Effect of Special Education on Children with Autism Spectrum Disorder and Mental Retardation

A
Thesis submitted
In the partial fulfillment of the requirement for the degree of

MASTER OF ARTS
IN
PSYCHOLOGY
(Clinical)

Submitted by:
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UNDER THE SUPERVISION OF

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THAPAR UNIVERSITY
PATIALA
June, 2017

CERTIFICATE

This is to certify that the thesis entitled "**Effect of Special Education on Children with Autism Spectrum Disorder and Mental Retardation**" in partial fulfillment of requirements for the award of degree of **Master of Arts in Psychology**, submitted in **the School of Humanities and Social Sciences, Thapar University, Patiala** is a bonafide work carried out under the supervision of **Dr. Simerpreet Ahuja,** Assistant Professor , School of Humanities and Social Sciences, Thapar University, Patiala and that no part of this project has been submitted for the award of any other degree.

Gurbinder Singh

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This is to certify that above statement made by the student concerned is correct and true to the best of my knowledge.

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CANDIDATE'S DECLARATION

I hereby declare that the work presented in this thesis entitled, **"Effect of Special Education on Children with Autism Spectrum Disorder and Mental Retardation"** in partial fulfillment of the requirement for the award of Degree of **Master of Arts in Psychology**, submitted in **the School of Humanities and Social Sciences, Thapar University,** Patiala, is an authentic record of my own work carried out under the supervision and guidance of **Dr. Simerpreet Ahuja**, Assistant Professor, School of Humanities and Social Sciences, Thapar University, Patiala and refers other researcher's work which are duly listed in the reference section.

The matter embodied in this thesis has not formed the basis for the award of any other degree of this or any other university.

Date: May 26th, 2017
Place: Patiala

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This is to certify that the above declaration made by the student concerned is correct and true to the best of my knowledge.

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Abstract

Autism is a neural disorder that confounds the development of brain, delivering challenging result in communication, social association, and problems associated with behavior. Since there is no cure for extreme autism, powerful instructive activities enable youngsters to accomplish massive change. Amid the educating and learning process, youngsters with autism require special care.The aim of present study is to survey the effect of special education on children with Autism Spectrum Disorder (ASD) and Mental Retardation (MR). The study tries to explore the relationship between behavioral change and parental qualification.Based on the previous research it was hypothesized that special education enhances the behavior of children with ASD and MR. A behavior record sheet was used to note down the behavior of children which records the baseline data and data for three more quarters (a quarter equals 3 months). The behaviors are marked according to their intensity. The results from t-test show the significant difference baseline ($M=44.66$, $SD=11.30$) and quarter 3 ($M=35.58$, $SD=11.38$); $t(10)=7.82$, $p=0.001$. These results show that special education does have an effect on behavior of children with ASD and MR. Specifically, our results suggest that with special education the problem behavior of children with ASD and MR do decrease.

Key words: Autism Spectrum Disorder (ASD), Mental Retardation (MR), Special Education, Early Diagnosis.

Chapter 1
Introduction

1.1What is Autism?

Autism is a neurological issue that can impair communication, socialization and conduct. It is normally analyzed during the initial three years of life and is four times more typical in young males than in young females. Be that as it may, a few sorts of autism may not be analyzed until years after the fact when the youngster enter school, because generally social deficiencies or trouble playing with others starts appearing late. At the point when this happens, the child is normally excessively old, making it impossible to exploit early youth benefits of intervention and is assessed for section into the specialized curriculum framework.

In spite of the fact that awareness have incredibly expanded in the course of recent decades, many individuals are still not aware of the genuine affect of Autism. It can turn into an eclipsing element in each part of life, including training, setting up and looking after connections, reacting to agony and inconvenience, and even in the capacity to express feeling.

Side effect seriousness in autism can extend from mellow to extreme. For instance, one kid may strongly fold their arms to show energy, another may show a grin under a similar arrangement of conditions, while another child may sit in the corner and shake, driving the onlooker to trust that they might be unequipped for appearing or feeling.

As guardians achieve the conclusion, treatment and instruction phases of Autism, they will hear a wide range of terms used to depict their tyke. This may incorporate words, for example, mentally unbalanced like, non-verbal, formatively deferred, extremely introverted propensities, intellectual, advanced, and low-working. The imperative thing to acknowledge is that all kids with Autism are distinctive. What works for one may have zero impact on another. The blends of signs and side effects are unending. More critical than the words used to depict the tyke is the hidden understanding that whatever the finding is, kids with Autism can learn, work gainfully in the public arena and show positive increases with suitable instruction and treatment arranges set up. Without fitting backing, the tyke may never understand his maximum capacity.

1.1.1 Signs and Symptoms

Hindered Reciprocal Social Interaction - Symptoms incorporate the following:

- Poor utilization of non-verbal communication and non-verbal correspondence, for example, eye contact, outward appearance and signals
- Lack of attention to sentiments of others and the statement of feelings, for example, joy (snickering), trouble (crying) for reasons not obvious to others
- Remaining unapproachable, liking to be separated from everyone else
- Difficulty cooperating with other individuals
- May not have any desire to nestle or be snuggled
- Lack of ordinary social play
- Not reacting to verbal signals (going about as though hard of hearing)

Disabled Communication - Symptoms incorporate the accompanying:

- Delay in or add up to absence of advancement of talked dialect or discourse
- If speech is produced, it is unusual in substance and quality
- Difficulty communicating needs and wants, verbally and additionally non-verbally
- Repeating words and expressions back when addressed (echolalia)
- Inability to start and maintain discussion
- Absent or inadequately created fanciful play

Restricted Repertoire of Interests, Behaviors and Activities - Symptoms include the following:

- Following same routines, resisting change
- Ritualistic or urgent practices
- Sustained odd play
- Repetitive body motions(hand fluttering, shaking) as well as unusual stance (toe strolling)
- Preoccupation with parts of articles or an interest with redundant movement (turning wheels, tuning lights on and off)
- Narrow, confined interests (dates/logbooks, numbers, climate, motion picture credits)

1.1.2 Diagnostic criteria for 299.00 Autistic Disorder

"A. A total of six (or more) items from (1), (2),and (3), with at least two from (1), and one each from (2) and (3):

1) Qualitative impairment in social interaction, as manifestation by at least two of the following:
    a) Marked impairment in the use of multiple non-verbal behaviors such as eye-to-eye gaze, facial expression, body posture, and gestures to regulate social interaction.
    b) Failure to develop peer relationships appropriate to developmental level.
    c) A lack of spontaneous seeking to share enjoyment, interests, or achievement with other people (e.g. by lack of showing, bringing, or pointing out objects of interest)
    d) Lack of social or emotional reciprocity.
2) Qualitative impairments in communication as manifested by at least one of the following:
    a) Delay in, or total lack of the development of spoken language(not accompanied by an attempt to compensate through alternative modes of communication such as gestures or mime)
    b) In individuals with adequate speech, marked impairment in the ability to initiate or sustain a conversation with others.
    c) Stereotyped and repetitive use of language or idiosyncratic language
    d) Lack of varied, spontaneous makes believe play or social imitative play appropriate to developmental level.
3) Restricted repetitive and stereotypes patterns of behavior, interest, and activities as manifested by at least one of the following:
        a) Encompassing preoccupation with one or more stereotyped and restricted patterns of interest that is abnormal either in intensity or focus
        b) Apparently inflexible adherence to specific, non-functional routines or rituals
        c) Stereotyped and repetitive motor mannerism(e.g. hand or finger flapping or twisting or compels whole body movement)
        d) Persistent preoccupation with parts of objects

B. Delays or abnormal functioning in at least one of the following areas, with onset prior to age 3: (1) social interaction (2) language as used in social communication, or (3) symbolic or imaginative play.

C. The disturbance is not better accounted for by Rett's Disorder or childhood Disintegrative disorder." (4th ed., text rev.; DSM–IV–TR; American Psychiatric Association, 2000, p. 75)

1.1.3 Causal Factors

Genetic Risk Factors:

The consequences of family and twin reviews propose that hereditary elements assume a part in the etiology of autism and other pervasive developmental disorders. Studies have reliably found that the pervasiveness of autism in kin of autistic youngsters is around 15 to 30 times more prominent than the rate in the overall public. Moreover, research suggests that there is a considerably higher concordance rate among monozygotic twins contrasted with dizygotic twins. It gives the idea that there is no single gene that can represent autism. Rather, there appear to be different genes included, each of which is a risk factor for segments of the autism spectrum disorder.

The new science shows that brain cells can turn into 'chatterboxes' in autism: There is more electrical energy, more chemicals, more hormones in the tiny gaps between brain cells than normal, which confuses the circuitry. In some forms of autism the brain becomes a chatterbox, while in other cases it goes the opposite way. In both, it becomes harder for the brain to identify and attend to signals, explains Chattarji. That explains why autism is such a psychedelic spectrum of extraordinary abilities and disabilities: Some can't speak in whole sentences while others can play long compositions on the piano without taking lessons ever, can't tell right from left but can figure out cube roots quicker than a calculator. "The brain develops fine but it develops differently," says Chattarji.

Oxytocin, a peptide hormone and neuropeptide, encourages pair bonding and builds trust and closeness to others. Modahlet. al. (1998) detailed that kids with autism had low down levels of this peptide.

It appears to be likely that Fusiform Face Area (B37) of autistics neglects to react to seeing the human face on the grounds that these individuals invest little energy concentrate other individuals' countenances and thus don't build up the skill which we normal people acquire via interactions.

Pathophysiology

All in all, neuro-anatomical reviews bolster the idea that a mental imbalance may include a blend of brain enlargement in a few regions and lessening in others. These reviews propose that autism might be brought about by unusual neuronal development and pruning during the early phases of prenatal and postnatal brain development, abandoning a few territories of the brain with an excessive number of neurons and other zones with couple of neurons. Some exploration has announced a general brain enlargement in autism, while others recommend variations from the norm in a few regions of the brain, including the frontal lobe, the mirror neuron framework, the limbic framework, the temporal lobe, and the corpus callosum.

In neuro-anatomical audits, when performing speculation of mind and facial emotion reaction assignments, the middle subject on the autism spectrum group shows less actuation in the essential and secondary somato-sensory cortices of the brain than the middle individual from a fittingly inspected control people. This finding agrees with reports displaying abnormal cases of cortical thickness and grey matter volume in those areas of autistic people's brains.

Environmental Factors

The part played by environmental factors in the advancement of a mental imbalance is an essential area of study. Studies show that hereditary factors strongly contribute to the hazard for creating autism spectrum disorder (ASD). Be that as it may, hereditary qualities alone don't represent all examples of autism. In light of current circumstances, the expanding predominance of autism has created extraordinary enthusiasm for the potential inclusion of poisons in our environment. For instance, prenatal introduction to the chemicals thalidomide and valproic acid has been connected to expanded danger of autism.

1.2What is Mental Retardation?

Mental retardation is a state of captured or fragmented advancement of the brain, which is particularly portrayed by weakness of aptitudes showed amid formative period, which add to the general level of intelligence, i.e. intellectual, dialect, motor, and social capacities. Retardation can happen with or without other mental or physical issue. Be that as it may, mentally retarded people can encounter the full scope of mental issue, and the pervasiveness of other mental issue is no less than three to four times more noteworthy in this populace than in the all inclusive community. Likewise, rationally hindered people are at more serious danger of misuse and physical/sexual manhandle. Versatile conduct is constantly disabled, yet in ensured social conditions where support is accessible this hindrance may not be at all conspicuous in subjects with mellow mental impediment.

1.2.1 Signs and Symptoms

Mental retardation starts amid youth and includes shortfalls in mental capacities, social aptitudes, and center exercises of day by day living when contrasted with same-matured companions. There regularly are no physical indications of mellow types of mental retardation, in spite of the fact that there might be trademark physical characteristics when it is related with a hereditary issue (e.g., Down Syndrome).

The level of impedance ranges in seriousness for every individual. A portion of the early signs can include:

- Delays in coming to or inability to accomplish points of reference in motor abilities (sitting, creeping, strolling)
- Slowness figuring out how to talk or proceeded with challenges with discourse and dialect aptitudes in the wake of beginning to talk
- Difficulty with self-improvement and self-care abilities (e.g., getting dressed, washing, and bolstering themselves)
- Poor planning or critical thinking capacities
- Behavioral and social issues
- Failure to develop mentally or proceeded with newborn child like conduct

- Problems keeping up in school
- Failure to adjust or change in accordance with new circumstances
- Difficulty understanding and abiding social principles

Table. 1 Showing levels of mental retardation and their respective IQ range-

Levels of MR	Range of IQ
Mild	50-70
Moderate	35-50
Severe	20-35
Profound	<20

1.3What is Special Education?

Special education (otherwise called unique need training, helped instruction or uncommon training) is the act of teaching students with exceptional instructive needs in a way that addresses their individual differences and needs. In a perfect world, this procedure includes the exclusively arranged and deliberately checked course of action of showing strategies, adjusted gear and materials, and available settings. These intercessions are intended to help people with special needs accomplish a more elevated amount of individual independence and achievement in school and in their group, that may not be accessible if the student were just offered access to a run of the typical classroom education.

Some important interventions that can be used are as follows:

Discrete Trial Teaching (DTT) or Lovaas Model:

Named for its pioneer (ABA-based) Teacher-coordinated DTT targets aptitudes and behaviors based on a set up educational modules. Every skill is separated into little strides, and instructed utilizing prompts, which are bit by bit dispensed with as the means are aced. The kid is given rehashed chances to learn and rehearse each progression in a variety of settings. Each time the

youngster accomplishes the desired result, he gets encouraging feedback, for example, verbal acclaim or something that the kid observes to be exceedingly persuading.

Picture Exchange Communication System (PECS)

A learning framework that permits kids with practically no verbal capacity to communicate utilizing pictures. An adult helps the kid construct a vocabulary and well-spoken cravings, perceptions or emotions by utilizing pictures reliably, and begins by instructing the youngster how to trade a picture for an object. In the long run, the individual is demonstrated to recognize pictures furthermore, images and utilize these to frame sentences. In spite of the fact that PECS depends on visual apparatuses, verbal reinforcement is a noteworthy part and verbal correspondence is energized.

Physical Therapy

Given by a Certified Physical Therapist (PT), this mediation concentrates on issues with development that cause useful restrictions. Studies with autism often have challenges with motor skills, for example, sitting, strolling, running and hopping, and PT can likewise address poor muscle tone, adjust and coordination. An assessment builds up the abdominal muscle abilities and developmental level of the youngster, and exercises or backings are intended to target territories of need.

1.4Autism Spectrum Disorder and Mental Retardation

People with Mental Retardation have deficiencies in intellectual and versatile working, which are seen during development (by and large, before the age of 18). Intellectual working incorporates the capacity to reason, issue illuminate, arrange, think uniquely, practice judgment, and learn. Versatile working alludes to the aptitudes expected to live in an autonomous and mindful way, including correspondence, social abilities, and self improvement abilities (for instance, getting dressed, sustaining, cash administration, and shopping).

While mental retardation used to be analyzed exclusively by administration of an Intelligence Quotient (IQ) test, current rules (DSM-5) accentuate the need to utilize both clinical evaluation and standardized testing. In any case, IQ scores are as yet utilized as a general rule, with a score measure up to or beneath 70 showing mental retardation.

Around 1 percent of the all inclusive community is thought to have mental retardation, and around 10% of people with mental retardation have Autism Spectrum Disorder (ASD) or extremely autistic characteristics. Be that as it may, a considerably higher rate of people with ASD have mental retardation.

As of the latest prevalence study by the Centers for Disease Control (CDC), which contemplated records from 2008, 38% of youngsters with ASD had mental retardation. A higher extent of females with ASD had Intellectual Disability contrasted with males: 46% of females with ASD had intellectual incapacity, contrasted with 37% of males. (Note, ASD is right around five times more pervasive in males than females).

Researchers are as yet attempting to decide whether there is a typical hereditary connection between Intellectual Disability and ASD. Certain hereditary disorders (Fragile X, Rett, Tuberous Sclerosis, Down, phenylketonuria, CHARGE, and Angelman) are related with serious Intellectual Disability and furthermore have a high occurrence of ASD. Notwithstanding, other research has demonstrated that Intellectual Disability is related with a high number of erasures inside a person's hereditary code, though ASD is related rather with a high number of duplications. Notwithstanding the likelihood of a causal association, it is perceived that people with ASD and those with Intellectual Disability share regular battles, especially as for social and relational abilities, which are vital segments of the ASD diagnosis.

Distinguishing an Intellectual Disability in a child with analyzed ASD is basic for building up an Individualized Education Program (IEP) to best bolster adapting requirements and freedom abilities. For instance, kids with Intellectual Disability may require more repetition, including pre-instructing and re-educating of aptitudes, contrasted with other youngsters their age. Their alternatives for work after secondary school will look not quite the same as those of youngsters who take in more effortlessly.

Chapter 2
Literature Review

A study by Miranda Andras demonstrated the impact of ten week by week sessions of LEGO treatment on the social association abilities. Findings demonstrate that there was more social interaction between kids after the session and that the impact was kept up when treatment ceased (Miranda, 2002).

Studies have uncovered that escalated, long haul, applied behavior analytic (ABA) treatment empowers numerous kids with autism to make huge picks up on standardized tests of intellectual, dialect, versatile and scholastic aptitudes.

An original review by Lovaas(1987) detailed that 47% of kids in study procured average dialect and scholarly abilities and were set into standard classrooms at age 7. Follow-up measures in 1993 demonstrated that everything except one of the 'best result' kids kept up their gains and were working socially at same level from their typically developing adolescent peers.

Research has examined the role that commonly creating associates might have the capacity to play in the social learning of youngsters with autism spectrum disorder (ASD).

Children with speech, language and communication needs(SLCN) are frequently observed as having a shrouded trouble and can present in different diverse ways including having discourse that is hard to comprehend, not knowing how to talk and tune in to others in discussions or battle to comprehend words and guidelines (I Can, 2012). Kids can give shifting levels of social correspondence skill, and this can be for a variety of reasons. For a few children they may have a Language Impairment (LI). There is an expansiveness of research recommending that kids with LI can encounter challenges with fundamental communication abilities which bolster their capacity to take part in social errands, for example, entering continuous collaborations and managing conflict.

A study compared 2 groups of youngsters getting either behavioral treatment (n=13) or diverse treatment (n=15) for a normal of 12 hours for each week. Kids were surveyed on knowledge, dialect, versatile working and maladaptive conduct at pretreatment and 2 years into treatment.

The groups did not contrast essentially at pretreatment. Following 2 years of treatment, the behavioral group made bigger increases than the eclectic group in many territories. (Eldevik, S., Eikeseth, S., Jahr, E. et al., 2006).

72% of youngsters who get Early Intensive Behavioral Intervention inevitably standard into consistent education. Of kids accepting EIBI, around half accomplish typical or close ordinary working (Lovaas, 1987; Sallows and Graupner, 2005). Around 40% of the youngsters accomplish moderate gains, permitting altogether diminished levels of care and help (Lovaas, 1987; Sallows and Graupner, 2005). Around 10% of the rest of the youngsters don't accomplish noteworthy gains in working and keep on requiring help (Lovaas, 1987; Sallows and Graupner, 2005). Jacobson et al. (1998) utilized every one of the three results to exhibit anticipated expenses and advantages.

According to Schumway and Wetherby, (2009) the second year of life is a critical time to examine the early development and emerging symptoms of ASD with the hope that early intervention can preempt significant symptoms (pg.1140). Due to this recent knowledge, it is critical to not only identify the disorder early, but also begin to receive various early intervention services in a timely manner.

The National Resource Council (2001) reported that the earlier that intervention begins in children's lives the better the outcomes (Boyd et al., 2010)

In a two week pilot, 17 children in the ages of 17-36 months, who were recently diagnosed with having autism, were involved in therapy that focused on three key areas that are typically the most affected areas (Wetherby& Woods, 2006). These areas include eye contact, gestures, and vocalization or words in hope to increase different aspect of communication that is usually effected by autism (Wong & Kwan, 2010). Results of this study indicated success with "children with autism improving in language/communication, reciprocal social interaction and symbolic play. Parents also noted success in improvement of their children's language, social interaction and their own stress level" (Wong& Kwan, Pg 677, 2010).

2.1Research Gap

There are very few studies which have studied the children with co morbidity of mental retardation and autism. Above studies targeted children with autism spectrum disorder only.

Such children may range from lower IQ levels to superior IQ levels. But in present study the sample consisted of subjects who have mild to moderate mental retardation and have co morbidity of autism spectrum disorder. It is known that there is high possibility of co morbidity of these disorders, present study is conducted to understand the effect of special education on children with autism spectrum disorder and mental retardation. An effort is made to look for the most prevalent developmental delays in children with ASD and MR.

Chapter 3

3.1 Motivation behind the present study

Mental health issues are of concern for psychologists. The present study is an attempt to study the effect of special education on children with autism spectrum disorder and mental retardation. Incidence of autism is increasing in the present times, so it is essential to study the correlates. In earlier times parents and care givers were not aware of such mental disorders, with increasing awareness it is important to study these variables and their effect on child development.

3.2Objectives of the Study

The present study has two main objectives:

- To study the effect of special education on the behavior of children with ASD and MR.
- To compare the behavioral improvements of children with high qualified mothers and less qualified mothers.
- To identify the prominent developmental delays in children with ASD and MR.

3.3 Hypotheses

Following hypotheses were formulated

H1 -Special education enhances the behavior of children with ASD and MR.
H0 -There is no difference in behavior of autistic children between two groups based on qualification of their mothers.

Chapter 4

Method

4.1 Sample

A total of 11 students of autistic wing of Navjivini School Of Special Education with mental retardation and autistic features were the subjects for present study. All the sample consisted of males. The mean age is 13.09 with standard deviation of 1.86.

4.2 Materials and Method

Behavioral Assessment Scales for Indian Children with Mental Retardation (BASIC-MR) is used for recording the behavior. This scale consists of 75 items each pertaining to different behavior. Each item should be scored based on three levels of severity/frequency of problem behavior i.e., Never (N), Occasionally (O) and Frequently (F). Score 0 for "Never", 1 for "Occasionally" and 2 for "Frequently."Reliability of the scale is 0.68 and its validity was found to be statistically significant (p=<0.001)

It deals with undesirable behavior. It is used to assess the problem behaviors of the children with Mental Retardation to intervene and reduce the problem behavior which are the main hindrances for their learning. Reliability of the scale is 0.68 and its validity was found to be statistically significant (p=<0.001)

4.3 Design

The independent variable of current study is special education and dependent variable is behavior of subjects.

For comparing whether there are behavioral changes between baseline recordings and quarter third recordings of problem behaviors t-Test is being used. The analysis of data for comparing two groups based on education of subjects mothers education is done using Mann-Whitney U test.

4.4Description of Cases

Case: 1 (Moderate Mental Retardation)

I. Identification Data

Name : Shaurya
Date of Birth : January 7, 2008
Sex : Male
Father's Qualification : M.sc
Father's Occupation : Army Officer
Income : 40,000 per month
Mother's Qualification : M.sc
Mother's Occupation : Counselor

II. Childhood History

Prenatal

Pregnancy : Wanted
Age of Parents at conception
Father's Age : 27 years
Mother's Age : 23 years
Fetal Movements : Normal

Natal

Delivery Type : Caesarean
Term : Full term
Birth Cry : Normal
Birth Weight : Normal

III. Developmental Milestones

Smiling (3 weeks) :
Head Control (4 months) :
Rolling Over (5-7 months) :
Standing (6-7 months) :
Crawling (8-10 months) :
Sitting (11 months) :
Walking (12-14 months) :
Teething (4-6 at 1 year) :
Babbling (8 months) : Around 11 months
First meaningful (1year) : At around one and half year
Overall : Delayed speech, fine motor development
Family History : No family history of mental illness

Case: 2 (Moderate Mental Retardation)

I. Identification Data

Name **:**Yuvraj
Date of Birth **:** December 23, 2003
Sex **:** Male
Father's Qualification **:** Graduate
Father's Occupation **:** Government Job
Income **:** 30,000 per month
Mother's Qualification **:** B.A.L.L.B
Mother's Occupation **:** Government Job

II. Childhood History

Prenatal

Pregnancy**:** Wanted
Age of Parents at conception
Father's Age **:** 29 years
Mother's Age **:** 27 years
Fetal Movements **:** Normal

Natal

Delivery Type **:** Normal
Term **:** Full Term
Birth Cry **:** Normal
Birth Weight **:** Normal

III. Developmental Milestones

Smiling (3 weeks) **:**
Head Control (4 months) **:**
Rolling Over (5-7 months) **:**
Standing (6-7 months) **:**
Crawling (8-10 months) **:**
Sitting (11 months) **:**
Walking (12-14 months)**:**
Teething (4-6 at 1 year)**:**
Babbling (8 months) **:**
First meaningful (1 year)**:**
Overall **:** Normal Development
Family History **:** No family history of mental illness

Case: 3 (Severe Mental Retardation)

I. Identification Data

Name **:**DhrienKansal
Date of Birth **:** October 10, 2005
Sex **:** Male
Father's Qualification **:** 12th
Father's Occupation **:** Private Job
Income **:** 15000 per month
Mother's Qualification **:** 10th
Mother's Occupation**:**House wife

II. Childhood History

Prenatal

Pregnancy **:** Wanted
Age of Parents at conception
Father's Age **:** 26 years
Mother's Age **:** 24 years
Fetal Movements **:** Normal

Natal

Delivery Type **:** Normal
Term **:** Full Term
Birth Cry **:** Normal
Birth Weight**:** Normal

III. Developmental Milestones

Smiling (3 weeks) **:**
Head Control (4 months) **:**
Rolling Over (5-7 months) **:**
Standing (6-7 months) **:**
Crawling (8-10 months**:** 2 years
Sitting (11 months) **:**
Walking (12-14 months) **:** 3 years
Teething (4-6 at 1 year) **:**
Babbling (8 months) **:**
First meaningful (1 year)**:** Cannot speak yet
Overall **:** Delayed language and motor development
Family History **:** No family history of mental illness

Case: 4 (Severe Mental Retardation)

I. Identification Data

Name **:**Harshdeep Singh
Date of Birth **:** March 30, 2004
Sex **:** Male
Father's Qualification **:**D.Ed
Father's Occupation **:** Farmer
Income **:** 12,000 per month
Mother's Qualification **:** 8th
Mother's Occupation **:** House wife

II. Childhood History

Prenatal

Pregnancy **:** Wanted
Age of Parents at conception
Father's Age **:** 21 years
Mother's Age **:** 23 years
Fetal Movements **:** Normal

Natal

Delivery Type**:** Normal
Term **:** Full Term
Birth Cry**:** Normal
Birth Weight**:** Normal

III. Developmental Milestones

Smiling (3 weeks)**:**
Head Control (4 months)**:**
Rolling Over (5-7 months)**:**
Standing (6-7 months) **:**
Crawling (8-10 months) **:** 1 and half year
Sitting (11 months**:**
Walking (12-14 months)**:** 2 years
Teething (4-6 at 1 year) **:**
Babbling (8 months) **:**
First meaningful (1 year) **:** cannot speak
Overall :
Family History : Sister of child's father is a case of M.R.
Other Complications : Convulsions at the age of 1 month

Case: 5 (Severe Mental Retardation)

I. Identification Data

Name : Jayant Das
Date of Birth : October 14, 2002
Sex : Male
Father's Qualification : B.Tech
Father's Occupation : Engineer
Income :
Mother's Qualification : M.B.A
Mother's Occupation : House wife

II. Childhood History

Prenatal

Pregnancy : Wanted
Age of Parents at conception
Father's Age : 30 years
Mother's Age: 25 years
Fetal Movements: Normal

Natal

Delivery Type: Normal
Term: Full Term
Birth Cry: Delayed
Birth Weight : Normal

III. Developmental Milestones

Smiling (3 weeks) :
Head Control (4 months) :
Rolling Over (5-7 months) : 10 months
Standing (6-7 months): 1 and a half year
Crawling (8-10 months) :
Sitting (11 months) :
Walking (12-14 months) :
Teething (4-6 at 1 year) :
Babbling (8 months) :
First meaningful (1 year) : Cannot speak yet
Overall :
Family History : No family history of mental illness

Case: 6 (Moderate Mental Retardation)

I. Identification Data

Name : Lavish Madan
Date of Birth : December 20, 2004
Sex : Male
Father's Qualification : 9th
Father's Occupation : Private job
Income : 3000 per month
Mother's Qualification : 12th
Mother's Occupation : House wife

II. Childhood History

Prenatal

Pregnancy : Wanted
Age of Parents at conception
Father's Age : 31 years
Mother's Age : 28 years
Fetal Movements : Normal

Natal

Delivery Type : Normal
Term : Full Term
Birth Cry : Normal
Birth Weight : Normal

III. Developmental Milestones

Smiling (3 weeks) :
Head Control (4 months) : 7 months
Rolling Over (5-7 months) :
Standing (6-7 months) :
Crawling (8-10 months) :
Sitting (11 months) :
Walking (12-14 months): 2 and a half years
Teething (4-6 at 1 year) :
Babbling (8 months):
First meaningful (1 year) :
Overall :
Family History : No family history of mental illness

Case: 7 (Severe Mental Retardation)

I. Identification Data

Name : AbhiVerma
Date of Birth: November 12, 2003
Sex : Male
Father's Qualification :
Father's Occupation : Government employee
Income : 15,000 per month
Mother's Qualification :
Mother's Occupation : House wife

II. Childhood History

Prenatal

Pregnancy: Wanted
Age of Parents at conception
Father's Age: 25 years
Mother's Age : 24 years
Fetal Movements : Normal

Natal

Delivery Type : Normal
Term : Full Term
Birth Cry : Delayed
Birth Weight : Normal

III. Developmental Milestones

Smiling (3 week :
Head Control (4 months :
Rolling Over (5-7 months) :
Standing (6-7 months) :
Crawling (8-10 months:
Sitting (11 months) :
Walking (12-14 months) : 2 years
Teething (4-6 at 1 year) :
Babbling (8 months):
First meaningful (1 year) : No speech yet

Overall :

Family History : No family history of mental illness

Case: 8 (Severe Intellectual Disability)

I. Identification Data

Name :Atul
Date of Birth : February 27, 2002
Sex : Male
Father's Qualification : Graduate
Father's Occupation : Shop-keeper
Income : 4,000 per month
Mother's Qualification: 12th
Mother's Occupation : House wife

II. Childhood History

Prenatal

Pregnancy : Wanted
Age of Parents at conception
Father's Age : 29 years
Mother's Age : 28 years
Fetal Movements : Normal

Natal

Delivery Type : Normal
Term: Pre-mature
Birth Cry : Normal
Birth Weight: Low

III. Developmental Milestones

Smiling (3 weeks) :
Head Control (4 months) :
Rolling Over (5-7 months):
Standing (6-7 months) :
Crawling (8-10 months) :
Sitting (11 months) :
Walking (12-14 months) : 2 and half years
Teething (4-6 at 1 year) :
Babbling (8 months) :
First meaningful (1 year) : No speech yet

Overall :

Family History : No family history of mental illness

Case: 9 (Moderate Mental Retardation)

I. Identification Data

Name :Karanveer Singh
Date of Birth : October 1, 2001
Sex : Male
Father's Qualification :
Father's Occupation : Government service
Income : 14,000 per month
Mother's Qualification : Graduate
Mother's Occupation : Government employee

II. Childhood History

Prenatal

Pregnancy : Wanted
Age of Parents at conception
Father's Age : 29 years
Mother's Age: 29 years
Fetal Movements : Sluggish

Natal

Delivery Type : Normal
Term : Full term (prolonged labor induced)
Birth Cry : Delayed birth cry
Birth Weight : Normal

III. Developmental Milestones

Smiling (3 weeks) :
Head Control (4 months) :
Rolling Over (5-7 months) :
Standing (6-7 months):
Crawling (8-10 months) :
Sitting (11 months) :
Walking (12-14 months) :
Teething (4-6 at 1 year) :
Babbling (8 months) :
First meaningful (1 year) :
Overall : Delayed
Family History : No family history of mental illness
Other Complications : Started having fits after 3 years of age

Case: 10 (Severe Mental Retardation)

I. Identification Data

Name :Risham
Date of Birth : January 1, 2004
Sex : Male
Father's Qualification : Post Graduate
Father's Occupation : Business
Income : 10,000 per month
Mother's Qualification : Post Graduate
Mother's Occupation : House wife

II. Childhood History

Prenatal

Pregnancy : Wanted
Age of Parents at conception
Father's Age : 31 years
Mother's Age : 29 years
Fetal Movements : Normal

Natal

Delivery Type : Instrumental Delivery
Term : Full Term
Birth Cry: Delayed
Birth Weight : Low

III. Developmental Milestones

Smiling (3 weeks) :
Head Control (4 months) :
Rolling Over (5-7 months :
Standing (6-7 months) :
Crawling (8-10 months) :
Sitting (11 months) :
Walking (12-14 months) :
Teething (4-6 at 1 year) :
Babbling (8 months) :
First meaningful (1 year) : No speech yet, says one word only which is papa
Overall :
Family History : No family history of mental illness

Case: 11 (Moderate Mental Retardation)

I. Identification Data

Name **:**AbhayRana
Date of Birth **:** February 18, 2002
Sex **:** Male
Father's Qualification **:** 10th
Father's Occupation **:** Painter
Income **:** 3500 per month
Mother's Qualification **:**
Mother's Occupation **:** House wife

II. Childhood History

Prenatal

Pregnancy**:** Wanted
Age of Parents at conception
Father's Age **:** 27 years
Mother's Age**:** 25 years
Fetal Movements **:** Normal

Natal

Delivery Type **:** Normal
Term **:** Full Term
Birth Cry **:** Normal
Birth Weight **:** Normal

III. Developmental Milestones

Smiling (3 weeks)**:**
Head Control (4 months)**:**
Rolling Over (5-7 months)**:**
Standing (6-7 months)**:**
Crawling (8-10 months)**:**
Sitting (11 months) **:**
Walking (12-14 months) **:**
Teething (4-6 at 1 year)**:**
Babbling (8 months)**:**
First meaningful (1 year)**:**
Overall : Delayed development
Family History : No family history of mental illness

Chapter 5

Results

The analysis of data was done using t-Test and Mann Whitney-U test. In order to find whether special education help reducing problem behavior t-Test was computed. In addition to that for comparing the groups formed on the basis mothers qualification Mann Whitney-U test was used.

Table 2. Showing baseline behavior and behavior in three quarters for an year (in percentage)-

Serial No.	**Baseline**	**Quarter 1**	**Quarter2**	**Quarter 3**
Subject 1	42	39	34	32
Subject 2	39	34	29	23
Subject 3	43	38	37	34
Subject 4	43	39	35	32
Subject 5	52	46	42	40
Subject 6	52	46	42	40
Subject 7	51	49	48	46
Subject 8	43	41	39	38
Subject 9	14	11	10	09
Subject 10	49	48	46	44
Subject 11	56	53	50	49

Table 2 shows the baseline data and data recorded for the next three quarters. This form keeps the record of undesirable behavior in each quarter.

Table 3. Showing mean and standard deviation-

Mean	44.66	40.83	37.83	35.58
S.D	11.30	11.26	11.08	11.38

Table 3 shows the mean and standard deviation of data of table 2. The mean value in each quarter decreases as compared to previous quarter and to baseline data as well. Thus we can say that the frequency of undesirable behavior is decreasing.

Table 4. t-Test: Paired Two Sample for Means-

	Baseline	Quarter 3
Mean	44	35.18182
Standard deviation	11.30	11.38
t Stat	7.82*	

*p<0.05

Table 4 showing the computed value of t for baseline data and data recorded in quarter 3.

Table 5. Data and ranks for the group with high qualified mothers-

Subject	**Baseline**	**Ranks**	**Quarter1**	**Ranks**	**Quarter2**	**Ranks**	**Quarter3**	**Ranks**
1	42	3	39	4.5	34	3	32	3.5
2	39	2	34	2	29	2	23	2
3	43	5	38	3	37	5	34	5
4	43	5	39	4.5	35	4	32	3.5
5	52	9.5	46	7.5	42	7.5	40	7.5
Sum of Ranks		24.5		21.5		21.5		21.5

Table 5 shows the baseline data and data for next three quarters and their respective ranks and sum of ranks for the first group formed on the basis of qualification of mothers.

Table 6. Showing the data and ranks for group with less qualified mothers-

Subject	Baseline	Ranks	Quarter1	Ranks	Quarter2	Ranks	Quarter3	Ranks
1	52	9.5	46	7.5	42	7.5	40	7.5
2	51	8	49	10	48	10	46	20
3	43	5	41	6	39	6	38	6
4	14	1	11	1	10	1	9	1
5	49	7	48	9	46	9	44	9
6	56	11	53	11	50	11	49	11
Sum of Ranks	41.5		44.5		44.5		54.5	41.5

Table 6shows the baseline data and data for next three quarters and their respective ranks and sum of ranks for the second group formed on the basis of qualification of mothers.

Table 7. Showing Mann Whitney U values-

U	9.5	6.5	6.5	6.5

Level of significance, $\alpha=0.05$

Critical Value = 3

Chapter 6

Discussion

For the present study the data is collected with the help of BASIC-MR scale on which the frequency of behavior was recorded. The cumulative score obtained by summing up all the items on scale are further converted into percentage score by dividing the total obtained by number of items.

The percentage score of all 11 subjects is given in table 2. Table-3 shows the mean and standard deviation of the scores on table 2. From table 3 it is clear that the mean score is decreasing as we compare score of each quarter with the baseline score. This decrease in score supports the first hypothesis i.e. special education do bring about changes in behavior of children with ASD and MR.

Also, the t-value computed from the means of baseline scores and quarter third scores is significant as well. The results from t-test show the significant difference baseline (M=44.66, SD=11.30) and quarter 3 (M=35.58, SD=11.38); t(10)=7.82, p=0.001. These results show that special education does have an effect on behavior of children with ASD and MR. Specifically, our results suggest that with special education the problem behavior of children with ASD and MR do decrease. Research has shown that PECS can be a compelling apparatus to encourage communication in youngsters with ASD (Bondy and Frost, 1994; Schwartz, Garfinkle, and Bauer, 1998).

For the second hypothesis two groups are formed based on the qualification of their mothers. Group one consists of 5 subjects who have high qualified mothers and group two consists of 6 subjects who have mothers who are low on qualification as compared to mothers on group one. For calculating the significant difference Mann Whitney U test was used.

Table 7 gives the U values for baseline scores and for all three quarters. The critical value on table as checked for N1 =5 and N2 = 6 is 3. Therefore, we do not reject H0 because value of U is higher for all the quarters and for baseline data as well than the critical value, i.e. 9.5, 6.5, 6.5 and 6.5. The null hypothesis is accepted because the calculated U value is high in every case than the critical value. Therefore the null hypothesis is retained. As hypothesized, there is no

difference in behavior of autistic children between two groups based on qualification of their mothers, U = 9.5, 6.5, 6.5, 6.5 for baseline, quarter 1, quarter 2 and quarter 3 records respectively, $\alpha = 0.05$ and table value is 3.We do not have sufficient evidence to conclude that two groups differ. Based on the Mann Whitney U test scores our second hypothesis is also accepted.

Another thing of importance in the present study is that if we look for developmental delays, delayed speech and walking are some of the most prominent one's. So it can be of importance that if these developmental delays are observed child must be taken for an appropriate examination to the authorized clinician so that early diagnosis can be made and child can be put to special care as early as possible.

Studies have supported that the earlier in life ASD can be identified and treated, the better. That's because the younger we are, the more adaptable our brains are, explains Beck. In the case of autism, it's believed that intensive therapy early on may encourage the young brain to reroute itself around faulty neural pathways.

Chapter 7

Conclusion

Custom curriculum is an extensive and costly framework as of now serving one in ten students in state funded schools. Numerous understudies are put in a custom curriculum in light of the powerlessness of normal instruction to accommodate their requirements. It has appeared that normal training, if appropriately modified, can address the issues of some more understudies with autism spectrum disorder and handicaps, however doing as such is testing. Expanded assets must be given in the normal classroom, and significant changes ought to be made in commonplace instructional work on, requiring extensive preparing of consistent instructors. Neighborhood schools and instructors must be submitted to incorporation to make it work. Each of these prerequisites is a potential stumbling block.

From the data collected it can be concluded that special education do help in turning problematic behavior into manageable ones. From the case descriptions given above it can be concluded that language deficits and delayed walking are among the most prominent developmental milestones which are delayed, and abrupt the normal course of development.

Chapter 8

8.1 Implications

Such studies can be used in clinical school settings.Arranging the instructional program for understudies with a autism is mind boggling, since these understudies have huge contrasts from generally other understudies in learning style, communication, and social aptitude advancement, and have challenging conducts. There is extensive personinconsistency in how these attributes influence a specific individual.

Programs must be individualized and in view of the one of a kind needs and capacities of every understudy. Knowing how the understudy's capacity to handle data and communication are influenced by autismis fundamentally important to planning.

An understudy's training project could incorporate a blend of instructional exercises from the customary educational modules and additionally exercises in light of objectives and targets that are one of a kind to the individual and set out in an Individual Education Plan (IEP).

Furthermore, understanding the problems of such children and getting to know about the areas in which they lag can be of importance in handling children with disorders effectively.

8.2 Limitations

The data recorded for keeping track of behavior is done by respective special educators of autistic wing of school. There may be chances of subjective bias in scoring to show improvement in behavior.

The sample size is too small, so no generalizations can be made from this study.

8.3Future Scope

There were no female subjects available for this study. In future it can be assessed whether the same developmental delays predominates for girls as identified for boys or not.

Similar research can be replicated to other areas to find out whether the same developmental delays are prominent there as well or not so that the results can be generalized if the findings of further studies come out to be same. Longitudinal, cross cultural studies can be carried to for the generalizations to be made.

Other mental disorders and their co-morbidity with autism and their influence on autistic children can also be studied. Studies to explore gender differences can also be carried out because it is being said that the ratio of boys to girls having autism spectrum disorder is high i.e. 4:1, this might be because of misdiagnosis.

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APPENDIX

Behavioral Assessment Scales for Indian Children with Mental Retardation (BASIC-MR) Part B

RECORD BOOKLET

Name of the student_____ Age_____

Level/Class_____ Sex_____

Dates :

Baseline Assessment_____ Evaluated by : _____

First Quarter Assessment_____ Evaluated by : _____

Second Quarter Assessment_____ Evaluated by : _____

Third Quarter Assessment_____ Evaluated by : _____

Instructions :

1. Each item should be scored based on three levels of severity/frequency of problem behavior i.e., Never (N), Occasionally (O) and Frequently (F) Score 0 for "Never", 1 for "Occasionally" and 2 for "Frequently."

2. Enter the appropriate numerical score against each item for the child, depending on the severity/frequency of the problem behavior in question, and in the appropriate box, i.e., baseline, first quarter assessment, second quarter assessment and/or third quarter assessment.

3. Add the total problem raw score and enter it in the profile sheet of BASIC-MR, Part-B

Item No.	Domains / Item	Assessments			
		Baseline	1st Qr.	2nd Qr.	3rd Qr.
Violent and Destructive Behavior					
1	Kicks others				
2	Pushes others				
3	Pinches others				
4	Pulls hair, ear, body parts of others				
5	Slaps others				
6	Hits others				
7	Spits on others				

8	Bangs Objects				
9	Slams doors				
10	Bites others				
11	Attacks or pokes others with weapon(stick)				
Item No.	Domains / Items	Assessments			
		Baseline	1st Qr.	2nd Qr.	3rd Qr.
12	Throws objects at others				
13	Tears/pullsthreadsfromownorothersclothing				
14	Tears up own or others books, papers, magazines				
15	Breaks objects / glass / toys				
16	Damages furniture				
Temper Tantrums					
17	Cries excessively				
18	Screams				
19	Stamps feet				
20	Rolls on floor				
Misbehaves with others					
21	Pulls objects from others				
22	Interrupts in between when others are talking				
23	Makes loud noise when others are working or reading				
24	Makes face or tease others				
25	Uses abusive/vulgar language				
26	Takes others possession without their permission				
27	Tells others what to do and wants his/her way (bossy)				
Self Injurious Behaviors					
28	Bangs head				
29	Bites self				
30	Cuts or mutilates self				
31	Pulls own hair				
32	Scratches self				
33	Hits self				
34	Puts objects into eyes / nose / ear				
35	Eats inedible things				
36	Peels skin / wound				
37	Bites nail				
Repetitive Behaviors					
38	Rocks body				
39	Nods head				
40	Sucks thumb				

41	Makes peculiar sounds				
42	Bites ends of pen / pencil				
43	Shakes parts of body repeatedly				
44	Grinds teeth				

Item No.	Domains / Items	Assessments			
		Baseline	1st Qr.	2nd Qr.	3rd Qr.
45	Swings round and round				
	Odd Behaviors				
46	Laughs at self				
47	Laughs inappropriately				
48	Talks to self				
49	Hoards unwanted objects (sticks, thread)				
50	Picks nose				
51	Plays with unwanted objects like chappal, strings, feces and dirt excessively				
52	Kisses, hugs and licks people unnecessarily				
53	Smells objects				
	Hyperactivity				
54	Does not sit at one place for required time				
55	Does not pay attention to what is told				
56	Does not continue with the task at hand for required time				
	Rebellious Behaviors				
57	Refuses to obey commands				
58	Does opposite of what is required				
59	Takes very long time intentionally to complete a task				
60	Wanders outside school				
61	Runs away from school				
62	Argues without purpose				
	Antisocial Behaviors				
63	Lies or twists the truth to his own advantage or blames others				
64	Cheats in games or no sense of fair play				
65	Steals				
66	Makes obscene gestures				
67	Exposes body parts inappropriately				
68	Makes sexual advances towards members of opposite sex				
69	Touches own private parts in public				
70	Touches others private parts in public				
71	Gambles				
	Fears				

72	Fear of objects				
73	Fear of animals				
74	Fear of places				
75	Fear of persons				
Any others :					

Total Raw Score	Baseline	1st Qr.	2nd Qr.	3rd Qr.
Cumulative Score (All Domains)				