Impact Of Iron Supplementation On Sexual Dysfunction Among Reproductive Age Women With Iron Deficiency Anaemia

Running Title: -Impact Of Iron Supplementation

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Abstract
A Quasi- experimental study where before-and- after with control group design was conducted to evaluate the Impact of iron supplementation on anxiety among reproductive age women with iron deficiency anaemia, Tamil Nadu, using Quantitative Evaluative approach. The setting of the study was selected by adopting four stage random sampling technique with lottery method. Two rural panchayat, Sengamviduthy panchayat and Kulathur Panchayat, from Gandharvakottai taluk,Pudhukottai districts was selected as control and experiment group. Non probability purposive sampling technique was used to select the samples in both the groups. Hundred women aged 18- 49 years, with iron deficiency anemia were selected for each group. Reliability was established and Pilot study was conducted to find the feasibility in urban areas, other than the main study areas.

In pre-test both groups baseline data was collected by Structured Interview Schedule followed by Assessment of haemoglobin by using true hub haemoglobin meter, anxiety by self-rating anxiety scale(modified). Post-test was done for both the groups with same tool and the collected data was analyzed with descriptive and inferential statistics.

The study findings revealed that the highest percentages of women with iron deficiency anemia in control and experiment group were in the age group of 18-25 years, educated from higher secondary school and daily wagers. Most of them were Hindus, belonged to nuclear family with a monthly income of Rs.5001 -10000. Also, most of them not had any bad habits, and not at all taken deworming drugs.

Percentage wise distribution of haemoglobin level among reproductive age women with iron deficiency anaemia shows that highest 76% of them had moderate anaemia in control group whereas it was 72% in experimental and more or less similar percentage (11% and 12%) of them had mild and severe anaemia in control group whereas it was (15% and 15%) in experimental group in pre-test. In post-test highest 76% of them had moderate anaemia in control group whereas it was 14 % in experimental and more or less similar percentage (11% and 12%) of them had mild and severe anaemia in control group whereas it was (32% and 14%) in experimental group.

Paired 't' test was calculated to analyse the haemoglobin level among reproductive age women with iron deficiency anaemia before and after administration iron supplementation between control group was 8.95 ± 1.12 and 8.96 ± 1.11 with mean difference 0.01, whereas the calculated t value was found to be 1.084 at $p>0.05$ level and experimental group was 8.91 ± 1.08 and 11.86 ± 1.023 with mean difference 2.95, whereas the calculated t value was found to be 111.442 at $p<0.05$ level.The sexual dysfunction among reproductive age women with iron deficiency anaemia before and after administration iron supplementation between the experimental groups was 27.474 ± 0.71 and 27.95 ± 0.729 with mean difference 0.476, whereas the calculated 't' value was found to be 10.485 at $p<0.05$ level.

Correlation between Haemoglobin level and sexual dysfunction shows that post-test mean hemoglobin score in experimental group was 11.86 ± 1.02 and mean sexual dysfunction score was 27.95 ± 0.729. The 'r' value was 0.024. Hence the investigator concludes that the implementation of Interventions to increase haemoglobin, sexual function was found to be effective among reproductive age women with iron deficiency anaemia

INTRODUCTION

Anaemia in reproductive age girls is a chief public fitness hassle for low and middle-profits international locations with a long-time period poor effect on monetary increase of society, girl's fitness and their children. The World

Health Organization cantered to govern anaemia amongst reproductive girls age 50% globally via way of means of 2025. With the modern-day way of life and fashion of people, it's far not going to do that goal.

Iron is an essential integrant withinside the metabolic strategies worried in tissue oxygenation. A common man or woman has 35 grams of iron and 15 mg of iron may be furnished via way of means of a popular weight loss program in line with day. The acidic surroundings allow with the iron absorption, which takes area withinside the first and 2d components of the small intestine. Iron absorption improved via way of means of the co-management of acidic compounds, consisting of ascorbic acid. After absorption, protein-certain iron transported into the bone marrow for manufacturing of purple blood cells.

Iron is a crucial mineral that performs an essential position in each molecular of the human frame. Iron is an essential detail of the haemoglobin protein in purple blood cells, which includes oxygen all around the frame. When there's a loss of iron withinside the frame, purple blood cells come to be small, and oxygen move might be decreased to frame tissues, this situation is referred to as iron deficiency anaemia. The not unusual place signs and symptoms of iron-deficiency anaemia had been loss of strength, dizziness or mild headache and pores and skin paleness

Female sexual disorder may also have an effect on the General Health and pleasant of existence. Several elements have an effect on girl sexual feature together with social reasons, mental elements (pressure anxiety) continual illnesses and dietary elements.[10] Sexual disorder described as an ailment withinside the sexual reaction cycle or ache for the duration of sexual intercourse. The incidence charge of sexual disorder pronounced withinside the United States is 43% girls and 31 % men.

Need for the Study
Anaemia is the most common public health issue affecting 2 billion people in world-wide and 90% of the people suffered with anaemia (41% pregnant women and 30% non-pregnant women age between 15-49 years) in developing countries. Iron deficiency anaemia (IDA) resulted in 2, 73,000 deaths, with 97% occurring in countries of low and middle-income.

In India poor education, poor socioeconomic status, faulty dietary practices as major bio-social factors and lack of practical skills for providing nutritional health education on prevention of anaemia among health workers is the main reason for increasing the prevalence of anaemia among women. The necessity of uninterrupted supply of IFA tablets, inter-sectorial coordination, and media accountability to combat the anaemia problem, especially in low-resource setting such as urban slum.

Cross-sectional study conducted to assess the prevalence of iron deficiency and anaemia among healthy women of reproductive age in Bhaktapur, Nepal. The study stated that the prevalence of anaemia (Hb concentration <12 g/dl) was 12% (n=58). Depletion of iron stores (plasma ferritin <15 μg/l) was 20% (n=98) and 7%(n=35) of women were having iron-deficient erythropoiesis. Out of the 58 anaemic women, 71% and 53% were also having elevated plasma transferrin receptor and depleted iron stores, respectively.

Cross-sectional study conducted to assess female sexual dysfunction (FSD) and its related factors in women with anxiety disorder in Warangal, Andrapradesh. It reveals that the mean age of the participated women was 33.3±7.2 years old. In these, 46.5% had mild anxiety, 30.1% moderate anxiety, and 22.4% severe anxiety, and 68.1% of them had Female Sexual Dysfunction. Dysfunctions in lubrication (73%), arousal (68.2%) and experience of pain (64.2%) were the most commonly reported problems respectively. The Hamilton anxiety inventory score was negatively correlated with the scores of the various female sexual function index domains ($p < 0.05$).

Research Approach and Research Design
The true experimental design where before- and- after with control group was adopted for this study. Quantitative evaluative approach was used for the present study

Setting of the study
The study was conducted at Gandarvakottaitaluk in Pudhukottai district, Tamilnadu **Population**
The study Population was all the married reproductive age women (18-49 years) with iron deficiency anemia residing in rural areas of Pudhukottai district, Tamil Nadu.

Sampling Technique
Multi stage random sampling technique was used in selecting the study area.

Sample size
The sample size included in this study was 100 reproductive age women with iron deficiency anemia for control group and 100 for experimental group.

Criteria for selection of sample
Inclusion criteria for sampling:
Women who are

- ➢ Married women with reproductive age between 18-49 years
- ➢ willing to participate within the study.
- ➢ having iron deficiency anaemia. (mild , moderate,severe)
- ➢ throughout the amount of information assortment

Exclusion criteria for sampling:
Women who are
- ➢ attained Post-menopausal
- ➢ already on treatment with iron deficiency
- ➢ life threatening anemia
- ➢ affected with alternative infections like communicable diseases, cancer, Enteric disturbances and hematological issues

Developmental Tool
The steps for preparing the tool was
- review of related literature
- preparation of blue print
- description of the tool
- validity of the tool
- modification of the tool
- translation of the tool
- reliability of the tool
- preparation of the final draft

Table No. 3.1: Categories of anemia for women (WHO, 2018)

Observation	Hemoglobin Level
No anemia	12-16.0 gm/dl
Mild	11-11.9 gm/dl
Moderate	8-10.9 gm/dl
Severe	6.5- 7.9 gm/dl
Life threatening	Below 6.5 gm/dl

Table No. 3.2: Domains of Female Sexual Function Index

Domain	Questions	Score Range	Factor	Minimum Score	Maximum Score	Score
Desire	1, 2	1 – 5	0.6	1.2	6.0	
Arousal	3, 4, 5, 6	0 – 5	0.3	0	6.0	
Lubrication	7, 8, 9, 10	0 – 5	0.3	0	6.0	
Orgasm	11, 12, 13	0 – 5	0.4	0	6.0	
Satisfaction	14, 15, 16	0 (or 1) – 5	0.4	0.8	6.0	
Pain	17, 18, 19	0 – 5	0.4	0	6.0	
Full Scale Score Range				2.0	36.0	

Developed by (Rosen et.al,2000)

Method of Data Collection
Ethical Consideration
Prior to the data collection ethical approval was obtained from ethical committee (IRB) at Vinayaka Mission's Kirupananda Variyar Medical College Hospital Salem..Written permission was obtained from the village president / village administrative office from the selected villages for control and experimental group. The written and oral consent was obtained from the subjects before conducting the study.

Data Collection Procedure
- Participants were made to feel comfortable and relaxed.
- Introductions was given related to the topic.
- Goods reports were maintained.

- Purpose of the study was explained to participants.
- Items regarding the demographic data was asked as per the interview.

RESULT & CONCLUSION

Tab.4.2.7: Comparison of level of female sexual dysfunction level among reproductive age women with iron deficiency anaemia after administration of iron supplementation between experimental and control group. **(n = 100)**

| Parameters | Post-test Values | | | | Difference |
| | Control Group | | Experimental Group | | |
	Mean	SD	Mean	SD	
Female sexual function	28.09	0.82	27.47	0.71	2.15

Comparison of Mean, SD and mean difference of female sexual dysfunction level among reproductive age women with iron deficiency anaemia after administration of iron supplementation between experimental and control group reveals that during post-test in experimental group the mean score of female sexual dysfunction level was 27.47±0.71 whereas in control group it was 28.09±0.82 with mean difference of 2.15. It shows that the effectiveness of iron supplementation which is increasing the female sexual function in experimental group(Tab. No 4.2.7).

Tab.4.3.6: Paired t test value of post-test Female sexual function among reproductive age women with iron deficiency anaemia between experimental and control group. **(n = 100)**

| Parameters | Post-test Values | | | | Difference | t-value |
| | Control Group | | Experimental Group | | | |
	Mean	SD	Mean	SD		
Female sexual function	28.09	0.82	27.47	0.71	2.15	18.2

Paired 't' test was calculated to analyse the significant difference between experimental and control group post-test sexual dysfunction among reproductive age women with iron deficiency anaemia after administration iron supplementation in experimental groups was 27.474±0.whereas in control group it was 28.09±0.82 with mean difference 2.15. The calculated 't' value 18.2 was found to be greater than table value 1.96 at $p<0.05$ level. It interprets that the female sexual function was found to have significant difference in experimental group.

Hence, the difference between pre and post-test occurred was true not by chance.which reveals that iron supplementation used to increase the female sexual function and were effective among reproductive age women with iron deficiency anaemia. So, the stated research was hypothesis (H_3) was accepted (Tab. No 4.3.6).

Table 4.3.9: Association between post-test value of female sexual function with their selected demographic variables among reproductive age women with iron deficiency anaemia in experimental group.
(n = 100)

S. No.	Demographic Variables	Sexual Dysfunction			
		Df	Table value	Chi square	p-value
Biographic variables					
1	Age in years	15	24.996	186.104	0.000*** S
2	Educational Status	15	24.996	181.607	0.000*** S
3	Monthly income of the family	10	18.307	155.714	0.000*** S
4	Types of family	5	11.070	56.6	0.000*** S
5	Religion	*	*	*	*
6	Occupation	15	24.996	177.998	0.000*** S
Clinical variables					
7	Personal Habit	*	*	*	*
8	Dietary pattern	*	*	*	*
9	Duration of deworming drug taken	5	11.070	4.859	0.433NS

NS - Not Significant   S- Significant   *<0.01 highly significant   *<0.05 Significant**

Chi square test was used to find out the association in post-test female sexual function among reproductive age women with iron deficiency anaemia with their demographic variables and clinical variables shows that, in experimental group, that there was highly significant association between post-test haemoglobin level and their demographic and clinical variablesexceptduration of deworming drug taken. Hence the stated research hypothesis (H_4) was accepted for all demographic clinical variables except duration of deworming drug takenwhich was true not by chance(Tab. No 4.3.9).

Table 4.3.11: Correlation between post test score with haemoglobin level and sexual function among reproductive agewomen with iron deficiency anaemiain experimental
(n = 100)

Parameter	Experimental group (Post-test)				'r' value
	N	Mean	SD	SE	
Haemogloben	100	8.96	1.11	.111	0.801 (p<0.001)
Sexual function	100	27.95	.73	.073	

Karl Pearson Correlation co-efficient test was used to find out Corelation between post test score of haemoglobin level and sexual function among reproductive age women with iron deficiency anaemia in experimental. It reveals that the post test score on haemoglobin and sexual function (r = 0.801 p < 0.001) among reproductive age women with iron deficiency anaemia in experimental have significant positive correlation.

Hence, the correlation between haemoglobin level and anxiety was true not by chance. which reveals that iron supplementation was effective to increase haemoglobin level and decrease the anxiety level among reproductive age women with iron deficiency anaemia. So, the stated research was hypothesis (H_5) was accepted (Table. No 4.3.11).

CONCLUSION
The present study assessed the impact of iron supplementation on anxiety and sexual dysfunction among reproductive age women with iron deficiency anaemia. The findings of the study revealed that the mean post-test values of haemoglobin level was significantly increased and anxiety level was decreased in experimental group.
Overall, the study findings reveal that the interventions to increase haemoglobin and decrease anxiety level promoted comfort and satisfaction for the women who felt happiness with their increase haemoglobin and sexual function.

REFERENCES
1. Salehzadeh M, Kajbaf MB, Molavi H, Zolfaghari M. "Effectiveness of cognitive–behavior therapy on sexualdysfunction in women". Journal of Psychological Studies ,V-7, Pp.11–13,2011.
2. Lewis RW, Fugl-Meyer KS, Corona G, Hayes RD, Laumann EO, Moreira ED Jr, et al.
3. "Definitions/epidemiology/risk factors for sexual dysfunction", Journal of Sexual Medicine,V-7, Pp.1598–607,2012.

4. AnjanaAgarwal, "Text book of human nutrition", 1st edition, Jaypee publication, Pp.116-119, 2019.
5. Swaminathan.S, "Advanced book of food and nutrition", 1st edition, Bappco publication, Volume-1, Pp.231-235, 2015.
World Bank "Open population data documentary", 2018.
6. Ministry of Health and Family Welfare, Government of India. "India national family Health survey (NFHS-4) 2015–16". Mumbai: International institute for population sciences, 2017.
7. Ratre BK, "Epidemiological profile of Anemia in central" Journal of Community Medicine,36(1): 8–16, 201
Lakshmikanthan.P, "Population based survey on reproductive age women in Pudhukottai
8. district", Indian Journal of Public Health, V-46-No3, Pp-1235-1237,20139.
9. Srilakshmi.B, "Nutrition science",1st edition , New Age International Publishers, Pp.127-129,2017,
10. Robin Berzin, 2020" "Iron is an essential part of the systems and circuits in the brain"
American Journal of Medicine, V- 121(11)943–948, 2020.