nurses constituted poor sources of health information (35.6%). *Conclusion:* There is a need to restructure the Health Education programmes relating to pregnancy delivered through PHCs and the mass media for better knowledge among women of childbearing age can decrease pregnancy-related problems and improve perinatal outcome.

Keywords: Health Education; Pregnancy; Health Knowledge.

Introduction

Health Education, one of the essential elements in the delivery of Primary Health Care as dictated by the Alma Ata conference (1978) is expected to be conducted from the Primary Health Centers (PHCs) of the Kingdom in an effective manner. The national "Plan of Action" for activities of the PHCs, which is revised annually emphasizes that health information on antenatal care and related matters must be properly disseminated so that women can improve their knowledge, attitude and skills for a healthy pregnancy and delivery. Health Education on this subject is also promoted through the mass media, including the national TV and a wide range of

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informative literature distributed. In other countries too [1,2,3],-efforts are made by the health-care providers to ensure that there is adequate health awareness among pregnant women. However, several studies have shown that many women either lack knowledge [1,4] or show a lack of concern for certain health risks in pregnancy [1,2],This indicates that there is the need for a more effective drive to educate women and help them to acquire appropriate knowledge and develop attitudes towards a healthy pregnancy. Though the primary health care programme and health education strategies have been implemented since many years little is known about the information women need on pregnancy and the extent to which they have benefited from the knowledge they have acquired through these channels of communication. The current study was, therefore, conducted on parous women who used the PHC facilities in Pandharpur taluka to find out their level of awareness of health matters relating to pregnancy and their sources of information.

Methodology

A cross-sectional study was conducted on women who visited three randomly selected PHCs in Pandharpur taluka during Oct 2014 from 8.30 am to 12 noon. Because of unavoidable logistic limitations, it was not possible to carry out the study in the afternoon sessions. Consequently, the data may not be as diverse as one may have wished. All married women who were of child-bearing age (15-45 years) and had been through at least one pregnancy were selected for the study. It was assumed that parous women should have had adequate exposure to health information on pregnancy. Any deficiencies in their knowledge would perhaps be a reflection of the inadequacies of the education provided through the PHC and the mass media.

Five hundred and eighty-one women were eligible for the study. They were asked questions on issues relating to health in pregnancy by means of a specially designed questionnaire. The information was elicited by trained interviewers. Information was sought on (a) their demographic profile and parity status, (b) the recommended dietary pattern in pregnancy, that is, foods that would promote the health of mother and baby, and those that should be avoided in the first trimester of gestation to avoid nausea and vomiting and those that help to avoid constipation; (c) the number of hours of rest advisable during the day and at night; (d) the necessity and type of exercise encouraged in pregnancy; (e) the safe maternal age for a healthy fetal outcome and (f) the harmful effects of cigarettes/shisha smoking . The women were asked about their awareness of the importance of antenatal check-ups, the suggested frequency and timing of antenatal visits, the significance of routine laboratory tests, the immunizations recommended and the breast-care practices in pregnancy for successful breastfeeding. The women's opinion was also sought on the ideal spacing of pregnancies. Finally, they were also asked the source(s) of their health information.

Data were analyzed using the SPSS package programme. Distributions and bivariate analyses of data were done. The chi-square test of significance was used where appropriate. A p-value of less than 0.05 was considered significant.

Results

Out of the 581 parous women recruited for the study, 435 (75%) within the age range of 15-45 years (Mean 31.4; SD 6.84). Most were in the 21-30 years (42%) and 31-40 years (41.2%) age groups. The women were grouped into three categories according to their literacy status as follows; 125 (21.5%) were either illiterate or had no schooling, 217 (37.3%) had reached primary or intermediate level and 239 (41.1%) had completed high school or had college education.

Food in Pregnancy

A survey on the food items necessary for maternal health and fetal growth showed that while a large proportion of women (71.4%) mentioned meat/fish/eggs, 74.7% dairy products and 68.2% fruits, fewer women (44.9%) named such essential foods as vegetables, 52.5% green leafy vegetables and 16.3% complex carbohydrates. Though more women who were Para >3 (77.1%) obtained a high knowledge score of 3-6 on this topic compared to those who were Para 1 (68%), the results were insignificant (p=0.1). Information on food patterns that are generally considered able to control or reduce nausea and vomiting of early pregnancy was sought. Nearly one-third of the women (31.3%) reported that they were not aware of them, others advocated small frequent meals (12.2%), a decreased intake of certain food items including oil-rich foods (38.5%), tea/coffee (17.5%) and spicy foods (17.1%). A large group of women (44.8%) believed that avoidance of sugar/sugary foodstuffs including chocolate, meat/fish/eggs, carbohydrate-rich foods like rice/pasta, milk, soft drinks and sour or very salty food items would

help to prevent nausea and vomiting in pregnancy. Parity did not influence the knowledge score for the recommended changes in food intake during early pregnancy. Responses to the question on the dietary requirements for the prevention of constipation showed that a large number of women (54.7%) were not aware of the importance of high fiber foods such as vegetables and fruits and whole grain products (82.1%) nor the requirement of an increased fluid intake (46.5%).

Rest in Pregnancy

The women were asked about the amount of daily rest necessary in pregnancy. A majority of the respondents (81.9%) rightly thought that 7-8 hours of night rest was adequate. An afternoon rest period of 2-3 hours was suggested by 57.1% women while 16% of the women believed that one hour or less was enough.

Exercise in Pregnancy

Ninety-five women (16.4%) were not in favor of any exercise during pregnancy and 53 (9.1%) had no knowledge of its importance. A large proportion of those who advocated exercise considered walking (64.4%) as the best form of physical activity. Few women (13.6%) suggested swimming/aerobics/jogging or "special antenatal exercises".

Breast Care in Pregnancy

Out of 581 women, 288 (49.5%) were not aware of the importance of regular cleaning of the nipples, 553 (95.2%) did not know about the application of skin softeners and 470 (80.9%) about manual expression of fluid from the breast during the last trimester of pregnancy. Only 5 (0.86%) women suggested that it was important to wear a good supportive undergarment.

Smoking and Pregnancy

A vast majority of the women (99.3%) responded affirmatively to the possible harmful influence of smoking during pregnancy. While fetal congenital malformation (24.3%), decreased fetal growth (11.4%) and abortion/premature delivery (5.3%) were mentioned, half of the women (50.6%) mentioned the general effects of smoking on health such as, cancer or a discomfort of the respiratory tract by the occurrence of "suffocation, dyspnoea, hypoxia and asthma." Literacy level did not have a significant effect on the women's knowledge of the possible risks of congenital malformation, decreased fetal growth or abortion/premature delivery as a consequence of maternal smoking ($p>0.05$).

Safe Maternal Age for Pregnancy

Out of 581 women, 15 (2.6%) did not respond to the question on the safe maternal age (upper limit) for a healthy outcome of pregnancy. Thirty-eight percent of the women felt that both the mother and the fetus were safe if the pregnancy occurred up to the age of 39 years, while 44.5% women believed it would be safe up to 45 years. A few women (9.8%) saw no risk to pregnancy even after the age of 45 years.

Spacing between Pregnancies

The mothers were questioned on the ideal spacing between pregnancies. A large proportion of them (59.5%) preferred two-year intervals between births while some of them (38.2%) stated three years or more. Very few women (2.3%) did not believe in spacing of pregnancies.

Antenatal Care

Importance of Antenatal Care

The vast majority (97.2%) of women had understood the importance of antenatal care. Nearly two-thirds of them (63.2%) believed that it was necessary for the monitoring of fetal growth. Other responses included "to have a safe pregnancy and delivery" (40.4%) and "to detect maternal and fetal complications" (36.3%).

Antenatal Visits

Out of 581 women, 534 (91.9%) were aware that the first visit for antenatal care should be in the first trimester of pregnancy. A large proportion of the women (78.2%) believed that more than 8 antenatal visits were required during the entire period of pregnancy.

Importance of Blood Examination

Seventy-four women (12.7%) were not aware of the reasons for blood examination in pregnancy with significant differences observed among the different literacy levels of the women as expected ($p<0.01$). Among those who were knowledgeable, the most common reasons mentioned for blood examination were to diagnose Anemia (58.3%) and Diabetes

(51.6%). Few women mentioned Blood Groups (11.7%) and diseases such as Hepatitis B (4.3%) and Syphilis (1%) as reasons for the Blood test. Literacy played a significant role in the responses given by the women for the detection of anemia ($p<0.01$) and blood groups ($p<0.01$).

Immunization in Pregnancy

More than half of the women (53.7%) were not aware of the immunizations recommended during or prior to pregnancy. Of those who knew, 44.6% rightly mentioned protection against tetanus as one of the reasons for immunization. Parity level did not exert a significant influence on their knowledge of the tetanus vaccine ($p=0.17$). None of them mentioned protection from rubella by immunization before pregnancy.

Sources of Health Information

The most common sources reported by the women for health information in pregnancy included doctors/nurses (35.6%), relatives/ friends (36.1%), books/magazines (35.3%), their mothers (25.1%) and TV/Video programmes (20.7%).

Discussion

The data indicate that many women were well informed about certain aspects of pregnancy such as the necessary dietary requirements, the need of adequate daily rest and exercise, timing of the antenatal visits, the importance of not smoking during pregnancy and the proper spacing of babies. However, the large gaps in other areas of knowledge is a cause of concern, considering that all the women in the study population had had at least one previous pregnancy, were PHC users and should have been exposed to or had the curiosity to explore health matters relating to pregnancy.

Many women were ill-informed about the importance of eating vegetables and other high fiber foods to prevent constipation, a condition commonly observed in pregnancy; nor was there much mention of green leafy vegetables which are a good source of Folic acid. Moreover, a large proportion of the women were not aware that avoiding certain types of foods and following acceptable dietary regimes minimized nausea and vomiting of early pregnancy.

Though a large proportion of the women (74.5%) in the present study were in favor of exercise in pregnancy, most of them (64.4%) suggested walking only. There was no specific mention of breathing and relaxation exercises which are recommended during this period. Swimming which is an acceptable physical activity in pregnancy was also not commonly reported, as it is not a popular exercise, in general, for women in this part of the world.

With the numerous campaigns in this region against smoking, the vast majority of women were generally aware that smoking was harmful to health. However, more than half of them did not know its specific ill-effects on the mother and the fetus.. This is contrary to our findings, possibly because of the lack of literature for the public or health education on maternal smoking in this region.

Advancing maternal age beyond the age of 35 years can adversely affect the outcome of pregnancy with an increased risk of having a child with Down's syndrome among other things. More than half of the women in the present study (54.3%) were not aware of this. Though, in general, as the literacy level of the women rose, there was a significant positive improvement in knowledge ($p<0.01$), a substantial proportion of the high school/college educated women (51%) remained unaware of the safe age for pregnancy, indicating a lack of discussion of this subject at the health center or in the mass media.

It was encouraging to note that a vast majority of women (97.4%) had understood the importance of antenatal visits and cited appropriate reasons for their check-up. They believed in antenatal care early in pregnancy and regular follow-ups as recommended. Their response, however, should not be taken as a reflection of women in the general community since those in the study group were urban women attending the PHCs. A notable point observed in the present study was that though the subjects were PHC users, many of them lacked information on the importance of antenatal procedures such as blood examination, immunization with Tetanus Toxoid and breast care during pregnancy. A decreasing literacy level was found to be a significant factor in the lack of awareness of these health practices ($p<0.01$). Moreover, physicians and nurses constituted poor sources of health information (35.6%) for these mothers.

The results of this investigation underlines the need to intensively reactivate the health education programmes through the local PHCs as well as the mass media. It seems that the current programmes are inadequate and need to be revamped. Educational interventional research studies [7,8]

conducted during the antenatal period have been highly effective in improving the knowledge and health habits of pregnant women. Creating awareness among the local women of childbearing age about the prevention of health problems in pregnancy, healthy practices during the gestational period, and the importance of the various procedures in antenatal care, will increase their satisfaction, improve perinatal outcome and ultimately reduce the burden of pregnancy-related preventable problems on the health services.

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Original Article

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Effectiveness of Structured Teaching Programme on Knowledge Regarding Maternal and Child Health Services of Community Health Center among People Residing at Selected Panchayat in Ernakulam District

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Abstract

Motherhood is the most important position a woman can have in her life but can be a life threatening event as well. During pregnancy, any woman can develop serious, life-threatening complications that require medical care [1]. India accounts for nearly 20% of maternal and child health services in the globe. This could be related to several factors such as non utilization or under utilization of maternal and child health (MCH) services. For proper programme implementation, understanding community knowledge and practices regarding maternal care during pregnancy, delivery, and postnatal period is required. Improving community awareness on maternal and child health (MCH) services is still required.[4]*Materials and methods;* Research design used for this study was pre experimental one group pre test post test design. 60 rural people belonging to the age group of 20-60 years were selected using non probability convenient sampling technique from Vadavucode Puthencruz Panchayath . The tool used for data collection consisted of two parts. Part A included demographic profile and part B was a structured questionnaire which comprised of maternal and child health services of community health centre .Pre-test was done which was followed by a structured teaching programme , five days prior to the post-test. The pre-test and post-test values were compared by using paired t-test. *Result:* The findings showed that the mean post test knowledge score of the subjects 18.25 was higher than the mean pre-test score of 14.183. The calculated "t" value obtained from paired "t" test was10.190 which is significant at P£ 0.05 level showing that there is improvement in knowledge of people. The results of chi-square analysis indicated that there was significant association between knowledge and demographic variables. *Conclusion:* The research conducted on people of selected Panchayath revealed that there was significant lack of knowledge regarding MCH services provided by Community Health Centres , among the people and the structured teaching programme has a remarkable role in improving their knowledge.

Keywords: Effectiveness; Structured Teaching Programme; Knowledge; Maternal and Child Health; Services; Community Health Centre; People.

Introduction

The World Health Organization (WHO) estimates that, of 536,000 maternal deaths occurring globally each year, 136,000 take place in India. Maternal Mortality Ratio (number of maternal deaths per 100000 live births) in Kerala fluctuated between 48.19 and 26.33. District wise analysis showed that the districts of Alappuzha, Ernakulum and Thrissur had

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values of MMR below the state average almost throughout the period of study and the under 5 five mortality rate in Kerala is 14 deaths per 1000 live birth [2].

For centuries, caring for pregnant women and new born baby was considered as a private affair, the realm of midwives and mothers. The creation of public health programs to care for mothers and children has its origins in late 19th century in Europe where healthy mothers and children were seen as economic, political and military resources for states who believed that unhealthy children threatened their cultural and military aspirations. Over time, medical, charitable and governmental authorities increasingly saw the health of mothers and children as a legitimate cause in its own right. At the same time, workers and women's movements and organization also took up the cause of women and children's health. With the advent of 20th century, maternal and child health care assumed the status of a public health priority, with corresponding responsibilities for the state [3].

Malnutrition in mothers accounts for a substantial proportion of neonatal malnutrition (Freedman et al, 2005). The risk of death for children under five years is doubled if their mothers die in childbirth. At least 20% of the burden of disease among children under five is attributable to conditions directly associated with poor maternal and reproductive health, nutrition and quality of obstetric and newborn care.

Strengthening the maternal and reproductive health services can also benefit the health system as a whole, enhancing access and use of a broader number of reproductive health care services. Maternal mortality has generally been accepted as an indicator of how well a health system is functioning [3].

By the implementation of the various national programmes for control / eradication of diseases and also of family welfare programme including the universal immunization programme and the maternal and child health activities has helped the state to reduce the mortality rates and improve the health status of mother and child. Today, in Kerala, the infant mortality rate is as low as 16 and the maternal mortality is below 1, which are comparable to that of some of the developed countries [3].

More than 1 lakh women in India are estimated to die every year from pregnancy and child birth related causes due to inadequate knowledge of MCH services & illiteracy, poverty, population density etc. The overall efforts of maternal & child health professionals involves practicing MCH to provide health care service based on most recent scientific research to assess & identify MCH problems & plan interventions [4].

A cross sectional study was conducted to assess the antenatal care service utilization, delivery practices and factors affecting them in tribal area of Maharashtra. Samples were selected using cluster sampling. 210 mothers who delivered within 1 year were interviewed. Main reasons for inadequate utilization of ANC were financial and lack of awareness. Utilization was associated with education, socio-economic status, etc. The study strongly recommends the need to provide health education to improve the utilization of ANC services [14].

Community Health Centres demonstrated that locally governed healthcare can improve lives while lowering costs. These pioneer Health Centres launched a national movement that provides affordable, high-quality, primary and preventive care to millions of people and reduces the need for costlier forms of care today. The state aims to reduce the present IMR to single digits by the end of the 12th Five year plan [4].

Community health centres play an important role in promotion of health. The present study is an attempt to assess the level of knowledge on maternal and child health services of Community health centres among people residing at selected panchayaths at Ernakulam district. The purpose of this paper is to present the effectiveness of structured teaching programme on maternal and child health services of Community health centre which is tested by comparing the pre-test and post-test knowledge score of people residing at selected panchayats between the age group of 20 - 60 years.

Statement of Problem

" A study to assess the effectiveness of structured teaching programme on knowledge regarding maternal and child health services of community health centre among people residing at selected panchayat in Ernakulam district."

Objectives

1. To assess the knowledge of people regarding maternal and child health services available in community health centre residing at selected panchayat in Ernakulam district.
2. To find out the effectiveness of structured teaching programme on maternal and child health services of community health centre residing at selected

panchayat in Ernakulam district.

3. To find out the association between pre test knowledge score and selected demographic variables residing at selected panchayat in Ernakulam district.

Hypotheses (at 0.05 Level of Significance)

H1: There will be a significant difference in pre-test and post test knowledge Scores of the subject.

H2: There will be a significant association between mean pre-test knowledge Score and selected demographic variables.

Materials and Methods

A quantitative research approach with pre experimental one group pre test post test research design was used for the study.

Variables of the Study

1. Dependent Variable: Knowledge regarding maternal and child health services of community health centre among the people in a selected Panchayath in Ernakulam district.
2. Independent Variable: Structured teaching programme on maternal and child health services of community health centre.
3. Attribute Variables: Demographic variables of people such as age, sex, religion, residential area, educational status, family income, receive any services from community health centre, previous source of information and attended any health educational classes.

A structured questionnaire, developed by the researchers was used to assess the knowledge of people on MCH services of community health centre. A pilot study was carried out from 10/12/2014 to 15/12/2015.

The tool was divided into two main sections: Section A comprised of items pertaining to demographic data and section B was a structured knowledge questionnaire related to MCH services which comprised of 30 multiple choice questions on areas such as various clinics conducted in community health centres, immunization services, national health programs and family planning services. Out of the 4 alternatives, three were distracters and one was the correct answer. The demographic data included were age, sex, religion, residential area, educational status, family income, receive any services from community health centre, previous source of information and whether attended any health educational classes.

A structured teaching programme was developed by the researcher which contained details about the MCH services of community health centre such as definition, various clinics conducted in CHC, National health programs (RCH, school health programme, Janani Suraksha Yojana, NRHM and Adolescent Health Programme), immunization for pregnant women and children and family planning services.

Researchers obtained permission from Panchayat office Vadavucode to conduct study over there. After obtaining the permission, researchers met the samples between the age group of 20-60 years at their houses and established rapport with them and requested to participate in the study. They were assured that confidentiality of the information will be maintained. 60 samples who met the inclusion criteria were selected using non probability convenient sampling technique and they were requested to assemble at Anganwady in Ward no: 12 on 17/12/14 at 10am. On 17/12/14 after obtaining a written informed consent from the subjects for willingness to participate in the study, demographic data sheet was given to them, followed by structured questionnaire to assess the knowledge on maternal and child health services provided from community health centre. After this procedure subjects were given structured teaching program for duration of 30 minutes. Post - test was done on the 23|12|14 following the intervention on the same place.

Result

Distribution of Demographic Variables of Sample Who are Residing in Selected Panchayat

From Table1, among the 60 samples it is evident that, majority of the samples 26(43.33%), belonged to the age group of 41 - 50 years, a larger percentage of the samples 56 (93.33%) were females. Most of the people 49(81.66%) were Hindus. All 30(50%) had family monthly income below Rs500. Majority of the people, 29(48.33%) had only primary education. Considering the type of family, most of them (71.66%) belonged to nuclear family. When the area of residence was taken into consideration, a higher proportion of the people 53(83.33%) were living in rural area. About the previous source of information, most of the people 29(48.33%) got information from the health professionals, majority of the people had attended the classes i.e., 40(66.6%) and most of the people 36 (60%) had received services from CHC.

Table 1: Frequency and percentage distribution of samples with demographic variables N = 60

Sl. No	Demographic Variables	Frequency	Percentage
	Age		
1	21-30	0	0
2	31-40	10	16.66
3	41-50	26	43.33
4	31-60	24	40
	Sex		
1	Male	4	6.66
2	Female	56	93.33
	Religion		
1	Hindu	49	81.66
2	Christian	11	18.33
3	Muslim	0	0
4	Others	0	0
	Residential Area		
1	Rural	53	88.33
2	Urban	7	11.66
	Type of Family		
1	Nuclear	43	71.66
2	Joint	17	28.33
	Educational Status		
1	Primary	29	48.33
2	Secondary	24	40
3	Higher secondary	5	8.33
4	Graduates	2	3.33
	Family income		
1	Below 500	30	50
2	500-2500	20	33.33
3	2500-5000	8	13.33
4	Above 5000	2	3.33
	Have you receive any services from chc		
1	Yes	36	60
2	No	24	40
	Source of Information		
1	Health professionals	29	48.33
2	Family and friends	9	15
3	Medias	8	13.33
4	Others	14	23.33
	Health Education Classes Attended		
1	Yes	40	66.66
2	No	20	33.33

Table 2: Frequency and percentage distribution of pre-test level of knowledge among the samples N = 60

Knowledge level	Frequency	Percentage
Poor (> 36.6%)	32	53.33%
Average(36.6 – 63.3)	23	38.33%
Good (< 63.3)	5	8.33%

Table 3: Frequency and percentage distribution of post test level of knowledge among the samples N=60

Knowledge level	Frequency	Percentage
Poor(< 36.6)	0	0%
Average (36.6-63.3)	32	53.33%
Good (> 63.3)	28	46.66%

Table 4: Comparison of mean and SD of the pre and post-test level of knowledge regarding MCH services among of people selected panchayat **N=60**

Sl. NO.	Level of knowledge	Mean	Standard deviation	Range	"t□test
1	Pretest	14.183	3.092	10-24	10.190
2	Posttest	18.25	2.679	15-27	
3	Enhancement	4.067	0.413	5-3	

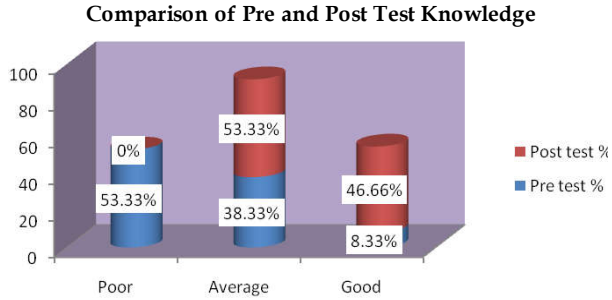

Fig. 1: Figure showing comparison of pre and post test knowledge among people of selected Panchayat

Distribution of People Based on Pre Test Knowledge Regarding MCH Services From CHC

From pre-test data analysis it was found that out of 60 samples , 32(53.3%) had poor knowledge regarding MCH services of CHC & 23(38.3%) had average knowledge and 5(8.3%) had good knowledge and it is shown in Table 2. This showed that the samples were not having enough knowledge regarding MCH services of CHC which clearly supported the need for teaching programme on the same aspect.

Distribution of Samples Based on Post Test Knowledge Regarding MCH Services from CHC

The table 3 below shows that during the post - test, out of 60 samples, 32(53.3%) had average knowledge regarding MCH services from CHC, 28 (46.6%) had good knowledge and 0 (0%) had poor knowledge. This indicated that the teaching programme improved the knowledge of the samples.

Effectiveness of Structured Teaching Programme by Comparing Pre and Post-Test Level of Knowledge

From the Table 4 and Figure 1 , the frequency and percentage distribution of knowledge on pre-test and post-test showed that majority of them had gained average level of knowledge 53.33% when comparing to pre-test. The standard deviation of pre-test knowledge score was 3.0% and post test knowledge score was 2.6%. The obtained "paired t"- value was 10.1%. The calculated value is less than "table value" at 0.05 level of significance. Hence the stated hypothesis H1 was accepted.

Association between the knowledge on MCH services provided from CHC and selected demographic variables among people in selected Panchayat

There was significant association between knowledge on MCH services provided from CHC and selected Socio-demographic variables of samples such as age, sex, religion, residential area, educational status, family income, receive any services from community health centre, source of information, attended any health educational classes in selected panchayat.

Discussion

Pre-Test Knowledge Score Regarding MCH Services Provided From CHC Among Samples.

The findings of the pre-test score showed that out of 60 samples , 53.33% of them had poor knowledge, 38.33% had average and only 8.33% had good knowledge. A survey was conducted to assess the utilization of antenatal care services among schedule caste women in India. The sample for the study comprised of 6212 currently married SC women in the age group of 15-49, who had given birth during three years prior to the survey. It was found that 75% of the mothers were not utilizing all the antenatal services, due to lack of awareness and illiteracy. The study strongly recommended for improving the implementation of RCH and strengthening the health education with regard to antenatal care services[16]

Post Test Knowledge Score Regarding MCH Services Provided from CHC among Samples

The findings of the pre-test score showed that out of 60 samples, majority, 53.33% of the samples acquired average knowledge and 46.33% of the samples acquired good level of knowledge after the intervention. So it revealed that the samples had lack of knowledge about the maternal and child health services from community health centre. This study enlightens that there is a need for educational program to improve the knowledge about the maternal and child health services from community health centre. A similar study to assess the effectiveness of structured teaching programme on knowledge about MCH services provided by health centres were conducted among mothers with infants. 40 mothers were selected for the study. Pre – test knowledge score was 58.2% and post – test knowledge score was 87.9%. From the results it was concluded that knowledge level increased after planned teaching programme [12].

Association between Knowledge and Selected Demographic Variables Regarding MCH Services Provided from CHC

The results of chi-square analysis indicated that there was significant association between knowledge and selected demographic variables of people

identified according to age, sex, religion, residential area, educational status, family income, receive any services from community health centre, source of information, attended any health educational classes. Of these variables, expect type of family, the other variables significantly associated at $p \leq 0.05$ level. A similar study to assess patient's awareness about primary health care centers services in Kuwait city. The sample consisted of 301 patients. The results indicated that gender, income, marital status and occupation were among the demographic variables that showed association [12].

Conclusion

The findings of the study suggested that there was inadequate knowledge regarding maternal and child health services offered by community health centre and structured teaching programme had a significant role in improving the knowledge among the people at selected panchayat in Ernakulam. So the nurses should create awareness about services provided by CHC at free of cost among the general population to increase the utilization of CHC thereby to improve the health status of the people.

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Original Article

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A Study to Assess the Awareness of Prenatal Exercise among Pregnant Women in Selected PHC's of Damoh

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Abstract

A Proper Exercise regimen during prenatal care helps the mother have a safe pregnancy and delivery today more than of pregnant women are over weight or obese which is the increase risk of gestational diabetes ,preeclampsia still birth congenital anomalies etc .Therefore important to assess the awareness of Exercise and Encourage for prenatal Exercise in the patients .

In this study participants were recruited from of PHC's of Damoh district from July 2015 Aug 2015. Pregnant women's who visited OBG clinic were between the age gap of 18-35 years were included in the study with the view that they are aware of the exercise during the pregnancy Questionnaires were developed based on the previous studies. 60% of the sample didn't meet the criteria and were unaware of the Exercise in pregnancy. After obtaining the consent from them the questionnaires were given to the participants which were in the local languages which included the baseline data obstetrical history different types of exercise in pregnancy. Data was analyzed using SPSS version.

Keyword: Prenatal Exercise; Pregnancy; Obstetrics and Gynecology.

Introduction

Today in the more than a half of pregnant women are overweight or obese. Obesity carries with it an increased risk of gestational diabetes, preeclampsia, stillbirth, congenital anomalies, fetal macrosomia with increased risk of shoulder dystocia and birth injury and childhood obesity. With obesity on the rise it is becoming increasingly important that we discuss, and encourage, exercise in our pregnant patients.

Exercise during pregnancy was once thought to promote an increased risk of infertility, miscarriage and preterm delivery. As research has emerged, however, this conservative attitude has shifted. Currently, the American College of Obstetrics and Gynecology recommends at least 30 min of moderate activity three-times a week. A 2013 study by Barakat *et al.*demonstrated that although exercise did not significantly decrease the incidence of gestational diabetes, it did decrease the risk of macrosomia, cesarean section and maternal weight gain [1]. Added benefits of exercise in pregnancy include improved mood and posture, promotion of muscle tone/endurance, improved sleep and a better ability to cope with labor [2,3].

Physical activity is very important aspect of good health. Exercise is very important irrespective of age & especially important for pregnant women as it help

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them overcome pregnant related complicated & maintain good physical fitness exercise during pregnant not only helps in maintaining musculoskeletal Fitness but also help in controlling weight maintaining blood glucose to cope with varies psychological & physical stress during pregnancy labour & improve blood circulation [4,5].

Kegels exercise is commonly followed prenatal exercise used to strengthen pelvic floor muscle which may stretch during delivery, which helps for labour[6,7,8].

In most situations, the intensity of physical activity can be assessed by heart rate. A normal target heart rate during exercise is calculated by subtracting age from 220. Generally, the greater the intensity of exercise the higher the heart rate. During pregnancy these target heart rates do not apply. In the first trimester, there is vasodilation, a decrease in preload and tachycardia, while in the third trimester women experience an expanded blood volume and an increased stroke volume. These physiologic changes in the third trimester will make it very difficult for most women to reach their target heart rate. A better way for pregnant women to judge the intensity of their exercise is merely by how hard a workout feels as they are doing it. Providers will often be questioned by patients regarding exactly what exercises are safe for them and their baby. In general, there are a large number of activities that women can participate in during pregnancy; from walking and yoga to light jogging and swimming. However, activities where there is a high potential for abdominal trauma or falls should be avoided [9].

Exercise at high altitudes should also be done with caution for pregnant women. As per studies on Obstetrics and Gynecology, exercise up to 6000 feet is safe. In elevations above this, however, there may be an increased risk to the fetus. It is important to note that these recommendations regarding exercising at high altitudes are based upon a small number of studies with very few subjects [10].

After the first trimester, pregnant women are often told to avoid supine positions for long periods of time owing to concerns that the gravid uterus may cause venous blood flow obstruction and the potential for orthostatic hypotension. While this recommendation may sound sensible, no data exist to support it. It is also recommended that pregnant women take precautions when exercising in hot, humid weather, such as wearing appropriate clothing and hydrating well.

While exercise is recommended for most pregnant women, there are some contraindications. These include incompetent cervix or cerclage, placenta previa after 26 weeks gestation, ruptured membranes, persistent second or third trimester bleeding, history of premature labor during the pregnancy and preeclampsia.

There are also many benefits of regular exercise to the fetus. A 2010 study by Juhl *et al.* revealed a decreased incidence of both large and small for gestational age babies in women who exercise [11].

To cope with emotimal stress & labour pain forcathing Techniques are proved to be successful [12].

Exercise also increases the placental surface area, volume and functional capacity; possibly providing a protective effect for the fetus [13].

Prenatal exercise also decrease adipose tissue growth ,increases stress tolerance & advances new behavior relaxation in the fetus [14].

Exercising while breastfeeding has also been found to be safe. Studies have shown that exercising has no negative effect on breast milk production, lactic acid levels, infant suckling or neonatal weight gain [15]. A 2007 cohort of over 587 mothers revealed that exercise did not affect the level of breastfeeding or need for supplementation, with no difference in infant weight or length [16].

Are there any long-term benefits for children of mothers who exercised during pregnancy? Studies have shown that there is no difference in height, limb length, head or chest circumference in 5-year olds. Additionally, there was no difference in physical coordination, visual-motor integration or academic readiness skills. However, children of exercising mothers were found to have decreased weight and percent body fat, along with improved oral language skills and higher IQ test scores [17].

Given the evidence supporting the benefits of exercise to both mother and baby, encouraging exercise during pregnancy is one positive step in combating the growing epidemic of sedentary lifestyle and obesity. We agree with recommendations of major medical societies that women with uncomplicated pregnancies should exercise as part of a healthy lifestyle before, during, and after pregnancy. It carries minimal risks and has demonstrated benefits for both mother and baby. Practitioners and patients will most benefit from future studies focusing on the most effective methods of counseling and successfully motivating patients to increase their physical activity.

Material & Methods

The present Study was carried out to assess the

awareness of prenatal exercise among pregnant women who came to ANC check up in OBG in selected in PHC'S Damoh using the questionnaires which were prepared for assessing the age ,literacy ,socioeconomic condition & awareness of different exercise the study pop consist of to velocity ANC mother from rural areas information collected was through questionnaires .the respondent were explained about the study & performance I.e. age . occupation,se awareness of exercise during pregnancy date was Entered & analyzed using SPSS version Frequency & % taken and as part of descriptive Statistics.

Result

The demographic variable in study are 83% of respondents were below 25 years 69 % had completed the high school & higher secondary (+2) 30% were from middle class 70 % were from lower class 80 % were multi parous.

Table 1

Variables	Number(%)
> 25 years	**83(75%)**
25 and above	**17(15%)**
	100(100%)

Table 2

Education level	
High school	**28(28%)**
Higher secondary	41(41%)
< 4th standard	21(21%)
No school	10(10%)
Total	**100(100%)**

Table 3

Socio economic Status	N(%)
Middle class	30(30%)
Lower class	70(70%)
Total	**100(100%)**

Table 4

Parity	N(%)
Primi parous	20(20%)
Multi parous	80(80%)
Total	**100(100%)**

Table 5

Occupation	N(%)
Unemployed (house wife)	57(57%)
Former	23(23%)
Daily wages	20(20%)
Total	**100(100%)**

Table 6

Awareness of Prenatal exercises	
Yes	15(15%)
No	85(85%)
If yes how Through	
Family & Friends	8(8%)
Media	2(2%)
Health care centers	5(5%)

Awareness of these exercise

Type of exercise	yes	No	Not sure	Total
Aerobics	0	90	10	100
Back care exercises	0	90	10	100
Abdominal Exercises	0	90	10	100
Pelvic muscle Exercises	0	90	10	100
Walking, Relaxation & Breathing Exercises	30	60	10	100
Muscle Strengthening	0	90	10	100
Education by Health personal	10	80	10	100

Discussion

Proper prenatal care plays a vital role in the safe motherhood .to my knowledge the Study was attempted to know the awareness of Prenatal Exercise among the pregnant women.

In my study 85% of the respondents are unawareness o f the Exercise & 15 % of the respondents who were aware, were having information of Prenatal Exercise i.e. 8% from family, 2% media, 5% health care centers.

In my study the respondents were less educated i.e. 28% high school, 41%higher secondary, 21 % pre primary & 10% were illiterate When the respondents were asked about different types Exercise 90% were unaware of aerobics & 10% were not sure & none were unaware of a back care Exercise & 90% were unaware of pelvic Exercise 30 % aware of walking, Relaxation & Breathing. 90% unaware of muscle strengthening & 10% were not sure. 10 % were been Educated about awareness of walking & relaxation.

These above states that they were unaware of the Prenatal Exercise i.e. poor in knowledge As compare with other previous studies done my study finding show that the respondent lack in awareness of different exercise and benefit for ANC Health care center play a important role in educating. However only 10% were Educated by health personnel about walking and relaxation.

Performing these exercise under the supervision result in various benefits Hence there is a need to incorporate or educate every prenatal mothers with exercise during the visits.

Limitations

The overcome of study is limited to selected PHC's in rural areas of Damoh Hence the study need to validates in other setting also.

The study was limited for only a month The barrier also plays a role as high class family's utilize less upper socioeconomic.

Conclusion

The finding that conclude from the Study that the pregnant women were unaware of the ANC exercise & its benefits.

Therefore every health care setting person must play an important role In Educating the women about the exercise & benefit.

These can also be achieved by home visit by nursing personnel's, Asha worker, Aaganwadi worker & interacting o f health professional and the health setting health educating etc.

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The author gratefully acknowledge all the women who voluntary involved in the study & also the a administrative and nursing personnel of hospital

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