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Effectiveness Of Nursing Intervention and Community Initiatives To Preventing Childhood Obesity Among Mothers At Selected Areas At Agra, Uttarpradesh

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ABSTRACT

Background: Obesity among children and adolescents continues to rise worldwide. Despite the efforts of the healthcare workforce, limited high-quality evidence has been put forward demonstrating effective childhood obesity interventions. The role of nurses as primary actors in the prevention of childhood obesity has also been under researched given the size of the workforce and their growing involvement in chronic disease prevention.

Objective: To assess the effectiveness of nursing intervention to prevent childhood obesity.

Methods: The study was conducted in selected community areas at uttarpradesh by two data collectors and selected community areas.50 obesity children's mothers were selected and purposive sampling technique used to select samples. The questionnaire was checked for completeness, cleaned manually and entered into Epi- Data version 4.2. Then the data was transferred into SPSS version 21.0 for further analysis. Descriptive statistics were carried out. Finally checked association between dependent and independent variables.

Results: Revealed that pretest and posttest level of knowledge regarding preventing childhood obesity among mother's pretest level good knowledge 0.00 percent, average knowledge 20(40%) and poor knowledge 30(60%) and posttest level of knowledge regarding preventing childhood obesity among mothers' good knowledge 40(80%),10(20%) were average knowledge and 0(0.0%) were poor knowledge. So, $P<0.05$ level at significant. There was a significant association between preventing childhood obesity among mothers and their demographic variables such as educational status of mothers. $p<0.05$ level. There was no Significant association between the demographical variables such as age, religion, resident area, occupational status, number of children, monthly income and source of information at $p<0.05$ level.

Conclusion: Although their effectiveness has not yet been established, nurse interventions to prevent obesity are viable. With the right training, nurses could more effectively utilize current clinical and situational opportunities to support the fight against pediatrics obesity.

Keywords: *Effectiveness, Nursing Intervention, Childhood Obesity*

1. INTRODUCTION

The accumulation of abnormal or excessive fat in the human body is referred to as obesity or overweight, and it does pose a health risk. Obesity is a complex, multi-factorial condition that results from specific genotypes and environmental interaction. A number of factors, including but not limited to social, behavioral, cultural, physiological, metabolic, and genetic factors,

all play a role. Obesity affects human health directly or indirectly in association with other issues like diabetes type 2, coronary artery diseases (CADs), hip replacement surgery, and respiratory issues, among others [1].

The prevalence of childhood and adolescent obesity has increased globally from 4% to 18% since 1975 (World Health Organization, 2020). No country has reported a decrease in obesity rates in the last three decades, and only one in ten is predicted to have a 50% chance of meeting WHO's target of no rise in childhood obesity between 2010 and 2025. Childhood obesity is a global problem, with an estimated 250 million obese children worldwide by 2030, or one in five children, up from the current figure of 150 million (World Obesity Federation, 2019) [2].

The prevailing recommendations from these reviews are the need for high-dose, multicomponent interventions targeting the family, delivered in a variety of settings. Nurses operate in a variety of settings, including primary care, hospitals, schools and the general community. Nursing models are increasingly moving towards preventive care, particularly in the primary healthcare setting where nurses represent a growing proportion of the healthcare workforce devoted to chronic disease prevention and management [3]

The three most used measures of obesity are the Body Mass Index (BMI), Waist Circumference (WC), and waist-to-hip circumference ratio (WHR). BMI is the ratio of body weight and height. Normal BMI is 18.5–24.90 kg/m2. A person is overweight if the BMI is between 25 and 29.90 kg.m2 and obese if the BMI is ≥30 kg/m2. WC is also essential as increased WC is a risk factor. Normal WC for men is ≥101.60 cm and ≥88.90 cm in women.[3] A family history of obesity, the biological composition of the body, sociocultural attitudes and practices, dietary customs and habits, education level, and socioeconomic background are some of the factors that contribute to obesity. However, obesity can be prevented and treated in the community through health education and behavior interventions for achieving and maintaining a healthy body weight. Community health nurses can play a vital role in preventing and treating obesity in the community through community participation. Awareness among people regarding lifestyle modification, diet, and food management may also play a vital role in the prevention and treatment of obesity. People's motivation for physical activities and exercise helps in burning extra calories [4].

2. METHODOLOGY

Research approach

Quantative research approach

Study area and period

Study was conducted at selected rural areas at Agra, uttarpradesh and study period one month.

Study design

A community based pre-experimental research design one group pretest and posttest design was conducted to attain the objectives of the study.

Population

Source and study population: Under five children mothers were selected

Inclusion criteria and Exclusion criteria

Inclusion criteria:

- Under five children mothers at selected rural area
- Under five children mothers willing to participate in study

Exclusion criteria:

- Under five children mothers are absent during data collection period
- Not interested to study

Sample size: Purposive sampling technique selected 50 under five children mothers

Variables

Dependent variable: Intervention and community initiatives

Independent variables:

Age, religion, Education status, Occupation, Family monthly income, source of information

Operational definition

Effectiveness: In this study it refers to the *capability of producing a desired result* or the ability to produce desired output about effective nursing intervention.

Nursing intervention: In this study it refers to the actions that nurses take to promote health, prevent disease, and help children reduce obesity.

Obesity: In this study it refers to the excess body fat (adipose tissue) that may impair health.

Data quality control

One week before to the actual data collection date, 10% of the sample size underwent a pretest of the data collecting questionnaires, which will be examined outside of the study location. The tools will be modified and altered in order to satisfy the study's goals after the pretest. Throughout the data gathering process, the data collectors and the technique of collection were closely observed, and the acquired data was regularly reviewed to ensure consistency. The supervisors examined any missing questionnaire questions that the data collectors misinterpreted right away, and the primary investigators fixed them for the following day's data collecting.

Data processing and analysis

Before the study started, the acquired data was cleaned, coded, and added to the SPSS software. The statistical kit for social sciences (SPSS) version 20 will be used to enter and analyze the data, and the results will be displayed in a precise manner utilizing cross tabs, proportions, and frequencies. t test were used to see the effectiveness, P-values of less than 0.05 were used to classify an association between dependent and independent variables as statistically significant.

3. RESULT

Table 1: Frequency and percentage distribution of the demographic variables N=50

Demographic variables		**frequency**	**Percentage (%)**
Age in years	18-20	7	14.0
	20-30	20	40.0
	30-40	9	18.0
	>40	14	28.0
Religion	Hindu	25	50.0
	Christian	15	30.0
	Muslim	10	20.0
Number of children	One	32	64.0
	Two	10	20.0
	>Two	8	16.0
Monthly Income (InRs.)	< 5000	9	18.0
	5000-10,000	14	28.0
	10,000-15000	18	36.0
	>20,000	9	18.0
Occupation	Un employed	35	70.0
	Employed	15	30.0
Educational status	No formal education	20	40.0
	Primary	10	20.0
	Secondary	11	22.0

	Higher Secondary	7	14.0
	Graduation and above	2	4.0
Source of information	Health person	20	40.0
	Friend	5	10.0
	Neighbor	10	20.0
	Mass media	15	30.0
Total		**50**	**100**

Table -1. Reveals frequency and Percentage distribution of under-five children's mothers according to their socio-demographic data. Result shows that majority of under-five children's mothers 20(40%) were between 20-30 years and 14(28%) of mothers were found between the age group more than 40 years,9(18%) between 30-40 years and 7(14%) were age group 18-20 years.

In relation to religion maximum numbers of mothers 25(50%) were Hindu, only 15(30%) were Christian and 10(20%) of mothers were Muslim. Regarding number of children's maximum numbers of mothers 32 (64%) were having one child, 10(20%) were 2 children's ,and only8(16%) were more than 2 children's.

Regarding monthly income maximum numbers of mothers 18(36%) were10,000-15,000,14(28%) was 5000 to 10,000, and only9(18%) of mothers were <5000 and more than 20,000. Regarding occupational status 35(70%) were unemployed and 15(30%) were employed.

With regarding educational status of mother's majority of mothers 20(40%) were no formal education,11(22%) was secondary,10(20%) was primary education and 7(14%) were higher secondary and 2(4%) were graduation and above. With regarding sources of information regarding obesity, 20(40%) were health people,15(30%) were mass media,10(20%) was neighbor and 5(10%) were friends.

Table 2: Description of pretest and posttest level of knowledge regarding preventing childhood obesity among mothers N=50

Levels of knowledge	**Pretest levels**			
	Number	**Percentage**	**Number**	**Percentage**
Poor knowledge	30	60	0	0.0
Average knowledge	20	40	10	20
Good knowledge	0	0.0	40	80
Total	**50**	**100.00**	**50**	**100.00**

P<0.05

Table 2 shows that pretest and posttest level of knowledge regarding preventing childhood obesity among mothers pretest level good knowledge 0.00 percent, average knowledge 20(40%) and poor knowledge 30(60%) and posttest level of knowledge regarding preventing childhood obesity among mothers' good knowledge 40(80%),10(20%) were average knowledge and 0(0.0%) were poor knowledge. So, P<0.05 level at significant.

Table 3: Comparison of overall mean and standard deviation between pretest and posttest level of knowledge regarding preventing childhood obesity among mothers N=50

Assessment	**Mean**	**Standard deviation**	**Paired 't' value**
Pretest	**28.6**	**4.84**	**10.14*** **
Posttest	**42.03**	**2.49**	

P<0.05

Table 3 depicts the comparison of mean and standard deviation between pretest and posttest level knowledge regarding preventing childhood obesity among mothers. The mean score was increased from 28.6 to 42.03 which showed a marked difference of 13.43 and the standard deviation was decreased from 4.84 to 2.49 after the administration of nursing intervention and community initiatives. The paired t' test value of 10.14, was very highly significant at $p<0.05$ level. Hence $H_1$is accepted, H1. There is a significant difference between pretest and post test score on knowledge regarding preventing childhood obesity among mothers before and after nursing intervention and community initiatives at $p\leq 0.05$ level

Table 4: Association between levels of preventing childhood obesity among mothers with selected socio demographic variables.

Demographic variables		**Level of childhood obesity**				
		Poor	**average**	**Good**	**Total**	**Chi-square P value**
Age in years	30-40	3	4	0	7	□□□□□□2=1.84 P=0.14
	41-50	10	5	0	15	
	51-60	12	6	0	18	
	>61	5	5	0	10	
Religion	Hindu	20	10	0	30	□□□□□□2=0.92 P=0.24
	Christian	5	5	0	10	
	Muslim	5	5	0	10	
Number of children	One	10	5	0	15	□□□□□□2=2.75 P=0.44
	Two	10	10	0	20	
	>Two	10	5	0	15	
Occupational status	Employed	10	5	0	15	□□□□□□2=0.49 P=0.23
	Un Employed	20	15	0	35	
Educational status	No formal education	7	5	0	12	□□□□2=1.49 P=0.04*
	Primary	6	4	0	10	
	High school	5	6	0	11	
	Higher secondary	7	5	0	12	
	Graduation and above	5	0	0	5	
Monthly income	<5000	14	3	0	17	□□□□2=0.96 P=0.57
	5001-10,000	10	5	0	15	
	10,001-20,000	5	10	0	15	
	>20,001	1	2	0	3	
Source of information	Health person	13	12	0	25	□□□□2=1.87

	Friend	2	2	0	4	P=0.23
	Neighbor	5	2	0	7	
	Mass media	10	4	0	14	

(* -P>0.05, significant) (NS=Not significant) S=(significant)

The above table 4 shows that there was a significant association between preventing childhood obesity among mothers and their demographic variables such as educational status of mothers. p<0.05 level. There was no association between the demographical variables such as age, religion, resident area, occupational status, number of children, monthly income and source of information at p<0.05 level.

4. CONCLUSION

Early childhood obesity and overweight can be prevented with the right kind of intervention. With research emphasis on low-income and socially disadvantaged families, if successful, it will yield several policy recommendations and workable tactics for promoting children's healthy nutrition and physical activity throughout their first two years of life.

5. DISCUSSION

A similar study was conducted to assess dietary and exercise programs designed to lower childhood obesity in children between the ages of one and five, according to the intervention setting. The research was categorized based on the environment in which the intervention was carried out. Interventions in childcare/school (n = 11), home (n = 5), community (n = 5), hospital (n = 4), e-health (n = 2), and mixed (n = 1) settings were included in the twenty-eight studies that were found. Measures of juvenile obesity, such as body mass index z-score and body fat percentage, improved as a result of thirteen (46%) therapies, 12 of which combined family- and parental-based interventions with dietary and exercise modifications for the child. Given that four out of five studies showed statistically significant changes in the child's weight outcomes, home-based therapies were shown to be the most beneficial location [5].

Conducted study to determine the Prevent weight growth in low-income moms who are overweight or obese who are between the ages of 18 and 39 by encouraging stress reduction, a good diet, and regular exercise. The DVD shows overweight and obese WIC women who are African American and White and who took part in a MIM-inspired healthy living intervention. Leading the PSGTs are paraprofessionals with training in group facilitation and motivational interviewing from Michigan State University Extension and WIC providers in Michigan. A comparison group (n = 175) or an intervention group (n = 350) is assigned at random to each participant. Weekly or bi-weekly, a 16-week intervention is given to the intervention group. Ten MIM DVD chapters must be watched at home, and participants must phone in to ten PSGT sessions. The study found that MIM might benefit community and public health initiatives if it proves to be effective. To avoid weight gain in low-income women, the DVDs and PSGTs will be distributed to similar target groups through WIC, Extension, and clinical practices that support healthy lifestyles.[6].

Competing interest:

The authors report no conflicts of interest for this work.

Author contribution:

All authors critically revised the manuscript

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