Research Article

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Impact of ICDS services in urban and rural area beneficiaries children of Ghaziabad, Uttar Pradesh, India: a comparative evaluation study

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ABSTRACT

Background: The rich experience of ICDS has brought about a welcome transition from welfare orientation to a new challenging perspective of social change. It aims at enhancing survival and development of children from the vulnerable sections of the society. Being the world's largest outreach program targeting infants and children below 6 years of age, expectant and nursing mothers.

Methods: A longitudinal and comperative study of morbidity (Prevalence and Incidence) among children bellow 6 years of age was conducted in two adjoining areas ,conducted in adjoining area of Rural health training centre and urban health training centre of both area ,covered by ICDS Centre of a concern medical college of Ghaziabad Uttar Pradesh.Impact was assessed (nutritional status and incidence of illness) in children of both the area.

Results: The overall incidence of morbidity was significantly higher in rural ICDS covered area (7.97episode per child per year) than in urban ICDS area (5.43 episodes per child per year).

On initial survey, overall prevalence of morbidity was significantly higher in rural ICDS area (54.14%) than urban area ICDS.(45.85%).

Conclusions: There are program gaps in coverage of supplementary nutrition in rural ICDS area children, its regular supply to the beneficiaries, in pre-school activities coverage, recording of immunization, and regular health check-up of beneficiaries and referral of sick children.

Keywords: ICDS impact, Rural and urban, Ghaziabad, Uttarpradesh

INTRODUCTION

ICDS is the world's largest program for the holistic development of children aged 0-6 years, expectant and lactating mothers and selected adolescent girls. With a view to improving the health and nutritional status of children in the age group of 0-6 years, pregnant women and lactating mothers, the Special Nutrition Program has been included as one of the most important components of the ICDS Program. It also aims at improving awareness of the community as a whole, and brings about behavior change. ICDS has provided significant assistance to as the nation's health and education system

for decades.¹ The Ministry of Women and Child Development (MWCD) of India established ICDS in 1975.² It is the world's largest early child development program. The objective of this programme to improve the nutritional status of pre-school children in addition to other services.

Malnutrition is "the syndrome that results from the interaction between poor diets and disease and leads to most of the anthropometric deficits observed among children in the worlds less developed countries" (WHO 1995).³

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Government of India with partnership of the international agencies like UNICEF (United nation children fund), CARE (Cooperative for assistance and relief everywhere) and WFP (World food programme) provides a package of services to children below six years of age, adolescent girls, expectant and nursing mothers through the network of Anganwadi⁴ The rich experience of ICDS has brought about a welcome transition from welfare orientation to a new challenging perspective of social change. It aims at enhancing survival and development of children from the vulnerable sections of the society. ICDS has generated interest worldwide among academicians, planners, policy makers, administrators and those responsible for implementation. According to National Family Health Survey-3, though 81.1% children under age six years were covered by AWCs, children who received any service from AWC were only 28.4%.⁵ Systematic evaluations of development interventions often lead to the evolution of sharper policies based on hardcore evidence. It is standard practice to look into the relevance, effectiveness, efficiency, impact and sustainability of the intervention in question.⁶ This study was designed to evaluate if the services provided by the scheme are utilized adequately and effectively by the community or not. Such studies will make the authorities aware of the factual situation regarding the scheme.

Aims and objectives of the study were,

- 1 To compare the morbidity in children bellow 6 years of age in a rural and urban ICDS centre.
- 2 To assess nutritional status of the same children in both the area.

METHODS

A longitudinal and comparative study of morbidity (Prevalence and Incidence) among children bellow 6 years of age was conducted in two adjoining areas ,both area covered by ICDS Centre. In this study ICDS centre covered are adjoining area of rural health training centre and urban health training centre, of a concern medical college Ghaziabad, Uttar Pradesh. The total population of urban area is 28351 and of rural area it is 10245. The study started in July 2014 and continued till March 2015. The study divided in to two phases, one month for socio-demographic survey and 6month for follow up for morbidity. A predesigned pretested proforma was used to collect the information about the children. The areas are predominantly inhabited by Hindu community. Most of people are working as daily wedge earner like laborers, factory workers, vendors, Masson etc. There are total 26 Anganwadi centers in urban area and 11 Anganwadi centre in rural area. Out of the total Anganwadi in both area, 10 Anganwadi was selected from rural area and 10 from urban area by random sampling and all of the children bellow 6 years of age in the selected Anganwadi constituted the study group. The 186 children were enrolled in rural selected Anganwadi centre where as 181 in urban selected Anganwadi centre. The houses of all

children in the selected groups were visited and best effort was made to include every child. It was possible to include 181 children from this area. Rest of the children could not include in the study eighter due to non-availability or persistent noncooperation on the part of parents, despite repeated visits. Survey was carried out for estimating the prevalence of illness, Immunization status, Nutritional status feeding practices. Information was also collected on housing conditions, socio-economic status literacy status and occupational status of parents, type and size of family, living order. The informant was always mothering. In case of non availability of mother father was the informant.

The age of children was determined on the basis of date of birth or according to the local calendar in case of date of birth was not known. For prevalence of morbidity, diagnosis was made on the basis of history of present and past illness and clinical examination of every child. In case of doubt about diagnosis, child was referred to the pediatrician not less than the level of senior resident. Kuppu-swamy classification was used to calculate socioeconomic status of children's family.

Anthropometric examination was done to assess nutritional status. Recumbent lengths in case of children bellow 2 years of age and standing length for children above 2 years. Every fortnightly information about morbidity of all the children included in the study was obtained by home visit. Morbidity during follow-up period was analyzed on the basis of children months. Total follow-up period (no. of children × period of study) in the ICDS (Urban) 1086 months and ICDS (Rural) 1116 children months. However 27 children -months in urban ICDS 25 children months in non ICDS area were lost to follow-up because of drop outs. Therefore information were available only for 1059 children months (97.51%) and 1091 children months (97.75%) in ICDS Urban and Rural ICDS respectively. Z test were applied to obtain p value for compression. Result were tabulated and analyzed by SPSS softwere-20.

RESULTS

Table 1: Distribution of children according to age and sex in rural and urban ICDS.

Ago(Months)	ICDS	(Urban)	ICDS (Rural)			
Age(Months)	N*	%	N	%		
<6	12	6.63	13	6.99		
>6-12	24	13.26	25	13.44		
>12-36	75	41.44	77	41.40		
>36-72	70	38.67	71	38.17		
Total (0-72)	181	100	186	100		

N*= Total Number of participants

Total 181 children were selected from Urban ICDS centre and 186 from rural ICDS centre (Table-1). Children belonged to only two religions, Hindu and Muslim in

both the study area. Majority of children belong to Hindu family in both the area. Majority of children in both the groups (59.12% in urban area and 61.83% in rural area) belongs to class IV and 29.83% of children of urban and 26.34% of rural belongs to class III.

Table 2: Distribution of children according to different characteristics.

Characteristics	ICDS (Urba	n)	ICDS	(Rural)					
	N	%	N	%					
Total	181	100	186	100					
Religions									
Hindu	175	96.68	177	95.16					
Muslim	6	3.32	9	4.84					
Socio economic sta	Socio economic status								
Upper(Class I)	0	0	0	0					
Upper middle(Class II)	17	9.3	21	10.75					
Lower middle (Class III)	54	29.83	48	26.34					
Upper lower(Class IV)	107	59.12	115	61.83					
Lower(Class V)	3	1.66	2	1.07					
Immunization stat	tus								
No Immunization	0	0	1	0.68					
Partial Immunization	51	28.18	57	30.65					
Complete Immunization	130	71.82	128	68.82					
Nutritional status 36700									
Normal	113	62.43	76	40.86					
Grade I	41	22.65	57	30.64					
Grade II	15	7.73	38	20.43					
Grade III	11	6.07	7	3.76					
Grade IV	1	0.55	8	4.30					

There was higher percentage (71.82%) of coverage of completely immunization in urban ICDS area as compare to rural ICDS (68.82%) Over all prevalence of protein energy malnutrition was higher in rural ICDS (59.14%) than urban ICDS (37.57%) (Table-2).

In the ICDS area, 83.42% of children suffered from at least one spell of sickness during the 6 month of follow up, while in rural ICDS area the percentage of similar children was 95.69%. The difference was statically significant (Table-3).

All types of morbidities (except others) show higher affinity for affinity for urban ICDS group of children. The difference between two areas was statically significant in respect of all types of morbidities excluding pyrexia, chicken pox and injuries (Table-3).

The most common morbidity in both the area was respiratory (Urban ICDS area-57.51%, rural-71.51%). It

was followed by Gastro intestinal diseases (41.98%) Pyrexia (24.31%) skin diseases (14.19%) and eye diseases 14.36% on the other hand in rural ICDS area Gastro intestinal diseases (70.43%) skin diseases (37.09%) and eye diseases 33.33% Pyrexia (27.42%). This compression shows the rural ICDS centers still to upgrade (Table-3).

Table 3: Distribution of children according to morbidity pattern.

Morbid	Urban ICDS Rural ICDS					P	
ity	No. of childre	0/0	No. of children	%	Z	value	
Respirat ory	104	57.45	133	71.51	2.84	< 0.01	
GIT	76	41.98	131	70.43	5.73	< 0.01	
Skin	27	14.91	69	37.09	5.01	< 0.01	
Eye	26	14.36	62	33.33	4.39	< 0.01	
Pyrexia	44	24.31	51	27.42	.68	>0.05	
Measles	21	11.6	48	25.81	3.56	< 0.01	
Ear	12	6.63	21	11.29	3.49	< 0.01	
Injuries	16	8.84	19	10.21	0.45	>0.05	
Chicken pox	5	2.76	8	4.30	1.92	>0.05	
Others	7	3.8	2	1.08	1.68	>0.05	
Total	151	83.42	178	95.69	3.92	< 0.01	

*Children who suffered from at least one spell of sickness during the period of study.

Average duration of sickness /Child /Year in Urban ICDS area was 40.15 while in rural ICDS it was 54.68 means 24 days of illness in a year in urban area and 27.34 days of illness in rural ICDS area children that is burden of morbidity in rural area is very high (Table-4).

Among the leading causes of morbidity average duration of sickness because of respiratory diseases, GIT diseases, eye diseases and pyrexia was higher in rural ICDS area although the difference was not statically significant. In contrary to the foregoing observations, the average duration of sickness caused by skin and ear diseases was significantly higher in Urban ICDS area (Table-4).

DISCUSSION

In the present study total 367 children were enrolled. Out of these 181 were from urban ICDS area and 186 were from rural ICDS area. In present study complete immunization was more in urban ICDS area (71.82) than rural area (68.82%). It may be due to more awareness of mothers in urban area. It was also seen that educational status of mothers and socioeconomic status in urban area was better than rural area but it is better than percentage of full immunization coverage survey done by DLHS-3 (District level household and family survey) in Ghaziabad district, where full immunization coverage of rural area (29.3,) and urban area (35.2) of Ghaziabad while according to NFHS -3 full immunization coverage of rural area (20.5,) and urban area (33.0)^{8,9} One unimmunized child found in the rural ICDS study area.

Table 4:	Duration	of sickness	and m	orbidity	pattern.

Urban ICl	DS				Rural IC	DS				
Diseases	Childr en months	Sickn ess days	Average duration of sickness /child/ month	Average duration of sickness /child /year	Children months	Sickn ess days	Average duration of sickness /child/ month	Duratio n of sickness /child /year	Z value	P value
Respirato	608	1003	1.65+	19.79	778	1350	1.74+	20.82	Z=0.75	p>0.0
ry	(104)		-1.00		(133)		-0.83			
GIT	447 (76)	744	1.66+ -1.01	19.97	765 (131)	1279	1.67+ -0.72	20.06	Z=0.5	p>0.0
Skin	159 (27)	308	1.94+ -1.13	23.25	407 (69)	618	1.52+ -0.67	18.22	Z=2.21	P=<0.0
Eye	153 (26)	164	1.07+ -0.31	12.86	367 (62)	407	1.11+ -0.45	13.30	Z=0.4	p>0.0
Pyrexia	251 (44)	245	0.94+ -0.41	11.71	295 (51)	333	1.13+ -0.55	13.55	Z=1.9	p>0.0
Measles	126 (21)	193	1.53+ -0.23	18.38	282 (48)	459	1.63+ -0.32	19.53	Z=1.25	p>0.0
Ear	70 (12)	148	2.1+ -0.69	25.37	125 (21)	135	1.08+ -0.15	12.96	Z=3.4	P=<0.0
Injuries	92 (16)	110	1.19+ -0.58	14.34	113 (19)	95	0.84+ -0.19	10.08	Z=2.5	P=<0.0
Chicken pox	30(5)	47	1.57+ -0.15	18.8	48 (8)	72	1.50+ -0.21	18.00	Z=1.17	p>0.0
Others	42(7)	56	1.33+ -0.73	16.0	12 (2)	10	0.83+ -0.00	10.00	Z=0.92	p>0.0
Total	902(1 51)	3018	3.35+ -1.78	40.15	1044 (178)	4758	4.55+ -1.82	54.68	Z=6	P=<0.0

It was seen than complete utilization of immunization service by the beneficiary children was 70.3 %. Immunization coverage in urban and rural area was nearly similar to the coverage reported by Punith K et al i.e. (71.11%). ¹⁰ The overall prevalence of malnutrition in study area was 48.50% which was similar to prevalence reported by Shubhada S. Avachat et al¹¹ (50.46%). This percentage was less than the percentage of malnourished children reported by Bhatia V et al¹² (65.87%), S. P. Mitra¹³ (61.11%), Anita Khokhar¹⁴ (60.7%). K.D.Bhalani¹⁵ (62.9%). It was observed that majority of malnourished children were from grade I malnutrition. In urban area 22.65% and in rural area 30.64% children were suffering from grade I malnutrition which was nearly similar to reported by S. P. Mitra in 2007^{13} (37.6%), Umesh Kapil et al¹⁶ (35.2%). The percentage of grade I malnourished children in study area was more than reported by A. Mittal et al¹⁷ (26.76%), Arshad Farooq et al¹⁸ (24.14%). Though the percentage was more for grade I malnutrition there was decrease in grade II malnutrition.

Frequency of illness is high in India. A greater proportion

of illness is due to preventable diseases borne by food, wsater, and facies and also due to bad environmental sanitation. In this study, 83.42% of urban ICDS children suffered from at least one spell of sickness during the 6 month of follow up, while in rural ICDS area the percentage of children was 95.69% the difference was statically significant (Table-3).

In present study most common morbidity in both the area was respiratory (Urban ICDS area-57.51%, rural-71.51%). It was followed by gastro intestinal diseases (41.98%) Pyrexia (24.31%) skin diseases (14.19%) and eye diseases14.36% on the other hand in rural ICDS area gastro intestinal diseases (70.43%) skin diseases(37.09%) and eye diseases 33.33% Pyrexia(27.42%). This compression shows the rural ICDS centres still to upgrade (Table-3).

A study was conducted in the urban slums of ICDS block, Vijiaiwada, Krishna District, Andhra Pradesh. Among children of 0-5 Years of age group it was observed that 20.8% did not suffer from any illness, 14.6% suffered from one episode of illness, 17% from

two, 19.8 percent from three and 27% from more than three episodes of same or different illness. The same study also revealed that major cause of morbidity among the infants were diarrhea (28.8%), Respiratory infection (19.4%), Pyrexia(20.0%), and minor infection and injuries (24.7%) and these were contributing to 92.9% of illness. The average spell of sickness was 2.2%. ¹⁹

In this study average duration of sickness /child /year in urban ICDS area was 40.15while in rural ICDS it was 54.68 means 24 days of illness in a year in urban area and 27.34 days of illness in rural ICDS area children that is burden of morbidity in rural area is very high (Table-4).

This is lower than the study coated by this book, children in India on an average suffer about 10.2 illness episodes which keep them sick for 51 days in a year and burden of morbidity in rural area is very high. This difference may be due to the sickness rate gradually decreasing after one to two year of age and sharp fall after the five years. The most common illness which retarded the normal growth of Indian infants is infection of gastrointestinal tract, Respiratory tract, skin Infection and other infectious diseases. ¹⁹

This information shows that even the immunization status of children are improving in these area but the malnutrition and duration of sickness is still an eye opening problem in both urban and rural ICDS centers. It has to want change in field of complete immunization, eliminating mal nutrition and health care deliveries through ICDS.

CONCLUSION

As health and nutrition education emerged as the most significant component of the ICDS scheme, it needs to be consolidated and strengthen by further training of Anganwadi worker. Health care and referral services were observed to have poor response from the people. Also take action simultaneously, to improve the prevailing insanitary and unhygienic living conditions and eradicate the monstrous problem of poverty from our country.

Recommendations

- ICDS cell needs to be strengthened in terms of resources and training as the resource and training devoted is not sufficient to meet the requirement especially in rural area.
- II. Set up a Research Cell to conduct studies on child development and level of malnourishment in rural Anganwadi areas and urban-Anganwadi areas.
- Involvement of community in the provision of Health.

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