

Effectiveness of Planned Teaching Programme (PTP) Regarding Micronutrient Deficiency and its Prevention in Terms of Knowledge among Adolescent Girls in Selected Senior Secondary Schools at Meerut

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Abstract: Micronutrient Deficiencies (MNDs) are of great public health and socioeconomic importance worldwide. The World Health Organization (WHO) considers that more than 2 billion people worldwide suffer from vitamin and mineral deficiencies, primarily iodine, iron, vitamin A and zinc, with important health consequences. WHO publication goes on to emphasize that micronutrient malnutrition is not, as was widely assumed, only a problem of developing countries. Objectives of the study is To develop and validate Planned Teaching Program (PTP) regarding micronutrient deficiency and its prevention for adolescent girls. To evaluate the knowledge regarding micronutrient deficiency and its prevention among adolescent girls in experimental group before and after administration of planned teaching program. To compare the knowledge of adolescent girls in experimental and control group regarding micronutrient deficiency and its prevention. To find out the association between post-test knowledge of adolescent girls with selected demographic variables in experimental group. The study revealed that the mean post-test knowledge score (27.19) of adolescent girls were significantly higher than the mean pre-test knowledge score (18.86) on micronutrient deficiency and its prevention. 80% of adolescent girls were having good knowledge after administration of planned teaching programme in experimental group. Post-test knowledge score of experimental group and control group of adolescent girls were found to be statistically significant as calculated value of 't' (6.68) df (58) $t = 2.0017$ at 0.05 level of significance. Hence research hypothesis H_1 , H_2 was accepted and null hypothesis H_{01} and H_{02} was rejected. There was no any significant association found in the demographic variable with the post-test knowledge score of experimental group adolescent girls. Hence null hypothesis H_{03} was failed to reject and research hypothesis H_3 is rejected. The study concluded that there was knowledge deficit in adolescent girls regarding micronutrient deficiency and its prevention before intervention and planned teaching programme was an effective method to improve the knowledge of adolescent girls.

Keywords: Effectiveness, knowledge, micronutrient deficiency, prevention, adolescent girls, senior secondary schools.

1. Introduction

"Micronutrients are nutrients that are needed by the body in small quantities and are important for development, growth and sustaining life,"

Conrad Cole

Health is the level of functional or metabolic efficiency of a living organism. In humans it is the ability of individuals or communities to adapt and self-manage when facing physical, mental or social challenges. Systematic activities to prevent or cure health problems and promote good health in humans are undertaken by health care providers. **Micronutrient** deficiency occurs all over the world but particularly in developing countries, not all population are equally at risk of each type of micronutrient deficiency, while iron deficiency anemia may affect all countries, the likelihood of iodine and vitamin a deficiency varies from area, region to region special attention should there for be given to population groups who come from area of known specific deficiency. Micronutrients deficiencies, also known as "HIDDEN HUNGER" are determined and aggravating factors for health status and quality of life.

Elizabeth I. Ransom (2003), reported that malnutrition, defined as ill health caused by deficiencies of calories, protein, vitamins, and minerals interacting with infections and other poor health and social conditions,

saps the strength and well-being of millions of women and adolescent girls around the world. [In this brief, the term malnutrition will refer to conditions of nutritional deficiency, including under nutrition and micronutrient deficiencies, though malnutrition actually also relates to problems of nutritional excess. Although malnutrition's effects on this group have been recognized for decades, there has been little measurable progress in addressing the specific nutritional problems of women and adolescent girls.

Iron Deficiency Anemia affects women and children in particular, as well as adolescents and the elderly. It makes people feel exhausted and slows down learning in children. Anemia increases the risk of problems for mother and baby during and after delivery. Iodine deficiency can cause growth problems in children as well as hinder brain development. Iodine Deficiency can lead to different grades of goiter and cretinism. Goiter is characterized by a palpable and visibly enlarged thyroid with neck in normal position. To prevent iron deficiency anemia in infants, feed your baby breast milk or iron-fortified formula for the first year. Cow's milk isn't a good source of iron for babies and isn't recommended for infants under 1 year. Adolescence is the stage of life between ages of 11 and 21 years. During this time, significant changes occur, which prepares a child for adulthood. The rapid growth and development during this stage increases energy and nutrient requirements. To sustain proper growth, development, and health while improving

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performance, adolescents engaged in sports could benefit from knowledge about the importance of good nutrition.

Based on the above review of literature it is important that early diagnosis of deficiency diseases, prevention and treatment of micronutrient is very essential for the adolescents. From the experience of the investigator many adolescent consider deficiency of micronutrients (iron, iodine and vitamin A) and they don't have proper nutrient. Due to high prevalence rate of iron and iodine deficiency and lack of knowledge related to deficiency of micronutrients and its prevention, investigator felt the need to innovate the measure which is safe, cost effective and efficient to reduce the deficiency of micronutrients.

Statement of the problem

“A study to evaluate the effectiveness of planned teaching programme (PTP) regarding micronutrient deficiency and its prevention in terms of knowledge among adolescent girls in selected senior secondary schools at Meerut”.

Objectives of the study were:

- 1) To develop and validate Planned Teaching Program (PTP) regarding micronutrient deficiency and its prevention for adolescent girls.
- 2) To evaluate the knowledge regarding micronutrient deficiency and its prevention among adolescent girls in experimental group before and after administration of planned teaching program.
- 3) To compare the knowledge of adolescent girls in experimental and control group regarding micronutrient deficiency and its prevention.
- 4) To find out the association between post-test knowledge of adolescent girls with selected demographic variables in experimental group.

Research Hypothesis (at 0.05 level of significance)

H₁ - The mean post-test knowledge scores of adolescent girls in experimental group will be significantly higher than the mean pre-test knowledge scores in experimental group as evident from structured knowledge questionnaire.

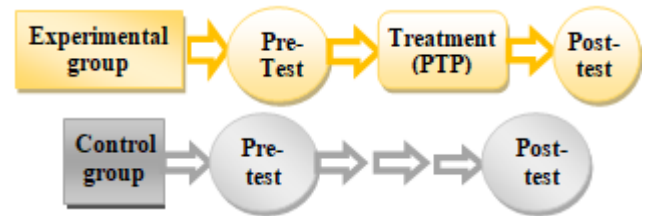
H₂ - The mean post-test knowledge scores of adolescent girls in experimental group will be significantly higher than the mean post-test knowledge scores in control group as evident from structured knowledge questionnaire.

H₃ - There will be a significant association between post test knowledge of experimental group with the selected demographic variables.

2. Methodology

The research designed in this study is quasi- experimental research (non-randomized control group design) design. In investigator introduced the base measures before and after the administration of treatment. The base measures were the knowledge of adolescent girls and treatment was planned teaching programme regarding micronutrient deficiency and its prevention. Sample sizes in the present study consist of 60 adolescent girls (30 of each in experimental group and control group) are studying in selected senior secondary schools at Meerut.

The research design is represented as –



Frequency and percentage distribution of demographic characteristics of the adolescent girls

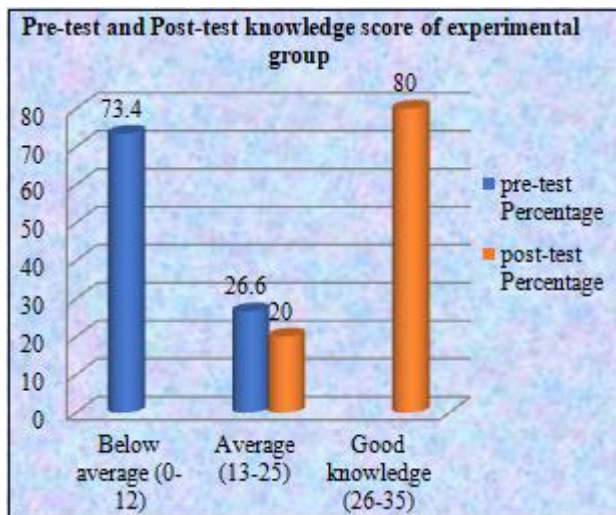
Sample Characteristics	Experimental Group (N=30)		Control Group(N=30)	
	Freq.	Percentage	Freq.	Percentage
1. Age in years				
a. 15-16	28	93.4	19	63.4
b. 17-18	2	6.6	11	36.6
c. 19-20	0	0	0	0
d. above 20	0	0	0	0
2. Type of family				
a. Joint	15	50	7	23.4
b. Nuclear	12	40	22	73.3
c. Single parent	0	0	0	0
d. Extended family	3	10	1	3.3
3. Education status of mother				
a. Had no formal education	4	13.4	0	0
b. Primary education	11	36.6	4	13.3
c. Secondary education	9	30	4	13.3
d. Intermediate	6	20	13	43.4
e. Degree & above	0	0	9	30
4. Dietary pattern				
a. Vegetarian	28	93.4	24	80
b. Non vegetarian	0	0	2	6.6
c. Eggetarian	2	6.6	4	13.4
5. Monthly family income in rupees				
a. Below 5000	16	53.4	1	3.4
b. 5001 to 15000	12	40	16	53.3
c. 15001 to 25000	2	6.6	9	30
d. 25001 & above	0	0	4	13.3
6. Occupational status of father				
a. Business	8	26.6	10	33.4
b. Government employee	1	3.4	8	26.6
c. Private employee	20	66.6	12	40
d. Retired/Pensioned	1	3.4	0	0

According to the above table shows majority of the sample in experimental and maximum in control group were in the age group of (15-16 years) i.e. 93.4% and 63.4% respectively. As per the type of family in experimental group 16 (50%) were joint family where as in control group 22 (73.3%) were nuclear family. Most of the mother of adolescent girls in experimental group had primary education status i.e 11 (36.6%) , whereas most of the mothers of adolescent girls in control group had their education intermediate level i.e. 13 (43.4%). Regarding the dietary pattern majority of the sample in the experimental and control group were vegetarian i.e. 28 (93.4%) and 24(80%) respectively. Most of the sample in the experimental group belong to a monthly family income of below 5000 i.e. 16 (53.3%), whereas in control group belong to monthly family income of 5001 to 15000 i.e.16 (53.3%). Regarding the occupational status of father of adolescent girls majority of the sample in the experimental and control group were private employee i.e. 20 (66.6%) and 12(40%) respectively.

Frequency & percentage pre-test and post-test knowledge score of adolescent girls of experimental group on micronutrient deficiency and its prevention, N=30

Knowledge score	Pre-test		Post-test	
	Frequency	Percentage	Frequency	Percentage
Below average (0-12)	22	73.4	0	0
Average (13-25)	8	26.6	6	20
Good knowledge (26-35)	0	0	24	80

Above table shows that in experimental group 22 (73.4%) of the adolescent girls were having below average knowledge and only 8 (26.6%) were having average knowledge score in pre-test, but in post-test majority of the adolescent girls were having good knowledge i.e. 24 (80%) and only 6 (20%) having average knowledge. Thus it indicated that the planned teaching programme was effective to improve the knowledge of adolescent girls regarding micronutrient deficiency and its prevention.



3. Conclusion

On the basis of the findings of the study There was knowledge deficit in adolescent girls regarding micronutrient deficiency and its prevention. The planned teaching programme was found to be effective in increasing the knowledge of adolescent girls in experimental group regarding micronutrient deficiency. The post-test knowledge of experimental group of adolescent girls were significantly higher than the control group of adolescent girls. There was no association found between post-test knowledge and demographic variable of adolescent girls in experimental group regarding micronutrient deficiency and its prevention.

4. Recommendations

- 1) This study can be replicated in large samples so that findings can be generalized.
- 2) This study can be done at community level to evaluate knowledge of the adolescent girls in senior secondary schools.

- 3) A study can be conducted to find out the knowledge of teachers regarding micronutrient deficiency and its prevention.
- 4) This study can also be done among mothers of adolescent girls to assess their knowledge regarding micronutrient deficiency and its prevention.
- 5) A follow up study can be conducted to evaluate the knowledge of adolescent girls regarding micronutrient deficiency and its prevention.
- 6) A study can be carried out to identify educational need of nursing students on diagnosis of micronutrient deficiency.
- 7) Training programme can be conducted in schools and community area to teach planned teaching of micronutrient deficiency.
- 8) A comparative study can be done to see the difference in the effect of planned teaching programme regarding micronutrient deficiency and its prevention in senior secondary schools.

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