

## Indian Pediatrics – Environmental Health Project *Special Article Series*

### Early Childhood Development in Deprived Urban Settlements

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*Poverty, the root cause of the existence of slums or settlement colonies in urban areas has a great impact on almost all aspects of life of the urban poor, especially the all-round development of children. Examples from countries, across the globe provide evidence of improved early child development, made possible through integrated slum improvement programs, are few in numbers. The observed 2.5% prevalence of developmental delay in the less than 2 year olds of deprived urban settlements, the presence of risk factors for developmental delay like low birth weight, birth asphyxia, coupled with poor environment of home and alternate child care services, highlights the need for simple cost effective community model for promoting early child development. This review on early child development focuses on the developmental status of children in the deprived urban settlements, who are yet to be on the priority list of Governments and international agencies working for the welfare of children, the contributory nature-nurture factors and replicable working models like infant stimulation, early detection of developmental delay in infancy itself,*

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*developmental screening of toddlers, skill assessment for preschool children, school readiness programs, identification of mental sub-normality and primary education enhancement program for primary school children. Further, the review probes feasible intervention strategies through community owned early child care and development facilities, utilizing existing programs like ICDS, Urban Basic Services and by initiating services like Development Friendly Well Baby Clinics, Community Extension services, Child Development Referral Units at district hospitals and involving trained manpower like anganwadi/creche workers, public health nurses and developmental therapists. With the decentralization process the local self-government at municipalities and city corporations are financially equipped to be the prime movers to initiate, monitor & promote early child development programs, to emerge as a part and parcel of community owned sustainable development process.*

**Keywords:** *Deprived urban settlements, early child development, developmental delay.*

Early Child Care and Development (ECCD) is a comprehensive approach specially aimed at providing opportunities for the holistic development of children in the age group of 0-8 years. Varied strategies have been used, singly or in combination for the betterment of the children's health, nutritional status, psychosocial development, early childhood education and primary school education. A large body of research evidence brings to light, the fact that ECCD programs, whether parent focused or child centered, help disadvantaged children directly or indirectly, to combat to a certain extent, the detrimental effects of poverty on child development

especially during the crucial first six years of life. But it would not be an exaggeration to say that ECCD programs in most of the developing countries are not always planned and implemented with a clear understanding of the issues specific to the urban poor living in slums and peri-urban settlements; with the result that a greater percentage of under fives in the poor urban areas still remain un-reached by any early child development programs.

Urban poverty and its characteristics like substandard housing, overcrowding, poor water, sanitation and sewage disposal facilities, related environmental risks including eviction of slum dwellers are all issues that had been discussed far and wide. But as professionals working in the field of child development, our understandings of the underlying complex causative processes, possible effects and implication of these issues on the slum children's development is still inadequate.

But this assumes greater significance against the World Bank estimates, that by the year 2000, half of the children born in urban areas of the developing countries would be in poor families with a larger proportion in South Asia(1). An increasing number of children are also facing new dangers associated with homelessness and street life. It is estimated that 100 million children struggle daily, for survival on city street(2). Child labor, probably the only means of survival for many poor urban households, is often at the expense of the health of the children and their schooling, thus creating a vicious cycle of poverty, illiteracy and unemployment, trapping even the next generation in to poverty. Almost 40% of the urban population in the Delhi city is poor, out of which two-thirds are women and children. In Chandigarh, 20.3% of the total urban slum population of 1,07098 is children in the 0-6 years age

group(3). Surely, we are talking of roughly six million children less than six years of age, residing in slums/deprived settings across the country. The actual percentage may be even greater as official statistics still measure the proportion of people living below the poverty line based on estimates of cost of food with only a small amount generally included for non-food essentials and excluding any criteria related to housing conditions, including access to water and sanitation(4).

The term "urban poor children" denotes not only the children residing in typical urban slums but also the children living in deprived urban and peri-urban settlements as in the state of Kerala, where there are no virtual slums like the ones in the metropolitan cities.

#### **Developmental status - an early child development indicator**

A country's future human resource development is determined on the basis of the developmental indices like infant mortality, morbidity, prevalence of disability, living conditions and education of children, especially the under fives. As early child development, an outcome of the survival and care practices adopted in a particular setting, is objectively reflected in the developmental status of children, any delay, dissociation or deviation in the development of children and its causes/contributory factors may be indicative of the need for strengthening the existing programs or the need for exploring and initiating newer possibilities. Although many isolated efforts have been undertaken in different parts of India to assess and document the developmental status of children in the deprived urban settlements, a comprehensive database on the above is still lacking. But the observed 2.5% prevalence of developmental delay in children below 2 years of age in the deprived urban settlements of Kozhikode is

higher than the all Kerala prevalence of 1.53%(5). Studies from Turkey have also shown that preschool children from deprived urban settlements lag behind their high socio-economic status counterparts in performance on Denver Development Screening Test indicating the influence of socio economic status on children's development(6). Similar observations have been made in Kerala with regard to poor urban preschool children's skill development and concept development(7).

### **Contributory risk factors for development delay**

#### *Biological risk factors*

There is now clear evidence that low birth weight is the single most important biological risk factor for developmental delay and that as the birth weight comes down by every 500 grams there is a corresponding reduction in the Bayley developmental scores(8). In the slums of Dhaka, Bangladesh, where the low birth weight prevalence is as high as 46.4%; 70% of them being SGA infants and 17% premature, it was found that the catch-up growth was limited and that although the weight at 12 months of age was largely a function of weight at birth, there was a greater plasticity of growth in the first 3 months of life than later in the first year, suggesting that these infants may respond to targeted postnatal interventions during the first three months of life(9). Health care practices, common in slums, like limiting the antenatal health care services for the first delivery and relying on untrained dais for conducting delivery at home *etc.* often result in adoption of unscientific health practices like incomplete immunization, insufficient check up during pregnancy, unsafe deliveries at home and improper post-natal care of mothers and newborn. These practices increase the risk factors for developmental delay, like infection with rubella in the first trimester of pregnancy,

intrauterine infections, premature delivery, perinatal problems like birth asphyxia, hypothermia, and hypoglycemia. Follow-up studies have shown that grade of post asphyxial encephalopathy is the best clinical marker for outcome, with least involvement among grade-I encephalopathy babies and poor outcome among grade-III encephalopathy babies even at 10 years(10). But recent, observation that room air oxygen is as effective as oxygen for resuscitation of newborns with birth asphyxia is a boon for the newborns in the slum as perinatal factors are important contributory factors for death and disability(11).

#### *Environmental risk factors*

The primary environment of any individual especially during infancy, is the family and more so, the mother. The developmental problems in the child are greatly determined by the biological variables, but the environment has the potential for influencing early developmental difficulties. Hence a child with environmental risk of living in deprived settlements may sometimes present with developmental delay as, child development is said to be the interplay between genetic and environmental factors, the genes setting the limits of achievement and the environment determining whether he/she achieves it or not. Poverty, substandard housing, overcrowding, inadequate water, sanitation and sewage disposal facilities and related environmental risks and insecurity characteristic of a slum has a great impact on the survival and quality of life of the urban poor children, especially the below 3 age group. Overcrowding increases the risks of airborne infections and accidents. The lack of safe water and sanitation facilities increases the risk of intestinal infections and other communicable diseases. The World Bank has estimated that over 30% of the global burden

of disease is associated with poor sanitation, unsafe water, and poor housing(1). Children over one month of age are especially vulnerable to the health risks of unsafe water and poor sanitation(12). Hence it can be stated that all the above factors place the children in the urban slums at greater risk for acute respiratory infections, diarrhea, measles, malaria and malnutrition, the five major causes of 70% of under five mortality. About 28% of all deaths in developing countries are due to infectious and parasitic diseases among children under five(13).

Care of children had always traditionally been the forte of mothers, irrespective of education, income and social class differences. But it is understood that these differences significantly affect the quality of care provided. Mothers in the urban slums are usually uneducated and unskilled laborers, working in construction sites or as housemaids. In the absence of mothers, it is the girl child in the family who is entrusted with the care of younger children and often the household itself, whereby her education is at stake. And inevitably, the challenging living conditions and long work hours undermine the capacity of these mothers to provide optimal care for children whereby compromises are sometimes made in keeping the children clean, hygienic preparation of food and also in proper waste management, especially in the absence of reasonably adequate services. All these are possible contributory factors, leading to the vicious cycle of malnutrition, lowered immunity and resultant diseases and apathy in the slum children(4). Lack of opportunity and stimulation were identified as factors responsible for the poor DDST performance of children in the deprived settlements of Turkey. It is interesting to note that the mother-child interactions and child care practices would be reflected in the

developmental rate of preschool children with the mothers from traditionally urban families doing better than the first generation slum dwellers(6). Comparative studies on the home environments of children in deprived urban settings and high socio-economic status has shown that children in deprived settings had poor home environment and this has been a factor that contributed to the difference in their developmental status. Studies on the home environment of preschool children in urban deprived settings using Home Observation for Measurement of Environment has shown that warmth and affection was highest in those homes but acceptance was the domain that scored least. It was also found that, not even in 10% of homes, parents encouraged children to learn shapes and spatial relationships. These homes also lacked toys, which teach names of animals and number(14). Added to this, mothers in slums are more prone to depression which affects the quality of maternal interaction with the child and this combined with poor home environment, inadequate provision of sufficient and appropriate play materials has been understood as leading to poor language and fine-motor skills in these children as compared to the better off children in the urban area. Caregivers in crowded and chaotic conditions have been found to be less responsive to their children, and more restrictive, controlling and punitive(4). The phenomenon of women headed family is on the rise in urban slums. Contradictory views exist about it. One view is that it is a reason that explains the poor outcomes of children in the slums, as women would be the sole wage earner who have very little time for income generation activities due to household chores, collecting water and fuel. Another view is that, children in such families are better off, as women are more likely to invest in terms of children's future.

### **Early Child Development Programs related Issues in deprived urban settlements**

Integrated Child Development Services (ICDS) is by far the largest and most important network of services for the rural poor but not for the urban as it operates only about 227 projects in the urban areas all over the country covering 1.5 million children out of the total 6 million urban slum children under 6 years of age(15). The utilization of its services is much lower as compared to the awareness of the services available. Although ICDS is supposed to approach the development of children in an integrated way, in actual practice, it still continues to place greater emphasis on health and nutrition components. The visible key component of preschool education still receives a low priority of program implementers and hence, it has not been able to achieve the desired level of community participation and acceptance. This may be partly attributed to their limited skill in organizing preschool activities as only 19% of anganwadi workers' training hours are kept aside for developing preschool education skills. Coupled with this, limitation of space especially in the urban sector, low honorarium, and competition from private preschools adopting formal approach to learning alphabets and numbers are, factors posing as major impediments in quality program implementation(15). A study on the environment of anganwadis in the semi urban areas of Thiruvananthapuram district of Kerala brings to light the fact that 50% of anganwadis lack the essentials for optimal child development like; good building and safe outdoor play environment, separate activity and play rooms, toys which teach color, size, shapes, puzzles for creative development, toys or games requiring refined movements, at least 10 children's books, real

or toy musical instruments, display of children's art work, toys that teach the name of animals, birds, and most of all trained and qualified pre-school teachers(7). It is only recently that ICDS has started focusing on the downward extension of its services to the under-three children and have started piloting early identification of developmental delay in infants below 2 years by anganwadi workers and organize intervention programs with the expert guidance of trained developmental therapists(5). Although envisaged as a program for the people and by the people, ICDS is now recognized only as a government sponsored program.

Urban Basic Services (UBS) Program is another multi dimensional, community based integrated effort aimed at improving the quality of life of the urban poor, especially women and children, through a gamut of activities like income generation activities for women and preschool centres for children. It is operational in 25 states and 6 Union Territories covering 296 cities and further 169 through state universalization efforts reaching an estimated 10 million urban poor(16). UBS program suffers from similar problems faced by ICDS program. The only major difference is the "Bustee Development Committee", which charges a nominal fee from the children towards payment of worker's honorarium. Like the ICDS, UBS also covers only the regularized colonies leaving aside the children from unauthorized residential clusters and floating urban poor population(15).

While anganwadis focus only on children above three, organized or adhoc services for children below 3 is almost non existent in urban poor settings, except for those operational under the Government's scheme for setting up creches for poor, working and ailing mothers and also the mobile creche movement. Mobile creches, which aim to



relieve the older child from the burden of rearing the younger ones by providing services like creche, preschool education and primary schools, is gaining ground in city construction sites of Delhi, Mumbai and Pune. Being voluntary in nature the establishment has been able to adopt a participatory management style, fostering joint decision-making and a sense of deep commitment. In spite of its operational success of over two decades, the program has not been expanded substantially because of its temporary nature, heavy dependence upon the paid/unpaid and committed volunteers and the financial support of the donors(17). The Government run creches on the other hand, caters to only 20% of children in urban slums and poverty pockets and, as the majority of the children availing the program are in the age group of 3-5 years, the thrust of the program is only on preschool education. The fund allotted is mostly used for infrastructure development and only a small amount is utilized for buying toys and learning aids for the preschool children(15). Yet, the workers of Government sponsored creches are unaware of the nuances in the field of ECD due to lack of frequent and in-depth training. The Balwadi program functioning in the urban areas on a moderate scale under the Central Social Welfare Board and Indian Council for Child Welfare focuses on natal and postnatal services, arts and crafts training, elementary medical services and preschool program for children between two and a half to five years. But in spite of its popularity as providing better quality preschool education, it suffers from inadequacy both of program content and problems in implementation(15).

In a nutshell, the problems faced by the ECCD programs of urban settlements are; inadequate infrastructure due to minimal funds, poor honorarium of workers,

unqualified and poorly skilled staff, lack of services for the under three, over importance to one or more components thereby neglecting other vital components of early child development, worker's lack of knowledge and skill in infant stimulation, early identification of developmental delay in children, lack of community participation and ownership of the program and absence of outreach programs. Thus it can be concluded that by nature, early child development programs in India is more a welfare measure than a developmental activity.

### **Replicable working models/services to strengthen early child development**

The issues concerning the ECD programs in the deprived settlements of India, brings to light the need to explore the various replicable working models/approaches that can be adopted and assimilated in urban ECD programs like ICDS, UBS program etc. In order to make sure that all age groups are included in the safety net of ECD program, the replicable models suitable for the developmental needs of each age are presented below.

#### *Infant stimulation*

Infants are not helpless as is commonly considered. They exhibit curiosity and active participation in learning experiences. And the kind of stimulation received during this period appears to be crucial as the motor, social and cognitive skills developed during this period have strong implications for future life long development. Hence, the need for providing infant stimulation to all infants and especially those who are at risk for developmental delay, including environmental risk factors. Infant stimulation can be provided by structuring the environment to facilitate sensory motor stimulation and also through direct, responsive interaction with the mother caregiver. Marked improvements in the performance, hearing and

speech subscales as well as the development quotient on Griffith mental development scale of deprived urban children in Jamaica, has been observed through weekly home visits and psychosocial stimulation(18).

*A community based model of early identification and intervention of developmental delay*

Every baby follows his or her own unique schedule of development within fairly broad limits, however the general developmental competence of an infant can be assessed. Such assessment may be of only passing interest with respect to a normal healthy infant, but may take on special significance with respect to a suspected developmentally abnormal infant. Identification of risk status can lead to provision of early intervention services aimed at prevention and amelioration of potential problems. If one can diagnose developmental delay in early stages of growth, the intervention can reduce long-term sequelae. The early identification of developmental delay makes use of simple, cost effective tools for identification like Developmental Observation Card for mothers, Trivandrum Developmental Screening Chart for field staff including Anganwadi workers (AWWs)/ creche workers and health workers, CDC grading for the important motor milestones of head holding, sitting, and standing. CDC model home based therapy with the mother as the therapist can also be replicated in any setting. The World Bank assisted Phase-III Project in Kerala have sought the services of Developmental Therapists (Diploma in Clinical Child Development Holders from Child Development Centre) to serve as community trainers in each of the districts of Kerala. Through the Developmental therapists, Kerala has trained 9258 AWWs for detecting developmental delay and TDSC is routinely used by the AWWs of Kerala to

screen infants for developmental delay(5).

*Community Extension Services*

Extension Services could be established in the urban slums with the help of anganwadi workers or community volunteers and with the support of health facilities available locally(5).

*Child development referral units (CDRU)*

There should be a district level facility for managing children with developmental delay. For this; the services of specialist doctors at district hospitals are utilized. Developmental therapist co-ordinates the activities of the CDRU(5).

*Development friendly well baby clinic*

It is now well appreciated that there are great many children presenting with developmental delay and spasticity, who do not have identifiable risk factors. Hence, ideally all babies should be assessed at least once during infancy. Well Baby Clinics, now functioning for a number of years as a facility meant for comprehensive preventive health care for infants and children have over the years been reduced to only an immunization clinic. The prevalence of developmental delay in less than 2 year olds, attending well baby clinics of SAT hospital, Medical College, Thiruvananthapuram district was 2.6% and the mothers and health professionals were not aware of this. The well baby clinics functioning in connection with urban health centres may be an ideal place to offer developmental assessment using tools like TDSC and CDC grading, apart from comprehensive growth assessment. Mothers coming for BCG vaccination can be given Development Observation card (DOC) to help them monitor their infant's development and to seek detailed assessment if need arises, as the four simple milestones of Social smile at

completed 2 months, Head holding at completed 4 months, Sitting at completed 8 months, Standing at completed 12 months given in the DOC, are perhaps the commonest milestones which parents make use of, for screening infants in the 1st year of life(19).

#### *Developmental screening for toddlers*

The poor performance of the pre-school child in classroom especially on reading and writing tasks itself calls for attention from parents and teachers. But it is difficult to suggest 3 or 4 milestones for the toddler age group, as we cannot focus on a particular area of development, like the motor milestones in the first year of life and skill development in pre-school years. So the possibility for parents to take a "let us wait and see" approach to any deviations noted in the child cannot be written off. Similarly, the problems like lack of concentration, hyperactive tendencies, which are usually detected only when children are enrolled in the formal education system, may have its beginnings in toddler age period. Hence, the need for incorporating developmental screening, for toddlers in the ECD programs. Simple developmental screening tools, like the Nursery evaluation scale junior (NEST junior), which the ECD worker herself can administer and which provides simple guidelines for intervention need to be propagated(20).

#### *Community owned ECD centers*

In a country with about 6 million children living in urban slums and limited coverage of existing programs, a top to bottom approach in providing ECD services, need to be and ought to be substituted by a community based ECD program if greater percentage of children are to be brought into the ECD programs and also for its greater sustain-ability. Thus, the groups identified from the community is expected to take part in developing ECD projects/

programs suitable to their locality and based on their felt need. Community participation is required in each step of the project right from locating the problem, decision-making, planning of activities, allocation of resources, implemen-tation, sharing the benefits, training and monitoring and evaluation(21). Bodhsalas in Jaipur, an NGO initiative, Pradham in Mumbai are examples of community-based ECD centers in India(22).

#### *Skill assessment of preschool children*

Studies in urban deprived setting have highlighted the fact that children in these settings lag behind their normal counterparts in age appropriate skill development, which has a direct bearing on their future scholastic performance. More over, a curriculum that looks into the holistic development of children ought to adopt a developmentally appropriate evaluation technique, which helps to identify children who are not at par with their age mates in their development and also to have a cumulative record of child's progress in skill development over a period of time. This would convince parents about the importance of the ECD program and the consequent improvement in the child. Simple easy to administer tools like Nursery Evaluation Scale, Trivandrum Senior (NEST) - abridged have been used for the same in the District Primary Education Program in Kerala and in the creches of Kerala State Child Welfare Council(23).

#### *School readiness program*

School readiness program for children who have not attended school in the first 6 years of life is another innovation successfully implemented in the municipal schools of Baroda, Delhi and Mumbai. A readiness package for such children is aimed at compensating for the lost period within 4 to 6 weeks on attaining 6 years of age(15).



*Child to child approach*

Child to child program is not a structured program but an approach built into existing programs of various institutions like primary schools, hospitals and voluntary organization with child care centres. The principle objective of the program is to train the siblings to directly involve in the health and development of younger children, while simultaneously improving their parenting capacity. As the focus of Child to Child has been on building nutrition and health related knowledge among children, there is a need to work out, how this strategy can be utilized in ECD programs. But this approach if modified as adolescent to child approach may gain more support in ECD(24).

*Primary education enhancement program*

Almost half of the parents in slums are illiterates (39% fathers and 52% mothers) working as coolies and in 75% of families; father is the sole breadwinner of the family. Most of the slum children are school dropouts who are not willing to return to school. Primary Education Enhancement program (PEEP) is another innovation, which works with urban deprived communities of Delhi, to involve parents in their children's education by motivating them to send their children to school. PEEP is a joint effort of National Institute of Urban Affairs, Government of India, UNICEF and USAID. Its vision is to bring every child in the city into primary school by facilitating access, ensuring that each child is in the school for a minimum of five years. It uses a wide range of participatory instruments to help understand the community priorities and problems and build community structures that would be responsible for preparing concrete action plans that the community would strive to attain(22).

*Identification of mental subnormality in primary school children*

The intellectual ability of children is equally important to access and retention in school. The children with mild mental subnormalities usually go unnoticed in a class of 50-60 children. They are the possible school dropouts or the group at risk for failure in class 10. The observed 10% poor performance of primary school children could be attributed to lower IQ of children and poor stimulating home environment(7). Hence, the need for a built-in system of screening, children with mild mental sub normality using simple tools like Draw-a-man test in primary schools of urban deprived settlements which would go a long way in reducing the school drop out rate and in providing education suitable to children's intellectual level.

**Policy Implication**

Implementation of any new initiative requires, a policy, a plan of action and, resources, including qualified manpower.

- Children of deprived urban settlements should be a priority area in the National Policy for children and also in the State Action Plan for children.
- Girl child of the urban slums is at greater risk for poverty related problems like illiteracy, malnutrition, adoption of unscientific health practices, early marriage and pregnancy. Hence issues of the urban poor girl child as a prospective mother, should be focused in the National Policy as well as in the Action plan.
- ICDS still remains, the best guarantee for assuring the optimal development of a deprived child in India. Hence widening the coverage, bringing in newer services and promoting greater community participation would help ICDS evolve as a sustainable ECD program.

- *Sarva Siksha Abhiyan*. The Government of India school enrollment program formulated as a strategy for bringing all children below the age of 14 years to the school and keep them there, is a golden opportunity for bringing in quality change to the education of deprived urban poor children. Similarly, the Continuing Education Program and Equivalency Program of National Literacy Mission, if extended to the deprived urban settlements would help in reducing the higher rates of illiteracy.
- The Primary Health Centers, Integrated Child Development Services and pre-school and primary education at least in Kerala, has been brought under the local self-government, the Panchayat, and Municipal Government/Corporation, as part of the decentralized planning. Hence municipal governments are in a key position to initiate novel child development friendly models/services so as to promote early child development in deprived urban settings.
- Appreciating the need for qualified human resource, which is unlikely to come from outside the system and in an effort aimed at the capacity building of personnel working in the field of early child development, University of Kerala in collaboration with the Child Development Centre, now offers a new course Post Graduate Diploma in Early Child Care Survival, Growth and Development as a distance education program.

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