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Effectiveness of Nutrition Education on Knowledge and Perceptions of Women on Anemia

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ABSTRACT: This study aims to determine the effectiveness of nutrition education intervention programme intervention on knowledge and perception levels of women. A sample of 300 respondents (15-49 years) selected for the study from five AICRP adopted villages. The respondents were categorized into experimental groups and control groups. Nutrition education intervention was given to the experimental group. The results revealed that after the intervention programme, there was a significant improvement in the mean scores of knowledge and perception levels. In the experimental group, after the nutrition education intervention, the majority of the respondents had medium knowledge (76.8%) and perception (73%) levels. The findings revealed nutrition education intervention had a good impact on improving knowledge and perception levels of women.

Keywords: Anaemia, Nutrition education, Nutritional status, nutrition deficiencies and iron deficiency.

INTRODUCTION

Iron deficiency is the most important cause of anemia. According to World Health Organization (WHO) 42% of children less than 5 years of age and 40% of pregnant women worldwide are anemic. Global evidence shows that 56% of pregnant women in developing countries are anemic (Black *et al.,* 2013). India is one of the countries with highest anemia prevalence. According to WHO estimates (2021), anemia affects 53% of women of reproductive age (15-49) in India.

It is a global public health problem that particularly affects young children and pregnant women. Anemia is more common in women of reproductive age (WRA) with low socio-economic status, are underweight, or have recently given birth. Adverse effects of anemia are seen in children, adolescents and in pregnant women mostly in developing countries where anemia is more prevalent (Kumar, 2014). The most common causes of anemia include nutritional deficiencies, particularly iron deficiency, though deficiencies in folate, vitamins B12 and A are also important causes; haemoglobinopathies; and infectious diseases, such as malaria, tuberculosis, HIV and parasitic infections.

Nutrition education programmes are the foundation and strategies for any program intended for nutritional improvement that could be used to improve the nutrition knowledge and attitudes of the public (Sunuwar *et al.,* 2019; Adjei-Banuah *et al.,* 2021). Research shows that appropriate nutrition intervention programmes has increased nutritional awareness, knowledge and practice levels. Effective nutrition education can decrease the occurrence ofchronic diseases, including obesity, type 2 diabetes, cardiovascular disease, and hypertension (Bhoge, 2016). Nutrition intervention programme showed a positive effect on students' knowledge and attitude about iron deficiency anemia (Shakouri *et al.,* 2009).

Given the significance of iron deficiency anemia prevention and the importance of nutrition education for women, the current study sought to determine the effectiveness of nutrition education on knowledge and perception levels of iron deficiency anemia among women of reproductive age.

METHODOLOGY

A quasi-experimental (pretest-posttest control group) research design was selected for the study. The respondents were selected from the five adopted villages of Rangareddy district *i.e.* Gungal, Subhanpur, Amdapur, Edira and Kaslabad of All India Coordinated Research Project on Women in Agriculture (AICRP-WIA) from Hyderabad, India. A total of 300 respondents who are in reproductive age group (15-49 years) were chosen for the study. The respondents were categorized into experimental group and control group.A sample of 250 respondents was classified as the experimental group and 50 respondents as the control group.A structured questionnaire was used for the study. The nutrition education programme was conducted with only the experimental group over a period of 45 days. The intervention was instructed in the local language (Telugu) and checked by the experts for content validity. The intervention group and the control group, were provided with the posttest questionnaires to assess the impact of the nutrition education programme on knowledge, perception levels, but the control group did not undergo the educational program. Data analysis was performed using Microsoft excel and SPSS.

RESULTS

Table 1 presents the profile characteristics of the respondents. Out of the total population, 61.00% of the respondents belonged to 15-26 years of age group, 28.67% of the respondents had high school education, 32.00% of the respondents were housewives, 87.67% belonged to nuclear families, 76.00% had small family size, 52.33% had small land holding, 55.00% had low family income, 79.67% had medium mass media exposure, 64.33% had medium extension contact and 73.00% of the respondents indicated Asha workers as their information source.

Table 2 presents the knowledge and perception levels of the respondents regards to anemia before and after intervention. Regarding knowledge, in the experimental group pre-test, 85.2% of the respondents had low knowledge levels about IDA, followed by medium (13.2%) and high (1.6%). In control group, 92% of the respondents had low knowledge about IDA, the remaining 8% had medium knowledge levels, and none of them had high knowledge levels. Discussions with the respondents revealed that, they had never heard about IDA, they were not aware of normal Hb levels, not aware of iron-rich foods and they were unaware of the signs, symptoms and consequences of IDA.

In terms of perception, 64.7% of respondents in the experimental group pre-test had low perceptions of IDA, followed by medium (32.1%) and high (3.2%). In the control group, 69.6% of respondents had a low perception of IDA, followed by 29% who had a medium perception and 1.4% who had a high perception. The majority of the respondents reported that they consume green leafy vegetables at least once a week. They wash their hands with soap before consuming food and after defecation.

After the nutrition education intervention programme, there was a significant difference between the two groups in terms of knowledge and perception levels. In the experimental group, after the nutrition education intervention, the majority of the respondents (76.8%) had medium knowledge levels, followed by low (16.8%) and high (6.4%). This means after the intervention, they were aware of IDA, Hb levels, iron-rich foods, signs, symptoms and consequences of IDA etc. However, in the control group, the majority (90%) of the respondents had low knowledge levels, followed by medium (10%) and none of them had high knowledge levels.

In terms of perception, in the experimental group, the majority of the respondents (73%) had medium perception, followed by high (18.4%) and low (8.6%). In the control group, the majority (67%) of the respondents had a low level of perception about IDA, followed by medium (30%) and high (3%).

The results clearly indicate that after the nutrition education intervention programme, there was a significant improvement in the mean scores of knowledge and perception levels in the experimental group. Before the intervention programme the respondents had very limited knowledge regarding anemia in both experimental and control groups. During the intervention period, the experimental group screened for 30 minutes over 45 days (regarding anemia, signs & symptoms, food sources, balanced diet, and nutritive values of food items that are related to anemia) through different channels (Posters, flipcharts and lectures). In the experimental group, there was an increase in the mean scores of knowledge and perception levels, but there was no change in the control group. This clearly indicates that the nutrition education programme has influenced the respondents to consume more iron rich foods, and maintain good hygiene practices. Elsharkawy *et al.,* (2022) indicated that after intervention there was a significant improvement in the mean scores of knowledge, food selection ability, compliance rate, and hemoglobin level for the intervention group than for the control group. Nutrition education initiatives have a good impact on improving nutritional health (María *et al.,* 2011). Jalambo *et al.* (2018) revealed that nutritional education is an effective tool in improving hematocrit, Hb, serum ferritin levels and anemia status among adolescents. Sari *et al.* (2018) concluded that effective nutrition education raised the hemoglobin level and the girls' knowledge score.

Table 1: Profile characteristics of the respondents.

S. No.	Profile characteristics	Frequency	Percentage
1.	**Age of the respondents**		
	15-26	183	61.00
	26-37	58	19.33
	37-49	59	19.67
2.	**Education**		
	Illiterate	39	13.00
	Primary School	25	8.33
	Middle School	29	9.67
	High School	86	28.67
	Intermediate/ Diploma	80	26.67
	Graduation& Above	41	13.67
3.	**Occupation**		
	Agriculture	84	28.00
	Labour	69	23.00
	Small business	3	1.00
	Government Job	1	0.33
	Housewife	96	32.00
	Any other	47	15.67
4.	**Family type**		
	Nuclear family	263	87.67
	Joint family	27	9.00
	Extended family	10	3.33
5.	**Family Size**		
	Small family	228	76.00
	Medium family	61	20.33
	Large family	9	3.00
	Very large family	2	0.67
6.	**Landholding**		
	No land		
	Marginal holding	73	24.33
	Small holding	157	52.33
	Semi-medium holding	56	18.67
	Medium holding	12	4.00
	Large holding	2	0.67
7.	**Annual income**		
	Low	165	55.00
	Medium	108	36.00
	High	27	9.00
8.	**Mass media exposure**		
	Low	18	6.00
	Medium	239	79.67
	High	43	14.33
9.	**Extension Contact**		
	Low	72	24.00
	Medium	193	64.33
	High	35	11.67
10.	**Sources of information**		
	AWW	205	68.33
	ANM	195	65.00
	Asha worker	219	73.00
	Neighbours	130	43.33
	Radio	53	17.67
	TV	264	71.00
	Printed materials	65	21.67
	Social media	186	62.00

Table 2: Knowledge and perception levels of the respondents on anemia- Before and after intervention.

Category	Experimental group		Control group	
Knowledge	**Pre-test**	**Post-test**	**Pre-test**	**Post-test**
Low	85.2	16.8	92	90
Medium	13.2	76.8	8	10
High	1.6	6.4	0	0
Perception				
Low	64.7	8.6	69.6	67
Medium	32.1	73	29.0	30
High	3.2	18.4	1.4	3

CONCLUSION

Nutritional education interventions have been widely used for control anemia, iron deficiency and other non-communicable diseases at early ages. In the present study, the results revealed that after the intervention programme, there was a significant improvement in the mean scores of knowledge and perception levels. Hence it can be concluded that nutrition education intervention had a good impact on improving knowledge and

perception levels of women. Future nutrition education practices should be conduct about dietary practices, beliefs, and should introduce new health and nutrition topics especially to the women and children in rural and tribal areas.

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Conflict of Interest. None.

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