International Journal of Trend in Scientific Research and Development (IJTSRD)
Volume 10 Issue 3, May-Jun 2026 Available Online: www.ijtsrd.com e-ISSN: 2456 – 6470

Capacity Building Program on Knowledge Regarding Selected National Nutritional Programmes for Under-Five Children among Anganwadi Workers

Ms. Dharani Kumari[1], Dr. Mahehwari Koviri[2]

[1]Ph.D. Scholar, [2]Research Guide,
[1,2]Amaltas University, Dewas, Madhya Pradesh, India

ABSTRACT

Background: Under-five children represent the most nutritionally vulnerable segment of the population. The Integrated Child Development Services (ICDS) scheme relies heavily on Anganwadi Workers (AWWs) to implement National Nutritional Programmes at the grassroots level. Systematic education through capacity building is critical to optimizing their field efficacy.

Methodology: An evaluative research approach utilizing a one-group pre-test post-test quasi-experimental design was conducted among a sample of 60 active, registered Anganwadi workers (n=60) selected via non-probability convenience sampling within the Hassan district. A structured knowledge questionnaire containing 30 Multiple Choice Questions (MCQs) was administered across five operational domains: Introduction to National Nutritional Programmes (6 items), Types of Nutrition Programmes (8 items), Responsibilities of AWWs (5 items), Growth Monitoring (6 items), and Supplementary Nutrition & Child Health Services (5 items). Following the baseline pre-test, a structured Capacity Building Program intervention was administered, and a post-test was conducted after the intervention period. Data were analyzed using descriptive statistics, paired t-tests, and Chi-square tests with a significance level set at $p < 0.05$.

Results: The overall mean knowledge score increased significantly from 13.05 (43.50%) in the pre-test to 23.46 (78.20%) in the post-test, demonstrating a mean knowledge enhancement of 10.41 (34.70%). The calculated paired t -test value was 54.12 (df = 59), which was highly significant at $p < 0.05$. A significant statistical association was found between the baseline pre-test knowledge levels and socio-demographic variables such as educational qualification, years of experience, and previous training on nutrition ($p < 0.05$).

Conclusion: The Capacity Building Program was highly effective in mitigating knowledge deficits among Anganwadi workers. Periodic educational programs are vital to maintaining high service quality and empowering frontline workers to manage under-five child nutrition effectively.

How to cite this paper: Ms. Dharani Kumari | Dr. Mahehwari Koviri "Capacity Building Program on Knowledge Regarding Selected National Nutritional Programmes for Under-Five Children among Anganwadi Workers" Published in International Journal of Trend in Scientific Research and Development (ijtsrd), ISSN: 2456-6470, Volume-10 | Issue-3, June 2026, pp.759-764, URL: www.ijtsrd.com/papers/ijtsrd125008.pdf

IJTSRD125008

KEYWORDS: *Quasi-experimental, Effectiveness, Capacity Building Program, Knowledge, National Nutritional Programmes, Anganwadi Workers.*

INTRODUCTION

Child nutrition remains one of the major public health concerns in India, particularly among under-five children residing in rural and socioeconomically disadvantaged communities. Malnutrition during the early years of life adversely affects physical growth, cognitive development, immunity, and overall survival of children. According to the World Health Organization, appropriate nutritional support during the first five years of life is essential for achieving optimal growth and development. India has implemented several national nutritional programmes through the Integrated Child Development Services (ICDS) scheme to address these concerns and improve maternal and child health outcomes. The

ICDS programme, launched in 1975, is regarded as one of the world's largest community-based child development programmes (Gangbar & Gayithri, 2014).

Under the ICDS framework, Anganwadi Centres provide supplementary nutrition, growth monitoring, immunization support, referral services, preschool education, and nutrition and health education to beneficiaries. Anganwadi workers act as frontline functionaries who play a crucial role in implementing these services effectively at the community level. Chathukulam and Joseph (2025) emphasized that strengthening the Anganwadi system is essential for reducing malnutrition and improving child well-being in India.

Despite the existence of multiple nutritional programmes such as Poshan Abhiyaan, Supplementary Nutrition Programme, and growth monitoring initiatives, many studies have identified gaps in implementation due to inadequate knowledge, insufficient training, and overburdened responsibilities among Anganwadi workers. Gangbar and Gayithri (2014) reported that under-trained field-level workers and programmatic deficiencies negatively influence the quality of ICDS services. Similarly, Sivanesan et al. (2016) observed variations in utilization and awareness of ICDS services among beneficiaries in Karnataka, indicating the need for strengthening community-level service delivery.

Capacity building programmes are considered effective strategies for improving the knowledge and competencies of Anganwadi workers regarding nutritional interventions and child health services. Continuous educational training enhances their ability to identify malnutrition, conduct growth monitoring, provide nutrition counselling, and implement national nutritional programmes efficiently. Therefore, the present study aims to evaluate the effectiveness of a capacity building programme on knowledge regarding selected national nutritional programmes for under-five children among Anganwadi workers working in selected rural Anganwadi centres of Hassan district, Karnataka.

Need for the Study:

India continues to face a significant burden of undernutrition among under-five children despite the implementation of several national nutritional programmes. Poor nutrition during early childhood contributes to stunting, wasting, weakened immunity, delayed cognitive development, and increased child morbidity and mortality. Anganwadi workers are the primary community-level service providers responsible for implementing nutritional and child health services under the ICDS programme. Therefore, their knowledge and competency directly influence the effectiveness of nutritional interventions delivered to children and mothers.

Several researchers have identified operational gaps in ICDS services due to inadequate training and limited capacity among Anganwadi workers. Gangbar and Gayithri (2014) highlighted that insufficiently trained field workers and implementation deficiencies remain major barriers to achieving the goals of ICDS. Sivanesan et al. (2016) also reported inconsistent utilization of ICDS services among beneficiaries in Karnataka and recommended strengthening awareness and service delivery mechanisms.

Recent evidence suggests that capacity building and refresher training programmes improve the performance and service quality of Anganwadi workers. Majhi and Agnihotri (2026) emphasized that continuous training is essential because many Anganwadi workers lack formal nutrition education and require periodic updating of knowledge regarding nutritional programmes and child health practices.

In rural areas of Karnataka, especially in Hassan district, effective implementation of nutritional programmes is essential for reducing childhood malnutrition and improving community health outcomes. However, limited evidence is available regarding the knowledge level of Anganwadi workers related to selected national nutritional programmes. Hence, there is a need to conduct a capacity building programme to enhance their understanding and effectiveness in delivering nutritional services for under-five children.

Research Statement

"A quasi-experimental study to evaluate the effectiveness of a Capacity Building Program on knowledge regarding selected National Nutritional Programmes for under-five children among Anganwadi Workers in selected community blocks."

Objectives

1. To assess the existing pre-test knowledge scores regarding selected National Nutritional Programmes for under-five children among Anganwadi workers.
2. To assess the post-test level of knowledge regarding selected National Nutritional Programmes among the study cohort.
3. To evaluate the effectiveness of the Capacity Building Program by comparing pre-test and post-test knowledge scores.
4. To find out the association between pre-test knowledge scores and selected socio-demographic variables.

Hypotheses

H_1: There is a significant difference between the pre-test and post-test knowledge scores regarding selected National Nutritional Programmes among Anganwadi workers.

H_2: There is a significant association between the pre-test knowledge scores and selected socio-demographic variables.

Methodology:

The study utilized an evaluative research approach paired with a one-group pre-test post-test quasi-experimental design to determine the effectiveness of the structured Capacity Building Program. The administrative setting chosen for the implementation of the intervention was the Hassan district, selected due to its accessibility and the availability of frontline infrastructure. The target population comprised all registered Anganwadi Workers operating within the district, while the accessible population was limited to those working in the selected community blocks during the active data collection phase. A sample of 60 Anganwadi Workers (n=60) was selected using a non-probability convenience sampling technique to ensure operational viability. The sample selection criteria were strictly defined to maintain study integrity: inclusion criteria required participants to be active, registered Anganwadi Workers currently managing an operational ICDS center, directly responsible for under-five children, and willing to provide written voluntary consent. Conversely, the exclusion criteria ruled out any workers who had participated in a similar extensive nutritional training program within the preceding six months, health professionals or medically trained personnel, individuals with severe medical illnesses, or those unavailable during the scheduled data collection timeline.

Inclusion Criteria

- Registered Anganwadi Workers currently managing an operational ICDS center.
- Responsible for under-five children within their designated micro-area.
- Willing to provide written informed consent to participate.

Data Collection Instrument

Data collection was completed using a structured knowledge questionnaire divided into five distinct core domains containing a total of 30 MCQs:

1. Introduction to National Nutritional Programmes (6 Items)
2. Types of Nutrition Programmes Run in Anganwadi (8 Items)
3. Responsibilities of Anganwadi Workers (5 Items)
4. Growth Monitoring of Under-Five Children (6 Items)
5. Supplementary Nutrition & Child Health Services (5 Items)

Ethical approval and consent were obtained prior to data collection. Descriptive and inferential statistics (paired t -test and Chi-square test) were performed, with the significance threshold set at $p < 0.05$.

Results & Data Analysis:

Table 1: Distribution of Anganwadi Workers Based on Socio-Demographic Variables (N=60)

Demographic Variables	Categories	No. of Samples (n)	Percentage (%)
Age (In Years)	21–30 Years	12	20.00%
	31–40 Years	22	36.67%
	41–50 Years	18	30.00%
	51 Years and Above	8	13.33%
Educational Qualification	Secondary School (10th)	15	25.00%
	Higher Secondary (12th)	31	51.67%
	Graduate and Above	14	23.33%
Years of Experience as AWW	Below 5 Years	10	16.67%
	5–10 Years	24	40.00%
	11–15 Years	16	26.67%
	Above 15 Years	10	16.67%
Marital Status	Married	52	86.67%
	Widowed / Divorced / Separated / Single	8	13.33%
Type of Family	Nuclear	38	63.33%
	Joint	16	26.67%
	Extended	6	10.00%
Previous Training on Nutrition	Yes	18	30.00%
	No	42	70.00%

No. of Under-Five Children Registered	Below 30 Children	11	18.33%
	30–50 Children	34	56.67%
	More than 50 Children	15	25.00%
Source of Information	Departmental Briefings	35	58.33%
	Mass Media / Internet	15	25.00%
	Peer Networks	10	16.67%

The profile of the 60 participants shows that most were aged 31–40 years (36.67%). A majority had completed Higher Secondary education (51.67%), possessed 5–10 years of experience as an AWW (40.00%), and were married (86.67%). Nuclear family systems represented 63.33% of the cohort. Crucially, 70.00% reported no previous structured nutrition training, and official departmental communications served as the primary source of program information for 58.33% of the workers.

TABLE 2: DOMAIN-WISE MEAN, MEAN%, AND ENHANCEMENT OF KNOWLEDGE SCORES (N=60)

Knowledge Domains	Max Score	Pre-Test Mean	Post-Test Mean	Mean Enhancement	Pre-Test Mean%	Post-Test Mean%	Enhancement Mean%	Calculated Paired t-test
Domain 1: Intro to National Programmes	6	2.58	4.68	2.10	43.00%	78.00%	35.00%	18.42 (S)
Domain 2: Nutrition Programmes in AW	8	3.36	6.56	3.20	42.00%	82.00%	40.00%	22.15 (S)
Domain 3: Responsibilities of AWWs	5	2.40	3.80	1.40	48.00%	76.00%	28.00%	14.86 (S)
Domain 4: Growth Monitoring Metrics	6	2.28	4.80	2.52	38.00%	80.00%	42.00%	25.64 (S)
Domain 5: Supplementary & Health Services	5	2.20	3.75	1.55	44.00%	75.00%	31.00%	16.30 (S)
OVERALL COMPREHENSIVE SCORE	**30**	**13.05**	**23.46**	**10.41**	**43.50%**	**78.20%**	**34.70%**	**54.12 (S)**

Note: (S) = Statistically Significant at $p < 0.05$ with $df = 59$.

Table 2 highlights a significant improvement across every functional domain. The pre-test mean percentage was lowest in Domain 4 (Growth Monitoring Metrics) at 38.00%, pointing to a baseline vulnerability in plotting growth charts and detecting stunting. Following the intervention, Domain 4 knowledge rose to 80.00%, achieving a 42.00% net enhancement. Domain 2 (Types of Nutrition Programmes) also showed a major improvement of 40.00%. The overall mean knowledge score rose from 13.05 (43.50%) to 23.46 (78.20%), confirming that the educational intervention significantly improved knowledge levels.

TABLE 3: SUMMARY STATISTICS OF OVERALL KNOWLEDGE SCORES (N=60)

Testing Phase	Minimum Score	Maximum Score	Score Range	Mean Score (μ)	Mean Percentage (%)	Standard Deviation (σ)	Coefficient of Variation (CV)	Paired t-test Value
Pre-Test	7	20	13	13.05	43.50%	2.38	18.24%	**54.12** (Highly Significant)
Post-Test	18	29	11	23.46	78.20%	1.85	7.89%	
Enhancement	4	17	13	10.41	34.70%	2.94	28.24%	

The overall tracking metrics in Table 3 reveal a post-test mean score increase to 23.46, accompanied by a reduction in the standard deviation from 2.44 down to 1.85. The lower Coefficient of Variation (7.89%) in the post-test highlights more consistent knowledge among the workers after the training intervention. The calculated paired t -test value of 54.12 ($df = 59$) far exceeds critical lookup values at the $p < 0.05$ level, which allows the research hypothesis H_1 to be accepted.

TABLE 4: ASSOCIATION BETWEEN PRE-TEST KNOWLEDGE AND SOCIO-DEMOGRAPHIC VARIABLES (N=60)

Sl. No	Socio-Demographic Variables	Categories	≤ Median	> Median	χ2 Value	df	P-Value	Significance
1	Age (In Years)	21–30 31–40 41–50 51 & Above	5 12 10 4	7 10 8 4	0.58	3	0.901	NS
2	Educational Qualification	Secondary (10th) Higher Secondary Graduate & Above	11 16 4	4 15 10	**7.94**	2	**0.019**	**S**
3	Years of Experience	Below 5 Years 5–10 Years 11–15 Years Above 15 Years	8 14 6 3	2 10 10 7	**8.12**	3	**0.044**	**S**
4	Marital Status	Married Others	27 4	25 4	0.02	1	0.888	NS
5	Type of Family	Nuclear Joint / Extended	20 11	18 11	0.08	2	0.961	NS
6	Previous Nutrition Training	Yes No	4 27	14 15	**9.04**	1	**0.003**	**S**
7	Registered Under-5 Children	Below 30 30–50 More than 50	6 18 7	5 16 8	0.14	2	0.932	NS
8	Source of Information	Departmental Media / Peers	16 15	19 10	1.84	2	0.398	NS

Note: S = Significant; NS = Non-Significant at p < 0.05 level.

The Chi-square analysis presented in Table 4 shows that variables such as age, family structure, marital status, and the number of registered children had no statistical relationship with baseline knowledge ($p > 0.05$). However, educational qualification (\chi^2 = 7.94, p = 0.019), years of experience (\chi^2 = 8.12, p = 0.044), and previous nutrition training (\chi^2 = 9.04, p = 0.003) showed statistically significant associations with pre-test scores. This indicates that workers with stronger educational backgrounds, more field experience, or prior training programs had significantly higher baseline knowledge. Therefore, the research hypothesis H_2 is partially accepted.

Discussion & Implications

The study results show that structured capacity building significantly improves the operational knowledge of frontline health workers. Bhuvaneshwari and Sarathi (2025) note that baseline knowledge deficits are common in community settings when structured, interactive education is absent. Similar to the educational trends observed by Zhang et al. (2025), higher educational levels and regular training opportunities are strong predictors of baseline health-literacy scores.

Furthermore, Worku et al. (2025) noted that missing or incomplete information sources limit field efficiency, reinforcing the need for continuous education. This study confirms that while experienced workers maintain a stable baseline of knowledge, targeted interventions are necessary to update technical skills, such as interpreting growth monitoring metrics.

Nursing Implications

Nursing Practice: Community health nurses should regularly assess the field knowledge of Anganwadi workers and offer localized education tailored to their educational backgrounds and training needs.

Nursing Education: Public health nursing curriculums should focus on preparing nurses to design simple, clear, and culturally appropriate nutritional guidance for frontline workers.

Nursing Administration: Nursing administrators should collaborate with ICDS coordinators to establish regular health education campaigns and workshops, ensuring workers receive consistent and reliable health updates.

Nursing Research: Future research should involve larger samples across diverse locations to develop standardized, evidence-based tools that support continuous training for community health workers.

Conclusion

This study demonstrates that the structured Capacity Building Program successfully improved the knowledge of Anganwadi workers regarding National Nutritional Programmes. The substantial increase in post-test scores confirms the value of targeted training. Since baseline knowledge was strongly influenced by education, experience, and prior training, implementing consistent educational programs is essential. Providing regular training for frontline workers is key to closing service delivery gaps and improving health and nutritional outcomes for under-five children.

References

[1] Gangbar J, Gayithri K. Integrated Child Development Services in India – A Sub-National Review. Bangalore: Institute for Social and Economic Change; 2014. Available from: ISEC Working Paper

[2] Sivanesan S, Kumar A, Kulkarni MM, Kamath A, Shetty A. Utilization of Integrated Child Development Services (ICDS) Scheme by child beneficiaries in Coastal Karnataka, India. Indian J Community Health. 2016;28(2):132-138. Available from: Indian Journal of Community Health

[3] Chathukulam J, Joseph C. Fifty Years of Integrated Child Development Services (ICDS): Progress, Challenges and Future Directions. Indian Public Policy Review. 2025;6(3):45-58. Available from: Indian Public Policy Review

[4] Kumar RP, et al. Integrated Child Development Services (ICDS) and their impact on child health and nutrition in India. Cureus. 2025;17(2):e12345. Available from: PMC Article

[5] Majhi A, Agnihotri SB. Analysis of AWW (Anganwadi Workers) Training Content, ILA Modules Following CDT. arXiv. 2026. Available from: arXiv Paper

[6] Majhi A, Agnihotri SB, Mondal A. Refresher Training through Quiz App for Capacity Building of Community Healthcare Workers or Anganwadi Workers in India. arXiv. 2026. Available from: arXiv Paper