

# Impact assessment- Knowledge Attitude Practice Behavior study in Uttar Pradesh



## WIFS- FACILITATION PROGRAM IN 8 DISTT. OF UP (Jan'18 to June'20)

Supported By



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## Addressing anaemia among adolescents through WIFS:

### Impact assessment- Knowledge Attitude Practice Behaviour study in Uttar Pradesh 2018-2020

#### 1. Background:

As per census 2011, India has approximately, 253 million adolescents (10-19 Years) which is 19 percent of the total population of the country. Uttar Pradesh, the largest state of the country, ranks first in terms of adolescent population in the country, accounting for 19.3% of total adolescent of the country which is 48 million. Gender wise distribution shows that adolescent girls are 47% of total adolescent population and most of them reside (79%) in the rural areas.

Adolescent development is as intricate as children as there is a complex interaction between puberty, neuro- cognitive maturity and social role transaction. The Ministry of Health and Family Welfare has launched the weekly Iron and Folic Acid supplementation (WIFS) Programme to meet the challenge of high prevalence and incidence of anaemia amongst adolescent girls and boys. WIFS is evidence based programmatic response to the prevailing anaemia situation amongst adolescent girls and boys through supervised weekly ingestion of IFA supplementation and biannual helminthic control. The long-term goal is to break the intergenerational cycle of anaemia, the short-term benefits is of a nutritionally improved human capital. The program, implemented across the country both in rural and urban areas.

Adolescent (age 10-19 Years) are at high risk of iron deficiency and anaemia due to accelerated increase in iron requirements for iron, poor dietary intake iron, high rate of infection and worm infestation as well as social norms of early marriage and adolescent pregnancy. The requirement of iron in fact doubles during adolescence as compared to younger age group. The overall iron requirements increase two to three folds from a preadolescent level of approximant 0.7 - 0.9 mg per day to as much as 1.37 – 1.88 mg per day in adolescent boys and 1.40 – 3.27 mg in adolescent girls. Therefore, in most populations anaemia is primarily due to iron deficiency and is fact the late stage of a relatively long process of deterioration in iron stores.

Adolescence is also an opportunities time for interventions to address Iron deficiency and anaemia. Large numbers of both boys and girls can be address easily if school attendance or participation in other group activities is high. Also, adolescents are open to new information and new practices since they are often striving for physical or academic excellence. Apart from this, adolescent centric interventions also have a very high benefit cost ratio, especially for a condition like anaemia where interventions also have a very high benefit to cost ratio, especially for a condition like anaemia where interventions may lead to improved physical capacity, cognitive ability, better pregnancy outcome and other intergeneration benefits.

Adolescent pregnancy and anaemia contribute to high prevalence of low birth weight babies and subsequent under nutrition among children. Addressing adolescent anaemia can contribute to breaking the inter-generational propagation of anaemia and reduce the effects of anaemia on young mother.

#### 2. Situation in UP-

The situation of anaemia is grim and has future deteriorated in a decade in the state with 52.4 percent females of the reproductive age group (15-49 Years) being identified as anaemic in the NFHS-4, 2015-2016 as compared to 49.9 percent females in the NFHS-

3, 2005-06. Thus, Every Second female and every fourth male in the 15-49 years age group is anaemic in Uttar Pradesh as per the NFHS-4, 2015-16. Coverage area.

Promoting Strengthening and implementation of WIFS program by Vatsalya supported by World Vision India in collaboration with National Health Mission, Uttar Pradesh. The implementation districts are (Sitapur-Mcchreta, Hardoi- Kothawa, Unnao-Sikandarpur, Barabanki-Nindura, Raibareli-Chhatoh, Bareilly-Bhoota,allia-Beruwabari, Lucknow-Urban Slum) for one block in each districts support to WIFS Program, Uttar Pradesh.

Program started in January-2018 implemented in 8 blocks of all 375 schools (6<sup>th</sup> to 12<sup>th</sup> class) and 1324 Anganwadi worker's in WIFS Program.

**Below is the table showing relevant details of the intervention area-**

S.No	District's	Block's	Total Population	Total no. of Schools	Total no. of Teachers	AWC's	AWW's
1	Sitapur	Maccheta	189364	57	57	188	173
2	Hardoi	Kothawa	188457	53	53	218	218
3	Barabanki	Nindoora	223732	70	69	205	205
4	Unnao	Sikandarpur	189394	75	75	221	221
5	Bareilly	Bhoota	233236	65	38	212	212
6	Raibareli	Chhatoh	116177	27	27	111	111
7	Ballia	Beruvabari	1258807	28	28	144	136
8	Lucknow	Urban Slum	65467	5	5	48	48
9	Total		2464634	380	352	1347	1324

### **Objectives:**

#### **The study aimed to understand:**

- 1) Access to and consumption of IFA among school going adolescent girls and boys and out-of- school adolescent girls
- 2) Availability of stock at district and frontline delivery points – school, sub-centers, Anganwadi centres (AWCs)
- 3) Knowledge, attitude, practice and behavior of adolescent girls and boys on benefits of IFA
- 4) Knowledge, attitude, practice and behavior of parents and community on benefits of IFA
- 5) Knowledge of service providers such as Nodal Teachers, ASHA ANMs and Anganwadi workers on benefits of IFA supplementation
- 6) Improvement in the supply chain management of Iron and monitoring and review of WIFS program.

### **Methodology**

The sampling design was multi-stage stratified random sampling. Adequate care was taken to ensure representation of diverse socio-cultural groups and geographic areas and regions. Stratification variables which contribute to variability in the population were used. Quantitative data collection was done. Interviews of adolescent girls, boys, parents, nodal teachers and service providers were done.

## Respondents

The target respondents are as follows:

- Adolescent girls and boys (10-19 years old) attending government and government aided schools (private schools are not included)
- Adolescent girls (10-19 years old) who are not attending any school
- Nodal teachers in schools
- Service providers (ANMs and Anganwadi workers) responsible for WIFS/IFA for pregnant and lactating women

## Selection:

For the baseline done in 2018, intervention districts of World Vision were selected. One intervention block per district was selected. From each of the 4 blocks, 15 villages were selected according to probability proportional to size (PPS) method. Thus, a total 60 villages were covered. Out-of school girls were selected from the anganwadi centres of the 15 selected villages. 15 upper-primary to intermediate schools per block were selected according to probability proportional to size (PPS) method. Thus, total 60 schools were selected. From each school, 15-20 girls present on the day of survey in 6-12 class were selected randomly. From each school, 15-20 boys present on the day of survey in Class 6-12 were selected randomly.

**The endline was started in march 2020 but because of the pandemic school and anganwadi was closed hence only a small portion of endline survey could be done in march. Even after opening of lockdown school and anganwadi remain closed but lot of efforts were made to meet teachers, Anganwadi workers, ANMS and school and non-school going children who were in the community, taking all precautions for covid-19.**

Due to corona pandemic it was not possible to cover the sample size taken in the baseline survey. However, sample size for the end line data collection was decided on the basic of 55 Percent Prevalence rate of adolescent anaemia in the study area. The reported sample size is considered to be optimum for the study.

## Sample size:

It was envisaged to scale the IFA consumption to 50% from the current 35% (assuming the consumption equivalent to the supply i.e. 35%). Therefore, the sample size was calculated using the formula

$$n = \{(Z_{\alpha} + Z_{\beta})^2\} \{p_1 (1 - p_1) + p_2 (1 - p_2)\} / d^2$$

Where  $d = (p_1 - p_2)$  is the difference to be tested,  $Z_{\alpha}$  is the standard normal deviate corresponding to selected significance level and confidence interval and  $Z_{\beta}$  is the desired statistical power. The level of significance is taken as 0.05, confidence interval as 95 percent,  $Z_{\alpha} = 1.96$  and  $Z_{\beta} = 0.842$ . On taking  $p_1=0.35$ ,  $p_2=0.50$ ,  $Z_{\alpha} = 1.96 = 2$  approx and  $Z_{\beta} = 0.842$ ,  $p_1-p_2=0.15$  and design effect as 1.5 for the current study, the final sample size came out to be 256.

## Sample and coverage

Respondent	Total sample size	Baseline Coverage	Endline Coverage
No. of District	8	8	8
In school adolescent girls	1024	1096	444
Out school adolescent girls	1024	1006	344
In school adolescent boys	1024	838	375
Parents of adolescent girls and boys	512	533	590
School	120	0	235
Anganwadi Centre	120	0	319
Nodal Teachers	32	43	257
Service Providers			
AWW	16	51	320
ANM	16	27	79

## 2: Findings from Adolescent Girls

- There was a marked increase in knowledge of anaemia: For schoolgoing girls, this rose from 29% to 97%; for non-school going girls this rose from 19% to 87%.
- At the endline, 97% school going girls and 87% non-school going girls were aware of anaemia.
- Among those who had knowledge of anaemia, respondents were better able to tell symptoms. ‘Don’t know’ response reduced from 32% to 7% for school going girls and 27% to 6% for non-school going girls.
- For non-school going girls, main source of information on prevention of anaemia was frontline workers ASHA/AWW/ANM: 80%. Up from baseline of 48%
- Among school going girls, teachers were the main source of information: 57%
- Only 7% non-school going girls said teacher was a source of information. But 30% school going girls said FLWs were a source of information, clearly establishing their crucial role in this programme.
- Friends, neighbours, parents, mass media, mid media do not seem to play an important role as source of information.
- In terms of prevalence of anaemia, 27% school going girls and 22% non-school going girls gave the correct answer of 5 per 10 girls, up from 15% and 10% respectively. 41% school going and 59% non-school going said ‘don’t know’ in the endline. This shows awareness has increased both among school going and non-school going girls, and school going fare better in terms of awareness.

<b>Table 2.1 Knowledge of respondents on anaemia</b>				
	<b>END LINE</b>		<b>BASE LINE</b>	
	<b>School going</b>	<b>Non-school going</b>	<b>School going</b>	<b>Non-school going</b>
	<b>Percent</b>		<b>Percent</b>	
<b>N</b>	444	343	<b>1096</b>	<b>1006</b>
<b>Ever heard/know about anaemia</b>	96.8	87.5	29.4	19.3
<b>Symptoms of anaemia known (multiple responses of those who heard about anaemia) (n= 430 and 300 respectively)</b>				
Yellowness in eyes, nails and palms	75.6	74.0	44.8	27.3
Weakness/ fatigue	28.1	31.0	48.7	35.6
Dizziness	41.6	38.7	39.2	19.1
Nausea/ vomiting	20.5	18.0	5.2	4.1
Don't know	7.0	6.3	32.3	26.8
<b>Respondents knowing measures to prevent anaemia (responses of those knowing about anaemia)</b>	98.2	97.1	69.3	52.5
<b>Measures known to prevent anaemia (multiple responses of those knowing the measures)</b>				
Iron tablets	43.3	32.1	51.1	26.8
Consumption of iron rich foods	4.1	4.2	27.8	14.6
Consumption of green leafy vegetables	11.0	20.1	63.9	35.0
All of the above	39.0	40.5	45.9	33.3
Don't know	3.9	11.7		
<b>Source of information on prevention from anaemia (multiple responses of those knowing the measures)</b>				
ASHA/ AWW/ ANM	29.7	79.9	39.0	47.9
School teacher	57.2	6.9	62.4	36.8
Friend/ neighbour/ parents	1.4	1.2	6.6	9.4
TV/ Radio	6.4	4.5	6.6	12.8
Other	11.9	0.0	3.8	7.7
<b>Number of anemic adolescent girls per ten girls according to respondents (responses of those knowing about anaemia) (n=436 and 343 respectively)</b>				
5 per ten girls	26.6	21.9	14.6	10.3

2 per ten girls	10.8	13.4	11.2	8.8
3 per ten girls	21.1	6.1	17.4	14.4
Don't know	41.5	58.6	56.8	66.5

### **IFA tablets and its consumption:**

- Respondents knowing about benefits of consuming IFA rose from 26% to 77% among school going and from 13% to 65% among non-school going girls.
- 92% school going girls and 84% non-school going girls said they had ever consumed iron tablet, up from 65% and 42% respectively. Over two years, more adolescent girls seem to have access to iron tablets.
- 40% school going girls and 30% non-school going girls had consumed iron tablets in the last week, up from 18% and 9% respectively.
- In the endline 63% school going and 60% non-school going said they had consumed IFA within the last month – not much difference between the two groups. This is up from 41% school going and 23% non-school going in the baseline, a difference of nearly double. This implies that access has improved for non-school going considerably. It could also mean that since during endline schools were closed, school going girls did not have an advantage over non-school going girls.
- In the endline, respondents said schools and AWC were the most common place for consuming IFA. For schoolgirls this has remained unchanged from baseline; however, for non-school going girls home 26% and other 46% were more popular places for IFA consumption in the baseline. This could have happened because of the VHND which were not happening in lockdown.
- Between baseline and endline, both schoolgirls and non-school going girls reported sharp increase in getting a regular supply: from 6% to 63% for schoolgirls and 5% to 49% for non-school going girls.
- Consumption also improved: 93% school going girls and 81% non-school going girls said they consumed all tablets received, up from 38% and 52% respectively.
- 35% schoolgirls and 19% non-school going girls said reason for not consuming was not going to school/ AWC. This could have happened because of lockdown. 34% non-school going and 30% non-school going said they forgot.
- 25% non-school going girls said they did not like taste, but none of the school going said so. This implies as users get used to the taste, they don't dislike it as much, also once they understand its value, they consume it without complaint.
- Complaints after consuming tablet: of those who reported complaints, among schoolgirls metallic taste reduced from 29% to 9% and non-school going from 13% to 0.7%. Headache reduced from 18% to 7% among school going and 17% to 3% among non-school going girls.
- Respondents were asked if they were ever counselled by teacher/ ASHA/AWW/ ANM on iron tablet (n= 444 school going and 343 non-school going). 88% school going and 85% non-school going reported being counselled by teacher/ ASHA/ ANM/ AWW, up from 33% and 21% respectively. This shows that counselling by teachers and FLWs has played a crucial role in acceptance of iron.
- Endline 65% school going girls and 56% non-school going said they had heard seen any mass media mid or media message on IFA tablet or anaemia, up from 9% and 42% respectively.

- There was better awareness on dietary sources of iron: 95% school going and 88% non-school going, up from 53% and 45% respectively.
- For schoolgirls, Teacher 36% and AWW 30% were the go-to person in case of complaint. For non-school going AWW 41% was the most approached person in case of complaint. Baseline showed that family played most crucial role: 26% for schoolgirls and 35% for non-school going girls but this reduced to 4% and 18% respectively. This implies better access to teachers and health workers for complaints.
- Girls were better able to report measures for prevention of complications associated with iron consumption. For schoolgirls this was up from 20% to 45% while for non-school going girls this was up from 23% to 31%
- 54% schoolgirls and 42% non-school going girls correctly reported tablet should be consumed only 1 hour after meals, up from 26% and 14% respectively.
- Person who can be affected by iron deficiency (multiple responses, n= 444 and 343 respectively), 55% schoolgirls and 58% non-school girls were able to correctly tell that iron deficiency can occur in children, adolescent girls, pregnant women and men, up from 14% and 10% respectively.

**Table 2.2 Knowledge, practice and behaviour of respondents on IFA tablets and its consumption**

	School going	Non-school going	School Going	Non-School Going
	END LINE		BASE LINE	
	Percent		Percent	
<b>N</b>	444	343	<b>1096</b>	<b>1006</b>
<b>Respondents knowing about benefits of consuming IFA tablets</b>	76.8	65.3	25.8	13.2
<b>Benefits of IFA consumption known (multiple responses of those knowing the benefits)</b>				
Better concentration	16.2	5.9	13.1	7.5
Less fatigue	9.0	11.7	26.1	27.1
Increased appetite	9.0	7.9	23.3	35.3
Regular menstruation	6.3	4.7	27.2	21.8
All of the above	38.1	38.5	21.2	18.0
Don't know	23.2	34.7		
<b>Respondents who ever consumed iron tablet (n= 407 and 289 respectively)</b>	91.7	84.3	65.2	41.7
<b>Times when last consumed (multiple responses of those who ever consumed iron tablet) (n= 407 and 289 respectively)</b>				
One week before	40.3	29.8	17.9	9.3
15 days before	7.8	8.0	4.8	3.6



1 month before	15.1	22.8	18.3	10.3
More than 6 months before	13.1	24.6	14.0	14.1
Other	14.9	5.5	21.8	39.1
Don't remember	8.7	9.3	23.2	23.6
<b>Place of consuming iron tablet (responses of those who ever consumed iron tablet)</b>				
School/ AWW centre	84.0	65.0	57.7	16.5
Home	8.8	18.3	12.1	26.0
VHND session	3.2	4.6	1.3	4.2
At the home of ASHA	1.2	5.9	4.3	6.8
Other	2.8	6.2	24.4	46.5
<b>Respondents getting regular supply of iron tablets for consumption</b>	63.1	49.3	6.5	5.0
<b>Respondents who consumed all tablets (responses of those who got iron tablets regularly)</b>	92.9	81.1	37.7	51.7
<b>Reasons cited for not consuming iron tablets (responses of those who did not consume all the tablets)</b>				
Did not go to School/ AWW centre	35.0	18.8		
Did not like the taste	0.0	25.0		
Forgot to take	30.0	34.4		
Black stools/ myth	0.0	6.3		
Pain in abdomen/ vomiting/ nausea/ headache	0.0	3.1		
Other	35.0	12.5		
<b>Respondents reporting any complaint after consuming iron tablet</b>	23.1	5.8	12.3	23.6
<b>Type of problem faced (responses of those who faced any complication)</b>				
Constipation/ vomiting/ diarrhoea/ abdominal pain	5.0	1.5	7.8	11.1
Metallic taste	9.2	0.7	28.9	13.1
Headache	6.9	2.9	17.8	17.2
Dizziness	0.8	0.0	18.9	18.2
All of the above	1.2	0.7	26.7	40.4
Other reason	76.9	94.2		
<b>Person whom the respondent consulted at the time of problem (responses of those who faced any complication)</b>				
Teacher	36.5	6.5	13.3	7.1
AWW	30.0	41.1	16.7	14.1
ASHA	3.5	2.8	21.1	22.2
ANM	3.5	0.9	11.1	12.1
Family	4.0	17.8	25.6	35.4
Other	22.5	30.8	12.2	9.1
<b>Respondents reporting measures for prevention of complications associated with</b>	45.0	31.2	20.3	23.3

<b>iron consumption (n= 200 and 107 respectively)</b>				
<b>Measures reported by respondents (multiple responses of those who reported any measure)</b>				
Iron tablet should be consumed only after 1 hr of eating meals	54.5	42.1	26.5	13.7
Increased water intake	11.5	11.2	15.2	27.4
Iron tablet should not be consumed with tea, coffee or milk	2.0	7.5	22.4	6.0
Iron tablet should not be consumed empty stomach	1.5	1.9	20.2	32.9
All of above	17.0	13.1	17.0	20.5
Other	13.5	24.3		
<b>Respondents who were ever counselled by teacher/ ASHA/AWW/ ANM on iron tablet (n= 444 and 343 respectively)</b>	88.1	85.1	32.9	21.0
<b>Respondents who had heard/seen any message on IFA tablet/ anaemia</b>	65.3	55.7	8.9	41.7
<b>Respondents who ever seen any person falling ill after consuming iron tablet</b>	11.3	8.7	1.6	1.3
<b>Respondents knowing about the dietary sources of iron</b>	95.0	88.0	52.6	44.8
<b>Dietary sources of iron known to respondents (multiple responses of those who know about the sources) (n=422 and 302 respectively)</b>				
Dark green coloured vegetables	48.3	46.4	47.1	47.9
Milk, meat, fish, egg	3.1	6.3	9.7	13.5
Dal, rice, roti	4.3	4.6	13.2	15.1
All of the above	19.0	15.2	11.1	15.5
Both dark green coloured vegetables and milk, meat, fish, egg	26.5	31.1	20.3	9.3
Don't know	5.2	13.6		
<b>Person who is affected by iron deficiency (multiple responses) (n= 444 and 343 respectively)</b>				
Only pregnant women	12.6	10.2	18.3	22.5
Only adolescent girls	12.8	24.8	11.3	12.0
Only males	3.2	0.3	1.4	1.5
Only children	10.4	2.3	8.2	6.4
All of the above	55.4	57.4	13.9	9.7
Other	9.5	8.7	23.7	25.9
<b>Respondents who knew about WIFS (iron) program</b>	98.2	95.3	10.2	4.5
<b>Colour of iron tablet according to respondents (responses of those knowing about WIFS) (n= 436 and 327 respectively)</b>				

Blue (100 mg)	92.0	91.7	52.7	55.6
Pink (45 mg)	0.9	0.3	12.5	2.2
Both blue and pink	6.0	3.3	9.8	17.8
Other	1.1	5.3	25.0	24.4
<b>Respondents who knew about the category who can consume iron tablets (responses of those knowing about WIFS)</b>	100.0	98.5	94.6	97.8
<b>Category who can consume iron tablets according to respondents (responses of those who knew among those knowing about the program) (multiple responses) (n= 436 and 327 respectively)</b>				
Adolescent boy /girl students 10-19 yrs.	45.6	34.3	29.2	31.8
All the children studying in class 6-12	8.9	0.6	17.0	6.8
Non-school going adolescent girls (at AWW)	3.2	21.1	0.9	11.4
All of above	45.6	46.8	52.8	50.0
<b>Time of taking iron tablet according to respondents (n= 444 and 343 respectively)</b>				
1 hr after eating meals with one glass water	92.1	79.9	30.3	30.3
Empty stomach	3.4	2.0	2.8	2.8
Immediately after meals	2.5	10.5	23.7	23.7
Any time	0.2	4.1	10.4	10.4
Don't know	1.8	3.5	32.8	32.8
<b>Respondents who were willing to consume iron tablets if provided</b>	97.1	94.2	72.1	87.6
<b>Respondents who were consuming de-worming tablets at six-months' interval</b>	60.6	57.4	44.8	37.0

## Responses by Adolescent Boys

### Knowledge of adolescent boys on anaemia:

- There was improved awareness: ‘Had ever heard about anaemia’ rose from 24% to 99%.
- Respondents had better knowledge of symptoms: ‘Don’t know’ reduced from 27% to 3%.
- Boys were better able to tell measures to prevent anaemia: iron tablets as a measure rose from 26% to 40%, ‘all of the above’ (iron tablets, iron rich foods, green leafy vegetables) rose from 22 to 40%
- School teacher was the most important source of information: 71%.
- 18% were able to correctly say 5 out of 10 adolescent girls suffer from anaemia, up from 11%. ‘Don’t know’ reduced from 67 to 52%.

<b>Table 3.1 Knowledge of adolescent boys on anaemia</b>		
	<b>Base Line</b>	<b>End Line</b>
	<b>Percent</b>	
<b>N</b>	<b>838</b>	<b>375</b>
<b>Ever heard/know about anaemia</b>	24.3	98.7
<b>Symptoms of anaemia known (multiple responses of those who ever heard of anaemia) (n=204)</b>		
Yellowness in eyes, nails and palms	30.4	75.4
Weakness/ fatigue	35.8	22.2
Dizziness	21.6	39.2
Nausea/ vomiting	3.9	11.9
Don’t know	27.0	3.0
<b>Respondents knowing measures to prevent anaemia (responses of those who heard/ know about anaemia)</b>	52.5	94.9
<b>Measures known to prevent anaemia (multiple responses of those knowing the measures) (n=107)</b>		
Iron tablets	26.2	39.9
Consumption of iron rich foods	10.3	5.1
Consumption of green leafy vegetables	56.1	32.9
All of the above	22.4	39.1
<b>Source of information on prevention from anaemia (multiple responses of those knowing the measures)</b>		
ASHA/ AWW/ ANM	17.2	22.2
School teacher	73.7	70.8
Friend/ neighbour/ parents	12.1	0.3
TV/ Radio	4.0	2.5
Other	5.1	5.6
<b>Number of anemic adolescent girls per ten girls according to respondents (responses of those knowing about anaemia) (n=204)</b>		

2	10.3	16.8
3	11.8	12.8
5	10.8	18.1
Don't know	67.2	52.3

### **Knowledge, practice and behaviour of adolescent boys on IFA tablets and its consumption**

- On benefits of IFA 44% correctly said all of the above (better concentration, less fatigue, increased appetite, regular menstruation) compared to 7% in baseline
- 95% said they had ever consumed an iron tablet, up from 50%
- 79% knew benefits of consuming IFA, up from 22%
- When last consumed – respondents who said upto a month – has dropped from 58% to 48%. This could likely be due to closure of schools during endline.
- School/ AWC remained the most popular place for consuming, likely school in this case: 78%.
- Did not go to school was the most common response for not consuming iron tablets: 25%
- Forgot to take dropped from 43% to 12%
- Respondents reporting any complaint dropped from 20% to 13%
- Metallic taste was the most common complaint: 57%
- Teacher was the most common response for person to go to with complaint: 45%. In the baseline this was 62%, likely because schools closed during endline.
- 51% correctly said consuming iron one hour after eating meals, up from 16%. There is greater awareness and knowledge of how to consume the iron tablet.
- 88% reported being counselled by teacher or frontline worker compared to 37% in baseline. 64% said they had seen messages on IFA/anaemia compared to 9% in baseline.
- 96% could tell dietary sources of iron compared to 48% in baseline
- 66% were correctly able to tell that iron deficiency can be caused in in pregnant women, adolescent girls, men, children, compared to 8% in baseline.
- Respondents who knew about WIFS (iron) programme rose from 21% to 99%. ‘Don’t know’ response reduced from 30% to 0.
- Time of taking iron tablet: 92 % correctly said it should be consumed an hour after a meal compared to 26% baseline. ‘Don’t know’ response reduced from 29 to 0. This indicates greater awareness.
- Nearly half were able to correctly tell people who were covered under the WIFS programme – adolescents in school, adolescent out of school girls.
- 98% said they were willing to consume if provided compared to baseline 64%. This indicates better understanding of IFA and anaemia and the importance of preventing it.
- Those consuming deworming was more or less same: 59% endline compared to 51% baseline.

<b>Table 3.2 Knowledge, practice and behaviour of adolescent boys on IFA tablets and its consumption</b>		
	<b>Base Line</b>	<b>End Line</b>
	<b>Percent</b>	<b>Percent</b>
<b>N</b>	<b>838</b>	<b>375</b>
<b>Respondents knowing about benefits of consuming IFA tablets</b>	21.7	79.5
<b>Benefits of IFA consumption known (responses of those knowing the benefits) (n=182)</b>		
Better concentration	25.8	18.1
Less fatigue	44.0	17.4
Increased appetite	28.6	18.5
Regular menstruation	6.6	3.4
All of the above	7.1	44.3
<b>Respondents who ever consumed iron tablet (N=838)</b>	50.1	94.9
<b>Times when last consumed (responses of those who ever consumed iron tablet) (n=420)</b>		
One week before	25.7	33.1
15 days before	10.5	3.4
1 month before	21.4	11.2
More than 6 months before	19.8	16.0
Other	6.9	28.1
Don't remember	15.7	8.1
<b>Place of consuming iron tablet</b>		
School/ AWW centre	87.4	78.1
Home	7.5	7.9
VHND session	1.9	1.1
At the home of ASHA	2.2	2.5
Other	1.0	10.4
<b>Respondents getting regular supply of iron for consumption (N=838)</b>	2.5	51.7
<b>Respondents who consumed all tablets (responses of those who got iron tablets regularly) (n=21)</b>	0.0	87.6
<b>Reasons cited for not consuming iron tablets (responses of those who did not consume all the tablets)</b>		
Did not go to School/ AWW centre	23.8	25.0
Did not like the taste	14.3	12.5
Forgot to take	42.9	12.5
Black stools/ myth	4.8	0.0
Pain in abdomen/ vomiting/ nausea/ headache	14.3	4.2
<b>Respondents reporting any complaint after consuming iron tablet (responses of those who ever consumed iron tablet) (n=420)</b>	20.5	13.1
<b>Type of problem faced (responses of those who faced any complication) (n=86)</b>		

Constipation/ vomiting/ diarrhoea/ abdominal pain	66.3	10.2
Metallic taste	1.2	57.1
Headache	9.3	16.3
Dizziness	16.3	12.2
All of the above	7.0	4.1
<b>Person whom the respondent consulted at the time of problem (responses of those who faced any complication)</b>		
Teacher	61.6	44.9
AWW	4.7	6.1
ASHA	8.1	2.0
ANM	5.8	2.0
Family	14.0	6.1
Other	5.8	38.8
<b>Respondents reporting measures for prevention of complications associated with iron consumption (N=838)</b>	22.3	88.5
<b>Measures reported by respondents (multiple responses of those who reported any measure) (n=187)</b>		
Iron tablet should be consumed only after 1 hr of eating meals	15.8	50.6
Increased water intake	13.2	12.0
Iron tablet should not be consumed with tea, coffee or milk	21.6	8.4
Iron tablet should not be consumed empty stomach	38.9	3.9
All of above	10.5	28.3
<b>Respondents who were ever counselled by teacher/ AWW/ ANM on iron tablet</b>	37.1	88.5
<b>Respondents who had heard/seen any message on IFA tablet/ anaemia</b>	9.8	63.7
<b>Respondents who ever seen any person falling ill after consuming iron tablet</b>	3.1	14.1
<b>Respondents knowing about the dietary sources of iron</b>	48.3	95.7
<b>Dietary sources of iron known to respondents (multiple responses of those who know about the sources) (n=405)</b>		
Dark green coloured vegetables	54.3	50.4
Milk, meat, fish, egg	19.3	4.2
Dal, rice, roti	18.3	2.8
All of the above	8.1	18.7
Both dark green coloured vegetables and milk, meat, fish, egg	6.9	25.6
<b>Person who is affected by iron deficiency (multiple responses) (N=838)</b>		
Only pregnant women	16.0	13.3
Only adolescent girls	10.0	13.6
Only males	4.8	1.9

Only children	14.4	11.7
All of the above	7.9	65.6
Other	20.8	2.7
Don't know	29.8	0.0
<b>Respondents who knew about WIFS (iron) program (N=838)</b>	21.4	99.2
<b>Colour of iron tablet according to respondents (responses of those knowing about WIFS) (n=179)</b>		
Blue (100 mg)	35.8	87.1
Pink (45 mg)	7.3	2.2
Both blue and pink	25.1	8.3
Other	31.8	2.4
<b>Respondents who knew about the category who can consume iron tablets (responses of those knowing about iron program)</b>	92.2	100.0
<b>Category who can consume iron tablets according to respondents (responses of those who knew about category among those knowing about the program) (n=166)</b>		
Adolescent boy /girl students 10-19 yrs	17.5	39.2
All the children studying in class 6-12	9.6	8.3
Non-school going adolescent girls (at AWW)	12.7	3.0
All of above	52.4	49.5
Other	7.8	0.0
<b>Time of taking iron tablet according to respondents (N=838)</b>		
1 hr after eating meals with one glass water	26.3	92.3
Empty stomach	3.2	2.4
Immediately after meals	26.4	4.0
Sometimes	15.2	1.3
Don't know	29.0	0.0
<b>Respondents who were willing to consume iron tablets if provided</b>	64.4	98.4
<b>Respondents who were consuming de-worming tablets at six-months' interval</b>	51.3	59.2



## Response of Parents

Average household size was 6.5 during endline, nearly the same as baseline 6.6.

- Improved awareness: 94% parents had heard/ knew about anaemia compared to 35% baseline.
- Knowledge of symptoms was still low: 39% said 'don't know' symptoms while 40% knew yellowness in eyes, nails, palms as a symptom.
- There was improved awareness on measures to prevent anaemia: 37% said consumption of 'all of the above' – iron tablets, iron rich foods green leafy vegetables – compared to 9% baseline. 'Don't know' reduced substantially from 67% to 8%.
- 24% correctly estimated prevalence of anaemia among adolescent girls – 5 in10 – compared to 7% at baseline. 'Don't know' reduced from 79% to 49%
- 49% households with pregnant women availed of all services – TT injection, services from ANM, iron tablets – up from 28%.
- 87% respondents were aware that adolescents require extra iron, nearly double of baseline 46%.
- 24% Respondents were able to correctly tell prevalence of anaemia among adolescent girls, up from 7%
- 81% knew benefits of consuming IFA, up from 38%. 46% said 'all of the above' – better concentration, less fatigue, increased appetite, regular menstruation – as benefits of IFA – up from 22%
- 93% knew dietary sources of iron, up from 63%.
- 62% correctly said iron deficiency can happen in men, women, children, up from 20%. 'Don't know' fell from 39% to 0.
- Respondents reporting any complaint by child after consuming iron rose from 14% to 87% likely indicating more consumption of iron. 87% said correctly that tablets should be consumed an hour after meals, up from 31%. 41% said tablets should not be taken with milk, tea, coffee, up from 16%. The most common myths around iron consumption was darkening of children and that elders advise against it.
- There was greater awareness about use and availability of iron tablets. 85% respondents said iron tablets can cure anaemia, up from 39%. 82% were aware these are being made available to adolescent girls, pregnant and lactating women in village, up from 26%.
- 86% said they had given advice to men/ women who appeared to be anemic, up from 36%.
- On advice given, 43% said 'all of the above' – consumption of iron tablets, eating iron rich foods and green leafy vegetables, consulting AWW ASHA – up from 16%. This indicates greater awareness and engagement.
- There was improved knowledge about hookworms: 99% were aware they weaken the body and cause anaemia, up from 60%.
- There was greater awareness of measures to prevent anaemia by hook works: 39% said 'all of the above' – deworming, not walking barefoot, washing fruit and vegetables, up from 19%.
- The most common reason cited for adolescent girls not wanting to consume iron tablets is lack of awareness: 16%.

<b>Table 4.1 Knowledge, attitude and practices of parents on anaemia</b>		
	<b>Base Line</b>	<b>End Line</b>
<b>Average household size</b>	6.6	6.5
<b>N</b>	<b>533</b>	589
	<b>Percent</b>	<b>Percent</b>
<b>Ever heard/know about anaemia</b>	35.1	94.2
<b>Symptoms of anaemia known to respondents (multiple responses who ever heard about anaemia) (n=187)</b>		
Yellowness in eyes, nails and palms	16.6	40.2
Weakness/ fatigue	46.0	11.9
Dizziness	31.5	47.1
Nausea/ vomiting	7.5	2.2
Don't know	24.1	39.5
<b>Measures known to prevent anaemia (multiple responses who heard about anaemia)</b>		
Iron tablets	6.4	28.9
Consumption of iron rich foods	5.4	8.5
Consumption of green leafy vegetables	18.4	23.3
All of the above	9.0	37.2
Don't know	66.6	8.0
<b>Number of anaemic adolescent girls per ten girls according to respondents</b>		
5	6.8	24.1
2	7.3	12.9
3	6.9	13.9
Don't know	79.0	49.1
<b>Households having pregnant women or women with children (N=533)</b>	72.8	100.0
<b>Services that were sought for pregnant women or women with children (multiple responses of households with pregnant women or women with children) (n=388)</b>		
TT injection	58.5	21.1
All services provided by ANM	14.9	21.1
Iron tablets	19.8	15.3
All of the above	28.3	49.1
<b>Respondents who know that adolescent require extra iron to compensate blood loss during menstruation and advise them to compensate that loss (N=533)</b>	45.8	87.3
<b>Advice given by respondents to compensate iron loss (multiple responses) (n=244)</b>		
Advise to eat iron tablets	11.5	22.8

Advise to eat iron rich foods	11.5	9.7
Advise to eat green leafy vegetables	57.4	24.9
All of the above	29.5	45.7
<b>Respondents availing services under VHND (N=533)</b>	56.1	98.6
<b>Types of services availed (multiple responses of those availing the services) (n=299)</b>		
Health check-up	62.2	56.8
Advise to eat iron rich foods	18.1	18.2
Counselling of adolescent girls	10.7	9.5
Iron tablets	29.1	33.9
Other (Immunization)	1.0	0.0
<b>Respondents knowing about benefits of consuming IFA tablets (N=533)</b>	37.9	81.2
<b>Benefits known (multiple responses of those knowing the benefits) (n=202)</b>		
Better concentration	9.4	13.6
Less fatigue	38.6	20.9
Increased appetite	24.7	19.2
Regular menstruation	13.9	4.6
All of the above	21.8	45.8
Other (increase in blood)	3.5	0.0
<b>Respondents knowing about dietary sources of iron (N=533)</b>	63.0	93.2
<b>Dietary sources of iron known to respondents (multiple responses of those knowing the sources) (n=336)</b>		
Dark green coloured vegetables	51.2	56.6
Milk, meat, fish, egg	9.2	3.6
Dal, rice, roti	13.7	3.3
All of the above	9.8	10.0
Both dark green coloured vegetables and milk, meat, fish, egg	17.8	27.1
<b>Person who is affected by iron deficiency (multiple responses) (N=533)</b>		
Only pregnant women	36.2	21.4
Only adolescent girls	5.6	13.1
Only males	1.1	1.7
Only children	6.2	1.4
All of the above	19.7	61.8
Don't know	39.2	0.0
<b>Respondents reporting any complaint by child after consuming iron tablet</b>	14.4	86.8
<b>Type of problem faced (multiple responses) (n=77)</b>		
Constipation/ vomiting/ diarrhoea/ abdominal pain	7.8	21.1
Metallic taste	9.1	11.9
Headache	11.7	6.5
Dizziness	26.0	4.3
All of the above	45.4	56.2

<b>Respondents reporting any colour of iron tablet (N=533)</b>	51.6	100.0
<b>Colour of iron tablet according to respondents (multiple responses) (n=275)</b>		
Blue (100 mg)	13.1	58.6
Pink (45 mg)	5.1	1.4
Red	51.3	13.6
All of the above	10.5	24.4
Other	22.2	5.8
<b>Respondents reporting time of consuming iron tablet (N=533)</b>	77.5	100.0
<b>Time reported by respondents (multiple responses) (n=413)</b>		
1 hr after eating meals with one glass water	30.8	86.9
Empty stomach	3.6	3.2
Immediately after meals	49.4	5.3
Sometimes	16.2	4.6
<b>Food items with which iron should not be taken according to respondents (multiple responses) (N=533)</b>		
Lemon water	15.6	22.1
Tea, milk, coffee	15.6	41.1
Can be taken with anything	17.1	9.5
Both with lemon water and tea, milk, coffee	12.0	27.3
Don't know	39.6	0.0
<b>Respondents who reported any problem related to iron consumption</b>	8.8	30.2
<b>Types of problems reported that can occur after consuming iron according to respondents (multiple responses) (n=47)</b>		
Black children	19.1	30.9
Children suffer from disease after birth	8.5	5.1
Elders restrict iron consumption	17.0	30.3
Women cannot conceive	8.5	2.8
All of the above	46.8	30.9
<b>Respondents who said that anaemia can be cured by iron tablets (N=533)</b>	38.6	85.4
<b>Respondents knowing that iron tablets are being made available to adolescent girls, pregnant and lactating women in village by schools, AWW, ASHA</b>	25.9	82.3
<b>Respondents who reported to give any advice to women or men whom they feel are anaemic</b>	36.4	86.4
<b>Advice given by respondents to women or men whom they feel are anaemic (multiple responses) (n=194)</b>		
Eat iron tablets	18.5	25.7
Eat iron rich foods	7.2	7.1
Eat green leafy vegetables	54.6	23.4
Advise to consult AWW/ASHA	11.3	7.9
All of the above	16.5	42.8
Other	2.1	0.0

<b>Respondents knowing that hookworms can weaken the body and cause anaemia (N=533)</b>	59.7	98.8
<b>Measures to prevent anaemia by hookworms (multiple responses) (n=318)</b>		
Consumption of Albendazole tablet at every 6 months	55.0	45.7
Do not walk bare foot	8.2	6.9
Consumption of fruits and vegetables only after washing it properly	17.9	9.6
All of the above	19.8	39.2
<b>Reasons why adolescent girls don't want to eat iron tablets (according to respondents) (N=533)</b>		
Don't know about iron consumption	5.4	16.0
People at home restrict them	0.2	4.0
Problems arise due to iron consumption	2.8	5.7
Don't know whether they have to take	2.6	4.0
All of the above	1.3	11.7
Don't know	87.6	58.8

## Nodal Teachers and Service providers

- Nodal teachers and service providers had good knowledge on anaemia. Respondents were better able to tell symptoms. While in the baseline 49% teachers and 50% service providers correctly said ‘all of the above’ to symptoms such as yellowing in eyes, nails, palms; weakness and fatigue; dizziness and nausea; this rose to 77% and 70 % respectively.
- Respondents were more aware of measures known to prevent anaemia: ‘all of the above’ response to consumption of iron tablets, having iron rich foods and green leafy vegetables, rose from 58% and 51% among teachers and service providers to 75% and 76% respectively.
- In the baseline, for teachers the most important source of information on prevention of anaemia was the Health department (41%) followed by Education department (28%). In the endline, Education department was more important (55%) than Health (44%). For service providers Health department remained the most important source of information.
- Over baseline and endline, percentage of Nodal teachers and service providers who correctly estimated anaemia prevalence among adolescent girls – 5 out of 10 – remained largely similar: between 18-23%. There was a minor fall in ‘don’t know’ response from 35% to 30% for teachers and 36% to 29% for service providers.

<b>Table 5.1 Knowledge of nodal teachers and service providers on anaemia</b>				
	<b>Base Line</b>		<b>End Line</b>	
	<b>Nodal teachers</b>	<b>Service providers</b>	<b>Nodal teachers</b>	<b>Service providers</b>
	<b>Percent</b>			<b>Percent</b>
<b>N</b>	<b>43</b>	<b>125</b>	<b>257</b>	<b>399</b>
<b>Ever heard/know about anaemia</b>	93.0	95.2	100.0	99.7
<b>Symptoms of anaemia (multiple responses) (n=40 and 119 respectively)</b>				
Yellowness in eyes, nails and palms	25.6	34.2	19.8	22.2
Weakness/ fatigue	23.1	19.7	0.8	3.8
Dizziness	25.6	8.5	7.4	11.4
Nausea/ vomiting	2.6	2.6	0.0	1.8
All of above	48.7	49.6	76.7	70.2
Don't know	0.0	2.6	0.4	0.0
<b>Respondents knowing measures known to prevent anaemia (responses of those who heard about anaemia) (n=36 and 114 respectively)</b>	90.0	95.8	100	99.5
<b>Measures known to prevent anaemia (multiple responses)</b>				

<b>of those knowing the measures)</b>				
Iron tablets	11.1	26.1	18.0	16.7
Consumption of iron rich foods	22.2	7.6	0.4	3.6
Consumption of green leafy vegetables	16.7	23.5	14.1	12.4
All of the above	58.3	51.3	74.9	76.1
<b>Source of information on prevention from anaemia (multiple responses)</b>				
Education department	28.2	4.3	55.5	0.3
AWW	2.6	36.2	1.9	47.2
Health department	41.0	58.6	43.7	55.9
Other	30.8	6.9	0.4	1.5
<b>Number of anaemic adolescent girls per ten girls according to respondents (n=40 and 119 respectively)</b>				
2	27.5	21.0	43.6	43.9
3	17.5	20.2	5.4	8.6
5	20.0	22.7	21.8	18.4
Don't know	35.0	36.1	29.2	29.3

### **Knowledge, attitude and practices of nodal teachers and service providers on IFA and its consumption**

- Nearly all respondents had good knowledge about benefits of consuming IFA tablets. ‘All of the above’ response – improved concentration, less fatigue, increased appetite, regular menstruation – rose from 46% to 73% among teachers and 45% to 77% among service providers.
- Respondents reported better availability of iron tablets in school: for teachers this rose from 63% to 92% in endline; for service providers it rose from 29% to 72%
- Time of iron tablet supply: the most common answer was more than six months before. In the baseline 41% teachers and 33% service providers said supply came more than six months before. In the endline 87% teachers and 52% service providers said more than six months ago. (Schools were closed during endline)
- More respondents had seen messaging on IFA and anaemia: For teachers this rose from 72% to 85%. For service providers this rose from 73% to 82%. This indicates greater awareness and engagement with the issue.
- There was excellent knowledge of dietary sources of iron. In the endline, nearly all could tell sources of iron.
- On persons affected by iron deficiency there has been a marked improvement in knowledge. In the baseline 1 in 4 teachers and service providers said this affected only pregnant women. This misconception fell to 3.5% and 4% respectively in the endline. Baseline response of ‘all of the above’ – pregnant women, adolescent girls, men,

children -- rose from 51% to 95 % among teachers and 58% to 92% among service providers.

- Regarding source of iron supply, in the baseline CHC was the most preferred response. In the endline 67% teachers said Education while 51% service providers said CHC.
- Respondents who had ever written a letter to department for iron supply rose sharply: from 26% to 87% among nodal teachers and 22% to 51% among service providers. This indicates greater engagement and ownership among key stakeholders.
- In the baseline 54% teachers said they sent the letter to MPRC/ supervisor while 37% service providers sent it to RBSK team and 37% sent it to MPRC/ Supervisor. In the endline BRC was the most common place teachers sent letter to (66%) for service providers, it was CDPO.
- In the endline 98% teachers and 97% service providers said they were trained on the WIFS programme, up from 19 and 31% respectively.
- In the baseline most teachers were trained at BRC (75%) while most service providers were trained at the community centre (70%). In the endline 58% teachers were trained at BRC and 42% at community centre. Among service providers 63% were trained at community centre and 34% at CDPO.
- There was a sharp increase in respondents to whom WIFS register and reporting performa was made available. In the endline 97% teachers and 86% service providers said yes compared to 39% and 25% in the baseline.
- In the endline 96% teachers and 84% service providers said they were trained in filling WIFS register and reporting performa
- There was a sharp increase in respondents asked by department to send iron supplementation report: 96% teachers and 84% service providers up from 52% and 39% respectively
- There was an increase in respondents who had ever consumed iron tablets. In the endline 95% teachers and 94% service providers said they had, up from 70% and 74% respectively
- In the endline 90% teachers and 84% service providers said they had consumed iron tablets in front of children.
- Respondents reporting complaint by child after consuming tablet fell from 19% to 11% for teachers and 23% to 18% for service providers.
- In the baseline teachers reported headache and dizziness as the most common complaints while service providers reported dizziness and constipation diarrhea abdominal pain. In the endline metallic taste was the most common complaint both by teachers and service providers. Complaints of headache dizziness were almost nil although complaint of constipation/ diarrhea/ abdominal pain was still high: 46% among teachers and 40% among service providers
- Respondents were better able to tell about who the iron tablets under WIFS are meant for: adolescent girls and boys in school; adolescent out of school girls.
- Nearly all were able to correctly tell that tablets should be consumed an hour after meals.

<b>Table 5.2 Knowledge, attitude and practices of nodal teachers and service providers on IFA and its consumption</b>				
	<b>Base Line</b>		<b>End Line</b>	
	<b>Nodal teachers</b>	<b>Service providers</b>	<b>Nodal teachers</b>	<b>Service providers</b>



	Percent		Percent	
N	43	125	257	399
<b>Respondents knowing about benefits of consuming IFA tablets</b>	86.0	83.2	100.0	99.5
<b>Benefits of IFA consumption known (responses of those knowing the benefits) (n=37 and 104 respectively)</b>				
Better concentration	27.0	7.7	5.8	2.5
Less fatigue	21.6	18.3	4.3	3.0
Increased appetite	10.8	23.1	5.4	2.8
Regular menstruation	10.8	18.3	1.6	3.3
All of the above	45.9	45.2	73.2	77.4
<b>Respondents reporting availability of iron tablets in school (n=43 and 125 respectively)</b>	62.8	28.8	91.8	72.1
<b>Time of iron tablet supply (n=27 and 36 respectively)</b>				
One week before	25.9	19.4	4.2	24.0
15 days before	0.0	19.4	3.8	7.1
1 month before	18.5	22.2	4.7	13.0
More than 6 months before	40.7	33.3	86.9	52.4
Don't remember/ other	14.8	5.6	0.4	3.5
<b>Respondents who had heard/seen any message on IFA tablet/ anaemia (N=43 and 125 respectively)</b>	72.1	72.8	84.8	82.3
<b>Respondents knowing about the dietary sources of iron</b>	86.0	88.8	99.6	99.2
<b>Dietary sources of iron known to respondents (responses of those who know about the sources) (n=37 and 111 respectively)</b>				
Dark green coloured vegetables	54.1	45.0	23.0	40.7
Milk, meat, fish, egg	2.7	3.6	0.4	1.7
Dal, rice, roti	8.1	3.6	0.4	1.0
All of the above	21.6	31.5	11.7	15.9
Both dark green coloured vegetables and milk, meat, fish, egg	21.6	17.1	52.7	42.2
<b>Person who is affected by iron deficiency (multiple responses) (N=43 and 125 respectively)</b>				
Only pregnant women	25.6	24.0	3.5	4.0
Only adolescent girls	9.3	0.0	1.6	5.0
Only males	7.0	14.4	0.0	0.2
Only children	14.0	5.6	0.8	0.8
All of the above	51.2	57.6	94.9	91.9
Other	7.0	3.2		

Don't know	7.0	6.4		
<b>Source of iron supply</b>				
Education department	37.2	1.6	66.9	0.0
AWW	4.7	13.6	1.9	48.7
CHC	48.8	67.2	30.7	51.0
Other	2.3	5.6	0.8	0.8
Don't know	7.0	12.0	0.4	0.5
<b>Respondents who had ever written letter to department for iron supply</b>	25.6	21.6	86.7	51.5
<b>Place where letter was sent (n=11 and 27 respectively)</b>				
BRC	9.1	11.1	66.2	1.1
CDPO office	18.2	11.1	2.3	59.1
RBSK team	9.1	37.0	8.6	3.2
MPRC/ Supervisor	54.5	37.0	23.0	38.2
Other	9.1	3.7	0.0	0.5
<b>Respondents who were trained on WIFS (iron) program (N=43 and 125 respectively)</b>	18.6	31.2	98.1	96.7
<b>Place where training was received (n=32 and 39 respectively)</b>				
BRC	75.0	10.3	58.3	2.4
Community centre	0.0	69.2	41.7	63.0
CDPO office	0.0	15.4	0.0	33.6
Other	25.0	5.1	0.4	1.3
<b>Respondents to whom WIFS register and reporting Performa was made available (N=43 and 125 respectively)</b>	39.5	24.8	96.8	85.6
<b>Respondents who were trained/informed on how to fill WIFS register and reporting Performa (of those who received reporting Performa) (n=17 and 31 respectively)</b>	70.6	51.6	96.4	84.5
<b>Respondents who were asked by department to send iron supplementation report (N=43 and 125 respectively)</b>	52.5	38.9	96.5	84.5
<b>Respondents who ever consumed iron tablet</b>	69.8	73.6	94.9	93.7
<b>Respondents who ever consumed iron tablet in front of children</b>	67.4	36.0	90.2	83.6

<b>Respondents reporting any complaint by child after consuming iron tablet</b>	18.6	23.2	10.9	18.4
<b>Type of problem faced (responses of those who faced any complication) (n=8 and 29 respectively)</b>				
Constipation/ vomiting/ diarrhoea/ abdominal pain	12.5	27.6	45.8	40.0
Metallic taste	12.5	6.9	54.2	46.7
Headache	37.5	3.4	0.0	1.7
Dizziness	37.5	37.9	0.0	6.7
All of the above	0.0	20.7	0.0	3.3
Other	0.0	3.4	0.0	1.7
<b>Respondents who ever seen any person falling ill after consuming iron tablet (N=43 and 125 respectively)</b>	7.0	6.4	12.1	12.9
<b>Respondents who knew about WIFS (iron) program</b>	72.1	71.2	96.5	93.9
<b>Colour of iron tablet according to respondents (multiple responses of those knowing about WIFS) (n=31 and 89 respectively)</b>				
Blue (100 mg)	67.8	52.9	80.6	86.6
Pink (45 mg)	19.4	14.9	0.0	0.3
Both blue and pink	12.9	29.9	19.0	13.4
Other	3.2	5.0	0.4	0.0
<b>Category to which iron tablets should be administered according to respondents (responses of those who knew among those knowing about WIFS)</b>				
Adolescent boy /girl students 10-19 yrs	43.3	33.3	22.2	16.0
All the children studying in class 6-12	10.0	1.2	23.4	0.5
Non-school going adolescent girls (at AWW)	10.0	12.3	1.2	17.1
All of above	26.7	40.7	60.1	69.8
Other (pregnant and lactating women)	0.0	16.0	0.0	.3
<b>Ways to administer iron tablet (N=43 and 125 respectively)</b>				
1 hr after eating meals with one glass water	79.1	80.8	97.3	99.0
Empty stomach	4.7	4.0	0.0	0.8
Immediately after meals	9.3	8.0	1.2	0.5
Anytime	4.7	0.8	1.6	0.5
Don't know	2.3	6.4	0.0	0.0

<b>Food items with which iron should not be taken according to respondents</b>				
Lemon water	20.9	17.6	4.3	10.1
Tea, milk, coffee	34.9	60.8	35.0	38.4
Can be taken with anything	2.3	2.4	1.6	2.0
Both with lemon water and tea, milk, coffee	27.9	13.6	59.1	49.7
Don't know	14.0	5.6	0.0	0.0
<b>Respondents who faced any problem after consuming iron tablet</b>	7.0	4.0	2.3	10.1

## Chapter 6

### Profile and basic information of selected Schools and Aganwadi Centres

#### 6.1 Introduction:

This chapter deals with knowledge, attitude, practice and behaviour of Schools and Aganwadi Centres on anaemia. There were 235 schools and 319 Aganwadi Centres under this study. We discuss these in the following sections.

<b>Table: 6.2 General Information of Schools and Aganwadi Centres</b>			
S.No		School	AWC
		Percent	
	N	235	319
<b>1</b>	<b>Number of students / adolescent girls registered in schools (n=234)</b>		-
	25-100	47.9	-
	101-500	50.4	-
	501-1000	0.9	-
	Above 1000	0.9	-
	<b>Average students / adolescent girls registered in schools (n=234)</b>	135	
	<b>Number of students / adolescent girls registered in AWCs (n=318)</b>		
	1-10	-	39.6
	11-20	-	43.4
	21-30	-	14.8
	Above 31	-	2.2
	<b>Average students / adolescent girls registered in AWC (n=318)</b>		13.6
<b>2</b>	<b>Number of Students / adolescent girls who were present on the date of survey (n= 233 and n=314 respectively)</b>	12.1	5.7
<b>3</b>	<b>WIFSP training given to nodal teachers and service providers (n= 227 and 315 respectively)</b>	96.6	100.0
<b>4</b>	<b>WIFSP logistics which were made available at schools and AWCs (multiple choice) (n=224 and n=303 respectively)</b>		
	Iron tablet 100 mg	97.8	90.4
	Iron pink tablet 45 mg	13.0	2.0
	WIFS Compliance card	88.8	78.2
	WIFS register	97.3	97.0
	WIFS reporting format	96.4	95.4
<b>5</b>	<b>Who made available the iron tablets (n=228 and n=303 respectively)</b>		
	ICDS	0.0	72.3
	BRC	62.7	0.0
	NRPC	32.0	0.0
	SUPERVISOR	0.0	14.5
	Education Department	1.8	0.0

	RBSK	3.5	0.0
	CDPO	0.0	11.9
	WIFSP	0.0	1.3
<b>6</b>	<b>Number of iron tablets which were made available in schools (n= 224)</b>		
	Less than 1000	15.2	-
	1001-5000	72.8	-
	5001-10000	8.0	-
	Above 10000	4.0	-
	<b>Number of iron tablets which were made available in AWCs (n=302)</b>		
	Less than 100	-	24.2
	101-500	-	54.3
	501-1000	-	20.5
	Above 1000	-	1.0
<b>8</b>	<b>Iron tablets being given to students / adolescent girls on weekly basis by nodal teachers and service providers (n= 139 and n= 218 respectively)</b>	59.4	69.2
<b>10</b>	<b>When was iron tablets not being given to the students/ adolescent girls (n=20 and n= 63 respectively)</b>		
	less than 1 month	5.0	4.8
	Between 1 month to 6 months	75.0	4.8
	More than 6 months	5.0	30.2
	Never	15.0	33.3
	Iron tablets was not available	0.0	27.0
<b>11</b>	<b>Days on which iron tablets were given to students/ adolescent girls (n= 215 and n=308 respectively)</b>		
	Monday	35.1	100.0
	Tuesday	0.0	0.0
	Wednesday	50.0	0.0
	Thursday	0.0	0.0
	Friday	0.0	0.0
	Saturday	14.0	0.0
	VHND	1.3	0.0
<b>12</b>	<b>Devouring tablets were given to the students/ adolescent girls (n=191 and n=259 respectively)</b>	81.6	81.2
<b>13</b>	<b>Average number of students/adolescent girls given iron tablets in the last month ( n=233 and n= 311 respectively)</b>	51.7	7.9
<b>14</b>	<b>Mild/ serve anaemia cases referred by nodal teachers/ service providers to CHCs (n= 234 and n=302 respectively )</b>		
	0	88.9	90.7
	1-5	8.1	8.7
	6-10	2.6	0.3
	Above 10	0.4	0.3
<b>15</b>	<b>Mild/serve anaemia cases fully treated in last 6 months (n=234 and n= 301 respectively)</b>		
	0	88.9	91.7
	1-5	8.1	8.0
	6-10	2.6	0.3

	Above 10	0.4	0.0
<b>16</b>	<b>Number of iron tablets remained on the date of visit of the survey team in schools (n= 232)</b>		
	Less than 1000	66.8	-
	1001-5000	28.9	-
	5001-10000	2.6	-
	Above 10000	1.7	-
	<b>Number of iron tablets remained on the date of visit of the survey team in AWCs (n=314)</b>		
	Less than 100	-	63.1
	101-500	-	34.1
	501-1000	-	2.9
	Above 1000	-	0.0

**Table: 6.3 Knowledge of Side Effects of Iron Tablets:**

		School	AWCs
		Percent	
	N	235	319
<b>17</b>	<b>Instructions given by medical AAM on the consumption practice of the iron tablets (n=229 and n=306 respectively)</b>	97.9	97.1
<b>18</b>	<b>Information given by the nodal teachers/ service providers on the side effects of iron tablet consumption (n=234 and n= 307 respectively)</b>	100	97.5
<b>19</b>	<b>Complaints mentioned by students/ adolescent girls in the last month related to the side effect of iron tablets (n=55 and n= 97 respectively)</b>		
	Nausea	50.9	40.2
	Vomiting	72.7	41.2
	Bad taste	56.4	63.9
	Constipation	45.5	36.1
	Black stool	58.2	52.6
	Stomach uneasiness	61.9	48.4
	Indigestion	38.2	26.8

**Table: 6.4 Knowledge related to Health and Nutrition:**

		School	AWCs
		Percent	
	N	235	319
<b>21</b>	<b>Information on health-related topics was given during the visit of nodal teachers/ service providers/ medical staff (n=232 and n= 308 respectively)</b>	99.1	97.8
<b>22</b>	<b>If yes, topics discussed during the visit (n=232 and n= 306 respectively)</b>		
	Lack of blood	100.0	98.0
	Personal health and hygiene	68.5	75.2
	Hygienic food	77.6	81.0

	Toilet facility	77.6	75.8
	Balanced diet	90.4	87.6
	Menstrual Hygiene	77.6	85.0
	Washing of hands	78.9	80.1
	Others	51.9	52.3

<b>Table : 6.5 WIFSP recording and reporting:</b>			
		<b>School</b>	<b>AWCs</b>
		<b>Percent</b>	
	<b>N</b>	<b>235</b>	<b>319</b>
<b>23</b>	<b>Records maintained related to WIFSP (n=231 and n= 316 respectively)</b>		
	WIFS register	98.7	98.1
	Others	1.3	1.9
<b>24</b>	<b>Updating of WIFS register (n=200 and n= 229)</b>	85.8	72.0
<b>25</b>	<b>WIFS compliance format being dully filled for students/adolescent girls (n=141 and n= 151 respectively)</b>	60.5	47.5
<b>26</b>	<b>Dully filled WIFS monthly report submitted at the block during last month (n=139 and n= 173 respectively)</b>	59.7	54.6
<b>27</b>	<b>Monitoring of WIFS (n=190 and n= 257 respectively)</b>		
	ARSH	1.0	6.6
	Vatsalya	14.2	17.5
	Block CODI	20.5	16.7
	CDPO	0.0	0.4
	RBSK	31.6	36.6
	SUPERVISOR	0.0	22.2
	NRPC	0.5	0.0
	WIFSP	32.6	18.7

\*for question 9 the reason why students and adolescent girls have not taken iron tablets on a weekly basis is due to COVID 19 pandemic.

## Chapter 7

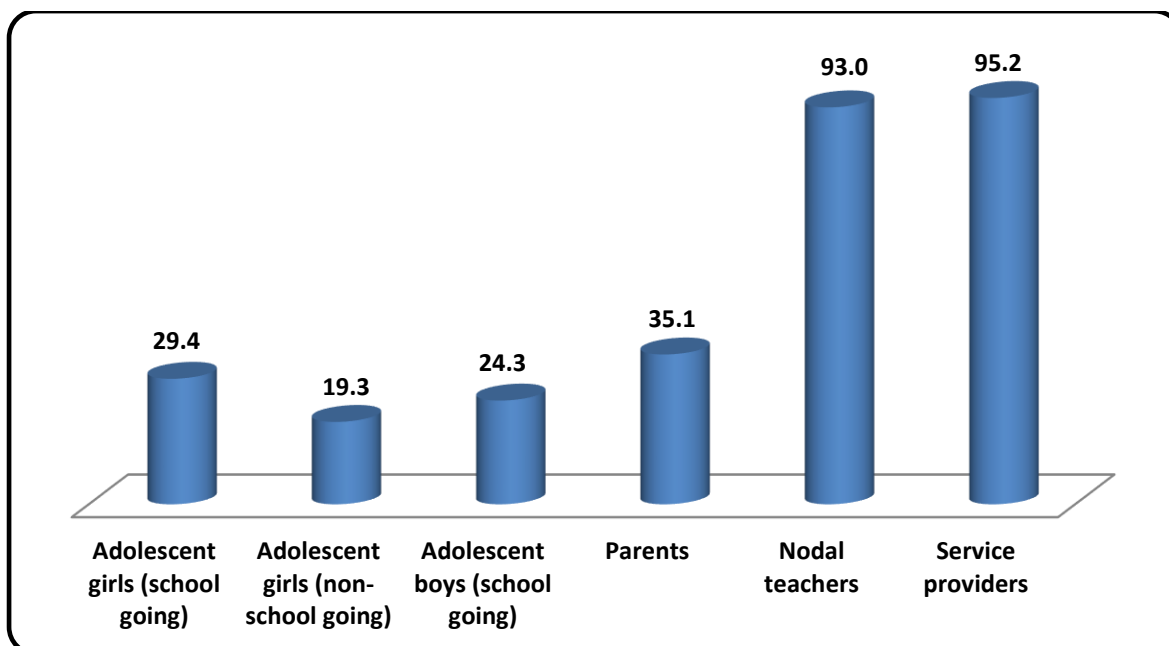
### Key Findings and Recommendations (Base Line)

#### 7.1 Introduction

This chapter deals with key findings and recommendations. We discuss these in the following sections.

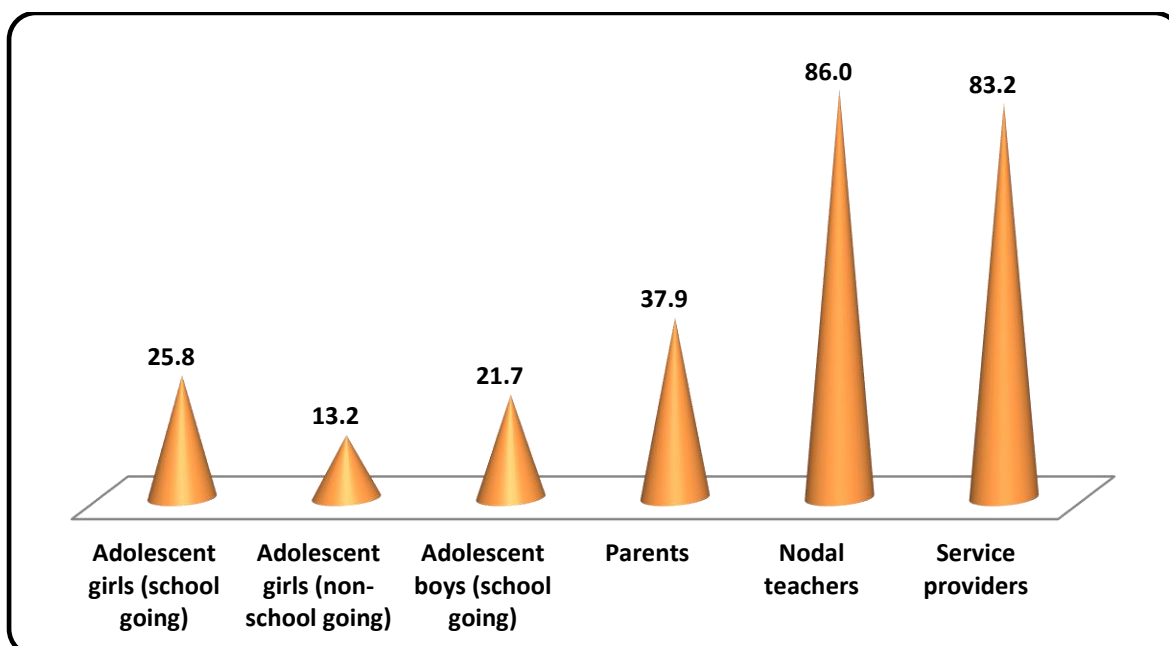
**7.2 Level of awareness about anaemia:** Figure 7.1 demonstrates level of awareness about anaemia across various sections of respondents. It can be seen that level of awareness in teacher and service providers is very high compared to other categories. The need is to create awareness in these respondents. Further, parents should also be made aware of anaemia.





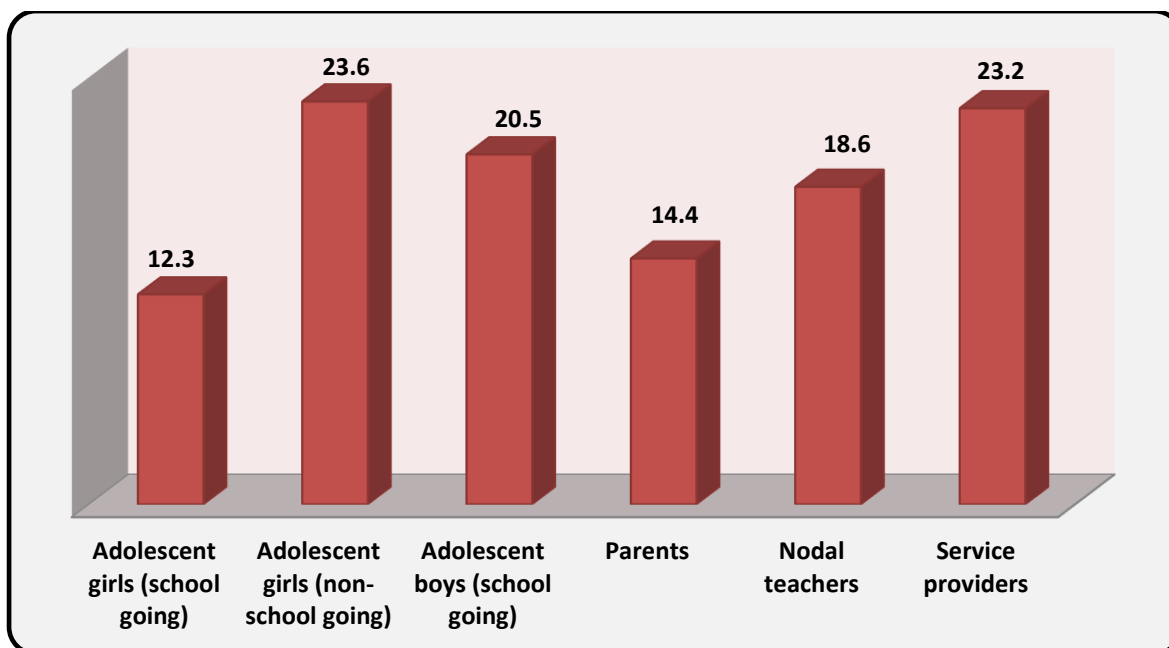
**Figure 7.1 Percentage of respondents who ever heard of anaemia**

**7.3 Knowledge about benefits of IFA tablets:** Figure 7.2 displays level of knowledge about IFA tablets. In this case also level of knowledge of teachers and service providers is much higher than other categories. Teachers, service providers and parents should be motivated to actively participate in spreading awareness about IFA tablets.



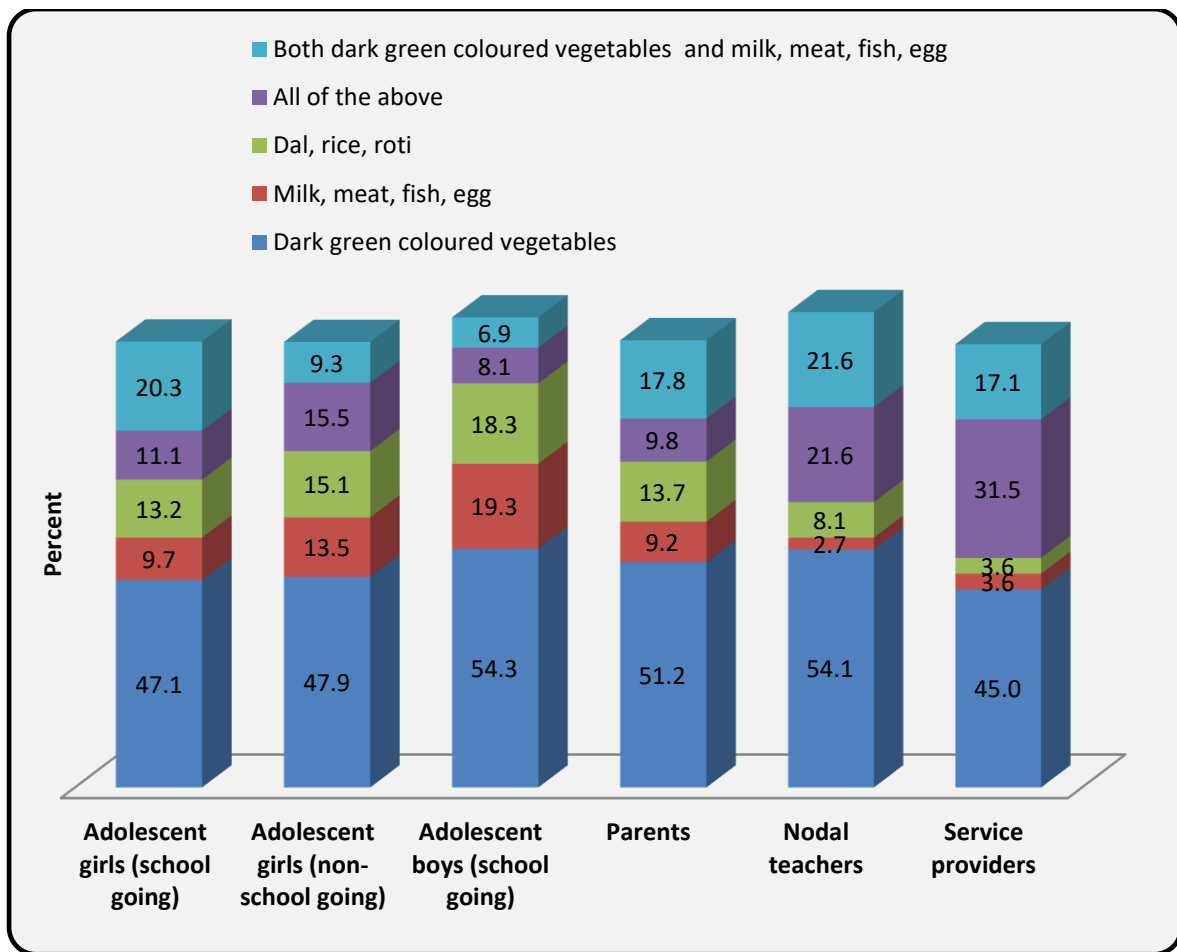
**Figure 7.2 Percentage of respondents who knew about benefits of consuming IFA tablets**

**7.4 Complaints received after consuming IFA tablets:** Figure 7.3 illustrates complaints received by respondents after consuming IFA tablets. No definite pattern seems to emerge from this. However, complaints received from adolescent girls (non-school going) need to be addressed.



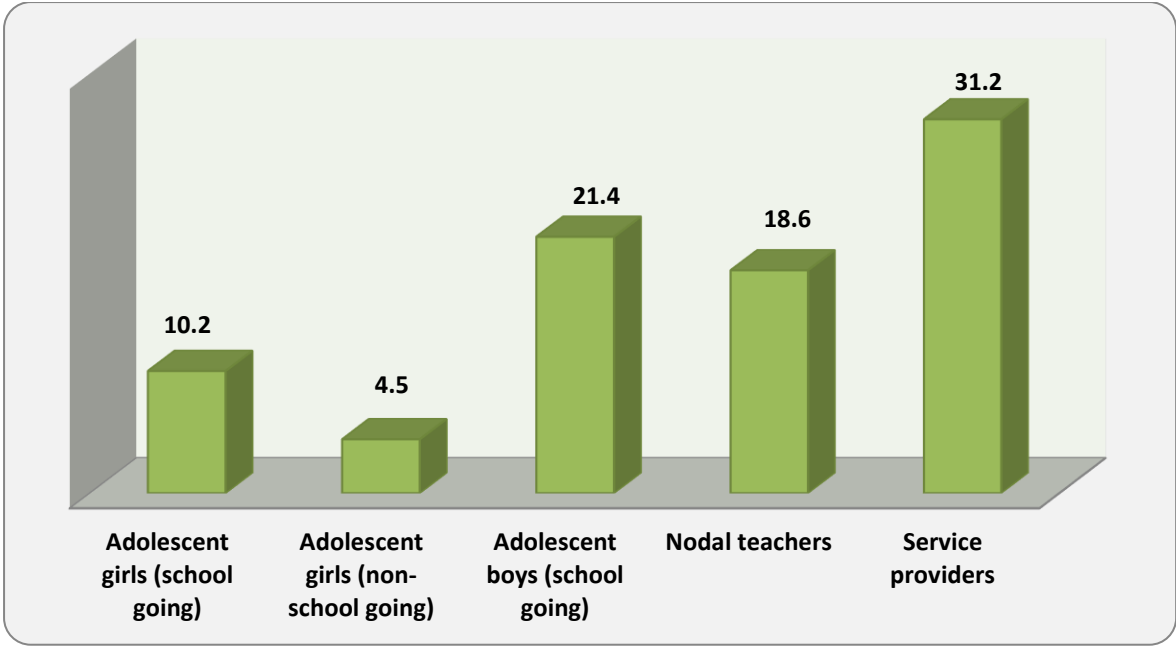
**Figure 7.2 Percentage of respondents reporting any complaint after consuming iron tablet (by self in case of adolescent girls/ boys and by children in case of parents/ teachers/ service providers)**

**7.5 Dietary sources of iron known to respondents:** Figure 6.5 relates to dietary sources of iron known to respondents. It can be seen that a very good proportion of respondents across the categories recommended consumption of dark green coloured vegetables.



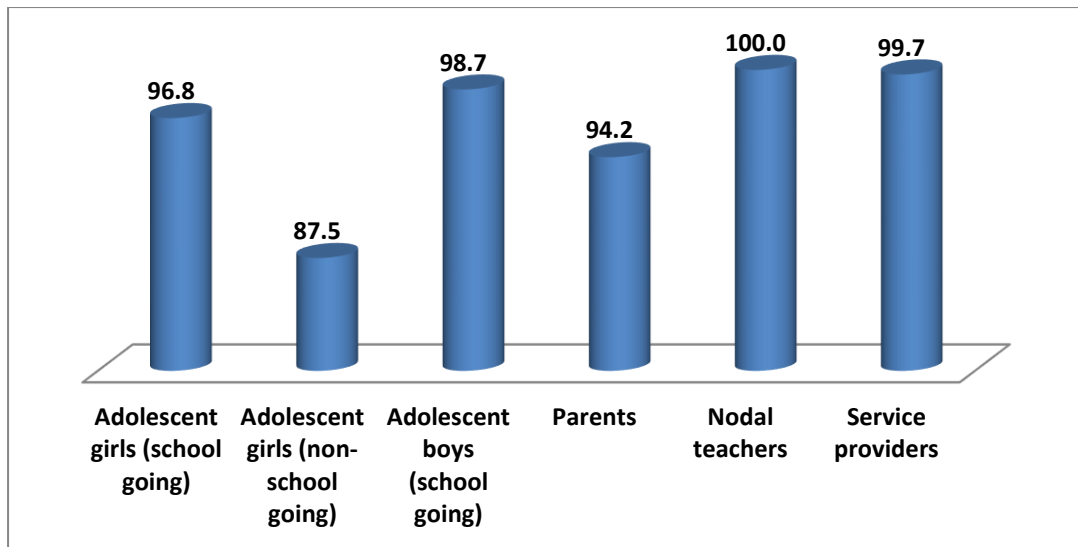
**Figure 7.3 Dietary sources of iron known to respondents**

**7.6 Awareness about WIFS program:** Figure 7.5 displays awareness levels of respondents about WIFS program. It can be seen that awareness levels are generally poor across all the respondents. It is therefore necessary that the people are made aware of WIFS for the benefit of people at large.

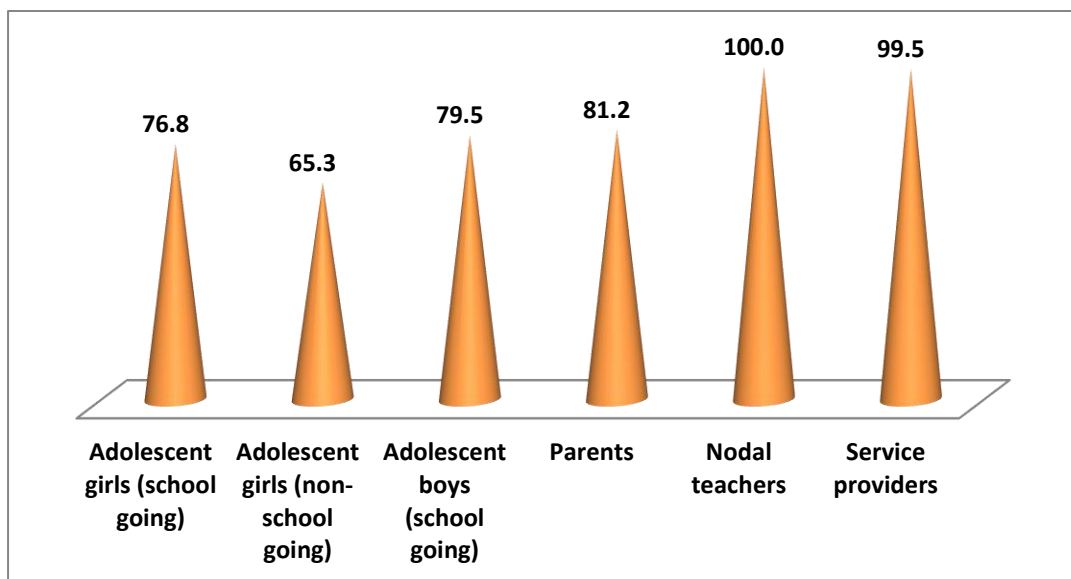


**Figure 7.4 Percentage of respondents who knew about WIFS program**

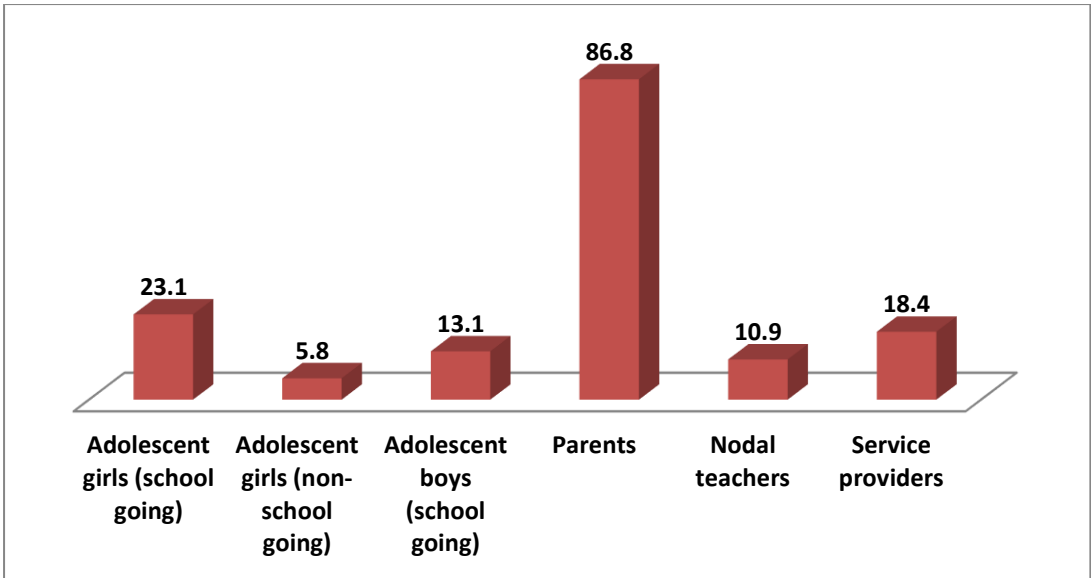
**Chapter 8**  
**Key Findings (END LINE)**



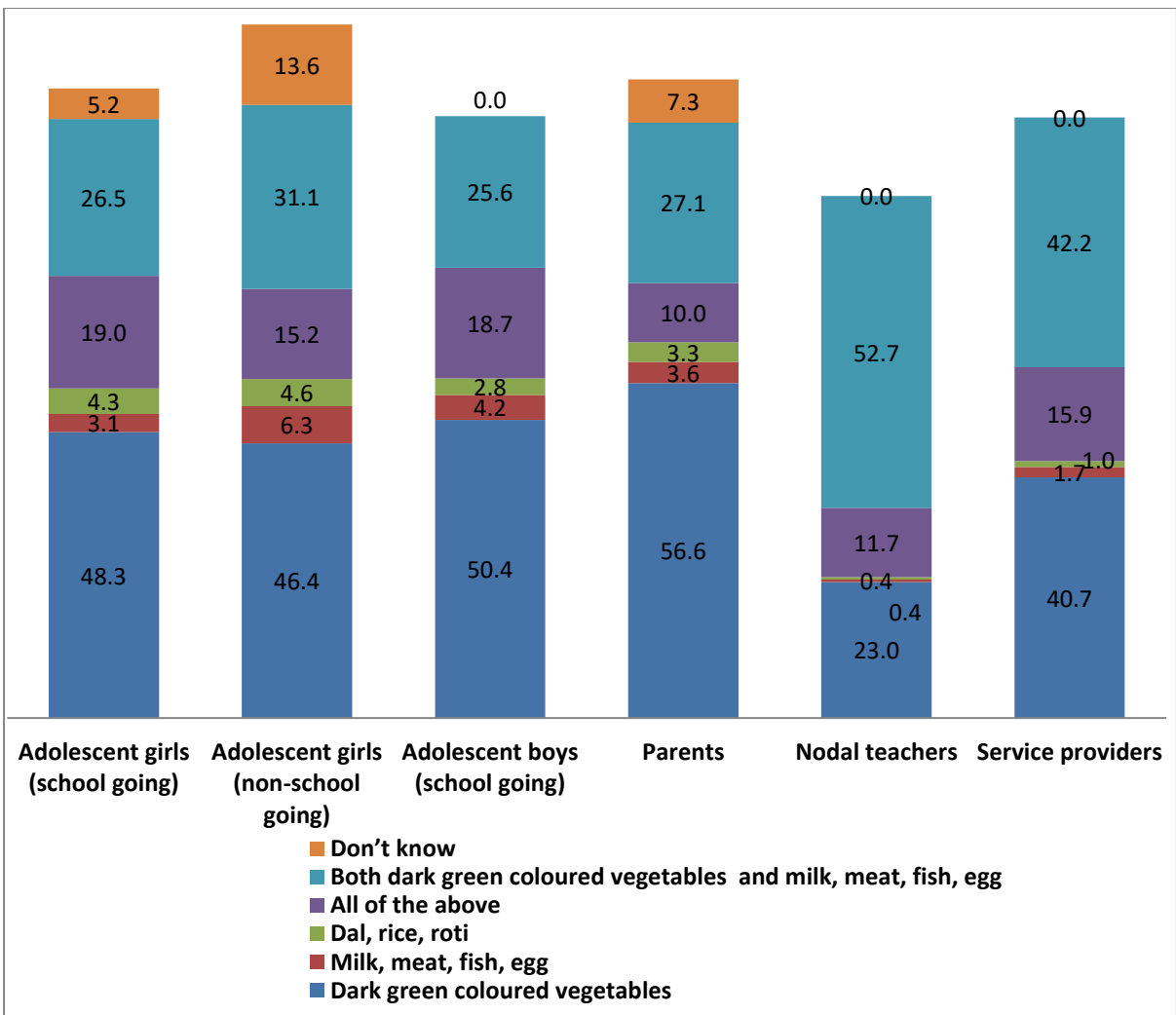
**Figure 8.5 Percentage of respondents who ever heard of anaemia**



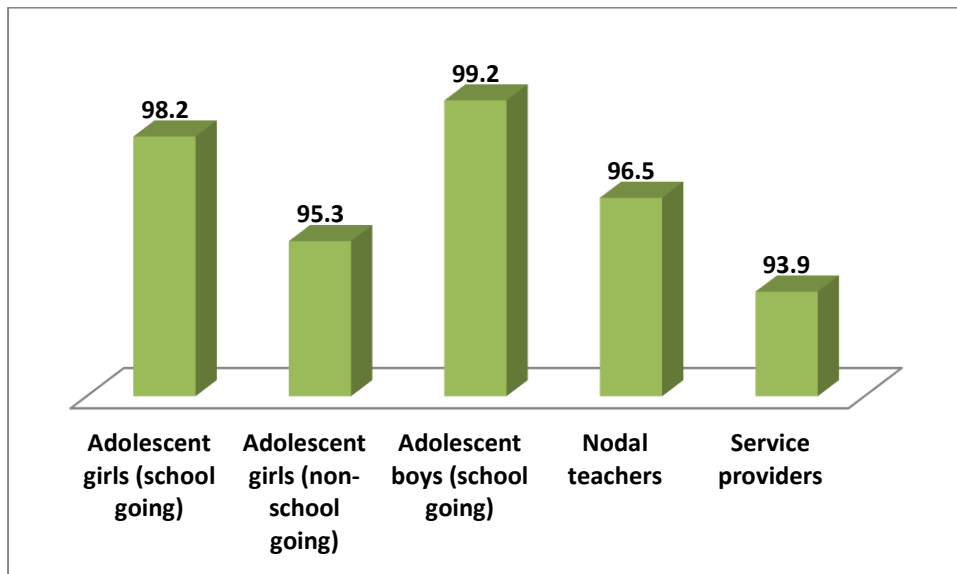
**Figure 8.2 Percentage of respondents who knew about benefits of consuming IFA tablets**



**Figure 8.6 Percentage of respondents reporting any complaint after consuming iron tablet (by self in case of adolescent girls/ boys and by children in case of parents/ teachers/ service providers)**



**Figure 8.7 Dietary sources of iron known to respondents**



**Figure 8.8 Percentage of respondents who knew about WIFS program**

**Comparison 2018-2020 (Baseline-End line Assessment )**

S. No	District	Block	Total Schools	Schools Visited		Total No of Student's in visited schools		Total no of Students oriented on WIFS		Availability of IFA at schools visited		WIFS Training received by Teachers		Consumption of IFA at schools visited		Availability of WIFS Register at schools visited		Reports submitted to respective departments	
				2018	2020	2018	2020	2018	2020	2018	2020	2018	2020	2018	2020	2018	2020	2018	2020
1	Hardoi	Kothawa	53	49	53	6104	8597	3605	6706	13	53	18	53	8	53	1	53	0	46
2	Bareilly	Bhuta	65	61	65	7976	2344	3786	1745	41	38	33	38	1	38	1	38	0	38
3	Lucknow	Urban Slum	5	3	5	730	1765	90	1580	0	2	0	5	0	2	0	1	0	0
4	Sitapur	Machareta	57	51	57	4503	7749	1952	6587	41	57	28	57	30	57	0	57	5	45
5	Unnao	Sikandarapur Sarosi	75	70	75	11300	7186	3390	5749	34	75	33	75	29	65	17	75	11	65
6	Raebareilly	Chhatoh	27	26	27	2426	2823	1357	2430	5	24	13	27	5	25	23	26	0	24
7	Barabanki	Nindoorra	70	70	70	6139	6976	1664	6350	28	69	39	69	24	69	51	69	3	66
8	Ballia	Beruarbari	28	23	28	5207	6999	1999	5740	14	24	6	28	7	24	1	27	0	18
9	Total		380	353	380	44385	44439	17843	36887	145	342	74	352	83	333	16	346	20	302
	Percentage							40.2	83.01	43.15	90.24	22.02	92.88	57.24	87.86	4.76	91.29	13.79	79.68



**NOTE:** The above data was collated for the period of Jan- March 2020. It shows that 83% of the students across the intervention schools were oriented in schools. We should consider that some students in every school are enrolled but do not actually come to school hence this data is not 100%, which it should have been. The reporting of WIFS to respective department reached to 73%. While iron was available in 90% of the schools. Some schools specially to mention Lucknow, the iron supply at district level for urban program was not purchased and in Bhuta block of Bareilly there was problem of transport. The supervised consumption in schools visited reached to 87.87% while 92.8% teachers received training on WIFS.