TRENDS AND IMPACT OF EARLY INTERVENTION FOR COMMUNICATION DISORDERS AT AIISH

[1]Malar, G., [2]Sreedevi N., & [3]Suresh, C. B.

Abstract

Presence of disabilities like hearing impairment, mental retardation, cerebral palsy, autism spectrum disorders, etc. are found to inhibit the personal, social and productive life of any individual (INDG, 2011; Mauro, 2010; NICHCY, 2010). However, contemporary evidences in the field of rehabilitation for communication disorders suggest that early identification followed by prompt intervention to produce effective results in later educational and social life of the individual (Berrueta-Clement et al., 1984, qtd. in OERI, 2011; Hall, Oyer & Haas, 2001; Moeller, 1991). As a pioneering institute not only in India, but in the south-Asian region for rehabilitation for communication disorders; All India Institute of Speech & Hearing (AIISH) has been a trend setter in early intervention for children with communication disorders for nearly five decades. The current study was undertaken to examine the trends in early intervention at AIISH and its impact on beneficiaries. Two-hundred and five former early intervened clients of AIISH since 2003 were reached out through a survey type of research. Antecedent details of the nature of early intervention services availed, consequent progress in early communication skills, as well as current school performances of the participants were compiled. Analysis of the information using simple descriptive and correlation statistical measures revealed a satisfactory trend in early identification and timely intervention ensued by commendable influence on development of communication and academic skills, as well as social integration in the educational mainstream. The findings reaffirm convictions about need for early identification and comprehensive intervention for successful rehabilitation of young children with communication disorders (Hammes et al., 2002; Yoshinaga-Itano et al., 1998; Robinshaw, 1995; Ramkalawan & Davis, 1992; Markides, 1986).

Keywords: *Early identification, Multidisciplinary intervention, Mainstreaming, School performance*

Introduction

Early intervention generally implies rehabilitative services provided to children below school age, who are discovered to be developing a handicapping condition or other special needs that may affect their development (LEAP, 2007). Nevertheless more recently, special needs in children are being identified soon after birth, followed up with effective intervention so that they could be mainstreamed at the age of three, that is, at preschool stage itself.

Early Intervention for Communication Disorders

One such group of special needs requiring early intervention is communication disorders. Communication problem could be briefly described as any difficulty faced by an individual in comprehending speech and language of others and/or use speech and other manifestations of language effectively in order to relate with people around him/her. Such difficulties could be consequent to presence of disabilities like autism, cerebral palsy, hearing impairment, learning disabilities and mental retardation, or due to disorders like aphasia and developmental phonological disorders among others. These problems have the potential to disturb the entire realm of an individual's life beginning from fulfilment of basic physical needs, through education, vocation; and to social integration and attainment of self-actualisation in life (Mauro, 2010; NICHCY, 2010). In India according to NSSO 2002 and Census 2001, approximately 1.9% to 2.13% of the population suffer from some or other kind of disability. NSSO (2002) reports that 15% of the above are with communication disorders. These databases provide further evidences that among these persons with disabilities, only 49% are literate, and there is a looming doubt of how many of them are functionally literate. Census 2001 also reports that only 34% of the persons with disabilities in the country are employed and that too mostly in unorganised and unskilled sectors (INDG, 2011)

However, these dire consequences could be prevented or alleviated with early identification of the communication disorders or their causative conditions followed with timely intervention services for the afflicted children. Depending on the nature of communication disorder, comprehensive early intervention services could include services like screening followed by multidisciplinary diagnostic services; direct

[1]Malar, G., Reader in Special Education (contract), All India Institute of Speech and Hearing (AIISH), Mysore-06, E-mail: malar@aiishmysore.in, [2]Sreedevi, N., Reader in Speech Sciences, AIISH, Mysore-06, E-mail: srij_01@yahoo.co.in. & [3]Suresh, C. B., Special Educator, AIISH, Mysore-06, E-mail: surayanamcb@rediffmail.com

intervention like fitment of necessary assistive aids/devices followed by therapeutic training like listening speech therapy, occupational therapy and physical therapy; and if necessary special early childhood care and education, that is, preschool training. These services are organised with the premise that intervention provided early, especially before manifestation of the problem, will address any delays in development, so that the child can integrate well in the society and may not need services later on (Girolametto & Weitzman, 2006; Beckman-Bell, 1981; Cooper, 1981).

These services might be provided in varied settings like clinical-centres, schools, hospitals, homes or combined settings depending on circumstantial needs and available facilities. Comprehensive early identification and intervention services not only cater to the rehabilitative needs of the child, but also extend supports to the parents and families (Hammes, Novak, Rotz, Willis, Edmondson, & Thomas, 2002; Yoshinaga-Itano, Sedey, Coulter, & Mehl, 1998; Robinshaw, 1995; Ramkalawan & Davis, 1992; Markides, 1986).

Evidences from Early Intervention Practices

Early identification and timely intervention services for communication disorders in young children have been found to help children with communication disorders acquire typical development, avail age appropriate education, and reduce the need for rehabilitative services later in life (Beckman-Bell, 1981; Cooper, 1981). There have been several follow-up studies on the efficacy of such early intervention programmes around the world for children with varied disadvantages. Ypsilanti Perry Preschool Project was an early intervention programme for disadvantaged children, which generated evidences through a longitudinal study that by 19 years of age the beneficiaries had attained significant gains. They demonstrated better academic performance through all grades at school with need for less special educational support, higher success rates of school completion, continuance with postsecondary education and/or employment compared to children who did not attend special preschool. The beneficial effects were found to extend even outside school in that the early intervened children had displayed less anti-social and delinquent behaviour (Berrueta-Clement et al., 1984, qtd. in OERI, 2011).

There have been studies on children with specific communication disorders, like that of Moeller (1991) with 112 children with hearing impairment. The findings suggested that earlier the intervention (within the first year of life) better was the development of vocabulary and verbal reasoning skills by five years of age. Another study (Hall, Oyer & Haas, 2001) again with children with hearing impairment, reported that early intervention combined with appropriate cognitive exposures led to better development of language skills, as well as speech intelligibility. Recent evidences (Yoshinaga-Itano, 2003) following a decade long study at the Colorado Home Intervention Programme suggest that children with hearing impairment who were identified and intervened in the natural settings of home as early as six months of age had evinced better linguistic, as well as socio-emotional development. Nevertheless, most of these research evidences cited have been generated from well developed communities in American and European countries. Developing communities from countries like India are short of ample, authentic evidences.

Early Intervention Practices in Developing Nations

Reports of early identification and timely intervention processes from developing countries, mostly Afro-Asian nations, have not been very encouraging. Gopal and team (2001) from Mauritius report of early intervention for 37 subjects with hearing impairment where the median age of identification was 24 months, but followed with fragmented management processes. Similar studies from other developing nations like Malaysia (Mukari, Vandort, Ahmad, Saim, & Mohamed, 1999) reiterate this notion. These lacunae are typical of any developing community and on the long run could lead to severe deprivations for the individuals, as well as burdens to the family and society.

In India, considerable work has been carried out on the early intervention front. One of the notable has been the Parent Infant Programme for children with hearing impairment being organised since 1992 at the Ali Yavar Jung National Institute for Hearing Handicapped in Mumbai. A follow-up study carried out between 2001 and 2004 revealed all round positive impact of the programme in improving communication and academic skills among others (Basavaraj, Nandurkar & Bantwals, 2005). This apart several non-governmental agencies like AURED in Mumbai, Bala Vidyalaya in Chennai, COMDEALL in Bengaluru, and EAR Centre in Mumbai have been providing early intervention services for children with communication disorders, especially hearing impairment (Alexander Graham Bell Association for the Deaf

& Hard of Hearing, 2005). Efforts for taking services to the homes of young children with special needs are also being made by the Indian National Portage Association (INPA, 2009). And all these programmes report of reaching considerable numbers of young children with various kinds of communication disorders. However, evidences on the qualitative impact of the efforts are scanty.

The All India Institute of Speech and Hearing (AIISH) as a national pioneer in rehabilitation for communication disorders has been extending early identification and timely intervention for its young clients over the years. On an average, clients under 6-years of age account to 15% of the total clientele (*Personal communication* from Medical Records Officer, AIISH on 10.05.2012). The wide range of services includes neonatal screening, multidisciplinary diagnosis, and fitment of necessary assistive aids, relevant therapeutic training, and preschool education. Over the Institution's almost half-a-century of existence, these services have been up graded from time to time, and it was time to take stock of the efficacy of the efforts. Thus, an AIISH Research Funded Project was undertaken between February 2010 and February 2012 to appraise the efficacy of the early multidisciplinary preparatory services provided at AIISH, especially its impact on mainstreaming children with communication disorders, under the supervision of former Director of AIISH, Dr. Vijayalakshmi Basavaraj. This article has been generated on the sidelines of this research titled 'Efficacy of Multidisciplinary Preparatory Services at AIISH in Mainstreaming Children with Communication Disorders', which examined the nature of early intervention services provided for communication disorders provided, and investigated its developmental and rehabilitative consequences.

Method

Participants: The study covered 205 children with communication disorders who had formerly received early intervention services at AIISH since 2003 (when the preschool curriculum had been revamped), against a set target of 423. These children were from the states of Karnataka and Kerala, to where more than 90% of the young clientele of AIISH belong to. And the shortcomings in covering the original target was primarily due to inaccurate addresses provided at the time of enrolment to services, change of residences, and contact phone numbers that were changed/non-functional. Another 33 children from other states were tentatively overlooked at the time of planning for data collection, as it was figured that accessing these children located far and wide across the country may not be cost-effective. Purposive sampling was employed to collect data from as many former clients of early intervention services at AIISH as possible. The demographic and disability composition of the research population is presented in Figure 1.

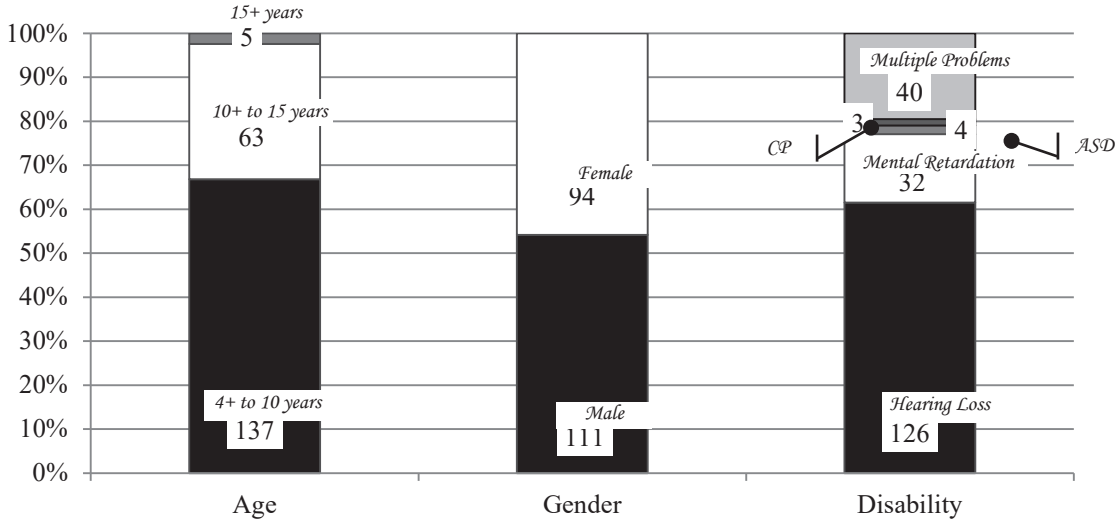

Figure 1: Composition of the research population.

Tool: The investigators had compiled a 63-item tool for the purpose of collecting data about the child-participants, including demographic information on 14 aspects collated from official records and/or face-to-face interview; antecedent information on 29 aspects related to early intervention measures and consequent development that were accrued from clinical and

preschool records; and current information on 20 aspects related to school placement and performance, as well as existing level of communication skills that were compiled from interviews, clinical records and/or administration of assessment procedures. The profile of the tool to collect data about the children with communication disorders is represented in Figure 2.

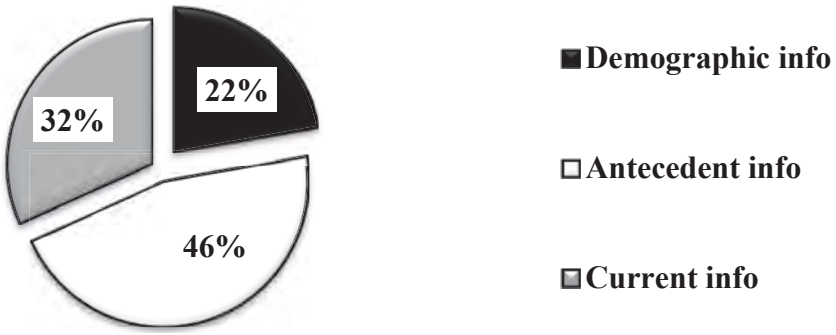

Figure 2: Details of the component items in data-collecting tool.

Apart from this tool compiled exclusively for the research, certain other screening tools like 3-Dimensional Language Assessment Test – 3D-LAT (Herlekar, 1986); Linguistic Profile Test – LPT (Karanth, 1980); Developmental Screening Test – DST (Bharathraj, 1985); and Ling's 6-sound Test (Ling, 1989) had been used to appraise the current level of hearing, speech-language, cognitive, and other developmental skills in the young participants in absence of recent evaluation reports.

Procedure: Over a period of 24 months, collection and analysis of data from former young clients of early intervention services at AIISH was carried out following the protocol provided in Figure 3.

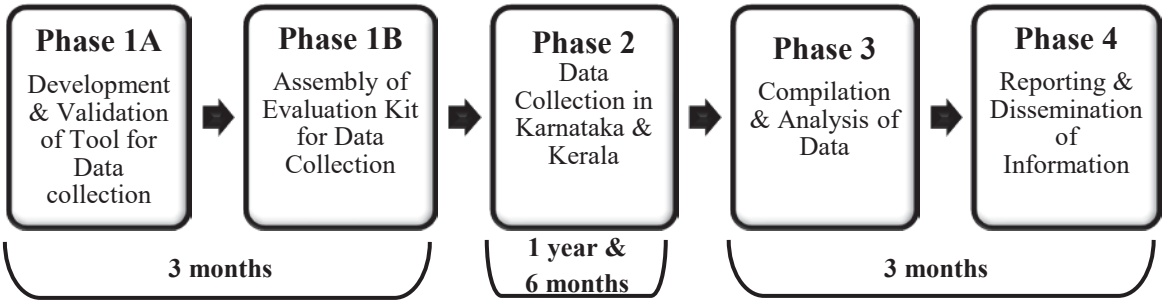

Figure 3: Protocol of the Study

Data Collection and Analysis: Data was collected through perusal of the clinical files of the young clients covered under the study; perusal of academic documents like progress reports and other school records; and interviews with caregivers, preschool and school educators. In certain instances where recent clinical reports on speech, hearing and other developmental abilities were not available, the research staff had carried out assessments using screening tools like LPT, 3D-LAT for speech-language abilities, DST for developmental abilities, and Ling's test of 6 sounds for aided hearing abilities. All face-to-face data collection procedures were conducted on one-to-one basis, and prior written consent was taken from the caregivers of the young participants after orienting them about the purpose and nature of the research.

Results

At the start, the compiled data were analysed to find out if there were any perceivable trends in early identification and intervention for communication disorders at AIISH.

Trends in Early Identification and Intervention

The numbers of children who were identified and/or intervened in each of the early years of life were accrued, and have been presented in Figure 4. It is evident from the figure that majority of the children (61.46%) have been identified for their

special needs within the first year of the life, and another 20% by the 2nd year. However the age of intervention seems to peak between the 3rd and 5th years. Twenty-four, twenty-seven and twenty-five percent of children had begun receiving remedial services during the 3rd, 4th and 5th years of their life, respectively. Eleven percent of children had started intervention in the 6th year and 10% only after the early childhood years. In contrast only a miniscule number of 2% of children with communication disorders had started with intervention during the crucial first 2 years of life.

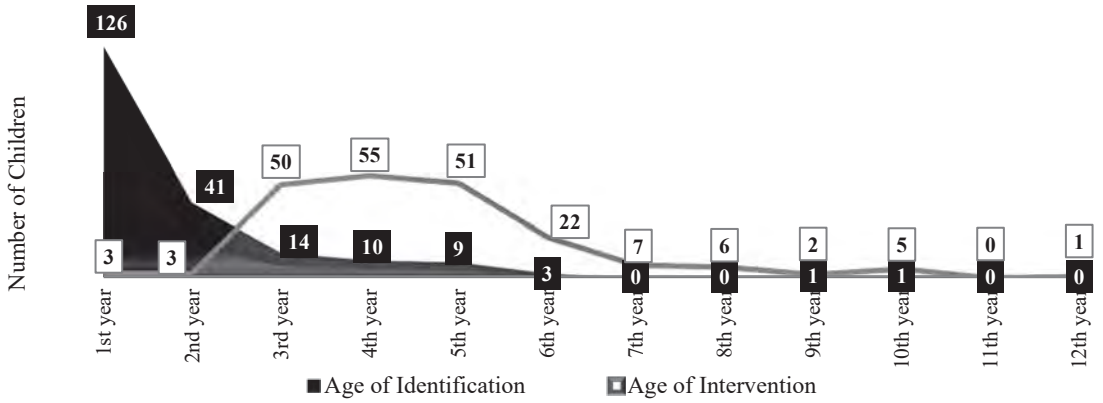

Figure 4: Trends in early identification & intervention for communication disorders.

Nature and Quantum of Early Intervention Services

Table 1: Quantum of Early Intervention Services received by Child-Participants

S. No.	Number of Services	No. of Recipients
01.	3 types of services	24
02.	4 types of services	35
03.	5 types of services	141
04.	6 types of services	02
05.	7 types of services	03
	Total	**205**

As evident from the data on Table 1, the child participants had received at least three types of early intervention services, namely, diagnostics, speech-language therapy and special preschool training (except 2 from Kerala who were mainstreamed by preschool age). Depending on the nature of the special needs, additional services like behavioural modification therapy, listening training, occupational/physiotherapy, sensory integration training, therapy for autism spectrum disorders, etc. had also been provided. At the utmost, some children had received up to of seven types of services, especially in case of multiple special needs.

Details of the duration of the services received have been presented in Figure 5, and it is found that most of the child-participants had received services of four years or less. Sixty-seven percent of child-participants in the study had received preschool services for duration of one to three years, as recent norms stipulate preschool services for a maximum period of three years. Whereas clinical services for training in listening, speech, language, behavioural and cognitive skills were availed during the entire early childhood period, though the numbers drastically diminished beyond four years of duration.

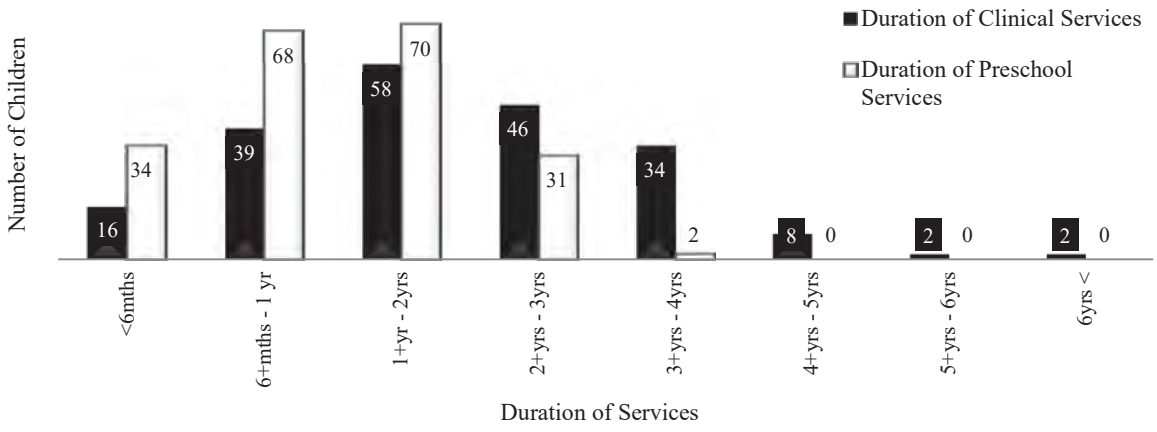

Figure 5: Duration of services received.

Impact of Early Intervention on Early Childhood Development and Learning

The next stage of data analyses was directed towards discerning the nature and extent of influence of early intervention efforts. To begin with, influences of early identification and better intervention practices on early developmental and learning skills in the child participants were investigated by analysing the correlation between the two sets of factors.

Table 2: Correlation of early intervention (EI) parameters with early developmental skills

S. No.	Early Intervention Status / Influential Factors	Age of Identification	Age of Intervention	Range of Services	Duration of Services
01.	Listening skills (only for CWHI°)	–0.226***	–0.416***	+0.149*	+0.343**
02.	Speech-language skills	–0.152*	–0.363**	+0.166*	+0.205**
03.	Cognitive skills	–0.176*	–0.046	+0.082	–0.020
04.	(Pre)Academic skills	–0.066	–0.276***	+0.218**	+0.221**
05.	Behaviour problems	+0.205**	+0.200***	–0.360***	–0.118

* - p < 0.05; ** - p < 0.01; *** - p < 0.001; no* - no statistical significance

° CWHI – Children with Hearing Impairment

The four early intervention parameters that were taken for consideration (namely, age of identification, age of intervention, range of services and duration of services) were correlated with the communication skill development in terms of listening and speech-language, cognitive skill development, performance in (pre)academic skills, and frequency of incidences of behavioural problems which had rated by caregivers on a 4-point Likert's scale. The results on Table 2, indicate negative and significant correlation between age of identification and intervention with development of listening ($p<0.001$ in both instances), speech-language ($p<0.05$ with age of identification, and $p<0.01$ with age of intervention), cognitive (no statistical significance) and pre-academic skills ($p<0.001$ with age of intervention).

On the other hand, there is positive and significant correlation for the age of identification ($p<0.01$) and intervention ($p<0.001$) with behaviour problems in the children. The range of services, that is, the number of early intervention services availed has a positive relationship with developmental aspects and negative relationship with behavioural problems, and that too statistically significant except for cognitive skills. Again the duration of services also has a positive and mostly statistically significant relationship ($p<0.01$, except for cognitive skill) with the development of various skills, and negative relationship with behaviour problems.

Impact of Early Intervention Services on Later Schooling

The bearing of early intervention efforts in mainstreaming children with communication disorders in the educational milieu was taken for consideration. Besides being an indicator of successful schooling, it could also be deemed to be a precursor to successful integration in the society later. The compiled results, in terms of numbers of child participants placed in mainstream and other educational streams, have been displayed in Figure 6.

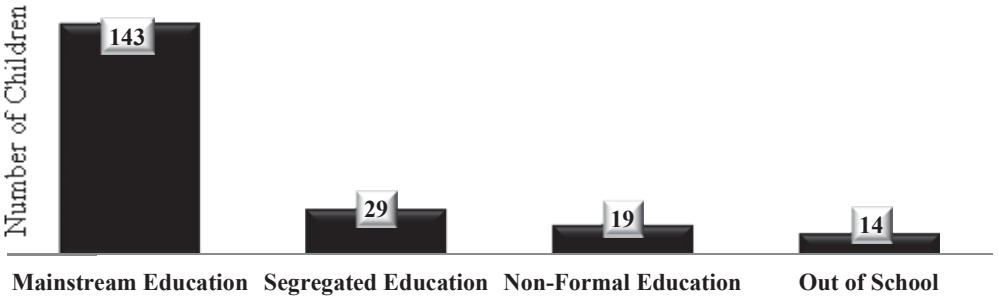

Figure 6: Educational placement of children with communication disorders.

The information on Figure 6, highlights that majority of the children (approx. 70%) who had received early intervention services at AIISH had been mainstreamed in regular schools. Approximately 14% of them had been pursuing education in special, segregated schools, and around 6% were out of school. Further scrutiny of the influence of the nature of special needs in children on their educational placement was also carried out. As per results displayed in Figure 7, children with severe and multiple special needs formed the major chunk of those who were pursuing non-formal educational streams like open schooling, or were out of school. Whereas, children with isolated special needs like hearing impairment (84%) and mental retardation (16%) constituted the mainstream group of children.

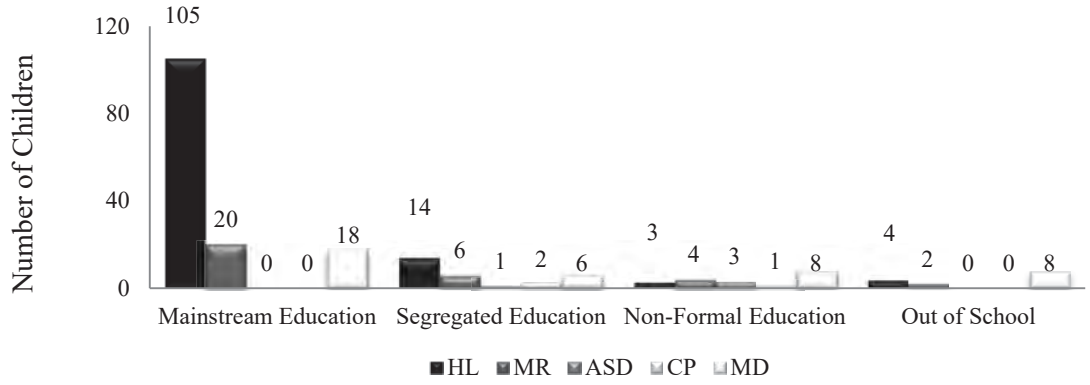

Figure 7: Educational placement of children with different kinds of special needs.

Table 3: Correlation of early intervention (EI) parameters with current school performances

S. No.	Early Intervention Status / Influential Factors	Age of Identification	Age of Intervention	Range of Services	Duration of Services
01.	Core curricular performance	–0.166*	–0.287**	+0.273**	0.314**
02.	Co-curricular participation	–0.068	–0.174*	+0.328**	0.333**
03.	Social integration	–0.148*	–0.178*	+0.285**	0.390**
04.	Grade placement	–0.067	–0.076	+0.232**	0.135

* - p<0.05; ** - p<0.01; *** - p<0.001; no* - no statistical significance

The constructive influence seems to continue in later school years, as it could be observed from the results in Table 3. There was a consistent negative correlation between the age of identification and intervention and the school performances in core, as well as co-curricular aspects, social integration in learning environment and grade placement. The core curricular performances were assessed in terms of the marks scored in the school examinations, while participation in co-curricular activities and social integration in the learning environment were graded on a 5-point Likert's scale by the school teachers. The appropriateness of grade placement was recorded on a 3-point scale of age-appropriate, 1-year below age, and more than 1-year below-age.

The relationship of early intervention parameters was with statistical significance for performance in core academic areas ($p<0.05$ with age of identification & $p<0.01$ for age of intervention), co-curricular areas ($p<0.05$ with intervention age) and social integration in learning environment ($p<0.05$ for both identification and intervention age). The range of services, as well as the duration of early interventional training seems to have extended an all-round, beneficial influence on the all aspects of performance at school. The progress achieved by children with communication disorders during the early intervention years is also seen as a significant indicator of their performances in the school years as elicited by the results displayed in Table 4. The communication skills developed during the early intervention years have a positive correlation with all aspects of school performances, especially in significance ($p<0.05$) with core curricular achievements. The (pre)academic and co-curricular performances at preschool have exhibited all-round, positive and highly significant ($p<0.001$) relationship with current school performances.

Table 4: Correlation of progress in early intervention (EI) years with school performances

S. No.	Educational Status / Progress during EI Years	Performances in Core Curriculum	Participation in Co-Curricular Activities	Social Skills in Learning Environment
01.	Communication abilities during EI years	+0.209*	+0.074	+0.057
02.	Preschool performances			
	(i) (Pre)Academics	+0.437***	+0.421***	+0.346***
	(ii) Co-curriculum	+0.476***	+0.459***	+0.399***

* - $p < 0.05$; ** - $p < 0.01$; *** - $p < 0.001$; no* - no statistical significance

Discussion

Trends in Early Identification and Intervention: Time and again, researchers in the field of disability rehabilitation have emphasised the need for early identification as a prerequisite for better remedial prospects (Hammes, et al., 2002; Yoshinaga-Itano, et al., 1998; Robinshaw, 1995; Ramkalawan & Davis, 1992; Markides, 1986). Still further researchers like Wake et al. (2005); Martineau et al. (2001); and Moeller (2000) insist that early identification should be followed-up with prompt intervention; and just identification without appropriate intervention might turn out to be futile.

Investigations of this study revealed that communication problems had been identified within the first year of life in almost 62% of the young clients at AIISH, and in another 20% by the second year of life. This implies that an amassing 82% of young children with communication disorders had been identified well within the critical years. These appreciable developments are similar to trends observed in developed countries like USA, where communication disorders like hearing loss have been identified in children between one-and-half and three years of life (Morbidity & Mortality Weekly Report, 2003). This could be attributed to the extensive preventive, outreach and public education measures undertaken at AIISH.

At the same time it is slightly disappointing to note that the delivery of intervention services peak well beyond the critical years between three and five years of age. However, this study had considered only children enrolled for preschool services at AIISH. On the other hand more recently there are instances of children who after receiving effective intervention right from the first or second year of life have been successfully integrated by preschool age itself. Systematic inclusion of children intervened in the early years of life in the study could have led to more comprehensive findings.

Nevertheless, such arguments cannot be augmented without empirical evidences. Research evidences (Wake et al., 200) imply that early identification, unless followed up with effective intervention, may not be rewarding. However a positive correlation observed between chronological and intervention age ($r = +.161$; $p<0.05$) in younger children among the participants of this study implies that the age of intervention is coming down for good over the years.

It could also be observed that among the children with different kinds of special needs; those with severe, multiple and visible conditions were prone to be identified early by birth (80%). Children with inconspicuous sensory impairments like hearing loss were identified between 1st and 2nd year of life (70%) when problems in expressive communication begin to manifest outwardly.

Nature and Quantum for Early Intervention Services: After enrolling for services, most child-participants of the study had received a minimum of three different types of rehabilitation services following diagnosis; namely preschool training, along with therapies/training for autism spectrum disorders, behaviour modification, listening, speech–language, occupational and physical competencies, sensory integration, and fitment of assistive devices depending on the nature of their special needs. Global evidences on rehabilitation for communication disorders also recommend a similar range of services (Kan, Walsh & Burns, 2008). As per results in Table 1, bulk of the child-participants (68.78%) had benefitted from five different types of early intervention services, while children with multiple special needs had received up to seven types of services. All said, a progressive trend could be observed at AIISH in meting out timely and comprehensive supports to young children with communication disorders.

Impact of Early Intervention Services: The results on Table 2 provide evidence to the positive impact of early intervention services on early developmental skills in children. Age of identification and intervention have negative, and

in most instances significant relationship with development of listening, speech-language, cognitive and pre-academic skills. Implying that the earlier the identification and intervention, better was the progress in these areas. And again, the lower age of identification and intervention was found to lead to lowered incidences of behaviour problems in these children, as indicated by the positive correlation between the two factors. The range of services (that is, number of services) also has a positive and significant relationship with all areas of early development, and negative relationship with problem behaviours. The overall impression is that comprehensive early intervention services, in terms of time of inception, duration and range; have resulted in positive, all-round development in children with communication disorders, while bringing down incidences of problem behaviours. Consistent and systematic exposure to early intervention services is also seen to have substantial impact in development in all areas ($p<0.01$, except for cognitive skills), as well as in lowering behaviour problems. The findings reinforce time-tested certainty of the positive impact of early identification and timely intervention (Geers, Nicholas & Sedey, 2003; Yoshinaga-Itano & Gravel, 2001; Moeller, 2000; Yathiraj, 1994; Ling, 1989; Guralnick, 1981; Boothroyd, 1978).

The efforts towards rehabilitation of persons with communication disorders at AIISH work with the underlying motto of providing effective communication to one and all, so that persons with communication disorders could integrate themselves into the mainstream society. Educational mainstreaming is widely considered as the stepping stone to social integration. In this context, early intervention efforts at AIISH have been successful in leading more than 70% of its young clientele with communication disorders to the mainstreams of education as per data presented in Figure 6. Children who are out of school and children who are pursuing education through segregated or non-formal means were mostly children with multiple special needs as indicated by the information provided in Figure 7. Thus, the findings of the study bolster the universal conviction (Yoshinaga-Itano, 2003) that prospects for educational mainstreaming of children with communication disorders is further strengthened by early intervention.

Results in Table 3 indicate that early identification and intervention have lead to better attainment in all areas of school life, namely age appropriate grade placement, performances in core-curricular as well as co-curricular aspects, and social participation in the learning environment, as indicated by the negative correlation with the above factors. It is also noticeable that the age of intervention has more significant relationships with all factors. This reiterates evidences provided by researchers like Beckman-Bell (1981) and Cooper (1981) suggesting that educational attainment is better in children with communication disorders who had been early intervened, irrespective of the educational setting they are in. The comprehensiveness of services in terms of their range and duration were also seen to extend a positive influence on the current school life endorsing earlier evidences of comprehensive, early intervention having led to improved school performances in children with communication disorders like hearing loss (Vohr, Jodoin-Krauzyk, Tucker, Johnson, Topol, & Ahlgren, 2008; Watkin, McCann, Law, Mullee, Petrou, Stevenson, Worsfold, Yuen, & Kennedy, 2000; Yoshinaga-Itano, 1999; Downs & Yoshinaga-Itano, 1999; Yoshinaga-Itano et al., 1998).

Data from Table 4 further implies that progress of the children in the early developmental skills, as well as in the core and co-curricular areas of preschool training (especially, the latter) were found to be strong, positive indicators of current school performances as reported in earlier researches (School Assessment & Curriculum Authority, 1997, qtd. in Thomas, 1998). Evidences from other parts of the world (Blamey et al., 2001) also suggest that receptive and expressive communication skills developed early in life of children with communication disorders serve as effective precursors of later educational attainments.

Conclusions

The findings of the study lead to a positive impression about the nature and efficacy of early intervention for communication disorders carried out at AIISH, though there are hints indicating scope for improvement in terms of age intervention and increased impetus on mainstreaming. There are concerted efforts on part of the departments at AIISH for prevention of communication disorders, delivery of clinical services, special educational services and distance mode rehabilitation and education in perpetuating early identification and intervention, social and educational mainstreaming, and follow-up supports and services consequent to mainstreaming.

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