P-ISSN: 2617-9806
E-ISSN: 2617-9814

Impact Factor: RJIF 5.2
www.nursingjournal.net

International Journal of Advance Research in Nursing

Volume 8; Issue 2; July-Dec 2025; Page No. 54-58

Received: 22-05-2025
Accepted: 24-06-2025

Indexed Journal
Peer Reviewed Journal

A study to assess the effectiveness of nurse led intervention on knowledge and practice regarding iron supplement among multigravida mothers in selected primary health centre at Chennai

Dr. B Tamilarasi, Saranya P, Abhinaya K, Anitha B, Asim Yasar S, Dhiviya Bharathi P, Jeethu Johnson, Lavanya S, Mohamed Anas AM, Niranjana M and Sangeetha C

[1] Principal, Madha College of Nursing, (Affiliated to the Tamil Nadu Dr. M.G.R. Medical University), Chennai, Tamil Nadu, India
[2] Reader, Madha College of Nursing, (Affiliated to the Tamil Nadu Dr. M.G.R. Medical University), Chennai, Tamil Nadu, India
[3-11] B.Sc(N)III Year, Madha College of Nursing, (Affiliated to The Tamil Nadu Dr. M.G.R. Medical University), Chennai, Tamil Nadu, India
Corresponding Author: Dr. B Tamilarasi

DOI: https://www.doi.org/10.33545/nursing.2025.v8.i2.A.527

Abstract
Iron deficiency is a global public health issue, particularly in pregnant and postpartum women, leading to complications such as fatigue, decreased immunity, and impaired cognitive ability. Inadequate iron intake, poor socioeconomic status, and excessive blood loss during previous delivery are the major causes of iron deficiency in Multigravida mothers. Iron supplementation is a key preventive measure, yet many multigravida mothers, despite their experience, may lack adequate knowledge and practice in managing their nutritional needs. Therefore, the present study aimed to assess the effectiveness of nurse-led intervention on knowledge and practice regarding iron supplements among multigravida mothers. A pre-experimental one-group pre-test and post-test pre-experimental research design was adopted for the study, among 30 multigravida mothers were selected using a purposive sampling technique. A structured questionnaire was used to assess the level of participants' knowledge about Iron supplements and the Adherence to refills and medications scale (ARMS) tool was used to evaluate participants actual level of practice regrading iron supplements among multigravida mothers. For knowledge Competency-based teaching session it covers the topics like awareness of its benefits, correct dosage & frequency, Dietary change & side effects by using a pamphlet and for practice was demonstrated on how to take an iron supplement effectively and avoid inhibitors like Tea & Coffee. The intervention was delivered in small group lasting approximately 30-45 min. The study findings showed that the pre-test on knowledge and practice mean scores was 13.07 and 30.50 respectively with standard deviations of 2.52 and 4.29 in each variable. And post-test knowledge and practice mean score was 21.03 and 21.50 with standard deviations of 3.51 and 4.29 respectively. The paired `t` value was 15.953 and 7.828, which revealed that there was a highly statistically significant difference between the pre-test and post-test level of knowledge and practice at $p<0.05$.

Keywords: Nurse led intervention, iron supplement, multigravida mothers

Introduction

"Mother's health, family's wealth"

Iron deficiency anemia continues to be one of the leading causes of preventable morbidity and mortality among women of reproductive age particularly during and after pregnancy. While iron supplementation is a well-established and effective strategy to prevent and treat iron deficiency, the low adherence to supplementation regimens poses a significant challenge to maternal health. This is particularly evident among multipara mothers, who are a heightened risk for anemia due to the cumulative effect of multiple pregnancies and the potential depletion of their iron stores.

According to National Health and Family Survey (NFHS-5) data indicates that approximately 57% of women in India are anemic. In Tamil Nadu, a study conducted by the Directorate of Public Health and Preventive Medicine found that 48.3% of adolescents aged 10-19 are anemic, with a higher prevalence among girls (54.4%) compared to boys (41%). Specific districts such as Trichy and Dindigul reported even higher rates with anemia prevalence reaching 84% and 70%, respectively.

Multigravida mothers or those who have had multiple pregnancies are at increased risk of iron deficiency due to repeated pregnancies & inadequate dietary intake of iron. Iron supplementation during pregnancy is a critical strategy for preventing anemia, ensuring maternal health and improving pregnancy outcomes. However, there remains a significant gap in knowledge and practice regarding the correct use of iron supplements, especially among multigravida mothers.

Iron supplementation is widely recommended during pregnancy and postpartum period to prevent and treat iron deficiency anemia. The guidelines for iron supplementation are well established, yet despites these recommendations, many women especially multipara mothers often fail to adhere to supplementation protocols. Multipara mothers who have already had multiple pregnancies may possess a certain level of experience in managing maternal health, however previous pregnancies and experience may not necessarily translate to proper knowledge and practice regarding iron supplementation. Furthermore socio-cultural factors, personal believes, economic constraints and health care system gaps may all contribute to low adherence rates.
Nurse led interventions have been shown to be effective in enhancing health education and improving health practices in community settings. By improving iron supplementation knowledge and encouraging adherence to prescribed regimens, nurses can play a vital role in reducing maternal anemia and its associated complications.

Statement of the problem
A study to assess the effectiveness of nurse-led intervention on knowledge and practice regarding iron supplement among multigravida mothers in selected primary health center at Chennai.

Objectives
1. To assess the pretest and [ost test level of knowledge and practice of iron supplement among multigravida mothers
2. To evaluate the effectiveness of nurse-led intervention on level of knowledge and practice on iron supplements among multigravida mothers
3. To associate the posttest level of knowledge and practice regarding iron supplements among multigravida mothers with their selected demographic variables

Hypothesis
H_1: There will be a significant difference between the pretest and post-test levels of knowledge and practice on iron supplements after nurse-led intervention among multigravida mothers

H_2: There will be a significant association between the level of knowledge and practice on iron supplement among multigravida mothers with their selected demographic variables.

Methodology
Quantitative Research approach was adopted for the study. One group pre-test and post-test pre-experimental research design was used. The study was conducted in Sakthi Nagar UPHC. The population were multigravida mothers in selected primary health center. The sample of 30 multigravida mothers who fulfilled the inclusion criteria was chosen using a purposive sampling technique. The tools used for the study was structured questionnaires that consist of 30 questions regarding iron supplements was used to assess the participants level of knowledge about Iron supplements and the Adherence to Refills and Medications Scale (ARMS) tool it includes 12 item questionnaires. Rate each item on a 4-point Likert scale was used to evaluate participants actual level of practice regarding iron supplements among multigravida mothers. After obtaining consent from the participants, the data collection procedure was started. The pre test was administered on first week to establish baseline knowledge and practice level. The intervention was delivered on the alternative days for knowledge competency - based teaching session it covers the topics like awareness of its benefits, correct dosage & frequency, dietary change & side effects, using printed material like pamphlet and for practice session the participants were encouraged and guided to demonstrate correct intake of iron supplement effectively. The intervention was delivered in small group lasting approximately 30-45 minutes for 2 weeks and the post test was conducted at the end of 3rd week.

Result and Discussion
The data collected was analyzed using both the descriptive and inferential statistics on the basis of objectives & hypothesis. The demographic variables of multigravida mothers revealed that 16(53.3%) were aged between 20 - 25 years, 11(36.7%) were between 26 - 30 years, 2(6.7%) were 31 - 35 years and only 1(3.3%) was 36 - 40 years. Regarding the educational level, 21(70%) were graduates, 8(26.7%) had higher secondary education and 1(3.3%) had primary school education. In occupation 13(43.3%) were private employ, 9(30%) were unemployed, 4(13.3%) were self-employed and 2(6.7%) were government employed. Considering the monthly family income, 13(43.4%) had income of 20001 - 30000, 7(23.3%) had >30000, 6(20%) reported as 10001 - 20000 and 4(13.3%) had family monthly income of <10000. With regard to number of previous pregnancies, 17(56.7%) had twice, 9(30%) had once and 4(13.3%) were pregnant thrice. The findings related to type of family showed that, 16(53.3%) belonged to nuclear family and 14(46.7%) were joint family. The residential area of the multi gravida mothers indicated that, 21(70%) were residing in urban area and 9(30%) were at rural area.

1. To assess the pretest and post test level of knowledge and practice of iron supplement among multigravida mothers
In pretest, 26(86.7%) had moderate knowledge and 4(13.3%) had inadequate knowledge and in the post test after the intervention, 18(60%) had adequate knowledge and 12(40%) had moderate knowledge regarding Iron supplement among multi gravida mothers.

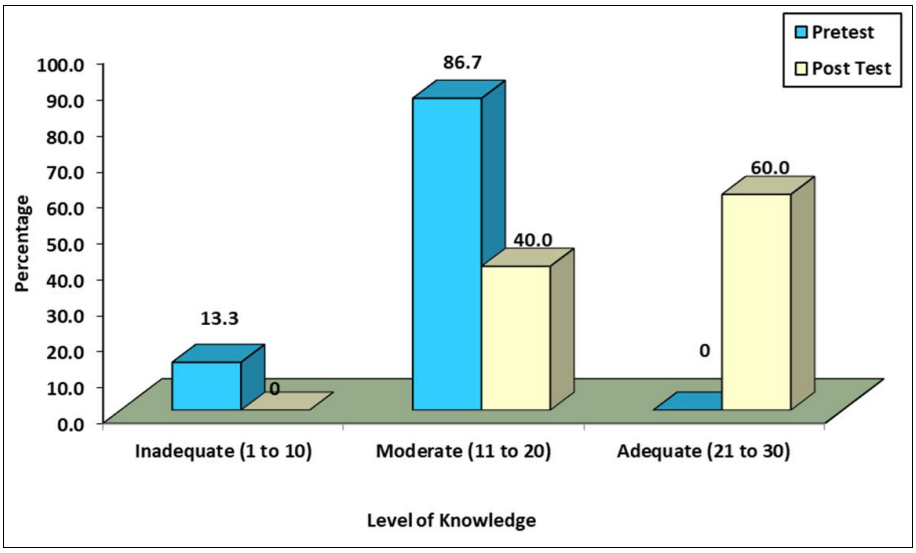

Fig 1: Percentage distribution of pretest and posttest knowledge regarding Iron Supplement among Multigravida Mothers

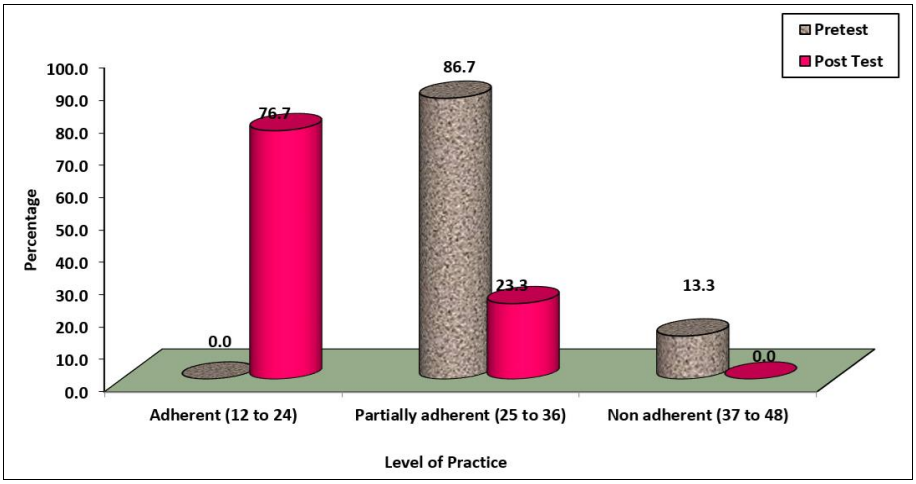

Fig 2: Percentage distribution of pretest and posttest level of practice regarding Iron Supplement among Multigravida Mothers

In Fig 2 shows that in pretest, 26(86.7%) were partially adherent and 4(13.3%) were non adherent and in the posttest after the intervention, 23(76.7%) were adherent and 7(23.3%) were partially adherent.

The second objective was to evaluate the effectiveness of nurse-led intervention of knowledge and practice on iron supplements among multigravida mothers

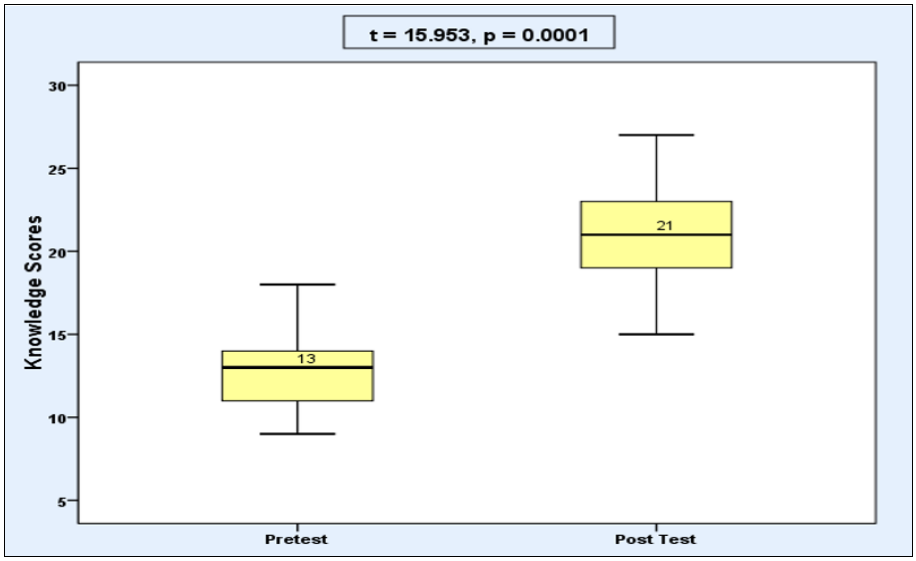

Fig 3: Boxplot showing the pre-test and post-test knowledge score on iron supplement among multigravida mothers

In Fig 3 revealed that the pretest mean score of knowledge was 13.07±2.52, and the posttest mean score was 21.03±3.31. The median score was 13.0 and 21.0, respectively. The mean difference score was 7.96. The calculated paired "t" test value of 15.953 was statistically significant at $p<0.05$ level, which clearly infers that after the nurse-led intervention of knowledge on iron supplement among multigravida mothers, the multigravida mothers had gained more knowledge regarding iron supplement

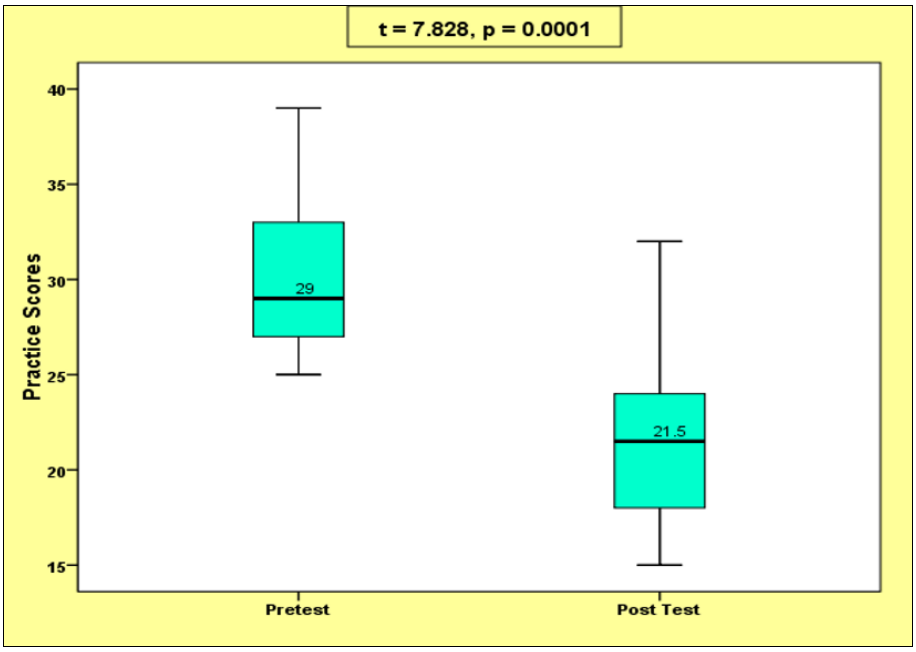

Fig 4: Boxplot showing the pre test and post-test practice score on iron supplement among multigravida mothers

Fig 4 depicted that the pretest mean score of practice was 30.50±4.29 and the posttest mean score was 21.50±4.29. The median score was 29.0 and 21.5 respectively. The mean difference score was 9.0. The calculated paired "t" test value of 7.828 was statistically significant at $p<0.05$ level which clearly infers that after the nurse led intervention of practice on iron supplement among multigravida mothers the multigravida mothers had gained more knowledge regarding on iron supplement.

The third objective was to associate the level of knowledge and practice regarding iron supplements among multigravida mothers with their selected demographic variables

Table 1 shown the association of posttest level of knowledge among multigravida mothers with the demographic variable age (χ^2=8.670, p=0.034) had statistically significant association with post test level of knowledge on iron supplement among multigravida mothers at $p<0.05$ level and the other demographic variables did not show statistically significant association with posttest level of knowledge on iron supplement among multigravida mothers at $p<0.05$ level.

The association of posttest level of practice among multigravida mothers with the demographic variable, number of previous pregnancy (χ^2=6.982, p=0.030) had statistically significant association with posttest level of practice on iron supplement among multigravida mothers at $p<0.05$ level and the other demographic variables did not show statistically significant association with posttest level of practice on iron supplement among multigravida mothers at $p<0.05$ level.

Table 1: Association of posttest level of knowledge on iron supplement among multigravida mothers with selected demographic variables. N =30

Demographic Variables	Moderate		Adequate		Chi-Square Test & p-value
	F	%	F	%	
Age in years					**χ^2=8.670 d,f=3 p=0.034 S***
20 - 25	3	10.0	13	43.3	
26 - 30	8	26.7	3	10.0	
31 - 35	1	3.3	1	3.3	
36 - 40	0	0	1	3.3	
Educational level					χ^2=1.925 d,f=2 p=0.382 N.S
Graduate	10	33.3	11	36.7	
Higher secondary	2	6.7	6	20.0	
Primary school education	0	0	1	3.3	
No formal education	-	-	-	-	
Occupation					χ^2=1.955 d,f=4
Government employed	0	0	2	6.7	

Private employed	6	20.0	7	23.3	p=0.744 N.S
Self employed	2	6.7	2	6.7	
Daily wages	1	3.3	1	3.3	
Unemployed	3	10.0	6	20.0	
Monthly family income (per month)					χ^2=3.592 d,f=3 p=0.309 N.S
>30000	1	3.3	6	20.0	
20001 - 30000	7	23.3	6	20.0	
10001 - 20000	3	10.0	3	10.0	
<10000	1	3.3	3	10.0	
No. of previous pregnancy					χ^2=0.459 d,f=2 p=0.795 N.S
1	4	13.3	5	16.7	
2	7	23.3	10	33.3	
3	1	3.3	3	10.0	
>3	-	-	-	-	
Type of family					χ^2=0.201 d,f=1 p=0.654 N.S
Nuclear family	7	23.3	9	30.0	
Joint family	5	16.7	9	30.0	
Residential area					χ^2=0.238 d,f=1 p=0.626 N.S
Urban	9	30.0	12	40.0	
Rural	3	10.0	6	20.0	
Semi urban	-	-	-	-	

*p<0.05, S - Significant, p>0.05, N.S - Not Significant

Conclusion

This study was done to assess the effectiveness of Nurse-Led Intervention on knowledge and practice regarding Iron supplements among Multigravida Mothers. From this study, the researcher found that multipara mothers have improved their level of knowledge and practice regarding iron supplements after Nurse led intervention. Based on the findings that the provision of Nurse led intervention have given adequate knowledge and practice regarding iron supplements. Therefore Nurse led intervention was very important to reduce maternal anemia and its associated complications. The result of this study show there is an improvement in level of knowledge and practice after Nurse led intervention regarding iron supplement.

References

1. Kaur M, Singh K. Effects of health education on knowledge, attitude and practice about anemia among rural women in Chandigarh. Indian Journal of Community Medicine. 2001;26(3):107-109.
2. Toteja GS, Singh P, Dhillon BS, Saxena BN, *et al*. Prevalence of anemia among pregnant women and adolescent girls in 16 districts of India. Food and Nutrition Bulletin. 2006;27(4):311-315.
3. Moussa WA. Food sources of energy. Proceedings of the CRSP Policy Workshop, Nutrition Institute, Cairo, Egypt. 1988.
4. Steven RD. Anemia a bane of third world. The Hindu. 2000 May 5.
5. Gupta C, Mahajan K. Textbook of Preventive and Social Medicine. 3rd ed. New Delhi: Jaypee Brothers; 2000. p. 43-45.
6. Black R. Micronutrient deficiency and underlying cause of morbidity and mortality. Bulletin of the World Health Organization. 2003;81(2):79.
7. Veena G. Efficiency of nutrition counselling of Punjabi rural mothers on the anthropometry and hematological profile of their pre-school children. Indian Journal of Maternal and Child Health. 1996;7(2):53-56.
8. Roodenberg AJ. Iron supplementation during pregnancy. European Journal of Obstetrics, Gynecology and Reproductive Biology. 1995;61(1):65-67.
9. Abraham LE. A study to assess the effectiveness of structured teaching programme on knowledge regarding iron deficiency anemia and its prevention among the antenatal mothers. Trends in Nursing Administration and Education. 2018;7(1).
10. Raksha M, *et al*. Knowledge, attitude, and practices of antenatal women regarding nutrition. International Journal of Reproduction, Contraception, Obstetrics and Gynecology. 2016;5(7):2101-2103. Available from: https://www.ijrcog.org
11. Bonnar J, Goldberg A, Smith JA. Do pregnant women take their iron? The Lancet. 1969;1:457-458.
12. Sharma A, Ravinder P, Nair KM, Kalaivani K, Ramchandran. Treatment of anemia in pregnancy with oral iron, folic acid or iron, folic acid and vitamin B12 supplementation: A hospital-based open randomized study. Indian Journal of Obstetrics and Gynecology Research. 2024;11(3):364-373.
13. Sharma A, Nair KM, Garg S, Ramachandran P. Impact of IM iron therapy in pregnant women with moderate anemia. Indian Journal of Obstetrics and Gynecology Research. 2022;9(3):361-367.

How to Cite This Article

Dr. B Tamilarasi, Saranya P, Abhinaya K, Anitha B, Asim Yasar S, Dhiviya Bharathi P, Jeethu Johnson, Lavanya S, Mohamed Anas AM, Niranjana M, Sangeetha C. A study to assess the effectiveness of nurse led intervention on knowledge and practice regarding iron supplement among multigravida mothers in selected primary health centre at Chennai. International Journal of Advance Research in Nursing. 2025;8(2):54-58