

## A Study on Weekly Iron and Folic Acid Supplementation (WIFS) Programme in a School at Rural Area of West Bengal, India

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**Abstract:** The Govt. of India, launched weekly IFA tablet Supplementation (WIFS) Programme on 2013 under RMNCH+A approach to cope up with the problem of iron deficiency anaemia among adolescent boys and girls.

**Aims:** To assess the compliance to IFA tablets among the students, to find out the causes of non-compliance among them and to assess the involvement of teachers into the programme.

**Study Settings:** Nachinda J. K. High School, Purba Medinipur, West Bengal.

**Materials and Methods:** An observational-descriptive study was carried out among 285 sample students of class VI to XII from 20th September to 20th October, 2015. Selected students and all the teachers were interviewed using predesigned schedule. Statistical analysis is done by Epi Info™ 7.

**Results and Discussions:** Out of 285 students 67.7% were "Compliant" to IFA tablet. Two most important causes of noncompliance were "Fear of Harm/Unpleasant side effects" and "Past experience of side effects". There is statistically significant association between the Noncompliance with "Fear of Harm/Unpleasant side effects" ( $P < 0.05$ ). Only 80 % of the teachers had taken IFA tablet before distribution and 83% ensure not to be consumed the tablet before meal.

**Conclusions:** Fears of Harm/Unpleasant side effects have significant association with non-compliance. Proper IEC and BCC may help to increase the compliance.

**Keywords:** Adolescents, Anaemia, IFA Tablet, WIFS

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### I. Introduction

Adolescents according to World Health Organization (WHO) are of age between 10-19 years.<sup>1</sup> Data show that the number of adolescents are 1.2 billion worldwide<sup>2</sup> and in India 243 million.<sup>3</sup> During adolescence, both in boys and girls, second growth spurt of life<sup>4</sup> is seen, which significantly increases nutritional requirements, especially for iron. Anaemia, due to nutritional deficiency disorder, is an important public health problem among adolescent in our country, primarily occurs due to iron deficiency.<sup>5,6</sup> According to National Family Health Survey (NFHS)-3, more than 55 percent of both adolescent boys and girls are anaemic.<sup>7</sup> Adolescent girls in particular are more vulnerable to anaemia due to dual effect of rapid growth of the body and loss of blood during menstruation. In India, the highest prevalence of anaemia is reported between the ages 12-13 years,<sup>8</sup> which also coincides with the average age of menarche. During adolescence, iron deficiency anaemia can result in impaired physical, mental, cognitive development, reduced work performance and lower concentration on daily tasks.<sup>9</sup> Regular consumption of iron-folic acid (IFA) supplements along with a diet rich in micronutrients is essential for the prevention of the disease. The Ministry of Health and Family Welfare (MOHFW), Govt. of India, has launched the Weekly Iron and Folic Acid Supplementation (WIFS) programme<sup>10</sup> on 2013 popularly known as "Solid Bano India-With just one Blue pill a week"<sup>11</sup> under RMNCH+A (Reproductive, Maternal, Newborn, Child and Adolescent Health) approach in National Health Mission (NHM) to cope up with the problems of high incidence and prevalence of iron deficiency anaemia amongst adolescent. WIFS provides 'continuum of care'<sup>12</sup> to ensure equal importance on various life stages. WIFS is evidence based programmatic response to the existing problem through supervised weekly ingestion of IFA tablet supplementation and helminthic control by biannual Albendazole tablet.<sup>13</sup> In India it was found that 33% of adolescents had a history of worm infestation. Worm infestation interfere with food intake, absorption, and storage, which contribute to anaemia.<sup>14</sup> The long term goal of this programme is to break the intergenerational cycle of anaemia. The programme implemented across the country both in rural and urban areas. The objective of this WIFS programme is to reduce the prevalence and severity of iron deficiency anaemia in adolescent population in the country.<sup>10</sup> The target groups are government or government aided school going adolescent girls and boys in 6th to 12th class and out of school adolescent girls. Out of school adolescent girls will be provided IFA tablets through AWW (Angan Wari Worker) / Auxiliary Nurse Midwives (ANM) under Rajiv Gandhi Scheme For Empowerment of Adolescent Girls (RGSEAG) popularly known as "SABALA".<sup>15</sup> The strategies for intervention are administration of supervised weekly IFA tablet containing 100mg of elemental iron and 500mcg of Folic acid using a fixed day approach i.e. on Monday, screening of target groups for moderate / severe anaemia and referring them to an appropriate health facility, biannual de-worming with albendazole (400mg) tablet, and health education for improving dietary intake and prevention of intestinal worm

infestation.<sup>10,16</sup> Convergence of MOHFW, with other key stakeholder ministries like the Ministry of Women and Child Development and Ministry of Human Resource Development is an integral part of implantation plan of the WIFS programme. Currently the programme has been implemented in all States / UTs and covers 11.2 crore beneficiaries including 8.4 crore in-school and 2.8 crore out of school adolescents.<sup>10</sup> Keeping all these words in mind an attempt has been made by this study to know the current status of WIFS programme in a school at rural area of West Bengal with following objectives-to assess the compliance of WIFS programme among the students, to find out the causes of non-compliance to WIFS programme among them and to assess the involvement of teachers into the programme.

## II. Materials And Methods

- 1. Study Setting:** Nachinda J. K. High School (H.S), Nachinda, Marisda, Purba Medinipur, PIN-721444 is a higher secondary school at Purba Medinipur District of West Bengal in India.
- 2. Study Population:** The study population composed of students from class VI to XII of academic year 2015-16 and all the teachers of that school.
- 3. Study Period:** From 20<sup>th</sup> September 2015 to 20<sup>th</sup> October 2015.
- 4. Study Design:** Observational Descriptive study with Cross Sectional Design.
- 5. Sample Size and Sampling:** There was total 1005 number of student within class VI to XII in the academic year 2015-16 at that school. Considering the compliance of adolescents to IFA tablets as 65% in west Bengal<sup>17</sup>, alpha ( $\alpha$ ) 0.05, and margin of error of 5%, the sample size was 259, calculated by using the Epi InfoTM7 software. Considering 10% non-response rate, the final sample size was 285. Number of students from each class was determined by Probability Proportional to Size (PPS) and students from each class were selected randomly using Random Number table.
- 6. Data Collection:** Students were interviewed, using predesigned and pretested schedule, after taking proper consent from their guardians. Along with this, all the teachers were also interviewed, using another predesigned and pretested schedule, after taking proper consent.
- 7. Data Analysis:** Analysis was done using EpiInfoTM 7 software (version7.1.5). Appropriate statistical test like Chi square test was done whenever necessary.

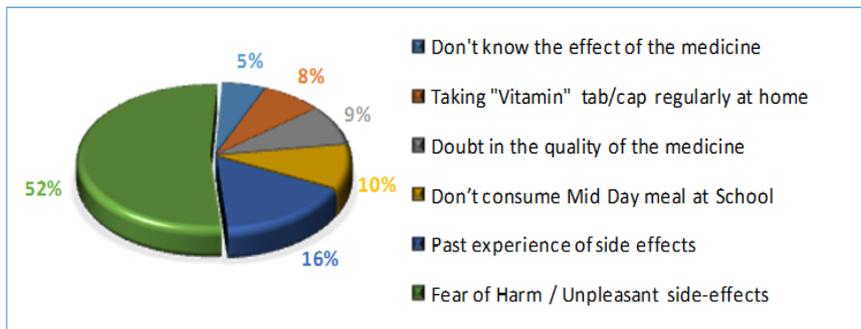
## III. Result And Discussion

After statistical analysis, the results can be summarized and discussed as follows. There were 167 (59%) boys and 118 (41%) girls among the sample population of 285 students. Among them, 39.3% boys and 28.4% girls i.e. total 67.7% students are "Compliant" to IFA tablet consumption. According to the WIFS programme, those who take less than 4 tablets in a month are considered to be "Non-Compliant".<sup>11</sup> Among the students, 19.7% boys and 12.6% girls i.e. total 32.3% students are "Non-Compliant" to IFA tablet consumption. There is no statistically significant difference in Compliance between boys and girls ( $P > 0.05$ ,  $\alpha = 5\%$ ,  $Df = 1$ ) (Table-1). Causes of Non-Compliance (Fig-1) were - Didn't know the effect of the medicine (5%), Taking "Vitamin" tablet/capsule regularly at home (8%), Doubt in the quality of the medicine (9%), Didn't consume Mid-Day Meal<sup>18</sup> at school (10%), Past experience of side effects (16%) and Fear of Harm / Unpleasant side effects (52%). There was no statistically significant difference in the causes of Non Compliance between boys and girls ( $P > 0.05$ ,  $\alpha = 5\%$ ,  $Df = 1$ ) (Table-2). Chi-Square test shows that there was statistically significant association between Non-Compliance to IFA tablet only with "Fear of Harm/Unpleasant side effects". ( $P < 0.05$ ,  $\alpha = 5\%$ ,  $Df = 1$ ) (Table-3). "Fear of Harm/Unpleasant side effects" perceived by the students were (Fig-2) -Liver Damage (6%), Hair Fall (17%), Vertigo (19%), Obesity (21%), Vomiting (28%), and non-Specific (9%). 96% Students had consumed Albendazole (400mg) tablet within last 6 months. Though all the teachers were aware about the ongoing WIFS programme, only 80% and 40% of them correctly knew the composition of the IFA tablet and named of the tablet for deworming respectively. 80% of the teachers used to take one IFA tablet before giving the tablet to the students and 83% of them ensured not to be consumed the IFA tablet before meal. Only 28% of the teachers encourage the students to take food rich in vitamin-c like lemon, amla, orange etc and only 18% of them discourage the students to drink tea or coffee within an hour of consuming main meals and IFA tablet.

#### IV. Figures And Tables

**Table-1:** 2x2 contingency table for significance testing between Sex and Compliance among students (n= 285).

Compliance to IFA Tablet	Compliant	Non-Compliant	Total	P Value
Boys	112	55	167	0.88
Girls	81	37	118	
Total	193	92	285	



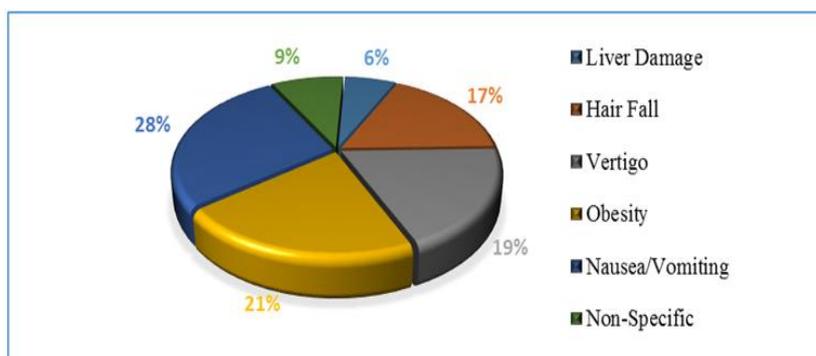
**Fig-1:** Pie diagram showing different causes of Non Compliance among the students (n=285).

**Table-2:** Distribution of Causes of Non Compliance according to Sex (n =92)

Causes of Non-Compliance	Boys	Girls	P Value
Don't know the effect of the medicine	3	2	>0.05
Taking "Vitamin" tab/cap regularly at home	5	4	
Doubt in the quality of the medicine	6	2	
Don't consume Mid-Day meal at School	4	3	
Past experience of side effects	7	8	
Fear of Harm / Unpleasant side effects	30	18	
Total	55	37	

**Table-3:** Association of Non - Compliance to IFA tablet and Fear of Harm / Unpleasant side effects (n=285).

Compliance to IFA Tablet		Compliant		Total	P value
		No	Yes		
Fear of Harm / Unpleasant side effect.	Yes	48	32	80	0.000
	No	44	161	205	
Total		92	193	285	



**Fig-2:** Distribution of different of Fear of Harm/Unpleasant side effects among the students (n=80)

#### V. Conclusion

Certain level has been achieved in WIFS programme in terms of compliance to IFA and Albendazole tablet consumption but there is a huge scope of improvement. Fears of Harm/Unpleasant side effects have significant association with non-compliance to IFA tablet. Proper IEC (Information Education and Communication) and Behavioral Change Communication (BCC) to eliminate the fear of harm/unpleasant side effects will help to increase the compliance. Teachers may play an important role in this matter.

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