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A cross sectional study on assessment of infrastructure and facilities at Anganwadi centres of Vijayawada

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***Abstract*---**Malnutrition includes under-nutrition as well as over-nutrition and refers to deficiencies, excesses or imbalances in the intake of energy, protein and/or other nutrients. The Ministry of Women and Child Development is implementing various schemes for welfare, development and protection of children. One of the main scheme under this ministry is the Integrated Child Development Services (ICDS) Scheme. This study was conducted to assess the socio-economic status of Anganwadi workers, Infrastructure, Equipment and facilities at Anganwadi centres of Vijayawada 1.To know Socio-demographic profile of Anganwadi workers. 2. To assess the infrastructure, Equipment and Facilities present in Anganwadi centres this is a cross- sectional descriptive study. With a purpose of sampling, 10% of the total 344 AWCs, the sample-size calculated was 34. A predesigned questionnaire was used to collect the data from AWCs. Questionnaire was prepared by modifying the ICDS Survey

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2013 Anganwadi worker questionnaire. The present study was carried out in 34 AWCs of Vijayawada ICDS Projects 1 &2, Krishna District, Andhra Pradesh. These 34 AWCs cater to a population of 51237.In the present study majority of Anganwadi workers (35.3%) aged between 31- 40 yrs followed by 41-50 yrs (32.4%) of age group. Mean experience is 15.41 years and 52.9% of AWCs residing in same locality. Majority of (85.3%) AWCs are housed in the rented building and 73.5% of AWCs need no repair. 88.2 % AWC are under water proof. 55.9 % AWC have adequate ventilation. 97.1 % of AWC are having sufficient lighting. 55.9 % have proper boundary wall. 85.3% AWCs are housed in the rented building. 73.5% need no repair. 88.2 % AWC are under water proof. 55.9 % AWC have adequate ventilation. 97.1 % of AWC are having sufficient lighting. 55.9 % have proper boundary wall.

***Keywords*---**AWC, AWW, ICDS Scheme.

Introduction

Adequate nutrition is essential for human development. Malnutrition includes under-nutrition as well as over-nutrition and refers to deficiencies, excesses or imbalances in the intake of energy, protein and/or other nutrients. A review of trends in economic growth, health and nutrition in India indicate that the country is undergoing rapid socio-economic, demographic, nutrition and health transitions. Under-nutrition continues to be persistently high in India and remains a challenge. [(1)] Under-nutrition is defined as "the outcome of insufficient food intake and repeated infectious diseases. It includes being underweight for one's age, too short for one's age (stunted), dangerously thin for one's height (wasted) and deficient in vitamins and minerals (micronutrient malnutrition)"[(2)].

Children in the age group 0-6 years constitute around 158 million of the population of India (2011 census [(3)].Ministry of Women and Child Development is implementing various schemes for welfare, development and protection of children under 0-6 years and launched Integrated child development services Scheme on 2nd October, 1975. ICDS Scheme is one of the flagship programmes of the Government of India and represents one of the world's largest and unique programmes for early childhood care and development. It is the foremost symbol of country's commitment to its children and nursing mothers, as a response to the challenge of providing pre-school non-formal education on one hand and breaking the vicious cycle of malnutrition, morbidity, reduced learning capacity and mortality on the other. The beneficiaries under the Scheme are children in the age group of 0-6 years, pregnant women, lactating mothers and reproductive age group women

Objectives of the Scheme are to improve the nutritional and health status of children in the age-group 0-6 years, to lay the foundation for proper psychological, physical and social development of the child, to reduce the incidence of mortality, morbidity, malnutrition and school dropout, to achieve effective co-ordination of policy and implementation amongst the various

departments to promote child development; and to enhance the capability of the mother to look after the normal health and nutritional needs of the child through proper nutrition and health education.

Study done in eastern India found out many issues regarding manpower, functionality and infrastructure of AWCs under ICDS program. Such issues warrants strengthening of grass root level facilities based on findings of regular needs assessment, effective monitoring and supervision. Involvement of the lowest level workers in stakeholder analysis for performance improvement, adequate supply of logistic, performance based incentives etc. may be some ways that could improve functioning ICDS and can help to achieve its intended goals. [4] A substantial amount of research has been carried out on Anganwadi workers from the perspective of social, political, health, cultural and economics. Various studies in recent past has revealed that implementation of services under ICDS are not up to satisfactory standards and still more efforts are needed for improving the quality of services for the successful achievement of expected targets (Barman 2001; Forces New Delhi 2007) [5]. The objective of this study was to assess the facilities available at the AWCs. The present study is aimed to assess the various aspects of ICDS scheme such as the infrastructure of AWCs, baseline characteristics of AWW etc.

Objectives

- To know Socio-demographic profile of Anganwadi worker
- To assess the infrastructure, equipment and facilities present in Anganwadi centers

Materials and Methods

The study entitled "A Cross Sectional Study On assessment of infrastructure, Equipment and facilities at Anganwadi Centres of Vijayawada" was undertaken from January 2016 to February 2017 for a period of 14 months.

Study area

The present study was carried out in 34 AWCs of Vijayawada ICDS Projects 1 &2, Krishna District, Andhra Pradesh. These 34 AWCs cater to a population of 51237.

Sampling technique

Systematic random sampling

Sample size

With a purpose of sampling, 10% of the total 344 AWCs, the sample-size calculation is given below: 344 (AWCs) X 10/100 = 34 AWCs

Selection criteria

Selection of AWCs for the study

Vijayawada city consists of two ICDS projects i.e. project 1 & project 2. Project 1 renders its services through 142 AWC centers and project 2 to 202 AWC which combine to totally it consists of 344 AWCs. With purposive sampling, 10 % of sample is taken for the study i.e. 34 AWCs taken for the study. First AWCs was taken by using table of random numbers. The first random number was 3. With sampling interval of 10 remaining sample of AWCs were taken for the study, number 133 AWC is the last center from project 1. Again from the project 2 first sample was taken from the 3rd AWC and with the sampling interval 10 remaining sample were taken, last AWC in project 2 is 193. With this a total of 34 AWC were taken for the study. Thus a sample of 10 % of AWC s in the city were covered. A predesigned questionnaire was used to collect the data from AWCs. Questionnaire was prepared by modifying the ICDS Survey 2013 Anganwadi worker questionnaire.

Method of data collection

Permission was taken from project director of Vijayawada ICDS project. Child Development Project officers (CDPO) of projects 1 & project 2, supervisors were informed before collecting information from AWCs. The working time of AWCs is from 9 AM to 4 PM daily. The AWCs were visited by the investigator on Mondays during the period of data collection. In the centers where the AWW is not available, these centers were revisited on next day. Oral consent was taken from Anganwadi worker (AWW) before they were interviewed and the data was collected using a pre designed semi-structured questionnaire which included information on the variables like profile of AWW, Ownership and type of Built of AWCs, Infrastructure and Basic amenities, Activity at the time of Visit, Attendance of beneficiaries at the AWC, Enrollment of Beneficiaries (Children, Pregnant & Lactating Mothers, Adolescent girls).

Ethical clearance

Was taken from the Institutional Ethical Committee of Siddhartha Medical College, Vijayawada.Permission was taken from Project director of Vijayawada ICDS project. CDPO s of Vijayawada ICDS projects 1&2, Supervisors were informed before going to AWCs.Oral consent was taken from the Anganwadi worker.

Statistical analysis

Data was entered in MS excel and analyzed for rates and proportions. This whole analysis was done using Epi Info software.

Results

The present study was analyzed systematically and results were discussed under following headings:

- Socio-demographic profile of Anganwadi worker
- Infrastructure, equipment & facilities in Anganwadi centers

Socio demographic Profile of Anganwadi worker

In the present study majority of Anganwadi workers (35.3%) aged between 31- 40 years.In the present study majority of Anganwadi workers (79.4%) belong to Hindu religion, Christians and Muslims are equal of 8.8%.In the present study majority of Anganwadi workers (55.9%) belong to OC category followed by SC (41.2%) and BC 2.9 %.In the present study majority of Anganwadi workers (52.9 %) are passed 10th class only.In the present study majority of Anganwadi workers (94.1%) are married. Minimum experience for AWWs is 1 year maximum is 34 yrs and mean experience is 15.41 years.In the present study majority of Anganwadi workers (52.9%) residing in same locality.In the present study majority (47.1 %) of AWW had induction training for one month and 41.2 % AWW had training of 3 months and 5.9 % AWW each had training of one month and 4 months.In the present study majority (53.0 %) of AWW had refresh training for 7 days and 41.2 % AWW had refresh training of 15 days and 2.9 % AWW each had refresh training for one day and 3 days. In the present study majority (88.2 %) of AWW felt that the training is adequate. In the present study majority of Anganwadi centers (85.3%) are housed in the rented building and remaining 14.7 % are housed in community halls.

Table1
Socio demographic profile of Anganwadi worker

Variable	Frequency	Percentage
Age wise distribution between 30-40 years	12	35.3
AWW belongs to Hindu religion	27	79.5
Distribution of AWW according to education who were passed 10th class	18	53
Experience of AWW $\leq$ 10 years	13	38.2
No. of AWW were reside in same locality	18	52.9
AWW were undergoing induction training more than one month	16	47
Aww were undergoing refresh training for 7 days	18	53
Adequacy of training	30	88.2

Table 2
Infra-Structure

Variable	Frequency	Percentage
Year of operation of Anganwadi centres before 1991	18	53
Rented Anganwadi centres	29	85.3
Working community halls as a AWC	5	14.7

In the present study majority of Anganwadi centers (73.5%) need no repair. 88.2 % AWC are under water proof. 55.9 % AWC have adequate ventilation. 97.1 % of AWC are having sufficient lighting . 55.9 % AWC have proper boundary wall.

Table 3
Availability of facilities

Availability of facilities	Yes Frequency (Percentage %)	No Frequency (Percentage %)
Electricity	34 (100.0)	0 (0.0)
Electric fan	32 (94.1)	2 (5.9)
Clean and safe drinking water	34 (100.0)	0 (0.0)
Toilet	30 (88.2)	4 (11.8)
Indoor activity space	32 (94.1)	2 (5.9)
Kitchen/Separate space for cooking	30 (88.2)	4 (11.8)
Storage facility for food	34 (100.0)	0 (0.0)
Storage facility for equipment	34 (100.0)	0 (0.0)

In the present study all (100 %) Anganwadi centers having electricity, clean and safe drinking water, and separate storage facility for food. 94.1 % of AWC having electric fan , 88.2 % AWC having toilet facilities, 94.1 % AWC having indoor activity space.

In the present study only 64.7 % AWC have good quality medical kit, in 20.6 % of AWC don't have medical kit et all. Good quality weighing scale present in 91.1 % AWC, In 8.9 % AWCs it is of poor quality. Only 61.8 % AWCs the quality of weighing scale is good, in 38.2 % AWCs it is of poor quality. Good quality wall charts and paintings present in 91.1 % AWC, In 8.9 % AWCs it is of poor quality. Nearly in 94 % of AWCs are having good quality indoor play equipment.

Table 4
Equipment details of Anganwadi centre

Details of equipment	Good quality Frequency (%)	Poor quality Frequency (%)	Not present Frequency (%)
Medical kit	22 (64.7)	5 (14.7)	7 (20.6)
Baby weighing scale	31 (91.1)	3 (8.9)	0 (0.0)

Adult weighing scale	21 (61.8)	13 (38.2)	0 (0.0)
Wall charts/Paintings	31 (91.1)	3 (8.9)	0 (0.0)
Indoor play equipments	32 (94.1)	2 (5.9)	0 (0.0)

Discussion

Socio demographic Profile of Anganwadi worker

In the present study majority of Anganwadi workers (35.3%) aged between 31- 40 yrs followed by 41-50 yrs (32.4%) of age group. Minimum age 24 yrs and maximum age is 56, mean age of AWW is 41.59. But as per the study done by Gaurav Desai et al (2012) in Wagodiya block of Vadodara district Showed that the mean age of Anganwadi worker was 33.8 years. (Range – 20-53 years) [12]. In the present study majority of Anganwadi workers (79.4%) belong to Hindu religion, Christians and Muslims are equal of 8.8%. when compared to the study done in Urban Blocks in Sundargarh District of Odisha by Prasanti Jena (2013) on Knowledge of Anganwadi Worker about Integrated Child Development Services (ICDS): showed that about 66.7% of AWWs are Hindu followed by 33.3% for Christian [13].

In the present study majority of Anganwadi workers (52.9 %) are passed 10th class only, followed by 23.5 % who passed intermediate and Degree equally. As per the study done in Gujarath 42.9 % of AWW passed matriculation (10th class), 28.6 % were below matriculation and 14.3 % who passed intermediate and Degree equally and also the nationwide survey report of NIPCCD (2006) which was carried out in all 35 States and Union Territories [UTs] showed that the majority of the AWWs [43.2%] were matriculate, 23% were having higher secondary school education and about 10% were graduates[9]. While distributing the respondents by marital status it was found that majority of Anganwadi workers (94.1%) are married and the remaining are widowed and unmarried who are 2.9 % each but when compared to the study done in Urban Blocks in Sundargarh District of Odisha by Prasanti (2013) showed that 76.7% of the workers are married, 20.0% are unmarried and 3.3% of the workers are divorce. So, major portion of workers are married in both studies [13].

In the present study majority of Anganwadi workers (38.2%) experience is less than or equal to 10 years followed by 26.5 % AWW whose experience is between 11-20 years and then 23.5 % & 11.8 % whose experience is 21-30 years and more than 30 years respectively. Nearly 62 % of AWW having experience of more than 10 years. Minimum experience is 1 year maximum is 34 yrs and mean experience is 15.41 years but as per the study done in Gujarath by Chudasama RK etal (2016) only 50 % of AWW in urban area had work experience of more than 10 years [6]. In the present study majority of Anganwadi workers (52.9%) residing in same locality and remaining 47.1 % are residing in other area whereas study done in Gujarath by Chudasama RK etal (2016) showed that in rural AWCs, 15.2% AWWs were residing in other village/locality. Wheras in urban area 100 % of AWW residing in same locality [6].

Training status of AWW

In the present study all (100%) AWW s received induction training but the period of training varied, 47.1 % of AWW had induction training for one month and 41.2 % AWW had training of 3 months and 5.9 % AWW each had training for two months and 4 months. Coming to the adequacy of training, 88.2 % of AWW felt that the training is adequate and 11.8 % AWW felt that training is inadequate. And the refresher training among all AWW majority (94.2 %) received refresher training, and 5.8 % AWWs not received refresher training, coming to the duration of training, majority (53.0 %) of AWW had refresh training for 7 days and 41.2 % AWW had refresh training of 15 days and 5.8 % AWW not attended refresh training the results are similar when compared to the study done by Prasanthi jena (2013) in Orissa it was found that majority of Anganwadi workers 100% were trained and have attended the ICDS training programme but among all 30 workers, only 50% of them attended the refresher training. Result also suggests that majority of the AWWs those who received training had opinion that they received enough practical experience during training sessions [13]. In the present study, in terms of time lapsed since last training, 73% of AWW's had taken training about 6 months to 1 year back. The AWW's who had received training in the past six months and more than 1 year back were 9 % and 18 % respectively. Datta SS et al. (2010) in their study showed that the percent of AWWs who received trainings in the past one year is 36.4 % [8] . The present study observed that a higher proportion of 81% of AWWs who had received training within 1 year.

Infrastructure, equipment, and facilities in Anganwadi centers

In the present study majority of Anganwadi centres (52.9 %) were established before 1991 followed by 20.6 % of AWC established in between 1991 to 2000, 17.6 % AWC established after 2010 and only 8.8 % centres established between 2001 to 2010 when compared to study conducted in Gujarath by Rajesh et al. (2016) that nearly 43 % of AWCs established before 1998 and 35.7 % of AWC established between 1998 to 2002 and 7 % of each AWC established between 2003 to 2007 & 2008 to 2012 [6] . In the present study majority of Anganwadi centres (85.3%) are housed in the rented building and remaining 14.7 % are housed in community halls and all are Pucca buildings. The Programme Evaluation Organization of the Planning Commission conducted an evaluation of ICDS through NCAER during 2009 revealed that overall 42.5% of sampled AWCs have their own buildings, 17.4% are in rented buildings, 17.3% are located in primary schools and other 22.9% are running from AWW house, Panchayat and community buildings.[10] The majority of AWC in urban areas (50%) were in rented buildings.[11] Study done by Datta SS et al (2010) covering 22 AWCs in Pondicherry and Tamilnadu border area, showed that 63.6% rural AWCS had a Pukka construction while 18.2% AWC buildings were run from Semi-Pucca and 18.18% were run from kaccha structures [8] . FORCES (2007) study in Delhi found that 96% centers were on rent [11].

Building condition

In the present study majority of Anganwadi centers (73.5%) need no repair. 88.2 % AWC are under water proof. 55.9 % AWC have adequate ventilation. 97.1 % of

AWC are having sufficient lighting . 55.9 % AWC have proper boundary wall.When compared to the study done in north east district of Delhi by Malik et al (2015) a source of cross-ventilation was present in 66.7% AWCs in Project A, 55.6% in Project B and 71.4% in Project C. The source of light was natural in 14.6% AWCs and the rest had an artificial source which consisted of a tube light in 36.6%, a CFL in 43.9% and a bulb in 4.9% of AWCs. However, it was possible to read a newspaper print, in any part of the room in only 65.9% of the AWCs (84.3, 64.3 and 33.3% AWCs in Projects A, B and C,respectively)[7] .

Facilities in AWCs

In the present study all (100 %) Anganwadi centers having electricity, clean and safe drinking water, and separate storage facility for food. 94.1 % of AWC having electric fan, 88.2 % AWC having toilet facilities, 94.1 % AWC having indoor activity space. And also as per the study done in north east district of Delhi by Akash malik (2015) the source of drinking water supply was tap water (from the Delhi Jal Board) in all the AWCs. However, the storage of drinking water was found to be hygienic in only in 78% of AWCs. A toilet was present in 88.9, 55.6 and 85.7% of AWCs in projects A, B and C, respectively [7]. Study done in Bandipora district of Jammu and Kashmir by Aadil Bashir et al (2014) showed that the food storage facility was very poor, and storage bins/other equipments supplied under the project were in bad condition. No adequate utensils were there to serve supplementary food [14].

Equipment

The AWC inventory usually consists of weighing scales, cooking/serving utensils, almirahs/boxes, toys, posters/charts and PSE Kits. Weighing scales are separate for babies and adults. In the present study only 64.7 % AWC have good quality medical kit, in 20.6 % of AWC don't have medical kit. Good quality baby weighing scale present in 91.1 % AWC, In 8.9 % AWCs it is of poor quality. Only 61.8 % AWCs the quality of adult weighing scale is good, in 38.2 % AWCs it is of poor quality. Good quality wall charts and paintings present in 91.1 % AWC, in 8.9 % AWCs it is of poor quality. Nearly in 94 % of AWCs are having good quality indoor play equipment. When compared to the study done by Programme Evaluation Organisation of Planning Commission on ICDS (2011) found that weighing scales available for babies were much more than those available for adults across all states. Tamil Nadu, Orissa and Uttarakhand had the highest number of AWC having weighing scales for babies (95.5%, 91.8% & 91.3% respectively) and Haryana had the highest number of weighing scales for adults (90.5%). Maharashtra, Kerala and Andhra Pradesh had the most number of AWC with utensils, cooking vessels and almirahs/boxes. Himachal Pradesh and Jharkhand had the most number of PSE kits in their AWC (90.1% & 72.9% respectively) and Bihar and Punjab had the least (12.9% and 13.9% respectively). Good quality wall posters were 85.3 % & functional adult weighing scale in Andhra Pradesh (united) was 60.5 % [30]. This result is similar to the current study where it shows that the functional adult weighing scale is 61.8% and quality wall posters are 91.[15]

Conclusion

In the present study, most of AWWs were aged less than 50 yrs., as per religion most of them belong Hindu and as per caste majority were belong to OC category, majority of their education is 10th class, almost all are married, majority of their work experience is less than or equal to 10 years. For every two AWWs one AWW residing in same locality. Merely half of them received only one month induction training. Nearly half of AWCs were established before 25 years, none of AWC had their own building. Nearly 3/4th of AWCs need no repair. Only half of AWCs had adequate ventilation. Cent percent of AWCs had electricity supply, Clean & safe drinking water, storage facility for food and equipments. Majority of AWCs had toilet facility, and Kitchen/separate space for cooking. Majority of AWCs had good quality baby weighing scale, wall charts/paintings.

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