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A Comparative Study to Assess the Effectiveness of Left Lateral Position Vs Upright Position on Fetal Heart Rate and Labor Pain Among Parturient Mothers in I Stage of Labor in Government Hospital, Vellore

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Reprint Request

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Abstract

The main aim of the study was to do comparative study to assess the effectiveness of left lateral position vs upright position on fetal heart rate and labor pain among parturient mothers in first stage of labor at government hospital, Vellore. quasi experimental, comparative pre and post test design was adopted for the study. The sampling technique used was purposive sampling technique, and 60 parturient mothers were taken for study, out of which 30 parturient mothers were allotted to study group I and 30 parturient mothers in study group II. Data collection was done for a period of 1 month, assessment of demographic variables, fetal heart and perception of pain assessment were done with left lateral and upright position among parturient mothers in first stage of labour.

Keywords: Fetal Heart Rate and Labor Pain Among Parturient Mothers in Stage I of Labor.

Introduction

Pregnancy and childbirth are events that touch nearly every aspect of the human experience, biologic, psychological, social, and cultural. Child birth pain has been associated with pain since the beginning of time, and throughout history measures have been introduced to help relieve it. Pain during child birth is generally handled with pharmacological techniques. A non pharmacological technique for pain relief is generally a new concept. Among all the non-pharmacological techniques, positions are the one, which does not require the presence of a nurse as it can be performed by the mother itself.

Cochrane review focuses on maternal position for fetal heart, it helps to improve the blood supply to the baby. Left lateral positions is advantage for both maternal and fetus well-being. In fetus it helps to take pressure off the internal organs which means umbilical cord is less likely to get squished and

reduced baby's oxygen supply. It helps to keep baby's heart rate up, if it decreasing during contractions. In mother, it helps the mother to have low blood pressure, and it can help the mother to rest and relax if labor is taking a long time, no energy is wasted [1].

Obstetrical Gynecological survey reported that, women given in upright positions have more comfort and length of labor is shorter and fetal well-being is improved and it is considered to be more safe position [2].

Sylvia T. Brown undertaken a study and found that mean reduction of active phase of I stage of labor was 2 hours in parturient mothers. The mean duration of labor in experimental group was significantly less than the control group. The study concluded that, maintenance of upright positions (sitting and standing) during the first stage of labor reduces the duration of first stage of labor. So it is recommended that upright positions should be given to all laboring mothers if not contraindicated, it

reduces the duration of first stage of labor. Study of the effect of upright positions can be done on other aspects like maternal comfort, labor pains etc. Similar study can be replicated on large sample[3].

Wrightington et al states that the effect on upright positions during first stage of labor on maternal parameters, it increases comfort and reduce pain, labor may be shorter, gravity will help the baby to move down more easily and more quickly, upright positions can help with the frequency, length and efficiency of the contractions help to dilate more quickly on fetal effect, it helps to supply better oxygen to the fetus and improve the fetal heart rate[4].

Pillai & James observed the development of fetal heart rate acceleration patterns during normal pregnancy. They reported that, gestational age also a factor influencing acceleration or reactivity of fetal heart rate. The percentage of body movements accompanied by accelerations increased with gestational age[5].

Neilson conducted a study to assess the effects of antenatal fetal heart rate recordings on pregnancy outcome and management. The analysis provides no support for the use of Cardiotocograph which was as supplementary test of fetal wellbeing in the management of high risk pregnancies. He also comments that a cardiotocograph is an assessment of fetal wellbeing at that time and to expect such a test to produce a reduction in perinatal mortality in the manner of a screening test is unlimiting[6].

With regard to the position of women and the physiology of parturition, the importance is to regulate the effects of gravity on the fetus, which supports the muscle force during the period of expulsion. The efficacy of the muscle can be measured by frequency and intensity of the uterine contractions. Many times it is difficult to distinguish between the influence of gravity and the muscle force in several positions during parturition. However, it can be observed through a cause-and-effect interrelations for being upright during labor, women should be encouraged and help to move and adopt whatever positions they find most comfortable throughout labor.

Hence, there are lot of advantages in positioning the parturient women in first stage of labor, in either left lateral and upright position, this made the investigator to do comparative study to assess the effectiveness of left lateral and upright position on fetal heart rate and labor pain among parturient mothers.

Statement of Problem

A comparative study to assess the effectiveness of left lateral position vs upright position on fetal heart rate and labour pain among parturient mothers in first stage of labor at Government hospital, Vellore

1.4 Objectives

1. To assess and compare the effectiveness of left lateral position and upright position on Fetal heart rate and labor pain among parturient mothers in stage I of labor in study group I&II.
2. To correlate the fetal heart rate and labor pain of parturient mothers with left lateral position and upright lateral position during Stage I of labor in study group I&II.
3. To find out the association between the fetal heart rate and labor pain of parturient mothers with left lateral position and upright position during stage I of labor with demographic and obstetrical variables in study group I & II.

Methods and Materials

Methodology

Research Approach

The research approach used in this study was Quantitative approach.

Research Design

Quasi experimental comparative pretest and post test design.

Group	Pretest	Intervention	Post test
Study Group –I (Left lateral position)	✓	✓	✓
StudyGroup-II (upright position)	✓	✓	✓

Variables of the Study

Independent variables

Left lateral position and upright position.

Dependent variables

Fetal heart rate and labor pain of parturient mothers in stage I of labor.

Demographic variables

Age, education, religion, occupation, type of work, habitance

Obstetrical and gynaecological variables

Parity, gestational age, and cervical dilatation of parturient mothers.

Extraneous variables

Psychological factor of parturient mothers.

Research Setting

The setting for the study was Government hospital, Vellore. The hospital is 250 bedded, with all facilities for obstetric and gynaecological services. It has all the specialties, providing inpatient and out patient services. They have fully Pledged maternity facilities. They are conducting more than 300 deliveries in a month, approximately 10-12 deliveries per day, in which 70-80% of parturient mothers going for normal vaginal delivery with or without episiotomy and so the hospital was selected to attain samples within the stipulated period of time.

Population

Population refers to the entire summation of case that meets the designed inclusion criteria. The population for the present study comprises of all the parturient mothers in I stage of labour.

Target population

It consisted of all the parturient mothers in I stage of labor.

Accessible population

It consisted of all parturient mothers in I stage of labor who are admitted in labor room of the

Government Hospital, Vellore, during the data collection period.

Sample

The study sample comprised of all parturient mothers admitted in laborroom, who met the inclusion criteria

Sample Size

The size of sample was 60 parturient mothers out of which, 30 parturient mothers were allotted to study group I and 30 of them to study group II.

Sampling Technique

Purposive sampling technique was used to select the samples for the present study.

Criteria for Selection of Samples

Inclusive criteria

- Primi and multiparous parturient mothers who are in I stage of labour.
- Parturient Mothers with 3-6cm of cervical dilatation.
- Parturient mothers who are willing to participate in study.

Exclusive criteria

- Parturient mothers with maternal complications like pregnancy induced hypertension, gestational diabetes mellitus and cord presentation.
- Mal presentations & mal positions.
- Parturient Mothers who have taken oral and epidural analgesia during labor.

Development and Description of Tool

The tool was developed with an extensive review of literature, discussion with professional experts and with the investigator's personal experience and a structured questionnaire was used. The tool consists of the three parts, section A, section B, and section C.

Section-A. Structured questionnaire was used to assess demographic and obstetrical variables. The demographic variables include age, educational status, occupation, income, type of family, religion and obstetrical variables include parity, gestational age and cervical dilatation.

Section-B. Fetal heart rate was assessed by doppler machine and values are entered in observational schedule prepared by the investigator.

Section-C. Pain of parturient mothers was assessed by combined numerical and categorical pain scale (Derry S et al., 2008).

The combined numerical and categorical pain scale was used to assess the pain perception. The scale assessed the subjective response of the pain intensity of the parturient mothers. It includes the numerical and categorical description of the level of pain, which ranged from '0' - (no pain) to '10' (worst possible pain).

Major findings

Regarding the demographic variables of parturient mothers in study group I

The major findings of demographic of parturient mothers age, 9 (63.3%) were between 21-25yrs, the educational qualification of parturient mothers, 11 (36.7%) were intermediate, occupation clerical shop owners, 12 (40.0%), the type of family, 15 (50.0) of them belonged to nuclear family, and 15 (50.0%) belonged to joint family. Income 13 (43.3%) were earning less than Rs 5,000/-month, The residence, 24 (80%) were residing in rural area., religion, 20 (66.7%) were Hindu .

Regarding the demographic variables of parturient mothers in study group II

The major findings of demographic variables in parturient mothers in study group II. The age distribution of parturient mothers were 18 (60.0%) between 21-25 years, the educational qualification of parturient mothers, 5 (50.0%) were intermediate, occupation, 15 (50.0%) were skilled workers, the type of family of parturient mothers, 16 (53.3) of them belonged to nuclear family, income 16 (53.3%) were earning less than Rs5,000/-month, the residence of parturient mothers, 24 (80.0%) mother who were residing in rural area. With respect to religious status of parturient mothers, 23 (76.7%) of them belong to Hindu.

Regarding the obstetrical Information of Parturient Mothers in Study Group I

The major findings of obstetrical variables of parturient mothers in study group I, the parity of parturient mothers, 20 (66.7%) were having one child, the gestational age of parturient mothers, 9 (30.0%), of them were in 40 weeks, the cervical dilatation of parturient mother 23 (76.7%) of them were between 3-4cm cervical dilatation,.

Regarding the obstetrical variables of parturient mothers in study group II

The major findings of obstetrical variables of parturient mothers in study group II, the parity of parturient mother, 20 (66.7%) belong to one child, the gestational age of parturient mother 9 (30%) were in 38 weeks, the cervical dilatation of parturient mothers, 25 (83.3 %) were between 3-4 cm cervical dilatation

Table 1: Comparison of post test level of mean and standard deviation of fetal heart rate and pain score of parturient mothers in I stage of labor with left lateral and upright position between study group I & II N=60

	Study Group I n=30		Study Group II n=30		Student's independent t-test
	Mean	SD	Mean	SD	
Fetal Heart Rate	136.00	9.08	149.17	10.53	t=2.82 P=0.01** df=58, significant
Pain	3.07	2.99	4.96	2.56	t=2.63 P=0.01** df=58 significant

** highly significant

The results depicted that, there was significant difference found in fetal heart rate of parturient mothers in study group I & II at P = 0.01 level.

Regarding the labor pain of parturient mothers in study group I & II, there was Statistical significance found at P = 0.01 level.

Table 2: Comparison of mean and standard deviation of pretest level and post test level of fetal heart and labor pain of parturient mothers in I stage of labour with left lateral position in study group I

Variables	Study group I				Paired t test
	Pre-test Mean	SD	Post-test Mean	SD	
Fetal heart rate	130.6	6.41	136	9.08	t=6.933 df=28 p=0.001***
Labour pain	7.1566	1.644	3.07	2.99	t=22.20 df=28 p=0.001***

*** very high significance

Analysis sho

Analysis showed that comparison of mean and standard deviation of pre-test level and post- test level of fetal heart rate of left lateral position in study group I was very highly significant at P=0.001 level and

comparison of pre test level and post level of labor pain of parturient mothers mean and standard deviation of pre and post test level of labor pain in study group I was very highly significant at P=0.001 level.

Table 3: Comparison of mean and standard deviation of pretest and post test level of fetal heart and labor pain of parturient mothers in I stage of labor with I upright position in study group II

Variables	Study group II				Paired t test
	Pre-test Mean	SD	Post -test Mean	SD	
Fetal heart rate	131.53	6.27	149.17	10.53	t=24.42 df=28 p=0.001***
Labor pain	7.28	2.08	4.96	2.56	t=7.99 df=28 p=0.001***

*** very high significant

Table 4: Correlation of fetal heart rate and pain score of parturient mothers in I stage of labor with left lateral and upright position in study group I&II
N= 60

	Correlation	Mean \pm SD	Correlation coefficient	Interpretation
StudyGroupI	FHR vs pain score	139.00 \pm 3.07	r=0.51 p=0.01**	Moderate correlation
StudyGroupII	FHR vs pain score	146.17 \pm 4.96	r=0.42 p=0.01**	Moderate correlation

** highly significant at Pd"0.01

Analysis depicted revealed that, mean and standard deviation value was 139.00 \pm 3.07 and the correlation was r =0.51 which was statistically significant at 0.01 level. There was a moderate positive correlation found between the fetal heart rate and pain perception of parturient mothers in study group I. The correlation of post test of fetal heart rate and pain score among parturient mothers in study group II revealed that, mean and standard deviation value was 146.17 \pm 4.96 and the correlation was r =0.42 which was statistically significant at 0.01 level. There was a moderate positive correlation found between the fetal heart rate and pain perception of parturient mothers in study group II.

Analysis revealed that, In study group I there was significant association found between fetal heart rate and demographic variables such as age and parity among which younger age and more parity mothers has high significant association at p=0.01 and there was no significant association found between Fetal heart rate with other demographic variable such as educational status, occupational status, type of family, monthly income, habitence, religion, obstetrical variables such as cervical dilatation and, gestational weeks.

Table 5: Association of Fetal heart rate with demographic and obstetrical variables of parturient mothers in I stage of labor with left lateral position in study group I. N=60

Demographic variables		Fetal Heart Rate (n=30)						Total	Chi square test
		120-130		130-140		140-150			
		No.	%	No.	%	No.	%		
Age	<20years	0	0.0	5	71.4	2	28.6	7	$\chi^2=18.06$ p=0.01**
	21-25years	4	21.1	14	73.6	1	5.3	19	
	26-30yers	0	0.0	0	0.0	2	100.	2	
	31-35 years	0	0.0	0	0.0	2	100	2	
Obstetrical variable									
Parity	One	0	0.0	14	70.0	6	30.0	20	$\chi^2=9.85$ p=0.01**
	Two	3	37.5	4	50.0	1	12.5	8	
	Three	1	50.0	1	50.0	0	0.0	2	

** highly significant at Pd"0.01

Table 6: Association of Fetal heart rate with demographic & obstetrical variables of parturient mothers in I stage of labor with upright position in study group II N=60

Demographic variables		Fetal heart rate (n=30)				Total	Chi square test
		130-140		140-150			
		No.	%	No.	%		
Age	< 20yrs	2	40.0	3	60.0	5	$\chi^2=9.18$ p=0.03
	21-25yrs	14	77.8	4	22.2	18	
	26-30yrs	1	20.0	4	80.0	5	
	31-35yrs	0	0.0	2	100	2	
Obstetrical variable							
Cervical dilatation	3-4cm	17	68.0	8	32.0	25	$\chi^2=10.67$ p=0.01*
	5-6cm	0	0.0	5	100	5	

* significant at Pd"0.05

Analysis depicted that, in study group II there was significant association found between fetal heart rate and demographic variables such as age and cervical dilatation, among which younger mothers and mothers with 3-4cm dilatation had high significant association

at P=0.01 level and there were no significant association found with other demographic variables such as educational status, occupational status, type of family, monthly income, habitence, religion, obstetrical variables such as parity and gestational weeks.

Table 7: Association of pain score with demographic and obstetrical variables of parturient mothers in I stage of labor with left lateral position in study group I N=60

Demographic variables		Pain (n=30)								Total	Chi square test
		No pain		Mild		Moderate		Severe			
		No	%	No	%	No	%	No	%		
Obstetrical variable											
Parity	One	1	5.0	10	50.0	4	20.0	5	25.5	20	$\chi^2=12.64$ p=0.05*
	Two	5	62.5	2	25.0	1	12.5	0	0.0	8	
	Three	1	50.0	1	50.0	0	0.0	0	0.0	2	
Cervical dilatation	3-4cm	7	30.4	11	47.8	3	13.0	2	8.7	23	$\chi^2=7.97$ p=0.05*
	4-5cm	0	0.0	2	28.6	2	28.6	3	42.9	7	

* significant at Pd"0.05

Analysis showed that, in study group II there was high significant association found between demographic variables such as parity and cervical dilation among which mothers of more parity mothers had highly significantly association at

P=0.05 and there was no significant association with demographic variables such as age, educational status, occupational status, type of family, habitence, religion and obstetrical variables such as, gestational weeks and cervical dilatation.

Table 8: Association of pain score with demographic and obstetrical variables of parturient mothers in I stage of labor with upright position in study group II N=60

Demographic variables		Pain (n=30)								Total	Chi square test
		No pain		Mild		Moderate		Severe			
		No.	%	No.	%	No.	%	No.	%		
Age	<20years	0	0.0	0	0.0	1	20.0	4	80.0	5	$\chi^2=16.96$ p=0.05
	21-25yr	3	16.7	6	33.3	7	38.9	2	11.1	18	
	26-30yr	0	0.0	0	0.0	1	20.0	4	80.0	5	
	31-35 yr	0	0.0	0	0.0	0	0.0	2	100.0	2	
Obstetrical variable											
Cervical dilatatio n	3-4cm	3	12.0	6	24.0	3	36.0	7	28.0	25	$\chi^2=9.00$ p=0.02*
	4-5cm	0	0.0	0	0.0	2	0.0	5	100.0	5	

* significant at Pd"0.05

Analysis revealed that, in study group II, revealed, that there was significant association found between demographic variables such as age and cervical dilatation among which mothers of younger age and with less cervical dilatation was highly significant association at P=0.05 and there was no significant association found in mothers with age, educational status, occupational status, type of family, income, habitence, religion, parity & gestational age.

Discussion

The present study compared the effectiveness of left lateral position vs upright position on fetal heart rate and labor pain among parturient mothers in I stage of labor in Government hospital, Vellore. The results of the study revealed that, the comparison of post test mean and standard deviation of fetal heart rate and pain score of parturient mothers in study group I and II was statistically significant at P=0.01 level. The parturient mothers who adopted left lateral position had normal range of fetal heart rate and the pain score was less in left lateral position. The results of the study proved that, left lateral position was more effective than upright position during labor

Nursing implication

This section of the research report that focuses on nursing implication, which includes specific suggestion for nursing practice, nursing education, nursing administration and nursing research.

Nursing Practice

- As a member of the health team, nurses play a vital role in providing comfort to parturient mothers in I stage of labor.

- Nurses should be aware of effects of positions during labor.
- Nurses should create an awareness and motivate others in the team to teach regarding labour process in reducing the fetal distress and labor pain among parturient mothers in I stage of labor.

Nursing Education

- A continuing nursing education program can be arranged on positions during for labour to assess fetal heart rate and pain perception.
- A nurse educator should gain knowledge on various non-pharmacological methods of pain relief during labor.
- A nurse educator should make use of available literatures and studies related to measures to maintain fetal heart rate normal and to reduce labour pain.
- A nurse educator should encourage the students for effective utilization of research based practice.

Nursing administration

- Conduct in service education program on the effectiveness of positions to maintain fetal heart rate and to reduce pain among parturient mothers in I stage of labour.
- Arrange and conduct workshop, conferences and seminars on adopting different positions of parturient mothers in I stage of labour.
- Provide opportunities for midwives to attend training program on benefits of positions during I stage of labor among parturient mothers.

Nursing research

- As a researcher, promote more research on positioning to maintain fetal heart and reduce pain perception in I stage of labor among parturient mothers.
- Disseminate the findings of the research through conferences, seminars and publishing in nursing journal.
- Promote effective utilization of research findings on management to maintain fetal heart rate and reduce labor pain I stage of labor among parturient mothers.

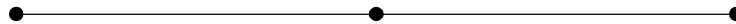
Recommendations

- A similar study can be undertaken to do comparison to assess the effectiveness of left lateral position and upright position on fetal heart rate and labor pain among parturient mothers in II stage of labor.
- A comparative study can be done on various other positions to assess the fetal heart rate and labor pain among parturient mothers in I stage of labor .
- The study can be done with large samples so that the results can be generalized.

- The same study can be done on different settings.

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Physical Activity Patterns and its Determinants among Adolescents of Kerala

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Abstract

Background: According to World Economic Forum report 2011, more than 60% of deaths worldwide are due to Non Communicable Diseases (NCDs), killing 36 million people each year. The beneficial role of physical activity in the prevention of NCD in adults has long been recognized. It is well established that health and development during adolescence in turn affect health during the adult years. *Aims:* To explore the patterns of physical activity and its determinants among school going adolescents. *Methods & Materials:* A school based descriptive survey conducted among 96 eligible adolescents selected using a multi-stage cluster sampling technique in Thrissur district, Kerala, with a structured pretested and validated questionnaire. Physical inactivity was defined as less than one hour of moderate and vigorous physical activity in a day. *Results:* The mean age of participants was $12.75 \pm .92$ years. It was found that 57.3% don't meet the requirements for 6 hrs of physical activity in a week 46.9% of children spent >2 hrs/day watching television. Physical activity was significantly associated with age and educational qualification of mother. Analysis was done using SPSS Version-16. *Conclusion:* Finding calls for an urgent need for population based strategies implemented at local and national level aimed at increasing levels of activity of adolescents to prevent escalation of non communicable diseases among young adults.

Keywords: Physical Activity; Determinants; Adolescents.

Introduction

According to World Economic Forum report 2011, more than 60% of deaths worldwide are due to Non Communicable Diseases (NCDs), killing 36 million people each year. Low and middle income countries are disproportionately affected and in 2010, 80% of NCD deaths occurred in those countries, many of them prematurely, at working age. The estimated cumulative output loss due to overall costs of NCDs to the global economy over the next 20 years represents approximately 4% of annual global gross domestic product and NCD to cost \$47 trillion by

2030. In India, NCD account for 62% of the total burden of foregone disability adjusted life years and 53% of total deaths. This huge burden is going cause a multi-dimensional impact at individual, household, health system, and macro-economic level in our country.

The case-control interheart study reported sedentary lifestyle as one of the main contributing factor for acute coronary heart disease (CHD) events in South Asians. Physical activity, even at an older age, can significantly reduce the risk of coronary heart disease, diabetes, high blood pressure, and obesity, help reduce stress, anxiety and depression, and

improve lipid profile and skeletal health. Doing more than 150 minutes of moderate physical activity or 60 minutes of vigorous physical activity a week – whether at work, in the home, or elsewhere – can reduce the risk of coronary heart disease by approximately 30%. Despite documented evidence of the benefit of physical activity in preventing and treating cardiovascular and other chronic diseases, more than a quarter of a million individuals die each year in the United States because of a “lack of regular physical exercise”. Industrialization, urbanization and mechanized transport have reduced physical activity, even in developing countries, so that currently more than 60% of the global population are not sufficiently active.

In India, physical inactivity is thought to account for 2.6% of coronary heart disease cases, 3.2% of type 2 diabetes cases, 4.8% of breast cancer cases, 4.6% of colon cancer cases, and 4.2% of all-cause mortality. It was found that Majority of 64.1% and 39% of urban and rural Indians resp. are sedentary and only 31.1% of urban and 37.3 % of rural do moderate physical activity related to job. 84.6 and 86% urban and rural respectively, never engage in any leisure time physical activity, While 12.8 and 9.5% of urban and rural Indian respectively engage in moderate Leisure time physical activity as revealed by non-communicable diseases survey conducted (STEPS 1 and 2) from 5 centers in India.

Kerala a southern state of India which is well known for its health indices and rapid growth has the highest prevalence of most of the NCD and risk factors [9]. National Family Health Survey 3 revealed that Kerala has the highest prevalence of overweight and obese women in the reproductive age group in India. It is the diabetic capital for India with a prevalence of 14.8 % in the age group of 15-64 yr and the age adjusted cardiovascular mortality is twice that of the United States [4,7]. Normal weight of children in Kerala were reported to have the highest mean systolic and diastolic blood pressure globally [7]. More than 50 per cent of children at 16 yr had high density lipoprotein cholesterol less than normal (45 mg/dl) [5]. A study conducted in Kerala among 2.3 million school children aged 10-15 yr, where only 11.5 % of girls could finish the recommended health related physical fitness test compared to 16.58 % in boys. There is compelling evidence to show that these adult metabolic diseases have their origin in early childhood [1] and later life morbidity or mortality. The health-related behaviors and conditions that underlie the major non-communicable diseases usually start or are reinforced during the second decade- tobacco and alcohol use, diet and exercise

patterns, overweight and obesity. New data presented in Health for the world's adolescents shows that fewer than one in every four adolescents meets recommended guidelines for physical activity; as many as one in every three is obese in some countries. In 2000, approximately 30 per cent of India's population was aged 10 to 24 yr, that increased to 53 per cent when children younger than 10 were included. There is clear scientific evidence that policy and environmental changes increase the physical activity levels of the entire population and have a tremendous impact on preventing CHD s. Even if there are small increases in daily physical activity in communities, it will translate to large national and population benefits in a state like Kerala due to high prevalence of risk. The present study was conducted to measure the physical activity patterns and its determinants, so that appropriate primary prevention programs can be initiated and executed at various levels.

Methods

The present cross-sectional survey was conducted at Thrissur district, Kerala. The target population was school going adolescents of Kerala in the age group 12-15 years (grade-7-9). Sampling frame consisted of all High schools (Government/Private, aided/unaided) of Thrissur district except special schools for disabled children. Out of three educational sub districts (clusters) of Thrissur, one sub district was randomly selected. One government, private aided and private unaided school were selected randomly using 2013 DPI/DDE census list. From each sample school one cluster of sub-divisions (7th, 8th, 9th) of the schools were randomly selected using class lists of the sample school obtained from the school authorities. The study was limited to 12-15 years age, as the authorities did not grant permission to include students above 15 years. The study protocol was approved by the ethics committee of Jubilee Mission medical college and research institute, Thrissur, Kerala and permission to conduct the research in schools was obtained from Directorate of Public Instructions, Thiruvananthapuram.

Study was conducted using a structured questionnaire having 2 parts a) Socio-demographic details and (b) Self reported behavior questionnaire on physical activity, screen time. Physical activity was measured by asking about mode of conveyance to school and tuition, involvement in moderate and vigorous exercises at home (how long and how often) during weekdays and weekends, and participation

in sports with regular practice. Total screen time was measured by asking to report time spend in watching TV/Video/DVD, computer use (Weekdays and weekends). Habit of watching television during meals was also measured.

A pilot study was carried out to know the feasibility and practicability before the main study. Following a brief presentation about the study, a written consent was sought from the school authorities to conduct the study in their school premises. Explanation about the study and questionnaire was given to participants and doubts were clarified. Questionnaires were administered and explained briefly to collect information. Collected data were

coded, categorized and analyzed (SPSS -16) using univariate and bivariate analysis.

Results

Table 1 shows the characteristics of study participants. A total number of 96 adolescents were participated in the survey, with a mean age of $12.75 \pm .92$ years, 61 boys and 35 girls. More than half (52.1%) were studying in 7th standard, remaining 22.8 % & 25 % in 8th and 9th respectively. More than half were residing in village (57%), and remaining (43%) were from corporation. One quarter (25%) of

Table 1: The characteristics of study participants

N=96

Variables	Frequency	Percentage(%)
Educational qualification of mother	Graduate or post graduate	31
	Intermediate or post high school diploma	33
	High School certificate	30
	Middle School certificate	2
	Primary School certificate	0
	Illiterate	0
Educational qualification of father	Graduate or post graduate	18
	Intermediate or post high school diploma	23
	High School certificate	45
	Middle School certificate	7
	Primary School certificate	3
	Illiterate	0
Occupation of mother	Profession	4
	Semi profession	9
	Clerical, shop owner, farmer	8
	Skilled worker	1
	Semi skilled worker	25
	Unemployed	49
Occupation of father	Profession	5
	Semi profession	14
	Clerical, shop owner, farmer	34
	Skilled worker	14
	Semi skilled worker	29
	Unemployed	0

the students had a family income in the range of Rs. 16020-32049. Only 35.4% of the children were aware of their bodyweight and none of them heard about Body Mass Index 48.9% and were attending tuition on a regular basis.

Table 2 shows that the pattern of moderate to vigorous physical activity/exercise. The mean duration of exercise during weekdays and weekends was 237.7 ± 159.3 and 403.3 ± 268.4 minutes respectively. which less than the recommend

Table 2: Pattern of moderate to vigorous exercise and screen time

N=96

Variables	Categories	Frequency	Percentage(%)
Physical activity/Exercise (weekdays)	≥1hr/day	19	19.8
	< 1hr/day	77	80.2
Physical activity/Exercise (weekends)	≥1hr/day	72	75
	< 1hr/day	24	25
Total physical activity in a week	≥1hr/day	41	42.7
	< 1hr/day	55	57.3
Screen time during (weekdays)	≥2hrs/day	92	95.8
	< 2hrs/day	4	4.2
Screen time during (weekends)	≥2hrs/day	25	26
	<2hrs/day	71	74
Total screen time in a week	≥2hrs/day	51	53.1
	<2hrs/day	45	46.9

duration of exercise. It was also found that 80.2 % and 25 % don't engage in one hour daily physical activity and exercise during weekdays and weekends

respectively and 57.3% don't meet the requirements for 6 hrs of physical activity in a week.

Table 3: Patterns of Physical activity

N=96

Variables	Frequency	Percentage
Mode of conveyance to school		
a) Physical mode (Not using vehicles)	30	31.2
b) Using motor vehicles	66	67.7
Participation in school Sports		
a) Member of sports team	42	43.8
b) Not a member	54	56.2
Participation in school physical education		
a) Always	16	16.7
b) Sometimes	66	68.8
c) Often	14	14.6
d) Very often	0	0
e) Never	0	0

As shown in table 3 , although 54.2% of children stay within 5 km radius of school, 67.7% were using motor vehicles for transportation. Only 43.8% were involved in any sports, while 68.8% participate in school physical education sometimes and 14.6% only often.

Table 4 shows the high prevalence of unhealthy habits associated with television viewing. In the present study physical activity/exercise was not found to be associated with gender, educational status of father, occupation of mother /father, area

Table 4: Unhealthy habits associated with television viewing

N=96

Variables	Frequency	Percentage
Habit of watching TV during breakfast		
a. Yes	74	77.1
b. No	22	22.9
Habit of watching TV during lunch		
a. Yes	79	82.3
b. No	17	17.7
Habit of watching TV during dinner		
a. Yes	81	84.4
b. No	15	15.6
Snacking while watching TV		
a. Yes	58	60.4
b. No	38	39.6

of living, family income, total number of children at home, presence of playground near home/school. Physical activity was found to be significantly high

($p=.016$) with higher educational qualification of mother and there is a significant decrease ($p=.0001$) in physical activity with increasing age.

Discussion

The study reveals high prevalence of physical inactivity and other sedentary behaviors among adolescents residing in Kerala. The beneficial role of physical activity in the prevention of NCD in adults has long been recognized. Compared to active subjects, inactive subjects had a relative risk of 1.5 to 2.4 of developing cardiovascular diseases; these effects were independent of other risk factors[6]. There is evidence that adolescents are not enough physically active and unable to sustain their activity levels into adulthood[2]. Sudhain (2007) found that an active lifestyles imply not only increasing physical activity levels, but also decreasing sedentary behavior. Body weight, in between meals snacking, parental Television (TV) watching habits and having a TV in the bedroom are positively associated with youth's TV/video viewing habits [3]. More than half of television viewers in India today are children below 15 years [8].

Data from this study provide the first estimate of the prevalence of insufficient physical activity among adolescents in Thrissur, district of Kerala. However, one should consider that our data arise from a single city. In spite of this limitation, we believe our prevalence estimates are likely to be valid for several parts of Kerala, particularly for cities and states with similar socio-economic and environmental aspects. In conclusion this call for an urgent action initiated and implemented at the local and national level, to prevent escalation of non-communicable diseases in young adults.

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A Study on Effectiveness of Selected Nursing Interventions in Reducing Pre-operative Anxiety among Children Undergoing Surgeries in a Selected Hospital

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Abstract

Anxiety is an emotion concerned with the future. In this study effectiveness of selected nursing interventions in reducing pre-operative anxiety among children was studied using Stait Trait Anxiety Scale. The research design used in the study was one group pre-test and post-test Pre-experimental design. Nursing interventions selected for reducing pre-operative anxiety among children included: Desensitization by showing photographs, tour to operation theatre and allowing mother to leave the child to the operation theatre. Levels of pre-operative anxiety were assessed twice before and twice after the implementation of selected nursing interventions. The conceptual framework of the study was based on Roy's Adaptation model. Study was conducted among 30 children whose age was between 11 and 13 years. The study revealed that the preoperative anxiety was significantly reduced after implementation of selected nursing interventions. The effectiveness of selected nursing interventions was independent of the selected background factors.

Keywords: Pre-operative Anxiety; Children; Surgeries; Nursing Interventions.

Introduction

Anxiety is a vague subjective, non specific feeling of uneasiness tension apprehension and sometimes dread or impending danger which occurs due to threat to one's biologic, physiologic, or social integrity arising from external influences. Anxiety is an emotion concerned with the future. Hospitalization and surgery imposes at least five threats to children of all ages which include physical harm or bodily injury, separation from parents and the absence of trusted adults, the strange and unknown, uncertainty about limit and acceptable behavior, loss of control, autonomy and competence.

Objectives

1. To assess the pre-operative anxiety among children prior to the implementation of selected interventions.
2. To assess the pre-operative anxiety among children after the implementation of selected nursing interventions.
3. To evaluate the effectiveness of selected nursing interventions in reducing pre-operative anxiety among the children.
4. To find out the association between the selected background factors and pre-operative anxiety among the children.

Research Hypothesis

H_1 : There will be significant difference in the level of pre-operative anxiety among children before and after implementation of selected nursing interventions.

H_2 : There will be significant association between the selected background factors and pre-operative anxiety among children.

Methods and Procedure

In this study effectiveness of selected nursing interventions in reducing pre-operative anxiety among children was studied using Stait Trait Anxiety Scale. The research design used in the study was one group pre-test and post-test Pre-experimental design. Levels of pre-operative anxiety were assessed twice before and twice after the implementation of selected nursing interventions. The conceptual framework of the study was based on Roy's Adaptation model. Study was conducted among 30 children whose age was between 11 and 13 years. The data was collected and analyzed based on objectives of the study using descriptive and inferential statistics.

Description of the tool

Part 1: Questionnaire on demographic factors.

Part 2: Questionnaire on assessment of the level of preoperative anxiety using Stait Trait Anxiety Scale.

The content validity of the tool was previously established as it was standardized tool. The background factors were corrected by the experts after incorporating the suggestions according to the experts' opinion. The reliability was tested using Karl Pearson method and co-relation co-efficient of Hindi questionnaire was Trait anxiety $r = 0.96$, and Stait anxiety $r = 0.85$ which found to be high. The tool was reliable. Nursing interventions selected for reducing pre-operative anxiety among children included the following:

- ❖ Desensitization by showing photographs.
- ❖ Tour to operation theatre.
- ❖ Allowing mother to leave the child to the operation theatre.

Findings and interpretation

1. Findings related to background factors of children

- Majority of the samples in the study were in the age group 11 years 12(40.0%), were males 17(56.7%) were studying in 6th standard, 15 (50.0%), were Hindus, 20(66.67%).
- Majority of children had been previously hospitalized 19(63.3%), had not undergone surgery previously 23(76.7%), had seen their parents/ relatives/ siblings and / or friends who had undergone surgery 16 (53.3%) and duration of illness for them was acute 2(40.0%).
- Majority of children did not have toy with them 17(56.7 %), their parents were worried about their disease/ problem 19(63.3 %), and their usual way of ventilating their fears/ worries was telling to parents 16(53.3%).

2. Findings related to the pre operative anxiety among children prior to the implementation of selected nursing interventions

- Majority of children 20(66.7 %) reported moderate Trait anxiety and least 2(6.67%) reported both mild and panic level of preoperative anxiety.
- Regarding stait anxiety score after information on the need of surgery majority of children 17(56.67 %) reported severe preoperative anxiety and least children 1(3.33 %) reported mild level of preoperative anxiety.
- The obtained t' value 3.47($p < 0.05$) was statistically significant. There was significantly high level preoperative anxiety in children in pre test measured at the time of admission and after providing the information on the need for surgery.
- The observed mean Stait Preoperative Anxiety 48.93 was higher than the Trait Preoperative Anxiety Score 35.91. It is inferred that there was difference in Preoperative Anxiety among children in the two observations made before the implementation of selected nursing interventions.

3 Findings related to the preoperative anxiety among children after implementation of selected nursing interventions

- Majority of children 18 (60%) reported moderate Stait anxiety and least 3 (10.0%) reported panic

Table 1: Frequency and percentage distribution of pre-test on pre-operative anxiety

N=30

Sr. no.	Preoperative Anxiety score	Level of anxiety							
		Mild		Moderate		Severe		Panic	
		No	%	No	%	No	%	No	%
1	Trait anxiety (O ₁)	2	6.67	20	66.7	6	20	2	6.67
2	Stait anxiety (O ₂)	1	3.33	7	23.33	17	56.67	5	16.7

Table 2: Comparison of mean, standard deviation and 't' value on level of preoperative anxiety among children in pre test observation

Observations	Mean	SD	t value (P value)
Trait anxiety (O ₁)	35.97	14.57	t =3.47 (P<0.05) (S)
Stait anxiety (O ₂)	48.93	15.57	

level of preoperative anxiety after the implementation of selected nursing interventions.

- Regarding Stait anxiety score just before surgery, majority 19 (63.3%) reported moderate Preoperative anxiety and least 2 (6.67%) reported

both mild and panic levels of Preoperative anxiety.

- It is inferred that for majority of children the level of anxiety was significantly reduced after the implementation of selected nursing interventions and just before the surgery.

Table 3: Frequency and percentage distribution of post-test Stait Pre-operative anxiety scores

Sr. no.	Post-test Pre-operative anxiety scores	Level of anxiety							
		Mild		Moderate		Severe		Panic	
		No	%	No	%	No	%	No	%
1	Stait anxiety (O ₃)	4	13.3	18	60.0	5	16.6	3	10.0
2	Stait anxiety (O ₄)	2	6.67	19	63.3	7	23.3	2	6.7

4. Findings related to effectiveness of selected nursing interventions in reducing preoperative anxiety of children

- The reported mean Trait preoperative anxiety score was little less than the mean post test Stait anxiety scores. The obtained' values 0.26 (P<0.05) and 0.38 (P<0.05) were not significant. Therefore the trait Preoperative Anxiety was different from the mean post test Stait anxiety.
- The mean Stait preoperative anxiety score 48.93 was higher than the mean Trait preoperative anxiety scores 35.97 before the information on need for surgery.
- The mean Stait post test level of preoperative anxiety scores 36.9 and 37.5 reported after the implementation of selected nursing interventions were less than the mean Stait preoperative anxiety score before the information on need of surgery.
- The obtained' value 3.47 (p<0.05) regarding pre-test preoperative anxiety scores was significant. The Stait preoperative anxiety score were significantly different from the Trait preoperative

anxiety score with regard to information on need for surgery.

- The obtained' values 2.05(p<0.05) and 3.31 (p<0.05) regarding the post test Stait Preoperative Anxiety scores were significantly different from the pre-test Stait Preoperative Anxiety Score in relation to the nursing interventions. Therefore the null hypothesis (H₀₁) was rejected and research hypothesis (H₁) was accepted.
- The study revealed that the preoperative anxiety was significantly reduced after implementation of selected nursing interventions. The reduction in the post test preoperative anxiety was effected by the nursing interventions.

5. Findings related to the association between the selected background factors of children and the post test level of pre operative anxiety

- The obtained chi-square value 0.85; 0.06; 0.33; 0.26; 6.56; 2.28; 3.33 and 0.07 at (p<0.05), regarding age; gender; previous hospitalization; previous surgery; previous exposure to post operative patients; duration of illness;

Table 4: Mean Standard Deviation and paired 't' value of preoperative anxiety in pre test (0_1 , 0_2) and post test (0_3 , 0_4) among children. N=30

0_1		0_2		0_3		0_4		't' values (p<0.05)	
Mean	SD	Mean	SD	Mean	SD	Mean	SD	Anxiety scores	't' values
35.97	14.7	48.93	15.7	36.9	16.5	37.5	14.5	01 Vs 02	3.47
								01 Vs 03	0.26
								01 Vs 04	0.38
								02 Vs 03	2.05
								02 Vs 04	3.31
								03 Vs 04	0.18

availability of toy and reaction of parents were not significant. Therefore the null hypothesis (H_{02}) was accepted and the research hypothesis (H_2) was rejected.

- It is inferred that there was no significant association between background factors and

post test level of Pre operative anxiety among children.

- The effectiveness of selected nursing interventions was independent of the selected background factors.



A Case Control Study on Maternal and Neonatal Factors Resulting in Low Birth Weight of Term Neonate at Selected Hospitals of the City

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Abstract

The study was conducted to find maternal and neonatal factors resulting in low birth weight of term neonate at selected hospitals of the city. The study is based on Multi-factorial theory. After considering the factors related to the selected problem which were retrospective in nature, the researcher had selected the "case- control design" as suitable for this study. In this study Non probability Convenient Sampling Technique was adopted to select the sample. 100 mothers with term neonates, 50 in case group (mothers with low birth weight neonate) and 50 in control group (mothers with normal birth weight neonate) were selected as per inclusion criteria. In demographic variables education of the mother, residence of mother, monthly income of the family, maternal weight, and gender of the newborn were associated with low birth weight of term neonate. In maternal factors weight gain during pregnancy, and history of low birth weight in siblings was found to be associated with low birth weight of term neonate. In neonatal factors history of intra uterine growth retardation and history of multiple pregnancies was found to be associated with low birth weight of term neonate.

Keywords: Maternal Factors; Neonatal Factors; Low Birth Weight; Term Neonate.

Background of The Problem

UNICEF says more than 20 million infants are born each year weighing less than 2,500 grams (5.5 pounds), accounting for 17 per cent of all births in the developing world [1].

According to WHO, World Health Statistics 2012, percentage of LBW births in India reported as 28 % during the period of 2005 – 2010. The reduction in the percentage of low birth weight also forms an important contribution to the Millennium Development Goal (MDG) for reducing child mortality [2].

Interventions to improve care during pregnancy, childbirth and the post natal period as well as

feeding are likely to improve the immediate and longer-term health and well-being of the individual infant and have a significant impact on neonatal and infant mortality at a population level[3].

Need of the Study

LBW is closely associated with fetal and Perinatal mortality and Morbidity, inhibited growth and cognitive development, and chronic diseases later in life. At the population level, the proportion of babies with a LBW is an indicator of a multifaceted public-health problem that includes long-term maternal malnutrition, ill health, hard work and poor

health care in pregnancy. On an individual basis, LBW is an important predictor of newborn health and survival and is associated with higher risk of infant and childhood mortality. Low birth weight constitutes as sixty to eighty per cent of the infant mortality rate in developing countries. Infant mortality due to low birth weight is usually a direct cause stemming from other medical complications such as pre term birth, poor maternal nutritional status, lack of prenatal care, maternal sickness during pregnancy, and an unhygienic home environment.⁴

A new survey carried out by leading weight Loss Company, has expressed concerns over the rising instances of babies with low birth weight of less than 2.5 kg in India [5].

There is significant variation in the incidence of low birth weight across regions. South Asia has the highest incidence, with 31 per cent of all infants with low birth weight, while East Asia/Pacific has the lowest, at 7 per cent. India is home to nearly 40 per cent of all low-birth weight babies in the developing world. Low birth weight is therefore an important indicator for monitoring progress towards these internationally agreed Millennium Development Goals which will need to ensure a healthy start in life for children[6].

Objectives

Objectives of the study were:

- To find the association between the low birth weight of term neonate and maternal factors in case and control group.
- To find the association between the low birth weight of term neonate and neonatal factors in case and control group.

Research Design

After considering the factors related to the selected problem which were retrospective in nature, the researcher had selected the “case – control design” as suitable for this study. There are four basic steps in conducting a case control study: selection of cases and controls, matching, measurement of exposure, analysis and interpretation [7].

In present study full term neonates with low birth weight and their mothers were considered as case group. Neonates with normal birth weight and their mothers were considered as control group.

Sampling Technique

In this study Non probability Convenient Sampling Technique was adopted to select the sample.

Sample Size

In the study 100 mothers with term neonates, 50 in case group and 50 in control group were selected as per inclusion criteria.

Variables of the Study

Independent Variable: The independent variable in this study was maternal and neonatal factors.

Dependent Variable: The dependent variable in this study was low birth weight of term neonate.

Description of Tool

The tool used for data collection was a self structured interview developed by the investigator. The tool consists of two sections:

Section I: Demographic data for the mother and baby

Part A: Demographic data for the mother

1. General information: Education of mother, Occupation of mother, Area of residence, Type of family, Religion, Income of the family.
2. Nutritional variables: Maternal weight (in kg) at the time of registration, Maternal height (in cm), BMI status of the mother, Number of meals per day, Type of diet, Number of fasting days in a week, etc.

Part B: Demographic data for the baby: Sex of newborn, Birth order of the newborn

Section II: Maternal factors and neonatal factors resulting in low birth weight babies

Part A: General Factors: Maternal age (in years), Age at marriage, Parity of mother, Birth interval, Registration of pregnancy, Mode of present delivery, Personal habits, Daytime rest by the mother, Weight gain during pregnancy

Part B: Specific factors (maternal) [records]: Pre conception counseling, History of consanguineous marriage, History of excessive vomiting, History of anemia, History of repeated abortions, History of

pregnancy induced hypertension etc. Total 25 items to be assessed.

Part C: Specific factors (neonatal) [records]; History of Intra Uterine Growth Retardation, History of Multiple Pregnancies, History of Congenital

Abnormalities, History of Chromosomal Abnormalities, History of TORCH Infections in mother, History of HIV Infections in mother, History of VDRL Infections in mother.

Table 1: Comparison of birth weight in cases and controls

Group	n	Mean	S.D.	S.E.	z-value	p-value
Case Group	50	2.21	0.25	0.03	15.13	0.000
Control Group	50	3.00	0.27	0.03		S, p<0.05

Data Analysis and Interpretation

The table shows that:

- The mean birth weight among the case group is 2.21 kg with SD of 0.25.
- The mean birth weight among the control group is 3.00 kg with SD of 0.27.
- The obtained z – value is 15.13 and p value is 0.000 which is significant.

Fig. 1: Bar diagram representing the mean birth weight and SD in case and control group

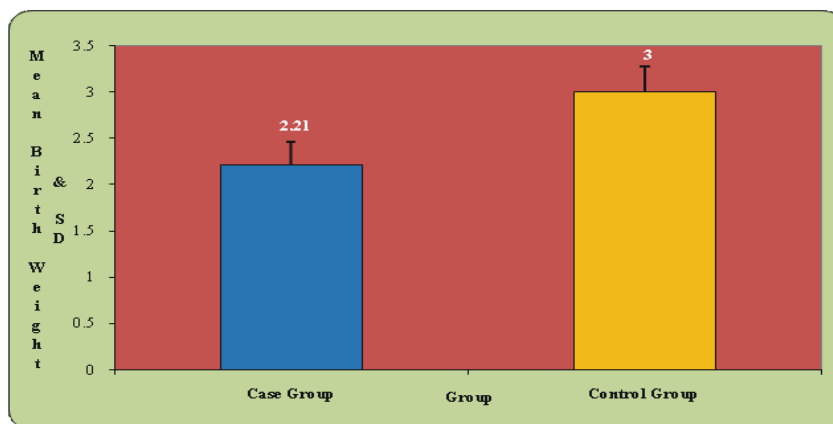


Table 2: Association between Maternal Factors and Low Birth Weight of Term Neonate in Case and Control Group

Maternal factors		Cases N = 50		Controls n= 50		χ^2 value	Df	P value	Level of significance
		Frequency	%	Frequency	%				
Maternal Age (yrs)	< 18	1	2	0	0	1.83	3	0.60	NS (p> 0.05)
	19 – 22	10	20	12	24				
	23 – 27	27	54	23	46				
	>27	12	24	15	30				
Birth Interval	1 st time pregnant	22	44	27	54	1.57	3	0.66	NS (p> 0.05)
	< 2 yrs	10	20	6	12				
	3- 5 yrs	10	20	10	20				
	>5 yrs	8	16	7	14				
Weight gain during pregnancy	Upto 7 kg	24	48	16	32	9.59	3	0.022	S (p< 0.05)
	8 – 10 kg	21	42	18	36				
	11 – 13 kg	4	8	6	12				
	>13 kg	1	2	10	20				

S = Significant, NS = Not Significant, NA = Not Applicable

Above table explains the frequency, percentage, chi – square value and level of significance of maternal factors and low birth weight among cases and controls.

Regarding age of the mothers, majority of cases 27 (54%) and 23 (46%) were in the age group between 23 – 27 years. The obtained chi – square value 1.83 ($p > 0.05$) was not significant. Therefore there was; no significant association between maternal age and low birth weight of the term neonate.

Regarding the birth interval, majority of cases 22 (44%) and controls 27 (54%) were first time pregnant.

The obtained chi-square value 1.57 ($p > 0.05$) was not significant. Therefore there was no significant association between parity of mother and low birth weight of the term neonate.

Regarding weight gain during pregnancy, majority of cases 24 (48%) had weight gain up to 7 kg and among controls 18 (36%) had weight gain of 8 to 10 kg. The obtained chi-square value 9.59 ($p < 0.05$) was significant. Therefore there is significant association between weight gain during pregnancy and low birth weight of the term neonate.

Fig. 2: Bar diagram representing the weight gain of mothers during pregnancy in case and control group

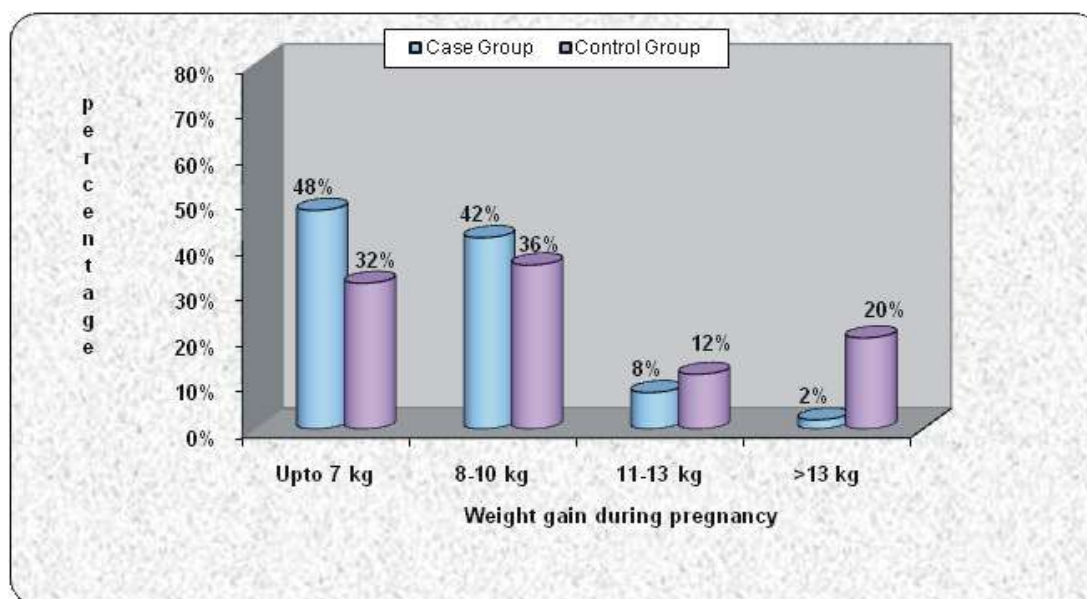


Table 3: Association between Maternal Factors and Low Birth Weight of Term Neonate in Case and Control Group

Maternal factors	Cases N = 50 Frequency	Control N= 50 Frequency	χ^2 value	Df	P value	Level of significance	Or
History of consanguious marriage	8	6	0.33	1	0.56	NS	1.39 (0.44 – 4.36)
History of excessive vomiting	25	22	0.36	1	0.54	NS	1.27 (0.57 – 2.79)
History of anemia	44	36	0.02	1	0.87	NS	1.06 (0.46 – 2.48)
History of pregnancy induced hypertension	12	9	0.54	1	0.46	NS	1.43 (0.54 – 3.79)
History of Oligohydramnios	10	4	2.99	1	0.08	NS	2.87 (0.83 – 9.88)
History of low birth weight in siblings	22	5	14.66	1	0.0001	S	7.07 (2.40 – 20.82)
History of compliance of medications	49	46	1.89	1	0.16	NS	4.26 (0.45 – 39.57)

S = Significant, NS = Not Significant, NA = Not Applicable

The above table shows 8 (16%) cases and 6 (12%) controls had history of consanguineous marriage. The obtained chi-square value is 0.33 ($P > 0.05$) was not significant. However, the obtained odd's ratio is 1.39 suggested that the mothers with history of consanguineous marriage is 1.39 times at risk to deliver low birth weight baby.

25 (50%) cases and 22 (44%) controls had history of excessive vomiting. The obtained chi-square value is 0.36 ($P > 0.05$) was not significant. However, the obtained odd's ratio is 1.27 suggested that the mothers with history of excessive vomiting is 1.27 times at risk to deliver low birth weight baby.

44 (88%) cases and 36 (72%) controls had history of anemia. The obtained chi-square value is 0.02 ($P > 0.05$) was not significant. However, the obtained odd's ratio is 1.06 suggested that the mothers with history of anemia is 1.06 times at risk to deliver low birth weight baby.

12 (24%) cases and 9 (18%) controls had history of pregnancy induced hypertension. The obtained chi-square value is 0.54 ($P > 0.05$) was not significant. However, the obtained odd's ratio is 1.43 suggested

that the mothers with history of pregnancy induced hypertension is 1.43 times at risk to deliver low birth weight baby.

10 (20%) cases and 4 (8%) controls had history of oligohydramnios. The obtained chi-square value is 2.99 ($P > 0.05$) was not significant. However, the obtained odd's ratio is 2.87 suggested that the mothers with history of oligohydramnios is 2.87 times at risk to deliver low birth weight baby.

22 (44%) cases and 5 (10%) controls had history of low birth weight in siblings. The obtained chi-square value is 14.66 ($P > 0.05$) was significant. However, the obtained odd's ratio is 7.07 suggested that the mothers with history of low birth weight in siblings is 7.07 times at risk to deliver low birth weight baby.

49 (98%) cases and 46 (92%) controls had history of compliance with medications. The obtained chi-square value is 1.89 ($P > 0.05$) was not significant. However, the obtained odd's ratio is 4.26 suggested that the mothers with history of compliance with medications is 4.26 times at risk to deliver low birth weight baby.

Table 4: Association between the neonatal factors and low birth weight of term neonate in case and control group

Neonatal Factors	Cases N = 50 Frequency	Control N = 50 Frequency	χ^2 value	Df	P value	Level of significance	Or
History of IUGR	36	2	49.07	1	0.0001	S	28.9)
History of Multiple pregnancies	9	1	7.11	1	0.007	S	10.76 (1.80 – 88.52)
History of congenital abnormalities	1	0	1.01	1	0.31	NS	3.06 (0.12 – 77.01)
History of VDRL infections in mother	0	2	2.04	1	0.15	NS	0.19 (0.008 – 4.10)

S = Significant, NS = Not Significant, NA = Not Applicable

The table shows 36 (72%) cases and 2 (4%) controls had history of intra uterine growth retardation. The obtained chi-square value is 49.07 ($P < 0.05$) was highly significant. However, the obtained odd's ratio is 61.71 suggested that the mothers with history of IUGR is 61.71 times at risk to deliver low birth weight baby.

9 (18%) cases and 1 (2%) controls had history of multiple pregnancies. The obtained chi-square value is 7.11 ($P < 0.05$) was significant. However, the obtained odd's ratio is 10.76 suggested that the mothers with history of multiple pregnancy is 10.76 times at risk to deliver low birth weight baby.

1 (2%) cases and 0 (0%) controls had history of congenital abnormalities. The obtained chi-square

value is 1.01 ($P > 0.05$) was not significant. However, the obtained odd's ratio is 3.06 suggested that the mothers with history of congenital abnormalities is 3.06 times at risk to deliver low birth weight baby.

0 (0%) cases and 2 (4%) controls had history of VDRL infections in mother. The obtained chi-square value is 2.04 ($P > 0.05$) was not significant. However, the obtained odd's ratio is 0.19 suggested that the mothers with history of VDRL infections in mother is 0.19 times at risk to deliver low birth weight baby.

The above table reveals the steps in logistic regression regarding association between maternal and neonatal factors resulting in low birth weight of term neonates among cases and controls.

Table 5: Logistic regression regarding the association of maternal and neonatal factors and low birth weight of term neonates

	B	SE(B)	AOR	t	p-value	95% Confidence Interval for B	
						Lower Bound	Upper Bound
Education of mother	0.05	0.036	0.110	1.467	0.146 NS,p>0.05	-0.019	0.126
Area of residence	0.14	0.054	0.197	2.723	0.008 S,p<0.05	0.040	0.256
Income of family	-0.02	0.039	0.041	0.529	0.598 NS,p>0.05	-0.097	0.056
BMI status of mother	-0.03	0.065	0.036	0.466	0.643 NS,p>0.05	-0.159	0.099
Weight gain during pregnancy	0.04	0.038	0.087	1.169	0.246 NS,p>0.05	-0.031	0.121
History of low birth weight in siblings	0.15	0.084	0.140	1.879	0.064 NS,p>0.05	-0.009	0.325
IUGR	0.67	0.085	0.655	7.978	0.000 S,p<0.05	0.506	0.842
Multiple Pregnancies	-0.007	0.125	0.004	0.058	0.954 NS,p>0.05	-0.255	0.240

- ❖ Low education of mothers had 0.110 times risk of delivering low birth weight term neonate (AOR 0.110, CI 95%, -0.019 – 0.126). The obtained p value is 0.146 which is greater than $p > 0.05$, thus not significant.
- ❖ Rural area of residence of mothers had 0.197 times risk of delivering low birth weight term neonate (AOR 0.197, CI 95%, 0.040 – 0.256). The obtained p value is 0.008 which is less than $p < 0.05$, thus significant.
- ❖ Low income of family had 0.041 times risk of delivering low birth weight term neonate (AOR 0.041, CI 95%, -0.097 – 0.056). The obtained p value is 0.598 which is greater than $p > 0.05$, thus not significant.
- ❖ Altered BMI of mothers had 0.036 times risk of delivering low birth weight term neonate (AOR 0.036, CI 95%, -0.159 – 0.099). The obtained p value is 0.643 which is greater than $p > 0.05$, thus not significant.
- ❖ Low weight gain during pregnancy had 0.087 times risk of delivering low birth weight term neonate (AOR 0.087, CI 95%, -0.031 – 0.121). The obtained p value is 0.246 which is greater than $p > 0.05$, thus not significant.
- ❖ History of low birth weight in siblings had 0.140 times risk of delivering low birth weight term neonate (AOR 0.140, CI 95%, -0.009 – 0.325). The obtained p value is 0.064 which is greater than $p > 0.05$, thus not significant.
- ❖ History of IUGR in pregnancy had 0.655 times risk of delivering low birth weight term neonate (AOR 0.665, CI 95%, 0.506 – 0.842). The obtained p value is 0.000 which is less than $p < 0.05$, thus significant
- ❖ History of multiple pregnancies had 0.004 times risk of delivering low birth weight term neonate

(AOR 0.004, CI 95%, -0.255 – 0.240). The obtained p value is 0.954 which is greater than $p > 0.05$, thus not significant.

Implications of the Study

The study findings can be used to bring about awareness among the midwives, mothers and family members etc. regarding good antenatal care, identifying high risk factors early in pregnancy and managing them accordingly so as to lower the incidence of low birth weight neonate. The present study would help the nurses to understand the maternal and neonatal factors associated with low birth weight babies. In service education should be conducted to improve the knowledge of health professionals and nursing personnel.

Recommendations

- A similar study can be replicated on a larger population.
- A comparative study can be done on the mothers residing in rural and urban areas with low birth weight neonates.
- An exploratory study to find out the prevalence of low birth weight in selected city.
- A similar study can be done with inclusion of preterm neonates.
- A study to assess the effectiveness of planned teaching programme on knowledge regarding factors resulting in low birth weight neonate among antenatal mothers in selected hospital.

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A Study to Assess the Effectiveness of Child to Child Programme on Knowledge Regarding Prevention of Dental Caries among School Children in Selected School of Nagpur City

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Abstract

A Pre-experimental design was adapted for the study, 50 younger children were selected by using stratified random method and 10 change agents were selected by using purposive sampling technique based on their academic performance. Change agents knowledge was assessed by pretest questionnaire and each change agent was assigned 1 topic. The investigator trained them and makes them to do rehearsal and same questionnaire given to determine their adequate level of knowledge on the next day. The change agents were assigned with 5:1 students. The samples were assembled as a small group in a common place and change agents were imparted knowledge regarding prevention of dental caries to the sample for 45 minutes by using PPT presentation. Evaluation of child to child programme approach was assessed by conduction of post test using self administered questionnaire on the 7th days to all the samples. The result shows that there is significant difference between pre test and post knowledge. The pre test mean was 8.6 and the post test mean was 11.5. Paired t test shows that it is invariably significant at $p < 0.01$ which was statistically acceptable level of significance. Hence, child to child approach was effective in improving the knowledge of school children.

Key words: Prevention of Dental Caries; School Children.

Background of the study

Dental caries is rapidly emerging oral health problem amongst the children of India. Its incidence in different states varies between 31 and 89%. In India almost 74% of people live in rural areas. It is observed that because of illiteracy, poverty, ignorance, misconception and superstition people of rural areas have developed undesirable health attitudes and practices. About 30- 50% of rural school children suffer from much morbidity like anemia, worm infestation, under nutrition and dental /oral problems. The vast population in the rural area could be approached through health education to protect against health related problems. Approaching every individual in the rural area is herculean task with

poor sustainability. Mass media have their limitations in such population. Under these circumstances teaching to children offers the most cost effective strategy to approach every family. Innovative approaches to education for health are essential to gain the interest, support, involvement and commitment.

Need for the study

Almost 88% of dental caries are attributed to poor dental cleaning practices, inadequate sanitation and hygiene. Simple act of oral washing at critical times can reduce the number of dental caries cases by up to 35%. Regular Oral hygiene practices helps to protect the children from oral problems.

Educating the children regarding causes, signs, symptoms, treatment and prevention of oral problems, has resulted in better knowledge, attitude and healthy practices amongst, the school children and their family members. The present study is an attempt to enhance the knowledge regarding oral hygiene among school children. Health education to school children in their formative age is the most effective method for protection and promotion of their health. Primary school children are more open minded and are likely to be receptive to changes in ideas and agreeable to modifications of their habits.

Objective of the study

1. To train the elder children about dental caries via power point presentation.
2. To evaluate the effectiveness of planned teaching among elder children.
3. To select 10 elder children to perform child to child education programme on dental caries.
4. To assess knowledge of younger children regarding dental caries.
5. To evaluate the effectiveness of child to child programme regarding dental caries among the younger children.

Research design

Pre-experimental- one group pre test post test design

Sampling technique

Stratified sampling technique

Sample size

50 children

Variables

Independent variable

Child-to-Child Programme on knowledge regarding prevention of dental caries among school children

Dependent Variable

Knowledge regarding prevention of dental caries among the school children.

Description of the tool

The tool constructed in the study consist of two parts

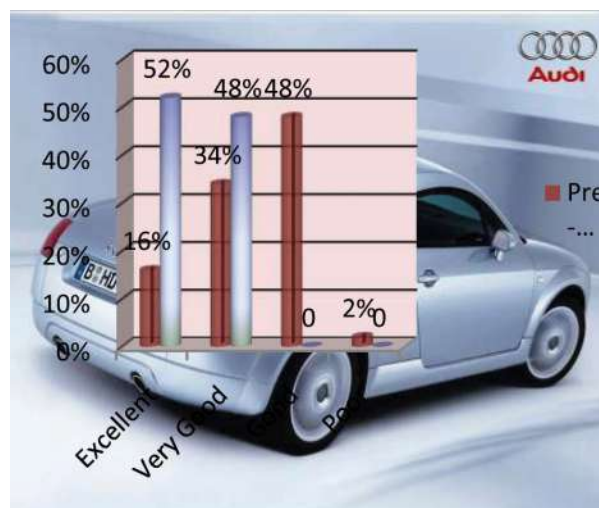
Section 1: Responses related to demographic variables

Section 2: Responses related to Knowledge items.

Result/Major Findings of the study

The maximum subject 37(74%) belongs to the age group of 10-12yrs; 13(26%) belongs to the age group of 12-14yrs. It is evident that most of them 34(68%) belongs to Hindu religion; 4(8%) belongs to Christianity; 2(4%)were Muslims; 10(20%) belongs to others religion. With regards to residence 39(78%) belongs to Urban area; 11(22%) belongs to Rural area. In context to class, 19 (38%) belongs to 5th standard; 31(62%) belongs to 6th standard. With regards to type of family 33(66%) belongs to joint family; 17(34%) belongs to nuclear family. In context to frequency of dental check-up done by children about 18(36%) check once in a year, 17(34%) twice in a year , 9(18%) thrice in a year, 6(12%) never have check ups .

Fig.1: Comparison between Pre-Test and Post Test level of knowledge score



The findings shows that, in Pre-test, most of them 24(48%) had good knowledge score, 17(34%) had very good knowledge, 8(16%) had excellent knowledge score and 1(2%) had Poor Knowledge Score.

In Post test most of the children 26(52%) had Excellent level of knowledge score, 24(48%) had Very Good knowledge Score.

Nursing implication

Nursing Education

The study implies on prevention of dental caries. The study also implies that the child to do proper brushing. The study held to raise awareness among school children.

Nursing Practices

Nurse plays an important role to improve the knowledge of children regarding the prevention of dental caries, complications and home remedies of dental caries to improve the oral hygiene of child. The education programme helps to increase the knowledge of the child regarding the prevention of dental caries and to improve oral hygiene.

Nursing Research

The research has always been of vital role in improving the knowledge of child regarding prevention of dental caries. This study threw light upon the necessary and responsibility of the nurse to improve knowledge of child about prevention of dental caries.

Recommendation

On the basis of finding of the study the following recommendation have been made for study;

1. Similar study can be done on the largest sample for generalization of findings.
2. A similar study can be included in the syllabus of school children.
3. The effectiveness of information booklet verses other method of teaching on prevention of dental caries can be evaluated.

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Tuberculosis in Children- Issues and Challenges

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Abstract

Childhood Tuberculosis has not given much alteration from the part of Governments and Voluntary organizations, if treated well the outcome will be better in children than that of adults.

Introduction

Tuberculosis remains a leading cause of mortality and morbidity. Childhood Tuberculosis is common in areas where Tuberculosis (TB) is common. TB is an important cause of child morbidity and mortality in TB endemic countries. WHO in 2012 estimated that globally there were 530000 TB cases among children (under 15 years of age) and 74 000 TB deaths (among HIV negative children), 6% and 8% of the global totals, respectively.

Common risk factors for TB in children

Close contact with a case of pulmonary TB usually from the same house hold (especially smear-positive or culture-positive pulmonary TB). A case control study on the risk factors of Tuberculosis from rural Bangladesh by Karim MR,

Rahman MA, Mamun SAA et al shows that children exposed to family members having TB were five times more likely to develop tuberculosis than those who came in contact with relatives or neighbours suffering from tuberculosis. Other risk factors are age less than 5 years, HIV infection and Severe malnutrition.

The case control study by Karim MR, Rahman MA, Mamun SAA et al shows that socio economic conditions are also related with Tuberculosis in Children. Seven of the study children were illiterate, and all of them had tuberculosis. TB in children was significantly associated with maternal education. Childhood tuberculosis was found to be related with regular or irregular displacement of the family members (changes in composition). Children living in families having only one bedroom had a greater chance of developing tuberculosis than those possessing two or more bedrooms.

Diagnosis of TB in Children

The diagnosis of TB in children usually relies on a combination of clinical and epidemiological features. A diagnostic algorithm has been added for the diagnosis and treatment of pediatric pulmonary and lymph node Tuberculosis.

A thorough and accurate contact history is an important diagnostic tool including symptoms consistent with TB. Tuberculin skin testing is also used to help in diagnosis of TB. A positive test does not distinguish between TB infection and active disease and a negative result does not exclude the disease. A false negative reaction may be due to HIV co-infection, severe malnutrition, other viral infections, immune-suppressed state very young age (younger than 6 months), very recent infection or advanced tuberculosis. Sputum should be examined (sputum microscopy and sputum culture as needed) in all suspected cases whenever available. Due to difficulty in coughing up sputum in children needed for the test, it fails to detect TB in most children. Children produce fewer bacteria in their cough samples, making it much harder to detect under a microscope. Chest radiography is sensitive but less specific to active TB. Other investigations will depend on site of disease.

Another new technique for the diagnosis of TB which is highly sensitive and specific is Gene xpert. It is based on DNA technology and it gives result within 2 hours. But the cost of this test is high common man will not be able afford it. Efforts are being made by various voluntary organizations to make this test available to public at affordable cost.

Treatment for childhood Tuberculosis

Children should be treated with drug regimens as per national guidelines. All children started on TB treatment should be registered under RNTCP. Treatment outcomes for children with TB are usually good and it also should be recorded for RNTCP.

Drug dosages are calculated according to weight (not according to age). Children tolerate first-line anti-TB treatment very well with low risk of toxicity. Resolution of symptoms and weight gain are markers of a satisfactory treatment response in sputum smear-negative cases. HIV-infected children with TB have poorer treatment outcomes than HIV-uninfected children with TB.

It is difficult to administer tablets in children. WHO has suggested the development of a fixed dose

combination – one tablet containing all the medicines which will help drug administration. For some children syrups can administered better. Now researches should focus on development of drug combinations in the form of single tablet or syrups.

The challenges of tuberculosis treatment in children include the need for services that provide an integrated, family-based approach to TB care.

Prevention of tuberculosis

Case finding

Children at risk of TB, should be routinely screened. When an adult is diagnosed with TB, all close contacts and family members should be screened and, if diagnosed provide proper treatment. A large proportion of childhood TB cases could be prevented by treating infected children discovered during case finding.

TB preventive therapy or Isoniazid preventive therapy (IPT)

All asymptomatic children who are exposed to an adult with TB should be provided IPT, which prevents infection from developing into active disease. IPT is especially important for children diagnosed with HIV. The dose of Isoniazid for chemoprophylaxis is 10 mg/kg administered daily for 6 months. TB preventive therapy should be provided to:

- a. All asymptomatic contacts (under 6 years of age) of a smear positive case, after ruling out active TB irrespective of their BCG or nutritional status.
- b. Chemoprophylaxis is also recommended for all HIV infected children who either had a known exposure to an infectious TB case or are Tuberculin skin test (TST) positive but have no active disease.
- c. All Tuberculin skin test positive children who are receiving immunosuppressive therapy.
- d. A child born to mother who was diagnosed to have TB in pregnancy should receive prophylaxis for 6 months, provided congenital TB has been ruled out.

Vaccination

Routine Immunization is one of the most cost effective public health interventions. BCG vaccine can be given at birth or as early as possible till one year of age. BCG vaccination can be given at birth

even if Isoniazid chemoprophylaxis is planned. BCG immunisation should not be given to an HIV-infected infant.

Infection control

It is important that health facilities, and other community settings such as homes, schools etc. need to be made safe from TB. Measures such as separating patients who are coughing, providing masks, and opening windows and doors to establish natural ventilation at home and other community settings can prevent TB to great extend.

Improving the socio economic status

Research shows that socio-economic status has an impact on TB incidence. So improvement in housing conditions, educational status etc. can bring about a major change.

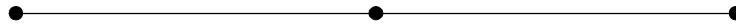
Conclusion

Childhood tuberculosis has not given much attention from the part of governments and voluntary organizations. Pharmacy companies are also not

giving much attention towards child friendly drugs to treat TB in children. If treated well the outcome will be better in children than that of adults. A global initiative is required from the part of WHO to make the stake holders aware of the importance of prevention and management of TB in children.

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Electronic Media and Young Children

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Abstract

As an early care and education professional, nurses are also a child care provider; nurses are also a family educator and a role model for positive care giving. By educating families about the dangers of electronic media and by creating a sensible media policy in their program, nurses can make a lasting difference in the lives of the children.

Keywords: Electronic Media; Children; Effects and Management.

Introduction

Television is a daily presence in the lives of most young children, and video games on consoles and computers are also widely used by children. But how does exposure to television, computers, electronic games and other such media affect children's health and development?

The first 2 years of life are considered a critical time for brain development. TV and other electronic media can get in the way of exploring, playing, and interacting with parents and others, which encourages learning and healthy physical and social development. As kids get older, too much screen time can interfere with activities such as being physically active, reading, doing homework, playing with friends, and spending time with family.

Of course, TV in moderation can be a good thing: Preschoolers can get help learning the alphabet on public television, grade schoolers can learn about wildlife on nature shows, and parents can keep up with current events on the evening news. No doubt about it — TV can be an excellent educator and entertainer.

Video games are considered as time-wasters, and worse by parents. Some education experts think that these games corrupt the brain. Playing violent video games are easily blamed by the media and some experts as the reason why some young people become violent or commit extreme anti-social behavior. Video games can actually have many benefits – the main one is making kids smart. Video games may actually teach kids high-level thinking skills that they will need in the future. "Video games change your brain," according to University of Wisconsin psychologist C. Shawn Green. Playing video games change the brain's physical structure the same way as do learning to read, playing the piano, or navigating using a map. Much like exercise can build muscle, the powerful combination of concentration and rewarding surges of neurotransmitters like dopamine strengthen neural circuits that can build the brain.

Below are the good and bad effects of video games.

Positive effects of electronic media

- Following instructions
- Problem solving and logic

- Hand-eye coordination, fine motor and spatial skills
- Planning, resource management and logistics
- Multitasking, simultaneous tracking of many shifting variables and managing multiple objectives
- Quick thinking, making fast analysis and decisions
- Accuracy
- Strategy and anticipation
- Situational awareness
- Developing reading and math skills
- Perseverance
- Pattern recognition
- Estimating skills
- Inductive reasoning and hypothesis testing
- Memory
- Concentration
- Improved ability to rapidly and accurately recognize visual information
- Taking risks
- How to respond to challenges
- How to respond to frustrations
- How to explore and rethink goals
- Teamwork and cooperation when played with others, Management
- Simulation, real world skills

Negative effects of electronic media

- Poor nutrition and obesity
- Television and electronic media displace social interaction
- Violence and aggressive behavior
- Tobacco and alcohol
- Attention problems
- School readiness
- Some video games teach kids the wrong values
- Games can confuse reality and fantasy
- Poor school grades
- Addiction to video games increases their depression and anxiety levels. Addicted kids also exhibit social phobias.

- Kids spending too much time playing video games may exhibit impulsive behavior and have attention problems.

What can we do?

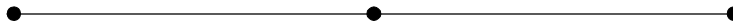
Below are several tips for protecting children from the adverse effects of electronic media.

- Television and electronic media are inappropriate for children from birth to 24 months, under any circumstances. Educate parents not to use television to entertain or educate these youngest and most vulnerable children. Infants and toddlers need frequent human interaction for social, emotional and cognitive development.
- Child care settings should consider a television-free policy for children of all ages, particularly if the children are being exposed to electronic media at home.
- For children age 2 years and over, caregivers and parents should limit television viewing to educational programs designed for children. In child care settings where there is some television present, children should be exposed to it only for short periods of time.
- Don't leave young children alone with television or electronic games on. Stay with them to monitor the content of the media and their reactions.
- Answer any questions they have about what they are seeing. Television and other electronic media should not be used as a "baby sitter" of young children.
- Teach children to be critical viewers of commercial messages.
- Evaluate the nutritional value of foods promoted on television, and offer children healthy alternatives.
- Educate families to create and implement an electronic media policy at home. The policy should provide children with clear guidance about how much and what types of programs and games are permitted. All of the adults in the setting should agree on the policy and enforce it consistently.

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