

ORIGINAL RESEARCH

Assessment of infrastructural and utility facilities of Anganwadi Centres in study district of western India

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ABSTRACT

Introduction: The ICDS program functions through a network of 'Anganwadi Centres' (AWCs) which are the focal points for service delivery and are managed by the Anganwadi Workers (AWWs). For better utilization of any health care services, the infrastructure where such services are provided must be meeting basic requirements for its functioning. So the study was focused on the place (AWC). **Objectives:** (1) to assess the infrastructural and other utility facilities AWCs (2) to find out differences in facilities of AWCs between rural and urban localities. **Method:** This cross sectional study was done at selected 120 AWCs of Rural and Urban areas of Jamnagar using simple random sampling. A proforma having questions related to physical infrastructure and utility facilities of AWCs was used for data collection. **Results:** About 87% AWCs had 'pucca' type of building. Of all AWCs, 77.5% had electricity supply. Separate kitchen was available in 87.5% AWCs with separate storage facility in 80%. Gas facility was available in 95% AWCs. Out of all AWCs, 70% had drinking water facility. Usable toilet facility was present in only 67.5% of AWCs that was more common in rural as compared to urban AWCs. **Conclusion:** More than 70% of all AWCs had 'pucca building', electricity supply, separate kitchen, separate storage facility, gas facility and drinking water facilities. About 2/3rd AWCs had usable toilet facility. Electricity supply was seen more commonly in urban than rural AWCs. Usable toilet facility was seen more commonly in rural AWCs than urban ones.

Key words: Anganwadi, Infrastructural Facilities, Utility

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INTRODUCTION

India is home to the largest child population in the world with 158.8 million children; constituting 13.1 per cent of the population below 6 years as per 2011 census. ^[1] Children are the future human resources of the country. This led to the birth of the Integrated Child Development Services (ICDS) in 1975. Integrated child development services (ICDS) program continues to be the world's most unique early childhood development program, which is being satisfactorily operated since more than 3 decades of its existence. ^[2] The ICDS programme functions through a network of Anganwadi Centres (AWCs) which are the focal points for the delivery of services attached to the scheme and are managed by the Anganwadi Workers (AWWs). ^[3] Geographical location of AWCs

also matters because water supply and electricity supplies are not uniformly distributed between rural and urban areas in India which can also affect facilities available at AWCs. Poor infrastructure generally leads to poor quality of service, which in turn not only wastes resources but is positively dangerous to the health and welfare of the patients and the community at large. ^[4] Infrastructure is a key pillar supporting the fundamental aim of promoting improved standards of care and wellbeing for all patients, together with a good experience of the health care system. ^[5] Infrastructure has been described as the basic provision for the delivery of public health activities in a productive and meaningful manner. ^[6] Promoting functional and safe design of the hospital is one of the crucial measures formulated to promote health and

well-being.^[7] Health infrastructure is regarded as a crucial concept, which needs to be emphasized upon particularly when improvements need to be brought about in medical and health care facilities.^[8] For better utilization of any health care services, the infrastructure where such services are provided must to user friendly and meeting basic requirements for its functioning. Many studies have been conducted to assess service utilization of AWCs but only few studies have studied the place (AWC) where these services are provided. So this study was conducted with following objectives: (1) To assess the infrastructural and other utility facilities of Anganwadicenters (AWCs) (2) to find out differences in facilities of AWCs between rural and urban localities

METHOD

The study was a cross sectional type of study which was conducted from July 2017 to June 2018 duration at ‘anganwadi centres’ of Jamnagar District, Gujarat, India selected by simple random sampling method. Total sample size was 120 which was total of ‘A’&‘B’. ‘A’ means 10% number of AWCs selected from the total number of 913 AWCs from all taluka of Jamnagar which came out to 91 and ‘B’ means 10% number of AWCs selected from the total number of 294 AWCs from all urban wards of Jamnagar municipal corporation which came out to be 29. The present study was approved by Institutional Ethical

committee. A pre-tested semi-structured pro forma designed by NIPCCD (National institute of public co-operation for child development) was used for data collection which includes questions related to assessment of various infrastructural and other facilities of AWC.^[9] One of the investigators visited the facility and filled the pro forma after assessment.

EXCLUSION CRITERIA

AWC which were not functioning at the time of study (i.e. where post of Anganwadi worker (AWW) was vacant at the time of study).

The data entry was done in MS Excel version 10.0 and data analysis was done using SPSS (Statistical Package for social sciences) version 20.0. For qualitative data, Pearson’s chi-square test was applied to test the relationship between different categorical data. If expected number in the cell was below 5 in a table, fisher’s exact test (exact two sided) was used. For quantitative data, mean and standard deviations were calculated. Appropriate statistical test of significance were applied to obtain result and to draw conclusion for quantitative data too. A ‘P value’ of < 0.05 was considered statistically significant.

RESULTS

Out of total 120 AWCs, 88 AWCs (i.e. 73%) were selected from rural areas of Jamnagar while 32 AWCs (i.e. 27%) were selected from urban areas of Jamnagar.

Table 1: Assessment of infrastructural and utility facilities of AWCs

Facility	Variables	n (%)
Construction	Pucca	104 (86.67)
	Kaccha	16 (13.33)
Building ownership	Government Building	99 (82.50)
	School	9 (7.50)
	Rented	12 (10.00)
Electricity Supply	Present	93 (77.50)
	Absent	17 (22.50)
Proper Sign board availability	Yes	42 (35.00)
	No	78 (65.00)
Sign Board visible from road	Yes	33 (78.57)
	No	9 (21.43)
Condition of Sign board	Good	24 (57.14)
	Satisfactory	6 (14.29)
	Bad	12 (28.57)
Cooking facility availability	Separate Kitchen	105 (87.50)
	Gas availability	114 (95.00)
	Storage space availability	96 (80.00)
Drinking water facility	Hand pump in AWC	27 (22.50)
	Hand pump nearby	12 (10.00)
	Well	24 (20.00)
	Municipality Supply	57 (47.50)
Toilet Facility	Present	81 (67.50)
	Absent	21 (17.50)
	Present but not usable	18 (15.00)
Separate toilet for boys & girls	Yes	0 (0.00)
	No	120 (100)

Alternative facility for absence of toilet at AWC	Other facility provided by society	3 (7.14)
	Roadside	24 (57.14)
	Nearby AWC	3 (7.14)
	Own house	12 (28.57)

Table 1 show that about 87% AWCs had 'pucca' type of building. Majority (82.5%) AWCs were being operational at government owned building. Only 77.5% AWCs had electricity supply. Only 35% of AWCs had properly visible sign board of that AWC. In those with sign board present, about 79% had visible sign board from the road. Condition of the sign board of AWC was either good or satisfactory in about 71% AWCs.

In context of cooking facilities, separate kitchen was available in 87.5% AWCs, gas facility for cooking was

available in 95% AWCs while separate storage facility was seen in only 80% of 'Anganwadi centres'.

70% of AWCs in our study were found to have water facility at AWC either through municipal supply or hand pump facility at AWCs.

Usable toilet facility was present in only 67.5% of AWCs with no separate toilet facility for boys and girls in any of the AWC. In those AWCs with no toilet facility, about 57% AWC even didn't have alternative arrangement for toilet and the children enrolled there has to go roadside for toilet.

Table 2: Comparison of facilities between rural and urban localities

Facility	Variables	Urban n (%)	Rural n (%)	Total n (%)	Chi square value	p value
Construction	Pucca	31 (96.88)	73 (82.95)	104 (86.67)	2.823	0.09
	Kaccha	1 (3.13)	15 (17.05)	16 (13.33)		
Electricity supply	Present	31 (96.88)	62 (70.45)	93 (77.50)	4.004	0.044
	Absent	1 (3.13)	16 (18.18)	17 (22.50)		
Storage space facility	Present	30 (93.75)	66 (75.00)	96 (80.00)	4	0.04
Toilet Facility	Present	18 (56.25)	63 (71.59)	81 (67.50)	9.123	0.01
	Absent	4 (12.50)	17 (19.32)	21 (17.50)		
	Present but not usable	10 (31.25)	8 (9.09)	18 (15.00)		
Alternative facility for absence of toilet at AWC	Other facility provided by society	3 (27.27)	1 (3.23)	3 (7.14)	15.6	0.001
	Roadside	1 (9.09)	23 (74.19)	24 (57.14)		
	Nearby AWC	1 (9.09)	2 (6.45)	3 (7.14)		
	Own house	6 (54.55)	5 (16.13)	12 (28.57)		

It can be seen from table 2 that even though it seems that 'pucca' type of construction is more common in urban AWCs as compared to rural AWCs but this association is not statistically significant. Electricity supply is far more common in Urban AWC compared to rural ones and this is statistically significant association. One significant finding came out was that separate storage facility was seen more commonly in Urban AWCs as compared to rural ones. A statistically significant finding observed was that 'usable toilet facility' was more common in rural AWCs than urban AWCs. In those AWCs without toilet facility, alternative toilet facility was not available (i.e children have to go roadside) in about 74% of rural AWCs which was about 8 times higher than that was seen in urban AWCs and this finding is supported by appropriate tests of 'significance of association'.

DISCUSSION

In present study 73% AWCs were selected from rural and 27% from urban areas of Jamnagar. A study carried out by Chudasama et al in the same state included 77% AWCs from rural and 23% from urban areas.^[10] 87% AWCs in our study had 'pucca' type of building. A study carried out (yr 2012-13) by Chudasama et al showed 77% AWCs running in Pucca type of buildings.^[10] Another study by Chaudhary et al in the Gujarat state in the year 2010-11 showed 58.3% AWCs with Pucca building while the study carried out in Dec 2010 by Lodhiya et al showed that 50% AWCs had Pucca building.^[11,12] It shows that percentage of Pucca building AWCs goes on increasing since 2010 to present study.

Out of all AWCs of present study, 82.5% were being operational at government owned building while 17.5% were operational in community owned places. A study by Chudasama et al showed the ownership of AWCs by Government and community owned places being 40% and 60% respectively.^[10] In the study by Chaudhary et al mentioned that 71% AWCs had govt owned building while 29% had community owned building.^[11] Another study by Lodhiya et al showed that total about 50% having government building.^[12] So we can say that AWCs owned by govt building are being increasing gradually since 2012-13 till present study. Our study showed that 77.5% AWCs had electricity supply. As per the rapid survey report on children 2013-14, electricity supply was present in only 32.4% AWCs which indicates that electricity connection availability is increasing in AWCs since 2013-14 till present study.^[13] In Our study separate kitchen was available in 87.5% AWCs. A study by Chudasama et al found 68.3% AWCs having separate kitchen facility.^[10] Chaudhary et al in their study found that 54.2% AWCs had separate kitchen facility while the proportion of the same was 78% in study by Lodhiya et al.^[11,12] Our study which was more recent that these previous study showed highest percentage of AWCs with separate kitchen facility for preparing supplementary food.

Out of all AWCs, 70% AWCs in present study were found to have drinking water facility at AWC itself (either through municipal supply or hand pump at AWCs). A study by Chudasama et al showed that 58% AWCs had tap water facility at AWCs while 44.7% AWC had drinking water facility available within AWCs premises as per the rapid survey report on children.^[10, 13] It's a good change that drinking water facility is showing increasing trend since 2012-13 till present study. Usable toilet facility was present in only 67.5% of AWCs in our study. Chudasama et al in their study found that toilet facility was available only in 19.6% and the same was available in 58.7% AWCs in the study by Lodhiya et al.^[10-12] A study by Chaudhary et al found 54.2% AWCs having toilet facilities. Again a positive change is seen about rise in toilet facility at AWCs during recent years.^[11]

Electricity supply is far more common in Urban AWC compared to rural ones and this is statistically significant association. As per the rapid survey report on children 2013-14, electrical supply was which 68% in urban and 28.6% in rural AWCs which shows similar kind of picture like our study.^[13] One significant finding came out was that separate storage facility in kitchen was seen more commonly in Urban AWCs as compared to rural ones. A study by Chudasama et al showed that separate storage space were seen in 41% of rural and 35.7% of urban area.^[10] This finding is different than that was found in our study; the probable cause for such difference may be more improvement in Urban AWCs than the rural ones. A statistically significant finding was observed that 'usable toilet facility' was more common in rural

AWCs than urban AWCs. A study by Chudasama et al showed toilet facility availability as 30% in urban area and 64.3% in rural areas. This study also shares similar reflection about toilet facility as our study.^[10]

CONCLUSION

About 9 out of every 10 AWCs had 'pucca' type of building. About 80% AWCs were being operational at government owned building. Only about 1/3rd of AWCs had properly visible sign board. Separate kitchen was available in almost 90% AWCs with separate storage facility in only 80% centres. Gas facility for cooking was available in majority (95%) of AWCs. Nearly 70% of had drinking water facility at AWC either through municipal supply or hand pump facility at AWCs. Usable toilet facility was present in only 67.5% of AWCs. Electricity supply was available more commonly in urban than rural AWCs. Usable toilet facility was present more common in rural AWCs than urban ones.

RECOMMENDATIONS

For better utilization of service of 'Anganwadi centres', basic facilities like electricity connection, Drinking water facility and toilet facility should be increased to 100% AWCs.

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