International Journal of Contemporary Pediatrics
*Moirangthem P et al. Int J Contemp Pediatr. 2026 Dec;13(12):2517-2525*
https://www.ijpediatrics.com
pISSN 2349-3283 | eISSN 2349-3291

DOI: https://dx.doi.org/10.18203/2349-3291.ijcp20264319

**Original Research Article**

# Evaluation of early childhood care and education among preschool children of Integrated Child Development Services in East Sikkim: a cross-sectional study

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**Received:** 29 September 2026
**Accepted:** 03 November 2026

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## ABSTRACT

**Background:** ECCE (Early Childhood Care Education) is one of the services provided by the ICDS for children aged three to six years. ECCE gives opportunities for holistic learning and growth. The objective is to evaluate the Early Childhood Care Education (ECCE) component of the ICDS for preschool children in East Sikkim. To find the factors influencing the quality of the ECCE under the ICDS in East Sikkim.
**Methods:** A cross-sectional study was carried out among 43 ICDS centres in East Sikkim, and systematic random sampling was first used for the selection of 43 AWCs from 173 AWCs. In the second stage, we conducted a complete enumeration of children aged 3 to 6 years attending the centre. We used descriptive analysis to report frequencies, means and proportions for basic participant information. Pearson's correlation and multilinear regression analyses were also performed.
**Results:** The majority of children (89%) were in the range of 3-4 years of age. Most AWWs conducted ECCE activities such as storytelling, free conversations, teaching children to count numbers, and reading and writing letters and numbers. The ECCE score was significantly influenced by AWWs' ability to conduct age-appropriate activities, their sensitivity toward children, and their efficiency in conducting ECCE activities, all of which positively impacted the ECCE score.
**Conclusions:** ECCE activities in ICDS helped children improve their cognitive and language skills and overcome shyness. The AWWs also played a key role in improving the ECCE score.

**Keywords:** Early Childhood Care Education, Anganwadi workers, ICDS, Children

## INTRODUCTION

India is a developing country with a big population. One-sixth of the world's population lives in India. India faces many quality-of-life challenges, especially for women and children.[1] Due to poverty, many health-related problems like malnutrition, child marriage, lack of sanitation facilities, poor hygiene and poor school attendance are seen mostly in the lower-class families in different parts of India, and most of them are from rural areas, slums, urban poor families and tribal communities.[2] This is a major hurdle to building a strong nation and supporting a child's future development. The early moments in children's lives are a crucial period and

also play a key role in achieving their maximum growth and development. The development of a baby's brain continues to grow rapidly in their early years. The early stages of life form the basis of all learning and play a significant role in shaping their physical, intellectual, and emotional well-being.[3]

In order for children to develop properly, their social, emotional, and educational needs must be met.[4] Success in adult life can be determined by the initial pattern of learning and behaviour during the early childhood development phase.[5] It is shaped by environmental stimulation or influence and by learning at an early age. Guidance and support are needed to establish meaningful and effective parenting patterns.[5] To combat the unequal distribution of educational opportunities and for the children's well-being, in October 1975, the government launched the Integrated Child Development Service (ICDS), making it one of the largest and most distinctive programs dedicated to early childhood development.[6]

The Ministry of Women and Child Development governs the ICDS program. ICDS aims at the holistic development of children (0-6) years old, mothers, and adolescent girls.[7] It is a unique program which encompasses health, nutrition and education. ECCE (Early Childhood Care and Education) is one of the services provided by ICDS for children aged three to six years.[8] In 2013, the Government of India introduced the National Early Childhood Care and Education policy to promote the learning potential of children under the age of six. Later, in July 2020, the Ministry of Education launched the new National Education Policy, integrating ECCE into the schooling system starting at age three.[9]

ECCE gives opportunities for holistic learning and growth. It gives a contribution to children's long-term development and provides a safe environment for the children to grow and learn.[8-10] ECCE has given the foundation for all the children to learn and grow during 3 to 6 years in ICDS centres.[10] Early Childhood Care Education is a form of non-formal education that helps children by fostering positive attitudes, values, behaviour patterns, and environmental awareness. It focuses on giving universal, free, equitable and enjoyable learning experiences.[8-10] Non-formal pre-school education is the backbone of the ICDS programme, taking place outside the traditional education system to nurture essential skills and aptitudes for daily life. Studies indicate that brain development is shaped not only by health, nutrition, and overall living conditions but also by the psychosocial environment during early childhood.

Deficits in emotional and psychosocial development can lead to irreversible changes in early life.[10] Early Childhood care provides a foundation for basic learning in the Anganwadi centre.[10] Children attending non-formal pre-school education in Anganwadi centres have yielded better long-term outcomes, exhibiting enhanced cognitive and socio-emotional skills in adulthood.[11] Children without pre-school education lag in primary school because they lack phonetic and visual skills; school dropouts are common, especially among low socio-economic families.[12] To prevent such incidents, we need to encourage the nearest ICDS centre or Anganwadi centres to promote ECCE. Given the importance of this component in children's all-round development, it is necessary to monitor and evaluate it regularly. For these reasons, the current study was carried out to evaluate the current status of the ECCE component of the ICDS for preschool children in East Sikkim and to identify the factors influencing the quality of ECCE under the ICDS in East Sikkim.

## METHODS

This study adopted a community-based cross-sectional design and was conducted from April 2023 to March 2024. The study population comprised children aged 3 to 6 years attending Anganwadi centres (AWCs) in both the urban and rural ICDS projects, as well as Anganwadi Workers (AWWs) of the ICDS. Inclusion criteria were registered children aged 3 to 6 years whose parents consented to participate, and consenting Anganwadi Workers. Exclusion criteria included those children (three to six years) who were registered but not attending the Anganwadi Centres, children whose parents refused to participate, and children who were less than three years old and above six years old. The study was conducted in Anganwadi Centres under the ICDS of the Urban and Rural Gangtok Project of East Sikkim. The study tool was a semi-structured questionnaire from the Early Childhood Education (ECE) program evaluation package developed by the World Bank, and socio-economic status was assessed using the BG Prasad scale 2023. The East district was selected purposively. The East District has two divisions: Gangtok and Pakyong. Within Gangtok ICDS, there were three projects: Rabdang Rural, Gangtok Urban, and Gangtok Projects; the urban and rural projects were chosen for feasibility and convenience. Of the 173 AWCs across both projects, the study selected 25%, for a total of 43 AWCs. A multistage sampling design was used. In the first stage, systematic random sampling was used to select 43 AWCs from 173 AWCs. The sampling interval was the fourth interval (n=4th interval), from the first to the fourth interval; the second AWC was selected using simple random sampling. Thereafter, we selected every fourth AWC until 173 centres were covered. In the second stage, we conducted a complete enumeration of children aged 3 to 6 years attending the centre. Consenting parents of these children, as well as all consenting Anganwadi Workers and Anganwadi Helpers, were assessed.

### *Data analysis*

All the data were entered into Microsoft Excel using appropriate codes based on the questionnaires. After cleaning the dataset, we imported it into the Statistical Package for Social Sciences (SPSS) version 27 (IBM,

Chicago, USA) for analysis. First, we used descriptive analysis to present the frequency, mean, and proportion of participants' basic information, and we also presented the descriptive data using appropriate tables. To examine associations between factors and outcomes, we used Pearson correlation and multiple linear regression. To assess the strength of the association between the factors and the outcome, we used the r value, the beta coefficient, and a $p<0.05$.

## RESULTS

Table 1 presents the sociodemographic characteristics of the children enrolled in this study. The majority of the children (88.9%) who participated in this study were 3 to 4 years old, the gender distribution was almost equal, and most of the children fell into the OBC category.

Table 2 explains the basic infrastructure and facilities in the 43 AWCs. Most AWCs operated from rented buildings. The majority of the rented AWCs were found to be located under the urban ICDS project. It was found that 37 AWCs had a separate kitchen, and only 6 AWCs had the kitchen attached to the classroom. All 43 AWCs provided a hot meal during the lunch hour of 11: 30 am to 12: 30 pm or 12:00 pm to 1:00 pm. In the morning, from 9:30 am to 10:00 am, children received warm milk. All the AWWs and AWHs in 43 AWCs used fresh ingredients and prepared hot meals like khichiri, millet roti with mixed vegetables and kheer. Out of 43 AWCs, 42 AWCs provided utensils, while only one AWC did not give utensils to the children. So, the children brought their own plates and cups from home to have a hot meal in AWC. The main source of drinking water was from the Public Health Engineering Department, which was apparently treated water. In addition, the water was also filtered and boiled at the centres before giving it to the children. All functioning toilets were also found in 43 AWCs. The AWWs and AWHs also helped the children in toilet training, such as how to sit on a toilet, encouraging the child to ask AWWs or AWHs when they want to go for urination or defecation, and also teaching the child not to forget to flush after every use.

The AWWs and AWHs also taught handwashing after using the toilet to all the children enrolled in the AWCs. Health equipment, like weighing scales and height measurement scales, was found in 43 AWCs. AWWs and AWHs took height and weight measurements every month and plotted the growth chart in Poshan Tracker.

Table 3 explains staffing availability and the implementation status of activities in 43 AWCs. During the study, AWWs were found in 95.35% of centres. The absence of AWWs from 2 AWCs was due to sickness and official commitments with the CDPO. During the absence, the AWHs took over the centre's responsibilities. Also, 5 AWHs were absent during the study. The timetable was present in 20 AWCs, contributing 46.15%, which was less than half. ECCE activities were conducted for one and a half to two hours in 39 AWCs and one hour in 4 AWCs. Of 43 AWCs, only 20.93% displayed children's creative work, such as paintings and drawings, and paper crumbling with the help of AWWs and AWHs.

Table 4 shows the various ECCE activities conducted by AWWs in 43 AWCs. 72.1% of AWCs conducted morning exercises regularly, including yoga. It was also observed that 76.7% of AWCs conducted morning prayers. 43 (100%) AWCs conducted storytelling in the local language. AWHs also took over storytelling for enrolled children when AWWs were on leave. All children engaged in free play with materials like toys, blocks, or dolls. The government's Women and Child Welfare Department provided the play materials, and a few were also bought by the AWWs. All 43 AWCs taught children to read the alphabet and count from 1 to 10. 86.05% of AWCs taught writing and drawing skills, and older children aged 5 to 6 were trained to write their own names. AWWs cited a lack of time or being too busy with children as reasons for not engaging them in writing and drawing skill training. Some of the AWWs mentioned that pencils could be a risk factor for harm among the children. All 43 AWCs conducted activities such as singing songs, reciting poems, and free conversations. Children learned and sang 10 to 15 minutes of rhymes with the AWWs. The children had a free conversation for 15-20 minutes. Playful outdoor activities were conducted in 10 AWCs under the guidance of the AWWs and AWHs. Outdoor activities included jumping and running, nature walks, cleaning the environment, gardening (such as planting trees), passing balls, and naming trees and flowers in nature. 76.74% did not conduct outdoor activities due to the inadequate space, and a few of the AWCs were very near the main roads. Therefore, outdoor game activities were risky for the children.

81 children were assessed for cognitive and conceptual skills, as explained in Table 5, and it was found that only 29(35.8%) children could identify all fruits and vegetables that were displayed on the charts at the AWCs and ECCE booklet activities, and very few 4.94% children were unable to identify vegetables and fruits. 45.68% of children could identify the sequence of the banana-peeling picture and describe it in words, while 11.11% were unable to identify the sequence. 59 (73%) children could identify the space concept according to the ECCE booklet activities, and 22 (27%) children failed to identify the space concept. 45(56.56%) children were able to follow simple instructions. Simple instructions were assessed to determine if the child was able to lift his or hands up. For complex instructions, such as passing a book or a ball to a friend, 36 (44.44%) children were able to follow them. Matching objects or numbers was assessed by using the ECCE activities booklet in the AWCs. It was found that 67 (83%) children were able to match objects or numbers, and 14 (17%) children were not able to match objects or numbers. The children were

given a picture booklet with images of "the child is eating food" and "the child is studying." After asking the children what they had seen, they had to respond in one sentence. It was found that 56 (69%) children could not form complete sentences, and 25 (31%) could identify and interpret in complete sentences.

Table 6 explains the ECCE score range for school readiness: 1 to 10, 11 to 20, 21 to 30, and 31 to 40. 5% of the children scored in the range of 1 to 10. The majority of the children (28) scored in the range of 11-20; the mean score was 24.22, with the minimum ECCE score of 5 and the maximum score of 39.

Table 7 shows a moderate, positive relationship between the register maintained by the AWW and the ECCE score ($r=0.45$, $p=0.003$), which is statistically significant. There was a strong, positive relationship between the ECCE materials used in AWC and the ECCE score ($r=0.65$, $p<0.001$). There was a strong, positive relationship between age-wise activities conducted, AWW sensitivity, and AWW efficiency ($r=0.7$, $p<0.001$). A correlation test was used to examine the relationship between the ECCE score and factors associated with AWC activities, such as children's participation level, morning exercises, prayer, drawing, writing, playing outdoors, and checking hygiene. Only one factor, children's participation level in all ECCE activities, was statistically significant (p value=0.004) and showed a moderate, positive relationship with the ECCE score.

Multiple linear regression was performed to identify factors influencing the ECCE score among children who attended 43 AWCs, as shown in Table 8. A few variables were statistically significant in relation to the ECCE score. Among them, age-appropriate activities conducted in AWCs for ECCE were statistically significant; for every 1-unit increase in age-appropriate activities, the ECCE score increased by 0.34 units. AWW sensitivity and efficiency also had a positive effect, with the ECCE score increasing by 0.41 units per unit increase. Children's participation level showed a strong positive association with their ECCE score: all children who participated in ECCE activities had significantly higher scores, with an increase of 1.69 units. But, maintenance of registers by AWWs and the materials of interest to children were not significantly associated with ECCE score.

**Table 1: Sociodemographic characteristics of the children enrolled in this study (n=81).**

| Variables | Category | Frequency (N) | Percentage(%) |
|---|---|---|---|
| **Age groups** | 3-4 years old | 72 | 88.9% |
| | 4-5 years old | 7 | 8.6% |
| | 5-6 years old | 2 | 2.5% |
| **Gender** | Male | 41 | 51% |
| | Female | 40 | 49% |
| **Caste** | General | 13 | 16% |
| | OBC | 40 | 49.4% |
| | ST | 28 | 34.6% |

**Table 2: Availability of basic infrastructure and facilities in the study AWCs (n=43).**

| Variables | Category | Frequency | Percentage(%) |
|---|---|---|---|
| **Types of AWCs buildings** | Rented type of AWCs | 29 | 67.44% |
| | Government owned type of AWCs | 14 | 32.56% |
| **Place of cooking in AWCs** | Separate kitchen | 37 | 86.05% |
| | Kitchen attached with the classroom | 6 | 13.95% |
| **Food provided in AWCs** | Hot meal | 43 | 100% |
| **Drinking water** | Boiled and filtered | 43 | 100% |
| **Availability of utensils** | Provided | 42 | 97.6% |
| | Not provided | 1 | 2.4% |
| **Toilet facility** | Functional | 43 | 100% |
| **Health equipment** Weighing scales Height measurements | Available | 43 | 100% |

**Table 3: Assessment of availability of AWW and AWHs and activity implementation in AWC (n=43).**

| Variables | Category | Frequency(N) | Percentage(%) |
|---|---|---|---|
| **AWWs present in AWCs** | Yes | 41 | 95.35% |
| | No | 2 | 4.65% |
| **AWHs present in AWCs** | Yes | 38 | 88.37% |
| | No | 5 | 11.63% |
| **Time table available in the centre** | Yes | 20 | 46.51% |
| | No | 23 | 53.49% |
| **Display of children's work** | Done | 9 | 20.93% |
| | Not done | 34 | 79.07% |

**Table 4: Distribution of various ECCE activities conducted in 43 AWCs.**

| ECCE activity | Done N (%) | Not Done N (%) |
|---|---|---|
| **Morning Exercises conducted** | 31 (72.1%) | 12 (27.9%) |
| **Morning Prayers conducted** | 33 (76.7%) | 10 (23.3%) |
| **Writing and drawing skills training** | 37 (86.05%) | 6 (13.95%) |
| **Outdoor activities conducted** | 10 (23.6%) | 33 (76.4%) |
| **Story telling** | 43 (100%) | 0 (0) |
| **Rhymes** | 43 (100%) | 0 (0) |
| **Free conversation and reading of alphabets and numerical** | 43 (100%) | 0 (0) |

**Table 5: Assessment of ECCE-related learning and cognitive skills among enrolled children, N=81.**

| Parameters | Category | N | % |
|---|---|---|---|
| **Identification of fruits and vegetables** | Able to identify all fruits and vegetables | 29 | 35.8% |
| | Identify to identify 2 vegetables and 2 fruits | 48 | 59.26% |
| | Unable to identify vegetables and fruits | 4 | 4.94% |
| **Sequential thinking skills** | Able to identify the sequence of the picture and describe in words | 37 | 45.68% |
| | Able to identify the sequence of the picture but unable to describe in words | 35 | 43.21% |
| | Unable to identify the sequence | 9 | 11.11% |
| **Space concept** | Able to identify | 59 | 73% |
| | Not able to identify | 22 | 27% |
| **Instruction to follow** | Able to follow simple instructions | 45 | 56.56% |
| | Able to follow complex instructions | 36 | 44.44% |
| **Matching objects** | Able to match | 67 | 83% |
| | Not able to match | 14 | 17% |
| **Able to complete sentence** | Yes | 25 | 31% |
| | No | 56 | 69% |

**Table 6: Distribution of ECCE school readiness score* of the participant children.**

| ECCE score range of school readiness | Number of children (%) |
|---|---|
| **1-10** | 4 (4.9%) |
| **11-20** | 28 (34.6%) |
| **21-30** | 25 (30.9%) |
| **31-40** | 24 (29.6%) |

*School readiness of the ECE program evaluation package.

**Table 7: Correlation between ECCE score and associated factors in AWCs (East Sikkim).**

| Category | Factors | R value | P value |
|---|---|---|---|
| AWW attributes | AWW is satisfied with her salary | -0.05 | 0.75 |
| | Received salary on time | 0.09 | 0.55 |
| | Education level of AWWs | 0.22 | 0.16 |
| | Maintenance of the register by AWWs. | 0.45 | 0.003 |
| | Preparation and use of materials of interest to the children by the AWWs | 0.65 | <0.001 |
| | Conduction of the activities according to the age wise of the children. | 0.7 | <0.001 |
| | Sensitivity of the AWW towards the children | 0.71 | <0.001 |
| | Efficiency of the AWW at organizing activities | 0.71 | <0.001 |
| AWCs activities | Children participation level | 0.43 | 0.004 |
| | Morning exercises | 0.21 | 1.71 |
| | Prayer | 0.13 | .398 |
| | Drawing | 0.21 | .186 |
| | Writing | 0.21 | .186 |
| | Playing outdoors | 0.13 | .398 |
| | Checking hygiene | 0.07 | .677 |

**Table 8: Multiple linear regression of the factors influencing the ECCE score of the children in AWCs.**

| Independent variables | Unstandardised coefficients (B) | Standard coefficients(β) | Standard Error | T value | P value | 95% CI(Lower) | 95% CI (Upper) |
|---|---|---|---|---|---|---|---|
| **Maintenance of the registers by AWWs** | 0.19 | 0.19 | 0.12 | 1.57 | .124 | -0.05 | 0.44 |
| **Materials that are being used of interest to children** | 0.21 | 0.21 | 0.16 | 1.31 | .197 | -0.11 | 0.54 |
| **Conduction of the activities according to the age wise of the children.** | 0.34 | 0.49 | 0.11 | 3.22 | .003 | 0.13 | 0.56 |
| **Sensitivity of the AWW towards the children** | 0.41 | 0.63 | 0.08 | 5.13 | <.001 | 0.25 | 0.58 |
| **Efficiency of the AWW at organizing activities** | 0.41 | 0.63 | 0.08 | 5.13 | <.001 | 0.25 | 0.58 |
| **Children participation: all of them** | 1.69 | 0.74 | 0.29 | 5.68 | <0.001 | 1.11 | 2.28 |
| **Children participation: some of them** | 1.02 | 0.45 | 0.28 | 3.61 | 0.001 | 0.45 | 1.59 |

## DISCUSSION

Table 1 presents the socio-demographic characteristics of the participants, showing that 81 children aged 3-6 years were assessed across all 43 ICDS centres. Most children (88.9%) were aged 3-4 years. The gender distribution was nearly equal, with 51% male and 49% female. In a similar study by Partik K. et al conducted in the urban field practice area of Maharashtra, 70 children were enrolled, of whom 51.43% were male.[13] Both studies reported nearly equal proportions of male and female participants, but the present study had a larger sample. In

the present study, all functional toilets were present in 43 AWCs. They were well maintained by both AWWs and AWHs. Comparing these results with another study conducted by Kapoor A, Singh K. (2019) in Jammu and Kashmir, it was found that toilet facilities were present only in 89.1 % of the AWCs, and 10.8% lacked such facilities; only 67.5% of toilets were properly maintained, whereas 32.4% of toilets were found to be dirty.[14]

The availability of functional, clean toilets and a safe water source in our study indicated that the state government took great responsibility for maintaining Water, Sanitation and Hygiene (WASH) infrastructure in all the AWCs. Additionally, the AWWs and the AWHs were also responsible for maintaining the clean toilets. They also taught the children not to forget to flush the toilets after each use and to practice hand hygiene afterwards. The AWWs and AWHs cooked the supplementary nutrition like khichri, kheers, millet rotis and mixed vegetables. In this study, 37 AWC had separate kitchens, and 6 (13.95%) AWCs had attached kitchens with the classroom. Attached kitchens could increase the risk of acute respiratory tract infections among children. Compared with a 2019 study by Bartwal J in Uttarakhand, no separate kitchens were found at AWCs.[15] In our study, 10 (23.62%) AWCs conducted outdoor activities, while 33 (76.74%) did not because of inadequate space; a few AWCs were also located very close to main roads. There was a similar finding in a study conducted in Chandauli district of Uttar Pradesh (2005), it was reported that 20 AWCs had inadequate indoor or outdoor spaces due to overcrowding and limited funding for AWC infrastructure.[16] Additionally, research in Jammu and Kashmir by Qadiri and Manhas (2009) reported that 65% of AWCs lacked outdoor space for pre-school activities.[17]

Timely growth and weight measurement of the children could prevent any malnutrition. In this study, all 43 AWCs had salter's scale and bathroom weighing scales, as well as a stadiometer and infantometer for height measurement. So, the AWWs monitored the weight and height of the children every month. In comparison, a study by Chattopadhyay in West Bengal (2004) reported that 30% of the AWCs had damaged weighing scales or did not use them.[18] This study found that all the 43 centres were equipped with medical kits, and comparing this finding with a study conducted by Saha M et al in the Darjeeling district of West Bengal, 90% of AWCs have medical kits, and as per the Aayog report on programme evaluation, 77.5% of AWCs had medical kits.[19,20]

AWWs played a key role in conducting the successful ECCE activities. It should be conducted in a play-based manner, allowing children to actively participate in various ECCE activities. Hence, this type of teaching would help children improve their cognitive, social, and physical abilities. In this study, 37 AWCs trained children in drawing and writing with pencils, colour pencils, and crayons. All 43AWCs taught children how to read the alphabet, count numbers from one to ten, recite rhymes and engage in free conversation. 10 AWCs conducted outdoor activities such as jumping, running, nature walk, cleaning the environment, gardening, like planting trees with AWWs and AWHs, passing balls, naming trees and flowers in nature. 31 (72.1%) AWCs conducted morning exercises and yoga to promote physical development, while 12 (27.9%) AWCs did not due to insufficient time management by the AWWs and AWHs. Morning prayers were conducted in 33(76.7%) AWCs. Similar findings were also reported in the study by Bashir et al in the district of Bandipora, Jammu and Kashmir, where activities such as counting numbers, praying, playing games, singing, and reciting poems were also conducted.[21] In a study done by Rajini Dhingra and Iesha Sharma in Jammu and Kasmir, similar activities were also conducted in all 60 AWCs such as storytelling by the AWWs and free discussions among children and other activities like drawing or painting, role play, nature walk and science activities were also conducted in few of the AWCs, few AWWs also took the children to temples or parks which were near to the AWCs for environmental exposures, children were made to do yoga for physical improvement.[22] 29 (35.8%) children in our study were able to identify all fruits and vegetables, 37(45.68%) children could identify the sequence of the pictures and describe it in words, 59 (73%) children could identify the space concept according to the ECCE booklet activities, while 22 (27%) could not. Observation from 67(83%) children were able to match objects or numbers, while 14(17%) children were unable to do so.

In comparison, a study conducted by Singh, S on a study on "Pre School Education Program For Children Under ICDS In Rural Punjab", it was found that 32.77% of the children could count the number of stones while 67.21% of the children could not count,40% of the children could identify 1-2 pictures of vegetables and only 8.33% of children could identify 5-6 pictures of vegetables.[23] The investigator had also examined the children's understanding of the different types of colours, and it was found that 3.33% children could identify three different types of colours, 39.44% of children could identify only one type of colour. In contrast, this study did not assess the children's ability to identify various types of colours.

To evaluate the factors influencing the quality of the ECCE under ICDS, the ECCE score was used in relation to various factors within the centres, and for this study, the ECCE score had four ranges. In our study, 4 (4.9%) children scored in the 1-10 range, while the majority (30.9%) scored in the 21-30 range. The AWW's sensitivity to children, their efficiency in conducting ECCE activities, and the level of children's participation were also found to be significant in improving children's scores. Samanta S. et al in West Bengal also reported a finding on school readiness score that mother educational status gave a positive impact in the school readiness score, there were other factors that were significant with the school readiness score like children who studied at

home with the help of others, infrastructural facilities like physical facilities, classroom performance, and overall management and organization.[24]

## CONCLUSION

The present study revealed the importance of ECCE activities conducted in AWCs under ICDS. The centres had adequate teaching materials and offered a variety of activities, such as storytelling, free conversation, indoor games, outdoor activities, and teaching alphabets and numbers. These activities helped children improve their cognitive and language skills and overcome shyness. Although most AWCs had adequate infrastructure, a few were overcrowded. AWWs played a key role in improving ECCE scores. Age-appropriate activities, along with the sensitivity and efficiency of AWWs, positively influenced children's ECCE scores.

### *Recommendations*

Regular training and retraining on ECCE activities should be conducted for AWWs at appropriate intervals. AWWs and AWHs should devote more time to ECCE activities with children at AWCs. Better financial support should be provided to improve infrastructure and facilities at AWCs with inadequate resources. Regular monitoring by supervisors and CDPOs should be ensured, along with proper documentation to track necessary improvements. Parents should be informed about ECCE activities conducted at AWCs. AWWs should provide proper counselling to parents in the community regarding the importance of ECCE activities. Community participation should be encouraged to increase awareness of the benefits of ICDS services.

*Funding: No funding sources*
*Conflict of interest: None declared*
*Ethical approval: The study was approved by the Institutional Ethics Committee*

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**Cite this article as:** Moirangthem P, Laskar NB, Tejkumar M. Evaluation of early childhood care and education among preschool children of Integrated Child Development Services in East Sikkim: a cross-sectional study. Int J Contemp Pediatr 2026;13:2517-25.