



BENEFICIARY SATISFACTION AND ITS DETERMINANTS IN ICDS SERVICES AT ANGANWADI CENTERS IN RURAL JAIPUR: A MULTI-GROUP CROSS-SECTIONAL STUDY

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ABSTRACT

Introduction: Integrated Child Development Services (ICDS) is a major public health program addressing child and maternal health in India. Beneficiary satisfaction influences service utilization and effectiveness. However, gaps in service quality, infrastructure, and communication persist. Limited multi-group evidence in rural settings highlights the need to assess satisfaction and its determinants to improve ICDS performance and outcomes.

Materials and Methods: A 19-month community-based cross-sectional study was carried out in rural Jaipur, including 1052 ICDS beneficiaries selected through universal sampling. Data were collected using a pre-tested semi-structured questionnaire and observations. Satisfaction determinants were assessed, and data were analyzed using SPSS. Ethical approval and informed consent were obtained; $p < 0.05$ was considered significant.

Results: The study enrolled 1052 beneficiaries across Anganwadi Centres, with children constituting the largest group (43.2%). Most participants belonged to lower socio-economic classes. Infrastructure was largely inadequate, though logistics were moderate. Service quality was acceptable but food irregularity was common. Presence of Anganwadi workers (AWWs) was satisfactory, but attitude and information delivery were concerns. Satisfaction varied significantly ($p < 0.001$), with lower levels among children and lactating mothers.

Conclusion: ICDS services in rural Jaipur show varied beneficiary satisfaction, with lower satisfaction among children and lactating mothers. Key determinants include infrastructure gaps, irregular nutrition supply, and limited AWWs communication. Strengthening service delivery, infrastructure, and worker capacity is essential to improve program effectiveness.

Keywords: ICDS, Anganwadi Centres, Beneficiary Satisfaction, Service Quality, Maternal And Child Health, Supplementary Nutrition.

INTRODUCTION:

Child health and nutrition remain critical public health priorities in India, particularly in rural settings where disparities in access and utilization of services persist. The Integrated Child Development Services (ICDS) scheme, launched in 1975, is one of the largest community-based programmes globally, providing a comprehensive package of services including supplementary nutrition, immunization, health check-ups, referral

services, nutrition and health education, and pre-school education through Anganwadi Centres (AWCs) [1]. Despite its extensive reach, the effectiveness of ICDS largely depends not only on service availability but also on beneficiary satisfaction and perceived quality of services. Beneficiary satisfaction is increasingly recognized as a key indicator of health system performance, as it directly influences service utilization, compliance, and community participation. Studies have shown that satisfaction with Anganwadi services is shaped by multiple factors such as quality and regularity of supplementary nutrition, behavior of service providers, infrastructure, and accessibility [2,3]. Evidence from various regions of India suggests that dissatisfaction among beneficiaries remains a concern, with gaps in service delivery, irregular supply, and inadequate communication affecting the



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overall perception of ICDS services [4]. Furthermore, the role of Anganwadi Workers (AWWs) is crucial in determining service quality, as their performance, training, and workload significantly influence beneficiary experiences and outcomes [5].

Recent research also highlights that socio-demographic characteristics such as education, socio-economic status, and awareness levels play an important role in shaping beneficiary satisfaction and utilization patterns. In addition, system-level factors including infrastructure constraints, administrative burden, and supervision mechanisms contribute to variations in service delivery across regions [6,7]. While several studies have examined utilization of ICDS services, relatively fewer have focused comprehensively on beneficiary satisfaction across multiple groups, including children, pregnant and lactating women, and adolescent girls. In states like Rajasthan, where maternal and child health indicators still lag behind national averages, understanding beneficiary perspectives becomes essential for improving programme effectiveness [8]. Assessing satisfaction across different beneficiary groups can provide valuable insights into gaps in service delivery and help identify context-specific determinants influencing service uptake. Given the limited evidence on multi-group beneficiary satisfaction in rural settings, there is a need for comprehensive studies that evaluate satisfaction levels and their determinants across all ICDS target groups. Such evidence is crucial for strengthening programme implementation, enhancing service quality, and ensuring better health and nutritional outcomes [9].

MATERIALS AND METHODS

This community-based cross-sectional study was conducted in the rural field practice area of Achrol, Jaipur district, Rajasthan, over a period of 19 months from December 2014 to June 2016. The study included all Anganwadi Centers (AWCs) that had been functional for at least one year prior to the initiation of the study. Ethical clearance for the study was obtained from the Institutional Ethics Committee prior to the commencement of the study. Written informed consent was obtained from all adult participants after explaining the purpose and procedures of the study in their local language. The study population comprised all beneficiaries registered at the selected AWCs, including children aged 0–6 years, adolescent girls (10–19 years), pregnant women, and lactating mothers. A universal sampling was adopted, wherein all eligible, available and consenting beneficiaries were included, resulting in a total sample size of 1052

participants. In addition, Anganwadi Workers (AWWs) and Anganwadi Helpers (AWHs) associated with these centers were included to assess service delivery and beneficiary satisfaction. Beneficiaries who were irregular in attendance (absent for three consecutive sessions or for more than seven days in the preceding three months) or those unwilling to participate were excluded from the study. Data collection was carried out using a pre-tested, semi-structured questionnaire administered through face-to-face interviews. Separate interview schedules were designed for different beneficiary groups to ensure appropriate and context-specific data collection. Information regarding socio-demographic characteristics, utilization of ICDS services, and determinants of beneficiary satisfaction was obtained. Satisfaction was assessed across multiple domains, including accessibility and availability of services (distance, working hours, and infrastructure, drinking water, and sanitation facilities), behavior and attitude of AWWs, and quality, quantity, and regularity of supplementary nutrition, along with delivery of health and nutrition services. In addition to interviews, on-site observations were conducted to assess the functioning of AWCs, including preschool education sessions, food preparation and distribution practices, and growth monitoring activities. Record reviews were performed to evaluate attendance registers, stock availability, logistics supply, and infrastructure facilities. Household visits were undertaken where necessary to validate information and ensure data accuracy. The collected data were coded and entered into Microsoft Excel and analyzed using SPSS version 20. Descriptive statistics such as frequencies and percentages were calculated. Associations between satisfaction levels and various determinants were assessed using appropriate statistical tests. A p-value of <0.05 was considered statistically significant.

RESULTS

The present study included a total of 1052 beneficiaries across different groups attending Anganwadi Centers. As seen in Table 1, children aged 0–6 years formed the largest segment, comprising 454 (43.2%) of the participants. Pregnant women accounted for 223 (21.2%), while lactating mothers constituted 201 (19.1%) of the study population. Adolescent girls represented 174 (16.5%), making them the least represented group. The distribution highlights that a substantial proportion of beneficiaries were children, with the remaining participants distributed across maternal and adolescent categories.

Table 1: Distribution of study participants

Beneficiary Group	n (%)
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Children (0–6 years)	454 (43.2)
Adolescent Girls	174 (16.5)
Pregnant Women	223 (21.2)
Lactating Mothers	201 (19.1)
Total	1052 (100)

The age distribution given in Table 2 revealed that among children, the majority belonged to the 3–6 years age group (337; 74.2%), while 117 (25.8%) were aged 0–3 years. Among adolescent girls, 102 (58.6%) were in the 10–14 years age group, and 72 (41.4%) were aged 15–19 years. Most pregnant women were in the age groups of 20–24 years (94; 42.2%) and 25–29 years (91; 40.8%), with fewer participants aged 15–19 years (24; 10.8%) and ≥30 years (14; 6.2%). A similar pattern was observed among lactating mothers, where the majority were aged 20–24 years (84; 41.8%) and 25–29 years (78;

38.8%), followed by smaller proportions in the younger (15–19 years: 20; 10.1%) and older (≥30 years: 19; 9.4%) age groups. Regarding family type, a higher proportion of children (218; 48.0%) and adolescent girls (94; 54.0%) belonged to joint families, followed by nuclear and three-generation families. In contrast, pregnant women were more commonly from nuclear families (107; 48.0%), while lactating mothers were predominantly from joint families (69; 47.8%). Three-generation families constituted a smaller proportion across all beneficiary groups.

Table 2: Distribution of study participants based on demographic variables

Variable		Category	n (%)
Age in years	Children	0–3	117 (25.8)
		3–6	337 (74.2)
	Adolescent girls	10-14	102 (58.6)
		15-19	72 (41.4)
	Pregnant women	15-19	24 (10.8)
		20-24	94 (42.2)
		25-29	91 (40.8)
		≥30	14 (6.2)
	Lactating mothers	15-19	20 (10.1)
		20-24	84 (41.8)
25-29		78 (38.8)	
≥ 30		19 (9.4)	
Family type	Children	Nuclear family	147 (32.4)
		Joint family	218 (48.0)
		Three generation family	89 (19.6)
	Adolescent girls	Nuclear family	66 (38)
		Joint family	94 (54)
		Three generation family	14 (8)
	Pregnant women	Nuclear family	107 (48)
		Joint family	72 (32.3)
		Three generation family	44 (19.7)
	Lactating mothers	Nuclear family	65 (32.3)
		Joint family	69 (47.8)
		Three generation family	40 (19.9)

The socio-economic distribution of beneficiaries, assessed using the Modified B.G. Prasad scale (2015), showed a similar pattern across all groups. Figure 1 shows that a higher proportion of participants belonged to the lower socio-economic strata, particularly Class V and Class IV. Among children, 128 (28.2%) were from Class V, followed by 104 (22.9%) from Class IV. A comparable trend was observed among adolescent girls, where 50 (28.7%) belonged to Class V and 39 (22.4%) to Class IV. Among pregnant women, the majority

were also concentrated in Class V (65; 29.1%) and Class IV (51; 22.9%), with similar findings among lactating mothers, where 57 (28.4%) and 46 (22.9%) belonged to Class V and Class IV, respectively. In contrast, a relatively smaller proportion of participants across all groups were from higher socio-economic classes (Class I and II). Overall, the findings indicate that most beneficiaries availing services at Anganwadi Centres belonged to lower socio-economic backgrounds, highlighting the

program's reach among economically disadvantaged populations.

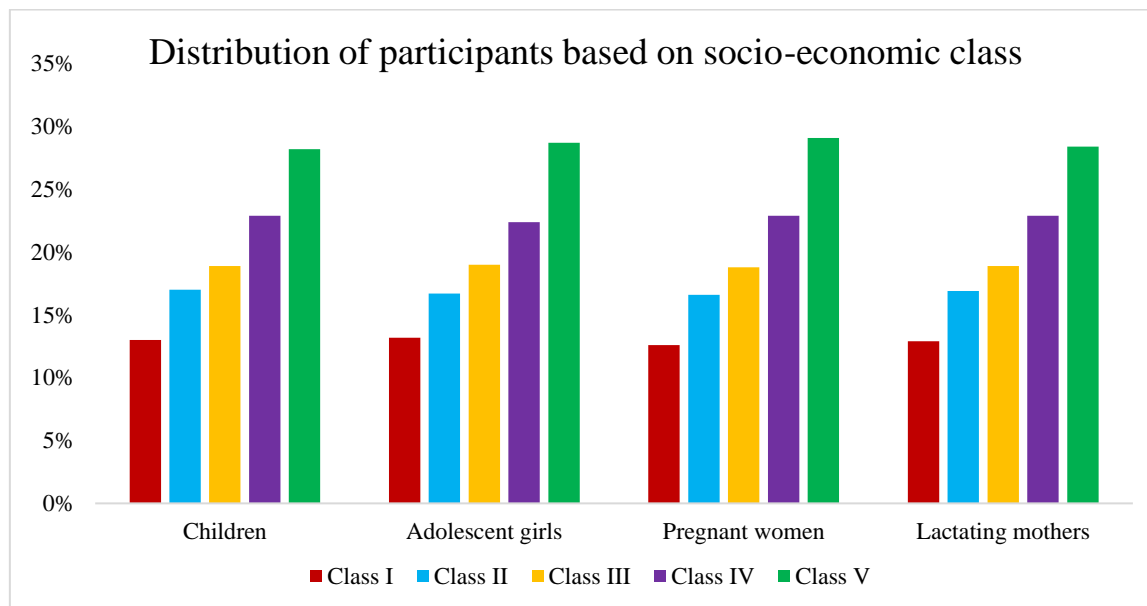


Figure 1: Distribution of participants based on socio-economic class

Assessment of infrastructure and logistics at Anganwadi Centres revealed varying levels of adequacy as shown in Table 3. With respect to logistics supply, more than half of the centres were graded as average (11 out of 21), while 6 centres were categorized as good and 4 as poor.

In contrast, infrastructure facilities were found to be comparatively inadequate, with the majority of

centres (13 out of 21) falling under the poor category. Only 5 centres demonstrated average infrastructure, and a minimal number (3 centres) were rated as good. Overall, while logistics supply appeared to be moderately satisfactory in most centres, infrastructure remained a significant area of concern, with a large proportion of AWCs lacking adequate physical facilities

Table 3: Infrastructure and logistics according to score at AWCs

Parameter	Good (n)	Average (n)	Poor (n)	Total
Logistics supply	6	11	4	21
Infrastructure	3	5	13	21

As visible in Table 4, assessment of service quality at Anganwadi Centres showed mixed findings across different indicators. The majority of beneficiaries rated food quality as acceptable (735; 69.9%), while 195 (18.5%) considered it poor and only 122 (11.6%) rated it as good. A similar trend was observed for food quantity, with 699 (66.4%) reporting it as somewhat adequate, whereas 230 (21.9%) found it inadequate and 123 (11.7%) considered it adequate. In terms of food regularity, nearly half of the participants (483; 45.9%) reported irregular supply, while 445 (42.3%) described it as

somewhat regular and only 124 (11.8%) reported very regular distribution. Regarding the functioning of AWCs, 674 (64.1%) beneficiaries stated that centres opened regularly. However, 174 (16.5%) reported irregular but occasional opening, and 204 (19.4%) indicated that centres were rarely operational. Overall, while certain aspects such as food quality and quantity were perceived as moderately satisfactory, issues related to regularity of food supply and consistency in AWC functioning were evident.

Table 4: Quality of services at AWCs

Indicator	Category	n (%)
Food quality	Good	122 (11.6)
	Acceptable	735 (69.9)
	Bad	195 (18.5)
Food quantity	Adequate	123 (11.7)

	Somewhat adequate	699 (66.4)
	Not adequate	230 (21.9)
Food regularity	Very regular	124 (11.8)
	Somewhat regular	445 (42.3)
	Irregular	483 (45.9)
AWC opening	Regular	674 (64.1)
	Time to time but not regular	174 (16.5)
	Rarely opened	204 (19.4)

The assessment of Anganwadi Workers (AWWs) revealed varied perceptions among beneficiaries as shown in Table 5. Regarding attitude, nearly half of the participants (494; 47.0%) perceived AWWs as indifferent, while 417 (39.6%) described them as kind and 141 (13.4%) reported a harsh attitude. In terms of availability, 633 (60.2%) beneficiaries stated that AWWs were always present at the centre. However, 241 (22.9%) reported that AWWs were present only sometimes, and 178 (16.9%) perceived

them as mostly absent. With respect to information provided by AWWs, a majority of respondents (651; 61.9%) considered the information to be not useful. Only 225 (21.4%) found it somewhat useful, while a smaller proportion (176; 16.7%) rated it as very useful. Overall, while the presence of AWWs at centres was reported to be satisfactory by a majority, concerns were noted regarding their attitude and the perceived usefulness of information delivered to beneficiaries.

Table 5: Interaction and service delivery characteristics of AWWs

Indicator	Category	n (%)
Attitude of AWW	Kind	417 (39.6)
	Indifferent	494 (47)
	Harsh	141 (13.4)
Presence of AWW at the center	Present always	633 (60.2)
	Present sometimes	241 (22.9)
	Mostly absent	178 (16.9)
Information given by AWW	Very useful	176 (16.7)
	Somewhat useful	225 (21.4)
	Not useful	651 (61.9)

Table 6 shows that, a statistically significant association was observed between beneficiary category and level of satisfaction with services at Anganwadi Centers ($p < 0.001$). Among children, a considerable proportion reported average satisfaction (197; 43.4%), followed by poor satisfaction (176; 38.8%), while only 81 (17.8%) reported good satisfaction. Adolescent girls demonstrated relatively better satisfaction levels, with 84 (48.3%) reporting average satisfaction and 51 (29.3%) indicating good satisfaction, while 39 (22.4%) expressed poor satisfaction. Similarly,

among pregnant women, the majority reported average satisfaction (118; 52.9%), followed by good (71; 31.8%) and poor satisfaction (34; 15.3%). In contrast, lactating mothers exhibited comparatively lower satisfaction levels, with more than half (101; 50.2%) reporting poor satisfaction. Only 59 (29.4%) reported good satisfaction, and 41 (20.4%) had average satisfaction. Overall, satisfaction levels varied significantly across beneficiary groups, with pregnant women and adolescent girls reporting relatively better satisfaction compared to children and lactating mothers.

Table 6: Association between the satisfaction level and beneficiary category enrolled in AWCs

Beneficiary Group	Good n (%)	Average n (%)	Poor n (%)	Total	p-value
Children (n=454)	81 (17.8)	197 (43.4)	176 (38.8)	454	<0.001
Adolescent Girls (n=174)	51 (29.3)	84 (48.3)	39 (22.4)	174	
Pregnant Women (n=223)	71 (31.8)	118 (52.9)	34 (15.3)	223	
Lactating Mothers (n=201)	59 (29.4)	41 (20.4)	101 (50.2)	201	

DISCUSSION

The present study assessed beneficiary satisfaction and its determinants in ICDS services at Anganwadi Centres (AWCs) in rural Jaipur. The findings revealed significant variation in satisfaction levels

across beneficiary groups, with pregnant women and adolescent girls reporting relatively higher satisfaction compared to children and lactating mothers. This finding is consistent with the study of Pandey et al. [2] and Thakare et al. [3], who also

observed higher satisfaction among maternal beneficiaries due to better engagement with services. However, this is in contrast with the findings of Singh S et al. [10], where satisfaction levels were reported to be uniformly distributed across different beneficiary groups. The socio-demographic profile in the present study showed that a majority of beneficiaries belonged to lower socio-economic classes, indicating effective outreach of ICDS services to vulnerable populations. This observation is supported by national reports and evaluations [1,8,9] as well as the study by Singh S et al. [10], which highlighted higher utilization of ICDS services among economically disadvantaged groups. In contrast, some studies have reported relatively better access among mixed socio-economic groups, suggesting variability in program reach across regions. Infrastructure assessment in the present study indicated that most AWCs had inadequate facilities, although logistics supply was comparatively better. These findings are supported by Kumar et al. [11] and Rao et al. [12], who documented similar deficiencies in infrastructure and basic amenities across AWCs. However, this is in contrast with the study by Nair et al. [13], which reported improved infrastructure and better service delivery in certain regions, indicating regional disparities in ICDS implementation. With regard to service quality, most beneficiaries in the present study perceived food quality and quantity as acceptable, but highlighted irregularity in food supply as a major concern. This finding aligns with Pandey et al. [2] and Dasgupta et al. [14], who identified irregular supplementary nutrition as a key determinant of dissatisfaction. In contrast, Joseph et al. [15] reported higher satisfaction levels with supplementary nutrition services in areas where supply chains and monitoring systems were more efficient.

The role of Anganwadi Workers (AWWs) emerged as a significant determinant of beneficiary satisfaction. While their presence at AWCs was reported to be fairly regular, a considerable proportion of beneficiaries perceived their attitude as indifferent and the information provided as inadequate. Similar finding was reported by Nair and Hallad [5], Gopal krishnan et al. [6], and Sharma R et al. [16], who emphasized that communication skills, behavior, and service delivery practices of AWWs play a crucial role in influencing beneficiary satisfaction. In contrast, Kaur et al. [17] demonstrated that effective counseling and positive interaction by AWWs significantly improved service utilization and satisfaction levels. The present study also found a statistically significant association between beneficiary category and satisfaction level ($p < 0.001$). Lower satisfaction

among lactating mothers and children may be attributed to gaps in service delivery, irregular food supply, and inadequate counseling. This finding is supported by the Population Research Centre report [4], which identified systemic gaps and service inconsistencies as major contributors to dissatisfaction. However, this is in contrast with the study by Singh A et al. [18], where higher and more uniform satisfaction levels were reported, possibly due to better program implementation and monitoring mechanisms. Overall, the findings of the present study suggest that while ICDS services are successfully reaching the intended population, several challenges such as inadequate infrastructure, irregular service delivery, and gaps in worker–beneficiary interaction continue to affect satisfaction levels. Addressing these issues through strengthened monitoring systems, capacity building of Anganwadi workers, and improvement in infrastructure is essential to enhance beneficiary satisfaction and optimize program effectiveness.

CONCLUSION

The present study highlights that beneficiary satisfaction with ICDS services at Anganwadi Centres in rural Jaipur varies significantly across different groups. While pregnant women and adolescent girls reported relatively better satisfaction, children and lactating mothers exhibited comparatively lower satisfaction levels. The findings indicate that although ICDS services are reaching a large proportion of the target population, several gaps persist in service quality, infrastructure, regularity of supplementary nutrition, and effectiveness of communication by Anganwadi Workers. Determinants such as socio-economic status, service quality, infrastructure, and AWWs behavior influenced beneficiary satisfaction. In particular, irregular food supply, inadequate infrastructure, and limited usefulness of information provided emerged as key concerns that need to be addressed. The study has important programmatic and policy implications. Strengthening infrastructure at AWCs, ensuring uninterrupted supply of supplementary nutrition, and improving monitoring mechanisms are essential for enhancing service delivery. Capacity building of AWWs, with emphasis on communication skills and beneficiary engagement, can further improve satisfaction levels. Additionally, targeted interventions for vulnerable groups, especially children and lactating mothers, are needed to ensure equitable and effective service utilization. Addressing these gaps is essential to enhance the overall impact and acceptability of ICDS services.

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