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Role of Anganwadi Workers' Knowledge in the Developmental Milestones of Children at Anganwadi Centers

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ABSTRACT

The study was conducted to determine *anganwadi* workers' (AWs) knowledge levels about children's developmental milestones as well as the information sources they use. Integrated Child Development Services (ICDS) providers (50 *anganwadi* workers from 30 urban and 20 from rural *anganwadi* centres) and their *anganwadi* children of Ludhiana district were studied. It was found that the majority of *anganwadi* workers had an average knowledge level and 10-15 years of experience. A significant finding of the study was that AWs in rural areas were more knowledgeable than their urban counterparts. Compared to children from urban areas, children from rural *anganwadi* centers possess more gross motor skills and have better socio-emotional development. There was a correlation between knowledge of AWs and children's developmental milestones that significantly impacts fine motor skills, cognitive skills, and language skills of urban children as well as gross motor skills and socio-emotional skills in rural *anganwadi* centres.

Key Words: Development, Education, Knowledge, Preschool, Workers.

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INTRODUCTION

Children's environment influences their transformation process and a stimulating and caring environment that promotes the children's developmental potential is needed for them to succeed in life later. The term 'developmental milestones' of a child includes the physical, language, cognitive, social and emotional aspect of that serve as indicators of a child's progress through distinct stages of development (Arya, 2023). Each child reaches milestones or performs developmental tasks at his/her own pace and in his/her own way. Children's care is now considered an essential element of the sustainable development goals (SDGs) by 2030. A number of studies and reports have highlighted the importance of early childhood development (ECD) for equity and a student's ability to succeed in school (Arya and Vig, 2023).

The lack of early childhood education may result in emotional, social, intellectual, and physical hardships for a child if he is admitted to primary school without a solid foundation of early childhood education (Arya, 2022). Integrated Child Development Scheme (ICDS) is the only large-scale program in India to assist underprivileged children by providing a variety of services such as immunizations, supplementary nutrition, and preschool education. Non-formal preschool education (NFPSE) is a crucial part of the ICDS programme as it helps lay a foundation for the children's physical, psychological, cognitive, and social development. Preschool education is mainly focused on creating an environment that stimulates and satisfies the curiosity of the child (Arya and Maurya, 2016). It provides a natural, pleasant, and stimulating learning environment that is conducive to optimal development rather than following a rigid curriculum (Jyothi, 2015). The success of the ICDS programme depends upon the effectiveness of the *Anganwadi W*orkers (AW), which depends on their knowledge, attitude, and practice. Knowledge includes facts, information or skills acquired through expressions or education. A sound knowledge of a subject can strengthen the skills and raise the capabilities (Arya *et al*, 2017). The AWs receive hands-on experience working with children, managing preschool environments, and providing learning opportunities. However, early learning has, so far, been largely neglected

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since nutrition has been prioritized (Limbu and Arya, 2019). It is right that the National Education Policy, 2020 emphasizes how important early childhood care and education is for the cognitive, social, and emotional development of a young child. The National Family Health Survey-5 (NFHS-5) finds, however, that only 13.6% of children attend pre-primary schools. Hence, the nearly 1.4 million *anganwadi* centres (AWC) that provide ICDS in India must supply early childhood care and education (ECCE) to the millions of young children from low-income families.

Admittedly, with its overriding focus on health and nutrition, NFPSE has hitherto been the weakest link of the *anganwadi* system (Ashajyothi *et al*, 2014). Multiple administrative duties have left AWs with little time for ECCE. The existing system at best serves the age group of 3-6 years, ignoring infants and toddlers. Nevertheless, a child's early learning begins at birth, initially through stimulation, play, interactions, non-verbal and verbal communication, and gradually through observation and cues from the immediate environment and increasingly structured activities. Unfortunately, due to a lack of parental awareness compounded by the daily stresses of poverty, disadvantaged households are unable to provide an early learning environment (Arya *et al*, 2023).

To accomplish this, AWC will be re-imagined and re-calibrated so that not only will nutritional aspects of children and mothers be addressed, but also early childhood education will be addressed, especially for children under the age of 6 years, which has been shown to be a foundation for the development of children. Study findings will help identify the gaps in AW knowledge about pre school education and assist *anganwadi* children in paying attention to areas such as preschool education which require more attention.

MATERIALS AND METHODS

The sample for the current study comprised *anganwadi* workers and *anganwadi* children. Among the 606 anganwadi centers established in Ludhiana Urban, there are 213 in Ludhiana Rural, according to the Ministry of Women and Child Development. A total of 30 *anganwadi* workers from three urban blocks and 20 *anganwadi* workers from two rural blocks of Ludhiana district were selected. From each urban block 30 AWCs and each rural block 20 AWCs were randomly selected. By using simple random methods, five 3-6-year-old children were also selected from each of the selected *anganwadi* centers. Those AWCs that were operational were included in the sample. In order to collect information, the knowledge questionnaire, the developmental milestones checklist, and observations were used as a tool. The knowledge scale used were: The self-structured knowledge questionnaire for *anganwadi* workers was used to assess their knowledge about non formal preschool education. The total scores obtained were divided equally across three levels of knowledge i.e. high, average and low. The same procedure was carried out for each AWC under study.

In the selected AWC, the investigator observed random activities conducted during the working period for two hours. In this study, each AWC was observed. Scoring was done based on how much knowledge they had of NFPSE that varied from low to high. One questionnaire took approximately two hours to complete. For assessment of Developmental Milestones Checklist of *anganwadi* children: This schedules developed by taking guidance from Guidebook for Planning and Organization of Preschool Education Activities in *Anganwadi* Centres by NIPCCD (2006). Physical and motor development, cognitive development, language development, and social and emotional development of selected *anganwadi* children were assessed using separate sub-checklists.Worksheets and activities were included in the checklists for the children in the AWC. During the selection and pretesting of both scales, experts in the field were consulted. A pre-testing stage was carried out in order to measure reliability after 78 per cent reliability was achieved, the actual data collection could begin.

Data collection and statistical analyses: The data were collected personally by making a

Table 1. Personal profile of *anganwadi* workers.

Personal information	Urban (n_U =30) *f* (%)	Rural (n_R=20) *f* (%)	Total (n=50) *f* (%)
Age (Yr)			
25-35	6 (20)	5(25)	11(22)
36-45	15(50)	7(35)	22(44)
>45	9(30)	8(40)	17(34)
Education			
High school	6(20)	9 (45)	15(30)
Intermediate	9(30)	6(30)	15(30)
Graduation	10(33.33)	3(15)	13(26)
Post-graduation	5(16.66)	2(10)	7(14)
Work Experience (Yr)			
< 5 yr	0	0	0
5-10 yr	12(40)	4(20)	16 (32)
11-15 yr	15(50)	6(30)	21(42)
>15 yr	3(10)	10(50)	13(26)
Number of Training and Refresher Courses Attended			
1-3	18(60)	10(50)	28(56)
4-6	12(40)	8(40)	20(40)
>7	0	2(10)	2(4)

Table 2. Knowledge level of *anganwadi* workers.

Levels of knowledge	Urban (n_U =30) *f* (%)	Rural (n_R=20) *f* (%)	Total (n=50) *f* (%)
High	4 (13.3 3)	3 (15)	7 (14)
Average	20 (66.67)	13 (65)	33 (66)
Low	6 (20)	4(20)	10 (20)

Table 3. Mean score (±SD) difference of *anganwadi* workers' knowledge level.

Knowledge level	Urban (n_u =30)	Rural (n_r=20)	t-Value
	Mean ± SD	Mean ± SD	
	19.38±5.46	27.26±6.18	4.75**

***Significant at 1%*

personal visit to Urban and rural *anganwadi* centres of different blocks in Ludhiana District. The field work involved the use of several tools to collect the required data. Researchers completed the Developmental Milestones Checklist purely based on observations. Categorical variables were expressed as percentages, mean (SD) for normally distributed continuous variables, and categorical variables were compared between groups using the Z-test and the t-test. The Pearson correlation coefficient was used to assess correlation between groups with normally distributed continuous variables.

RESULTS AND DISCUSSION

Age

The data (Table 1) revealed that a large percentage (44%) of the AWs included in the sample were in the 36-45 age group and 34 per cent

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Table 4. The differences among urban and rural *anganwadi* children in developmental milestones across different domains and levels.

Levels and domains of developmental milestones	Urban *anganwadis* (n_u =150)	Rural *anganwadis* (n_r=100)	Z-value
	Frequency (%)	Frequency (%)	
1. Development i n Physical and Motor (i) Gross motor skills			
Low	40(26.67)	8(8)	3.67**
Average	68(45.33)	74(74)	4.48**
High	42(28)	18(18)	1.81 ^{NS}
(ii) Fine motor skill			
Low	25(16.67)	6(6)	2.51*
Average	105(70)	79(79)	1.58 ^{NS}
High	20(13.33)	15(15)	0.37 ^{NS}
2.Cogni tive skill			
Low	19(12.67)	15(15)	0.52 ^{NS}
Average	95(63.33)	72(72)	1.42 ^{NS}
High	36(24)	13(13)	2.15*
3. Language skill			
Low	0	0	0
Average	117(78)	89(89)	2.24*
High	33(22)	11(11)	2.24*
4. Socio-emotional skill			
Low	0	0	0
Average	125(83.33)	92(92)	1.98*
High	25(16.67)	8(8)	1.98*

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were belonged to >45 years. Rest 22 per cent belonged to the 25-35 years of age group. The study suggested that AWs has a majority of workers 36 to 45 years old, which makes it easier to work with young children as workers under this age are not mature enough or too young. Similar findings have also been reported by Arya and Vig (2023) who concluded that 36-45 year is a very suitable age for effective functioning of the *anganwadi* workers at the *anganwadi* centres.

Education

Most of the respondents (30%) were high school or intermediate qualified whereas, 26 per cent finished their graduation and 14 per cent completed post-graduation. As part of education, most of the AWs have high school and intermediate so its impact on their children and their performances. These finding have also been reported by Arya *et al* (2018).

Work Experience

It was found that 42 per cent worked between 11-15 years. Thirty two per cent worked between 5-10 years and 26 per cent had served for more than 15 years. None of them were less than five years of experience. It was observed that training part was lacking, as they have not been provided with training by the department or higher authorities, therefore they have little or no knowledge of preschool education (Arya and Vig, 2023).

Number of training and refresher courses

Study results indicate that most anganwadi workers received one or two training courses.

Table 5. Differential mean scores (±SD) of *anganwadi* children based on developmental milestone.

Developmental Milestones Domains	Urban *anganwa dis* (n_u =150)	Rural *anganwadis* (n_r=100)	t-Value
	Mean ± SD	Mean ± SD	
1.(a) Gross motor skill	10.84±2.30	11.52±2.89	2.06*
b) Fine motor skill	12.18±3.17	11.89±3.45	0.68
2. Cognitive skill	11.74±2.91	11.13± 2.84	1.64
3. Language skill	11.47±2.29	10.53±2.26	3.18**
4.Social -emotional skill	17.00±3.62	18.21±3.37	2.71**

**Significant at 0.05 level, **Significant at 0.01 level*

Table 6. Correlation between *anganwadi* workers' knowledge and developmental milestones of children.

Developmental milestones Domains	Knowledge level	
	Urban (n_U=150)	Rural (n_R=100)
Gross motor skills (r)	0.04	0.26**
Fine motor skills (r)	0.21*	0.09
Cognitive skills (r)	0.26**	0.001
Languageskills (r)	0.15*	0.09
Socio-emotionalskills (r)	0.004	0.22*

**Significant at 0.05 level, **Significant at 0.01 level*

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Similar results found by Arya *et al* (2018) that most (56%) of the AWWs had received only one or two training sessions.

The findings divulged that percentage distribution of knowledge level of the urban and rural AWs. The overall data elucidated that majority (66%) of the AWs at average level and (20%) were at low level and only (14%) at high level of the AWs in knowledge. It was concluded that *anganwadi* workers' awareness of non-formal preschool education was generally average, which indicates the importance of regular quality training and on-site training. Although *anganwadi* workers have worked in an *anganwadi* centres for 11-15 yrs, their skills have not been trained, so the results indicate that they have the average level of knowledge (Arya and Vig , 2023).

The data (Table 3) present the area-wise mean scores (±SD) of *anganwadi* workers' knowledge level. The data regarding 'knowledge' that maximum mean score (27.26±6.18) of the *anganwadi* workers from centres and minimum mean scores (19.38±5.46) were found in urban *anganwadi* centres. There was a significant difference ($t=4.75$; $p<0.01$) in mean scores between urban and rural *anganwadi* workers' knowledge level. The finding of the study indicated that AWs in rural areas display higher knowledge levels than their urban counterparts, and this was significant.

The data (Table 4) showed that difference mean scores (± SD) of developmental milestones of *anaganwadi* children. In rural *anganwadi* children, gross motor skills were significantly

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different at average level (Z=3.70, P0.01) and low level (Z=3.67, P0.01). In fine motor skills, a significant difference was found (Z=2.51, p≤0.05) at the low level. A significant difference was observed in case of cognitive skills (Z=2.15; p<0.05) at high level whereas, as for the language and socio-emotional skills, they were significantly at the higher and average level, respectively.

A significant difference in gross motor skills was observed between rural and urban *anganwadi* children (t=2.06; p=0.01). The finding of the present study was in line with the studies of Arya *et al* (2023) that *anaganwadi* children in rural areas display higher gross motor than their urban children, and this is significant. Additionally, rural *anganwadi* children scored higher mean scores (18.21±3.37) in socio-emotional skills than urban *anganwadi* children by a significant amount (t = 2.71; p<0.05). However, when it comes to language skills, urban *anganwadi* children scored significantly higher than rural *anganwadi* children (t=3.18; P< 0.01). The results signified that children from rural *anganwadi* centers are more likely to possess gross motor skills, and their socio-emotional development is better than that of children from urban areas, but they have better cognitive and language abilities than children from rural areas.

The data (Table 6) depicts the correlation between the between *anganwadi* workers' knowledge and developmental milestones of children. The results revealed that *anganwadi* workers' were positively correlated with the children's fine motor skills (r =0.21; p<0.01), cognitive skills (r =0.26; p<0.01), and language skills (r =0.15; p< 0.05). In case, rural *anganwadi* workers' knowledge level was positively correlated with gross motor skill (r=0.26; p<0.05) along with socio-emotional skills (r =0.22; p<0.05) of the children. This correlation indicates that the level of knowledge of AWs and children's developmental milestones has a significant impact on the fine motor skills, cognitive skills, and language skills of urban children. As a result, urban children are better at reaching, grasping, remembering, paying attention, thinking, and writing. Children from rural AWC have a better understanding of feelings, better relationships with family and friends, and better gross motor skills like running and dancing than children in urban areas.

CONCLUSION

The results indicated that *anganwadi* workers' knowledge of developmental milestones was correlated with better childcare strategies and overall better outcomes for children. A correlation exised between knowledge of AWs and children's developmental milestones, which significantly impacts fine motor skills, cognitive skills, and language skills of urban children, as well as gross motor skills and socio-emotional skills in rural centers. Governments and higher authorities should establish policies that promote skill up gradation and provide training to AWs. Planning, executing activities, and developing appropriate curriculum related to NFPSE should have been included in the AWs, not just in terms of nutrition. Effective transition programmes should be developed for children, parents, and *anganwadi* workers, which emphasize meaningful partnerships.

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