

# EFFECTIVENESS OF BEHAVIORAL MODIFICATION TECHNIQUES IN CHILDREN HAVING INTELLECTUAL DISABILITY "PRE AND POST EVALUATION

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## ABSTRACT

### OBJECTIVE

To find out the effectiveness of different strategies of behavior modification techniques on children having intellectual disability in specific time period under controlled setting and compare pre and post scores.

### STUDY DESIGN

ABA research design, Pre and post intervention research design was used in the current study.

### PLACE AND DURATION OF THE STUDY

The study was conducted in center of children having special needs at Faisalabad (private sector) in duration of 1 year (January 2014 to December 2014).

### SUBJECTS AND METHODS

: 36 children diagnosed with intellectual disability were included in current studies, comprised of 20 boys and 16 girls. A diagnostic criterion of DSM-V for intellectual disability was applied to diagnose the children. Portage Guide to Early Education (PGEE) was selected and then find out the developmental age of children and in some of the cases to find out the functional level of intellectually impaired children. For diagnostic point of view intelligence test includes Slosson Intelligence test was administered for screening children and Colored Progressive Matrices was used to find out the level of mental maturity. Behavior modification techniques that were selected for administration of IEP's in specific areas were reinforcement techniques, shaping, chaining, prompt-fading and negative punishment. The training program consists of five days per week and four hours per day by the help of team of trained professionals; specifically all were trained clinical psychologists.

### RESULTS

Repeated measure t-test has shown significant statistical difference between pre and post ratings of the Intellectually Disabled children on all the domains including Self Help, motor, cognitive, language and socialization of PGEE, results shows the difference respectively;  $t(35) = -8.82, -8.393, -7.496, -7.541$  &  $-7.4295, p = .000$  two tailed on above mentioned domains. Intellectually disabled children scored higher in post ratings ( $M=52.25, SD= 15.39$ ); ( $M=54.58, SD= 12.46$ ); ( $M=37.25, SD= 18.13$ ); ( $M=43.44, SD= 19.00$ ); ( $M=52.56, SD= 17.33$ ) on Self Help, motor, cognitive. Language and socialization domains of PGEE then pre test rating ( $m=44.67, SD= 16.44$ ); ( $m=44.78, SD= 13.52$ ); ( $M=29.53, SD= 18.13$ ); ( $M=36.47, SD= 19.74$ ); ( $M=43.75, SD= 16.83$ ).

### CONCLUSION

IEP's do work effectively in dealing with children having special needs with use of behavioral intervention as it was found in our research that drastic change in post rating of each adaptive area like Self help, Motor, Cognitive, Language and Socialization.

### KEY WORDS

Adaptive Skills, Mental Retardation, Portage guide, Behavioral techniques

## INTRODUCTION

Intellectual disability is problem in which impairments to the brain (e.g., body functions and structures) result in activity limitations and participation restrictions. Intellectual functioning is a type of human functioning, is defined in the American Association on Mental Retardation (now American Association on Intellectual and Developmental Disabilities, or AAIDD) 2002 *Manual on Definition, Classification, and Support Systems in Mental Retardation*<sup>1</sup> as referring to a general mental ability that includes reasoning, planning, problem solving, abstract thinking, comprehending complex ideas, learning quickly, and learning from experience.

Adaptive functioning has a strong link with intellectual functioning. Deficits in intelligence quotient and adaptive functioning in period of development lead toward intellectual disability. Adaptive functioning is person's ability to cope with his or her environment. Deficit in adaptive functioning referred to how well a person meets community standards of personal independence and social responsibility in comparison to others of similar age and socio cultural background. Adaptive functioning involves adaptive reasoning in three domains: conceptual, social and practical<sup>2</sup>.

The prevalence of intellectual disability is approximately 1%<sup>2</sup> and across Asia appears to be consistent with western estimates at 0.06-1.3%. In the only two studies of mental health conducted in Asia, the prevalence ranged from 4.4 to 48.3%<sup>3</sup>. Comprehensive assessment approaches are being used to assess children with ID. Different assessment tools have been used to evaluate the problem of intellectual functioning in which various kind of intelligence and adaptive functioning tests have used widely. But application is according to their socio-cultural background e.g. PGEE<sup>4</sup>, WISC-R<sup>5</sup>, VABS<sup>6</sup>, and SIT<sup>7</sup>.

Multidisciplinary treatment strategies are being adopted for the management of intellectual disability according to the need of child for which Individualized educational plans are designed and administered through application of behavior modification techniques<sup>8</sup>. Behavior modification strategies are successfully used to manage and train children with intellectual disability. Basic techniques are reinforcement, punishment, extinction, behavioral skills training, token economy, shaping, chaining, prompting, prompt fading, differential reinforcement and behavioral contract<sup>8</sup>. Individualized family services plans (IFSP) play a vital role in management of children having intellectual disability in effective way<sup>8</sup>.

The rationale of current study is to evaluate the effect of behavioral modification techniques in children having intellectual disability as in our society these children are neglected. In our society families do not focus on training aspects and unable to realize the efficacy of training procedures so our purpose is to explore the difference and effectiveness of training programs on children with intellectual disability in controlled setting

through process of developing Individualized Educational Plans (IEP's). Main objective is to find out the effectiveness of different strategies of behavior modification techniques on children having intellectual disability in specific time period under controlled setting and compare pre and post scores. The study further aims to following objectives;

- To find out the effectiveness of training on all five areas of Portage Guide to Early Education (PGEE)
- To assess the effectiveness of Individualized Educational Plans (IEP's) using behavioral modification techniques
- To measure the change through adaptive functioning technique on large group in controlled setting.
- To evaluate the effectiveness of Individualized family services plans (IFSP).

**SUBJECTS AND METHODS**

**Participants**

36 children diagnosed with intellectual disability were included in current studies, comprised of 20 boys and 16 girls. The study was conducted in center of children having special needs at Faisalabad (private sector) in duration of 1 year (January 2014 to December 2014).

**Instruments**

A diagnostic criterion of DSM-V for intellectual disability was applied to diagnose the children. Informal and formal assessment ways were used to evaluate the severity of problems. In informal assessment demographic variables were recorded on a sheet, detail relevant history was taken and bio data form was filled. Complication faced by parents, observation, subjective rating by parents and clinical psychologist were recorded. On the other side we have administered the adaptive functioning tools to find out the level of adaptation in different area. For that purpose Portage Guide to Early Education (PGEE) was selected and then find out the developmental age of children and in some of the cases to find out the functional level of intellectually impaired children.

For diagnostic point of view intelligence test includes Slosson Intelligence test was administered for screening children and Colored Progressive Matrices was used to find out the level of mental maturity. After screening and diagnosis of children they placed in a special / controlled setting. Training program according to structured set pattern of Individualized Educational Programs (IEP's), in which we have selected different techniques of behavior

modification to apply those plans in the area of Self help, Cognition, Motor, Socialization and Language with set targeted goals / behavioral plans.

Behavior modification techniques that were selected for administration of IEP's in specific areas were reinforcement techniques, shaping, chaining, prompt-fading and negative punishment.

**Procedure**

Institutional ethical approval was sought. Kids with intellectual disability were selected and informed consent was obtained from guardians. Behavior modification techniques that were selected for administration of IEP's in specific areas were reinforcement techniques, shaping, chaining, prompt-fading and negative punishment.

The training program consists of five days per week and four hours per day by the help of team of trained professionals; specifically all were trained clinical psychologists. Each day had a specific target, set goals and on monthly basis trials were taken to evaluate the efficacy of techniques being used in administration of IEP's in specific areas of PGEE. On the other side family services were also included on weekly and monthly basis in which mothers were trained to administer these techniques to practice at home and on monthly basis feedback was taken from them and whole team given them the guidelines regarding the issue of each child. Assessment was done through administration of PGEE as earlier in pre-assessment and subjective rating of problem. The scoring was done in each area Self help, Cognition, Motor, Socialization and Language respectively. PGEE was administered on children and relevant information was taken from mothers.

Post scoring was done and the scoring of pre- post rating were compared and data was analyzed through SPSS17.

**RESULTS**

Descriptive statistics showed that out of 36, 20 (55.6%) children were males while 16 (44.4%) were females, 31 children were between 5-15 years and 5 children were between 16-25 years of age. 19 (52.8%) children had 1<sup>st</sup> birth order, 9 (25 %) had 2<sup>nd</sup>, 6 (16.7%) had 3<sup>rd</sup> birth order and 2 child had 5<sup>th</sup> and 9<sup>th</sup> birth order respectively. The results indicated that 11 (30.6 %) participants had 1 sibling, 14 (38.9 %) had 2 siblings, 8 (22.2 %) had 3 siblings and 3 children had more than 3 siblings.

**Table 1**

*Mean, standard deviation and t-test scores at five domains of PGEE*

	Mean	N	SD	STD Error mean	t	p
Pre Ratings of PGEE (Self help)	44.67	36	16.44	2.741	-8.823	.000
Post Ratings of PGEE (Self help)	52.25	36	15.39	2.565		
Pre Ratings of PGEE (Motor)	44.78	36	13.52	2.253	-8.393	.000
Post Ratings of PGEE (Motor)	54.58	36	12.46	2.076		
Pre Ratings of PGEE (Cognitive)	29.53	36	17.29	17.293	-7.496	.000
Post Ratings of PGEE (Cognitive)	37.25	36	18.13	18.129		

\*\*\*<p=.000

**Table 1**

Continue

Pre Ratings of PGEE (Language)	36.47	36	19.74	3.290	-7.541	.000
Post Ratings of PGEE (Language)	43.44	36	19.00	3.167		
Pre Ratings of PGEE(Socialization)	43.75	36	16.83	2.806	-7.295	.000
Post Ratings of PGEE(Socialization)	52.56	36	17.33	2.889		

t (35), =0.05, two tailed

Repeated measure t-test has shown significant statistical difference between pre and post ratings of the Intellectually Disabled children on all the domains including self help, motor, cognitive, language and socialization of PGEE; t (35) = -8.82, -8.393, -7.496, -7.541 & -7.4295, p = .000 two tailed on above mentioned domains. Intellectually disabled children scored higher in post ratings (M = 52.25, SD = 15.39); (M = 54.58, SD = 12.46); (M = 37.25, SD = 18.13); (M = 43.44, SD = 19.00); (M = 52.56, SD = 17.33) on self help, motor, cognitive, language and socialization domains of PGEE than pre test ratings (m = 44.67, SD = 16.44); (m = 44.78, SD = 13.52); (M = 29.53, SD = 18.13); (M = 36.47, SD = 19.74); (M = 43.75, SD = 16.83).

## Discussion

IEP's do work effectively in dealing with children having special needs with use of behavioral intervention as it was found in our research that drastic change in post rating of each adaptive area like Self help, Motor, Cognitive, Language and Socialization. It is novel and useful study in our culture as overall significant difference has been proved in pre-post ratings of each child when being measured. So it is proved via our current research that interventional strategies do effect if being administered in form of IEP's and Individualized family services plans (IFSP) should be given then significant improvement can be seen with these children through designing special education interventional programs.

In our study male ratio of intellectual disability is high as compare to female children having intellectual disability; other studies and findings also are in favor of that male ratio is higher as compare to female<sup>29</sup>. Previously it was found that intellectual disability was present between age 4-18 years whereas it has also consistent with our findings like mostly children fall in the age range of 5-15<sup>9</sup>. Intellectual disability has found to be more prevalent in term of first birth order as supported by previous findings (ref). Many studies found that chances of complication during first pregnancy are higher<sup>10</sup>. On the pre, peri and post natal complications have strong association with intellectual disability. It might be possible that in our culture female are not as much educated and stress are highly associated with early adjustment issues, dietary issues can also be an issue<sup>11</sup>.

Mostly children with intellectual disability had one sibling in our findings; the explanation for third new finding might be possible that they planned not to carry on further due to stress of care of that child and fear of having further child with intellectual disability<sup>12</sup>. Genetic studies also shown strong association with intellectual disability so it might be possible that fear of having another baby is linked to that perspective<sup>13</sup>. Through direct association of number of siblings of intellectual disability have not been studied yet.

The main goal of our study was to find the effect of psychological training on adaptive functioning and also assess the efficacy of behavior modification techniques through administration of Individualized Educational Programs (IEP's) in specific areas of Self help, Motor, Cognitive, Language and Socialization<sup>14</sup>. Pre and post assessment was done through administration of behavior modification strategies longitudinally; Individualized family services plans (IFSP) were also given for effectiveness of strategies at home and researches supported its effectiveness<sup>9</sup>.

Behavior modification is recommended in different researches for effective management of children having intellectual disability. Various techniques of behavior modification like shaping, chaining, reinforcement, punishment and prompt-fading were administered individually in one to one session of each child. Previous studies have shown that these techniques of behavior modification are helpful in dealing with these children<sup>9</sup>. And as it is proved in our research that these behavior modification worked in form of IEP's successfully that is step wise task analysis of each target behavior on all specific areas<sup>14</sup> and it is being used world wide to deal with children having intellectual disability<sup>15</sup>.




## Conclusion:

IEP's do work effectively in dealing with children having special needs with use of behavioral intervention as it was found in our research that drastic change in post rating of each adaptive area like Self help, Motor, Cognitive, Language and Socialization. There is need to be established training setups in structural ways and develop and device different effective strategies and use them according to guidelines for better outcome. Change is definitely their if special efforts can be made. Further more we can bring these children near to normal and our target should be make them as much as independent as possible. With an effort the goal should be their rehabilitation and self reliant. Though Individual variations in dealing with children on behalf of professionals capabilities are there.

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