

# Utilization of ICDS program by adolescent girls and implementation barriers in Urban Rishikesh, India

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## ABSTRACT

**Context:** Adolescent girls are at higher risk of mortality and morbidity due to childbirth. Government of India therefore initiated Adolescent girls' scheme since year 2000. However, since its inception program received various setbacks. **Aims:** This study was carried out to assess the utilization of ICDS program for adolescent girls through Anganwadi centers (AWC) and implementation barrier from providers point of view. Also study assessed gaps in knowledge, attitude, and practice of anemia. **Settings and Design:** Mixed-method sequential explanatory approach was adopted. Quantitative data was collected by community-based cross-sectional survey in Urban Rishikesh, Uttarakhand. This was followed by in-depth interview of Anganwadi worker (AWW). **Methods and Materials:** Twenty adolescent girls from each of 20 clusters were selected by cluster sampling. Data was collected by structured validated questionnaire using Epicollect 5. AWWs were interviewed with help of interview guide. **Statistical Analysis:** Variables were described as proportion and mean. The interview transcript was analyzed using content analysis. **Results:** Out of 400 adolescent girls, 10% were school dropouts and 59% were undernourished. Seven percent had ever visited AWC in last year. The main reason for nonutilization was unawareness. 38% had knowledge regarding symptoms of anemia. AWW faces problems due to nonavailability of iron tablet, untrained for health education sessions, and service not meeting demand of beneficiaries. **Conclusions:** Poor utilization of ICDS services by adolescent girls due to unawareness. There is gap in knowledge regarding anemia among adolescent girls. Adolescent girls' scheme is not as per felt need of beneficiary and poorly implemented.

**Keywords:** Adolescent girls, anemia, integrated child development service schemes, mixed method

## Introduction

Adolescent comprises 18% of India population.<sup>[1]</sup> Adolescent is at risk for injury, reproductive and sexual health problems, mental, emotional problem, overweight, substance abuse, violence, etc., Apart from this, adolescent girls had to face an additional problem related to early pregnancy. In India, considering the problem of gender inequity this problem widens. Dietary knowledge and access to resources are critical to improving health and nutrition in a sustainable way. Adolescence is the time to learn and adopt healthy habits to avoid many health and nutritional problems

later in life. Kishori Shakti Yojana (KSY), Centrally sponsored program under Integrated Child Development Scheme (ICDS) was started by Government of India in 2000 with an aim at breaking the intergenerational lifecycle of nutritional and gender disadvantage thus providing a supportive environment for self-development of adolescent girls.<sup>[2]</sup> A special intervention for adolescent girls called Scheme for Adolescent Girls (SAG) initiated in the year 2010 that focused only on out of school adolescent girls between 11 and 14 years of age. With expansion of SAG scheme to all the districts of the country under umbrella ICDS, the KSY has been phased out since year April 2018.<sup>[3]</sup>

Since the inception of both program, had problem of poor service utilization of service by adolescent and low impact on health and nutritional status of adolescent girls (AGs).<sup>[4]</sup> Study done by Chandrakumari *et al.* in rural area of Tamil Nadu found

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anemia in 48% of AGs.<sup>[5]</sup> AWW gives least importance to the AGs' scheme. No study on ICDS services for AGs is done in Uttarakhand until date. Though, at present ICDS program is only focused on out of schools girls (11–14 years) barriers in implementation of earlier program needs to be understood to make evidence-based sustainable program. Despite many national and state adolescent health programs, evidence suggests large unmet need for promotive, preventive, and curative health services for adolescents. The lesson learned from KSY and problems faced needs to be addressed in policy/program making decisions related to adolescent health who constitute one-fifth of India's population.

## Objectives

1. To assess the Utilization of ICDS program by AGs.
2. To study the gaps in Knowledge, attitude, and practice regarding anemia among AGs
3. To identify reasons for non-participation of the AGs in the ICDS Program from beneficiary and provider (AWW) point of view.

## Methodology

A sequential explanatory mixed-methods study involving a quantitative component followed by a descriptive qualitative component was planned. Quantitative component was used to assess the utilization of ICDS program and knowledge, attitude, and practice regarding anemia among AGs. Qualitative component added an understanding to implementation of ICDS schemes for AGs and reason for nonutilization of services by AGs (providers' point of view).

### General setting

Rishikesh is a city in district of Dehradun, Uttarakhand. The city is divided into 20 wards (administrative blocks) with an estimated adolescent population of 14,099 (22%) of which AGs' population is 7135 approximately.<sup>[6]</sup>

### Specific setting

Integrated Child Development Services (ICDS) scheme is community-based program.<sup>[7]</sup> The services are extended to the target community at a focal point "Anganwadi" (AWC) located within an easy and convenient reach of the community. AWC is managed by an honorary female worker "Anganwadi Worker" (AWW) who is the key community-level functionary. The scheme is targeted at children up to the age of 6 years, pregnant and lactating mothers, AGs, and women under reproductive age group. The scheme is aimed to improve the health, nutrition, and education (KAP) of the target community. Under AGs' scheme, various activities are being undertaken mainly related to nutritional and health education, life skills, vocational training, and iron and folic acid supplementation for out of school girls. Supplementary nutrition is given to three AGs (preferably belong to poor family and malnourished) for period of 6 months. AWW should identify AG who belongs to

below poverty line and school drop out for vocational training courses.

## Study population and sampling

### Quantitative

AGs (11-19 years) residing in the wards of Rishikesh in 2018-19 irrespective of their enrolment in schools or type of schools, were covered in cross-sectional community-based survey (between July 2018 and November 2018).

### Sample size

Considering 30% coverage of WIFS among adolescent, with 90% confidence interval, desired precision of 5%, with correction of finite population (total no of AGs 7135 approx), adjusting for design effect of cluster sampling (1.5), and nonresponse rate of 10%, sample size comes to 365.<sup>[8]</sup>

Sampling methodology: Cluster sampling was used considering wards (population under the coverage of each Anganwadi center (AWC) as a cluster ( $n = 62$ ). Twenty clusters were selected by PPS (population proportional to size) sampling. The sampling frame consisted of all households in cluster. Each household (sampling unit) was selected by systematic random sampling without replacement. Approximately, from each cluster, 19 to 20 AGs were selected, totaling to 400 approximately. If a particular household did not have an AG, then next consecutive household on list was selected. In household with more than one AG, one was selected randomly. No revisits were done if AG is absent at time of survey.

Data collection was done house to house from July 2018 to November 2018. After obtaining written consent from parents and assent form from participants, a structured validated questionnaire was administered. It consisted of four parts: Part 1 consisted of questions on awareness on iron deficiency anemia, cause, sign symptom, consequences, and preventability of anemia. Part 2 consisted of the practice of participants of taking iron-rich foods, foods that inhibit iron absorption, iron tablets. Part 3 consisted of questions on attitude regarding likeliness of having anemia and severity of disease. Body mass index was calculated as weight (kg)/height<sup>2</sup> (m). This survey was done during evening hours (4.30-6.30 pm) with the highest probability of approaching girls at home. Part 4 consisted of information on ever utilization of ICDS services in AWC in past one year by study participants and reason for nonparticipation.

### Qualitative

In-depth interview of seven AWW (reached data saturation) was taken after obtaining written informed consent for participation and audio recording. Interview guide contained open-ended questions on the view of AWW with respect to Services for adolescent in AWC and barriers in implementation. Each interview was audio-recorded and field notes were taken. Interview took around 40-50 minutes. Transcription was done on same or next day.

Triangulation of data source regarding utilization of AW services was done through direct interview with beneficiaries (AG) and in-depth interview of AWW.

Study was ethically approved by the Institutional Ethics Committee, AIIMS Rishikesh, India (Letter No. 80/IEC/IM/2017).

### Data analysis

Data was collected using a mobile data capture App called EpiCollect5. Data was exported to MS Excel format and analyzed using EpiData (version 2.2.2.183 EpiData Association, Odense, Denmark).

Continuous variables such as age of adolescent was summarized in terms of mean ± SD. Categorical variables such as BMI, knowledge, attitude, and practice regarding IDA, utilization of services is expressed as proportion.

Two independent trained investigators (MK and SK) did a content analysis of open-ended observations and discrepancies found were resolved by discussion.<sup>[9]</sup>

## Result

This study surveyed 400 AGs. As shown in Table 1, mean age was 14.7 years. Twenty-nine percent ( $n = 117$ ) were in primary class, 19% ( $n = 76$ ) in secondary, 37.8% ( $n = 151$ ) were in higher secondary. Forty-one (10%) of participants were school dropouts. Seventy percent ( $n = 281$ ) were studying in government-aided/municipal schools. As per WHO classification of BMI categories,<sup>[10]</sup> 237 (59%) adolescent were found to be undernourished. Mean BMI of study participants was 18.15 (3.74) kg/m<sup>2</sup>.

Table 2 shows the utilization status of various Anganwadi services by study participants during last year. It was found 31 (7.75%) had ever visited the AWC for one or other services. About 15 (3.75%) and 13 (3.25%) had visited for supplementary nutrition and iron folic acid supplementation respectively. None of them was school dropout. Eight (2%) and one (0.25%) participant visited AWC for health education and vocational training. The reason for nonparticipation was found to be due to unawareness of services available in AWC. IFA supplementation is provided through school so this service not needed for schoolgoing children. Two hundred and sixty-four (64%) showed interested in vocational training.

Table 3 illustrates knowledge, attitude, and practice regarding anemia. Eighty-four percent of the participants were aware of IDA. Knowledge of sign and symptoms, consequences of anemia, preventive measure were present in 155 (38%), 134 (33%), and 120 (30%) participants respectively. Fifty-three percent ( $n = 213$ ) were consuming green leafy vege Tables 3 and 4 times/week. Seventy-five % ( $n = 300$ ) were taking citrus fruits most of days in a week. Very few were taking coffee and tea regularly and take it in early morning only. Less than 50% responded to attitude

**Table 1: Demographic and nutritional profile (BMI) of study participants (adolescent girls) in Rishikesh, India (Aug - Oct 2018)**

Variable	Number	Percentage
Total	400	(100)
Age (years)		
Mean (SD)	14.7	(2.5)
Education (class)		
<6	15	(3.8)
6-8	102	(25.5)
8-10	76	(19.0)
10-12	151	(37.8)
>12	13	(3.3)
Dropout	41	(10.3)
Type of school		
Government aided/municipal	281	(70.3)
Private	78	(19.5)
School dropout	41	(10.3)
BMI categories*		
Undernourished (< 18.5 kg/m <sup>2</sup> )	237	(59.3)
Normal (18.5-24.9 kg/m <sup>2</sup> )	146	(36.5)
Overweight and obese (>25 kg/m <sup>2</sup> )	11	(2.8)
Not recorded	6	(1.5)

\*WHO classification

**Table 2: Ever utilization of the ICDS® services at AWC\* by the study participants**

Services of Anganwadi availed by adolescent girl	Number	Percentage
Adolescent girl ever visiting AWC*	31	(7.75)
Supplementary Nutrition Programme	15	(3.75)
Nutrition and Health Education Programmes	8	(2)
Iron Folic Acid Supplementation Programme	13	(3.25)
Vocational training programme	1	(0.25)

\* Integrated Child Development Service Scheme. \* Anganwadi Centre

questions on IDA. Thirty-three (8.3%) consider likelihood of being anemic while 48 (12%) perceives anemia to be a serious condition.

Table 4 depicts the categories generated from verbatim of an in-depth interview of AWW regarding implementation and reason for nonutilization of ICDS services by AGs. Each of AWW has approximately six AG enrolled. Reason for nonutilization of IFA supplementation was due to no supply of tablets for adolescent, refusal from parents to take a tablet, and schoolgoing receives tablet from schools. Therefore, this is duplicate activity.

*Hame kishoriyon ke liye kach nahi milta hai* (no supply for an adolescent)

There is a misconception about the ingestion of tablets as said by some of participant.

*kishori ka kehna hai wo bimar nahi hai to kyo le?* (They are not ill so why to take)

**Table 3: Knowledge, attitude, and practice of study participants (adolescent girls) regarding iron deficiency anemia (IDA) in Rishikesh, India (Aug-Oct 2018)**

Variable	n	Percentage
Total	400	(100)
Awareness		
Aware of IDA		
At least two signs and symptoms	155	(38.7)
At least two consequences	134	(33.5)
At least two causes	43	(10.7)
At least two prevention measures	120	(30.0)
At least two iron-rich food	115	(28.7)
At least one food that facilitates absorption of iron	137	(34.3)
At least one food that hinders absorption of iron	52	(13)
Practice		
Frequency of intake of iron-rich food		
Almost daily	83	(20.8)
3-4 days per week	213	(53.3)
1-2 days per week	81	(20.3)
Never	7	(1.8)
Not recorded	16	(4.0)
Frequency of intake of citrus fruits		
Almost daily	34	(8.5)
Sometimes	300	(75)
Never	49	(12.3)
No response	17	(4.3)
Frequency of intake of coffee and tea		
Two hours or more before a meal	110	(27.5)
Right before meal	10	(2.5)
During Meal	18	(4.5)
Right after meal	6	(1.5)
Two hours or more after a meal	23	(5.8)
No response	233	(58.3)
Attitude		
Likelihood of getting anemia		
Not likely	138	(34.5)
Likely	33	(8.3)
No response	229	(57.2)
Seriousness of being anemic		
Not serious	161	(40.2)
Serious	48	(12.0)
No response	191	(47.8)

*koi kehata hai doctor ne mana kya hai, aur kisiko dawai lene ne pet me taqleef hoti hai. Mein samjhati hu par nahi maante.* (Excuse like doctor told to not to take tablets, gastric problems. I try to counsel but of no use.)

Reason for poor health education session was due to uninterested AGs, many schoolgoing so shortage of time. AWW not given appropriate training and material on session activities. AWW takes session on foods to eat, marriage only after 18 years, how to behave with opposite gender.

Participant# 4 *hume khud nahi pata kya sikhaye koi training nahi hui hai. Mein khane ke baare mein aur shadi 18 saal ke baad hi karni is baare me hi batati hu har baar.*

Participant # 5 *Kya khana hai kya nahi. anaemia, ladkon ke saath kaise rehna hai, mahine ke baare me.*

Poor response to supplementary food was due to no supply of take home ration after 2010. Vocational training is held for girls who reside nearby block area only. *hame pucha nahi jaata hai Is baare me, aaspas ke wahi 3-4 ladkiya jaati hai*

No communication in this regard made to AWW. Some parent has concern about the safety of AG.

Overall, there is poor reporting, monitoring and no action taken for demands put up by beneficiaries. AGs demand daily things like an umbrella and sanitary pads from AWW. AWW needs structured training material for health education sessions. Sometimes supervisors should also accompany in sessions. The place to conduct activity is inadequate.

Regarding the perception of AWW toward the services of adolescent had mixed attitude. AWW feels that girls are more open to talking to them rather than their teacher.

*kishori hamse jyada khulge baat kar sakti hai jo wo teacher se nahi kar paati*

However, they feel this as an extra burden apart from preschool children and pregnant/lactating mother. AWW deny AGs service as their work. *Ye hamara kaam nahi hai hame sirf 0-6 saal ke bachoo ko hi dekhna hai.*

## Discussion

The main findings of the study were poor nutritional status, very low utilization of ICDS services through AWC, and low awareness about iron deficiency anemia among study participants. On qualitative analysis of in-depth interview of AWW, poor supply of IFA or Take Home Ration, inadequate training for health education session, and poor monitoring were found to be barrier for implementation of ICDS services for AGs. This study utilizes mixed-method approach to understand the implementation barrier and perception of AWW for providing services to AGs and also to achieve data triangulation regarding utilization of services. It gives a picture of poor service of AWCs for AGs in less-focused urban area as compared to rural.

Only 10% of AGs were dropout as opposed to other studies that reported high dropout rates.<sup>[11,12]</sup> A study from the tribal area reported much higher dropout of 23%.<sup>[13]</sup> All of the AGs were aware of Anganwadi center and its location but few were aware of services provided for them. AGs believe the AWC to be only limited to preschool children. The minimal percentage had utilized the services for AGs in Rishikesh. This contradicts the above-mentioned studies. Poor outreach results in low awareness. This emphasizes the adolescent needs to reach in their own environment, i.e. family, school, or community for creating awareness and demand.

**Table 4: Categories generated from verbatim of in-depth interview of AWW \*regarding implementation and reason for nonutilization of ICDS® services by adolescent girls**

Categories	Codes	Meaning condensed unit
Reason for nonutilization of services Iron and Folic acid supplementation	No supply	No supply of tablets
	Deny to take tablet	Family member don't allow Not ill Advised by doctor Gastrointestinal side effect
Reason for poor response to health education session	Duplicate activity	Duplicate activity already from school
	Adolescent Not interested	Only 2-3 comes
	No training	No time after school Private school We are not aware what to teach
Reason for poor response to supplementary food	No Take Home Ration supply	Ration in 2010-11 only
No vocational training done	No communication/aware	Not asked for Girls from nearby block only are selected Not aware
Overall reason for poor implementation of services	Poor reporting	Report only total adolescent
	Poor supply	No supply of Kishori cards, sanitary pads
	No monitoring or action taken	rarely report Health Education session and attendance of adolescent girls No action taken on demand
Demands	Demand of beneficiaries	Demand daily need things like umbrella, bag, pads, etc.,
	Demand of AWW *	Training for Health education sessions Structured learning material Handholding by supervisors Provide sufficient place to take sessions or activity
Perception of AWW*	Favorable attitude	Adolescent more open to AWW* Can teach life skills
	Negative attitude	Not our work to look after adolescent
	Heavy workload	Loaded with other activities

\* Aaganwadi Centre® Integrated Child Development Service Scheme

AWC's has an important role in creating health-related awareness and nutritional status in community. In current study, 59% were undernourished which is comparable to study by IIPHG<sup>[14]</sup> (60%), Rose–Clarke<sup>[13]</sup> (41%), and higher than NFHS 4 (22.9%).<sup>[15]</sup> Study finding indicated that there were poor knowledge, unfavorable attitude, and satisfactory practice about iron deficiency anemia among study participants. In this study, 81% had heard of anemia and very few of them could correctly quote sign and symptoms, consequences, preventive measures, iron-rich foods. Only 10% were aware of causes of anemia and 13% knew that tea, coffee hinders absorption of iron. Though in a study by Angadhi and Ranjitha<sup>[16]</sup> 91% had heard of anemia, overall poor knowledge, and unfavorable attitude found in all studies<sup>[16-20]</sup> is comparable to this study. Another study by IIPHG found awareness of anemia in 23% of AG.<sup>[14]</sup> Practice of eating iron-rich food was found to be satisfactory compared to other studies<sup>[16,17]</sup> which may be due to season of year, i.e. July–November when leafy vegetables are cheap, easily available in this region. According to Glanz *et al.* (2015), perceived threat is a combination of perceived susceptibility and perceived seriousness.<sup>[21]</sup> Perceived threat is strongly associated with behavioral intention.<sup>[22]</sup> Result of this study indicates that study participants perceive themselves to be least susceptible to anemia and no serious problem.

The ICDS program for an adolescent is nonfunctional in the area for last 3 years as confirmed by interview with AWW. The

barriers faced in giving service to AGs were related to poor political and State commitment toward their health. AWC has to give nutritional service and IFA tablets to school dropouts and health education to all AGs. However, in study AWW distributed iron tablets and supplementary nutrition to few accessible AGs and not to those who need it. There is unavailability of proper infrastructure (limited space) to conduct health activities. The supervisor is not available to supervise AWW during session. As working time of supervisor is from 10 to 2 pm and health education activity is held at 4 p.m., this too can be solved by proper work scheduling. AWWs attempt and struggle to form the groups of AGs, has been unsuccessful. A similar finding is been reported by IIPHG study.<sup>[14]</sup> Vocational training is conducted in a few selected areas only. The concern of parent regarding safety of AG as training is conducted outside community can be solved by providing safety learning experience and token of appreciation to AG. Adolescent does not have autonomy to take his or her own decision. Adolescent health program should take cognizance of this and involve parents and community. AWW's had felt the need for skill-based training to impart health and nutrition education to AGs. Chauhan *et al.* demonstrated the impact of training AWW in improving the utilization of services by AGs and improved communication skill of AWWs.<sup>[23]</sup> As seen in CORT study, Vadodara<sup>[24]</sup> in this study too AWW has felt need for giving more time to adolescents to discuss their problems. AWWs are available at doorstep and AGs discuss more freely

with them rather than teachers. AWW should be motivated to devote services to AGs.

## Conclusion

There is a poor utilization of ICDS services provided through AWCs by AGs. The main reason is due to unawareness. There is gap in knowledge, practice, and attitude regarding anemia among AGs. AWW has constraint related to supply of IFA tablets, limited space to conduct education session, no training, poor monitoring and reporting, and no supervision from supervisor. Focused services should be provided to out of school through AWC and rest through schools to avoid duplication of activities. Capacity building of AWW, ensured enrolment, regular reporting, and supervision of services provided to AGs should be carried out. The convergence of related department and engagement of community is necessary for success of adolescent health program.

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## Conflicts of interest

There are no conflicts of interest.

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