

## **Research in Early Childhood Development: Selected Abstracts**

Various initiatives in the field of Early Childhood Development (ECD) have been taken in a scattered manner in Bangladesh since the 1980s. According to the latest directory of Bangladesh ECD Network (BEN), about 250 organizations are engaged in various ECD activities and programs. Many of them have developed innovative models and have carried out evaluation and research. The Early Childhood Development Resource Centre (ECDRC) at the Institute of Educational Development of BRAC University designed and started the first Post Graduate Diploma and Masters Degree Program in ECD in the country in 2008. So far two batches of students have successfully completed their degree and have conducted studies as a partial requirement of the degree. ECDRC also has been involved in research.

Bangladesh ECD Network took the initiative to organise a research dissemination seminar on 20-21 December, 2011. The goal was to share the knowledge generated by research with BEN members and the larger ECD constituency. A selection of the abstracts of research presented at the seminar is given below.

### **1. Understanding the Required Capacity in ECCD and DRR for Particular Communities in a Disaster Prone District of Bangladesh.**

**Researchers:** Syeda Rezwana Akhter<sup>1</sup>, Mahmuda Akhter<sup>1</sup>, Altaf Hossain<sup>1</sup>, Ratan Kumar Sarkar<sup>1</sup>, Md. Tariqul Islam Chowdhury<sup>2</sup>, Mohammad Nuruzzaman<sup>2</sup>, Tamanna Taher<sup>3</sup>, Matiur Rahman<sup>4</sup> and Shahidullah Sharif<sup>4</sup>

**Abstract:** The Asia Pacific region represents a ring of fire or a geographical area that is at high risk for natural disasters (Hayden & Cologon, 2011). Cyclone, flood, drought, riverbank erosion, landslides, tornado, earthquakes and arsenic toxicity in drinking water are major hazards for Bangladesh. In April 2010, Bangladesh has approved the National Plan for Disaster Management 2010-2015. In the plan the government acknowledged need for pre-disaster mitigation and preparedness of the people as a necessary as well as a cost-effective approach. Though one of the goals were 'Empowering at risk communities', unfortunately it did not address social variables of Disaster Risk Reduction (DRR) for 0-8 year's age group children, who as a group are highly vulnerable and often bear the brunt of disasters.

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Research suggested that selected actions in the area of early childhood care and development (ECCD) could be an important DRR factor for young children (Shores, Grace, Barbaro, Flenner & Barbaro, 2009 in Hayden & Cologon, 2011). Furthermore, it was suggested that children in emergency situations benefit from being informed and involved in their community (Mitchell, Haynes, Hall, Choong, & Oven, 2008; Morris, van Ommeren, Belfer, Saxena, & Saraceno, 2007 in Hayden & Cologon, 2011). Hence the objective of this study was to identify the strength and gap of capacity for the families in ECCD and DRR for particular communities in disaster prone region of Bangladesh. The study took place in four communities of a coastal district. The respondents were representative of ethnic groups, cluster villages, fishermen and general population, selected randomly from families who had children of 0-8 years, habitant for five years and experienced in facing disaster. In total 120 household were surveyed, 4 focus group discussions were held and 12 interviews were conducted in the communities. The study found that the people in general gave priority to the safe shelter for the children in disaster. Besides that every other matter children faced during or later were seen as normal and less initiatives and services present. Although the communities believed in helping each other especially at the time of disaster but there was no indication of any initiative as a group/whole. It was also found that the services during the disaster and later were inadequate but people had their own way of facing disasters and reviving from that. It was also found that the people suffer because of weak collaboration between GO and NGO. Hence the data gathered through the study constituted evidence which can inform advocacy activities for enhancing services for -8 year's age group children in terms of social variables of DRR at the community level. The study also supported the proposition that ECCD activities should be incorporated into DRR Policy by initiating mapping of ECCD in DRR program for the country.

## **2. Children's Exposure to Television Advertisement-Exploring the Bangladesh Context**

**Research:** Md. Iqbal Hossain<sup>1</sup>

**Abstract:** The effects of television advertisements on children have become a growing concern in many countries since the first extensive research in 1970. In Bangladesh, there has been no research to date that has examined the effects of television advertising on young children. Considering international experiences and the significance of the issue in Bangladesh, as a first step, this study aimed to provide preliminary clarification of the possible effects of television advertisements on children.

A qualitative, mixed methods approach was used to estimate children's probable exposure to TV advertisements, analyzing selected TV advertisements by experts to identify areas of the effect and explore the responses of parents towards children's exposure to TV advertising.

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The study found that the average probable exposure of children to television advertisements is 21.19% (34.79%)<sup>1</sup> of total watching time during any weekday and 32.55% (37.72%) during the weekend. Through expert's analysis, it was found that most of the ads contain social class and gender bias and implicate morals, ethics or values and lifestyles. The ads also mislead children and manipulate their logic or reasoning. Some of the ads have potential to challenge thinking, create curiosity and introduce a new concept. Overall, virtually all of the advertisements directly or indirectly targeting children have the potentiality to provoke them, affect food habit, health and attitude or behavior. The study also took into account the parent's perception of the effect of children's exposure to television advertisement. Overall a large number of parents agreed that their children influenced by ads differently that have different affects on children food, lifestyle, demand, choice and preference.

This was an inaugural exploratory study on children's exposure to television advertisement in Bangladesh. The results of this study give a reflection on the probable amount of exposure children receive, the potential areas the advertisement may affect children and parents perception on their child's exposure to television advertisements.

### **3. Exploring the State of Educational & Care Giving Services for Autistic Children in Dhaka City: A Case Study of Two Schools**

**Researcher:** Arpita Majumdar<sup>1</sup>

**Abstract:** Autism is a neurobiological based developmental disability which is manifested during the first three years of life. Children with ASD displays marked impairment in communication and social relationship, demonstrates restricted range of interests and behaviours, including significant deficits in language and socialization skills. Bangladesh has a high percentage of disabled children. According to the WHO, 10 percent of population of developing countries are disabled, and Bangladesh is one of them. (Priestly, 2001). This means 1 in every 500 children is affected in this country (Rahman, 2010). There are very few institutions working for the autistic children and they do not come under government's concern in terms of funding, care, curriculum, evaluation, monitoring and training. There has been practically nil research on autism.

The study attempted to fill in this knowledge gap through a case study investigation of autistic school's teachers' knowledge, perception and motivation for working with these children, parents' knowledge on autism and perception of the schools, school authority's perception, and expectation from their respective schools and through examination of physical resources of the schools. This study was an attempt to explore the existing educational and care giving facilities in Dhaka city. The case study was exploratory in nature and used both qualitative and quantitative methods to get maximum information from

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<sup>1</sup> Values are inclusive of TV promotions, which is also an advertisement but not for any commodities.

the parents, teachers and school authorities to understand the overall situation of the educational and institutional care available for autistic children in Dhaka. The two schools were selected purposively for the study was SWAC and AWF. Semi-structured interviews of parents and teachers, in-depth interviews of the school authorities, review of school's documents, classroom observations were done to get maximum inputs. Quantitative data was analyzed by calculating Frequency Distribution and Percentage whereas Grid Analysis and Thematic Coding were done to review the qualitative data.

The study had some very interesting findings. Lack of awareness and infrastructure was found in respect to training, schooling, awareness, diagnosis and care. Children with autism were found lacking quality education, restricting their holistic development. Parents were found less motivated and knowledgeable on the disability. Teacher's knowledge was limited and was not sufficient to move these children ahead of their disability. The school authorities were found dedicated but due to lack of funding and infrastructure, they were not able to match up to their intentions. In conclusion, the autistic schools in Dhaka city were found not apposite to the requirements of the autistic children and their families.

#### **4. A Comparison of Verbal Skill and Cognitive Performance of Children Having High Educated Versus Low Educated Parents in Urban and Rural Context.**

**Researcher:** Ratan Kumar Sarkar<sup>1</sup>

**Abstract:** Parents' literacy levels are usually related to children's literacy development and parent-child engagement in literacy activities in the home has been found to help children develop oral language. This study explored the relationship of the verbal skill and cognitive performance of children with the education level of parents in rural and urban residential context. This cross sectional study compared the verbal skill and cognitive performance of children of low educated parents with that of high educated parents. The participants were 100 preschool age children, 49 from rural areas and 51 from urban areas. The WPPSI was used for measuring children's verbal skill and cognitive performance and a pre-tested questionnaire was used for getting socio-economic and demographic information. Children's mean (SD) score of verbal, performance and full scale IQ were 83.13 (9), 80.23 (10.57) and 79.78 (10.46) respectively. The scores were 4-5 points higher ( $p < 0.05$ ) among urban children than their rural counterparts. Children's IQ scores were found strongly correlated with fathers' and mothers' educational level individually. Mothers' education contributed to 18.6% of variation in Verbal IQ, 15.6% of performance IQ and 23.5% of full scale IQ. The impact of mothers' education on IQ scores is more prominent. Fathers' education has also linear relationship with IQ scores. The relation is more prominent in case

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of 0-5 years and again in 9 years + strata. IQ scores also has significant linear relation with socio-economic status of parents.

Recognizing the adult's tone and experiencing the situation, a child becomes able to speak as the situation demands. High level of education could enable the parents in providing inputs and making diversified examples. Low socio-economic status is associated with lower language promoting experiences. Children living in urban areas get more exposure to diversified situations, more learning opportunities than children from rural areas that affect their development.

The policy makers, educators and practitioners should think about raising parent education level to ensure scaffolding.

## **5. Safe child friendly environment in hospitals and Day care centres of Bangladesh: An Early Learning For Child Development(ELCD) Project Initiative**

**Researcher and Presenter:** Dr S M Shahnawaz Bin Tabib<sup>1</sup>

**Abstract:** Early childhood environment is those spaces that are designed to accommodate young children and stimulate their senses in away that both pleases them and teaches them. This environment can be in an early learning centre, kindergarten, hospital outdoor and indoor, day care center, preschool and park or garden. It may even be in a shopping centre of a city centre. In our country fixed facilities like hospitals, schools, daycare centers are built in such way that the environment is not child friendly, neither the structure & design nor the activities that prevail there. The purpose of this study is to prepare a guideline in our country perspective, which may act as a guiding tool to assess the environment of fixed facilities like hospital outdoor and indoor and also the daycare centre. This guideline will help managers of health and daycare centre to build their centres in such a way that these become safe and child friendly and promote early childhood development.

Initially four workshops were held involving members of various organizations such as Institute of child And Mother Health, Save the Children, Dhaka Shishu Hospital, Protibondhi Foundation & others who are experts in this field. Through intense work, searching literatures from internet, and review of relevant materials and discussion, a draft guideline was prepared. A checklist containing indicators for rating daycare centers was developed through workshops. Field testing of the checklist indicators for daycare centers was done in the ICDDR B daycare centre, daycare centre of PHULKI at Shekerteck, Mohammadpur, and daycare centre of Jatio Mahila Shagstha under Ministry of Children and Women Affairs. The centers were observed and data were gathered according to a checklist derived from the draft guideline.

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The checklist and indicators were further refined based on the field testing. Statistical calculation and reliability and validity of the field testing results were also done and final guideline prepared by checking internal validity. Internal validity of the seven subscales was also tested. Based on the field-testing, it is proposed that a minimum score of 28 for hospital outdoor and a score of 48 for hospital indoor as well as daycare centers is necessary. A range is also proposed for each type. For outdoor the range was: <28=unacceptable, 28-42=Bellow average/poor, 43-55= Inadequate, 56-68=Average, Above 68=Good; for Indoor facility, the range is: <28= unacceptable, 28-42= Poor quantity, 43-55= Inadequate, 56-75= Average, Above 75= Good. For day care the proposed range is : <48= unacceptable, 48-70= Poor quantity, 71-95= Inadequate, 96-115= Average, 116-144= Good. Based on the test results and further review by experts, the guideline including indicators was developed and a training manual was prepared for training the managers of hospitals and day care centres. A manual for training the supervisors of play corners of medical colleges was also prepared. This guideline will be helpful primarily to promote early child friendly learning environment in hospitals and day care centers of Bangladesh. Establishment of play corners in medical college hospitals of Bangladesh can be considered a success story in creating safe and child friendly environment in fixed facilities initiated by the Early Learning for Child Development Project (ELCD) and the Institute of Child and Mother Health(ICMH).

## **6. Action Research on Efficiency and Effectiveness of Indigenous ECD Materials**

**Researcher:** Anup Kumar Kar<sup>1</sup>

**Research Abstract:** Dhaka Ahsania Mission as part of implementing a ECD project has been undertaking an action research project on the use of indigenous or local materials for early childhood development since 2010. The overall objective of this research is to explore and assess effectiveness of locally available indigenous materials used in the ECD programmes of rural Bangladesh. The field work is done in three Unions in three Upazillas of Barguna District. The field data were collected through qualitative research method used a number of qualitative data collection methods.

The action research is spread over a year (November 2010-December 2011) with a split in three phases, where the phase I attempted to know the opinions about the use and application of the indigenous materials for childhood development. This presentation is prepared based on the findings of first two phases and reflections on the preliminary findings of the last phase.

The findings show that the indigenous play materials are more suitable and sustainable for appropriate childhood development. These are more attractive to the children and the raw

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materials of such kind of materials are locally available. The survey found that local indigenous play materials contribute to learn better and faster. Production and marketing opportunities of these materials also has some livelihood prospect. These are low cost and have good prospect for income generation activities in Bangladesh. Initial findings of the third stage action research indicates that required skills for mass production and marketing indigenous toys materials can be an effective measure to promote entrepreneurship.

## **7. Cultural Adaptation of Wechsler Preschool and Primary Scale of Intelligence-III (WPPSI-III) in Bangladesh.**

**Researchers:** S Yesmin<sup>1</sup>, M. Ahmed<sup>1</sup>, M Akhter,<sup>1</sup> F Khanom<sup>1</sup>, SS Zaman<sup>1</sup>, N F Rahman<sup>1</sup>, R Khanom<sup>1</sup>, S Sharif<sup>1</sup>, W Parvin<sup>1</sup>

**Background:** There are very few tools to assess mental development of child that are culturally appropriate in Bangladesh. Although WPPSI –III has been used for 4-6 years old children in Bangladesh by an international research organization, there is no validated version for younger children.

**Objective:** To do reliability and validity of WPPSI-III as a culturally appropriate psychological assessment tools for 2.6 to 3.11 years old children.

**Method:** Forward and backward translation and back translation were synthesized and face validity was done by the expert reviewers. Thereafter the test was administered on 115 children age 2.6 to 3.11 years in two upazilas for item analysis. Then the final version was administered on 62 samples to get validity. The test-retest reliability study was conducted on 46 children after a gap of 15 days.

**Results:** Receptive Vocabulary ( $r=.64$ ,  $p=.01$ ), block design ( $r=.63$ ,  $p=.01$ ), information ( $r=.64$ ,  $p=.01$ ), object assembly ( $r=.85$ ,  $p=.01$ ) and picture naming ( $r=.66$ ,  $p=.01$ ) were reliable after a short period. Internal reliability was confirmed by a Cronchbach's alpha coefficient of 0.79. The full scale IQ ( $r=.65$ ,  $p=0.01$ ) was highly reliable. Verbal IQ ( $r=.64$ ,  $p=0.01$ ), performances IQ ( $r=.66$ ,  $p=0.01$ ), General Language IQ ( $r=.61$ ,  $p=0.01$ ) were also reliable. Inter-correlation of subtests and composite scale were significant. Convergent and discriminate validity was satisfactory in Bangladeshi population.

**Conclusion:** The WPPSI-III becomes a useful tool to assess cognitive development of children and is sensitive for younger children in Bangladesh.

**Acknowledgement:** Acknowledge the financial support of Aga Khan Foundation Bangladesh and logistic support of IED, BRAC University in conducting the study.

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## 8. Effect of psychosocial-stimulation on cognitive, motor and behavioral development of iron deficient anaemic and non-anaemic children in rural Bangladesh- A randomized controlled trial

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**Background:** Iron deficiency anemia (IDA) is associated with poor infant development. Iron-supplementation mainly benefits motor function and children with IDA generally do not catch up to non-anemic (NA) children. The addition of psychosocial stimulation may facilitate catch up.

**Objective:** To compare the effects of psychosocial-stimulation, on cognitive and motor development, of IDA and NA children.

**Methodology:** This cluster-randomized controlled trial was conducted in 30-villages (15 stimulation and 15 control villages) in Bangladesh. All available 1237 children, aged 6-24 months, were screened for IDA. Total 223 children from stimulation-villages (117 IDA and 106 NA) and 211 children from control-villages (108 IDA and 103 NA) were enrolled. All IDA children received daily iron-treatment for 6 months. Stimulation comprised 9 months of weekly play sessions at home. We assessed children's development at baseline and after 9 months using Bayley Scales of Infant Development-II and stimulation in the home with the Family Care Indicators (FCI).

**Results:** Iron treatment benefitted anemia and iron status. After receiving iron-treatment non-stimulated IDA and NA groups had similar mental development index (MDI) scores but the IDA group had lower PDI scores and was less responsive to examiner. Stimulation significantly improved children's MDI (multiple regression analyses;  $B \pm se$   $5.9 \pm 1.9$ ; 95%CI 2.2, 9.7,  $p=0.002$ ). The interaction between iron status and stimulation on change in MDI approached significance ( $p=0.095$ ). NA children significantly benefitted from stimulation ( $5.6 \pm 1.9$ ; 95%CI 1.7, 9.2;  $p=0.004$ ) whereas IDA group did not ( $2.0 \pm 1.9$ ; 95%CI -1.7, 5.7;  $p=0.28$ ). Stimulation improved the FCI in both groups ( $1.1 \pm 0.3$ ; 95%CI 0.5, 1.7;  $p=0.001$ ).

**Discussion and Conclusion:** With iron treatment alone, the IDA-group caught up to the non-stimulated NA-group in MDI but not PDI. There was an overall benefit from stimulation on children's mental development but the IDA group tended to improve less than the NA group in spite of similar improvements in home stimulation. Acknowledgements: Nestle Foundation.

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## **9. Essentials of ECCD Interventions for 0-4 aged children in rural Bangladesh: Introducing two promising program models based on a comparative study**

**Researcher and Presenter:** MI Nahl<sup>1</sup>

**Abstract:** Development of effective ECCD intervention strategies for reaching infants and toddlers is the critical issue globally given the high rates of malnutrition and lack of stimulation opportunities facing most children living in low resource settings. This paper aims to describe two innovative ECCD interventions targeting 0-4 aged children in rural Bangladesh- 1-Service-based 2-Community-based as well as compare the relative effectiveness, challenges and implications of these two promising models. This study adopted both quantitative and qualitative research methodology. Children's health & cognitive status as well as mothers' social status, child rearing knowledge and practices were assessed through a cross-sectional survey (n=474) using structured questionnaire. The two intervention models will be comparatively discussed in terms of implementation, coverage, potential for scale up and knowledge & care-giving practice outcomes based on the regular program monitoring data and semi-quantitative survey.

Over 40% of children had been sick in the past week and 90% had no adequate dietary diversity. Cognitive and language scores were very low. Maternal education and their autonomous decision-making skills (e.g., 35% could decide what to feed her child) and mobility were very low. The service-based and the community-based model had 22% and 65% coverage respectively. Comparatively, maximum number of caregivers (68%) in the community-based model could remember the key program messages. On the other hand, caregivers' child development knowledge and practices improved relatively better in the service-based model. Distance, caregivers to service provider ratio, working schedule, quality of services, competencies of service providers and community participation were the key determinant factors of the outcomes of the intervention.

In context of rural Bangladesh, the community-based model was comparatively more effective in coverage whereas the service-based model was relatively better at service quality. Nevertheless, more investigations need to conduct emphasizing on child's-development outcomes and cost-effectiveness to determine the relative and comprehensive effectiveness of these two models as well as feasibility of combination of these two models.

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## 10. School Readiness: the Effectiveness of Preprimary Education in Bangladesh

**Researchers:** Kerrie Proulx<sup>1</sup>, SMM Kabir<sup>2</sup>

**Presenter:** Ms. Rabeya Hossain<sup>3</sup>

**Research Summary:** The findings of this research demonstrate the effect of pre-primary education on children's school readiness skills in the following domains: (a) literacy and language development; (b) cognition and early math skills; (c) social and emotional development; (d) gross and fine motor development; (e) approaches to learning; and (f) knowledge of Bangladeshi culture and heritage. The study draws on original data from 243 children entering Grade 1 in 2011 across 11 districts in Bangladesh. It includes an intervention group of 121 children who attended pre-primary and a control group of 122 children who did not attend pre-primary. The study explores "who" benefits most from pre-primary education and "what" specific quality indicators in the pre-primary classroom promote children's school readiness.

The results provide evidence that participation in pre-primary has a significant effect on children's school readiness, with stronger positive effects for children of mothers with limited education, particularly related to language and literacy skills. Observed classroom practices related to the learning environment were related to school readiness skills. These findings contribute further evidence of the influence of quality pre-primary education on children's development and skills at the start of primary school and indicate a need to target high-quality interventions for children from more at-risk backgrounds. Follow-up studies are planned in 2012 and 2013 to assess the effect of pre-primary on achievement in the early years of primary school, retention and dropout.

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