



Assessment of Integrated Child Development service program performance by data validation in geographically representative districts of Chhattisgarh

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Abstract

Background: Integrated Child Development Services (ICDS) program is a vision oriented scheme of government of India. The Government of Chhattisgarh has launched initiatives under the banner 'Kuposhan Mukti Abhiyaan' – notably the weighing of all children in the state in a campaign mode called Wajan Tyohar or Weighing Festival to address the issue of under – nutrition in the state. Cross sectional survey for nutritional assessment is an important initiative to ensure community diagnosis of under nutrition in defined geographical areas and is a scientific tool too. Assessment of program performance by periodic survey and data validation can be useful for planning, implementation and making strategy hence this study was planned in a geographically representative district of Chhattisgarh. **Methodology:** A community based cross sectional survey was planned in seven geographically representative districts of the state during 8 – 14 August 2016. It was decided to conduct validation exercise in AWCs of selected 84 Gram panchayats (GPs). Survey teams were trained for validation process and data collection in predesigned pretested proforma at field level. **Results:** Present study covered 3065 children of 84 GPs from 126 AWCs to validate records of AWCs. In our observation there was a gap in recorded and validated data and coverage gap of 5.43%. Our observation revealed that Height for age, difference in observation was significantly high (i.e. 9.89%). Overall weight for age data validation showed difference in observation was minimal (i.e. 2.81%). Overall performance assessment we found that 3 districts below average performance and rest 4 were average performing during Wajan Tyohar Campaign. **Conclusions:** Few districts showed poor community participation initiatives for Wajan Tyohar campaign. Out of all, few districts failed to adopt the SOPs of anthropometric measurement which is a serious concern. Author recommends field validation exercise as an appropriate method for evaluation ICDS program monitoring and assessment of field level ICDS functionaries.

KEY WORDS: ICDS, Malnutrition, Anganwadi Centres (AWCs), Monitoring, Validation, Evaluation

Introduction

Integrated Child Development Services (ICDS) program is a vision oriented scheme of government of India. In this scheme various package of services provided to children 0-6Yrs of age are Supplementary nutrition, Immunization, health check-up, referral services and Non-formal pre-school education through Anganwadi Centres (AWCs) across the country¹. Recent evaluation conducted by planning commission reported poor coverage (41%) and quality of ICDS services². In Chhattisgarh NFHS- 4 (2015-16) data shows that the prevalence of stunting (37.6%), underweight (37.7%) and wasting (23.1%) is high. Also Rapid Survey on Children (RSOC-2014) 2014 data shows that the prevalence of stunting (43%), underweight (33.9%) and wasting (12.9%) has significantly declined but still it is unacceptably high in the state. Government of Chhattisgarh has launched initiatives under the banner 'Kuposhan Mukti Abhiyaan' – notably the weighing of all children in the state in a campaign mode called Wajan Tyohar or Weighing Festival to address the issue of under – nutrition in the state. Wajan Tyohar is a community based intervention which ensures that all children less than 5yrs are weighed in the Anganwadi Centre over a period of one week across the state. Children are invited through home visits and their weighing is done at Anganwadi centers in the presence of local community representatives so that a transparency could be maintained. Cross sectional survey for nutritional assessment is an important initiative to ensure community diagnosis of under nutrition in defined geographical area and is a scientific tool too. There were five such surveys conducted in previous years. Periodic survey of under nutrition and timely intervention would help to focus efforts to overcome the challenges of under nutrition in the state. Further these activities would also be useful for planning, implementation and making strategy for rational allocation of resources. Strategy of validation by 'external technical support group' can be an eye opener for strategic tactical and operational interventions. Current evaluation based on validation of data, captured by frontline ICDS functionaries of all children registered in AWCs. It was decided to conduct this validation exercise in 7 geographically representative districts of the state in collaboration with Women Child Development Govt. and C.G. UNICEF partnered with Department of Community Medicine, Medical College Raipur.

Objectives

- To validate Wajan Tyohar data.
- To estimate the agreement between the 'Wajan Tyohar' results and results from the validation of the sample.
- To assess the skills of AWW for anthropometric measurements i.e. weight, height and MUAC.

Methodology

A community based cross sectional survey was planned in seven geographically representative districts of the state during 8 – 14 August 2016. It was decided to conduct validation exercise in AWCs of selected Gram panchayats. For identification of Gram Panchayats we requested DWCD to provide district wise list of all Gram Panchayats (GPs) and then for survey purpose 84 GPs were identified by Systematic Random Sampling methodology. Survey teams were formed with mix of interns, demonstrators, post-graduate scholars of department of community medicine Pt JNM Medical Cpllege Raipur and volunteers. One day Hands-on Demonstration cum Training of Survey Teams. They were trained for validation process and data collection in predesigned pretested proforma at field level. It was decided that a two membered team will visit at Anganwadi centre.

Map showing geographical location of selected 84 Gram Panchayats under study:-

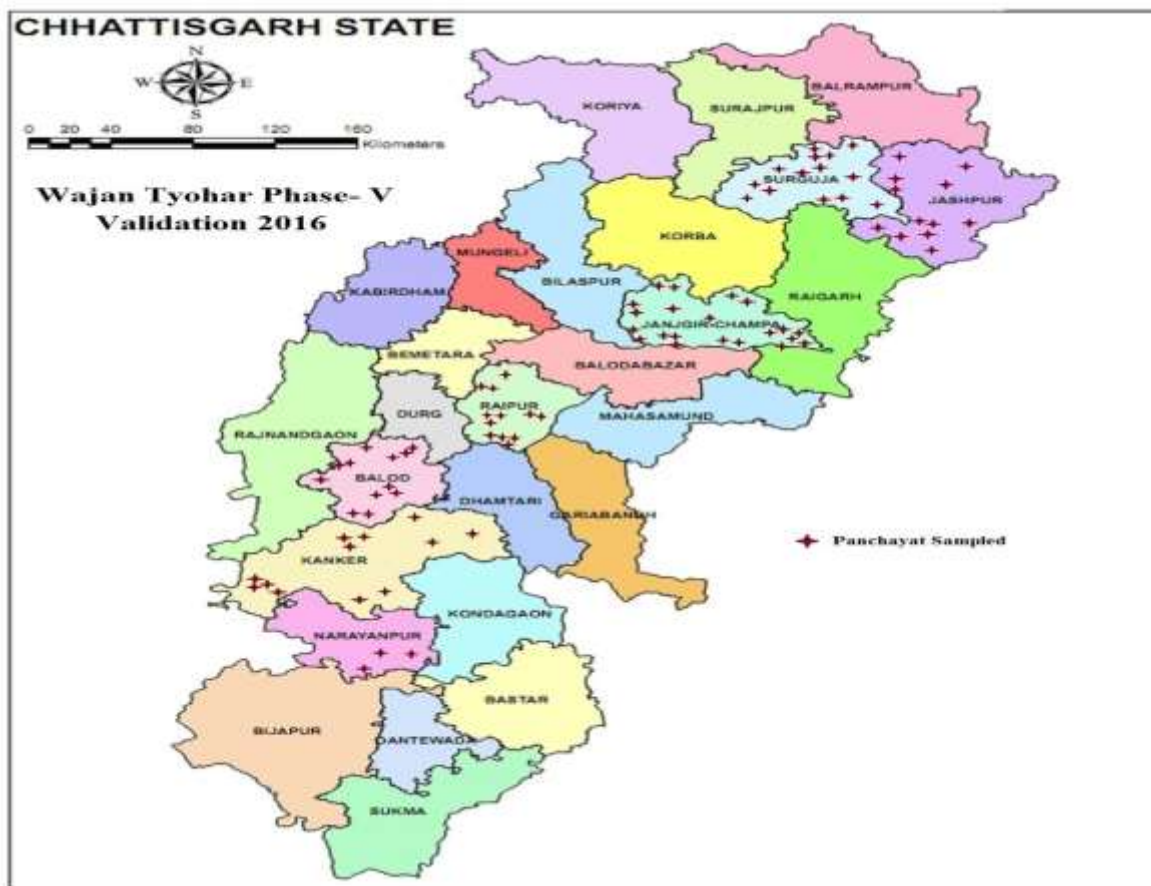


Table- 1. District wise coverage gap covered in AWCs of identified GPs during Wajan Tyohar validation exercise

S. N.	District	Total No. Of GPs in Districts	No of GPs covered for validation	Aanganwadi Centers covered	No of Registered children of 0-5yrs	No of Children who are weighted during Wajan Tyohar	% Children covered during Wajan Tyohar
1	Balod	421	6	6	235	231	98.3
2	Janjgir Champa	732	10	10	1228	1180	96.1
3	Jashpur	427	6	6	215	184	85.6
4	Kanker	421	6	6	287	259	90.2
5	Narayanpur	98	2	2	48	47	97.9
6	Raipur	416	6	6	487	475	97.5
7	Sarguja	464	6	6	263	237	90.1
		2979	42	42	2763	2613	94.57

Table- 2. District wise distribution of children covered in AWCs of identified GPs during Wajan Tyohar validation exercise

S.N.	District	Total GPs in Districts	No of GPs covered	Aanganwadi Centers Covered	Total
1	Balod	421	12	18	371
2	Janjgir Champa	732	20	30	951
3	Jashpur	427	12	18	258
4	Kanker	421	12	18	433
5	Narayanpur	98	3	6	123
6	Raipur	416	12	18	477
7	Sarguja	464	12	18	452
	Total	2979	84	126	3065

Table- 3. Age and Sex wise distribution of children covered from AWCs of identified GPs

S. N.	Age group	Female	Female %	Male	Male %	Total Children	Total Children %
1	< 12 months	287	8.61	297	8.91	584	17.5112
2	12 -36 months	769	23.06	668	20.03	1437	43.0885
3	37 - 60months	712	21.35	602	18.05	1314	39.4003
	Total	1768	53.01	1567	46.99	3335	100

Table- 4 District wise comparison of observation made by validation team and AWW record of Weight for Age in surveyed district.

S. No.	District	AWW Record			Validation Team Observation			Gaps in Observation		
		Grade of Nutrition			Grade of Nutrition			Difference in Normal Grade	Difference in Moderate Grade	Difference in Severe Grade
		Normal%	Moderate %	Severe %	Normal %	Moderate %	Severe %			
1	Balod	64.4	27.49	8.09	59.57	26.95	13.48	4.85	0.54	-5.39
2	Janjgir Champa	66.8	24.19	9.04	62.46	27.23	10.30	4.31	-3.05	-1.26
3	Jashpur	64.3	25.97	9.69	62.02	30.62	7.36	2.33	-4.65	2.33
4	Kanker	61.4	27.02	11.55	63.05	27.48	9.47	-1.62	-0.46	2.08
5	Narayanpur	65.9	25.20	8.94	60.98	26.02	13.01	4.88	-0.81	-4.07
6	Raipur	68.1	25.37	6.50	61.84	29.77	8.39	6.29	-4.40	-1.89
7	Sarguja	63.1	24.12	12.83	64.82	23.89	11.28	-1.77	0.22	1.55
	Total	65.2	25.35	9.49	62.35	27.37	10.28	2.81	-2.02	-0.78

Table- 5 District wise comparison of observations made by validation team and AWW record of Height for Age in surveyed district.

S. No.	District	AWW Record			Validation Team Observation			Gaps in Observation		
		Grade of Nutrition			Grade of Nutrition			Difference in Normal Grade	Difference in Moderate Grade	Difference in Severe Grade
		Normal %	Moderate %	Severe %	Normal %	Moderate %	Severe %			
1	Balod	39.89	25.61	34.50	52.56	30.19	17.25	-12.67	-4.58	17.25
2	Janjgir Champa	45.95	24.19	29.86	52.16	26.39	21.45	-6.20	-2.21	8.41
3	Jashpur	39.92	31.01	29.07	53.10	26.36	20.54	-13.18	4.65	8.53
4	Kanker	46.19	22.17	31.64	52.19	24.25	23.56	-6.00	-2.08	8.08
5	Narayanpur	52.03	25.20	22.76	54.47	21.14	24.39	-2.44	4.07	-1.63
6	Raipur	44.03	25.79	30.19	56.18	26.83	16.98	-12.16	-1.05	13.21
7	Sarguja	40.71	18.36	40.93	57.52	23.45	19.03	-16.81	-5.09	21.90
	Total	43.92	24.08	32.01	53.80	25.97	20.23	9.89	1.89	-11.78

Table- 6. District wise comparison of AWW record and observation made by validation team for MUAC in surveyed district.

S. No.	District	AWW Record			Validation Team Observation			Gaps in Observation		
		Grade of Nutrition			Grade of Nutrition			Difference in Normal Grade	Difference in Moderate Grade	Difference in Severe Grade
		Normal %	Moderate %	Severe %	Normal %	Moderate %	Severe %			
1	Balod	94.53	4.50	0.96	94.53	4.82	0.64	0.00	-0.32	0.32
2	Janjgir Champa	93.54	5.24	1.22	93.29	6.10	0.61	0.24	-0.85	0.61
3	Jashpur	90.09	9.48	0.43	94.40	5.60	0.00	-4.31	3.88	0.43
4	Kanker	91.69	7.53	0.78	92.73	6.23	1.04	-1.04	1.30	-0.26
5	Narayanpur	95.54	4.46	0.00	95.54	4.46	0.00	-0.00	0.00	0.00
6	Raipur	96.54	1.84	1.61	97.93	1.61	0.46	-1.38	0.23	1.15
7	Sarguja	93.28	4.73	1.99	91.79	6.47	1.74	1.49	-1.74	0.25
	Total	93.59	5.19	1.19	94.03	5.19	0.74	-0.44	0.00	0.44

Table-7. District wise performance based on scoring as deference in observation in overall anthropometric measurements i.e. Wt for Age, Ht for Age and MUAC of AWW record and validation team in surveyed district.

S. N.	District	Assesmet for A=1,B=3, C=5	Severe Grade			Moderate Grade			Normal Grade			MUAC Score Out of 15 *	Total Score Out of 45	Performance of District in Wajan Tyohar
			<5%	5-10%	>10%	<5%	5-10%	>10%	<5%	5-10%	>10%			
1	Balod	Ht for Age	A			A					C	3	13	Average
		Wt for Age	A			A			A					
2	Janjgir Champa	Ht for Age	A			A				B		3	11	Average
		Wt for Age	A			A			A					
3	Jashpur	Ht for Age	A			A					C	7	17	Below Average
		Wt for Age	A			A			A					
4	Kanker	Ht for Age	A			A				B		5	13	Average
		Wt for Age	A			A			A					
5	Narayanpur	Ht for Age	A			A			A			3	11	Average
		Wt for Age		B		A			A					
6	Raipur	Ht for Age	A			A					C	5	17	Below Average
		Wt for Age		B		A			A					
7	Sarguja	Ht for Age	A				B				C	5	17	Below Average
		Wt for Age	A			A			A					
*Scoring Criteria For MUAC (Difference in percentage)- 0-<1= A, 1-<5= B, 5<= C														
Assessment Scoring Criteria A=1, B=3, C=5														
Performance of District			0-15 = Average, 16-30 = Below Average, 31-45 = Poor											

Table- 8 District wise status of community participation index based on scoring assigned to proxy indicators for the same as depicted in table below during Wajan Tyohar Phase-V in surveyed districts.

S. No.	District	Score (out of 10)	Performance
1	Balod	5	Average
2	Janjgir Champa	4	Poor
3	Jashpur	7	Average
4	Kanker	10	Good
5	Narayanpur	8	Good
6	Raipur	7	Average
7	Surguja	6	Average
Proxy indicator used for study purpose	Did care takers receive the invitation card of Wajan Tyohar	0-33%=1, 33-66%=2, >66%=3	
	Did care takers have knowledge about the colors in growth chart	0-33%=1, 33-66%=2, >66%=3	
	Did care takers know the color in which their children come at present	0-25%=1, 25-50%=2, 50-75%=3, >75%=4	
Performance based on total score		1-4=Poor, 5-7=Average, 8-10=Good	

Table- 9 District wise performance based on scoring for deference in observation AWW and validation team for adoption of SOPs for age specific Anthropometric measurement (i.e. Weight, Height & MUAC) in surveyed districts.

S. No.	District	AGE GROUP					
		0-12 months		13-36 months		37-60 months	
		Total score secured by Adoption of SOP	Performance of district based on score	Total score secured by Adoption of SOP	Performance Of district based on score	Total score secured by Adoption of SOP	Performance of district based on score
1	Balod	19	Below Average	22	Below Average	22	Below Average
2	Janjgir-champa	25	Below Average	26	Below Average	27	Below Average
3	Jashpur	17	Poor	25	Below Average	27	Below Average
4	Kanker	34	Average	34	Average	34	Average
5	Narayanpur	33	Average	33	Average	33	Average
6	Raipur	29	Average	30	Average	30	Average
7	Sarguja	23	Below Average	34	Average	35	Average
SOP adoption criteria		0-60% = 1, 61-70% = 2, 71-100= 3					
Assessment of district based on Scoring		0 – 18 =Poor, 19 – 27= Below Average, 28-36 =Average					

Results: Present study covered 3065 children of 84 GPs from 126 AWCs to validate records of AWCs. It was found that Wajan Tyohar was operational in all visited Gram Panchayats/Anganwadis of 7 surveyed districts. The mandate of Wajan Tyohar is to cover all the children but our observation showed coverage gap of 5.43%. In our observation there was a gap in recorded and validated data. Our observation revealed that Height for age, difference in observation was significantly high (i.e. 9.89%). Overall weight for age data validation showed difference in observation was minimal (i.e. 2.81%), this difference was significantly more in Raipur (6.29%) followed by Narayanpur, Balod and Janjgir Champa; 4.88%, 4.85% and 4.31% respectively for assessing Normal grade of children (**Table 7**). For MUAC measurement difference in observation was significantly low (i.e. 0.44%) in assessing normal Grade. Overall assessment based on score in difference in observation of validation pertaining to Wt for Age, Ht for Age and MUAC we found that 3 districts (i.e. Jashpur, Raipur and Sarguja) had below average performance and rest 4 were average performing during Wajan Tyohar Campaign (**Table 10**). District preparedness was found good in Narayanpur and Kanker but poor in Janjgir Champa (**Table 11**). Overall among all surveyed districts, Jashpur performed poorly in measurement of 0-1 yrs for adoption of SOPs for Anthropometric measurement. We found that below average performance by other district (i.e. Balod and Janjgir Champa) in adopting SOPs of anthropometric measurements of 1-3 and 3-5 yrs (**Table 12**). Apart from validation exercise validation team observed that in many AWCs weighing machine was not functional properly and electronic weighing machine were not available. Basic amenities like Electricity, Fan, lighting, Separate kitchen and functional Sanitary Toilets were not present in majority of AWCs.

Discussion

Evaluation and validation of data should be the essential component to monitor progress of any community based initiative or intervention. Wajan Tyohar is one of the community based target oriented initiative to assess nutrition in an intention to overcome malnutrition among under five children. In a current study we observed coverage gaps among targeted children for ICDS service, similar observation made by Jitendra Kumar Meena *et al* in urban slum of Delhi³. Our study also revealed gaps in observation against recorded and validated data generated by frontline ICDS functionaries (i.e. AWWs). The record maintenance was not being done uniformly and irregular growth charting led to the poor nutritional assessment of the children. Inadequacy in the training of AWWs and poor and irregular monitoring led to under and/or mis-utilisation of existing resources as reported in past evaluation surveys.⁴ It was also came into our notices that AWWs were facing difficulties to plot nutritional status of children in growth chart similar things had been highlighted in study done in New Delhi⁵. Present study findings largely conforms to the findings of previous evaluation surveys^{2,6}. The AWCs under study grossly devoid of infrastructural inventory provisions i.e. safe drinking water, toilets, teaching aids, weighing, and adequate play space at the centre for the beneficiaries similar observations were made by Sahoo *J et al*⁷ poor infrastructure, Poor staff incentives, Poor logistics, Unnecessary record maintenance, and Poor community support. Optimal monitoring is often essential for any community based programs and overall assessment of performance is also a key to success of implementation of any program progress and it is must to comply assessment of ICDS services. These monitoring tools guides all stakeholders to allocate resources judiciously including financial as well as human and technical resources^{8,9}. Current study depicted that few districts performance were below average and

even poor may be due to lack of trained manpower and gaps in infrastructure available to their respective AWCs similar remarks had been made by other researchers that Ineffective utilization leads to lack luster program performance and this necessitates the alternative approach for monitoring^{10, 11}.

Conclusions

Out of all children suppose to be included in this nutritional assessment campaign (i.e. Wajan Tyohar) in surveyed district; few children were missed during Wajan Tyohar. Few districts showed poor community participation. Out of all few districts failed to adopt the SOPs of anthropometric measurement which is a serious concern, as SOP of anthropometric measurement is the basis for nutritional as well as programmatic assessment of children. More than half of surveyed district facing problem in SOP related to anthropometric measurement especially for young children 0 -12 months and few district are facing problem in almost all age groups. We found significant gap in height for age measurement, should be taken as eye opening intervention being priority for training of AWWs and supervisors. Author recommends field validation exercise as an appropriate method for evaluation ICDS program monitoring and assessment of field level ICDS functionaries.



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