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Behaviour in Relation to Diseases of the Mentally Retarded Persons in Rajshahi District

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Dissertation submitted for the degree of Doctor of Philosophy

By

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By

Shabnam Mustary

Under the supervision of

Dr Anwarul Hasan Sufi

and

Dr Kazi Wali Ahmed

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Certificate

This is to certify that the thesis entitled 'Behaviour in Relation to Diseases of the Mentally Retarded Persons in Rajshahi District' has been completed by Shabnam Mustary of the Institute of Biological Sciences, University of Rajshahi for the award of Ph.D. Degree. The work has been done under our supervision. We now recommend for the examination of the thesis.

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Declaration

This thesis entitled "Behaviour in Relation to Diseases of the Mentally Retarded Persons in Rajshahi District" contains no material which has been accepted for the award of any other degree or diploma in any university and contains no material previously published or written by another person, except where due reference is made in the text of the thesis.

Shabnam Mustary

Shabnam Mustary

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Abstract

This research entitled 'Behaviour in relation to diseases of the mentally retarded persons in Rajshahi District' is an attempt to explore some behavioural changes of the mentally retarded persons followed by eight specific diseases. The researcher closely observed 155 mentally retarded persons during last five years in and around Rajshahi.

The diseases are Meningitis, Hepatitis, Typhoid, Chicken Pox, Influenza, Measles, Pneumonia and Diarrhea. She studied the psychological, biological, social and some special changes in the behaviour of the subjects during and after the diseases.

The subjects were categorized as male-female; child-adult; rural-urban; mild-moderate and severe; with and without chromosomal anomalies; having or not having convulsive disorders; and dependent or not dependent on psychotropic drugs.

The urban subjects are from Rajshahi City and the rural subjects are from the villages of Joynagar Union of Durgapur Upazilla of Rajshahi District.

All the subjects were observed and studied personally by the researcher several times during 2000 and 2004. Especially they were visited during different illness. Major methodology was case study method, but the case studies were seconded by observation, interview and free discussion. The researcher also studied all the available medical papers, prescriptions, pathological reports, etc. of all the 155 subjects.

Though the research was designed mainly to study the nature, number and seriousness of eight common diseases suffered by the selected cases of mental retardation and to explore the changes in their behaviour the specific objectives were: to find out the nature, number and seriousness of eight diseases

suffered by the Mentally Retarded persons; to explore behavioral problems of the persons with Mental Retardation due to the diseases; to investigate the pattern of medical treatment received by the Mentally Retarded person; to suggest ways and means to promote awareness that will help appropriate care of the mentally retarded persons during these diseases and save them from the aftereffects of the diseases; and to recommend measures that will help formulation of a suitable health policy including special care of the mentally retarded persons in Bangladesh.

On the basis of the findings, interview, secondary data and overall observation, the researcher concludes the following: sufferings in any of the diseases create at least some behaviour problem among the mentally retarded persons; those who have suffered by more diseases are now having more behaviour problems; the duration of sufferings in diseases are positively related to the deterioration of behaviour; Meningitis is considered as the most severe disease that seriously affects the behaviour of the mentally retarded persons in Rajshahi District; Convulsion associated with high fever is seriously affecting the behaviour of the mentally retarded persons and in most cases they are becoming drug dependent for convulsion; the rural mentally retarded persons are relatively drug free compared to the urban mentally retarded persons; those mentally retarded persons who have become adults are now relatively free from the diseases compared to the mentally retarded children; mentally retarded persons with chromosomal anomalies, specially the Downs Syndromes, are relatively less affected from the common diseases compared to the mentally retarded persons without chromosomal anomalies; the mentally retarded persons who were immunized were less affected by the common diseases; the rate of attack of the diseases is not related to sex of the mentally retarded persons; the severely retarded persons are more affected by the diseases compared to the mild and moderately retarded persons; and those who have become dependent on psychotropic drugs are due to faulty treatments of the physicians and ignorance of the parents.

The researcher recommends the following to uplift the treatment and care of the mentally retarded persons: awareness development on mental retardation and the possible outcomes of the diseases need extensive publicity by the mass media; training courses are to be arranged for the physicians to update them on recent information on mental retardation; management of febrile convulsion needs extensive publicity by mass media

that parents can identify the primary symptoms and can take up emergency measures; mentally retarded persons can not narrate their actual physical problems to others. They should not become subjects of trials and errors by the physicians and family members, therefore, specific pathological tests must be done before giving them any medicine; and a national health policy is needed to control the use and abuse of psychotropic drugs.

Contents

Chapter I
Introduction

Mental Retardation is not a disease or single entity, rather a term applied to a condition of retarded mental development present at birth or in early childhood and is characterized mainly by limited intelligence combined with difficulty in adaptation. Hence mental retardation is impaired mental ability. A retarded child learns more slowly and at maturity his capacity to understand will be less than normal. He finds difficulty in learning, social adjustment and economic productivity (Sen and Dutta, 1985).

Behaviour of the mentally retarded persons differs widely from the persons who are not mentally retarded. The degree of deviation of behaviour from the approved norms in different social situation and interpersonal relations can be assessed from different viewpoints considering the culture and customs. Many mentally retarded persons can not cope with the approved norms of behavioral interactions due to their deficiency in intelligence.

It is seen that the behavior of the mentally retarded persons depend on the degree of their retardation. The degree of retardation is again related to the other disable condition and the diseases suffered by the mentally retarded persons. It is also seen that the behaviour of many mentally retarded persons change due to illness and diseases suffered by them.

The main objective of this research is to study the behavioural aspects of the mentally retarded persons of Rajshahi District in relation to the diseases suffered by them. Mental Retardation is not new in Bangladesh. Many research works were also done on mental retardation in Bangladesh, but nothing was done to relate their illnesses and diseases in relation to their behaviour. However, before entering into the detail of the study it is pertinent here to discuss the key words of this research which are *Mental Retardation, Disease* and *Behaviour*.

Mental Retardation

Mental retardation is a condition, a syndrome, a symptom, and a source of pain and bewilderment to many families. Its history dates back to the beginning of man's time on earth. The idea of mental retardation can be found as far back in history as the therapeutic papyri of Thebes of Egypt, around 1500 B.C. Although somewhat vague due to difficulties in translation, these documents clearly refer to disabilities of the mind and body due to brain damage (Sheerenberger, 1983).

Mental retardation is also a condition or syndrome defined by a collection of symptoms, traits, or characteristics. It has been defined and renamed many times throughout history. For example, feeblemindedness and mental deficiency were used as labels during the later part of the last century and in the early part of this century. Consistent across all definitions are difficulties in learning, social skills, everyday functioning, and age of onset. Mental retardation has also been used as a defining characteristic or symptom of other disorders such as Down syndrome and Prader-Willi syndrome. Finally, mental retardation is a challenge and potential source of stress to the family of an individual with this disorder. From identification through treatment or education, families struggle with questions about cause and prognosis, as well as guilt, a sense of loss, and disillusionment about the future.

The plight of individuals with developmental disabilities has been dependent on the customs and beliefs of the era and the culture or locale. In ancient Greece and Rome, infanticide was a common practice. In Sparta, for example, neonates were examined by a state council of inspectors. If they suspected that the child was defective, the infant was thrown from a cliff to its death. By the second century A.D. individuals with disabilities, including children, who lived in the Roman Empire were frequently sold to be used for entertainment or amusement. The dawning of Christianity led to a decline in these barbaric practices and a movement toward care for the less fortunate; in fact, all of the early religious leaders, Confucius, Jesus, Buddha, and Mohammed (S:) advocated human treatment for the mentally retarded, developmentally disabled, or infirmed (Sheerenberger, 1983).

During the middle ages (476 - 1799 AD) the status and care of individuals with mental retardation varied greatly. Although more human practices evolved (i.e., decreases in infanticide and the establishment of foundling homes), many children were sold into slavery, abandoned, or left out in the cold. Toward the end of this era, in 1690, John Locke published his famous work entitled *An Essay Concerning Human Understanding*. Locke believed that an individual was born without innate ideas. The mind is a *tabula rasa*, a blank slate. This would profoundly influence the care and training provided to individuals with mental retardation. He also was the first to distinguish between mental retardation and mental illness; "Herein seems to lie the difference between idiots and madmen, that madmen put wrong ideas together and reason from them, but idiots make very few or no propositions and reason scarce at all" (Doll, 1962).

A cornerstone event in the evolution of the care and treatment of the mentally retarded was the work of physician Jean-Marc-Gaspard Itard (Sheerenberger, 1983) who was hired in 1800 by the Director of the National Institutes for Deaf-Mutes in France to work with a boy named Victor. Victor, a young boy, had apparently lived his whole life in the woods of south central France and, after being captured and escaping several times, fled to the mountains of Aveyron. At about age 12, he was captured once again and sent to an orphanage, found to be deaf and mute, and moved to the Institute for Deaf-Mutes.

Based on the work of Locke and Condillac who emphasized the importance of learning through the senses, Itard developed a broad educational program for Victor to develop his senses, intellect, and emotions. After 5 years of training, Victor continued to have significant difficulties in language and social interaction though he acquired more skills and knowledge than many of Itard's contemporaries believed possible. Itard's educational approach became widely accepted and used in the education of the deaf. Near the end of his life, Itard had the opportunity to educate a group of children who were mentally retarded. He did not personally direct the education of these children, but supervised the work of Edouard Seguin (Sheerenberger, 1983).

Seguin developed a comprehensive approach to the education of children with mental retardation, known as the Physiological Method (Sheerenberger, 1983). Assuming a direct relationship between the senses and cognition, his approach began with sensory training including vision, hearing, taste, smell, and eye-hand coordination. The curriculum extended from developing basic self-care skills to vocational education with an emphasis on perception, coordination, imitation, positive reinforcement, memory, and generalization.

In 1850, Seguin moved to the United States and became a driving force in the education of individuals with mental retardation. In 1876, he founded what would become the American Association on Metal Retardation. Many of Seguin's techniques have been modified and are still in use today.

Over the next 50 years, two key developments occurred in the United States: residential training schools were established in most states by 1892, and the newly developed test of intelligence developed by Binet was translated in 1908 by Henry Goddard, Director of Research at the training school in Vineland, New Jersey. Goddard published an American version of the test in 1910. In 1935, Edgar Doll developed the *Vineland Social Maturity Scale* to assess the daily living skills, adaptive behavior of individuals suspected of having mental retardation. Psychologists and educators now believed that it was possible to determine who had mental retardation and provide them with appropriate training in the residential training schools.

During the early part of the 20th century, residential training schools proliferated and individuals with mental retardation were enrolled. This was influenced by the availability of tests (primarily IQ) to diagnose mental retardation and the belief that, with proper training, individuals with mental retardation could be "cured". When training schools were unable to "cure" mental retardation, they became overcrowded and many of the students were moved back into society where the focus of education began to change to special education classes in the community. The training schools, which were initially more educational in nature, became custodial living centers.

As a result of the disillusionment with residential treatment, advocacy groups, such as the National Association of Retarded Citizens and the President's Commission on Mental Retardation, were established in the 1950's through the 1970's. The Wyatt-Stickney federal court action, in the 1970's, was a landmark class action suit in Alabama establishing the right to treatment of individuals living in residential facilities. Purely custodial care was no longer acceptable. Concurrent with this case, the United States Congress passed the Education for the Handicapped Act in 1975, now titled the Individuals with Disabilities Education Act. This Act guaranteed the appropriate education of all children with mental retardation and developmental disabilities, from school age through 21 years of age. This law was amended in 1986 to guarantee educational services to children with disabilities age 3 through 21 and provided incentives for states to develop infant and toddler service delivery systems. Today, most states guarantee intervention services to children with disabilities between birth and 21 years of age.

Definition, Diagnosis and Classification

According to Sheerenberger (1983), the elements of the definition of mental retardation were well accepted in the United States by 1900. These included: onset in childhood, significant intellectual or cognitive limitations, and an inability to adapt to the demands of everyday life. An early classification scheme proposed by the American Association on Mental Deficiency (Retardation), in 1910 referred to individuals with mental retardation as feeble-minded, meaning that their development was halted at an early age or was in some way inadequate making it difficult to keep pace with peers and manage their daily lives independently (Committee on Classification, 1910). Three levels of impairment were identified: *idiot*, individuals whose development is arrested at the level of a 2 year old; *imbecile*, individuals whose development is equivalent to that of a 2 to 7 year old at maturity; and *moron*, individuals whose mental development is equivalent to that of a 7 to 12 year old at maturity.

Over the next 30 years, the definitions of mental retardation focused on one of three aspects of development: the inability to learn to perform common acts, deficits or delays in social development/competence, or low IQ (Yepsen, 1941). An example

of a definition based on social competence was proposed by Edgar Doll who proposed that mental retardation referred to "social incompetence, due to mental subnormality, which has been developmentally arrested, which obtains at maturity, is of constitutional origin, and which is essentially incurable". Fred Kuhlman, who was highly influential in the early development of intelligence tests in the United States, believed mental retardation was "a mental condition resulting from a subnormal rate of development of some or all mental functions" (Kuhlman, 1941).

As a result of the conflicting views and definitions of mental retardation, a growing number of labels used to refer to individuals with mental retardation, and a change in emphasis from a genetic or constitutional focus to a desire for a function-based definition, the American Association on Mental Deficiency (Retardation) proposed and adopted a three part definition in 1959. "Mental retardation refers to subaverage general intellectual functioning which originates in the developmental period and is associated with impairment in adaptive behavior" (Heber, 1961). Although this definition included the three components of low IQ (<85), impaired adaptive behavior, and origination before age 16, only IQ and age of onset were measurable with the existing psychometric techniques. Deficits in adaptive behavior were generally based on subjective interpretations by individual evaluators even though the Vineland Social Maturity Scale was available (Sheerenberger, 1983).

In addition to the revised definition, a five level classification scheme was introduced replacing the previous three level system which had acquired a very negative connotation. The generic terms of borderline (IQ 67-83), mild (IQ 50-66), moderate (IQ 3-49), severe (16-32), and profound (IQ <16) were adopted.

Due to concern about the over or misidentification of mental retardation, particularly in minority populations, the definition was revised in 1973 (Grossman, 1973) eliminating the borderline classification from the interpretation of significant, subaverage, general intellectual functioning. The upper IQ boundary changed from <85 to $\leq$ 70. This change significantly reduced the number of individuals who were previously identified as mentally retarded impacting the eligibility criteria for special school services and

governmental supports. Many children who might have benefitted from special assistance were now ineligible for such help. A 1977 revision (Grossman, 1977) modified the upper IQ limit to 70 - 75 to account for measurement error. IQ performance resulting in scores of 71 through 75 were only consistent with mental retardation when significant deficits in adaptive behavior were present.

The most recent change in the definition of mental retardation was adopted in 1992 by the American Association on Mental Retardation. 'Mental retardation refers to substantial limitations in present functioning. It is characterized by significantly sub-average intellectual functioning, existing concurrently with related limitations in two or more of the following applicable adaptive skill areas: communication, self-care, home living, social skills, community use, self-direction, health and safety, functional academics, leisure, and work. Mental retardation manifests before age 18' (American Association on Mental Retardation, 1992). On the surface, this latest definition does not appear much different than its recent predecessors. However, the focus on the functional status of the individual with mental retardation is much more delineated and critical in this definition. There is also a focus on the impact of environmental influences on adaptive skills development that was absent in previous definitions. Finally, this revision eliminated the severity level classification scheme in favor of one that addresses the type and intensity of support needed: intermittent, limited, extensive, or pervasive. Practically, a child under age 18 must have an IQ $\leq$ 75 and deficits in at least 2 of the adaptive behavior domains indicated in the definition to obtain a diagnosis of mental retardation.

Educational Classifications. While the medical and psychosocial communities were developing an acceptable definition and classification system, the educational community adopted their own system of classification. Their three level system separated school age children with mental retardation into three groups based on predicted ability to learn (Kirk, Karnes, & Kirk, 1955). Children who were *educable* could learn simple academic skills but not progress above fourth grade level. Children who were believed to be *trainable* could learn to care for their daily needs but very few academic skills. Children who appeared to be *untrainable* or totally

dependent were considered in need of long term care, possibly in a residential setting. Some form of this scheme is still in use today in many school systems across the country.

DSM-IV attempts to blend the 1977 and 1992 definitions put forth by the American Association on Mental Retardation. It adopts the 1992 definition, but retains the severity level classification scheme from the 1977 definition. The upper IQ limit is 70, and an individual must have delays in at least two of the 10 areas outlined in the 1992 definition. In general, the overview of mental retardation in DSM-IV is thorough and easy to follow. However, it should be noted that comprehensive cognitive and adaptive skill assessment is necessary to make the diagnosis; it should not be made on the basis of an office visit or developmental screening.

ICD-10 is the tenth revision of the International Classification of Diseases (World Health Organization, 1993). It is currently in use in some countries around the world but will not be adopted for use in the United States until after the year 2000. ICD-10 differs from ICD-9 in at least two key ways. First, it includes more diagnoses and is, consequently, much larger. The second major change is the coding scheme. The diagnostic codes have been changed from numeric codes to codes that begin with an alphabet letter and are followed by two or more numbers (e.g., mild mental retardation has changed from 317 to F70).

ICD-10 characterizes mental retardation as a condition resulting from a failure of the mind to develop completely. Unlike DSM-IV and the Classification Manual of the AAMR, ICD-10 suggests that cognitive, language, motor, social, and other adaptive behavior skills should all be used to determine the level of intellectual impairment. ICD-10 also supports the idea of dual diagnosis, suggesting that mental retardation may be accompanied by physical or other mental disorders.

Four levels of mental retardation are specified in ICD-10: F70 mild (IQ 50 - 69), F71 moderate (IQ 35 - 49), F72 severe (IQ 20 - 34), and F73 profound (IQ below 20). IQ should not be used as the only determining factor. Clinical findings and adaptive behavior should also be used to determine level of intellectual functioning. Two additional classifications are possible: F78 other mental retardation

and F79 unspecified mental retardation. Other mental retardation (F78) should be used when associated physical or sensory impairments make it difficult to establish the degree of impairment. Unspecified mental retardation (F79) should be used when there is evidence of mental retardation but not enough information to establish a level of functioning (e.g., a toddler with significant delays in development who is too young to be assessed with an IQ measure).

Epidemiology

Over the past 50 years the prevalence and incidence of mental retardation have been affected by changes in the definition of mental retardation, improvements in medical care and technology, societal attitudes regarding the acceptance and treatment of an individual with mental retardation, and the expansion of educational services to children with disabilities from birth through age 21. The theoretical approach to determining the prevalence of mental retardation uses the normal bell curve to estimate the number of individuals whose IQ falls below the established criterion score. For example, 2.3% of the population of the United States has an IQ score below 70, and 5.5% has an IQ score below 75. However, this estimate does not account for adaptive behavior skills. Based on empirical sampling, Baroff (1991) suggested that only 0.9% of the population can be assumed to have mental retardation. Following a review of the most recent epidemiological studies, McLaren and Bryson (1987) reported that the prevalence of mental retardation was approximately 1.25% based on total population screening. When school age children are the source of prevalence statistics, individual states report rates from 0.3% to 2.5% depending on the criteria used to determine eligibility for special educational services, the labels assigned during the eligibility process (e.g., developmental delay, learning disability, autism, and/or mental retardation), and the environmental and economic conditions within the state (U.S. Department of Education, 1994). It is estimated that approximately 89% of these children have mild mental retardation, 7% have moderate mental retardation, and 4% have severe to profound mental retardation. In addition, McLaren and Bryson (1987) report that the prevalence of mental retardation appears to increase with age up to about the age of 20, with significantly more males than females identified.

Etiology. There are several hundred disorders associated with mental retardation. Many of these disorders play a causal role in mental retardation. However, most of the causal relationships must be inferred (McLaren & Bryson, 1987). The American Association on Mental Retardation subdivides the disorders that may be associated with mental retardation into three general areas: prenatal causes, perinatal causes, and postnatal causes. For a complete listing of these disorders, the reader is referred to *Mental retardation: Definition, classification, and systems of support* (AAMR, 1992). It should be noted that some causes can be determined much more reliably than others. For example, chromosomal abnormalities such as Down syndrome can be assumed to be causal with more certainty than some postnatal infections. It should also be noted that mental retardation is both a symptom of other disorders as well as a unique syndrome or disorder.

Causes associated with level of mental retardation. The most common factor associated with severe mental retardation (including the moderate, severe, and profound levels of mental retardation) has been chromosomal abnormality, particularly Down syndrome (McLaren & Bryson, 1987). In approximately 20 to 30% of the individuals identified with severe mental retardation the cause has been attributed to prenatal factors, such as chromosomal abnormality. Perinatal factors such as perinatal hypoxia account for about 11%, and postnatal factors such as brain trauma account for 3 to 12% of severe mental retardation. In 30 to 40% of cases, the cause is reported to be unknown.

The etiology of mild mental retardation is much less delineated. Between 45 and 63% of the cases are attributed to unknown etiology. Fewer cases of prenatal and perinatal causes are reported, with the largest number attributed to multiple factors (prenatal) and hypoxia (perinatal). Very few postnatal causes have been linked to mild mental retardation (McLaren & Bryson, 1987).

Associated disorders. A variety of disorders are associated with mental retardation. These include: epilepsy, cerebral palsy, vision and hearing impairments, speech/language problems, and behavior problems (McLaren & Bryson, 1987). The number of associated

disorders appears to increase with the level of severity of mental retardation (Baird & Sadovnick, 1985).

Psychopathology

Studies estimating the prevalence of mental health disorders among individuals with mental retardation suggest that between 10 and 40% meet the criteria for a dual diagnosis of mental retardation and a mental health disorder (Reiss, 1990). The range in prevalence rates appears to be due to varying types of population sampling. When case file surveys are conducted, the prevalence rates are consistently around 10%. The use of psychopathology rating scales in institutional or clinic samples produces the much higher 40% prevalence rate (Reiss, 1990). The actual prevalence may lie somewhere in between these two estimates. This may be the case due to the tendency of mental health professionals to consider behavior disorders in individuals with mental retardation as a symptom of their delayed development. Nevertheless, individuals with mental retardation appear to display the full range of psychopathology evidenced in the general population (Jacobson, 1990; Reiss, 1990). Individuals with mild cognitive limitations are more likely to be given a dual diagnosis than children with more significant disabilities (Borthwick-Duffy & Eyman, 1990).

Assessment

Assessment of a child suspected of having a developmental disability, such as mental retardation, may establish whether a diagnosis of mental retardation or some other developmental disability is warranted, assessing eligibility for special educational services, and/or aid in determining the educational or psychological services needed by the child and family. At a minimum, the assessment process should include an evaluation of the child's cognitive and adaptive or everyday functioning including behavioral concerns, where appropriate, and an evaluation of the family, home, and/or classroom to establish goals, resources, and priorities.

Globally defined, child assessment is the systematic use of direct as well as indirect procedures to document the characteristics and resources of an individual child (Simeonsson & Bailey, 1992). The process may be comprised of various procedures and instruments resulting in the confirmation of a diagnosis, documentation of

developmental status, and the prescription of intervention/treatment (Simeonsson & Bailey, 1992).

A variety of assessment instruments have been criticized for insensitivity to cultural differences resulting in misdiagnosis or mislabeling. However, assessments have many valid uses. They allow for the measurement of change and the evaluation of program effectiveness and provide a standard for evaluating how well all children have learned the basic cognitive and academic skills necessary for survival in our culture. Given that the use of existing standardized instruments to obtain developmental information as part of the assessment process may bring about certain challenges, there does not appear to be a reasonable alternative (Sattler, 1992). Thus, it becomes necessary to understand assessment and its purpose so that the tools which are available can be used correctly, and the results can be interpreted in a valid way.

The four components of assessment (Sattler, 1992), norm-referenced tests, interviews, observations, and informal assessment, complement each other and form a firm foundation for making decisions about children. The use of more than one assessment procedure provides a wealth of information about the child permitting the evaluation of the biological, cognitive, social and interpersonal variables that affect the child's current behavior. In the diagnostic assessment of children, it is also important to obtain information from parents and other significant individuals in the child's environment. For school-age children, teachers are an important additional source of information. Certainly, major discrepancies among the findings obtained from the various assessment procedures must be resolved before any diagnostic decisions or recommendations are made. For example, if the intelligence test results indicate that the child is currently functioning in the mentally retarded range, while the interview findings and adaptive behavior results suggest functioning in a average range, it would become necessary to reconcile these disparate findings before making a diagnosis.

Developmental Delay or Mental Retardation

In diagnosing infants or preschoolers, it is important to distinguish between mental retardation and developmental delay. A diagnosis of mental retardation is only appropriate when cognitive ability and

adaptive behavior are significantly below average functioning. In the absence of clear-cut evidence of mental retardation, it is more appropriate to use a diagnosis of developmental delay. This acknowledges a cognitive or behavioral deficit, but leaves room for it to be transitory or of ambiguous origin (Sattler, 1992). In practice, children under the age of 2 should not be given a diagnosis of mental retardation unless the deficits are relatively severe and/or the child has a condition that is highly correlated with mental retardation (e.g., Down syndrome).

Cognitive/Developmental Assessment Tools

Bayley Scales of Infant Development - Second Edition (Bayley, 1993): The Bayley Scales is an individually administered instrument for assessing the development of infants and very young children. It is appropriate for children from 2 months to 3½ years. It is comprised of three scales, the Mental Scale, the Motor Scale, and the Behavior Rating Scale. The Mental Scale assesses the following areas: recognition memory, object permanence, shape discrimination, sustained attention, purposeful manipulation of objects, imitation (vocal/verbal and gestural), verbal comprehension, vocalization, early language skills, short-term memory, problem-solving, numbers, counting, and expressive vocabulary. The Motor Scale addresses the areas of gross and fine motor abilities in a relatively traditional manner. The Behavior Rating Scale is used to rate the child's behavioral and emotional status during the assessment. Performance on the Mental and Motor Scales is interpreted through the use of standard scores (mean = 100; standard deviation = 15). The Behavior Rating Scale is interpreted by the use of percentile ranks. The Bayley Scales were standardized using a stratified sample of 1,700 infants and toddlers across 17 age groupings closely approximating the U.S. Census Data from 1988. The manual includes validity studies and case examples. The Bayley Scales is one of the most popular infant assessment tools. It can also be used to obtain the developmental status of children older than 3 ½ who have very significant delays in development and cannot be evaluated using more age-appropriate cognitive measures (e.g., a 6 year old with a developmental level of 2 years).

The Differential Ability Scales (DAS) (Elliott, 1990): The DAS consists of a battery of individually administered cognitive and

achievement tests subdivided into three age brackets: lower preschool (2 ½ years to 3 years, 5 months), upper preschool (3 ½ years to 5 years, 11 months), and school age (6 years to 17 years, 11 months). The cognitive battery focuses on reasoning and conceptual abilities and provides a composite standard score, the *General Conceptual Ability* (GCA) score. Verbal and Nonverbal cluster standard scores and individual subtest standard scores are also available. The DAS has several advantages over other similar measures. It has a built-in mechanism for assessing significantly delayed children who are over the age of 3 ½ years. It can also provide information comparable to other similar instruments in about half the time. Finally, it is very well standardized and correlates highly with other cognitive measures (i.e., the Wechsler Scales).

Wechsler Preschool and Primary Scale of Intelligence-Revised (WPPSI-R) (Wechsler, 1989): The WPPSI-R can be utilized for children ranging in age from 3 years to 7 years, 3 months. Though separate and distinct from the WISC-III (discussed below), it is similar in form and content. The WPPSI-R is considered a downward extension of the WISC-III. These two tests overlap between the ages of 6 and 7 years, 3 months. The WPPSI-R has a mean of 100 and standard deviation of 15, with scaled scores for each subtest having a mean of 10 and a standard deviation of 3. It contains 12 subtests organized into one of two major areas: the Verbal Scale includes Information, Similarities, Arithmetic, Vocabulary, Comprehension, and Sentences (optional) subtests; the Performance Scale includes Picture Completion, Geometric Design, Block Design, Mazes, Object Assembly, and Animal Pegs (optional) subtests. The WPPSI contains 9 subtests similar to those included in the WISC-III (Information, Vocabulary, Arithmetic, Similarities, Comprehension, Picture Completion, Mazes, Block Design, and Object Assembly) and 3 unique subtests (Sentences, Animal Pegs, and Geometric Design). Three separate IQ scores can be obtained: Verbal Scale IQ, Performance Scale IQ, and Full Scale IQ. The WPPSI-R was standardized on 1,700 children equally divided by gender and stratified to match the 1986 U.S. census data. This instrument cannot be used with severely disabled children (IQ's below 40) and, with younger children, may need to be administered over two sessions due to the length of time required to complete the assessment.

Wechsler Intelligence Scale for Children-III (WISC-III) (Wechsler, 1991): The WISC-III can be utilized for children ranging in age from 6 years through 16 years of age. It is the middle childhood to middle adolescence version of the Wechsler Scale series. It contains 13 subtests organized into two major areas: the Verbal Scale includes Information, Similarities, Arithmetic, Vocabulary, Comprehension, and Digit Span (optional) subtests; the Performance Scale includes Picture Completion, Picture Arrangement, Block Design, Object Assembly, Coding, and the optional subtests of Mazes, and Symbol Search. Three separate IQ scores can be obtained: Verbal Scale IQ, Performance Scale IQ, and Full Scale IQ. Each of these separate IQ's are standard scores with a mean of 100 and a standard deviation of 15, with scaled scores for each subtest having a mean of 10 and a standard deviation of 3. The WISC-III was standardized on a sample of 2,200 American children selected as representative of the population on the basis of 1988 U.S. census data.

Wechsler Adult Intelligence Scale - Revised (WAIS-R) (Wechsler, 1981): The WAIS-R covers an age range of 16 years, 0 months to 74 years, 11 months. The revised version contains about 80% of the original WAIS and was modified mainly due to cultural considerations. There are 11 subtests: Verbal Scale - Information, Similarities, Arithmetic, Vocabulary, Comprehension, and Digit Span; Performance Scale - Picture Completion, Picture Arrangement, Block Design, Object Assembly, and Digit Symbol. The WAIS-R was standardized in the 1970's on a sample of 1,880 white and non-white Americans equally divided among gender. The WAIS-R has a mean of 100 and a standard deviation of 15 with the scaled scores for each subtest having a mean of 10 and a standard deviation of 3.

Stanford-Binet:Fourth Edition (SB: FE) (Thorndike, Hagen, & Sattler, 1986): The SB: FE is appropriate for use on individuals ranging in age from 2 to 23. It is comprised of 15 subtests, though only 6 (Vocabulary, Comprehension, Pattern Analysis, Quantitative, Bead Memory, and Memory for Sentences) are used in all age groups. The other 9 subtests (Picture Absurdities, Paper Folding and Cutting, Copying, Repeating Digits, Similarities, Form-Board Items, Memory for Objects, Number Series, and Equation Building) are administered on the basis of age. Unlike

previous editions, the SB: FE uses a point scale similar to that of the Wechsler Scales, is more culturally sensitive, and includes some new items in the areas of memory for objects, number series, and equation building.

Once administered, the SB: FE yields three types of scores: age scores (or scaled scores), area scores (general intelligence, crystallized intelligence and short-term memory, specific factors, and specific factors plus short-term memory), and a Composite Score (similar to the Full-Scale IQ of the Wechsler). The SB: FE Composite Score has a mean of 100 and a standard deviation of 16 (unlike the Wechsler's standard deviation of 15).

Overlap between the WISC-III and the Stanford-Binet:Fourth Edition: The WISC-III is appropriate between the ages of 6-16, while the Stanford-Binet: Fourth Edition is appropriate between the ages of 2 and 23. While the child is between 6 and 16, either test is appropriate. Correlations range from .66 to .83 between the WISC-R Full Scale IQ and the Fourth Edition composite. Results from Thorndike, Hagen, and Sattler (1986) show that while the two tests yield approximately equal scores, they are not interchangeable. This is partly due to the fact that they operate on different standard deviations (Sattler, 1992).

Overlap between the WAIS-R and the Stanford-Binet:Fourth Edition: Results for individuals with and without mental retardation are similar in that the WAIS-R yields higher scores than the Stanford-Binet Fourth Edition.

Special Note: Assessment Tools for Individuals with Mental Retardation. The Stanford-Binet: Fourth Edition and the Wechsler Scales are useful instruments in assessing mild mental retardation; however, neither is designed to test individuals with severe/profound mental retardation. In addition, due to the high floor on the Wechsler Scales the publisher recommends that a child obtain raw score credit in at least 3 subtests of the Verbal Scale and the Performance Scale before assuming they provide useful information. Raw score for 6 subtests, 3 Verbal and 3 Performance are recommended for a valid Full Scale IQ.

McCarthy Scales of Children's Abilities (McCarthy, 1972): The McCarthy Scales can be used with children between the ages of 2

½ years and 8 ½ years. It contains six scales: Verbal Scale, Perceptual-Performance Scale, Quantitative Scale, Memory Scale, Motor Scale, and General Cognitive Scale. In addition to yielding a General Cognitive Index (GCI), the McCarthy Scales provide several ability profiles (verbal, non-verbal reasoning, number aptitude, short-term memory, and coordination). The overall GCI has a mean of 100 and a standard deviation of 16 and is an estimate of the child's ability to apply accumulated knowledge to the tasks in the scales. The ability profiles, in particular, make the McCarthy Scales useful for assessing young children with learning problems. The GCI is not interchangeable with the IQ score rendered by the Wechsler Scales; therefore, caution is advised in making placement decisions based on the GCI, especially in the case of children with mental retardation (Sattler, 1992).

Assessing Adaptive Behavior

Adaptive behavior is an important and necessary part of the definition and diagnosis of mental retardation. It is the ability to perform daily activities required for personal and social sufficiency (Sattler, 1992). Assessment of adaptive behavior focuses on how well individuals can function and maintain themselves independently and how well they meet the personal and social demands imposed on them by their cultures. There are more than 200 adaptive behavior measures and scales. The most common scale is the Vineland Adaptive Behavior Scales (Sparrow, Balla, & Cicchetti, 1984).

Vineland Adaptive Behavior Scales (VABS) (Sparrow, Balla, & Cicchetti, 1984): The VABS is a revision of the Vineland Social Maturity Scale (Doll, 1953) and assesses the social competence of individuals with and without disabilities from birth to age 19. It is an indirect assessment in that the respondent is not the individual in question but someone familiar with the individual's behavior. The VABS measures four domains: Communication, Daily Living Skills, Socialization, and Motor Skills. An Adaptive Behavior Composite is a combination of the scores from the four domains. A Maladaptive Behavior domain is also available with two of the three forms of administration. Each of the domains and the Composite has a mean of 100 and a standard deviation of 15. Three types of administration are available: the Survey Form (297 items), the Expanded Form (577 items, 297 of which are from the Survey Form), and the Classroom Edition (244 items for children age 3-

13). The Survey and Expanded Forms were standardized on a representative sample of the 1980 U.S. census data including 3,000 individuals ranging in age from newborn to 18 years, 11 months. There are norms for individuals with mental retardation, children with behavior disorders, and individuals with physical handicaps. The Classroom Edition was standardized on a representative sample of the 1980 U.S. census data including 3,0000 students, ages 3 to 12 years, 11 months. Caution is advised when using this scale with children under the age of two because children with more significant delays frequently attain standard scores that appear to be in the low average range of ability. In this case more weight should be placed on the age equivalents that can be derived.

The American Association on Mental Retardation (AMMR) Adaptive Behavior Scale (ABS): The ABS has two forms which address survival skills and maladaptive behaviors in individuals living in residential and community settings (ABS-RC:2; Nihira, Leland, & Lambert, 1993) or school age children (ABS-S:2; Lamber, Nahira, & Leland, 1993). It is limited in scope and should be used with caution. A new scoring method has recently been devised that can generate scores consistent with the 10 adaptive behavior areas suggested in the 1992 definition of mental retardation (Bryant, Taylor, & Pedrotty-Rivera, 1996). The results of this assessment can be readily translated into objectives for intervention.

Achievement Tests

Intelligence tests are broader than achievement tests and sample from a wider range of experiences, but both measure aptitude, learning, and achievement, to some degree (Sattler, 1992). Achievement tests (such as reading and mathematics) are heavily dependent on formal learning, are more culturally bound, and tend to sample more specific skills than do intelligence tests. Intelligence tests measure one's ability to apply information in new and different ways, whereas achievement tests measure mastery of factual information (Sattler, 1992). Intelligence tests are better predictors of scholastic achievement contributing to the decision-making processes in schools and clinics, and they are a better predictor of educability and trainability than other achievement tests because they sample the reasoning capacities developed outside school which should also be applied in school.

To determine if learning potential is being fully realized, results from an IQ test and standardized tests of academic achievement can be compared. If there is a significant difference between IQ and achievement, the child may benefit from special assistance in the academic area identified.

Achievement Assessment Tools that can be used with children with mild learning disorders.

Woodcock-Johnson Psycho-Educational Battery - Revised (Woodcock & Johnson, 1990): The Woodcock-Johnson is comprised of 35 tests assessing cognitive ability (vocabulary, memory, concept formation, spacial relations, and quantitative concepts) and achievement (reading, spelling, math, capitalization, punctuation, and knowledge of science, humanities, and social studies). Though the test batteries can be used with individuals from age 2 through adulthood, not all tests are administered at every age. The Cognitive Ability Battery and the Achievement Battery each have recommended standard and supplemental batteries. The Achievement Battery can be used with preschool children (4 or 5 year olds) through adults. They each provide scores which can be converted into standard scores with a mean of 100 and a standard deviation of 15. By comparing the Tests of Cognitive Ability and the Tests of Achievement, the Woodcock-Johnson allows for the assessment of an Aptitude/ achievement discrepancy. The discrepancy reflects disparity between cognitive and achievement capabilities. The Woodcock-Johnson was standardized on a representative sample of 6,359 individuals ranging in age from 2 to 95 from communities throughout the United States.

The Wide Range Achievement Test - Revised (WRAT-R) (Jastak & Wilkinson, 1984): The WRAT-R is a brief achievement test and contains three subtests: Reading, Spelling, Arithmetic. The WRAT-R is divided into two levels: Level One (ages 5 years, 0 months to 11 years, 11 months), and Level Two (ages 12 years, 0 months to 74 years, 11 months). The WRAT-R has a mean of 100 and a standard deviation of 15. It also provides *T* scores, scaled scores, grade-equivalent scores, and percentile ranks. It was

standardized on a sample of 5,600 individuals in 28 age groups (5-74 years).

A variety of other achievement tests are available for assessing academic performance. These include, but are not limited to, the Kaufman Test of Educational Achievement (Kaufman & Kaufman, 1985) and the Wechsler Individual Achievement Test (1992).

Other Assessment Tools

Peabody Picture Vocabulary Test - Revised (PPVT-R) (Dunn & Dunn, 1981): The PPVT-R is appropriate for individuals between the ages of 2½ and adulthood and measures receptive knowledge of vocabulary. It is a multiple choice test requiring only a pointing response and no reading ability, thus making it useful for hearing individuals with a wide range of abilities, particularly children with language based disabilities. The revised edition is more sensitive to gender-based stereotypes and cultural issues; in fact only 37% of the original items were retained. The PPVT-R has two forms, L and M, with 175 plates in each form in ascending order of difficulty. Each plate consists of four clearly drawn pictures, one of which is the correct response to the word given by the experimenter. Standard scores have a mean of 100 with a standard deviation of 15. The PPVT-R was standardized on a national sample of 4,200 children (2½ - 18) and 828 adults (19 - 40) equally divided among gender and based on 1970 U.S. census data. The PPVT-R was designed to assess breadth of receptive vocabulary and not as a screening tool for measuring intellectual level of functioning. PPVT-R scores are not interchangeable with IQ scores obtained via the Stanford-Binet: Fourth Edition or the Wechsler Tests.

Columbia Mental Maturity Scale: The Columbia Mental Maturity Scale (Burgemeister, Blum, & Lorge, 1972) is a test of general reasoning ability that can be used with children who have significant physical limitations. It is appropriate for children between the ages of 3 ½ years and 9 years, 11 months. The Columbia has a mean of 100, a standard deviation of 16, and can be interpreted using age equivalents. When used in conjunction with the Peabody Picture Vocabulary Test - Revised, it can provide reasonably accurate cognitive status information comparable to the more common intelligence tests.

Leiter International Performance Scale: The Leiter International Performance Scale (Leiter, 1948) is a nonverbal assessment of intelligence. Although the norms are dated, it provides useful information about the cognitive status of children with hearing impairments or severe language disabilities. It can be used with children aged 2 through adults. It is currently under revision and will likely be a useful tool in the future (Roid & Miller, 1997).

For a description of a wide range of other specialty tests, the reader is referred to the *Assessment of Children* by Jerome Sattler (1992).

Dual Diagnosis

Appropriate assessment of psychopathology in people with dual diagnosis is important because: a) it can suggest the form of treatment; b) it may ensure access to and funding for special services; and c) it can be used to evaluate subsequent interventions (Sturmey, 1995). Brain damage, epilepsy and language disorders are risk factors for psychiatric disorders and are often associated with mental retardation (Rutter, Tizard, Graham, & Whitmore, 1976; Sturmey, 1995). Social isolation, stigmatization, and poor social skills put individuals with mental retardation at further risk for affective disorders (Reiss & Benson, 1985). The relationship between emotional disorders and mental retardation has been noted by many researchers (Bregman, 1991; Menolascino, 1977; Reiss, 1982). Rates of emotional disorders are more prevalent in children with mental retardation than children without mental retardation (Bregman, 1988; Lewis & MacLean, 1982; Matson, 1982, Russell, 1985). As noted previously, epidemiological studies of psychiatric disorders in individuals with mental retardation show that this population experiences higher rates of psychopathology (Corbett, 1985; Gostason, 1985). Though children with mental retardation are diagnosed with psychiatric disorders more often than children without mental retardation, they are usually diagnosed with the same types of disorders. However, uncommon psychiatric disorders may be found in children with severe and profound levels of mental retardation (Batshaw & Perret, 1992).

An additional problem is the application of DSM-IV criteria to individuals with mental retardation. Though the DSM has proven useful in diagnosing individuals with mild or moderate mental

retardation (especially when the criterion are modified in some way, leading to problems in clearly operationalized definitions), many psychologists and psychiatrists rely more on biological markers, observable signs, and patterns of family psychopathology to diagnose individuals with severe and profound mental retardation thus implying that the DSM may not be as useful with this population (Sturmey, 1995). The mismatch between behaviors scripted in the DSM-IV and psychopathology presented in individuals with mental retardation can lead to under diagnosing of these individuals (Sturmey, 1995). Because the DSM is so widely used by psychiatrists, psychologists, health insurance companies, and because of the way it is coordinated with the International Classification of Diseases (ICD), it will continue to be the main diagnostic source. Practitioners should take care not to modify the DSM criteria for their own use and instead should use the criteria as they are prescribed and document cases where the criteria are inadequate to make a comprehensive diagnosis (Sturmey, 1995).

Most psychologists in the mental health field have little exposure to individuals with mental retardation and are sometimes uncomfortable treating these individuals; in fact, many professionals seem unaware that this group can experience mental health problems (Reiss & Szyszko, 1983). Mental health and mental retardation systems have been separated in this country for many years making it difficult to administratively serve people with both mental retardation and mental health disorders (Matson & Sevin, 1994). Recently, there has been a heightened awareness of need to pursue behavioral-psychiatric assessment, diagnosis, and treatment of people with mental retardation and mental health problems (Bregman, 1991; Eaton & Menolascino, 1982; Reiss, 1990).

A variety of behavioral assessment tools are available and provide key information for practioners in this area. A few of the commonly used measures or checklists include: the Child Behavior Checklist (Achenbach & Edelbrock, 1986), the Conners Parent (or Teacher) Rating Scale (Conners, 1990), the Revised Behavior Problem Checklist (Quay & Peterson, 1987), and the Social Skills Rating System (Gresham & Elliott, 1990). These measures are only as reliable as the parent, guardian, or teacher completing them. However, they can provide useful information about the nature of

the behavioral problems or competencies of the child. All of the scales noted above focus primarily on behavioral difficulties with the exception of the Social Skills Rating System which includes items that address prosocial behaviors.

Interdisciplinary Approach

Because children with mental retardation often have other problems, it is necessary to involve a team of practitioners from different areas (e.g., child psychiatrist, social worker, child psychologist, special education teacher, speech and language specialist, and community agencies), in the comprehensive diagnosis. This type of interdisciplinary team approach is relatively new but is considered to be imperative for comprehensive assessment, treatment, and management of children with mental retardation (Lubetsky, Mueller, Madden, Walker, & Len, 1995). A natural extension of the interdisciplinary approach is the involvement of the family in the decision-making process. In fact, recent government and educational initiatives such as Public Law 99-457 and Public Law 102-119 *require* the involvement of parents and professionals in early intervention services (Lubetsky et al, 1995). A family-centered interdisciplinary approach begins with an assessment of the child (including school history, obtained from parents and school records), family (family marital and parenting history), and community resources. Medical, developmental and psychiatric histories are obtained. Behavioral analysis, psychoeducational, speech and language testing are completed. Medical and neurological assessments are performed. The team presents these results to the parents who are actively involved in evaluating and implementing treatment recommendations (Lubetsky, et al, 1995).

Intervention

Psychoeducational Intervention

As a result of federal legislation developed with the aid and encouragement of a number of advocacy groups (i.e., the Individuals with Disabilities Education Act; Public Law 94-142, Public Law 99-457, and Public Law 102-119), children and adolescents with mental retardation or related developmental disorders are entitled to free and appropriate intervention. Appropriate intervention should be based on the needs of the child

as determined by a team of professionals, address the priorities and concerns of the family, and be provided in the least restrictive most inclusive setting (i.e., where they have every opportunity to benefit from interacting with non-disabled peers and the community resources available to all other children).

Infant/Toddler Services

Services to infants and toddlers can be home-based, center-based, or some combination of the two. The nature of the services should be determined based on the results of the child assessment and family priorities for the child. These should be used to develop an Individual Family Service Plan for the child which includes all parties participating in the intervention and is coordinated by a Services Coordinator (case manager) who is available and acceptable to the family. The services may include assistive technology, intervention for sensory impairments, family counseling, parent training, health services, language services, nursing intervention, nutrition counseling, occupational therapy, physical therapy, case management, and transportation to services.

Preschool and School Services

Services to preschool children, ages 3 through 5, and school-aged children, 6 through 21, can be home-based, but are more frequently center-based. As in the case of infants and toddlers, a team evaluation and parent input is used to develop an intervention plan. This plan, the Individualized Education Plan (IEP), details the objectives for improving the child's skills and may include family or parent focused activities. Services may include special education provided by a certified teacher and focused on the needs of the child, child counseling, occupational therapy, physical therapy, language therapy, recreational activities, school health services, transportation services, and parent training or counseling. These services should be provided in the most inclusive least restrictive setting (e.g., a regular preschool program, Headstart Center, child's home).

Social/Interpersonal Intervention

Social and interpersonal interventions can be both preventative and therapeutic. As noted above, children with mental retardation are at an increased risk for behavioral disorders. Therefore, a variety of group social and recreational activities should be included in the

child's educational program. These activities should include nondisabled peers and may include participation at birthday parties, attending recreational activities such as ball games and movies, participating in youth sports activities, and visiting community sites such as the zoo. The goal of these activities should be to teach appropriate social skills relevant to group participation and building self-esteem.

Parents also may benefit from prevention activities. Respite care provided by trained individuals can afford parents the opportunity to address their own needs (e.g., personal time, medical appointments, socializing with peers, etc.). They can be much more effective in parenting when their own needs have been met. Social or parent support groups can also be an outlet for parents to discuss their feelings with individuals who have similar experiences. These groups may be syndrome specific (e.g., Parent Advocates for Down Syndrome) or more generic in nature.

Therapeutic interventions with the children and families may include family therapy, individual child behavior therapy, parent training, and group therapy with mildly mentally disabled children and adolescents focusing on developing appropriate social skills. Child behavioral interventions can be used to teach self-care, vocational, leisure, interpersonal, and survival skills (e.g., finding a public restroom). Disruptive behaviors such as tantrumming, self-injury, noncompliance, and aggression toward others can also be addressed through behavioral techniques. The most frequent form of behavioral intervention for problematic behavior involves differential reinforcement of incompatible and/or other behaviors (Batshaw & Perret, 1992).

Psychopharmacological Intervention

Treatment specifying the use of medication should only be considered when a particular psychiatric condition know to benefit from a particular drug coexists with the mental retardation or developmental disability. This may take the form of a severe depression, obsessive-compulsive disorder, attention deficit-hyperactivity disorder, or a variety of other psychiatric disorders. There are few well controlled studies of drug treatments with children who have mental retardation. It should also be noted that the use of medication as a form of chemical restraint should be

avoided. In addition, when drug treatment is used, it should only be one component of an overall treatment approach (Batshaw & Perret, 1992).

An invaluable resource in evaluating and treating children with mental retardation is the child's family. Consequently, including the families of children with or at-risk for disabilities in every phase of intervention, from identification to planning to implementation through monitoring should be considered. However, including families in decisions about the treatment or management of their children's problems presents new challenges. Nevertheless, trying to understand and include families in the decision-making process can ultimately be rewarding and beneficial for all involved.

Level of Family Involvement

How and when should families be included in decision making? There is no standard formula for answering this question. Families, like individuals, vary tremendously. Nevertheless, there are some issues that must be considered when involving families in team decisions about their child with a disability. First, the team must be receptive to including families in the decision-making process. This involves some effort on the part of the non-family team members to encourage family participation. In addition, the team must decide what child and family concerns are related to enhancing the development of the child. These should be the focus of generating family-oriented service delivery alternatives.

Second, the team must consider the level of knowledge and understanding of the family related to the disability of the child and/or the service/treatment options. If families are to participate in the decision-making process they must have the knowledge necessary to select appropriate alternatives. It is unfair to assume that families will not understand or cannot make appropriate decisions about the care of their child. They are the consumers and need to be given the chance to make an informed choice.

Finally, once the family has an adequate understanding of the condition and service/treatment alternatives, they may need to be nurtured through the team decision-making process. Most families have never been faced with participating as a member of a team of

professionals and may initially be reticent or nonparticipatory in discussions unless they are specifically invited to do so. Certainly, as a primary care provider the parent or family member has more at stake than the other team members. Over time, however, the cautious or reticent family member may become an active and vital team member.

Encouraging Parent Participation: Health and education professionals who participate as team members must actively pursue parent-professional partnerships in the decision-making process. The logical first step is to acknowledge the value of the parent-professional relationship. Parents should be viewed as equal partners who can make important and necessary contributions in the planning, decision-making, process. If professionals are reluctant to or refuse to acknowledge parents as partners in the process, they run the risk of alienating them are resulting in a lack of interest or participation in necessary services. Once the non-family team members accept the parents or other relevant family members as equal partners in the planning process, strategies to encourage continued active participation should be developed and implemented.

Disease

Popularly disease is known as sickness, illness or loss of health. Disease means an impairment of health or a condition of abnormal functioning of the mind and body. A disease is any abnormal condition of the body or mind that causes discomfort, dysfunction, or distress to the person affected or those in contact with the person. Sometimes the term is used broadly to include injuries, disabilities, syndromes, symptoms, deviant behaviors, and atypical variations of structure and function, while in other contexts these may be considered distinguishable categories.

The word Disease comes from the words *Lack of ease*; which means deviation from normal. Disease is also known as any abnormality of bodily structure or function, other than those arising directly from injury. Literally, dis-ease, lack of ease; pathological condition that presents a group of symptoms peculiar to it and which establishes the condition as an abnormal entity different from other normal or pathological body states.

Disease is a condition of the body in which there is incorrect function due to heredity, infection, diet, or environment.

In disease an abnormal condition of body structure and function takes place, usually indicated by symptoms. During disease a harmful deviation from the normal functioning of physiological and biochemical processes inside the body are usually caused by *viruses, bacteria* and *parasites*.

Virus

The word virus comes from the Latin word for a "slimy liquid" or "poison." A virus is an infectious agent of small size and single composition that can multiply only in the living cells of animals, plants, or bacteria.

Virus is a tiny organism that multiples within cells and causes disease such as chickenpox, measles, mumps, rubella, pertussis and hepatitis. Viruses are not affected by antibiotics, the drugs used to kill bacteria. These are microorganisms composed of a piece of genetic material (RNA or DNA) surrounded by a protein coat. To

replicate, a virus must infect a cell and direct its cellular machinery to produce new viruses.

Virus, a non-cellular biological entity that can reproduce only within a host cell. Viruses consist of nucleic acid covered by protein; some animal viruses are also surrounded by membrane. Inside the infected cell, the virus uses the synthetic capability of the host to produce progeny virus. Virus, the simple sub-microscopic infectious agent that often causes diseases in plants, animals and bacteria. They are unable to replicate without a host cell. Viruses can reproduce only in living cells.

Bacteria

Bacteria are single-celled organisms that live in and around us. Bacteria may be helpful, but in certain conditions may cause illnesses such as strep throat, most ear infections, and bacterial pneumonia. These are very small, single-celled life-forms that can reproduce quickly. Bacteria are group of universally distributed, rigid, essentially unicellular microscopic organisms lacking chlorophyll. Some bacteria can aid in pollution control by consuming or breaking down organic matter in sewage or by similarly acting on oil spills or other water pollutants. Bacteria in soil, water, or air can also cause human, animal, and plant health problems. Some cause infections and disease in animals and humans. The singular of bacteria is bacterium.

Bacteria are very diverse. They can be shaped like spheres, rods or spirals and can be found in virtually any environment. The earliest fossils found on Earth are bacteria, almost 3.3 billion years old. Bacteria are controlled by chlorine, bromine or other sanitizing and disinfecting agents. These are one-celled living organisms, typically about one micron in diameter. Bacteria are among the oldest, simplest, and smallest types of cells. Some bacteria are helpful to humans, such as those that live in our stomach and help with digestion, while some are harmful, releasing toxins or poisonous waste products. Bacteria do not have an organized nucleus, but they do have a cell membrane and protective cell wall. Bacteria can be used to ferment sugars to ethanol.

Parasite

Parasite is an animal or plant that lives in or on a host (another animal or plant). The parasite obtains nourishment from the host without benefiting or killing the host.

A parasite is an organism that lives in or on the living tissue of a host organism at the expense of it. The biological interaction between the host and the parasite is called parasitism. Parasitism is a type of symbiosis, by one definition, although another definition of symbiosis excludes parasitism, since it requires that the host benefit from the interaction as well as the parasite.

A complete parasite gets all of its nutrients from the host organism, but a semi-parasite gets only some of its nutrients from the host. It is a type of predator that kills its prey slowly. A typical parasite will lay its eggs inside the host (prey), thereby ensuring a constant supply of food for the developing larva.

Common Diseases

There are many diseases in Bangladesh which are caused due to virus, bacteria and parasite. Mentally retarded persons are no exception that can escape such diseases. The common diseases of Bangladesh include diarrhea, dysentery, worms' infection, measles, diphtheria, whooping cough, tetanus, pulmonary tuberculosis, polio, asthma, pneumonia, jaundice, typhoid, dyspepsia/ gastritis, malaria, meningitis, rabies, eye infection, peptic ulcer, colds and scabies. Burns and injuries also cause morbidity. Prevalence rate for all diseases other than heart diseases is higher in rural destitute households compared to non-destitute ones.

Sufi (1992) observed that among the above mentioned diseases the following diseases are important biological factors and also seriously affect the behaviour of the mentally retarded persons. The diseases are: influenza, chicken pox, measles, typhoid, pneumonia, meningitis, diarrhea and hepatitis. Brief descriptions of these diseases are given in the following pages.

Influenza

Influenza, commonly known as 'the flu', is a highly contagious viral infection of the respiratory tract. It affects bath sexes and all age groups. But its highest incidence is in children outbreaks tend to occur in the winter and early spring when as many as 40% of children can become infected. Alternative names: Asian flu, Asian flu type A; Asian flu type B; flu; Influenza A: Influenza B

There are three types of influenza virus. All are spread from person to person by inhaling infected droplets from the air. Type A is usually responsible for the large outbreaks and is a constantly changing virus. New strains of type A virus develop regularly and result in a new epidemic every few years. Types B and c are fairly stable viruses. Type B causes smaller outbreaks and type c usually causes mild illness similar to the common cold. : The incidence in seven out of 1000 people.

Symptoms : Fever, Cough with or without mucus, Nasal discharge, Headache, Muscle aches and stiffness, Shortness of breath, Chills, Sweating, Fatigue, Malaise, Stuffy, Congested nose, Sore throat, Clammy skin, Nosebleed Symptom, Nausea & Vomiting, Joint Stiffness, Elbow pain, Loss appetite, Abnormal taste, Dizziness

Duration: After 5 days, fever and other symptoms usually disappear, but a cough and weakness may persist. All symptoms are usually gone within 7 to 14 days.

Incubation: Symptoms usually appear 1 to 4 days after a person is exposed to the flu virus.

Contiguousness: Influenza is spread by virus infected droplets coughed or sneezed into the air. People infected with the flu are contagious as long as they Show symptoms. The flu usually occurs in small outbreaks, but epidemics tend to occur every few years. Epidemics peak within 2 or 3 weeks after the first cases occur and then being to subside.

There have also been pandemics affecting people all over the world, such as the Spanish flu in 1918 which killed 20 millions of young adults the Asian flu in 1957 which killed 70,000 people in

the United States and the Hong Kong flu in 1968 which killed 34,000 people in the United States.

Prevention: Anti influenza vaccines (flu shots) are recommended annually for people who are 65 years of age or older, anyone with chronic heart or lung conditions and those living in institutions. The vaccine has a 60% to 70 success rate in preventing infection. Nasal vaccines have been tested widely and should be available in fall 1999.

For older individuals who have been exposed to the virus the drug amantadine may be given to prevent them from actually getting the flu. This may also be used for treatment. However, amantadine is not considered as substitute for vaccines because it is effective against only type A influenza viruses.

Signs and tests: Nasopharyngeal culture, Influenza fixation, Febrile/ Cold agglutinins, blood differentia

Treatments: The flu rarely requires specific medical treatment. Some children who have chronic medical conditions may become sicker with the flu and may require hospitalization. Flu in a newborn also can be hazardous. For a severely ill child or one with other special circumstances a doctor may prescribe an antiviral medicine such as amantadine or rimantadine, which can ease flu symptoms but only if given within 48 hours of the onset of the flu.

People with the flu should rest in bed. Rest helps the body fight the virus. For the usual case of the flu, there is no specific drug treatment, but a nonaspirin medicine such as acetaminophen can be taken to relieve aches and pains and to reduce fever. Do not give as pirin to your child unless your child's doctor instructs you to do so. Offer your child plenty of fluids (Fever can dehydrate the body).

Chicken pox

A highly contagious, usually mild childhood disease caused by the Herpes virus varicella zoster virus, which also cause herpes zoster (Shingles). Alternative names Varicella.

Causes, incidence and risk factors: Chickenpox is a viral disease characterized by itching (Pruritus) and a a skin rash with fluid blisters that burst and from crusts. The onset of the chickenpox rash may be preceded by a day of mild fever and malaise. The rash begins with a few small reddish bumps (papules) that quickly fill with fluid to form small blisters (vesicles). The vesicles appear in 'Corps' small groupings, first on the trunk then spreading to the extremities face and scalp over a period of two to four days. The rash may spread into the mouth and other internal parts of the body. The vesicles break and a light brown seal or crust forms over the top. This crust gradually darkens to a dark brown before it finally falls off usually within two weeks of the onset of the illness.

Chickenpox seldom causes scarring but when it does the scars most often occur around the eyes and consist of a small depression. Chicken pox lesions can become infected, usually from scratching and most frequently with staphylococcus. These secondary infections may be severe enough to require hospitalization.

Chickenpox is spread from person to person by respiratory droplets or by contact with articles freshly soiled by discharge from the lesions. It is contagious two days before the onset of the rash until six days after the appearance of the first lesions, or until all of the lesions are crusted over. The incubation period is 10 to 21 days. There is universal susceptibility to the virus in those not previously infected. Most children have been infected with the virus by the age of 10. After infection lifelong immunity against recurrent infection is usually present. However a person with a history of chickenpox may develop shingles (herpeszoster) later in life.

Symptoms: Achy and feverish (one day prior to rash), a skin rash or lesion on the chest back, shoulders, scalp, or other areas, lesions on the mouth vagina, rectum, eye or other mucus membranes. The rash changes over several hours to filled blisters. Crusting after the blister breaks occurs two to four days. Crusts become progressively

darker with time Scabs fall off in about nine to 13 days. Itching may be severe.

Prevention: Varieella zoster immune globulin (VZIG) may modify the severity of the disease or prevent the disease if given within 96 hours after exposure to the virus. In general this is reserved for high risk individuals because the disease usually is benign. high risk individuals are those with no past history of chickenpox and who have a condition (such as depressed immune system, chemotherapy, AIDS leukemia lymphoma or organ transplant) and have been exposed to chickenpox.
Varicella vaccine is recommended between the ages of 12 and 18 months (It a teenager is not known to have had chicken pox, then blood can be drawn to see if he or she is susceptible to the disease and if so the vaccine should be administered. Varicella vaccine has become a recommended childhood vaccine.

Sign and tests: The appearance of the rash is sufficient to establish the diagnosis.

Treatment: General measures to relive etching associated with skin lesions include cool water soaks or compresses and bathing with one cup of baking soda added to a bathtub of lukewarm water. Topical Preparations such as nonprescription calamine lotion antihistamines or other lotions containing camphor menthol or phenol may be helpful. Fingerings should be trimmed to prevent searching which may head to a secondary infection. Infant's hands may be covered with a soft Colton or flannel mitten to prevent searching (the hand should never be restrained).

Do not use Aspirin: to reduce fever, use acetaminophen instead of aspirin. Aspirin use during a viral illness, particularly chickenpox, has been associated with a risk of developing Reye's syndrome A sedative given at night may be prescribed for sleep.

The prescription drug acyclovir has been approved by the FAD for use in treating the symptoms of chicken pox in people over 2 years old. Although acyclovir usually is reserved for teenagers because the disease is more severe in that age group. the drug should help reduce the severity of chickenpox symptoms, especially in older children and teenagers if taken within 24 hours of the rash's first

appearance. it may also be prescribed in severe cases or in people who are immunosuppressed. An alternative antiviral agent is vidarabine.

Children should be kept home from school or day care until all of the blisters have broken and scabbed over, and they feel well enough to participate in normal activities.

Prognosis: The out come is expected to be excellent in an uncomplicated c ase. Chickenpox e ncephalitis a r are c omplication of chickenpox generally has a poor outcome.

Complications: Women who acquire chickenpox early in pregnancy are at risk for congenital malformation in the fetus (rare). Newborns are at risk for severe infection if their mothers are not immune. (They are considered one of the high risk groups who should receive VZIG). Secondary infection of blisters (Vesicles) with staphylococcus or streptococcus bacteria may occur. Encephalitis occurs in less than 1 out of 1000 cases and tends to occur late in the disease or one to two weeks after the skin lesions have healed. Reye's syndrome pneumonia and transient arthritis have also been reported as complications of chickenpox. Cerebella ataxia may appear during the convalescent phase or later. Cerebella ataxia is characterized by a very unsteady walk.

Measles

Measles is an acute highly contagious viral disease capable of producing epidemics. Measles is more common in winter and spring.

Causes incidence and risk factors: Measles is caused by the paramyxovirus. It is one of the infection diseases of childhood that causes a skin rash. Other names for it are red measles or seven day measles. The measles virus is in fact, spread principally by small droplets from the nose throat and mouth of some one who is in the early stages of the disease.

Most people have been exposed to the disease 10-12 days before they have any symptoms. At first patients are ill for about 7 days; 3 before the rash starts and 4 while the rash is breaking out. The rash starts to fade in another 3 days. It si spread by coming in contact with the saliva of someone who has the disease through coughing, kissing or sharing of eating utensils. A child born to a mother who had measles receives immunity from its mother lasting most of the first year of life. One attack of measles provides lifelong immunity and proper vaccination confers lifelong protection against measles. A person with measles can transmit it beginning 23 to 4 days before the rash appears until the rash fades and clears.

Symptoms: Cold, Fever (The fever can top 104F), Runny nose (Coryza), Hacking cough, Conjunctivitis (red eye), Sneezing, Watering of the eyes, Hoarseness of the voice

Presence of koplik's spots on the mucous membrane of the diagnostic k opliks spots disappear w hile the dark r ed m acular o r maculopapular rash develops first at the back of the ears and at the Junction of the forehead and the hair. Within a few hours there is invasion of the whole skin and as the spots rapidly become more numerous they fuse to form the characteristic blotchy appearance of measles. Rash is fully erupted usually in 2 or 3 days. The malaise and the fever subside as the rash fades.

Prevention: The way to prevent measles immunization. The standard MMR (Measles mumps, and rubbella) vaccine is given in two dosages. The first dose should be at 12-15 months of age. The second vaccination should be at. 4-6 years of age. Measles mumps

and rubella vaccines may be administered as individual shots, if necessary or as a measles rubella combination. Most children should receive MMR vaccinations. Exceptions may include children with congenital immunodeficiency (born with an inability to fight off infection). Some children on treatment with radiation or drugs for cancer and children on long term steroids (Cortisone). People with severe allergic reactions to eggs or the drug neomycin should probably avoid the MMR accine. Pregnant women should wait until after delivery before being immunized with MMR. Worlwide (universal) immunization against measles is the goal. Exceptions should be made only for special reasons. People with HIV or AIDS should normally receive MMR Vaccine.

Treatment: Eye care: The eyes may be very sensitive to light and have an irritating discharge. Wash the eyes by wiping then with a clean, wet washcloth but avoid rubbing them. Keep lights dim or the room darkened sunglasses may also help. Humidity: For the cough humidify the air with a cool mist vaporizer or with pans of water set in the room. The from a shower also helps. Fluids: Increases fluids to 12-16 glasses of liquid (8 ounces or 250 ml per glass) a day during the fever. One should drink enough fluids to cause urination every 2 hours. Bed rest: Stay in bed during the fever. Balanced diet: Eat a balanced diet (as always we hope). Avoid aspirin: Avoid aspirin and all aspirin products. Aspirin today is not recommended for children or for patients with infections diseases caused by viruses because of the association with Reyes syndrome.

Measles is potentially serious disease. Measles is due to a virus that is easily spread. Measles can be complicated by ear infection Pneumonia or encephalitis. Measles in mare sever in infants and adults.

Measles infection of the brain (encephalitis) can cause convulsions mental retardation and even death. Measles in pregnant women can cause miscarriage or premature delivery. Measles can be prevented through vaccination. Each person not immunized against measles is at risk for measles and puts others at risk.

Hepatitis

Hepatitis is an inflammation of the liver. Hepatitis can be caused by bacterial or viral infestations with parasites chemicals (alcohol or drugs), toxins or immune disease It can be short term (acute) long-term (Chronic), cause permanent liver damage. The incidence severity and means of contagion vary with different forms of hepatitis. Some forms of infection hepatitis are transmitted through blood products some through eating contaminated food, some through sexual contact and some through unknown means.

Specific types of hepatitis include: Hepatitis A, Hepatitis B, Hepatitis C, Hepatitis D, Chronic active hepatitis, Chronic persistent hepatitis, Autoimmune hepatitis, Drug-induced hepatitis, Alcoholic hepatitis, Non-alcoholic steato hepatitis.

Symptoms: Dark urine, Loss of appetite, Fatigue, General discomfort uneasiness, or ill feeling, Abdominal distention, Generalized itching, Jaundice, Nausea and vomiting, Low grade fever, Pale or clay colored stools, Abnormal taste, Abdominal pain, Abdominal indigestion, Pain tenderness.

Additional symptoms that may be associated with this disease: Yellow skin, jaundice, Breast development in males, abdominal fullness, gaseous, Nosebleed symptom, Depression,

Prevention: Prevention of hepatitis varies with each type of infection. Some general precautions to reduce the chance contracting hepatitis or other infections include: Avoid contact with blood or blood products, Avoid sexual contact with a person infected with hepatitis or person with unknown health history. Practice safer sex behaviors. Avoid contact with blood or blood products when ever possible. (Note: Blood donors are serenade for the virus but this is not 100% accurate.
Wash hands thoroughly or clean up extensively after using the restroom if there is contact with any ones blood, Faces or body fluids.
Hepatitis B vaccine is available for people in high-risk groups.

Hepatitis A vaccine is available for people in high risk professions like nursery attendants institutional care workers nurses physicians and people traveling to undeveloped countries.

Signs and tests: Physical examination of the abdomen shows an enlarged and tender liver.

Tests include: Hepatitis virus serology, Liver function test.

Treatment: Treatment varies with the specific type of hepatitis.

Prognosis: Most people recover fully: within 1 to 2 months the liver is healed.

Complications: Permanent liver damage (liver failure) can occur.

Hepatitis B

Hepatitis B and C both can cause chronic infection and permanent liver damage. Approximately 10 recent of those infected with the hepatitis B virus develop this chronic condition. A small proportion of patients in this group with chronic hepatitis eventually develop both cirrhosis and liver cancer. Alternative names: acute hepatitis B

Causes, incidence, and risk factors: Most people regard hepatitis B Primarily as a sexually transmitted disease. Indeed, sexual partners of infected individuals are at risk for the disease. However, it is alos transmitted via blood putting health care personnel, including Physicians, nurses, dentists and dental personnel at risk as well. The availability of the hepatitis B vaccine has greatly decreased the risk to health workers.

Because hepatitis B in transmitted through blood other people at risk for the disease include intravenous drug users who share needles, gay men, dialysis patients blood transfusion recipients and people who get tattoos or have acupuncture A woman with active hepatitis B infection may also transmit the virus to her baby at birth or shortly after wards.

Most damage from hepatitis B virus is caused by the body's response to the infection. This immune response against the infected liver cells (hepatocytes) damages the cells causing the liver inflammation known as hepatitis. As a result liver enzymes (transaminases) leak out of the liver into the blood causing

transaminase blood levels to be elevated. The virus impairs the liver's ability to produce the clotting factor prothrombin, increasing the time required for blood clot formation (prothrombintime). Liver damage also impairs the body's ability to rid itself of bilirubin (a breakdown product of old red blood cells), causing Jaundice (Yellow discoloration of the eyes and body) and dark urine. In a small percentage of patients, an overly vigorous immune response to the infection leads to fulminate hepatic failure. These patients show sings of liver failure, including decreased production of albumin (a protein used as a building block in the body) and prothrombin. The livers ability to clear proteins and toxins is decreased.

The risk of chronically depends on the age at the time of infection : of those infected with hepatitis B more than 90 percent of newborns about 50 percent in children and less than 5 percent of adults develop chronic hepatitis.

Symptoms: Nausea and vomiting, Loss of appetite, Fatigue, Muscle and joint aches (orthralgios), abdominal pain, Jaundice and Dark urine due to in creased billirubin.

The incubation period (time between infection and disease manifestation) for hepatitis B is two to six moths. About 1 percent of patients infected with hepatitis B die due to liver damage in this early stage.

Prevention: Screening of all donated blood has reduced the likelihood of contracting hepatitis B from a blood transfusion. As an initial screen blood donors are now required to fill out a questionnaire about their sexual and drug use activities. The blood of those who are in high risk groups is not used. Also, serologic tests are used to screen collected blood for the hepatitis B virus.

Formerly, hepatitis B vaccine was made from human blood products, so it was not received well by the public. The new hepatitis B vaccine is entirely artificial, with no human products, and therefore cannot transmit either hepatitis B or the AIDS virus. The new vaccine is requiring three vaccinations administered six months apart to achieve full immunity.

Sexual contact with a person who has acute or chronic hepatitis B should be avoided. However immunization provides the only definitive protection against the virus. Vaccination of those at high risk has been of only limited success.

Infants born of mothers who either currently have acute hepatitis B or who have had the infection receive a special immunization series to prevent viral transmission. This includes administering hepatitis B immune globulin and a hepatitis B immunization within 12 hours of birth.

Signs and tests: Hepatitis B surface antigen. This represents the first viral marker present on blood tests after the patient is infected. It usually disappears from the blood in 1-2 months Hepatitis B core antibody this is usually detected within 1-2 weeks of the appearance of hepatitis B surgace antigen. Both hepatitis B surface antigen and core antibody persist indefinitely in the blood of patients who have recovered form hepatitis B. However patients with chronic hepatitis do not develop this antibody.

Hepatitis B surface antibody: this is found both in those who have been immunized and those who have recovered form hepatitis infection liver enzyme (transaminases) blood levels may be elevated due to liver damage.

Albumin levels may be low and prothrombin time may be prolonged due to sever liver failure.

Meningitis

An infection which causes inflammation of the membranes covering the brain and spinal cord. The Alternative names are viral meningitis, bacterial meningitis. The most common causes of meningitis are bacterial infections that start in other parts of the body and spread to the brain or spinal card via the blood. Stream. Meningitis is also caused by viruses, Chemical irritation or tumors. Anyone can get viral meningitis but it occurs most often in children. Occasionally children will have viral meningitis but it occurs most often in children. Ossociated with mumps or herpes virus infection. Mosquito borne viruses also accerent for a few cases each year. In many cases the specific virus cannot be identified.

Types include: Meningitis cry to coccal, Syphilitic aseptic meningitis
Meningitis, H. influenza, Meningitis, meningo coccal, Meningitis, Pneumococal, Meningitis, Staphylococcal Meningitis, tuberculous Aseptic meningitis, Meningitis gram negative.

Acute bacterial meningitis is very serious and should be treated immediately to prevent permanent damage. Bacterial strains that cause meningitis include streptococcus, Haemophilus influenzae, Staphylococcus, and Meningococcus. IN the US about 17,500 cases of bacterial meningitis occur each year.

Common entero viral meningitis is milder and occurs more often than bacterial meningitis. It usually develops in the winter and affects people under 30. Seventy percent of the infections occur in children under the age of 5. Other types of viral meningitis are rare, but more serious. Some of the enteroviruses that cause viral meningitis are contagious while others, such as mosquitoborn viruses, connot be spread from person to person. Fortunately, most people exposed to hese viruses experience mild or no symptoms. Most People are exposed to these viruses at some time in their lives but few actually develop meningitis the manner in which the virus is spread depends upon the type of virus involved. Some are spread by Person to person contact; others can be spread by insects.

Symptoms: Fever, Headache, severe Nausea and vomiting, Stiff neck and fatigue, Rash, Sensitivity to light (Photophobia), Sore

throat and intestinal symptoms may also occur. Symptoms generally appear within one week of exposure.
Additional symptoms that may be associated with this disease: Speech impairment, Neck Pain, Muscle Pain, Hallucinations, Facial Paralysis, Eye lid drooping, Drowsiness, Consciousness decreased, Chills, Breathing, rapid, Agitation, Positive Babinski's reflex, Fontarelles bulging, Opisthotonos, Poor feeding, Irritability.

Prevention: Hacomphilus vaccine (HiB vaccine) in children will help prevent one type of meningitis. It is highly recommended that parents and close contacts of individuals with meningitis caused by certain bacterial strains take preventative measures to avoid infliction themselves. A person with viral meningitis for strict isolation is not necessary. Since most eases are due to enterovirouses that may be passed in the stool, people diagnosed with viral meningitis should be instructed to thoroughly wash their hands after using the toilet.

Signs and test: Lumber Puncture, CSF Smear, Culture of CSF (cerebral spinal fluid), Skull X-pay, sinuses X-ray, and chest X-ray, Head CT scan looking for abscess or deep swelling.

This disease may also after the results of the following test: CSF glucose, CSF cell count.

Typhoid fever

A bacterial infection characterized by diarrhea, systemic disease, and a rash; most commonly caused by salmonellea typei. Alternative names: Enteric fever

Cause, incidence and risk factors: Typhi are spread by contaminated food drink or water. Rollowing infestion the bacteria spread form the intestine to the intestinal lymph nodes liver and spleen via the blood where they multiply. Salmonella may directly infect the gallbladder through the hepatic duct or spread to other areas of the body through the bloodstream.

Early symptoms are very general and include fever malaise and abdominal pain. As the disease progresses the fever becomes higher (greater than 103 Fahrenheit) and diarrhea becomes prominent.

Weakness, Profound fatigue delirium obtundation and an acutely ill appearance develop. A rash characteristic only of typhoid and called "rose spots" appears in most cases of typhoid. Rose Spots are small (1/4 inch) dark red flat spots that appear most often on the abdomen and chest. Typically, children have milder disease and fewer complications than adults.

A few people can become carriers of typhoid and continue to shed the bacteria in their feces for years. Although typhoid is common in developing countries less than 600 cases are reported in the U. S. each year.

Symptoms: Severe headache, Fever, Loss of appetite, General discomfort uneasiness or ill feeling (malaise), Rash (rose spots) appearing on the lower chest and addomen during the second week of the fever. Abdominal tenderness, Constipation then diarrhea, Stools bloody, Slow sluggish lethargic, Rangue, Weakness, Nosebleed, Chills, Delirium, Confusion, Agitation, Fluctuating mood, Difficulty paying attention (attention deficit), Hallucinations.

Prevention: Vaccines are recommended for travel outside of the U. S. Canada northern Europe, Australia, and New Zealand and during epidemic out breaks. Immunization is not always completely

effective and at risk travelers should drink only boiled or bottled water and lat well cooked food. Experimentation with an oral live attenuated typhoid vaccine is now underway and appears promising. Adequate water treatment waste disposal and protection of food supply form contamination are important public health measures. Carriers of typhoid must not be allowed to work as food handlers.

Signs and tests: A blood culture during first week of the fever can show salmonella typhi bacteria. Note: A stool Culture is unreliable.

Other tests: ELISA lest on urine may show vi antigen specific for the bacteria, Platelet count (decreased platelets), Fluorescent antibody study (demonstrates vi antigen, which is specific for typhoid).

Treatment: Intravenous fluids and electrolytes are usually given. Appropriate antibiotics are given to fight the bacteria. Chloramphenicol or ampicillin should be given for 14 days initially in a dose of i g t. i. d reducing to 500 mg 6 hourly.

Prognosis: The illness usually resolves in 2 to 4 weeks with treatment. The out come is likely to be good with early treatment but becomes poor if complications develop. Cases in children are milder and are more debilitating in the elderly. Relapse may occur if the treatment has not fully eradicated the inception.

Complications: Intestinal hemorrhage (severe GI bleeding), Intestinal perforation, Kidney failure, Peritonitis

Pneumonia

Pneumonia is basically an inflammation of the lungs caused by an infection. Alternative names: bacterial Pneumonia

Causes, incidence, and risk factors: Pneumonia is a very common serious illness and affects about 1 out of 100 people each year. It is caused by many different organisms and can range in seriousness from mild to life threatening illness. There are different categories of pneumonia.

Two of these types are hospital acquired and community acquired. Common types of community acquired pneumonia are pneumococcal pneumoniaand Mycoplasma pneumonia. In some people, particularly the elderly and those who are debilitated, Pneumonia may follow influenza. Hospital acquired pneumonia tends to be more serious because defense mechanisms against infection are often impaired.

Bacterial pneumonia can attack anyone form infants through the very old. The most common cause of bacterial pneumonia in adults is a bacterium called strelpto coccus pneumoniae or pneumonoccus.

Some of the specific pneumonia related disorders include: Aspiration Pneumonia, Atypical Pneumonia, Bacterial pneumonia, Chlamydia pneumonia (C. trachomatis), Chlamydial pneumonia (Psitta cosis), Chlamydial pneumonia (Psitta cosis), CMV Pneumonia, E osinophilie p neumonia a lso c alled a cute pulmonary losinopnilia (Loeffler's s yndrome), H ospital a cquired p neumonia, Hydrocarbon Pneumonia, Hypersensitivity pneumonitis, Legionella pneumonia, Mycoplasma Pneumonia) walking pneumonia), Necrotizing pneumonia, Pediatric pneumonia, Pneumocystis carinii pneumonia, Pneumonia in immunocompromiesed host, Pneumonia with lung abscess, Pyogenic Pneumonia, Viral Pneumonia

Symptoms: The onset of bacterial pneumonia can vary form gradual to sudden. Characteristic symptoms are: Chills with shaking, Chattering, A cough that produces rust colored or greenish sputum, temperature often shoots up s high s 105/= (41^0C), Severe chest pain, headache, Loss of appetite, Nausea and vomiting,

Breathing and pulse rate increase rapidly. Lips and nailbeds may have a bluish cast from lack of oxygen in the blood, Mental state may be clouded or delirious,

Additional symptoms that may be associated with this disease: Shortness of breath, Sweating excessive, Skin Clammy, Nasal flaring,
Coughing Up blood, breathing absent temporarily, Anxiety, stress, and tension, abdominal pain.

Prevention: Vaccination (flu vaccine pneumovax) may be helpful in preventing some types of pneumonia coughing and deep breathing may help prevent some forms of hospital acquired pneumonia. The pneumo coccal vaccine can protect against strains of pneumo coccus which cause I out of 10 cases of Pneumocaccal disease.

Adverse reaction: Reactions to a single dose of vaccine are usually mild, Soreness, redness and indication (Swelling) at the site where the vaccine was injected are auite common. A low grade fever (Less than 38.3^0C, 100^0F) may also occur. Adverse reactions which are more serious and. or long lasting are rare, but may occur.

Advise: Pregnant or nursing women should not be vaccinated with the Pnevmococcal vaccine. Children under 2 Years of age should not be vaccinated with the Pneumococcal vaccine. Routine revaccination of adults is not recommended, except under certain circumstances. Signs and tests crackles are heard when listening to the chest with a stethoscope (ausculation).

Tests include: a chest x-ray, a sputum gram stain, a CBC, arterial blood gases. This disease may also after the results of the following tests: thoracic CT, routine sputum culture, Pulmonary ventilation/Perfusion scan, Plenural fluid culture, Lung needle biopsy

Treatment: The goal of treatment is to cure the infection with antibiotics. If the pneumonia is caused by a virus antibiotics will not be effective. Supportive therapy includes oxygen and respiratory treatments to remove secretions if indicated.

Diarrhea

Diarrhea is the frequent Passage of unformed watery stools. Alternative names Stools watery frequent bowel movements loose bowel movements the runs.

Causes of Diarrhea: Diarrhea is caused by bacteria or viruses children who are malnourished suffer much more; in turn, diarrhea weakens children and makes them more malnourished. Diarrhea is also a major cause of child malnutrition. Too much fluid is passed (secreted) from the blood stream into the bowel, for example in gastroenteritis. This is how some laxatives work. The bowel moves its contents through too quickly and too little fluid is passed back in to the bloodstream. This is one way in which anxiety produces diarrhea. More liquid is drunk than the bowel can cope with this seldom happens but is one way in which drinking too much beer can cause diarrhea.

There are two type of diarrhea analysis: Acute diarrhea – comes on suddenly and lasts a short time. And Food Poisoning, Gastroenteritis, Anxiety, Sometimes treatment with an antibiotic, Alcohol (to excess).

Chronic diarrhea affects some one over a long period of time. When diarrhea goes on for a long time, the most likely cause is the irritable bowel syndrome. it is called a 'functional' condition this means that the bowel produces stools which are looser or more frequent than normal although the bowel not diseased. Less commonly there are also several conditions which cause chronic diarrhea.

Inflammation of the bowel - e. g. Ulcerative colitis or crohn's disease. The diarrhoea in ulcerative colitis often contains blood. Poor absorption of blood eg. coeliac disease or chronic disease of the pancreas when the stools may be very pale offensive smelling and difficult to flush away. Hormonal changes e. g. diabetes or an overactive t yphoid gland, Some bowel infections, Some stomach operations, Some drugs including antibiotics magnesium containing antacids pills for blood pressure or arthritis and laxatives.

Foods including milk in some people who digest milk sugar (lactose) Poorly and wheat products in patients with coeliac disease and consumption of unusually large amounts of alcohol.

Prevention: Diarrhea can be prevented by pursuing multi-sectoral efforts by: improving access to clean water and safe sanitation, Promoting hygiene education, exclusive breast feeding, improved weaning practices, immunizing all children; especially against measles. Using latrines, keeping food and water clean, washing hands with soap (the baby's as well) before touching food, and by sanitary disposal of stools.

The above is most important message that can help parents' governments and communities to prevent almost all of these deaths and most of the malnutrition caused by diarrhea. The key factors are unclean water dirty hands at mealtime and spoilt food.

Treatment: A cute diarrhea (usually i mproves w ithin a f ew d ays), Ask yourself whether this is due to anxiety, medicines or alcohol. Keep up a good fluid intake using rehydration solutions when much liquid is passed to replace lost fluid and salt. Observe good hygiene, in case the diarrhea is infections. Wash your hands thoroughly after going to the toilet. Don't prepare food for other people, especially babies and old people. Consider taking an anti diarrhoeal drug such as loperamide or diphenoxylate which can be obtained for adults without a prescription if the symptoms are severe but always read the label and ask your pharmacist for advice if unsure.

The doctor may prescribe an antibiotic if a severe infection is diagnosed or suspected. In Chronic Diarrhea, continuing for weeks or months it is wise not to use any medicine without consulting a doctor. There may be an underlying disease which can be cured. In most cases chronic diarrhea is not serious and can be controlled by medicines but this is best done under medical supervision. Acute Respiratory tract infections now kill 3.6 million children each year. Whereas Diarrheal diseases are responsible for 3 million child deaths every year.

Behavior

In psychology, behaviour means the aggregate of the responses or reactions or movements made by an organism in any situation. Behavior is the manner of acting or conducting of a living organism.

Behaviour also refers to the actions or reactions of an organism, usually in relation to the environment. Behavior can be conscious or unconscious, overt or covert, and voluntary or involuntary. Behavior is controlled by the endocrine system, and the nervous system. The complexity of the behavior of an organism is related to the complexity of its nervous system. Generally, organisms with complex nervous systems have a greater capacity to learn new responses.

Behaviour also describes an animal's posture, actions, and activities. It includes various levels of detail such as: muscle tone or contraction, the position and movement of parts of the body, movement of the whole animal and interaction of the animal with its environment or with other animals.

Many researchers found that mentally retarded persons show some changes in behaviour prior to the attack by some diseases. Mothers or close family members who nurse the mentally retarded persons at home also report that they observe behavioural changes before the persons are attacked by diseases. They also report that changes take place in the behaviour and functional levels of the mentally retarded persons after the diseases. But such changes of behaviour after the diseases were not studied systematically.

When a person become ill his/ her behaviour changes temporarily or permanently. During high fever a person finds it difficult to concentrate to the telephone conversation and also finds it difficult to solve mathematical problems. But when he/ she recover from the high fever he/ she returns to his/ her own intellectual level and can interact properly. But whether the mentally retarded persons can return to their previous position so quickly is yet to study.

It is assumed that all diseases, whether mild or severe create some physiological and mental changes. The medicines used as treatment sometimes create severe problems to the mentally retarded persons which they can not explain well to their parents and guardians. And during illness most of the mentally retarded persons show some abnormal behaviour.

It observed that many mentally retarded children develop self injurious behaviour after suffering serious diseases. Head banging is one of such self injurious behaviour. Such mentally retarded persons in the residential institutions are given special helmets that they do not further damage their heads (Sufi, 1992).

Many mentally retarded children, who were capable of using the toilet by themselves, during illness become so weak that they need all help in toilets by their parents. When they recover from the illness, they develop some phobia that they can not return to their previous performance level in toilet behaviour.

Sufi (1992) observed 32 mentally retarded children who developed aggressive behaviour after suffering diseases like meningitis, typhoid and chicken pox. He also observed two mildly retarded adults in Dhaka city who became depressed after suffering pneumonia and could not return to their previous level of social interaction.

Convulsion is commonly observed in most of the mentally retarded children following meningitis. The convulsive behaviour jeopardizes their whole life. Most of these mentally retarded persons become completely dependent on psychotropic drugs. Large majorities of these persons can not take any initiatve to improve their Daily Living Activities.

It is also observed that many mentally retarded persons deteriorate in visual, auditory and other sensory abilities after suffering a disease which does not harm the non-retarded persons that much.

However, it is observed that behaviour problems are more among the mentally retarded persons after different diseases compared to the non-retarded persons. It is a mystery whether such behaviour problems are due to drug abuse or due to further brain damage. The

problem is that most of the mentally retarded persons can not express their real feelings and physical problems during illness. They depend on their parents to narrate their problems to the physicians. Therefore, they actually become subjects of trials and errors in treatment and overall care.

Review of Literature

The researcher personally observed many mentally retarded children and adults in Rajshahi city and in the adjoining areas who suffered many serious diseses which caused different types of damages to them. She observed that some of the diseases deteriorated their memory, some created secondary illnesses, some of the diseases damaged their physiological organs, etc. She tried to review the medical, psychological and other related jouranls to know the behavioural aspects of the mentally retarded persons during and after the diseases. Following are some the summery of some of the findings cited in different journals, books, newsletters and webpages.

Nursing Standard (July 02, 2003) reported that **"Behaviour problems after childhood meningitis."** (News: clinical digest: a weekly round-up of the latest research and scientific reports from the nursing and medical journals) infants who have meningitis might go on to develop behavioural problems as teenagers. Researchers in London conducted a national postal survey of parents and teachers. Subjects were 739 of the surviving children from the national incidence study of infantile meningitis in England and Wales carried out between 1985 and 1987. They were compared with 606 matched controls who had been recruited when the index cases were five years old. Of the parents of children who had meningitis with complications in infancy, 46 per cent rated their children as having behavioural problems. This compared with 21 per cent of parents of controls. When the children were rated by their teachers, 37 and 23 per cent rated those who had had meningitis and controls as having behavioural problems respectively. There was no significant difference in behaviour between the 103 children who had had meningitis during the first month of life and the 634 who had had by their teachers, 37 and 23 per cent rated those who had had meningitis and controls as having behavioural problems respectively. There was no significant difference in behaviour between the 103 children who had had meningitis during the first month of life and the 634 who had had postneonatal meningitis. Eight of the index cases had been excluded from school compared with none of the controls. Halket S

et al (2003) Long-term follow up after meningitis in infancy: behaviour of teenagers.

Halket, Louvois, Holt and Harvey (2003) of the Department of Paediatrics, Imperial College School of Medicine, Hammersmith Hospital, London in their article "**Long term follow up after meningitis in infancy: behaviour of teenagers tried to determine the effects of meningitis in infancy on subsequent teenage behaviour.**" A national postal survey of parents and teachers using an established standard behavioural questionnaire. Subjects were 739 of the surviving children from the national incidence study of infantile meningitis in England and Wales carried out between 1985 and 1987, together with a group of 606 matched controls that had been recruited when the index cases were 5 years old. 46% of parents of children who had had meningitis with complications in infancy, compared with 21% of parents of control children rated their children as having behavioural problems. When the children were rated by their teachers, 37% and 23% respectively, were scored as having behavioural problems. There was no significant difference in behaviour between the 103 children who had had meningitis during the first month of life and the 634 who had had postneonatal meningitis. Eight of the index children had been excluded from school compared to none from the control group. They concluded that the behaviour of teenage children who had meningitis in infancy is worse than that of control children who did not have infantile meningitis when rated by parents and teachers.

Grizenko, Cvejic, Vida and Sayegh (1991) in their paper entitled "**Behaviour p roblems o f t he m entally r etarded**" examined the behaviour profiles of 176 mentally retarded individuals from two reception centres and nine group homes were assessed. The correlations between behaviour and age, sex, degree of mental retardation, etiology of mental retardation and medical diagnosis were assessed using the Revised Child behaviour profile. The severity of behaviour disturbance did not vary with age of medical diagnosis. The moderately retarded subjects presented with more severe behaviour problems, such as aggression, them the severely mentally retarded subjects. The variable most predictive of behavioural problems was etiology of the disorder. Individuals with Down's syndrome had significantly fewer behaviour

disturbances and those with autism and pervasive developmental disorder had significantly more behaviour disturbances than other subjects. A psychiatric disorder was found in 10.2% of the sample. The implications of these findings are discussed with respect to public policy.

Ruedrich, Swales, Fossaceca, Toliver and Rutkowski (1999) in their research paper entitled "**Effect to divalproex sodium on aggression and self-injurious behaviour in adults with intellectual disability**"have reported that the aim of their study was to evaluate the efficacy of divalproex sodium treatment in adults with intellectual disability and aggressive or self injurious behaviour. Twenty-eight adults aged between 20 and 63 years of age with severe, long-lasting behavioural problems were treated with divalproex sodium (dosage 500-4000mg day (–1)). Clinical changes were assessed at 2–73 months into the pharmacological treatment utilizing the Clinical Global Impression Severity (CGI–S) scale and monthly behavioural counts of aggressive and self–injurious acts. Sevently one percent of subjects demonstrated a moderate of marked improved on the CGI-S; another 21% domenstated a moderate of marked improved on the CGI–S; another 21% demonstrated mild benefits. Among the patients for whom objective prospective behavioral counts were available, 88% showed a significant reduction in aggression and self-injurious behaviour, 46% had other psychotropic medication discontinued and another 39% had psychotropic medications decreased. One patient had serious thrombocytopenia which required the discontinuation of divalproex sodium and one other had vomiting and worsened aggression. The present preliminary, uncontrolled study suggests that adults with intellectual disability and aggressive or self–injurious behavior may respond to divalproex sodium and that this drug is well tolerated in the majority of subjects.

Notteastad, Linaker (2001) in their research paper entitled "**Self-injurious behaviour before and after deinstitutionalization".** The deinstitutionalization movement is presently spreading in Europe. Studies evaluating the' effects of deinstitutionalization on behaviour disturbances among people with intellectual disability (ID) have been inconclusive. The present paper focuses on people without self-injurious behaviour (SIB) who developed SIB after deinstitutionalization. The present authors studied individual and

environmental characteristics before and after deinstitutionalizatiun to look for factors associated with the development of SIB which could also be possible intervention points for preventive action. All those individuals in an institution for people with ID who did not have SIB before deinstitutionalization were included in the present study. The individuals who developed SIB after deinstitutionaiization (n = 15) formed the study group (group A) and those who did not (n = 53) comprised the control group (group B). The population was examined both before and after deinstitutionalization. As far as possible, the same methods were used at both occasions. The cavorts were both individual (e.g. mental health, behaviour disturbances and behaviour deficits) and environmental (e.g. caretaker education, caretaker: patient ratio, housing and leisure activities). Psychiatric disorders were identified in 1987 and 1995 with the Psychopathology Instrument for Mentally Retarded Adults, which was filled in by the caretakers. In 1987, the people in-group A who acquired SIB had lower developmental quotients, used wheelchairs more often and had trouble with moving around without help. They also had a greater frequency of epileptic seizures, and hearing and communication impairment. In 1995, there were only minor environmental differences between groups A and B. There were significantly more individuals involved in the rotation period and more unskilled caretakers working with the people in group A than group B. The present authors found no differences between the two groups on variables such as global mental health and behaviour disturbances, or in the use of neuroleptics before or after deinstitutionaiization. Groups A and B did not show differences in behaviour-disturbances or psychiatric disorders in 1987. In both 1987 and 1995, there were no differences between groups A and B on variables such as accommodation, caretaker patient ratio, the number of caretakers involved in direct care, the caretakers' education, or the time spent in structured activities before and after deinstitutionalization. The individual characteristics indicating that a person may acquire SIB are behaviour deficits, which are suggestive of central nervous system dysfunction or damage, even if the results are inconclusive. The development of SIB may also be facilitated by communication deficits or by reinforcement of an incidentally occurring SIB if the staff includes many unskilled caretakers in the rotation period.

Islam, S. and Haque, P. (1996) in their research paper entitled **"Behaviour Problem among the Institutionalized Children"** have done. Institutionalized children are deprived of usual adult-child interaction essential for development of normal healthy behavioral pattern. The present study was designed to investigate whether institutionalized children are more prone to get involved in problem behavior than their home-raised counterparts. 24 institutionalized and 34 home-raised children were assessed for behavior problem by the teachers using Rutter Behavior Problem Checklists. Results show that 70% of institutionalized children had been identified as having behavior problem while none of the home-raised children met the criterion. Institutionalized children also had significantly higher score on neurotic. Hyperactive, and antisocial subclass. Though no significant gender difference was found between children identified as having behavior problem, boys were found to be more involved in certain types of problem behavior than girls.

Trauer, T (1983) **"A study of Collective Disturbed Behaviour among Psychiatric Patients".** An investigation was conducted over a 40-week period in which staff completed weekly a list of 34 items representing aspects of disturbance for all patients in a modified therapeutic community comprising male and female words. Four principal components accounted for about half the variance in both the men's and women's disturbance data. The first components in both groups represented general disturbance. Subsequent components in the men concerned rejection and withdrawal nocturnal disturbance, and physical aggression, whilst among the women the later components reflected hysterical acting-out, withdrawal and opting out, and self-directed and indirect forms of aggression. There was only an insignificant relationship between the general disturbance levels in the two words. A number of variables, including the level of disturbance predicated form the diagnostic composition of the ward, average length of stay, and numbers of patients in the words were found to correlate with the weekly levels of disturbance. In the men's a 12-week cycle of general disturbance was found. An occasion of disruption to the routine of the unit (Christmas) was implicated in an episode of high disturbance.

Toledo , Lowe , Gonzalez , Haddad (2004) in their research article **'Risk of aspiration pneumonia after an epileptic seizure: a retrospective analysis of 1634 adult patients'** published in the Journal 'Epilepsy & Behaviour 'reviewed the incidence of aspiration pneumonia secondary to seizures in three populations of patients with chronic epilepsy. 733 outpatients were seen in a tertiary referral centre, 806 adult patients admitted to two university video-telemetry units. The third group comprised 95 institutionalised, adult patients with severe learning difficulties and chronic epilepsy. Two of the 733 adults who had seizures in the outpatient setting, and two of the 806 patients who had one or more epileptic seizures in the telemetry units, developed aspiration pneumonia. In the 95 institutionalised patients, 17 had aspiration pneumonia after a generalised seizure and 32 developed aspiration unrelated to seizures over a 12-month period. These findings suggest that aspiration pneumonia is not a common complication of seizures in otherwise healthy adults. The authors conclude that the increased incidence of aspiration in developmentally delayed individuals seem to derive from a combination of factors. Increased oral secretions, impaired swallowing mechanisms and difficulty in obtaining adequate patient positioning significantly increased the risk of aspiration.

Domizio, Verrotti, Ramenghi, Sabatino and Morgese (1993) of the Department of Neonatology, University of Chieti, Ospedale Pediatrico, Italy in their research work entitled **"Anti-epileptic therapy and behaviour disturbances in children"** evaluated the effects on behaviour of some anti-epileptic drugs, they studied 300 children treated with phenobarbital and other drugs. The age of the subjects ranged from 3.1 months to 15.9 years. The children were divided into two groups: group A: 197 (116 male and 81 female) children, mean age +/- SD 5.3 +/- 2.8 years, treated with phenobarbital; group B: 103 (66 male and 37 female) children, mean age 6.4 +/- 3.1 years, treated with anti-epileptic drugs other than phenobarbital. In all patients hyperactivity, irritability, disturbances of sleep, and drowsiness were investigated. The parents of patients completed a questionnaire with seven items. In group A, 150 (76.1%) children showed one or more behaviour disturbances, while in Group B a smaller number of patients 32 (31%) had such disorders. There was a significant difference

between the two groups ($P < 0.0001$). The most frequent disorder was hyperactivity. The results of this study suggest that anti-epileptic drugs, in particular phenobarbital, can cause behaviour disturbances.

Eiser, Havermans, Pancer and Eiser (1992) of the Department of Psychology, University of Exeter, Devon, England in their article **"Adjustment to chronic disease in relation to age and gender: mothers' and fathers' reports of their childrens' behavior"** investigated age and gender differences in adjustment to chronic disease in children suffering from one of five conditions: diabetes, asthma, cardiac disease, epilepsy, and leukemia. Ratings of adjustment and disease-related restrictions were obtained separately from mothers and fathers. Factor analysis of the adjustment scale yielded 6 subscales which differentiated between children in terms of age and disease type, and to a lesser extent, gender. Mothers' and fathers' ratings of adjustment and restrictions were comparable, though fathers made less differentiation on the basis of disease or age. For both parents, perceived restrictions of the disease were associated with poorer adjustment in the child, and this was particularly reflected on indices of peer relations and work.

Bohmer, Niezen-de-Boer, Klinkenberg-Knol, Nadorp and Meuwissen (1997) in their paper entitled"**Gastro-oesophageal reflux disease in institutionalised intellectually disabled individuals"** studied the prevalence of reflux oesophagitis (RO) in the normally intellectual population is about 2%, while this condition in the intellectually disabled has an estimated prevalence of 10%. We investigated the presence of RO among 1687 intellectually disabled, with an $IQ < 50$, from 5 different institutes in the Netherlands. All were scored for possible associated factors and reflux symptoms, and compared with the overall population ($n = 1580$) from the same institutes (controls). Also, the effect of treatment of symptoms was evaluated after at least one year of therapy. Gastro-oesophageal reflux disease (GORD) was suspected clinically in 169 patients based on the following symptoms: vomiting, haematemesis, anaemia, rumination or behaviour problems. At endoscopy RO was diagnosed in 107 of 1687 patients (6.4%): 17 (15.9%) grade 1, 34 (31.8%) gr. II, 42 (39.3%) gr. Ill and14 (13.1%) gr. IV RO (Savary-Miller classification). Cerebral palsy, constipation, anticonvulsant drugs, an $IQ < 35$, underweight

and gastrostomy feeding appeared to be possible associated factors, while as reflux symptoms persistent vomiting, haematemesis, iron deficiency anemia, rumination, and behaviour problems were found. Concerning therapy surgery was found to be effective in 38%, H2 receptor antagonists in 60% and the proton-pump inhibitor omeprazole in 96%. In this group of Dutch intellectually disabled patient with IQ < 50 RO was diagnosed in about 6% (107 of 1687), mostly severe grades of oesophagitis. Several possible associated factors were significantly present. From non-specific reflux symptoms persistent vomiting was the most indicative factor. In this population the most effective treatment of RO was long -term omeprazole therapy.

Gimbel (2000) in his research entitled **"Diagnosis and treatment of gastroesophageal reflux disease in the Mentally Retarded guidelines of a multidisciplinary consensus work group"** have done. Gastroesophageal Reflux Disease (GORD) is more frequent among people with intellectual disability than among the intellectually normal population. Also GORD is more serious in this population. The diagnosis is often missed because most intellectually disabled cannot express their complaints of GORD. For that reason a multidisciplinary working group of the Dutch Association of physicians active in the care of persons with a mental handicap has developed guidelines. The working group recommends endoscopy in case of a (alarm) symptoms: haematemesis, prolonged v omiting, irondeficiency anaemia e.c.i., and a 24 hour oesophageal pH test in case of b (.aspecific) symptoms: recurrent pneumonia, refusal of food, regurgitation, rumination, dental erosions. In general most patients are cured with drug treatment (omeprazol or another proton pump inhibitor). It symptoms are not improved after 6 months of optimal treatment, surgical treatment may be considered.

Elliot (1986) in his research entitled **"Lithium treatment and cognitive changes in two mentally retarded patients"** used Licl (900–2400), t o treat behavioural d isorders (sexual acting o ut and aggression) in 2 mentally retarded patients (a 22–year–old male and a 4 4–year–old f emale). A lthough i mprovement w as n oted i n the behaviours, cognitive performance measured with the Peabody Picture Vocabulary Test (PPVT), showed a decline, which was related to the Serum Li level.

McDermott, Breen, Platt, Dhar, Shelton, Krishnaswami (1997) of the University of South Carolina School of Medicine, Department of Family and Preventive Medicine, Columbia, USA in their research paper **'Do behavior changes herald physical illness in adults with mental retardation?'** reported a longitudinal study of 62 individuals with profound mental retardation was conducted to determine if direct care staff can identify behavior change prior to identifying symptoms of acute illness. Results indicate that staffs were able to notice changes in sluggishness prior to the onset of illness. Self-care behavior was of borderline significance and there was no significant change in eight behavior dimensions (vocalizations, peer conflict, stereotype, aggression, self-injurious behavior, restlessness, distractibility, and depression). This finding should alert physicians and caregivers to the importance of prompt response to symptoms. Reliance on behavioral observation of direct care staff is not always sensitive enough to pick up changes in health status in less restrictive residential environments.

Kolfen, Edrich, Konig and Formanski (2001) of the Klinik fur Kinder und Jugendliche, Elisabeth Krankenhaus, Monchengladbach, Germany, in their paper titled **"Children with epilepsy after withdrawal of anticonvulsive therapy: psychiatric behaviour and neuropsychological abilities"**, reported that the children who remain in remission with epilepsy after withdrawal of anticonvulsive therapy still exhibit a different behaviour and performance-related abilities compared to healthy children? Investigated that whether these children showed deviating psychiatric behaviour and neuropsychological function deficits as compared with a healthy control group and with children following occasional seizures which had never been treated. The study comprised 39 children with epilepsy after withdrawal of anticonvulsive therapy, 37 children with occasional seizures, and 39 matched healthy control children who were tested with regard to psychiatric and neuropsychological criteria. The patients were aged 6-15 years; 28 had a primarily generalised epilepsy, and 11 had a focal epilepsy. The patients remained free from seizures for more than 1 year. Psychiatric testing comprised the Child Behavior Checklist by Achenbach and Edelbrock and the Mannheim Parent

Interview. Neuropsychological testing included non-verbal intelligence, visual perception, short-term memory and learning ability, arithmetics, movement coordination and motor skills, fine motor skills and verbal functions. After withdrawal from anticonvulsive therapy, the children with epilepsy did not exhibit any psychiatric disturbances, whereas those with occasional seizures frequently showed behaviour problems. After withdrawal from anticonvulsive therapy, no neuropsychological deficits were found in the children with epilepsy as compared to those with occasional seizures or to healthy children. Risk factors for poorer test results were first seizures occurring before the age of 3 years, delayed development, and neonatal problems. Finally they mentioned that Children with epilepsy who remained without relapse after withdrawal from the anticonvulsive therapy did not show any psychiatric abnormalities and their performance was comparable to that of healthy control children, provided no risk factors were present.

Ferrie , Madigan, Tilling, Maisey , Marsden and Robinson (1997) of the Consultant Paediatric Neurologist, The General Infirmary, Leeds, UK in their Paper titled **"Adaptive and maladaptive behaviour in children with epileptic encephalopathies: correlation with cerebral glucose metabolism"**. An investigation was childhood epileptic encephalopathies mental impairment is common and severe. Traditional cognitive assessment is difficult because of the low level of performance, autistic features, and the unpredictable effect of seizures. An alternative is to measure adaptive and maladaptive behaviour using instruments administered to the caregivers. Adults with different types of dementia have characteristic patterns of cortical glucose hypometabolism. Thirty-two children were studied using visual and semiquantitative analysis of 18fluorodeoxyglucose positron emission tomographic (PET) scans. The Vineland Scales and the Conners' Questionnaires were used to assess adaptive and maladaptive behaviour. The mean adaptive behaviour composite score was 37.3+/-15.6; all but one subject had a low adaptive level. A profile of relative strength in socialisation and weakness in daily living skills emerged. Up to two-thirds of children had abnormal behaviour patterns, particularly attention-deficit disorders and hyperactivity. Adaptive and maladaptive behaviour was not related to the presence or absence of focal cortical PET abnormalities.

However, adaptive behaviour scores showed an inverse correlation with the degree of metabolic abnormality in the frontal lobes.

Zuuren and Dooper (1999) in their paper entitled **'Coping style and self-reported health promotion and disease detection behaviour'** investigated the relevance of the monitoring-blunting concept to the realm of health behaviour, and to health promotion and disease detection behaviour in particular. The study is correlational in character, supplemented with some qualitative data. Sixty participants of varying sex, age and educational level filled out the Threatening Medical Situations Inventory, measuring the monitoring and blunting coping style, and the newly developed Health Promotion-Detection Questionnaire, intended to measure the tendencies to exhibit health promotion and disease detection behaviours. In addition, they answered a few open questions concerning their health. Results. It emerged that disease detection behaviour is positively related to age, and it is more often carried out for health reasons than health promotion behaviour. The monitoring coping style is significantly, though modestly, related to both health promotion and disease detection.The latter relation still holds when we controlled for age and gender.No relations with blunting were found, except for individual health behaviours. The results of the study encourage further investigation of the role of coping styles in the performance of different types of health behaviours. Further distinction between health strivings of the approach and the avoidance type may prove useful.

Luciaino, Molina, Gomez (2000) in their study entitled **"Say-do-report training to change chronic behaviors in mentally retarded subjects".** Two Mentally Retarded subjects with language deficits participated. A Say – do- report correspondence training was implemented to break the functions of present conditions given by a long history of contingencies maintaining chronic inadequate patterns of behavior. The say-do-report procedure was implemented following a multiple baseline design across two behaviors in one subject and in an AB design for the other. During baseline, all possible social contingencies maintaining the inadequate behaviors were eliminated. Promising or saying what a subject would do was then implemented and followed by the differential reinforcement of say-do correspondence reports. All behaviors changed and were.

Maintained at an appropriate level, even after eliminating the components involved in the say-do-report procedure, that is, the reports, the extra consequences, and even the promise. Results are discussed in the context of verbal behavior altering the function of present conditions in subjects with limited verbal repertory, as wall as in the context of new applications to make a difference in chronic behaviors.

Ghadami,Tomita,NaJafi,Damavandi,Farahvvash,Yamada,majidzadeh,Niikawa(2000) in their paper titled "**Bardet-Biedl syndrome type 3 in an Iranian family :Clinical study and confirmation of disease localization.**" Bardet-Biedl Syndrome (BBS) is a group of autosomal recessive MCA/MR syndromes characterized by pigmentary retinopathy, postaxial polydactyly, hypogenitalism, obesity, and mental retardation. Five BBS loci have been identified; among them, BBS type 1 (BBS1) and type 3 (BBS3) are most common and most rare, respectively. We encountered an Iranian family that had seven affected members. All patients had a history of mild to severe obesity, but it was reversible in some patients by caloric restriction and exercise. All patients had pigmentary retinopathy, beginning as night blindness in early childhood and progressing toward severe impairment of vision by the end of the second decade. Polydactyly varied in limb distribution, ranging from four-limb involvement to random involvement or even to nonaffectedness. Six of the seven patients were not mentally retarded. Although kidney anomaly or an adrenal mass was present in two patients, the fact that one patient had seven children rules out reproductive dysfunction. Linkage analysis with microsatellite markers showed that the disease in the family was assigned to a region around marker loci at 3pl3-pl2 (maximum LOD score = 4.15 and recombination fraction straight theta - 0, at D3S1603 microsatellite marker), to which the BBS3 locus has been mapped. Haplotype analysis did not reduce the extent of the previously reported critical region of BBS3. A comparison of clinical manifestations of our patients with those of previously reported BBS3 patients did not support any type-specific phenotypes, though manifestations in our patients are similar to those in BBS3 patients of a family in Newfoundland.

Patrick Burke and Melanie Elliott (1999) in their article **'Depression in Pediatric Chronic Illness: A Diathesis-Stress Model'** mentioned the Depression in pediatric chronic illness has been receiving increasing attention in recent years. Studies to date have typically focused on characteristics of illness as the major determinants of the development of depression, but characteristics of the child have received less attention. This review suggests that a diathesis-stress model can be a fruitful heuristic that would incorporate illness characteristics and attributes of the child and environmental effects in an overall framework to guide future research and treatment

Wilder and Granlund (2003) of the Department of Social Sciences, Malardalen University, Vasteras, Sweden in their research work entitled **"Behaviour style and interaction between seven children with multiple disabilities and their caregivers"**. They first mentioned that some studies show that the existing interaction patterns of children with multiple disabilities should be taken into consideration when planning communication interventions. For children with disabilities, it is especially important that the partner in interaction is sensitive and well aware of the importance of a qualitatively successful interaction. Earlier it was found that the behaviour style of 30 children with multiple disabilities was more related to the caregiver-perceived interaction than the communicative skills and functional abilities of the children. This study inductively explored the caregivers' perceptions of interaction within seven caregiver-child dyads. The research questions were: How do the caregivers perceive the interaction? How do the caregivers perceive the children's behaviour style to be related to the interaction with the caregivers? The children were selected individually depending upon the responses the caregivers had given about the children's self-regulation and reactivity in the Carolina Record of Individual Behaviour questionnaire. The study was undertaken by means of home visits where the caregivers participated in an interview asking about their strategies for interaction, how they perceived the roles of the children and their own roles in interaction, the caregivers' opinion of what an interaction constituted of and the caregivers' aims and aspiration for interaction. The data analysis was performed by meaning concentration and categorization through a pendulum between the parts and the entirety of the interviews. In this way, hermeneutics

and thematic analysis were both being practised. The results of the interviews are presented as a model with categorizations as a network. The categorizations reflect the system of themes that permeate how the caregivers perceived interaction in the dyad. The themes are: sharing of experience, successful interaction, role of the child, role of the caregiver, interaction methods, obstacles and facilitators and aims and aspirations. Finally they mentioned that the caregivers perceived their own role in interaction to be of a sensitive leading kind. The caregivers lead the interaction by using their knowledge about the children's usual way of interacting, the children's behaviour styles, functional abilities, the children's current mood and situation as well as the whole context. They monitored the interaction such that, throughout an interaction sequence, the caregivers always tried to optimize the interaction between the parties in the dyad. The behaviour style was a background factor that the caregivers had knowledge of and scanned in their everyday turn taking. Although there were differences in the children's behaviour styles, the caregivers discussed the same themes in the interviews. The behaviour style became a facilitator for the whole interaction, forced the interaction in certain directions and made the interaction more complete with turn taking of different kinds from both parties. The findings show that it is imperative to see caregivers as experts on their children and to make them assertive in this in relation to professionals. Furthermore, as a successful interaction can boost the development of children, it is essential to direct interventions to the everyday interaction in caregiver-child dyads.

Begum, R. (1998) in her paper titled **"Behaviour Problems Among Mentally Retarded Children: Birth Order and Severity of Retardation"** reported that the behavior problems among 50 (33 boys and 17 girls) mentally retarded children as a function of birth order and severity of mental retardation. The Bengali version of the Child Behavior Checklist was used of measure behavior problems. Results showed that problems varied significantly according to the severity of mental retardation. Lowest problem scores were obtained by the mildly retarded children while the severely retarded children obtained the highest problem scores. Behavior problems were not found to be related to the birth order of the mentally retarded children.

Tachi, Akio, (1977) in their study entitled **"A Comparison Of The Stereotyped Behaviours Exhibited By The Profound Adult Retardates In Two Types Of Institutions".** To compare the stereotyped behavior in different psycho-social environments, 40 profound retarded residents were studied by a time-sampling method in two institutions A and B, A being a rehabilitative public organization, and B being a custodial private organization. As a result, in institution B more gross stereotypes were observed and more partial stereotypes in institution A. Reciprocal relation between other-directed behavior and self-directed behavior is noted in both institutions. Some stereotypes correlated significantly with CA and length of institutionalization (LI) in institution A. But in institution B there was no significant correlation between stereotypy with CA with LI. Behavioral facts observed are discussed in the light of each institutional psycho-social environment.

ABE, Kenichi, (1977) in his study entitled "**Exploratory behaviour of retarded children in a probability learning task"** investigated that the performance of normal and retarded children in a particular type of three-choice discrimination task first used by Stevenson & Zigler (1958), and concluded that the performance of the retarded children in the task was characterized by lock of motivation to explorer. However, the Ss of the previous study had a wide range of MA. The purpose of the present study is to relocate and extended the previous study by investigation the performance of normal and retarded children form three MA levels (3:1-5:0, 5:1-7:0, and 7:1-9:0);

Deutsch (1986) in his research entitled "**Managing behaviour in mentally retarded residential populations-examined the use of neuroleptics"** (i.e., li, beta blokers, Carbomazepine, naloxone) in light of findings that neuroleptics may reduce inappropriate behaviour in the mentally retarded at the expense of cognitive, intellectual test and work shop performance.

Plomin, Price, Eley, Dale and Stevenson (2002) of the Social Genetic and Developmental Psychiatry Research Centre, Institute of Psychiatry, King's College London, UK in their research work entitled **"Associations between behaviour problems and verbal**

and nonverbal cognitive abilities and disabilities in early childhood". Investigated associations between behaviour problems and verbal and nonverbal cognitive abilities at 2, 3 and 4 years of age both for the entire distribution and for the lowest 5% and 10% of the verbal and nonverbal cognitive disabilities. A community sample of 4,000 pairs of twins born in England and Wales in 1994 and 1995 was assessed by their parents at 2, 3 and 4 years using the Revised Rutter Parent Scale for Preschool Children (RRPSPC, behaviour problems), the MacArthur Communicative Development Inventory (MCDI, verbal development), and the Parent Report of Children's Abilities (PARCA, nonverbal cognitive development). The results of the behaviour problem scores were modestly associated with lower MCDI and PARCA scores - correlations were less than .30. Similarly modest effect sizes were found for relationships between behaviour problem scores and the lowest 5% and 10% of the MCDI and of the PARCA distributions. Associations were stronger for nonverbal than for verbal development, increased from 2 to 3 to 4 years, and, at the extremes of the distributions, were stronger for boys than for girls. Multivariate genetic analyses indicated that both genetic and shared environmental factors mediate the links between behaviour problems and cognitive development both for the total distribution and for the extremes. Genetic links may be stronger for the extremes than for the total sample. So that in this community sample of young children, associations between behaviour problems and verbal and nonverbal cognitive development are generally modest for the entire distribution and are no greater at the extremes than expected on the basis of the associations for the entire distribution.

Stevenson , Richman and Graham (1985), presented a paper named **"Behaviour problems and language abilities at three years and behavioural deviance at eight years".** Investigated a representative sample of 535 children were followed up from their third to their eighth birthday using measures of language ability and behaviour. At age 8 yr it was found that there were significantly more boys with behavioural deviance than girls, and that children from manual social class backgrounds also showed more behavioural deviance. The only difference between the immigrant and non-immigrant children was a less frequent

occurrence of neurotic deviance in the immigrant group. It was found that behaviour problems at age 3 yr were strongly related to behavioural deviance at school at age 8 yr, particularly for boys. This medium-term stability in behaviour problems had not been found in previous studies looking at younger children. A low score on a measure of language structure at age 3 yr was found to be related to a high rate of neurotic deviance at age 8 yr even when behaviour at age 3 yr was controlled. The implications of these findings for the early identification and intervention with children at risk for later behaviour deviance are discussed.

Madsen, Millard, and Connor,(1973) in their paper entitled Cooperative and Competitive **"Behavior of Retarded and Nonretarded Children at two Ages"** Cooperateive-competitive between pairs of retarded and nonretarded children aged 6-7 and 11-12 was assessed in a situation in which competitive interaction was nonadaptive in terms of reward attainment. The retarded group was significantly more cooperative than the 11-12 year retarded group. The results are discussed in relation to previous developmental studies of cooperative-competition and placed in the context of cognitive and reinforcement theories of social development.

Molteno, Molteno, Finchilescu and Dawes (2001) have studied **"Behavioural and emotional problems in children with intellectual disability attending special schools in Cape Town, South Africa".** A sample of 355 children with intellectual disability (ID) attending special schools in Cape Town, South Africa, were assessed on the Developmental Behavioural Checklist-Teacher Version (DBC-T). A prevalence rate of 31% for psychopathology was found. Boys manifested more behaviour problems than girls, especially in relation to disruptive, self-absorbed and antisocial behaviour. Children with severe and profound levels of ID showed more behavioural difficulties than those in the mild and moderate categories. Specific behaviour problems were self-absorbed and autistic behaviours in children with profound ID, communication problems and anxiety in those with severe ID and antisocial behaviour in children with mild ID. Epilepsy, but not cerebral palsy was associated with higher total behaviour scores. Ambulant children were more disruptive and antisocial, while non-ambulant children were more anxious. Non-

verbal children had higher scores on all of the subclass except for disruptive behaviour.

Matson, Johnny, Mayvilfe, Erik, Lott and Julia(2002) presented a paper named "**The r elationship b etween b ehaviour m otivation and social functioning in persons with intellectual impairment**". To assess the social functioning of individuals with severe and profound intellectual impairment who displayed maladaptive behaviour for one particular reason, as assessed by a functional analysis checklist. The social skills of 100 persons with severe and profound intellectual impairment were studied. The Matson Evaluation of Social Skills for the Individuals with Severe Retardation (MESSIER) was used to assess social functioning. Participants were, placed into one of four groups according to function of maladaptive behaviour as assessed by the Questions about Behaviour. Function Scale (QABF). A multivariate analysis of variance and follow-up univariate F-tests were conducted using MESSIER subscales as the dependent variables and QABF function as the independent variable. To identify specific social skill strengths and weaknesses associated with each function group, the means of MESSIER items were calculated for each function group, and the 10 most frequently endorsed items WERE displayed. Significant differences were found for all the MESSIER subscales except one. A list of most commonly displayed behaviours for each function group was identified. This research represents the first attempt to systematically identify social strengths and weaknesses associated w ith b ehaviour f unction. R esults r evealed a p attern o f social behaviours among groups, indicating that positive and negative a social behaviour varies somewhat with behaviour motivation. The implications of these findings for clinical utility are discussed.

Huskin, Sasitharan and Howard (1992) in their paper titled "**The use of a low phenylalanine diet with amino acid supplement in the treatment or behavioural problems in a severely mentally retarded adult female with phenylketonuria"** reports that if phenylketonuria is untreated in infancy, it causes irreversible brain damage. No dietary treatment can alter this brain damage. However, it has been shown that dietary treatment can reduce behaviour disturbances often associated with the condition. In this study, a subject's behaviour was monitored over 18 weeks while on

a low phenylalanine diet. Results demonstrate a significant reduction in the Level of her disturbed behaviour.

Deb and Hunter (1992) of the Department of Mental Health, University of Aberdeen, Woodlands Hospital in their research titled **"Psychopathology of people with mental handicap and epilepsy. I: Maladaptive behaviour"**, have done one hundred and fifty mentally handicapped people (100 from hospital and 50 from the community) with epilepsy were studied along with an individually matched control group of 150 (100 from hospital and 50 from the community) non-epileptic mentally handicapped people. Behaviour was studied using the Profile of Abilities and Adjustment Schedule. Of the total population, 55.3% showed some type of severe behaviour problem. Although the epileptics showed slightly more severe behaviour problems than the non-epileptic group, there was no statistically significant difference between the two groups. Some differences emerged between the groups when subgroups of epileptics were studied.

Linda , H aber, Joan, A ustin, G ertrude , Huster, K athleen , L ane, and Susan Perkins (2003) of Indiana University School of Medicine in their article **"Relationships Between Differences in Mother-Father Perceptions and Self-Concept and Depression in Children With Epilepsy"** explored the relationships between differences in perceptions of mothers and fathers and self-concept and symptoms of depression, respectively, in 69 youth with epilepsy. Multiple regression was used to test whether the absolute difference scores between mothers' and fathers' perceptions of family adaptive resources, stigma, their children's negative coping behaviors, and their attitudes toward epilepsy were predictors of child self-concept and depression after adjusting for epilepsy severity, children's attitudes toward epilepsy, and children's ratings of family adaptation. Only the mother-father differences related to children's negative coping behaviors significantly predicted children's self-concept and depressive symptoms. Findings suggest that differences in perceptions related to children may be more highly associated with the children's outcomes than differences related to family characteristics or the children's illness.

Jenkins, Rose, and Jones (1998) presented a paper entitled "**The Checklist of Challenging Behaviour and its relationship with the Psychopathology Inventory for Mentally Retarded Adults.**" The Checklist of Challenging Behaviour (CCB) was developed to survey the prevalence of challenging behaviour among people with intellectual disability. It describes 32 behaviours, and data are collected on the frequency, management difficulty and severity of these states. The present paper reports on the relationship between challenging behaviour (as measured by the CCB) and mental health (as measured by the Psychopathology Inventory for Mentally Retarded Adults). In addition, it discusses the differences between the two groups of clients used in the study, i.e. hospital and community subject groups, in terms of challenging behaviour and mental health.

Hanzel, Kalachnik and Harder (1992) have studied "**an adult female with development disability**" who was prescribed chlorpromazine to reduce aggression and self-injurious behavior (SIB). She was prescribed Phenobarbital also for seizures. Upon a Chlorpromazine minimal effective dose reduction, target behaviors increased and dosage was returned to prior levels with the conclusion that chlorpromazine was controlling the target behaviors. Upon subsequent reduction and discontinuation of Phenobarbital, however, chlorpromazine was able to be reduced with no increase in target behaviors. The year of behavioral data are presented to support the hypothesis that Phenobarbital was exacerbating maladaptive behaviors. Given tardive dyskinesia (TD), Clinicians and interdisciplinary teams should remain alert to the following client profile : (1) Prescribed Phenobarbital (or Primidone), (2) Prescribed neuroleptics, especially at high dosages, to control maladaptive behaviors (3) failure of neuroleptiecs gradual minimal effective dose attempts and (4) Possible presence of behavioral procedures, especially intrusive procedures, to control maladaptive behaviors. This profile should trigger a "red flag" as to the possibility of Phenobarbital behavioral side effects exacerbation of pre-existing maladaptive behaviors.

Woods and Reed (1998) in their paper titled "**Measuring risk and related behaviour with the Behavioural Status Index (BSI); some preliminary psychometric studies.**" In this study British Special Hospitals are key caregivers for mentally disordered

individuals who may display extreme anti-social and challenging behaviour. Assessment of risk and related diurnal behaviour is central to treatment planning for these patients. This paper describes a behaviourally based assessment instrument to assist in the process of the assessment of these 'risky' and related diurnal be.ihaviour. Results of some early data analysis are reported.

Zimber, Schaufele and Weyerer (1998) in their study entitled **"Changes in homes for the aged and nursing homes: functional impairments and behavioral disorders of residents are increasing"** have mentioned that Residents in homes for the elderly and in nursing homes suffer from physical and mental disorders that are prevalent far above average. In the course of the changes that are presently taking place in the German health care system there is now an increase in the number of mentally ill and severely impaired persons residing in old-age homes. Earlier epidemiological studies do not yield any conclusive predictions of changes in residential structures and hence in nursing care requirements. Two cross-sectional studies are presented on the prevalence of physical and mental diseases, daily and behavour problems among residents of old age and nursing homes in Mannheim. There was a distinct increase in average age, functional impairment, depression and disoriented behaviour among residents in 12 homes for the elderly in Mannheim conducted in 1998 (n= 542) and 1992 (n= 497). During the period it was noted that disoriented behaviour significantly increased the mortality risk. In another study the by far larger group of nursing home residents was investigate. So far we have data for 1995 and 1996 on results obtained from 1178 residents of Mannheim homes for the elderly and nursing homes. Among the residents of nursing homes there was a much higher prevalence of functional impairment and behaviour problems than among those of homes for the elderly. Despite a very high prevalence of depression or disorientation, only every third resident was diagnosed as suffering from organic brain disease and only every tenth resident had a depressive disorder. Since a growing proportion of residents will be mentally ill or severely impaired, these institutions will be facing increasing medical and nursing demands. Due to limited resources, the homes cannot meet these demands adequately. Hence, health policy changes are mandatory to improve nursing care and to avoid placing an increasing burden on the nursing staff.

Holden (1997) presented a paper entitled "**Clonazepam therapy of aberrant behavior in a mentally retarded man.**" In this study, the treatment of aberrant behaviour in a mentallv handicapped male had failed. No link between the behavioural disorder and social circumstances was found. The subject had epilepsy. This was assumed to be a possible cause of the disorder and on this basis the antiepileptic medication was changed. Clonazepam was added to carbamazepin, and haloperidol was discontinued. The aberrant behaviour stopped. It is argued whether- this was due to anticonvulsive effects; or anxiolytic, muscle relaxing and sedative effects. No definite conclusion is offered, although some findings could suggest the first interpretation.

Anderson, (1997) in his paper titled "**Mental illness and criminal behaviour: a literature review.**" The purpose of this paper is to review the current literature in relation to mental illness and criminal behaviour. The material presented for discussion was selected from forensic and general psychiatric literature. However, a number of important publications, policy documents and independent reports were used to explore the debate surrounding this subject. Contemporary studies of prison populations in the UK and abroad illustrated the difficulty in relating mental illness to crime. Papers presenting research in the UK revealed important implications for mental health policy and the way in which the penal system deals with mentally disordered offenders. The literature reviewed provided arguments for and against an association between mental illness and criminal behaviour. Methodological problems associated with criminological and psychiatric research were addressed in relation to the exploration of whether people suffering from a mental illness are more dangerous or violent than other people. Research papers focusing on public reaction to mental ill people living in the community provided important considerations when addressing mental illness and criminal behavjour in the context of care in the community policy. This paper will be of interest to a broad range of mental health professionals, particularly those working with individuals who have a history of mental illness and violent behaviour, or mental health professionals working with mentally disordered offenders.

Islam, Durkin and Zaman (1993) in their research article entitled **'Socioeconomic status and the prevalence of mental retardation in Bangladesh'** reported a population-based study of the prevalence of mental retardation among 2- to 9-year-old children in Bangladesh were reported. More than 10,000 children were screened for mental retardation and other disabilities. All children with positive screening results plus a random sample with negative results were referred for clinical evaluations. The prevalence rates per 1,000 of severe and mild mental retardation in this population were 5.9 and 14.4, respectively. As found in studies in developed countries, the prevalence of mild mental retardation was strongly and significantly associated with low socioeconomic status, whereas the association for severe mental retardation was relatively weak and not significant.

Bhawalkar, Aswar, and Wahab (1997) in their paper entitled "**A study of some etiological factors and morbid conditions in mentally handicapped children**" reports that most of the subjects belonged to mild and moderate degree of mental handicap i.e. 30.8% and 44.9% respectively while severe degree of mental handicap was present in 22.7% subject. The factors responsible for mental handicap include prenatal factors (34.6%), perinatal factor's (15.1%) and post natal factors (37.9%). In 12.4% cases etiology was not known. The associated behaviour problems were observed in 33% of the study subjects while other morbid conditions were present in 47% of the study subjects.

Smith and Phillips (1992) in their study "**Attainments of severely mentally retarded adolescents by aetiology**" have reported that Piagetian cognitive level, language abilities, adaptive behaviour and graphic skills were assessed in three groups of adolescents with severe learning difficulties: Down's syndrome (DS), congenital cerebral palsy (CP) an unknown origin (NSP). Results were compared with assessments made seven years earlier. A wide range of scores was observed in each group. Medians of the DS and NSP groups were similar and generally were significantly higher than those the CP group. When the number and severity or other impairments and disabilities (HDCP) was taken into account, group averages of attainments and progress were very similar. Implications for intervention are discussed.

Durkin, Khan, Davidson, Huq, Munir, Rasul and Zaman (2000) in their research paper entitled '**Prenatal and Postnatal Risk Factors for Mental Retardation among Children in Bangladesh**' evaluated the contribution of prenatal, perinatal, neonatal, and postnatal factors to the prevalence of cognitive disabilities among children aged 2–9 years in Bangladesh. A two-phase survey was implemented in 1987–1988 in which 10,299 children were screened for disability. In multivariate analyses, significant independent predictors of serious mental retardation in rural and urban areas included maternal goiter (rural odds ratio (OR) = 5.14, 95% confidence interval (CI): 1.23, 21.57; urban OR = 4.82, 95% CI: 2.73, 8.50) and postnatal brain infections (rural OR = 29.24, 95% CI: 7.17, 119.18; urban OR = 13.65, 95% CI: 4.69, 39.76). In rural areas, consanguinity (OR = 15.13, 95% CI: 3.08, 74.30) and landless agriculture (OR = 6.02, 95% CI: 1.16, 31.19) were also independently associated with the prevalence of serious mental retardation. In both rural and urban areas, independent risk factors for mild cognitive disabilities included maternal illiteracy (OR = 2.48, 95% CI: 0.86, 7.12), landlessness (OR = 4.27, 95% CI: 1.77, 10.29), maternal history of pregnancy loss (OR = 2.61, 95% CI: 0.95, 7.12), and small for gestational age at birth (OR = 3.86, 95% CI: 1.56, 9.55). Interventions likely to have the greatest impact on preventing cognitive disabilities among children in Bangladesh include expansion of existing iodine supplementation, maternal literacy, and poverty alleviation programs as well as prevention of intracranial infections and their consequences. Further population-based studies are needed to confirm and understand the association between consanguinity and serious cognitive disability.

Ismail, Jafar, Jafary, White, Faruqui and Chaturvedi (2004) in their research entitled '**Risk factors for non-fatal myocardial infarction in young South Asian adults**' determined the risk factors for premature myocardial infarction among young South Asians. Case control study in a hospital admitting unselected patients with non-fatal acute myocardial infarction were studied. Risk factor assessment was done in 193 subjects aged 15–45 years with a first acute myocardial infarct, and in 193 age, sex, and neighborhood matched population based controls. The mean (SD) age of the subjects was 39 (4.9) years and 326 (84.5%) were male.

Current smoking (odds ratio (OR) 3.82, 95% confidence interval (CI) 1.47 to 9.94), use of ghee (hydrogenated vegetable oil) in cooking (OR 3.91, 95% CI 1.52 to 10.03), raised fasting blood glucose (OR 3.32, 95% CI 1.21 to 8.62), raised serum cholesterol (OR 1.67, 95% CI 1.14 to 2.45 for each 1.0 mmol/l increase), low income (OR 5.05, 95% CI 1.71 to 14.96), paternal history of cardiovascular disease (OR 4.84, 95% CI 1.42 to 16.53), and parental consanguinity (OR 3.80, 95% CI 1.13 to 1.75) were all independent risk factors for acute myocardial infarction in young adults. Formal education versus no education had an independently protective effect on acute myocardial infarction (OR 0.04, 95% CI 0.01 to 0.35). The researchers concluded that tobacco use, ghee intake, raised fasting glucose, high cholesterol, paternal history of cardiovascular disease, low income, and low level of education are associated with premature acute myocardial infarction in South Asians. The association of parental consanguinity with acute myocardial infarction is reported for the first time and deserves further study.

Bashir, Yaqoob, Ferngren, Gustavson, Rydelius, Ansari and Zaman (2002) in their research article '**Prevalence and associated impairments of mild mental retardation in six- to ten-year old children in Pakistan: a prospective study**' studied the prevalence of mild mental retardation (MMR) in 6- 10-y-old children in a prospectively followed cohort in Pakistan from four areas with different socioeconomic conditions. Retarded children were identified by a two-step method, comprising a household screening with the Ten Questions Screening in 649 families followed by clinical investigation and psychometric testing (WISC-R and Griffiths) of the 132 children found by the screening. The overall prevalence of MMR among 6-10-y-old children was 6.2%. The distribution of MMR was uneven, with 1.2% among children from the upper-middle class, 4.8% in the village, 6.1% in the urban slum and 10.5% in the poor periurban slum area. Additional impairments were found in 75% of the children with MMR, of which speech impairment was the most common. They concluded that the prevalence of MMR was found to be higher in a developing country than in developed countries. It also seemed to be related to poor socioeconomic conditions, as the prevalence in the upper-middle class was comparable to figures from developed countries,

while the prevalence in children from poor population groups was much higher.

Tamim, Khogali, Beydoun, Melki, Yunis (2003) in their research article **'Consanguinity and Apnea of Pre-maturity'** studied consanguinity, marriage between relatives, has been associated with perinatal mortality and morbidity. Apnea of prematurity is defined as the cessation of breathing for longer than 20 seconds or that of any duration if accompanied by cyanosis and sinus bradycardia, for infants born before 37 weeks of gestation. The objective of the study was to examine the association between consanguinity and apnea of prematurity in Greater Beirut, an area having a relatively high prevalence rate of consanguineous marriages. The study was cross-sectional. Between September 1, 1998, and March 31, 2001, 21,723 newborn infants were admitted to the National Collaborative Perinatal Neonatal Network in Greater Beirut, Lebanon. The inclusion criteria were infants less than 37 weeks of gestation who were admitted to the intensive care unit, with no congenital malformations, sepsis, or neurologic disorders. Analysis was based on 597 infants of whom 66 had apnea of prematurity. With adjustment for weeks and type of gestation, pregnancy complications, and Apgar score, the odds ratio of apnea of prematurity for first-degree consanguineous parents as compared with other marriages was 2.9 (95% confidence interval: 1.3, 6.4). In addition to the recognized etiologic factors for apnea of prematurity, this study suggests a role played by genetic factors.

The above mentioned review of literature includes few of the research works related to the diseases suffered by the mentally retarded persons in different parts of the world. It is seen that these research workers mainly studied the symptoms and prevention strategies and practically nothing was done to study the behaviour problems of the mentally retarded persons which are aftereffects of different diseases. Therefore, the researcher plans to study the eight common diseases of Bangladesh which possess significant effect on the behaviour of the mentally retarded persons in Bangladesh.

Objectives

Diseases may cause Mental Retardation during infancy, babyhood or early childhood. Again these diseases may reduce the intellectual abilities of an infant or a baby. The diseases also change behaviour patterns of the affected persons.

This research is designed to study the nature, number and seriousness of eight common diseases suffered by the selected cases of mental retardation and to explore the changes in their behaviour.

Following are the specific objectives of the research.

1. To find out the nature, number and seriousness of eight diseases suffered by the Mentally Retarded persons.
2. To explore behavioral problems of the persons with Mental Retardation due to the diseases.
3. To investigate the pattern of medical treatment received by the Mentally Retarded person.
4. To suggest ways and means to promote awareness that will help appropriate care of the mentally retarded persons during these diseases and save from the aftereffects of the diseases.
5. Recommend measures that will help formulation of a suitable health policy including special care of the mentally retarded persons in Bangladesh.

Significance

This research is an attempt to investigate the diseases suffered by the mentally retarded persons and study the related behavioral changes and problems. The expected results will be helpful for the guardians, physicians and concerned professionals to perceive the behavioral changes and problems of the Mentally Retarded persons when the diseases attack them.

This study may also help to investigate the pattern of medical treatment received by the Mentally Retarded persons. The findings will definitely save the Mentally Retarded persons from many Trials and Errors done with them. The findings will also provide new information related to the diseases as well as the Mental Retardation in this country.

It is assumed that the findings of this research will help facilitate formation of a national health policy for the mentally retarded persons in Bangladesh. This research will also help promotion of general awareness about the mentally retarded persons and their behaviour in relation to different diseases.

Chapter II
Method and Procedure

This research, "Behaviour in Relation to Diseases of the Mentally Retarded Persons in Rajshahi District" was designed to study the nature, number and seriousness of eight specific diseases suffered by the mentally retarded persons in Rajshahi District and to study the effects of these diseases on the behaviour of the subjects.

The diseases are:

1. Meningitis
2. Hepatitis
3. Influenza
4. Chicken Pox
5. Measles
6. Typhoid
7. Pneumonia, and
8. Diarrhea

Subjects and their selection

The subjects of this study were the mentally retarded persons who meet the following criteria.

Criteria of selection of the subjects:

- Born, brought up and reside in Rajshahi District
- Affiliated with NGOs working for the mentally retarded persons
- Has seriously suffered at least one of the above diseases
- Possess supporting medical papers related to the sufferings and treatments
- Aged more than 5 years
- Live with their parents
- Belongs to middle class socio economic families
- Mothers or at least one family member are competent enough to give description of diseases and behaviour of the subjects

The major work of this research was mainly the case studies of 155 mentally retarded persons. The work was done in following ways:

1. Identification of the mentally retarded persons who fulfill the criteria of the sample.
2. Establishment of contacts with the families of the subjects.
3. Case studies.

The researcher obtained a list of names and addresses of about 500 mentally retarded children and adults from two NGOs working for the mentally retarded persons in Rajshahi District. These NGOs are SWID Bangladesh (Society for the Welfare of Intellectually Disabled Bangladesh) and The SIVUS Institute. The Rajshahi branch of the Society for the Welfare of Intellectually Disabled is working in the District since 1982 and The SIVUS Institute is working in the District since 1992. Both of these two NGOs maintain detail case study files of the subjects. Earlier, the Counselors of these NGOs also assessed the subjects according to their levels of retardation and clinical types.

The researcher established contact with the families of the subjects and prepared a primary list of about 300 mentally retarded persons who fulfils the above mentioned criteria of subject selection. She then randomly selected 200 subjects for her study. But at the end of her three years close contact and case studies she finds 155 subjects with complete papers whom she studied in detail. The cases were studied during 2000 – 2005.

Out of these 155 mentally retarded persons 97 were male and 58 were female; 82 live in rural areas and 73 in urban areas; 93 were children and 62 were adults; 30 have chromosomal anomalies and 125 do not have chromosomal anomalies; 25 are mild, 78 are moderate and 52 are severely retarded; 62 experienced convulsive disorders and 93 never experienced any convulsion; 40 are dependent on psychotropic drugs and 115 are free from drugs. More detail of the subjects is shown in different tables of the following pages under two broad categories, children and adults.

Table – 1 Age distribution of the Mentally Retarded subjects

Age groups in years	Developmental Period	Broad category	N	%
6 -10	Late Childhood	Children N= 93	26	16.77
11-14	Puberty		43	27.74
15-17	Early Adolescence		24	15.83
18-21	Late Adolescence	Adults N=62	31	20.00
21-40	Early adulthood		26	16.77
41-60	Middle aged		5	3.23
Total			**155**	**100.00**

The age distributions of the subjects are shown in the above table. Out of 155 subjects 93 were children and 62 were male. The subjects were categorized in six different age groups from late childhood to middle age according to the life span groupings of Hurlock (1959) in her book on Developmental Psychology. Persons of each of these age groups possess specific developmental and psychological characteristics.

It is seen in the above table that the highest percentages of subjects belong to the age group 11-14 years, the puberty period. And the lowest percentages of subjects are aged between 41-60 years, the middle aged group.

In Bangladesh, only about 30 years ago, the mentally retarded persons had very short life span. Now with the promotion of countrywide EPI program and other developments in medical facilities the life span of the mentally retarded persons has also increased.

There is no national survey of the exact condition of the mentally retarded persons, but it is assumed that the mentally retarded persons who reach their adulthood are mainly the mildly retarded persons and who are relatively free from different diseases.

Hurlock, E B, (1959), *Developmental Psychology*, London : McGraw Hill Book Company

Table – 2 Sex distribution of the Mentally Retarded subjects

Category	Children		Adults	
	N	%	N	%
Male	56	60.22	41	66.13
Female	37	39.78	21	33.87
Total	**93**	**100.00**	**62**	**100.00**

In the table above sex distribution of the subjects are shown under two broad categories of child and adults. It was found that out of 93 children 56 are male and 37 are female. Among the 62 adults, 41 are male and 21 are female. It is seen that the percentage of female are almost half of the male, but this is not the real picture of prevalence of male female ratio of the country's population as well as the male female prevalence of the mentally retarded population in Bangladesh. It is assumed that the prevalence of male female ratio of mentally retarded persons is same in the country.

Table – 3 Rural Urban distribution of the subjects

Category	Children		Adults	
	N	%	N	%
Rural	50	53.76	32	51.61
Urban	43	46.24	30	48.39
Total	**93**	**100.00**	**62**	**100.00**

Rural urban distributions of 155 subjects are shown in the table above. It is seen that almost similar percentage of subjects are from urban and rural areas, but in Bangladesh almost 80% mentally retarded population live in rural areas.

The researcher observed that the rural mentally retarded persons are deprived from better medical facilities which are available in the urban areas. The rural people mostly depend on quack physicians, ayurvedic and homeopathic medicines.

Table – 4 Degree of Mental Retardation of the subjects

Category	Children		Adults	
	N	%	N	%
Mild	15	15.15	10	17.86
Moderate	44	44.45	34	60.71
Severe	40	40.40	12	21.43
Total	**99**	**100.00**	**56**	**100.00**

Though the mentally retarded persons can be classified into five categories as borderline, mild, moderate, severe and profound mentally retarded persons, in this research they were categorized into three categories as mild, moderate and severe.

In Bangladesh, it is very difficult to identify the borderline cases. Because of the simple living pattern the borderlines cases are well integrated in the society. Rarely they are segregated as mentally retarded persons.

The profound cases usually experience very short life span and in rural areas they rarely survive beyond babyhood. Therefore, the researcher included the urban profound cases inside the severe category.

In the above table it is seen that out of 155 cases only 12 adult cases are of severe mental retardation. Out of these 12 cases only 3 live in the rural areas and the remaining 9 persons live in urban areas. It was also found that the 3 rural adult severely retarded persons are aged between 18 – 21 years. Whereas in the urban areas out of 9 severe adult mentally retarded persons 2 are aged above 40 years. Again both the persons are completely dependent on psychotropic drugs and are under regular supervision of qualified medical doctors.

Table – 5 Chromosomal anomalies of the subjects

Category	Children		Adults	
	N	%	N	%
Possess Chromosomal Anomaly	19	20.43	11	17.74
No chromosomal anomaly	74	79.57	51	82.26
Total	**93**	**100.00**	**62**	**100.00**

The distributions of subjects with and without chromosomal anomalies are shown in the above table. All the cases of chromosomal anomalies of this study are Trisomy 21 cases or Downs Syndrome cases. Possibly there are cases of other types of chromosomal anomalies of different nature who were not properly diagnosed and are included among the subjects without chromosomal anomalies.

It is assumed that in all mentally retarded population nearly 50% are cases of Downs Syndrome, but among the subjects of this study 20.43% of the children and 17.74% of the adults were Downs Syndrome cases.

Table – 6 Convulsion of the subjects

Category	Children		Adults	
	N	%	N	%
Experienced Convulsion	42	45.16	20	32.26
Did not experience any convulsion	51	54.84	42	67.74
Total	**93**	**100.00**	**62**	**100.00**

Among the 93 children subjects 45.16% experienced or now regularly experience convulsion of different nature. Whereas out of 62 adult subjects 32.26% experience convulsion. It is seen that the rate is lesser among the adults.

Table – 7 Drug dependence of the subjects

Category	Children		Adults	
	N	%	N	%
Dependent on Psychotropic Drugs	27	29.03	13	20.97
Free from psychotropic dugs	66	70.97	49	79.03
Total	**93**	**100.00**	**62**	**100.00**

Dependence on psychotropic drugs by the mentally retarded persons is yet being ignored or not being given enough attention by the concerned professionals, but it is a serious problem. Many mentally retarded persons possess case history that they were subjects of trials and errors with different types of treatments and ultimately became drug dependent.

There are many cases who experienced severe convulsion during early ages because of very high fever and were not given immediate medical care. These persons had permanent brain damage of different degrees. These persons are also dependent on psychotropic drugs.

There are some cases who were prescribed psychotropic drugs by qualified physicians after appropriate pathological tests. These subjects recovered from their ailments but the parents did not consult the physicians on due dates for follow up reassessment. Later suddenly these subjects had shown behaviour problems or convulsion and the parents repeated the same dose of medicine by themselves without consulting the physicians. The subjects recovered and the parents repeated the medicines whenever they had further attacks. Thus these subjects have become completely dependent on psychotropic drugs. Such subjects were found more in the urban areas compared to the rural areas.

Study area: Rajshahi District

Rajshahi district is located in the north-west part of the country. Area of the district is 2,407.01 square kilometers. In 2001, the population was 2,274,340 in 498,020 households. Size of household is 4.5 persons. Male population is 1,181,000 and female population is 1,093,340.

The researcher selected Rajshahi City as the urban area and the villages of Joynagar Union of Durgapur Upazilla as the rural areas.

In Rajshahi city there is a medical college and a large medical college hospital. There are two private medical colleges and several modern clinics in the city. Qualified medical doctors live in all the places of the city and are easily available compared to the other urban places.

Because of the active role of two NGOs for the mentally retarded persons the awareness level of the general population related to mental retardation seems much higher in this city compared to many other urban places of the country. Though there is no official data of the government or of the health wing of the city corporation, private sample survey shows that the prevalence of mental retardation in this city is lesser than 0.40%.

The Joynagar Union of Durgapur Upazilla is about 15 kilometers away from Rajshahi City Centre. In 1991 the communication was very poor and cow carts were the only means of transport. Now the Union Parishad can be reached by motor vehicle within 30 minutes. Total area of the union is 7356 acres.

In 1991 there were 4221 households and the population was 20,166 persons (Male 10,219 and female 9,947). There are 15 mouzas and about 20 villages in Joynagar Union. The mouzas are: anulia, bagalpara, bajukhalsi, brahmapur, chuniapa, daokandi, gaganbaria, harirampur, joynagar, khidrakhalsi, maria, narikelbaria, parila, rasulpur and sukhandighi.

The researcher personally visited all the mouzas of this union and completed a door to door survey of all the households during last 4 years. She and her team of students identified 163 mentally

retarded children in 2002 in the entire union. The assumed prevalence of mental retardation excluding the borderline and some of the mild cases is 0.652%.

The researcher has seen some adult mentally retarded men and women who are happily married and having children. All the married cases are of mild or moderate retardation. They are engaged in agriculture oriented works.

The researcher also observed 9 babies with severe retardation and multiple disabilities in 2001. All the 9 cases died before they reached 5 years age. She was also informed by the villagers that many infants died in these villages who had severe disabilities and died mostly within one month of their birth. There is no birth record of such infants in the Union Council office. However, the FWAs (Family Welfare Assistants) working in the union could give very clear picture of such births and deaths compared to the concerned families.

There are some villages which are not accessible even by boat during monsoon. The only means to arrive the villages are walking through the sticky mud. Electricity is yet beyond imagination in 9 out of 15 mouzas. Availability of graduate medical doctors is also beyond imagination in extreme emergencies. In the remote villages the Homeopathic treatment is done by self educated Homeopathic doctors and they practically handle about 50 medicines. Approximately 90% of the h ouseholds are completely dependent on agricultural works.

Methods Used

The researcher mainly followed case study method in this study. In addition, 'Observation' and 'Free discussion' methods were extensively done during the case studies. The researcher observed all the cases for several months under different conditions. She had free and informal discussions with the parents / guardians in relation to the diseases and behavioural changes of the subjects.

This study also included

- Background data of all the mentally retarded persons,
- Both structured and unstructured interview.

Field notes were maintained properly. This study also required case histories, personal health records and all available medical documents of the subjects.

Parents, guardians or siblings of the mentally retarded persons were the major respondents. The researcher first tried to obtain information from the parents, specially the mothers. In the absence of the parents, one of the siblings acted as the main respondent. It is mentionable, most of the respondent were found well aware of the condition of the subjects and could answer most of the questions of the researcher. Concerned Special Education Teachers, Professional staff members, Counselors of the NGOs were also consulted to verify the responses given by the guardians. In addition, some concerned people like Psychologists, Psychiatrists, General Physicians, Pharmacologists, Pharmacists, Biochemists were also interviewed on various related issues.

Instruments Used

To collect information about the Mentally Retarded persons, one Questionnaire and one Behaviour Checklist were used by the researcher. The questionnaire was used to interview the guardians. The behaviour checklist was used to assess the functioning level of the subjects.

The Questionnaire

The questionnaire used in this study was in Bengali langue. The questionnaire and its English translation are attached in Appendices of this thesis. The items in the questionnaire included information blank to obtain names, addresses, age, sex, birth history, diseases suffered, etc. of the subjects.

The Behaviour checklist

The behaviour checklist was also in Bengali language. The Checklist and its English translation are also attached in the Appendices of this thesis. The checklist is a modified version of another checklist originally developed by the principal research supervisor for his own doctoral research. The research supervisor used the checklist to assess about 800 mentally retarded children and adults during 1988-1992. When the research supervisor used his checklist for his own research work, many parents narrated him the after effects of some diseases suffered by the mentally retarded children. The research supervisor noted the important information given by the parents during 1988- 1992. On the basis of that information, the checklist used in this study was drafted. The items of the checklist were amended on consultation with the co-supervisor and other experts.

The items included in the checklist are related to five major behavioural aspects. These are:

1. Sensory behaviour

- Visual behaviour
- Auditory behaviour
- Olfactory behaviour
- Gustatory behaviour
- Cutaneous behaviour
  - Feelings of pressure
  - Feelings of pain
  - Feelings of warmth
  - Feelings of cold

2. Motor Behaviour

- Hand movement
- Leg movement
- Body movement
- Head and neck movement
- Self injurious behaviour

3. Daily Living Activities

- Toilet
- Dress
- Eat
- Sleep

4. Social Behaviour

- Interaction with family members
- Interaction with non family members

5. Cognitive Behaviour

- Communication
- Attention
- Concept formation
- Problem solving
- Memory

Procedure

The researcher established contact with the families of the subjects and studied them mainly at their home. She visited the subjects on a regular basis during 2001 – 2004. She requested the families to inform her whenever the subjects were attacked by any disease that she can follow-up the cases during and after illnesses. In rural areas she assigned some of her representatives to keep records of the illnesses, treatment patterns, etc. But she visited the subjects soon she was informed any illnesses and changes of the subjects. During last four years she regularly telephoned the families of the subjects who have telephones. The subjects who live in Rajshahi city were frequently and informally visited by the researcher. She observed the subjects at Day Centers who attend the Day Centers. Some of the subjects and their parents frequently visited the home of the researcher, too.

The researcher mainly observed the subjects, interviewed the subjects and their family members. She allowed them to talk by themselves about their problems and prospects. When she intended to know something special, she asked questions. She discussed her observation and findings with the professionals attached with the NGOs. She also discussed her observation and findings with her Supervisor and Co-supervisor from time to time. On the basis of their specific enquiries she visited the subjects and enquired the specific behavioural aspects.

She recorded her findings and observation in her note books. She tabulated most of the findings in numerical figures and on the basis of these findings the tables of the Results chapter were prepared. Some of her observation and findings were not generalized and are discussed in Chapter IV of this thesis. Mainly percentages of different findings were done. In addition confidence intervals were calculated for different symptoms related to different diseases.

Confidence Interval

The researcher calculated Confidence Interval (CI) of the percentages and the level of significance of the percentages were estimated. While describing Confidence Interval, Grant (1964)[1] has mentioned, "It is assumed that we have a sample that we believe to have been taken from a single unknown universe. If we desire to make a point estimate of some parameter of the universe on the basis of the evidence of the sample, it is assumed that we want to estimate X'. And that we decide to use the X of the sample as our estimator. We know that X gives us a unbiased estimate. If the universe is normal, the estimate will be efficient. Nevertheless, particularly if the sample size is small, we know that our point estimate based on X may sometimes be quite different from the true X'. Therefore it is desirable to accompany a point estimate of a parameter with some information that indicates how close the estimate may be to the unknown true value. Confidence Intervals and Confidence Limits may be used for this purpose if there is some rational basis for an assumption regarding the form of the frequency distribution of the universe".

Significance and Stability of Percentages: It is often feasible to finalize the percentage of a given sample which exhibits certain behaviour or possesses a definite attitude or other characteristic when it is difficult or impossible to measure these attributes directly. Given the percentage occurrence of behaviour, the question often arises of how much confidence we can place. How reliable an index is if the percentage of the incidence of the behaviour in which we are interested? To answer this question, we must compute the SE of a percentage by the equation:

$$\text{SE of a percentage}^{2} = \sqrt{PQ/N}$$

In which P = the percentage occurrence of the behaviour,
Q = 1 - P, and
N = number of cases

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[1] E. L Grant, *Statistical Quality Control*, 3rd Ed (N. Y.: Mc Graw Hill Book Company, Inc., 1964.). pp. 286-287.

[2] H. E Garrett, *Statistics in Psychology and Education*, International Book Bureau, Hyderabad, 1979. p 197.

In this research work the following formula was used where necessary:

The 100 (1- α) % CI for the population percentage π is given by

$P + SE.(P)\, t_{n-1}, \alpha$

Where

$$SE(P) = \sqrt{P(1-P)/n},$$

n = Sample size and t_{n-1}, α is the 100 α % tabulated value of t

Chapter III
Results

The researcher found that each subject is an unique case of behavioural problems in relation to different diseases. It is really difficult to generalize the changes in behaviour after the diseases of the subjects as there are many variables. The subjects were male-female, rural-urban, child-adult, different levels of retardation, dependent or free from psychotropic drugs, experience or do not experience convulsion, and of chromosomal anomalies or without chromosomal anomalies. Secondly, the treatment pattern and attitude of the parents are different. Some subjects were given enough attention soon there was slight change in their physiological condition and some subjects were not given any attention until they became seriously ill.

The researcher also observed that some subjects possess multiple handicapped condition and chronic illness. Again some subjects are so much socially improved that it was difficult to identify them as mentally retarded.

The researcher also observed that availability of medical facilities and communication problems to go to the medical centres also jeopardized the treatment pattern.

However, the researcher tried to generalize the changes of behaviour of the subjects after different diseases in some tables. In tables 1 – 5, the researcher tried to show the number and percentage of different diseases suffered by different categories of subjects. In tables 6 – 13, each disease and the corresponding behavioural changes were presented as psychological changes, biological changes, social changes and special changes in behaviour.

Table No. 1
Number and percentage of children and adults in relation to different diseases

Disease	Children		Adults		Total	
	N	%	N	%	N	%
Meningitis	7	7.53	2	3.22	9	5.81
Hepatitis	9	9.68	3	4.84	12	7.74
Typhoid	36	38.71	10	16.13	46	29.68
Pneumonia	18	19.35	1	1.61	19	12.26
Severe Diarrhea	75	80.64	14	22.58	89	57.42
Chicken Pox	26	27.96	2	3.22	28	18.06
Measles	52	55.91	1	1.61	53	34.19
Severe Influenza	86	92.47	11	17.74	97	62.58

The table above shows the number of cases of sufferings of the eight diseases by the child and adult subjects. The figures shown in the table are self explanatory. It is seen that 97 subjects were attacked by severe influenza and 89 subjects were attacked by severe diarrhea. Measles is the 3rd and Typhoid is the 4th ranked diseases suffered by the subjects of this study.

Some subjects experienced severe influenza and severe diarrhea more than once.

The in-depth study of individual disease showing the nature, number and seriousness of the diseases are presented in tables 6 to 13 of this chapter.

Figure – 1 Number and percentage of children and adults in relation to different diseases subjects

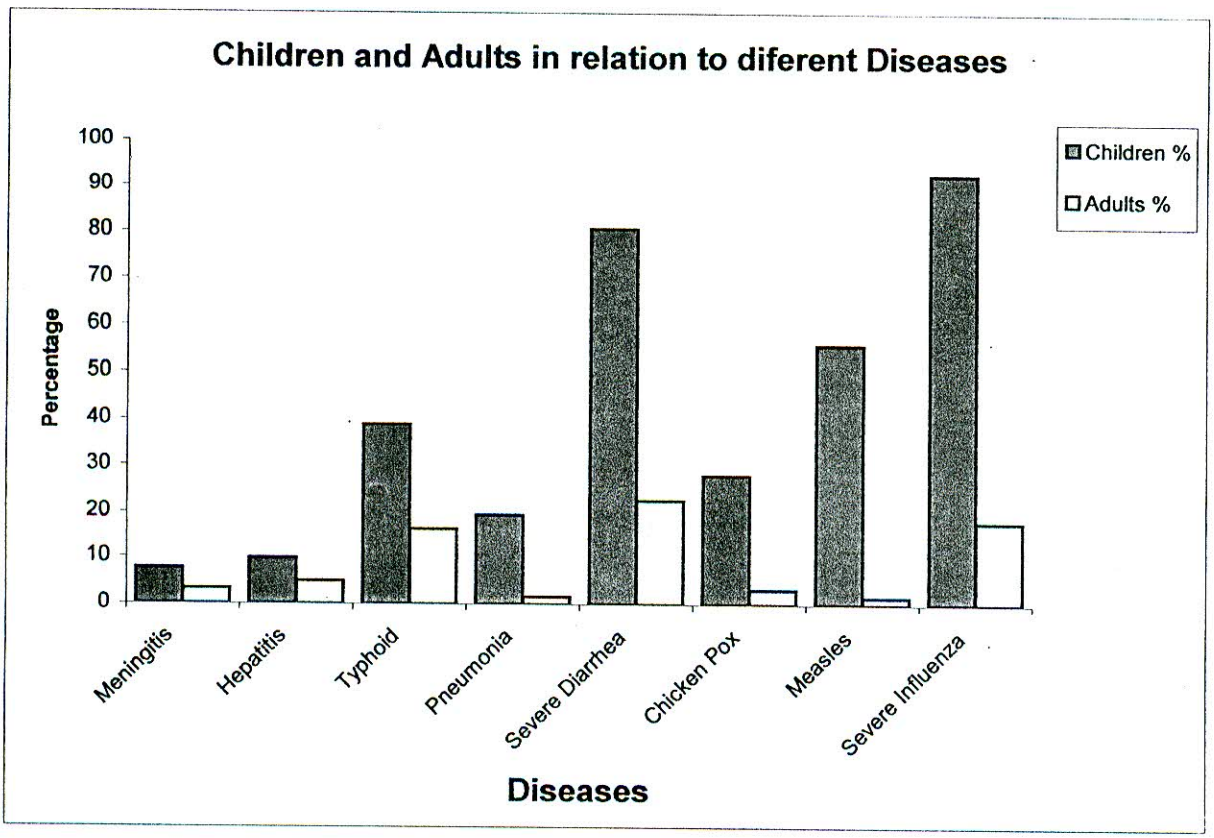


Table No. 2
Number and percentage of rural and urban subjects in relation to different diseases

Disease	Rural		Urban		Total	
	N	%	N	%	N	%
Meningitis	2	2.44	7	9.59	9	5.81
Hepatitis	4	4.88	8	10.96	12	7.74
Typhoid	27	32.93	19	26.03	46	29.68
Pneumonia	11	13.41	8	10.96	19	26.03
Severe Diarrhea	37	45.12	52	71.23	89	57.42
Chicken Pox	9	10.47	19	26.03	28	18.06
Measles	36	43.90	17	23.29	53	34.19
Severe Influenza	44	53.66	53	72.60	97	62.58

The table above shows the number of cases of sufferings of the eight diseases by the rural and urban subjects. The figures shown in the table are self explanatory. It is seen that urban subjects suffered more in diseases compared to the rural subjects. It was reported by the parents and guardians that some of the subjects suffered twice or more in the same disease. Such diseases are typhoid, diarrhea and influenza.

The findings shown in the above table indicate that the rural subjects suffered lesser in diseases compared to the urban subjects. But it is not the true picture of the sufferings. Actually many of the rural subjects were not provided treatment during illness or they were treated by homeopathic medicine or ayurvedic medicines, and the medical papers were not available.

Figure – 2 Number and percentage of rural and urban subjects in relation to different diseases

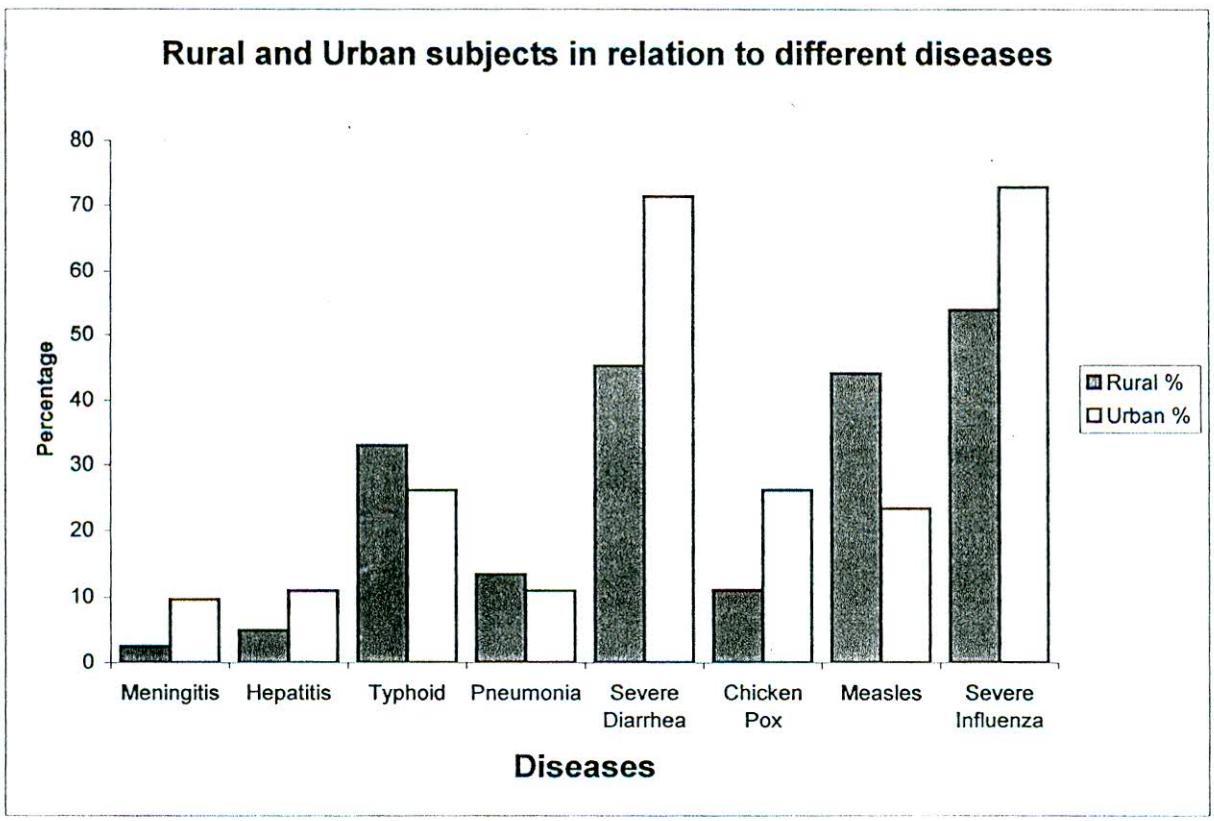


Table No. 3
Number and percentage of Male and Female subjects in relation to different diseases

Disease	Male		Female		Total	
	N	%	N	%	N	%
Meningitis	6	6.18	3	5.17	9	5.81
Hepatitis	8	8.25	4	6.90	12	7.74
Typhoid	13	13.40	33	56.90	46	29.68
Pneumonia	10	10.31	9	15.51	19	12.26
Severe Diarrhea	68	70.10	21	36.21	89	57.42
Chicken Pox	17	17.52	11	18.96	28	18.06
Measles	40	41.24	13	22.41	53	37.19
Severe Influenza	55	56.70	42	72.41	97	62.58

The findings shown in the above table projects the illness of the male and female subjects. It is seen that prevalence of meningitis was more among male subjects. But it is not a correct picture of the prevalence of meningitis in the country. In reality many infants die after suffering meningitis in the country who are not included in the population later on.

Similarly the higher percentage of cases of typhoid among the female subjects; higher percentage of diarrhea, measles and influenza among the male subjects do not project the correct prevalence rate of the country. Actually the findings shown in the table above is based on the medical papers available related to the subjects of this study.

Figure – 3 Number and percentage of Male and Female subjects in relation to different diseases

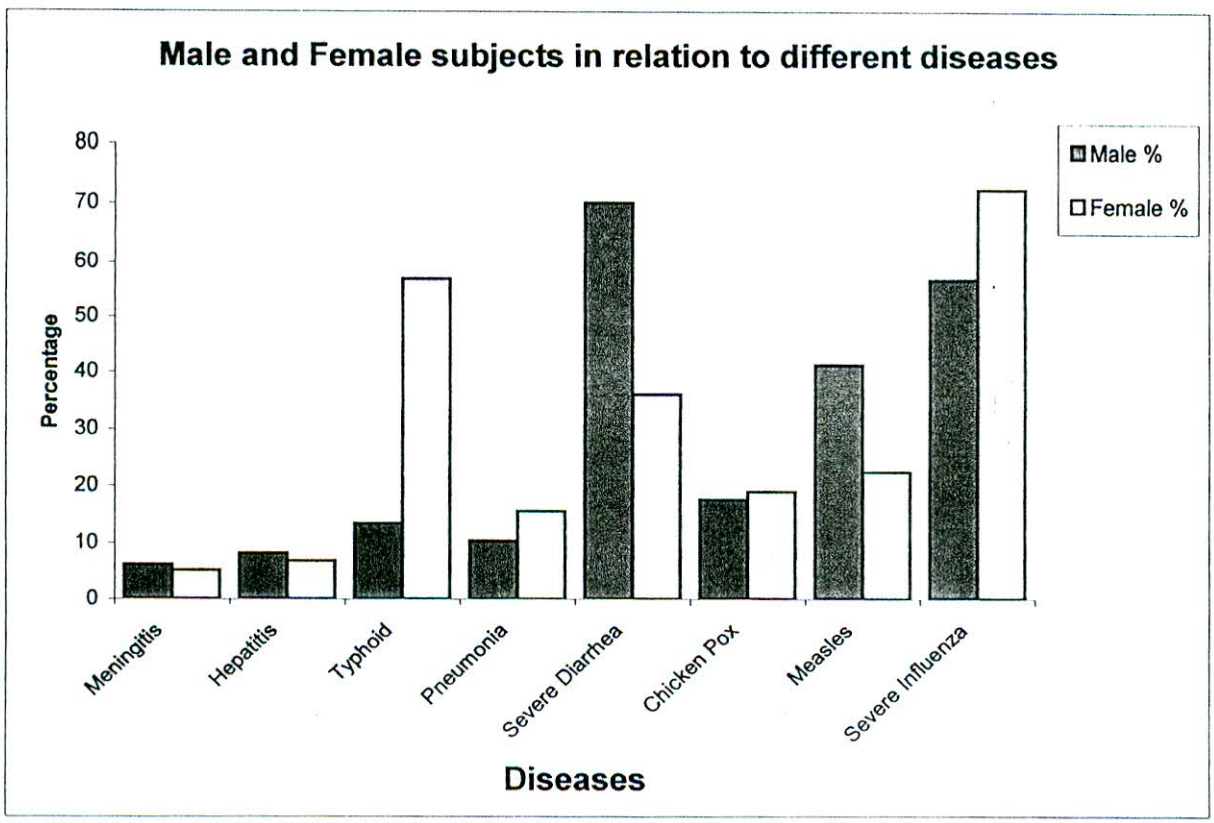


Table No. 4
Number and percentage of subjects with and without chromosomal anomalies in relation to different diseases

Disease	Chromosomal Anomalies		Free from chromosomal anomalies		Total	
	N	%	N	%	N	%
Meningitis	0	0	9	7.2	9	5.81
Hepatitis	0	0	12	9.6	12	7.74
Typhoid	1	3.33	45	36.0	46	29.68
Pneumonia	3	10.00	16	12.8	19	12.26
Severe Diarrhea	22	73.33	67	53.6	89	57.42
Chicken Pox	0	0	28	22.4	28	18.06
Measles	2	66.66	51	40.8	53	34.19
Severe Influenza	12	40.00	85	68.0	97	62.58

The findings shown in the above table projects the prevalence of different diseases among the subjects with and without chromosomal anomalies. It is seen that the subjects with chromosomal anomalies suffered lesser in the severe diseases like meningitis, hepatitis, chicken pox and measles.

All the subjects of this study with chromosomal anomalies are Downs Syndrome cases and the researcher observed that both in the rural and urban areas they suffer lesser in severe diseases compared to their siblings.

Figure – 4 Number and percentage of subjects with and without chromosomal anomalies in relation to different diseases

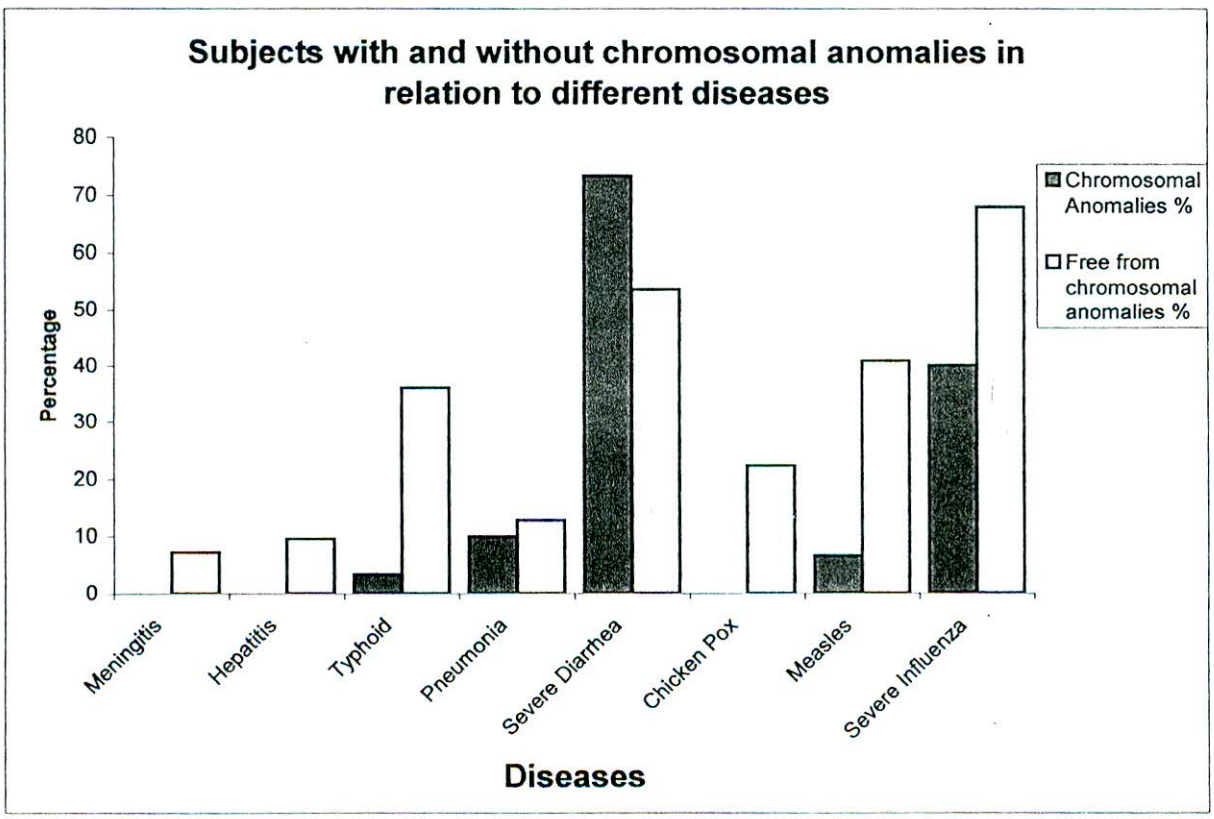


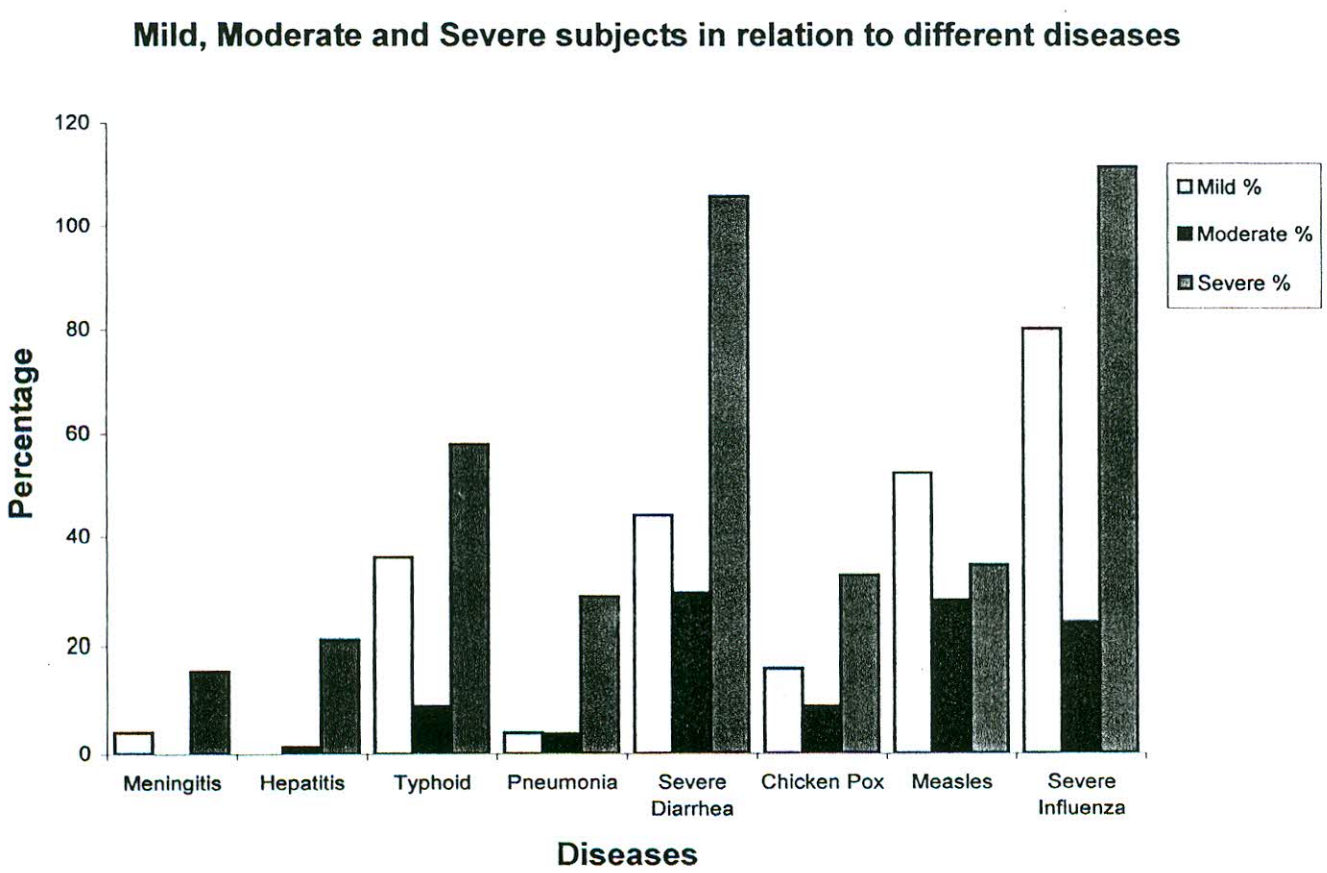
Table No. 5
Number and percentage of mild, moderate and severe subjects in relation to different diseases

Disease	Mild		Moderate		Severe		Total	
	N	%	N	%	N	%	N	%
Meningitis	1	4	0	0	8	15.38	9	5.81
Hepatitis	0	0	1	1.28	11	21.15	12	7.74
Typhoid	9	36	7	8.97	30	57.69	46	29.68
Pneumonia	1	4	3	3.85	15	28.85	19	12.26
Severe Diarrhea	11	44	23	29.49	55	105.77	89	57.42
Chicken Pox	4	16	7	8.97	17	32.69	28	18.06
Measles	13	52	22	28.20	18	34.61	53	34.19
Severe Influenza	20	80	19	24.36	58	111.54	97	62.58

The findings shown in the above table projects that the illness is more among the severely retarded subjects compared to the mildly retarded subjects.

The researcher observed that the mildly retarded persons can express their physiological problems better to the parents and to the physicians. Whereas the severely retarded persons mostly depend on their family members to perceive their problems and to explain the problem to the physicians which jeopardize the entire treatment. Secondly, large majorities of the severely retarded subjects are having some other disability which also complicate their illness as well as the treatment.

Figure – 5 Number and percentage of mild, moderate and severe subjects in relation to different diseases



Meningitis

Meningitis was suffered by 9 subjects out of 155 subjects.

Table No. 6.1: Psychological

Nature of problem	N	%	Confidence Interval
Memory deterioration	9	100.0	-
Attention deficit	9	100.0	-
Obsessive compulsive behaviour	1	11.11	0-35
Increase of irritation	0	00.00	-
Blank staring expression	4	44.44	6-83
Temper tantrums	0	00.00	-
Confusion	9	100.0	-
Hallucination	1	11.11	0-35

Table No. 6.2: Biological

Nature of problem	N	%	Confidence Interval
Visual impairment	3	33.33	0-70
Auditory impairment	3	33.33	0-7
Motor disorders	2	22.22	0-54
Convulsion increased	7	77.77	45-100
Convulsion decreased	0	00.00	-
Secondary disease	9	100.0	-
Allergy	1	11.11	0-35
Breathing problems	2	22.22	0-54
Gastrointestinal problems	9	100.0	-

Table No. 6.3: Social

Problem areas	N	%	Confidence Interval
Aggression increased	0	00.00	-
Depression increased	9	100.0	-
Speech impairment	4	44.44	6-83
Demanding attention	2	22.22	0-54

Table No. 6.4: Special

Problem areas	N	%	Confidence Interval
Toilet behaviour	5	55.55	17-94
Eating behaviour	4	44.44	6-83
Dressing behaviour	6	66.66	30-100
Self injurious behaviour	0	00.00	-
Sleep disturbance	7	77.77	45-100

Table No. 6.5: Duration of illness

Duration	N	%	Confidence Interval
Prolonged period	9	100.0	-
Short period	0	00.00	-

Table No. 6.6: Types of treatment

Treatment given by	N	%	Confidence Interval
From qualified physician	9	100.0	-
From quack physicians	2	22.22	0-54
Homeopathy	4	44.44	6-83
Ayurvedic	0	00.00	-

Hepatitis

Hepatitis was suffered by 12 subjects out of 155 subjects.

Table No. 7.1: Psychological

Nature of problem	N	%	Confidence Interval
Memory deterioration	11	91.67	74-100
Attention deficit	7	58.33	27-90
Obsessive compulsive behaviour	0	00.00	-
Increase of irritation	7	58.33	27-90
Blank staring expression	3	25.00	0-52
Temper tantrums	12	100.00	-
Confusion	12	100.00	-
Hallucination	1	8.33	0-26

Table No. 7.2: Biological

Nature of problem	N	%	Confidence Interval
Visual impairment	7	58.33	27-90
Auditory impairment	9	75.00	47-100
Motor disorders	3	25.00	0-52
Convulsion increased	1	8.33	0-26
Convulsion decreased	0	00.00	-
Secondary disease	12	100.00	-
Allergy	3	25.00	0-52
Breathing problems	3	25.00	0-52
Gastrointestinal problems	12	100.00	-

Table No. 7.3: Social

Problem areas	N	%	Confidence Interval
Aggression increased	0	00.00	-
Depression increased	12	100.00	-
Speech impairment	4	33.33	3-63
Demanding attention	12	100.00	-

Table No. 7.4: Special

Problem areas	N	%	Confidence Interval
Toilet behaviour	10	83.33	60-100
Eating behaviour	10	83.33	60-100
Dressing behaviour	7	58.33	27-90
Self injurious behaviour	2	16.67	0-40
Sleep disturbance	12	100.00	-

Table No. 7.5: Duration of illness

Duration	N	%	Confidence Interval
Prolonged period	12	100.00	-
	0	00.0	-

Table No. 7.6: Types of treatment

Treatment given by	N	%	Confidence Interval
From qualified physician	11	91.67	74-100
From quack physicians	1	8.33	0-26
Homeopathy	10	83.33	60-100
Ayurvedic	3	25.00	0-52

Typhoid

Typhoid was suffered by 46 subjects out of 155 subjects.

Table No. 8.1: Psychological

Nature of problem	N	%	Confidence Interval
Memory deterioration	3	6.52	0-14
Attention deficit	4	8.69	1-17
Obsessive compulsive behaviour	11	23.91	11-36
Increase of irritation	9	19.56	8-31
Blank staring expression	12	26.09	13-39
Temper tantrums	19	41.30	27-56
Confusion	26	56.52	42-71
Hallucination	8	17.39	6-28

Table No. 8.2: Biological

Nature of problem	N	%	Confidence Interval
Visual impairment	14	30.43	17-44
Auditory impairment	18	39.13	25-53
Motor disorders	11	23.91	11-36
Convulsion increased	4	8.69	0-17
Convulsion decreased	1	2.17	0-6
Secondary disease	30	65.22	51-79
Allergy	3	6.52	0-14
Breathing problems	3	6.52	0-14
Gastrointestinal problems	26	56.52	42-71
Constipation	13	28.26	15-41
Rash	2	4.35	0-10
Abdominal pain	21	45.65	31-60

Table No. 8.3: Social

Problem areas	N	%	Confidence Interval
Aggression increased	12	26.09	13-39
Depression increased	3	6.52	0-14
Speech impairment	2	4.35	0-10
Demanding attention	20	43.49	29-58

Table No. 8.4: Special

Problem areas	N	%	Confidence Interval
Toilet behaviour	17	36.96	23-51
Eating behaviour	22	47.83	33-62
Dressing behaviour	4	8.69	1-17
Self injurious behaviour	1	2.17	0-6
Sleep disturbance	19	41.30	27-56

Table No. 8.5: Duration of illness

Duration	N	%	Confidence Interval
Prolonged period	18	39.13	25-53
Short period	28	60.87	47-75

Table No. 8.6: Types of treatment

Treatment given by	N	%	Confidence Interval
From qualified physician	35	76.09	64-88
From quack physicians	11	23.91	11-36
Homeopathy	19	41.30	27-56
Ayurvedic	8	17.39	6-28

Pneumonia

Pneumonia was suffered by 19 subjects out of 155 subjects.

Table No. 9.1: Psychological

Nature of problem	N	%	Confidence Interval
Memory deterioration	1	5.26	0-16
Attention deficit	6	31.57	9-54
Obsessive compulsive behaviour	0	00.00	-
Increase of irritation	6	31.57	9-54
Blank staring expression	0	00.00	-
Temper tantrums	1	5.26	0-16
Confusion	2	10.53	0-25
Hallucination	0	00.00	-

Table No. 9.2: Biological

Nature of problem	N	%	Confidence Interval
Visual impairment	1	5.26	0-16
Auditory impairment	2	10.53	0-25
Motor disorders	0	00.00	-
Convulsion increased	3	15.79	0-33
Convulsion decreased	0	00.00	-
Secondary disease	9	47.37	23-71
Allergy	0	00.00	-
Breathing problems	11	57.89	34-82
Gastrointestinal problems	7	36.84	13-60
Respiratory problems	6	31.57	9-54
Low blood pressure	3	15.59	0-33
Skin disease	0	00.00	-

Table No. 9.3: Social

Problem areas	N	%	Confidence Interval
Aggression increased	6	31.57	9-54
Depression increased	5	26.32	5-47
Speech impairment	0	00.00	-
Demanding attention	2	10.53	0-25

Table No. 9.4: Special

Problem areas	N	%	Confidence Interval
Toilet behaviour	2	10.53	0-25
Eating behaviour	6	31.57	9-54
Dressing behaviour	0	00.00	-
Self injurious behaviour	1	5.26	0-16
Sleep disturbance	6	31.57	9-54

Table No. 9.5: Duration of illness

Duration	N	%	Confidence Interval
Prolonged period	7	36.84	13-60
Short period	12	63.16	40-86

Table No. 9.6: Types of treatment

Treatment given by	N	%	Confidence Interval
From qualified physician	11	57.89	34-82
From quack physicians	8	42.10	18-66
Homeopathy	1	5.26	0-16
Ayurvedic	0	0.00	-

Severe Diarrhea

Out of 155 subjects 89 subjects suffered severe diarrhea. Some of them suffered several times in severe diarrhea.

Table No. 10.1: Psychological

Nature of problem	N	%	Confidence Interval
Memory deterioration	3	3.37	0-7
Attention deficit	2	2.25	0-5
Obsessive compulsive behaviour	0	0.00	-
Increase of irritation	32	35.95	26-46
Blank staring expression	1	1.12	0-3
Temper tantrums	27	30.33	21-40
Confusion	2	2.25	0-5
Hallucination	2	2.25	0-5

Table No. 10.2: Biological

Nature of problem	N	%	Confidence Interval
Visual impairment	2	2.25	0-5
Auditory impairment	3	3.37	0-7
Motor disorders	11	12.36	6-19
Convulsion increased	1	1.12	0-3
Convulsion decreased	0	0.00	-
Secondary disease	13	14.61	7-22
Allergy	2	2.25	0-5
Breathing problems	6	6.74	2-12
Gastrointestinal problems	31	34.83	25-45
Rectal prolepses	2	2.25	0-5
Acute renal failure	1	1.12	0-3

Table No. 10.3: Social

Problem areas	N	%	Confidence Interval
Aggression increased	12	13.48	6-21
Depression increased	33	37.08	27-47
Speech impairment	3	3.37	0-7
Demanding attention	44	49.44	39-60

Table No. 10.4: Special

Problem areas	N	%	Confidence Interval
Toilet behaviour	20	22.47	14-31
Eating behaviour	33	37.08	27-47
Dressing behaviour	12	13.48	6-21
Self injurious behaviour	0	00.00	-
Sleep disturbance	46	51.68	41-62

Table No. 10.5: Duration of illness

Duration	N	%	Confidence Interval
Prolonged period	7	7.86	2-13
Short period	82	92.13	87-98

Table No. 10.6: Types of treatment

Treatment given by	N	%	Confidence Interval
From qualified physician	44	49.44	39-60
From quack physicians	27	30.34	21-40
Homeopathy	6	6.74	2-12
Ayurvedic	0	0.00	-
No treatment	12	13.48	6-21

Chicken Pox

Out of 155 subjects 28 had chicken pox.

Table No. 11.1: Psychological

Nature of problem	N	%	Confidence Interval
Memory deterioration	11	39.28	20-58
Attention deficit	20	71.43	54-89
Obsessive compulsive behaviour	3	10.71	0-23
Increase of irritation	26	92.86	83-100
Blank staring expression	0	00.00	-
Temper tantrums	20	71.43	54-89
Confusion	2	7.14	0-17
Hallucination	2	7.14	0-17

Table No. 11.2: Biological

Nature of problem	N	%	Confidence Interval
Visual impairment	3	10.71	0-23
Auditory impairment	12	42.86	23-62
Motor disorders	9	32.14	14-50
Convulsion increased	3	10.71	0-23
Convulsion decreased	0	00.00	-
Secondary disease	21	75.00	58-22
Allergy	9	32.14	14-50
Breathing problems	2	7.14	0-17
Gastrointestinal problems	2	7.14	0-17
Dizziness	7	25.00	8-42

Table No. 11.3: Social

Problem areas	N	%	Confidence Interval
Aggression increased	3	10.71	0-23
Depression increased	11	39.28	20-58
Speech impairment	2	7.14	0-17
Demanding attention	13	46.43	27-66

Table No. 11.4: Special

Problem areas	N	%	Confidence Interval
Toilet behaviour	11	39.28	20-58
Eating behaviour	11	39.28	20-58
Dressing behaviour	8	28.57	11-46
Self injurious behaviour	2	7.14	0-17
Sleep disturbance	22	78.57	63-94

Table No. 11.5: Duration of illness

Duration	N	%	Confidence Interval
Prolonged period	2	7.14	0-17
Short period	26	92.86	83-100

Table No. 11.6: Types of treatment

Treatment given by	N	%	Confidence Interval
From qualified physician	10	35.71	17-54
From quack physicians	18	64.28	46-83
Homeopathy	0	00.00	-
Ayurvedic	0	00.00	-

Measles

Out of 155 subjects 53 subjects suffered in measles.

Table No. 12.1: Psychological

Nature of problem	N	%	Confidence Interval
Memory deterioration	3	5.66	0-12
Attention deficit	11	20.75	10-32
Obsessive compulsive behaviour	2	3.77	0-9
Increase of irritation	26	49.06	36-63
Blank staring expression	1	1.89	0-6
Temper tantrums	22	41.51	28-55
Confusion	3	5.66	0-12
Hallucination	3	5.66	0-12

Table No. 12.2: Biological

Nature of problem	N	%	Confidence Interval
Visual impairment	11	20.75	10-32
Auditory impairment	7	13.21	4-22
Motor disorders	2	3.77	0-9
Convulsion increased	2	3.77	0-9
Convulsion decreased	0	0.00	-
Secondary disease	23	43.40	30-57
Allergy	11	20.75	10-32
Breathing problems	20	37.73	25-51
Gastrointestinal problems	7	13.21	4-22
Myocarditis	1	1.89	0-6
Encephalitis	1	1.89	0-6

Table No. 12.3: Social

Problem areas	N	%	Confidence Interval
Aggression increased	4	7.55	0-15
Depression increased	0	0.00	-
Speech impairment	0	0.00	-
Demanding attention	11	20.75	10-32

Table No. 12.4: Special

Problem areas	N	%	Confidence Interval
Toilet behaviour	3	5.66	0-12
Eating behaviour	3	5.66	0-12
Dressing behaviour	3	5.66	0-12
Self injurious behaviour	0	0.00	-
Sleep disturbance	11	20.75	10-32

Table No. 12.5: Duration of illness

Duration	N	%	Confidence Interval
Prolonged period	2	3.77	0-9
Short period	51	96.23	91-100

Table No. 12.6: Types of treatment

Treatment given by	N	%	Confidence Interval
From qualified physician	29	54.72	41-68
From quack physicians	12	22.64	11-34
Homeopathy	7	13.21	4-22
Ayurvedic	3	5.66	0-12
No treatment	2	3.77	0-9

Severe Influenza

Out of 155 subjects 97 had severe influenza. Large majorities of these 97 subjects have suffered several times in severe influenza.

Table No. 13.1: Psychological

Nature of problem	N	%	Confidence Interval
Memory deterioration	2	2.06	0-5
Attention deficit	21	21.65	13-30
Obsessive compulsive behaviour	1	1.03	0-3
Increase of irritation	32	32.99	23-42
Blank staring expression	0	00.00	-
Temper tantrums	3	3.09	0-6
Confusion	3	3.09	0-6
Hallucination	0	0.00	-

Table No. 13.2: Biological

Nature of problem	N	%	Confidence Interval
Visual impairment	2	2.06	0-5
Auditory impairment	2	2.06	0-5
Motor disorders	0	0.00	-
Convulsion increased	1	1.03	0-3
Convulsion decreased	0	0.00	-
Secondary disease	13	13.40	7-20
Allergy	6	6.18	1-11
Breathing problems	6	6.18	1-11
Gastrointestinal problems	31	31.96	23.41

Table No. 13.3: Social

Problem areas	N	%	Confidence Interval
Aggression increased	3	3.09	0-6
Depression increased	7	7.22	2-12
Speech impairment	0	0.00	-
Demanding attention	11	11.34	5-18

Table No. 13.4: Special

Problem areas	N	%	Confidence Interval
Toilet behaviour	1	1.03	0-3
Eating behaviour	1	1.03	0-3
Dressing behaviour	1	1.03	0-3
Self injurious behaviour	0	0.00	-
Sleep disturbance	13	13.40	7-20

Table No. 13.5: Duration of illness

Duration	N	%	Confidence Interval
Prolonged period	3	3.09	0-6
Short period	94	96.91	93-100

Table No. 13.6: Types of treatment

Treatment given by	N	%	Confidence Interval
From qualified physician	42	43.30	33-53
From quack physicians	31	31.96	22-41
Homeopathy	22	22.68	14-31
Ayurvedic	2	2.06	0-5

In tables 6.1 to 13.6 different aspects of the eight diseases were shown. For each disease there are six tables. The first table shows the psychological aspects related to the disease. The second table shows the biological aspects, the third table shows the social aspects, the fourth table shows some special aspects, the fifth table shows the duration of sufferings in the diseases and the sixth table shows the types of treatment received by the subjects during that particular disease.

The figures shown in the tables are self explanatory. The first column shows the nature of problem faced, the second column shows the number of cases who faced the particular problem, the third column shows the percentage of cases and the fourth column shows the confidence interval to assess the significance of the particular problem.

It was mentioned earlier that each subject of this study is a unique case and there are differences in their behaviour considering their physical, mental and social conditions. It is very difficult to generalize the nature of the behavioural problems of the subjects for different types of diseases. Secondly, some of the subjects have other disabilities in addition to their mental retardation. Some subjects obtained immediate attention for qualified medical professionals and some subjects did not get any treatment during the diseases.

However, the researcher tried to discuss more about the behavioural problems of the subjects related to different diseases in the following chapter. In addition, some selected case studies were included in the appendices of this thesis which projects the individual nature of the cases.

Chapter IV
Discussion

In Bangladesh until the decades of seventies of the last century, the Mentally Retarded persons had a relatively shorter life span due to ignorance of the parents and concerned medical personnel. But nowadays, the Mentally Retarded persons are experiencing longer life span because of EPI programme, better awareness among the parents and concerned medical personnel. But those who survive in adolescence or adult period, many of them experience different types of diseases which sometimes jeopardize their behavioural adjustments.

The psychologists and other concerned persons have reported that these diseases and behaviour problems could be avoided if proper diagnosis and treatment could be provided in their early ages, especially during infancy and babyhood.

Mental Retardation is not mental illness and drugs are not always needed for the Mentally Retarded persons if he or she is free from any illness. A number of Pathological tests are must in many countries before using drugs. Some pathological tests including Complete Blood count (CBC), thyroid function, SMA – 12 or 18 (blood test on a blood sample), ECG, Opthamological tests etc, are essential before prescribing any drug.

As most of the Mentally Retarded persons are mostly the subjects can not narrate their inert feelings and real physiological problems either to their parents or to their physicians they become subjects of trials and errors in medical care in Bangladesh. To avoid such trials and errors and to provide them real treatments during different ailment, appropriate pathological tests are necessary.

In the early ages, the faith healers were the leading personalities to explain the conditions of mental retardation. They interpreted the symptoms differently according to their own education and training.

Homeopathic medicines are widely practiced in this country. Unfortunately large majority of the homeopathic doctors have no formal education from any Homeopathic Medical College. Treatment with Ayurvedic medicines are also popular in Bangladesh. This treatment pattern was also invented in this sub-continent thousands of years ago. Ayurvedic medical books interpreted mental retardation in their own ways. Whether the treatment is homeopathic, ayurvedic and allopathic the mentally retarded persons of this country are subjects of experiments. The physicians are engaged in Trials and Errors with them in the absence of effective health policy of the government. The ultimate result is drug dependency of the mentally retarded children, which is continued throughout their life.

There are differences in the treatment patterns of the mentally retarded persons between urban and rural areas, rich and poor families, educated and illiterate families, etc.

A large number of mentally retarded persons develop drug dependency due to faulty treatments and ignorance of the concerned medical practitioners. Ignorance of the guardians jeopardizes the condition a little more. It could be avoided if the mentally retarded conditions could be detected in the early ages of the affected persons.

Most of the parents of the mentally retarded persons in Bangladesh are not aware about their ward's real condition. Even they do not know the causes and symptoms of mental retardation. Majority of the parents and guardians of the mentally retarded persons in this country treat their wards as mentally ill. They usually seek help of every type of medical practitioners for their mentally retarded wards. They also do trials and errors with their wards.

Homeopathic and Ayurvedic treatments are widely practiced both in the rural and urban areas of Bangladesh. There are many Homeopathic and Ayurvedic physicians in the villages. Since they are the readily available persons, the people usually consult them at first during any illness. When the illness takes a serious turn or involves surgical operation, only then the villagers approach educated allopathic doctors in the nearby urban areas.

Homeopathic treatment is relatively popular among the rural people because of the lower cost and easy availability. It is sometimes the only treatment for all diseases to the poor people. Homeopathists, both educated and uneducated, practice treatment of the mentally retarded persons since hundreds of years. To most of the Homeopathists, mentally retarded persons are mentally weak persons. They use a number of Homeopathic medicines mainly for improving the memory and thought process.

Ayurvedic treatments are very old in this sub-continent. The main philosophy is to obtain medicine from the plants and minerals. Thousands of Ayurvedic medicines are available in the village market and people indiscriminately use these medicines, even without any formal prescription from an expert, for improvement of their mental capacity. Faith healing and miracle cures are also widely practiced in the rural areas of Bangladesh.

It is found that most of the parents of the mentally retarded persons seek help from the general medical practitioners or psychiatrists for their wards. The general medical practitioners and the psychiatrists usually prescribe psychotropic medicines for the mentally retarded persons. The psychotropic drugs are more popular in the urban areas than in the rural areas.

It was mentioned in the Introduction chapter of this thesis that the common diseases in Bangladesh include diarrhea, dysentery, worms infection, measles, diphtheria, whooping cough, tetanus, pulmonary tuberculosis, polio, asthma, pneumonia, jaundice, typhoid, dyspepsia/gastritis, malaria, meningitis, rabies/ hydrophobia, eye infection, peptic ulcer, common cold and scabies. Burns and injuries also cause morbidity. Prevalence rate for all diseases other than heart diseases is higher in rural destitute households compared to non-destitute ones.

In the absence of proper care in time, morbidity leads to chronic illness, disability, and even death. A recent survey of 347,150 rural people revealed that 4,447 of them were disabled and among them 2,456 were male, 1,991 female.

According to U.S. Library of Congress, communicable diseases were the major health hazards in the 1980s in Bangladesh. Poor

nutrition and sanitation fostered the spread of infections. Infectious diseases like cholera, dysentery, diarrhea, measles, diphtheria, pertussis, tetanus, and poliomyelitis--and parasitic diseases such as malaria, filariasis, and helminthiasis are responsible for widespread illness and numerous deaths. Although not reported among government statistics, tuberculosis was believed to be an increasingly serious health problem, with 90,000 deaths and 110,000 new cases occurring annually. Disease in the late 1980s was most prevalent in rural areas and treatment was most readily available in the rural areas. A mid-1980s survey by WHO indicated that deaths due to diarrheal diseases, malnutrition, and pneumonia accounted for 16.3 percent, 13.1 percent, and 10.8 percent of all deaths, respectively. The percentages for other diseases were as follows: prematurity and birth injury (8.6 percent), cardiovascular accidents (4.5 percent), tetanus (4.4 percent), pulmonary tuberculosis (3.3 percent), measles (2.7 percent), and other causes (36.3 percent).

Young children suffered disproportionately from diseases, and they accounted for 40 percent of deaths annually. Major killers of young children were severe diarrhea and neonatal tetanus caused by unsanitary treatment of the umbilicus. Until the mid-1980s, only 3 percent of Bangladeshi children received immunization against common infectious diseases. Consequently, potentially avoidable illnesses like tetanus, pertussis, and measles accounted for nearly half of infant deaths and more than a third of childhood deaths.

By the late 1980s, a massive immunization program had eliminated smallpox, and highly effective treatments had contained cholera. Malaria, however, once thought to have been eradicated, again had become a major health problem by 1988.

Non-communicable diseases such as diabetes, cardiovascular diseases, mental illness, gastrointestinal disorders, cancer, rheumatoid arthritis, respiratory disease, and urogenital diseases were increasing in frequency in the 1980s. Cases of vitamin A deficiency causing night blindness and xerophthalmia, iron deficiency anemia, iodine deficiency, protein-calories deficiency, and marasmus also were on the increase.

In a developing country like Bangladesh with 120 million people and limited financial resources in the health sector, the rational treatment of most common diseases is essential. 85% of the population lives in rural communities; poor social economic conditions, demographic structure, system of sanitation, water supply and food are the reasons for the common prevailing diseases and the mentally retarded persons are also included inside the sufferers of these diseases.

In this research work all the diseases were not studied. Only eight diseases were studied and it was seen how these diseases affect the behaviour of the mentally retarded persons. It was also found that not all the mentally retarded subjects of this study suffered all the diseases.

Meningitis

Meningococcal disease is an uncommon but life threatening infection. In meningitis, infection of the meanings, the membrane lining of the brain and spinal cord and mostly septicemia takes place. Meningitis can affect anyone, any where, at any age and may be devastating for patients and their families.

In this study, out of 155 subjects, only 9 subjects were affected by meningitis. During interview the parents told that meningitis attacked the subjects when they were small babies. The parents could not understand that their children were being affected by such a severe disease that will change the whole life of their children.

It was found that all the 09 subjects had the following signs and symptoms when they were attacked by meningitis. These are:

- Very high fever with cold hands and feet
- Refusing feeds or were vomiting
- Disliked of being handled and /or cried when moved
- Fretful or irritable behaviour
- The subjects were unable to raise head or they became limp
- Performed high-pitched moaning cry or whimpering

- They had pale or blotchy complexion
- Marked neck retraction with arching of bale
- Blank staring expression, and
- Acute Convulsion

As the subjects were too small and could not complain their own physiological problems, mostly the mothers observed and perceived the symptoms. In rural areas the quack physicians were the first medical persons to give treatments, but they mainly did some trials and errors without doing any pathological test. Finally when the convulsion because severe and temperature did not reduce below 104°F the subjects were moved to the hospitals or clinics in Rajshahi city.

The parents informed that their children survived as these children were finally moved to the hospitals. But they have seen many babies die in their villages who did not get standard treatment at villages or at hospitals. It is assumed that the babies were moved to the hospitals when it was too late.

It is mentionable, in Bangladesh thousands of children die every year because of meningitis. The birth, death and nature of their sufferings are not being recorded by any government or non-government health agency. Secondly, those who ultimately survive form meningitis become mentally retarded of different degrees of retardation.

Meningitis can be considered as one of the most serious diseases and one of the most important factors of mental retardation in Bangladesh. In this study 09 subjects were found who suffered meningitis. All these 09 subjects were attacked by meningitis when they were in their babyhood and aged below 2 years. At present 7 of them are aged below 17 years and 2 are aged over 17 years.

All the parents claimed that these persons were born as healthy infants and were growing up normally. There was no sign of mental retardation among them before they were attacked by meningitis. All the parents reported that suddenly they became sick and all of them had very high fever. In all cause the fever was above 104°F and continued for prolonged period followed by

serious convulsion. All the cases were ultimately treated in standard clinics or hospitals by qualified medical doctors. All of them were given antibiotics. But all the 09 cases suffered seriously for prolonged period lasting 25 days to 2 months including secondary complications.

The parents informed the researcher that all of them experienced severe convulsion and the duration of each convulsion lasted form 2 minutes to 20 minutes. Before bringing them to the hospitals, parents of 5 cases tried body sponge with cold water and tried to reduce the fever, but the fever again reached to 104°F in most cases.

The 4 other cases were first treated by qualified physicians or Homeopathic medicines were given. But the treatments failed and finally they were shifted to the hospitals and clines. In all the 09 cases the qualified doctors at the hospitals or clinics finally diagnosed that the subjects were attacked by meningitis.

The researcher examined the old medical papers and found that the cause of meningitis was not traced properly. However, after suffering meningitis all the cases developed secondary symptoms and started behaving like mentally retarded persons.

Out of 9 cases, 6 were given admission to normal primary schools or kindergartens. But all of them finally dropped out of the schools. All the 9 cases are having poor memory and their Immediate Memory Spans are very short, too. All the subjects possess attention deficit, can not give appropriate attention to most of the interactions of daily living activities.

Out of these 09 cases 04 have developed permanent blank staring expressions. The researcher also observed that they can not interact properly in social situations.

Hepatitis

In this study, out of 155 cases 12 had hepatitis. 9 of them are yet children and 3 have become Adults; 4 live in the villages and 8 in Rajshahi city; 8 are male and 4 are female. None of these 8 subjects are Downs Syndrome cases and none of them are of mild

retardation. One subject is of moderate retardation and 11 are of severe mental retardation. It was also found that all the 12 subjects suffered for a ling time in this disease. Though there are many types and classifications of hepatitis but all the 12 subjects of this study were diagnosed that they had jaundice. All the subjects had inflammation of the liver.

Out of these 12 subjects 11 obtained full treatments from qualified medical doctors. Only one subject who lives in a village was treated by a Quack physician. Out of 12 subjects 10 also had Homeopathic treatment, too. It was learnt that the name of the homeopathic medicine is known as 'Chelidolium' which is a liquid medicine. In all cases the subjects were asked to take bed rest for a prolonged period.

The 3 subjects who are now adults also had jaundice when they were aged below 5 years. All the 12 subjects had severe abdominal pain, low grade fever, nausea and vomiting, ill feeling, severe fatigue and loss of appetite before, during and many days followed by the disease.

The researcher interviewed the 3 adults about their sufferings. It was found that they can't remember much of their sufferings and it is assumed that they have severe memory deterioration, attention deficit and some hearing impairments, etc. after their disease.

Considering the available medical rewords, description given by the parents and personal observation, the researcher assumes that Hepatitis may have caused mental retardation to the subjects or the subjects had tremendous changes in their behavior after suffering severe jaundice.

The behavioral changes of the subjects are shown in Tables 7.1, 7.2, 7.3 and 7.4 of the preceding chapter. The findings show that jaundice caused several changes in the psychological, biological, social and some special behaviours of the subjects.

Actually the subjects who suffered jaundice need extensive pathological tests by the medical scientists to assess the type of hepatitis they suffered and the physiological changes those took place inside them. But the researcher after her close observation

strongly feels that jaundice caused serious damage to these children which may have caused their mentally retarded condition.

Typhoid

Typhoid fever is an illness caused by the bacterium Salmonella typhi. Very common worldwide, it is transmitted by food or water contaminated with feces from an infected person. After infection, symptoms include a high fever from 103° to 104°F that rises slowly, slow pulse rate (bradycardia), weakness, headaches, lack of appetite, severe diarrhea, stomach pains, and a rash of flat rose-colored spots called the rose spots. Extreme symptoms such as intestinal perforation or hemorrhage, delusions, and confusion also are possible. Diagnosis is made by blood, bone marrow or stool cultures and with the Widal test (demonstration of salmonella antibodies against antigens O-somatic and H-flagellar) or, in less affluent countries with the urine diazo test. In epidemics and less wealthy countries, after excluding malaria, disentery or pneumonia, a therapeutic trial with chloramphenicol is generally undertaken while awaiting the results of Widal test and blood cultures. Typhoid fever can be fatal.

In this study out of 155 mentally retarded subjects 46 were attacked by Typhoid. And out of these 46 subjects 36 are yet aged below 18 years and 10 have become adults. All the 46 subjects were attacked by typhoid when they were aged between 3 and 10 years. Out of 46 cases 03 cases have experienced the second attack of Typhoid or something similar to Typhoid.

All the 46 cases showed the primary symptoms like-

- fever 101^0 F to 104^0 F
- headache
- loss of appetite
- constipation followed by diarrhea (23 cases had severe diarrhea after they were given medicines by the physicians. But the diarrhea did not continue for a longer period).
- cough (38 had non-productive cough)
- severe weakness.
- loss of interest to communicate with parents or attending personnel.

The nature of biological problems, claimed by the parents, followed by Typhoid are shown in Table 8.2 of the preceding chapter. Here the researcher wants to focus on the behavioural problems shown in Table 8.1 and 8.3 of the preceding chapter.

It was found that out of 46 subjects 3 subjects had memory deterioration as claimed by their parents. But it is not known what levels of memory they had before they were attacked by Typhoid. The researcher found that all these 3 cases are of severe retardation and their abilities to recall names, objects and incidents are relatively very low. She observed that all these 3 subjects watch Television and the changes of sounds during advertisements attract their attention.

Seven, out of 46 cases now have increased irritation. They mostly become angry when they are insisted to eat something or do something. Sometimes they become so irritated that they attack their siblings or throw away objects to others. Five of these subjects are of ill health and seems underweight compared to their chronological age.

It was found that 26 of them have different types of confusion and 8 have some Hallucination. The confusions are related to medicines, social affairs, parents, siblings, moving objects and nature. The Hallucination are associated with fears, anxiety etc. that they see animals attacking them or may harm them. They do not like pets in their houses or around them.

Out of 46 subjects 12 have developed 'blank staring expression' which their parents claim developed after suffering Typhoid. 11 subjects developed some obsessive compulsive behaviour which the parents also claim developed in them after suffering Typhoid. These obsessive compulsive behaviour include repeated hand wash, repeated questioning without listening or giving attention to the given answers.

It was found that 18 subjects suffered for a prolonged period in Typhoid. 02 cases of these 18 subjects are of severe retardation and possess multiple disable conditions. The parents claimed that

severe Typhoid is the main factor of retarded condition of their children.

Among special behaviour problems 17 cases have deteriorated in toilet behaviour, 22 have problems in eating by themselves, 4 can't wear dresses by themselves, 19 have different degrees of sleep disturbances, and one case have developed hand banging a self injurious behaviour. It is not sure but the researcher herself and the physician of the subject assume that the subject has developed self injurious behaviour because of some other unknown biological condition of the subject, not due to typhoid.

Measles

In this study, out of 155 subjects 53 had measles. All of them suffered in Measles when they were aged below 2 years. Out of these 53 subjects, 52 are yet children and only one has become Adult. 40 of these subjects are male and 13 are female. 2 of them are Downs Syndrome cases and 51are non-Down Syndrome cases. 13 are mild, 22 moderate and 18 are of severe mental retardation.

Out of these 53 subjects, among 23 subjects secondary diseases developed followed by Measles. These secondary diseases are mild type of :

bronchiolitis
pneumonia
conjunctivitis
myocarditis
hepatitis, and
encephlitis

Out of 53 subjects parents of 23 subjects believe that their children were born as normal children and have become mentally retarded because of the severe Measles followed by the secondary diseases. Unfortunately most of the parents could not show enough medical documents of these subjects to the researcher during interviews. The parents said that they did not think that their children will face disabilities like mental retardation and did not preserve the medical papers.

However, five parents preserved all the medical papers of their children. The researcher discussed the medical doctors with these papers. The medical doctors after studying the medicines used during measles and secondary complications also assumed that mental retardation of these five subjects may have caused because of sever measles.

The researcher assumes that measles can also be considered as a serious disease for the children of Bangladesh from the viewpoint of a psychologist. Among the 53 subjects now 3 have memory deterioration, 11 have attention deficit, 2 have obsessive compulsive behavior, 26 have increased irritation, 1 have Blank staring expression, 22 have temper tantrums, 3 have confusion and 3 of them now experience hallucination.

Aging it was found that 23 subjects have experienced secondary diseases after Measles. 20 subjects now have breathing problems, 11 have visual impairment and 7 have hearing impairment.

The researcher surprisingly found that only 2 cases suffered for a prolonged period in Measles and the sufferings of 51 cases were short. She also understood that parents did not considered measles as a serious disease as 12 cases were treated by Quack physicians. It was found that 2 subjects were never taken to the physicians or given any medicine. Observing all the cases, the researcher assumes that measles must be given due importance in Bangladesh to prevent Mental retardation of the children.

Chicken Pox

In this study it was found that out of 155 subjects 28 had chicken pox. The psychological, biological, social and special changes of behaviour of the subjects are shown in tables 11.1, 11.2, 11.3 and 11.4 in the preceding chapter. It was also found that 2 subjects suffered for a prolonged period. These two subjects practically recovered form chicken pox within one month, but developed secondary diseases like breathing problems and gastrointestinal problems which continued for prolonged period. Both these subjects are physically weak. These conditions changed their psychological behaviour. They have developed some confusions and experience hallucinations. The researcher found that the

parents are anxious about them and can't attend any social program leaving them alone at home.

Chickenpox is very common in children and can not be claimed as mild illness. Once someone has had chickenpox, they are immune to further infection. However, the varicella zoster virus which causes chickenpox remains in the body for life. Normally, the varicella virus lies dormant and does not cause health problems. But if the immune system, which normally protects the body against infection, is weakened the virus can reactivate. When reactivated, it causes shingles, which can be more serious than chickenpox. The medical name for chickenpox is varicella zoster and for shingles it is herpes zoster.

Chickenpox is a very contagious viral disease that causes an itchy outbreak of skin blisters. The chickenpox virus spreads from person to person by direct contact with fluid from broken chickenpox blisters. It also spreads through the air. Chickenpox is usually a mild disease. However, in adults and children with weakened immune systems, chickenpox can cause serious complications and even death.

Chickenpox spreads from person to person by direct contact with fluid from broken chickenpox blisters or through the air by coughing or sneezing. Chickenpox is so contagious in its early stages that an exposed person who has not had chickenpox has a 70% to 80% chance of getting the disease.

After infection, the virus stays in the body for life. Although people cannot get chickenpox twice, the same virus causes shingles. A person with shingles can spread the virus to an adult or child who has not had chickenpox and that person can develop chickenpox.

Chickenpox typically produces a mild fever and an itchy outbreak of blisters on the scalp, face, and torso. The blisters dry and become scabs in 4 to 5 days. The blisters occur in successive crops that can produce hundreds of scabs. An infected person is contagious from 1 to 2 days before the rash appears and until all blisters have formed scabs.

Symptoms usually start within 2 to 3 weeks after contact with an infected person. Chickenpox can usually be diagnosed by symptoms. A blood test is available to confirm the diagnosis if necessary. Anyone who has not had chickenpox is at risk after exposure to an infected person.

The most common complications of chickenpox are skin infections and pneumonia. Other complications are encephalitis (inflammation of the brain) and hepatitis. Chickenpox can also lead to severe problems in pregnant women, causing stillbirths, birth defects, or infection of the newborn during childbirth.

It was found that before the subjects were attacked by chicken pox they had the following signs and symptoms.

- started with a slightly raised temperature,
- fatigue along with the development of red spots, mainly on the body and face,
- spots appeared over a few days and progressed from being red spots forming blisters.

If the after effects are generalized in relation to behavioural changes, the following after effects continued in all of them for several months.

- confusion,
- irritability,
- excessive drowsiness,
- difficulty waking the child up, and
- hallucinations

But all these after effects did not prevail in the 28 subjects. Some of them improved and returned to their previous level of behaviour, but 2 of them are yet having behaviour problems.

From case studies it is understood that chicken pox was not the cause of their mentally retarded condition, but chicken pox deteriorated their functional levels.

Pneumonia

In this study it was found that out of 155 subjects only 19 suffered in Pneumonia when they were aged below 2 years. 18 subjects are yet children and only one has become Adult. 11 of these subjects live in Rajshahi city and 8 live in the villages. 10 of them are male and 9 are female. Three of these subjects are of Downs Syndrome category and the remaining 16 are non-Downs Syndrome subjects. Out of 19 subjects 1 is mild, 3 are moderate and 15 are of severe mental retardation. The psychological, social, biological and special changes of the subjects are shown in tables 9.1 to 9.4 of the preceding chapter.

Pneumonia is an inflation of the lunge caused by infection with bacteria, viruses, and other organisms. Pneumonia is usually triggered when a patient's defense system is weakened, most often by a simple viral upper respiratory tract infection or a case of influenza. Such infections or other triggers do not cause pneumonia directly but they alter the mucous blanket, thus encouraging bacterial growth. Other factors can also make specific people susceptible to bacterial growth and pneumonia.

Parents of the subjects of this study informed that the subjects showed the following symptoms:

1. High fever
2. Coughing
3. breathing problems
4. Abdominal pain, and
5. bluish

The children became bluish the parents became very much anxious and rushed to obtained help form qualified physicians. It was found that 8 subjects were treated by Quack physicians in the villages. One of the subjects was given only the Homeopathic medicine.

Out of 19 subjects 09 had secondary diseases followed by pneumonia. Now all the subjects have multiple disabilities, but those who have respiratory problems suffer most.

None of the parents claimed that their children became mentally retarded because of pneumonia but all of them claimed that Pneumonia caused several behavioural problems of the subjects.

As these subjects had Pneumonia before they were 2 years old, medical papers were not available in most cases. The researcher observed that attention deficit, irritation, sleep disturbances, etc. are present among at least 6 cases.

There are two subjects who were attacked twice by Pneumonia. Both these subjects now have auditory impairment and show confusion in behaviour.

There are 3 subjects living in Rajshahi city, who also had severe meningitis and experience frequent convulsion. These 3 subjects are now completely dependent on psychotropic drugs. If the drugs are withdrawn the subjects immediately experience convulsion. In these 3 subjects meningitis happened first followed by Pneumonia.

The researcher did not see, but listened from the parents of a dead female baby in Sukhandighi village that the baby was born normal. Then the girl suddenly had Pneumonia (as told by the village quack physician) which turned to meningitis (as told by the physicians of Rajshahi Medical Collage Hospital). The girl was shifted to Rajshahi Medical College Hospital with 105°F temperature and severe convulsion. But the girl died at the hospital within one day.

Influenza

In this study out of 155 subjects 97 were attacked by Influenza and most of them were attacked more or less every year. The subjects who escaped Influenza are mostly the persons with chromosomal anomalies, the Downs Syndrome subjects. But the Downs syndrome subjects were not fully escaped, too. Some of these subjects were also attacked by mild influenza which continues for lesser periods among them compared to their siblings or other family members.

There are 2 male subjects, who are now adults, living in the village Sukhandighi near Rajshahi suffer in Influenza more or less every year. The disease has become chronic physiological problem to

both of them. These 2 persons have significantly deteriorated in their memory power. They forget most of the names, incidents, etc. and face many problems in their Daily Living Activities because of deteriorated memory. These two persons were engaged in agricultural works earlier, now they are not given the jobs by others. But it can not be claimed that simply Influenza has caused their memory deterioration. These two persons also suffered in some other disease like chicken pox, Typhoid, Diarrhea and Measles. These two subjects now have significant visual impairment and hearing impairment, too.

It was found and well understood by the researcher that Influenza did not cause convulsion to any subject of this study. But due to Influenza 13 subjects developed secondary diseases. Just after suffering in Influenza 6 subjects developed breathing problems which they did not have before they were attacked by Influenza.

Gastro intestinal problem appeared among 31 subjects followed by Influenza. Out of 97 subjects 3 children (who are now aged between 7- 13 years) developed confusion and all the three subjects show temper tantrums. These 3 subjects live in Rajshahi City and belong to middle class socio economic status. Incidentally the mothers of all these 3 children are working mothers who can't attend them during day time.

One boy now aged 17 years developed obsessive compulsive behaviour after suffering severe Influenza when he was 09 years old. This boy always swings and rotates objects tied with string by his hand, but he does not have blank staring expression though he possess attention deficit.

The researcher observed that large majorities of the parents ignored Influenza disease of their children and 22 attempted Homeopathic treatments, 2attempted Ayurvedic treatment during first attack. Then when the fever did not reduce they tried allopathic treatment. Influenza was of short duration to most of the subjects but 3 subjects suffered for a prolonged period including some secondary complications.

After observing the subjects, listening to the parents and case studies, the researcher understood that Influenza did not cause

mental retardation to any of these 155 subjects. But severe Influenza caused many changes in their behaviour. Some of the changes became permanent.

Diarrhea

Diarrhea is yet considered as a severe disease in Bangladesh which causes deaths of thousands of children every year in the country. Nowadays people are aware of the prevention of diarrhea because of extensive propaganda by the media. But yet severe diarrhea is an important cause of mental retardation of many children in the country. Diarrhea is relatively a common disease, but sever diarrhea may cause death.

In this study it was found that out of 155 cases 89 suffered in diarrhea of different degree and severity. Most of these 89 subjects were attacked by severe diarrhea several times in their life. Out of the 89 subjects 75 subjects are yet children and 14 have become adults; 37 live in rural areas and 52 live in Rajshahi city; 68 are male and 21 are female, 22 are Downs Syndrome and 67 are non-Downs Syndrome cases. Among the diarrhea affected subjects of this study, 11 are mild, 23 are moderate and 55 are severe cases of mental retardation.

The psychological changes of the subjects are shown in Table 10.1 of the preceding chapter. It was found that 3 cases had memory deterioration after first attack of severe diarrhea. These 3 subjects suffered more than two weeks in severe diarrhea and almost died during the diarrhea. The parents gave-up hope that the children will not survive. But they have survived but now have many complications. They have attention deficit, temper tantrums, confusion, hallucination, visual impairment, auditory impairment, etc. One of them sometimes experience convulsion, too. Gastrointestinal problem is very serious problem among them. All the 3 subjects now live in Rajshahi city and aged below 12 years. All of them are very weak and can't cope with the daily living activities.

It is assumed that 3 million child die every year because of diarrhea. Contaminated food and drinks are the major sources of diarrhea. Diarrhea may be caused because of both the bacteria and

virus. It was observed that 43 subjects of this study have chronic diarrhea. 32 of these subjects show irritative behaviour and 27 subjects have temper tantrums. Following the acute attack of diarrhea 11 subjects developed motor disorders in addition to their mentally retarded condition. Secondary diseases like pneumonia, typhoid and severe influenza attacked 13 subjects. Some of the subjects had pneumonia and typhoid first, then they had severe diarrhea.

It is not a conclusion of the researcher but the researcher observed that severe diarrhea associated with severe dehydration have caused brain damage to some children and they are severely retarded children. She also observed that the 14 subjects who are now adult do not have chronic diarrhea.

Behavioral Problems

Differentiation between difficult but normal behaviors and significant behavioral problems is often unclear. A significant problem is more likely when the behavior is frequent and chronic, when more than one problem behavior occurs, and particularly when the behavior interferes with social and cognitive functioning. The mentally retarded persons can not perceive what really are recognized as accepted social norms and develop eating, sleeping, dressing, personal hygiene and toilet problems. All the deviations they do are considered as behavioral problems.

Eating problems

Many mentally retarded persons, e specially the severely retarded persons and spastic children were found can not eat food by themselves like others. They need help of others either partially or fully. Some of them do not know how much they should eat, when to eat and not to eat.

The researcher observed that out of 155 subjects of this study, large majorities have developed appropriate or near appropriate skills to eat by themselves through training and practice. She also observed that after suffering in severe diseases some of them deteriorate in self eating behaviour.

The researcher assumes that such deterioration is not always because of the biological changes due to diseases, but sometimes because of phobia, anxiety, attention seeking and many other mental conditions.

Sleep problems

Persons aged 2 to 3 years cycle through the stages of non-rapid eye movement (NREM) sleep (deep sleep) and then rapid eye movement (REM) sleep (light sleep) about every 90 minntes; about 80% of the total sleep time is spent in NREM. Newborns, who have less well-defined stages, enter sleep through active REM and spend about 50% of total sleep time in NREM.

Nightmares, which occur during REM, can be caused by frightening experiences (e.g., scary stories, television violence),

particularly in 3 and 4 years olds who cannot readily differentiate fantasy from reality. The child usually becomes fully awake and can vividly recall the details of the nightmare. An occasional nightmare is normal, but persistent or frequent nightmares warrant evaluation.

Somnambulism (persistent sleepwalking) and night terrors (sudden awakening with inconsolable panic and screaming) occur during stage 3 or 4 NREM sleep, usually in the first 1 to 3 hours of sleep. Episodes last from seconds to many minutes and are characterized by blank or confused stares, incomplete arousal with poor responsiveness to people, and amnesia for the episode. Somnambulism involves walking clumsily, usually avoiding objects. The child appears confused but not frightened. Of children aged 5 to 12 yr, 15% have sleepwalked at least once. Somnambulism occurs in 1 to 6% of the population, most commonly among school-aged boys. Stressful events may trigger an episode. Night terrors are most common in children aged 3 to 8 years age.

All the subjects of this study are aged above five years. The age is their chronological age, not the mental age. The mental age of many subjects were relatively low. During close interview with the parents of the subjects, the researcher came to know that some of the subjects of this study experienced somnambulism, but not due to the diseases suffered.

Toileting problems

Toilet behaviour of the mentally retarded children is one of the major problems. Most of the parents have belief that these persons are unable to develop appropriate toilet habits. But it is not true. It was proved by the concerned professionals that even the severely retarded children can develop appropriate toilet habits if given suitable training. But some of the children can not perform all tasks of cleaning themselves because of their other disabilities, or if they are profoundly retarded and have physical handicap conditions. Only those children need some help.

The researcher observed that most of the subjects of this study were given trained in toilet habits. But due to illness, prolonged sufferings, severe weakness, etc. some of the children needed help

in toilets during illnesses and some days after the illnesses. But some children developed confusion, phobia, anxiety, etc. that they can not perform all the toilet works. The natures of deterioration in toilet habits are shown in different tables of the preceding chapter after each disease.

Nocturnal Enuresis (Bed-wetting)

Nocturnal enuresis at an age when voluntary control should be expected affects 30% of children at age 4 yr, 10% at age 6 yr, 3% at age 12 yr, and 1% at age 18 yr. It is more common in boys than girls, appears to be familial, and is sometimes associated with sleep disorders. Enuresis u sually represents o nly a delay in maturation that resolves with time. Only 1 to 2% of cases have an organic etiology, usually a UTI. Rare causes are congenital anomalies, sacral nerve disorders, diabetes mellitus, etc.

The researcher observed that many subjects of this study have bed-wetting problems. She came to know that some of them developed the appropriate behaviour not to do bed-wetting but deteriorate when they suffer in some serious illness. Some of them again return to the behaviour of not to do bed-wetting, some of them fail to return to appropriate behaviour.

Encopresis and Constipation

Encopresis (fecal incontinence in the absence of organic defect or illness) occurs in about 17% of 3-yr-olds and 1% of 4-yr-olds. The cause is usually resistance to toilet training but is sometimes overflow fecal incontinence due to chronic constipation.

Constipation is difficult or infrequent passage of feces, hardness of stool, or a feeling of incomplete evacuation. Causes include stool withholding due to fear of using the toilet; resistance to toilet training; anal fissure; congenital abnormalities, eg, spinal cord lesions, imperforate anus (after surgical repair), and related anomalies; Hirschsprung's disease; hypothyroidism; malnutrition; cerebral palsy; and psychopathology in the child or family.

It was observed that some of the subjects of this study have Constipation behaviour and they remain irritated most of the time. The mothers of these subjects reported that constipation is related to their illnesses.

Separation anxiety

Crying when the parent leaves the room or when a stranger approaches is normal from age 8 months to 18 or 24 months. The intensity of this behavior varies. Some parents suspect an emotional problem and respond by becoming protective and avoiding separations or new situations.

It was not properly studied in this research but was found that some of the subjects suffer in separation anxiety. Through interview the researcher came to know that some parents tell them that they will be sent to residential homes and that create more anxiety among the children.

Fears and Phobias

Fears of the dark, monsters, bugs, and spiders are common in 3- and 4-yr-olds; fears of injury and death are more common in older children. Frightening stories, movies, or television shows are often upsetting and intensify fears. Statements made by the parents in anger or jest may be taken literally by mentally retarded children and can be disturbing. A shy child may initially react to new situations with fear or withdrawal, but repeated exposure and reassurance, without pressure, help the child adapt.

Phobias cause persistent, unrealistic, yet intense anxiety in reaction to external situations or stimuli. Normal developmental stage-related fears must be differentiated from those caused by tension in the home or by internalized conflicts (phobias). If the phobia is intense, is disproportionate to the potential danger involved, and interferes with the child's activity or if the child does not respond to simple reassurance, a psychiatrist should be consulted.

The researcher observed that many subjects of this study have different kinds of phobias. Height phobia, zoo phobia,

claustrophobia and separation anxiety are very common among them. It was not properly studied, but the researcher assumes that such phobias are more related to the family interaction than the diseases.

Hyperactivity

Hyperactivity is not easily defined because claims that a child is hyperactive often reflect the tolerance level of the annoyed person. However, more active children with shorter-than-average attention spans create management problems. Hyperactivity may have various underlying causes (e.g., an emotional disorder, CNS dysfunction, a genetic component), or it may be an exaggeration of normal temperament. Two-yr-olds are generally active and seldom still, and in 4-yr-olds a high level of activity and noise is common. Such behavior is stage-related but frequently leads to parent-child conflicts and causes parental concern. Extreme hyperactive behavior associated with signs of perceptual, motor, or psychological disorders is pathologic, and further evaluation is indicated.

Hyperactivity was found among many subjects of this study. The researcher did not study the rate of change of hyperactivity in relation to the diseases. But she observed that during illness hyperactivity reduced and after the illness hyperactive increased among some of the subjects.

Obesity

Obesity is associated with cardiovascular disease, breast, prostate and colon cancers, cerebro-vascular disease and diabetes. It is assumed that the number of overweight individuals has risen in the last three decades in Bangladesh. Obesity is more common among individuals with Mental Retardation than in the general population. The prevalence of obesity in the Mentally Retarded population has been found to vary with living situation and etiology of Mental Retardation. Individuals living at home have the highest prevalence of obesity followed by those living in a group home, while individuals living in institutions have the lowest prevalence of

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obesity. In addition, individuals with Down Syndrome are 1.5 times more likely to be obese compared with individuals with other etiologies of Mental Retardation. With the majority of individuals with Mental Retardation living in the community, it is imperative that obesity be considered a major health problem facing individuals with Mental Retardation.

The researcher observed that many subjects of this study, especially the Downs Syndrome subjects and teenage girls of the urban areas with mild mental retardation have obesity. She observed that these subjects also have eating disorder problems.

Physical Activity

Regular physical fitness is an important health maintenance activity that is associated with decreased body fat, decreased risk of cardiovascular disease and diabetes and enhanced psychological well-being. Like individuals in the general population, individuals with Mental Retardation are unlikely to participate in physical activities, either because they lack the motivation or the opportunity to be involved in fitness programs. In a review of physical fitness among individuals with Mental Retardation, reports that adults with Mental Retardation have lower cardiovascular fitness levels than the general population, suggesting that individuals with Mental Retardation may lead more sedentary lifestyles. Others have also found that individuals with Mental Retardation have lower cardiovascular fitness levels compared with those in the general population.

Special Olympic International has recognized the need for individuals with Mental Retardation to have the opportunity to participate in physical activities, including team and individual sports. Special Olympic International provides year-round opportunities for individuals with Mental Retardation to participate in sports training and athletic competition, with one of the explicit goals being development of physical fitness. Besides the primary athletic competition program, Special Olympic International also

has developed basic fitness guides and training materials for Special Olympic International coaches to raise awareness of proper diet and nutrition among athletes. Further, these guides encourage athletes to participate in daily exercise not only during Special Olympic International programs but also in their own home. Additionally, Special Olympic International has developed four specific programs to encourage individuals at increased risk for sedentary lifestyles to participate in physical activities. These programs include a motor activities training program for individuals with severe Mental Retardation, a unified sports program integrating individuals with mild Mental Retardation with their peers without Mental Retardation, a play activities program for young children with Mental Retardation ages 6 and 7 years and an athlete leadership training program.

The researcher has observed that most of the subjects of this study do not take part in physical activities including the house hold works. She also observed that the parents actually do not motivate them to do household works. They are given some impression that they are sick and can't do things. She also observed that the subjects who do some physical labours at home and outside are maintaining better health condition than those who do not work. Bangladesh is now sending team of mentally retarded athletes to the special Olympics, but yet the mentally retarded children of Rajshahi were not included in the team. She recommends that if the mentally retarded children of Rajshahi are also included in special Olympics they will be motivated to keep themselves physically fit.

Self injurious behaviour

The researcher observed some of the subjects developed self injurious behaviour, especially head banging after suffering serious disease. It is not know why and how the behaviour developed. These subjects were found also having mental illness or symptoms of some mental illnesses like schizophrenia and manic depressive psychoses. The researcher found that the parents of these children always remain worried that their children may injure themselves.

She assumes that such children having some serious pain or irritation inside the brain that insists them to bang their head with the walls. She strongly recommends the medical scientists to study the cases.

Child Health Conditions and Prevention Measures

Following are some information related to Child Health Conditions and Prevention Measures available in different websites. The researcher summarized the contents of these websites and recommends multidisciplinary research in the following areas related to mental retardation and the diseases.

Otits media, asthma, child maltreatment and immunizations, were put forth as research priorities in the children's health arena by the Agency for Health Care Policy and Research, now called the Agency for Healthcare Research and Quality. Although these conditions and prevention measures are areas of concern among children in the general population, and, thus, among children with Mental Retardation, little information is available on the prevalence and long-term consequences of these illnesses and behaviors among children with Mental Retardation.

Otitis Media

Young children are particularly susceptible to otitis media, or middle ear infections, because they have developing immune systems that have difficulty fighting infections, immature eustachian tubes that prevent optimal fluid drainage, and may have enlarged adenoids that interfere with the eustachian tube opening. Otitis media not only can cause severe pain, but, if left untreated, also can cause permanent hearing loss. Additionally, recurrent otitis media can have a negative impact on speech and language development, cognitive achievement and social and emotional development.

The prevalence of otitis media among children with Mental Retardation has not been adequately explored in Bangladesh. There are some reasons to believe that children with Down Syndrome are at increased risk of middle ear infections due to midfacial malformations and increased susceptibility to infections. Hearing impairment and infections were more prevalent among children

with Down Syndrome. Given the potential impact of otitis media on development.

Pediatric Asthma

Asthma is characterized by recurrent breathing problems brought on by inflammation of the lining of the lungs. The severity of asthma, as with most conditions, varies by individual. While some individuals are severely limited in their activities by the condition, others have only periodic symptoms of the disease. The negative consequences of asthma, however, can be avoided with appropriate disease management. Little research has been done on the prevalence of asthma among children with Mental Retardation. And practically nothing was done in Bangladesh.

Child Maltreatment

Maltreatment is an all too common childhood condition in Bangladesh. Children with Mental Retardation also face serious consequences from abuse and neglect, although there is limited research on overall prevalence estimates of maltreatment in this population. Children who are abused are over four times as likely to have Mental Retardation compared with non-abused children. The causal direction in the association of child maltreatment and MR, however, is not clear. Physical abuse and neglect may result in Mental Retardation (due to brain damage) or individuals with Mental Retardation may be more likely to be abused and neglected.

In addition, sexual abuse appears to be more prevalent among children with Mental Retardation compared with children in the general population. Although not strictly focused on children with Mental Retardation.

Several researchers have speculated about the reasons for the increased prevalence of abuse among individuals with Mental Retardation, and have cited stress and strain on the family, unrealized parental expectations of the child, emotional and social isolation of caregivers, children's inability to report abusive

experiences, children's dependency on caregivers and lack of awareness about abusive situations as potential contributors. Although there may exist a detection bias in who is identified as a victim, it is clear that individuals with Mental Retardation are at least as, if not more, likely to experience maltreatment compared with their peers without Mental Retardation.

Immunizations

Vaccines which prevent infectious diseases and death are considered one of the most important public health achievements of the 20th century. In Bangladesh, vaccinations of children has remained a national health initiative and at least the urban children including the mentally retarded children have received routine vaccinations, including immunizations against Hepatitis B, diphtheria, tetanus, pertussis, polio, measles, mumps, rubella and Haemophilus influenza. Information on the immunization status for children with Mental Retardation is sparse.

Certain health conditions are particularly prevalent among individuals with Down Syndrome and warrant further discussion. For example, conditions such as orthopedic anomalies, congenital heart defects and thyroid disease, although relatively infrequent in the general population, can be life-threatening conditions for individuals with Down Syndrome.

Atlantoaxial Instability

Individuals with Down Syndrome have many orthopedic anomalies, but few are as life threatening as atlantoaxial instability. Atlantoaxial instability is a laxity in the movement between the first and second cervical vertebrae and, thus, increases the risk of spinal cord injury. Despite the relatively high prevalence of atlantoaxial instability, there is no information about the prevalence of screening among individuals with Mental Retardation, which may be due in part to the controversy surrounding the safety of the radiograph screening process and the questionable diagnostic value

of the procedure. Therefore, effective and safe health screening procedures for asymptomatic atlantoaxial instability is an important consideration, in need of further exploration.

Congenital Heart Defects

Children with Down Syndrome are significantly more likely to have a congenital heart defect than individuals in the general population. The organizations working with Down Syndrome children reported in the websites that approximately 40% to 60% of children with Down Syndrome have a heart defect compared with 0.8% in the general population. Due to advancements in medical technology, however, survival for children with heart defects has dramatically improved. Consequently, some physicians recommend that infants with Down Syndrome have electrocardiogram and echocardiogram screenings so that those in need can be referred to a specialist for medical management. No studies were found that determine the screening rate of congenital cardiac conditions among individuals with Down Syndrome, however.

Thyroid Disease

Diseases of the thyroid, the organ that regulates the body's metabolism, can lead to blood pressure disturbances, fatigue, changes in appetite, weight disturbances, difficulty with concentration and changes in gastrointestinal regulation. Compared with the general population, individuals with Down Syndrome have an increased probability of having a thyroid disorder, including hypothyroidism or hyperthyroidism. Unlike individuals in the general population, who are at increased risk of thyroid disease with increased age, individuals with Down Syndrome are more likely to have thyroid disease at an earlier age. Those with Down Syndrome are thought to be at increased risk of thyroid disease because they often have autoimmune abnormalities and accelerated immunologic aging.

Similar to individuals in the general population, individuals with Mental Retardation are at risk for chronic medical conditions, including cardiovascular disease, cancer, cerebrovascular disease, lung conditions and diabetes. Individuals with Mental Retardation are also susceptible to the primary risk factors of chronic diseases including obesity, decreased physical activity and smoking. As in the general population, the risk of disease among those with Mental Retardation increases with age. In addition, the disease prevalence varies by severity of Mental Retardation. Individuals with mild or moderate Mental Retardation are more likely to have cardiovascular disease and diabetes compared with individuals with severe or profound Mental Retardation, while those with severe or profound Mental Retardation living in institutions are more likely to have respiratory conditions compared with individuals with mild or moderate Mental Retardation.

Further, one group of individuals with Mental Retardation, those with Down Syndrome, who have autoimmune abnormalities, are at increased risk of cardiovascular disease, leukemia, respiratory disease and diabetes. Not surprisingly, the risk factors associated with these diseases are more prevalent among those with Down Syndrome, namely obesity and decreased physical activity. Besides the common adult health conditions, individuals with Down Syndrome are also more likely to have diseases that are less common among individuals in the general population, including atlantoaxial instability, congenital cardiac conditions and thyroid disease.

Although common childhood conditions, such as otitis media, asthma and child abuse, have also been reported among children with Mental Retardation, very little information exists about the prevalence or manifestations of these conditions in children with Mental Retardation. The research that does exist suggests that children with MR are at increased risk of otitis media and of being maltreated.

Conclusions

On the basis of the findings, interview, secondary data and overall observation, the researcher concludes the following.

1. Sufferings in any of the diseases create at least some behaviour problem among the mentally retarded persons.

2. Those who have suffered by more diseases develop more behaviour problems.

3. Meningitis can be considered as the most severe disease that seriously affects the behaviour of the mentally retarded persons in Rajshahi District.

4. Convulsion associated with high fever seriously affects the behaviour of the mentally retarded persons and in most cases they become drug dependent.

5. The rural mentally retarded persons are relatively drug free compared to the urban mentally retarded persons.

6. Mentally retarded persons with chrosomomal anomalies, specially the Downs Syndrome cases, are relatively less affected from the common diseases compared to the mentally retarded persons without chromosomal anomalies.

7. The mentally retarded persons who were immunized were less affected by the common diseases.

8. The rate of attack of the diseases is not related to sex of the mentally retarded persons.

9. The severely retarded persons are more affected by the diseases compared to the mild and moderately retarded persons.

10. Those who have become dependent on psychotropic drugs are due to faulty treatments of the physicians and ignorance of the parents.

Recommendations

The researcher wants to recommend the following to uplift the treatment and care of the mentally retarded persons.

1. Awareness development on mental retardation and the possible outcomes of the diseases need extensive publicity by the mass media.

2. Training courses are to be arranged for the physicians to update them on recent information on mental retardation.

3. Management of febrile convulsion needs extensive publicity by mass media that parents can identify the primary symptoms and can take up emergency measures.

4. Mentally retarded persons can not narrate their actual physical problems to others. They should not become subjects of trials and errors by the physicians and family members, therefore, specific pathological tests must be done before giving them any medicine.

5. A national health policy is needed to control the use and abuse of psychotropic drugs.

References

AAMR, American Association on Mentally Retarded. (1992). Mental Retardation: Definition, Classification, and systems of supports. Washington, D.C.: American association on Mental Retardation.

ABE, Kenichi (1977). "Exploratory behavior of retarded children in a probability learning task". Journal of child development, Vol. 13, pp. 22-28,

Achenbach, T. M. & Edelbrock, C. S. (1986). Child Behavior Checklist. Burlington, VT: Author.

American Association on Mental Retardation. (1992). Mental retardation: Definition, classification, and systems of supports. Washington, D. C.: American Association on Mental Retardation.

Anderson, M. (1997) "Mental illness and criminal behaviour: a literature review", J-Psychiatr-Ment-Healh-Nurs. Aug, vol. 4(4); p. 243-50.

Baird, P. A. & Sadovnick, A. D. (1985). Mental retardation in over half-a-million conservative live births: An epidemiological study. American Journal of Mental Deficiency, 89, 323-330.

Baroff, G. S. (1991). Developmental disabilities: Psychological aspects. Austin, TX: Pro-Ed.

Bashir A, Yaqoob M, Ferngren H, Gustavan k-H, Rydelius P-A, Ansari T, Zaman S.(2002), " Prevalence and associated impairments of mild mental retardation in Six- to ten-year old children in Pakistan : a prospective study", Acta paediatrica, , 1 July, Vol. 91, No. 7, pp. 833-837(5).

Batshaw, M. L., & Perret, Y. M. (1992). Children with Disabilities. Baltimore: Paul H. Brookes Publishing Co.

Bayley, N. (1993). Bayley Scales of Infant Development: Second edition. San Antonio, TX: The Psychological Corporation Harcourt Brace Janovich, Inc.

Begum, R.(1998) " Behavior problems among mentally retarded children: Birth order and severity of retardation, Bangladesh Psychological Studies, , Vol. 8.pp- 21-28.

Bhawalkar, J. S.; Aswar, N. R. and Wahab, S. N.(1997), "A study of some etiological factors and morbid conditions in mentally handicapped children". Indian- J-Med-Sci. Feb; 51 (2); p. 35-40.

Bohmer, C. J.; Niezen-de-Boer, M. C.; Klinkenberg-Knol, E. C.; Nadorp, J. H. and Meuwissen, S. G. "Gastro-oesophageal reflux disease in institutionalised intellectually disabled individuals". Neth-J-Med. 1997 Oct; 51(4); p. 134-139.

Borthwick-Duffy, S. A. & Eyman, R. K. (1990). Who are the dually diagnossed? American Journal on Mental Retardation, 94, p. 586-595.

Bregman, J. D. (1988). Treatment approaches for the mentally retarded. In R. Michels, A. M. Cooper, S. B., Guze, et al. (Eds.), Psychiatry (pp. 1-11). Philadelphia: J. B. Lippencott.

Bregman, J. D. (1991). Current developments in the understanding of mental retardation. Part ll: Psychopathology. Journal of the American Academy of Child and Adolescent Psychiatry, Vol. 30, p. 861-872.

Bryant, B. R., Taylor, R. L., Pedrotty-Rivera, D. (1996). AAA Assessment of Adaptive Areas. Austin, TX: Pro-Ed.

Burgemeister, B. B., Blum, L. H. & Lorge, I. (1972). Columbia Mental Maturity Scale. San Antonio, TX: Psychological Corporation Harcourt Brace Janovich, Inc.

Committee on Classifcation of Feeble-minded. (1910). Journal of Psycho-Asthenics, 15, 61-67.

Conners, C. K. (1990). Manual for Conners' Rating Scales. Toronto, Canada: Multi-Health Systems. 1990.

Corbett, J. A. (1985). Mental retardation: Psychiatric aspects. In M. Rutter & L. Hersov (Eds.), Child and Adolescent Psychiatry: Modern Approached (2nd ed.) (pp. 661-678). Oxford: Blackwell Scientific Publications.

Deb S and Hunter D. (1993) "Psychopathology of people with mental handicap and epilepsy. I: Maladaptive behaviour", British Journal of psychiatry, Dec, 159, p.822-826, 833-834

Deutsch, S.I.(1986), "Managing behavior in mentally retarded residential populations". Hospital and Community Psychiatry. Mar, Vol. 37(3), p. 221-222,

Doll, E. A. (1953). The Measurement of Social Competence. A Manual for the Vineland Social Maturity Scale. Washington DC: Educational Test Bureau.

Doll, E. A. (1962). Trends and problems in the education of the mentally retarded, 1800 - 1940. American Journal of Mental Deficiency, Vol. 72, p. 175-183.

Domizio S, Verrotti A, Ramenghi LA, Sabatino G. and Morgese G (1993) "Anti-epileptic therapy and behaviour disturbances in children".Journal of child Nervous system, Aug, Vol. 9(5), p.272-274

Dunn, L. M., & Dunn, L. M. (1981). Peabody Picture Vocabulary Test-Revised. Circle Pines, MN: American Guidance Service.

Durkin M.S., Khan N.Z, Davidsion L.L , Huq S, Munir S, Rasul S. and Zaman S.S.(2000), " Prenatal and Postnatal Risk Factors for Mental Retardation among children in Bangladesh", American Journal of Epidemiology Vol.152, No. 11, p.1024-1033.

Eaton, L. A., & Menolascino, F. J. (1982). Psychiatric disorders in the mentally retarded: types, problems, and challenges, American Journal of Psychiatry, 139, p. 1297-1303.

Eiser C , Havermans T , Pancer M and Eiser JR(1992) "Adjustment to chronic disease in relation to age and gender: mothers' and fathers' reports of their children's' behavior" Department of Psychology , University of Exeter, Devon, England , Journal of Pediatric Psychiatry , Vol. 17, p. 261-275

Elliot, C. D. (1990). Differential ability scales. San Antonio, TX: The Psychological Corporation Harcourt Brace Janovich, Inc.

Ferrie CD, Madigan C, Tilling K, Maisey MN, Marsden PK, and Robinson RO (1997) "Adaptive and maladaptive behaviour in children with epileptic encephalopathies: correlation with cerebral glucose metabolism", Dev Med Child Neurol , Sep, Vol. 39(9), p. 588-595.

Ghadami, Tomita, Najafi, Damavandi, Farahvvash, Yamada, majidzadeh, Niikawa (2000), "Bardet-Biedl syndrome type 3 in an Iranian family :Clinical study and confirmation of disease localization". Am-J-med-Genet. Oct 23; Vol. 94(5): p. 433-437.

Gimbel, H. (2000) "Diagnosis and treatment of gastroesophageal reflux disease in the Mentally Retarded guidelines of a multidisciplinary consensus work group". Dutch Association of Physicians in Care of Mentally Handicapped. , Jun 10, 144(24), p. 1161-1165

Gostason, R. (1985). "Psychiatric illness among the mentally retarded. A Swedish population study". Acta Psychiatrica Scandinavia, 70, 1-117.

Gresham, F. M. & Elliot, S. N. (1990). Social Skill Rating System. Circle Pines, MN: American Guidance Service, Inc.

Grizenko, N; Cvejic, H; Vida, S; and Sayegh, L.(1991), "Behaviour problems of the mentally retarded". Can-J- Psychiatry. Dec; Vol.36(10); p. 712-717.

Grossman, H. J. (Ed.). (1973). Manual on terminology in mental retardation , Washington, D. C.: American Association on Mental Deficiency.

Grossman, H. J. (Ed.). (1977). Manual on terminology in mental retardation , Washington, D. C.: American Association on Mental Deficiency.

Hanzel, T. F., Kalachnik, J. E. and Harder, S. R.(1992), "A case of Phenobarbital exacerbation of a preexisting maladaptive behavior partially suppressed by chlorpromazine misinterpreted as chlorpromazine efficacy". Research in developmental disabilities, Vol. 13, No. 4.USA: Pergamon Press.

Hala Tamim , Mustafa Khogali, Hind Beydoun, imad Melki, Khalid Yunis (2003), "Consanguinity and Apnea of Prematurity", Am J Epidemiol, the National Collaborative Perinatal Neonatal Network, 158, p. 942-946

Halket S, Louvous J, Holt DE and Harvey D(2003), "Long term follow up after meningitis in infancy: behaviour of teenagers", Department of Paediatrics , Imperial College School of Medicine, Hammerment Hospital, London , UK, Arch Dis. Child. May, Vol. 88(5), p. 395-398.

Heber, R. A. (1961). A manual on terminology and classification in mental retardation (2nd ed.). Monograph Supplement to the American Journal of Mental Deficiency.

Holden, B.(1997) " Clonazepam therapy of aberrant behavior in a mentally retarded man". Oct 10; 117(24); p .3500-3501.

Huskin, R.G. Sasitharan, T. and Howard, R.(1992), "The use of a low phenylalanine diet with amino acid supplement in the treatment or behavioural problems in a severely mentally retarded adult female with phenylketonuria". J- Intellect-Disabil-Res. Apr; 36(Pt 2); p. 183-191.

Islam S, Durkin MS, and Zaman SS(1993), "Socioeconomic status and the prevalence of mental retardation in Bangladesh". Department of Psychology , University of Dhaka , Bangladesh , Mental Retardation, Dec , Vol. 31(6) , p. 412-417 .

Ismail J, Jafar TH, Jafary FH, White F, Faruqui AM and Chaturvedi N.(2004), " Risk factors for non-fatal myocardial infarction in young South Asian adults" 90, p. 259-263.

Islam, S. and Haque, P.(1996), "Behavior problem among the institutionalized children" the Dhaka University Journal of Psychology , Vol. 20, p.- 26-33,.

Jacobson, J. W. (1990). "Do some mental disorders occur less frequently among persons with mental retardation?" American Journal of Mental Retardation, 94, p. 596-602.

Jastak, S., & Wilkinson, G.S. (1984). WRAT-R: Wide Range Achievement Test Administration Manual. Los Angeles: Western Psychological Services.

Jenkins R., Rose J, and Jones T. (1998), "The Checklist of Challenging Behaviour and its relationship with the Psychopathology Inventory for Mentally Retarded Adults", J-Intellect-Disabil-Res. Aug; 42(Pt 4): p. 273-278

Kaufman, A. S. & Kaufman, N. L. (1985). Kaufman test of educational achievement. Circle Pines, MN: American Guidance Service.

Kirk, S. A., Karnes, M. B., & Kirk, W. D. (1955). You and your retarded child. New York: Macmillan.

Kolfen W., Edrich J., Konig S. and Formanski U. (2001), " Children with epilepsy after withdrawal of anticonvulsive therapy: psychiatric behaviour and neuropsychological abilities" The Eur. J pedioatr, sep, 160(9), p 566-571

Kuhlman, F. (1941). Definition of mental deficiency. American Journal of Mental Deficiency, 46, p. 206-213.

Leiter, R. G. (1948). Leiter International Performance Scale. Wood Dale, IL: Stoelting Co.

Lewis, M. H., & MacLean, W. E. (1982). Issues in treating emotional disorders. In J. L. Matson & R. P. Barrett (Eds.), Progress in Behavior modification , Vol. 1, San Diego: Academic Press.

Linda C. Haber, D.N.S, R. N, C.S.(2003), " Relationships Between Differences in Mother-Father Perceptions and Self-Concept and Depression in Children with Epilepsy", Journal of Family Nursing, Vol.9, No.1, p. 59-78

Lubetsky, M. J., Mueller L., Madden, K., Walker, R., & Len, D. (1995). Family-centered/interdisciplinary team approach to working with families of children who have mental retardation. Mental Retardation, 33, p. 251-256.

Luciaino, Molina, Gomez,(2000) "Say-do-report training to change chronic behaviors in mentally retarded subjects". Res. Dev. Disabil. Sep-Oct., 21(15); p. 355-366

Madsen, Millard, C. and Connor, C.(1973) "Cooperative and competitive behavior of retarded and nonretarded children at two ages" Child Development, Vol-44, p.-175-178,.

Matson, J. L. (1982). Depression in the mentally retarded: A review. Education and Training in the Mentally Retarded, 17, 159-163.

Matson, J. L., & Sevin, J. A. (1994). Theories of dual diagnosis in mental retardation. Journal of Consulting and Clinical Psychology, 62, p. 6-16.

Matson, Johnny, L.; Mayville; Erik, A.; Lott, and Julia, D. (2002), "The relationship between behaviour motivation and social functioning in persons with intellectual impairment". Br-J-Clin-Psychol. Jun, 41 (Pt 2), p. 175-84.

McCarthy, D. A. (1972). McCarthy Scales of Children's Abilities. San Antonio: The Psychological Corporation.

Mc Dermott S, Breen R, Platt T, Dhar D, Shelton J, Krishnaswami S (1997), " Do behaviour changes hearld physical illness in adults with mental retardation" Journal of Community Mental Health, Apr, 33(2), p. 85-97

McLaren, J. & Bryson, S. E. (1987). "Review of recent epidemiological studies in mental retardation: Prevalence, associated disorders, and etiology", American Journal of Mental Retardation, 92, p. 243-254.

Menolascino, F. J. (1977). Challenged in mental retardation progressive ideology and services. New Your: Huyman Services Press.

Molteno, G.; Molteno, C.D., Finchilescu, G.and Dawes, A.R. (2001), "Behavioural and emotional problems in children with intellectual disability attending special schools in Cape Town", South Africa. J-Intellect - Disabil-Res. Dec; 45 (Pt 6); p. 515-20.

Nihira, K., Leland, H., & Lambert, N. (1993). AAMD Adaptive Behavior Scale – Residential and Community (2nd Ed.). Austin, TX: Pro-Ed.

Notteastad, Linaker(2001), "Self-injurious behaviour before and after deinstitutionalization". J-Intellect-Disabil-Res. Apr; 45 (Pt 2): 121-9.

Nursing Standard;, (2003), "Behaviour problems after childhood meningitis", The nursing and medical journals,Archives of Disease in Childhood, July 02, Vol.88(5), p.395-398.

Patrick Burke, M.B., B.C.H., Ph.D., and Melanie Elliott, B.A.(1999), " Depression in pediatric chronic illness" A Diathesis – Stress Model, Psychosomatics , 40, February, p. 5-17

Plomin R, Price TS, Eley TC, Dale PS and Stevenson J. (2002) "Associations between behaviour problems and verbal and nonverbal cognitive abilities and disabilities in early childhood", Journal of child psychology psychiatry, Jul, 43(5), p.619-633.

Quay, H. C. & Peterson, D. R. (1987), Manual for the Revised Behavior Problem Checklist. Coral Gables, FL: Author, University of Miami.

Reiss, S. (1990). "Prevalence of dual diagnosis in community-based programs in the Chicago metropolitan area", American Journal on Mental Retardation, 94, p. 578-584.

Reiss, S. A., & Benson, B. A. (1985). Psychosocial correlates of depression in mentally retarded adults: Minimal social support and stigmatization. American Journal on Mental Deficiency, 89, p. 331-337.

Reiss, S., & Szyszko, J. (1983), Diagnostic overshadowing and professional experience with mentally retarded persons. American Journal of Mental Deficiency, 87, p. 396-402.

Roid, G. & Miller, L. (1997). Leiter International Performance Scale - Revised. Wood Dale, IL: Stoelting Co.

Ruedrich, S. et al. (1999), "effect of divalproex sodium on aggression and self-injurious behavior adults with intellectual disability: a retrospective review". J Intellect Disabil Res. Apr, Vol. 43, (2), pp. 105-111.

Russell, A. T. (1985). The mentally retarded, emotionally disturbed child and adolescent. In M. Sigman (Ed.), Children with Emotional Disorder and Developmental Disabilities: Assessment and Treatment ,New York: Grune & Straton, pp. 111-136

Rutter, M., Tizard, J., Yule, W., Graham, Y., & Whitmore, K. (1976). Isle of Wright studies. 1964-1974. Psychological Medicine, 7, p. 313-332.

Sattler, J. M. (1992). Assessment of Children 3rd Edition. San Diego: Jerome M. Sattler, Publisher, Inc.

Sen, A.K.and Dutta, T. (1985) Social-Culture aspect of Mental Retardation, Souvenir of the 7th world Congress of IASSMD, New Delhi, p.24-28.

Sheerenberger, R. C. (1983). A history of mental retardation. Baltimore: Brooks Publishing Co.

Simeonsson, R. J., & Bailey, D. B. (1992). Essential elements of the assessment process. In L. Rowitz (Ed.), Mental retardation in the year 2000 (pp.25-41). New York: Springer-Verlag.

Smith, B .and P hillips, C. J.(1992), " Attainments of severely mentally r etarded adolescents by aetiology". J-Child-Psychol-Psychiatry. Sep; 33(6): p. 1039-58.

Sparrow, S. S., Balla, D. A., & Cicchetti, D. V. (1984a). Vineland Adaptive Behavior S cale, Expanded F orm M anual. C ircle P ress, MN: A merican Guidance Services.

Stevenson J, Richman N and Graham P. (1985) "Behaviour problems and language abilities at three years and behavioural deviance at eight years", Journal of child Psychology psychiatry , Mar, 26(2), p. 215-230.

Sturmey, P. (1995). DSM-III-R and persons with dual diagnoses: Conceptual issues and strategies for future research. Journal of Intellectual Disability Research, 39, 357-364.

Sufi, A. H. (1992), " Psycho- bio-social factors of mental retardation in Bangladesh". Unpublished Doctoral Dissertations, University of Rajshahi.

Tachi, Akio.(1977), " A comparison of the stereotype behaviors exhibited by the profound adult retardates in two types of institutions" Journal of child development, Vol. 13, pp.1-8,

Thorndike, R. L., Hagen, E. P., & Sattler, J. M. (1986a). Guide for Administering and scoring, the Stanford-Binet Intelligence Scale: Fourth Edition. Chicago: Riverside Publishing.

Thorndike, R. L., Hagen, E. P., & Sattler, J. M. (1986b). Technical Manual, Stanford-Binet Intelligence Scale: Fourth Edition. Chicago: Riverside Publishing.

Toledo, Lowe, Gonzalez, Haddad (2004), " Risk of aspiration pneumonia after an epileptic seizure : a retrospective analysis of 1634 adult patients", Journal of Epilepsy & Behaviour , Vol. 5(4), p. 593-595.

Trauer, T .(1 983), "A s tudy o f c ollective d isturbed b ehavior a mong p sychiatric patients" British Journal of Clinical Psycology,Vol. 22, pp.265-275.

U.S. Department of Education. (1994). The sixteenth annual report to Congress on the implementation of the individuals with disabilities education act. Washington, D.C.: U.S. Government Printing Office.

Wechsler Individual Achievement Test. (1992). San Antonio, TX: The Psychological Corporation Harcourt Brace Janovich, Inc.

Wechsler, D. (1981). Wechsler Adult Intelligence Scale-Revised. San Antonio: The Psychological Corporation.

Wechsler, D. (1989) Wechsler Preschool Primary Scale of Intelligence - Revised. San Antonio: The Psychological Corporation.

Wechsler, D. (1991). Wechsler Intelligence Scale for Children-Third Edition. San Antonio: The Psychological Corporation.

Wilder J and Granlund M. (2003) "Behaviour style and interaction between seven children with multiple disabilities and their caregivers", Child Care Health Development, Nov, 29 (6), p 559-567

Woodcock, R. W. & Johnson, M. B. (1990). Woodcock-Johnson Psycho-Educational Battery - Revised. Allen, TX: DLM Teaching Resources.

Woods, P. and Reed, V. (1998), "Measuring risk and related behaviour with the Behavioural Status Index (BSI); some preliminary psychometric studies".Int-J-Psychiatr-Nurs-Res. Apr; Vol. 4(1); p. 396-409.

World Health Organization. (1993). International classification of diseases: 10th revision. Ann Arbor, MI: Commission on Professional and Hospital Activities.

Yepsen, L. (1941). Defining mental deficiency. American Journal of Mental Deficiency, Vol. 46, p. 200-205.

Zimber, A.; Schaufele, M. and Weyerer, S. (1998), "Changes in homes for the aged and nursing homes: functional impairments and behavioral disorders of residents are increasing". Apr, Vol. 60(4), p. 239-46.

Zuren F, Dooper R(1999) "Coping style and self-reported health promotion and disease detection behaviour ", British Journal of Health Psychology , Febroary ,Vol. 4, p. 81-89 (9).

Appendix - I

ইনষ্টিটিউট অব বায়োলজিকাল সাইন্সেস
রাজশাহী বিশ্ববিদ্যালয়

গবেষক ঃ শবনম মুস্তারী

তত্বাবধায়ক ঃ
১) ডঃ আনওয়ারুল হাসান সুফি
রাজশাহী বিশ্ববিদ্যালয়

২) ডাঃ কাজী ওয়ালী আহমেদ
বগুড়া মেডিকেল কলেজ

ভাইরাস এবং ব্যাকটেরিয়াল অসুখে আক্রান্ত হবার কারনে মানসিক প্রতিবন্ধীদের যে সকল আচরন পরিবর্তন ঘটে সেগুলো অনুধ্যানের জন্য এই প্রশ্নমালাটি প্রনয়ন করা হয়েছে। এই অনুধ্যান একটি প্রথমিক সমীক্ষা এবং এখন পর্যন্ত প্রকাশিত প্রবন্ধ সমুহের আলোকে প্রশ্নগুলো সাজানো হয়েছে ।

প্রতিবন্ধিদের অভিভাবকদের নিকট আবেদন তারা তাদের শিশুদের বিভিন্ন অসুখের সময় যে সকণ অবস্থা পর্যবেক্ষন করেছেন সেগুলো যথাসম্ভব স্মরন করে প্রকৃত অবস্থা বর্ণনা করবেন। বিভিন্ন অসুখের সময় চিকিৎসকদের দেওয়া ব্যবস্থাপত্র এবং প্যাথলজিক্যাল রির্পোট সমূহ সরবরাহ করলে গবেষনার মান আরও উন্নত হবে।

প্রাপ্ত সকল তথ্যের গোপনীয়তা গবেষক নিশ্চিত করছেন।

জাতীয় বিজ্ঞান ও প্রযুক্তি ফেলোশীপ প্রোগ্রামের অর্থানুকুল্যে গবেষনাটি পরিচালিত হচ্ছে এবং গবেষনায় দেওয়া তথ্য সমূহ বিজ্ঞানের উন্নয়নে কাজে লাগবে।

প্রতিবন্ধীর সাধারন পরিচয়

পূর্ননাম ঃ _____ ডাক নাম ঃ_____

পিতার নাম ঃ _____ পিতার শিক্ষাগত যোগ্যতাঃ_____

মাতার নামঃ _____ মাতার শিক্ষাগত যোগ্যতাঃ_____

পূর্ন ঠিকানাঃ _____

বাড়ীর নাম ঃ _____ বাড়ী নং ঃ_____

ভাড়া বাড়ী হইলে বাড়ীর মালিকের নাম ঃ _____

সড়কের নাম ঃ _____ মহল্লা ঃ_____

থানা ঃ _____ ডাকঘর ঃ _____ জেলা ঃ_____

টেলিফোন নম্বর (যদি থাকে) ঃ _____

প্রতিবন্ধী কার সাথে বাস করে ঃ _____

প্রতিবন্ধীর বিশেষ পরিচয়

জন্ম তারিখ ঃ _____ বয়স ঃ _____ জন্মের স্থান ঃ_____

জন্মস্থানটি ঃ শহর / গ্রাম

ছেলে / মেয়ে উচ্চতা ঃ _____ওজন ঃ_____

গঠনঃ মোটা/ মাঝারী/ পাতলা/ খুব পাতলা

চুলের রং ঃ _____ চোখের রং ঃ _____ত্বকের রং ঃ_____

সনাক্ত করন চিহ্ন ঃ_____ ধর্ম ঃ _____ মাতৃভাষা ঃ_____

রক্তের গ্রুপঃ_____

পর্যবেক্ষন এবং আলোচনার প্রেক্ষিতে গবেষকের মতে প্রতিবন্ধীর বর্তমান অবস্থা

প্রতিবন্ধীর সমস্যার বিবরন	১	২	৩	৪	৫	৬	৭	৮	৯	১০	মন্তব্য
টয়লেট ট্রেনিং											
পোষাক পরিধান ক্ষমতা											
খাবার নিজে খেতে পারার ক্ষমতা											
বসা দাড়ানো এবং হাটা											
শব্দ উচ্চারন এবং কথা											
শব্দ শোনা, শ্রবন শক্তি											
কোন নির্দেশ বুঝতে পারার ক্ষমতা											
সাধারন সারীরিক গঠন											
চঞ্চলতা											
দৃষ্টিশক্তি											
ঘ্রানশক্তি											
স্বাদ সংবেদন											
ত্বক সংবেদন-ঠান্ডা,গরম,তাপ,ব্যাথা											
বুদ্ধি/সমস্যা সমাধান ক্ষমতা											
স্মৃতি শক্তি/ বিভিন্ন বস্তু ও ব্যক্তির নাম স্মরন ক্ষমতা											
স্বাভাবিক বুদ্ধির সমবয়সিদের তুলনায় সাধারন											
স্কুলে সামগ্রিক আচরন											
বাড়ীতে সামগ্রীক আচরন											
খেলাধুলার সময় আচরন											
বিভিন্ন ঋতুতে সাধারন অসুখ বিসুখের মাত্রা											
তাপমাত্রা পরিবর্তনে বিভিন্ন অসুখের মাত্রা											
পানিবাহিত রোগে আক্রান্ত হবার মাত্রা											
বায়ুবাহিত রোগে আক্রান্ত হবার মাত্রা											
ছোঁয়াচে রোগে আক্রান্ত হবার মাত্রা											
সর্দি কাশি এবং ঠান্ডা লাগার পরিমান											
বাবা-মার সাথে আচরন											
ভাই-বোনদের সাথে আচরন											
পরিচিতদের সাথে আচরন											
অপরিচিতদের সাথে আচরন											
সমবয়সীদের সাথে আচরন											
পরিস্কার পরিচ্ছন্নতা											

শিশুর জন্মের পর বিভিন্ন রোগের বিবরন

বয়স	অসুখের বিবরন	অসুখের ফলে আচরনের পরিবর্তন
জন্ম থেকে ১৪দিন		
১৫দিন থেকে ২বৎসর		
২ থেকে ৬ বৎসর		
৬ থেকে ১২ বৎসর		
১২ থেকে ১৪ বৎসর		
১৪ থেকে ১৭ বৎসর		
১৭ থেকে ২১ বৎসর		
২১ থেকে ৪০ বৎসর		
৪০ থেকে ৬০ বৎসর		

বাবা মা বলবেন। গবেষক লিপিবদ্ধ করবেন। সম্ভব হলে চিকিৎসা পত্র সমূহের ফটোকপি সংগ্রহ করতে হবে।

প্রতিবন্ধীর বিশেষ সমস্যার বিবরনঃ

ক) মনস্তাত্ত্বিক সমস্যাবলী (শিক্ষন/বুদ্ধি/স্মৃতি)

১) আপনার প্রতিবন্ধী সন্তানটি কি স্কুলে যায়? হাঁ ☐ না ☐
২) আপনার প্রতিবন্ধী সন্তানটি কি স্কুলে যেতে পছন্দ করে? হাঁ ☐ না ☐
৩) শিশুটি কি বই পড়তে পছন্দ করে? হাঁ ☐ না ☐
৪) অক্ষর চিনতে পারে কি ? হাঁ ☐ না ☐
৫) কোন কিছু শেখার পর কি পুনরাবৃত্তি করতে পারে? হাঁ ☐ না ☐
৬) শিশু কি অধিকাংশ সময় মন মরা হয়ে থাকে ? হাঁ ☐ না ☐
৭) শিশুটি কি ক্ষুধার কথা বলতে পারে? হাঁ ☐ না ☐
৮) কথা কি গুছিয়ে বলতে পারে? হাঁ ☐ না ☐
৯) টয়লেট সমস্যা জানাতে পারে কি? হাঁ ☐ না ☐

খ) শারীরিক সমস্যা ও রোগ

১) শিশুর শারীরিক কোন সমস্যা আছে কি? হাঁ ☐ না ☐
২) শারীরিক কোন সমস্যা থাকলে সেটা কি ধরনেরঃ
   ক) কথা বলতে পারে না।
   খ) মুখদিয়ে লালা পড়ে।
   গ) হাত দিয়ে কোন কাজ বা ভারী জিনিষ উঠাতে পারে না
   ঘ) হাটতে পারে না বা পায়ে কোন শক্তি পায় না
   ঙ) কানে শুনতে পারে না
   চ) চোখে কম দেখে
৩) শিশুর মাঝে মধ্যে কি খিঁচুনী হয়? হাঁ ☐ না ☐
৪) শিশুর খিঁচুনি হলে সেটা কতক্ষন স্থায়ী থাকে।
   ক) কয়েক মিনিট
   খ) প্রায় ১০-১৫ মিনিট
   গ) এক ঘন্টার মত
   ঘ) এক ঘন্টার বেশী
   ঙ) অনিয়মিত

৫) অসুস্থ হলে শিশু কি ধরনের আচরন করে ?

   ক) চুপ চাপ শুয়ে থাকে।
   খ) বেশী চঞ্চল হয়ে উঠে।
   গ) মেজাজ খিটমেটে হয়ে যায়।
   ঘ) খেতে চায় না।
   ঙ) খাওয়া দাওয়ায় কোন পরিবর্তন হয় না।
   চ) ঘুম বৃদ্ধি পায়
   ছ) ঘুম কমে যায়
   জ) অন্যান্য

গ) সামাজিক সমস্যাবলি (বন্ধুদের সাথে, রাস্তাঘাট, খেলার মাঠ)

১) বাড়ীতে অতিথি আসলে প্রতিবন্ধী শিশুটি কি ধরনের আচরন করে

ক) চুপচাপ বসে থাকে
খ) অতিথির সংঙ্গে কথা বলতে চায়
গ) অতিথি দেখে রেগে যায়

২) প্রতিবন্ধী শিশুটি কি পচ্ছন্দ করে
ক) গান শুনতে
খ) টিভি দেখতে
গ) খেলাধুলা করতে
ঘ) সুন্দর ছবিযুক্ত ম্যাগাজিন দেখতে

৩) শিশুটি কি একা খেলতে বেশী পচ্ছন্দ করে? হাঁ ☐ না ☐
৪) শিশুটি রাস্তায় হাটার সময় শান্তভাবে হাটে না কি ছুটাছুটি করে? হাঁ ☐ না ☐
৫) আপনার প্রতিবন্ধী শিশুটির কি কোন বন্ধু আছে: হাঁ ☐ না ☐

সাধারন প্রশ্নঃ

১) শিশুর কত বছর বয়সে বুঝতে পারলেন যে সে প্রতিবন্ধী
ক) জন্মের কয় দিন পর
খ) দুই সপ্তাহ থেকে দুই বর বয়সের মধ্যে
গ) ২ - ৪ বছর
ঘ) ৪ - ৮ বছর
ঙ) ৮ - ১২ বছর
চ) ১২ - ১৪ বছর
ছ) ১৪ - ১৬ বছর
জ) ১৭ - ২১ বছর

২) কিভাবে বুঝলেন আপনার শিশুটি প্রতিবন্ধী

৩) প্রতিবন্ধী শিশুটির জন্য কি কি চিকিৎসা করানো হয়েছে
ক) কবিরাজী
খ) ঝাঁড়ফুক
গ) হোমীওপ্যাথিক
ঘ) এ্যালোপ্যাথিক

৪) বর্তমানে কি ধরনের চিকিৎসা করানো হচ্ছে
ক) কবিরাজী
খ) ঝাঁড়ফুক
গ) হোমীওপ্যাথিক (ঔষধের নাম কি ছিল ?)

ঘ) এ্যালোপ্যাথিক

ঙ) কোনটাই না

৫) প্রতিবন্ধী কি নিয়মিত কোন ঔষধ সেবন করে ? হাঁ ☐ না ☐

হাঁ হলে ক) কি ঔষধ ?

খ) ঔষধের ডোজ কি ?

গ) ঔষধ না দিলে কি হয় ?

ঘ) প্রয়োজনে ঔষধের মাত্রা কে পরিবর্তন করে ? অভিভাবক/ডাক্তার

৬) আপনার অন্যান্য সন্তানের ন্যায় কি আপনি প্রতিবন্ধী সন্তানকে সমান দেখেন? হাঁ ☐ না ☐

7) প্রতিবন্ধী শিশুটিকে আত্মীয়ের বাসা কিংবা কোন অনুষ্ঠানে সাথে নিয়ে যান কি? হাঁ ☐ না ☐

৮) প্রতিবন্ধী সন্তানের ভবিষ্যত কি হবে বলে আপনাদের মনে হয়?

৯) অন্যান্য সন্তানের তুলনায় প্রতিবন্ধী সন্তানের কি বেশী অসুখ বিসুখ হয়? হাঁ ☐ না ☐

১০) শিশু রেগে গেলে আপনারা কি ধরনের আচরন করেনঃ

ক) আদর করে বুঝিয়ে বলেন

খ) মারধর করেন

গ) ঘরে দরজা বন্ধ করে রাখেন

ঘ) অন্যান্য ঃ

১১) শিশুটি কি মাঝে মধ্যে বাড়ী থেকে একা বেরিয়ে যায়? হাঁ ☐ না ☐

১২) আপনার সন্তানটির কি যথার্থ সময়ে পূর্ন বিকাশ হয়েছে? হাঁ ☐ না ☐

১৩) আপনারা কি মনে করেন আপনাদের সন্তানটি প্রতিবন্ধী হয়ে জন্ম গ্রহনের জন্য আপনারাই দায়ী? হাঁ ☐ ☐ না

১৪) আপনি কি মনে করেন বর্তমানে আপনার শিশুর যথার্থ চিকিৎসা হচ্ছে? হাঁ ☐ না ☐

১৫) আপনার কি মনে হয় চিকিৎসার মাধ্যমে আপনার শিশুটি ভালো হবে? হাঁ ☐ না ☐

১৬) প্রতিবন্ধী সন্তানের ভবিষ্যত নিয়ে কি আপনারা উদ্বিগ্ন? হাঁ ☐ না ☐

১৭) প্রতিবন্ধী সন্তানের বিয়ে দিতে কি আপনারা আগ্রহী? হাঁ ☐ না ☐

১৮) আপনার শিশুটি প্রতিবন্ধী হওয়ার জন্য কি আপনার আত্মীয় স্বজন আপনাদের দোষারোপ করেন? হাঁ না ☐ ☐

১৯) সমাজের অন্যান্য ব্যক্তিবর্গ কি আপনাদের কটাক্ষ করে? হাঁ ☐ না ☐

২০) প্রতিবন্ধীদের কার দায়িত্ব কার নেওয়া উচিত?

ক) পরিবার

খ) সমাজ সেবায় নিয়জিত এন.জি.ও.

গ) গ্রাম/মহল্লার সকল মানুষের

ঘ) সরকারের

ঙ) অন্যান্য

২১) প্রতিবন্ধী অবস্থার উন্নতি প্রকল্পে সরকারের কি পদক্ষেপ নেওয়া উচিত বলে আপনি মনে করেন

ভাইরাস এবং ব্যাকটেরিয়া জনিত রোগের বিবরন

১) জন্মের পর থেকে বর্তমান বয়স পর্যন্ত আপনার প্রতিবন্ধী সন্তানটি কোন কোন রোগে আক্রান্ত হয়েছে?

ভাইরাস জনিত রোগ		ব্যাকটেরিয়া জনিত রোগ		ভাইরাস ও ব্যাকটেরিয়া জনিত রোগ	
ইনফ্লুয়েনজা	কতবার	টাইফয়েড	কতবার	হেপাটাইটিস	কতবার
ঠান্ডা লাগা		নিউমনিয়া		মেনিনজাইটিস	
চিকেন পক্স				ডাইরিয়া	
হাম					
মাম্পস					
ব্রনকিওলাইটিস					

ভাইরাস জনিত রোগের সংগে প্রতিবন্ধী শিশুর আচরনের সম্পর্ক

A) ইনফ্লুয়েনজা

১) নিচের সমস্যাগুলো কি আপনার শিশুর মধ্যে দেখা দিয়েছিল?

(ক) কফসহ জ্বর
(খ) মাথাধরা
(গ) মাসলব্যাথা এবং শক্ত হয়ে যায়
(ঘ) ঘাম হয়ে জ্বর ছেড়ে যায়
(ঙ) শীত লেগে জ্বর আসে
(চ) এই জ্বর ৭ থেকে ১৪ দিন মত থাকে

২) শিশুর কত বছর বয়সে এই লক্ষনগুলো দেখা দেয়?
৩) এই ধরনের সমস্যা শিশুর কয়বার দেখা দিয়েছে?
৪) এই সময় শিশুকে কি চিকিৎসা দেওয়া হয়েছিল?
৫) ঐ সময় তার অন্য যে সমস্ত শারীরিক সমস্যা দেখা ধিয়েছিল সেগুলো কি কি?
৬) এই সময় শিশুর আচরনের কোন পরিবর্তন হয়েছিল কি?
   ক) ঔষধ প্রয়োগ বা চিকিৎসার পূর্বে আচরন
   খ) ঔষধ চলাকালীন সময়ে আচরন
   গ) রোগ মুক্তির পর আচরন

B) ঠান্ডা লাগা

নিচের লক্ষন গুলো কি আপনার শিশুর মধ্যে কখনও দেখা দিয়েছে?

ক) নাক দিয়ে সর্দি ঝরে
খ) হাঁচি, কফ
গ) গলা বসে যাওয়া
ঘ) শরীরের তাপমাত্র খুব সামান্য ১০০° ফা থেকে আরও নীচে ৯৯° ফা

   ১) শিশুর কত বছর বয়সে এই লক্ষনগুলো দেখা দেয়?
   ২) এই ধরনের সমস্যা শিশুর কয়বার দেখা দিয়েছে?
   ৩)এই সময় শিশুকে কি চিকিৎসা দেওয়া হয়েছিল?
   ৪) ঐ সময় তার অন্য যে সমস্ত শারীরিক সমস্যা দেখা ধিয়েছিল সেগুলো কি কি?
   ৫) এই সময় শিশুর আচরনের কোন পরিবর্তন হয়েছিল কি?

C) চিকেন পক্স

নীচের সমস্যাগুলি দ্বারা আপনার শিশুকি কখনও প্রভাবিত হয়েছে

ক) জ্বর জ্বর ভাব

খ) ত্বক লাল লাল র‍্যাশ, বুকে, পিঠ, ঘাড়, চুলের গোড়ায় এবং অন্যান্য এলাকায় ব্যাথা

গ) র‍্যাশ গুলি কয়একদিন পর আস্তে আস্তে পানিভর্তি ফোসকায় পরিণত হওয়া

ঘ) ফোসকার বাইরের আবরণটা শক্ত হয়ে ২ থেকে ৪দিনের মধ্যে ফেটে যায়

ঙ) নয় থেকে ১৩ দিনের মধ্যে খোসা পড়তে শুরু করে

১. শিশুর কত বছর বয়সে এই লক্ষনগুলো দেখা দেয়?
২. এই ধরনের সমস্যা শিশুর কয়বার দেখা দিয়েছে?
৩. এই সময় শিশুকে কি চিকিৎসা দেওয়া হয়েছিল?
৪. ঐ সময় তার অন্য যে সমস্ত শারীরিক সমস্যা দেখা ধিয়েছিল সেগুলো কি কি?
৫. এই সময় শিশুর আচরনের কোন পরিবর্তন হয়েছিল কি?

D) হাম

নিচের সমস্যাগুলো কি আপনার শিশুর মধ্যে দেখা দিয়েছিল?

ক) ঠান্ডা লাগা, জ্বর, তাপমাত্রা১০৪° ফা পর্যন্ত উঠে যায়

খ) হাঁচি, দমআটকানো কাশি

গ) চোখ লাল হয়ে যাওয়া, চোখ দিয়ে পানি পড়া

ঘ) ৩ থেকে ৪দিনের মধ্যে মুখে, কানের পিছনে, কপালে এবং চুলের পাশ দিয়ে র‍্যাশ বের হয়

১. শিশুর কত বছর বয়সে এই লক্ষনগুলো দেখা দেয়?
২. এই ধরনের সমস্যা শিশুর কয়বার দেখা দিয়েছে?
৩. এই সময় শিশুকে কি চিকিৎসা দেওয়া হয়েছিল?
৪. ঐ সময় তার অন্য যে সমস্ত শারীরিক সমস্যা দেখা ধিয়েছিল সেগুলো কি কি?
৫. এই সময় শিশুর আচরনের কোন পরিবর্তন হয়েছিল কি?

E) মাম্পস

আপনার সন্তানটি কি নীচের সমস্যাগুলি দ্বারা প্রভাবিত হয়েছে ?

ক) মুখ ব্যাথা কানের কাছের গ্লান্ডটা ফুলে যায়

খ) জ্বর

গ) মাথা ব্যাথা

ঘ) চোয়াল ফুলে যায়

১. শিশুর কত বছর বয়সে এই লক্ষনগুলো দেখা দেয়?
২. এই ধরনের সমস্যা শিশুর কয়বার দেখা দিয়েছে?
৩. এই সময় শিশুকে কি চিকিৎসা দেওয়া হয়েছিল?
৪. ঐ সময় তার অন্য যে সমস্ত শারীরিক সমস্যা দেখা ধিয়েছিল সেগুলো কি কি?
৫. এই সময় শিশুর আচরনের কোন পরিবর্তন হয়েছিল কি?

F) ব্রনকিও লাইটিস (Bronchiolitis) [Respiratory tract] নিচের সমস্যাগুলি দ্বারা আপনার শিশু কি কখনও প্রভাবিত হয়েছিল?

ক) প্রথম দিকে ঠান্ডা লাগা, শ্বাস রোধ হয়ে আসা , নাক দিয়ে পানি ঝরা, সামান্য কাশি

খ) শেষের দিকে এই লক্ষন গুলো প্রকট হয়
গ) শব্দ করে শ্বাস নেওয়া

১. শিশুর কত বছর বয়সে এই লক্ষনগুলো দেখা দেয়?
২. এই ধরনের সমস্যা শিশুর কয়বার দেখা দিয়েছে?
৩. এই সময় শিশুকে কি চিকিৎসা দেওয়া হয়েছিল?
৪. ঐ সময় তার অন্য যে সমস্ত শারীরিক সমস্যা দেখা ধিয়েছিল সেগুলো কি কি?
৫. এই সময় শিশুর আচরনের কোন পরিবর্তন হয়েছিল কি?

ব্যাকটেরিয়া জনিত রোগের সংগে প্রতিবন্ধী শিশুর আচরনের সম্পর্ক

G) টাইফয়েড

আপনার শিশুর মধ্যে কি কখনও নিচের লক্ষন গুলো প্রকাশ পেয়েছিল?
ক) তীব্র মাথা ব্যাথা এবং জ্বর থাকে
খ) ক্ষুধা থাকে না, সব সময় অস্থিরতা কাজ করে
গ) শরীর খুব দূর্বল লাগে
ঘ) প্রথমে কোষ্ঠকাঠিন্যতা এবং পরে ডায়রিয়া দেখা দেয়
ঙ) কখনও কখনও রক্ত যুক্ত পায়খানা হয়

১. শিশুর কত বছর বয়সে এই লক্ষনগুলো দেখা দেয়?
২. এই ধরনের সমস্যা শিশুর কয়বার দেখা দিয়েছে?
৩. এই সময় শিশুকে কি চিকিৎসা দেওয়া হয়েছিল?
৪. ঐ সময় তার অন্য যে সমস্ত শারীরিক সমস্যা দেখা ধিয়েছিল সেগুলো কি কি?
৫. এই সময় শিশুর আচরনের কোন পরিবর্তন হয়েছিল কি?

H) নিউমোনিয়া

নিচের সমস্যাগুলি দ্বারা আপনার শিশু কি কখনও প্রভাবিত হয়েছিল?
ক) কাঁপুনি সহ ঠান্ডা লাগা
খ) তাপমাত্রা১০৫° ফা পর্যন্ত উঠে
গ) ভীষন বুকে ব্যাথা হয়
ঘ) মাথা ধরে, ক্ষুধা থাকে না, বমি বমি ভাব
ঙ) শ্বাস প্রশ্বাস এবং নাড়ীর স্পনদন দ্রুত ঘটে
চ) মাসল ও জয়েন্টে ব্যাথা

১) শিশুর কত বছর বয়সে এই লক্ষনগুলো দেখা দেয়?
২) এই ধরনের সমস্যা শিশুর কয়বার দেখা দিয়েছে?
৩) এই সময় শিশুকে কি চিকিৎসা দেওয়া হয়েছিল?
৪) ঐ সময় তার অন্য যে সমস্ত শারীরিক সমস্যা দেখা ধিয়েছিল সেগুলো কি কি?
৫) এই সময় শিশুর আচরনের কোন পরিবর্তন হয়েছিল কি?

I) হেপাটাইটিস

নিচের লক্ষন গুলি আপনার শিশুর মধ্যে কি কখনও দেখা দিয়েছিল?
ক) প্রস্রাব হলুদ হওয়া
খ) ক্ষুধা নষ্ট হওয়া
গ) বমি বমি ভাব

ঘ) সামান্য তাপমাত্রা থাকা
ঙ) স্টুল ফ্যাকাশে বা মাটির মত রং হয়

১) শিশুর কত বছর বয়সে এই লক্ষনগুলো দেখা দেয়?
২) এই ধরনের সমস্যা শিশুর কয়বার দেখা দিয়েছে?
৩) এই সময় শিশুকে কি চিকিৎসা দেওয়া হয়েছিল?
৪) ঐ সময় তার অন্য যে সমস্ত শারীরিক সমস্যা দেখা ধিয়েছিল সেগুলো কি কি?
৫) এই সময় শিশুর আচরনের কোন পরিবর্তন হয়েছিল কি?

J) মেনেনজাইটিস

নিচের সমস্যাগুলি দ্বারা আপনার শিশু কি কখনও প্রভাবিত হয়েছে?
ক) জ্বর
খ) প্রচন্ড মাথা ব্যাথা
গ) বমি বমি ভাব
ঘ) ঘাড় শক্ত হয়ে যাওয়া, মাসল ব্যথা
ঙ) শারীরিক এবং মানসিক ক্লান্তি
চ) খিচুনী

১) শিশুর কত বছর বয়সে এই লক্ষনগুলো দেখা দেয়?
২) এই ধরনের সমস্যা শিশুর কয়বার দেখা দিয়েছে?
৩) এই সময় শিশুকে কি চিকিৎসা দেওয়া হয়েছিল?
৪) ঐ সময় তার অন্য যে সমস্ত শারীরিক সমস্যা দেখা ধিয়েছিল সেগুলো কি কি?
৫) এই সময় শিশুর আচরনের কোন পরিবর্তন হয়েছিল কি?

K) ডায়রিয়া

নিচের লক্ষন গুলি আপনার শিশুর মধ্যে কি কখনও দেখা দিয়েছিল?
ক) বার বার পাতলা পায়খানা
খ) জ্বর জ্বর ভাব
গ) চোখ লাল হয়ে যায় (Sunken Eyeball)
ঘ) খিচুনি হয়

১) শিশুর কত বছর বয়সে এই লক্ষনগুলো দেখা দেয়?
২) এই ধরনের সমস্যা শিশুর কয়বার দেখা দিয়েছে?
৩) এই সময় শিশুকে কি চিকিৎসা দেওয়া হয়েছিল?
৪) ঐ সময় তার অন্য যে সমস্ত শারীরিক সমস্যা দেখা ধিয়েছিল সেগুলো কি কি?
৫) এই সময় শিশুর আচরনের কোন পরিবর্তন হয়েছিল কি?

অন্যান্য অসুখের বিবরন (যদি থাকে) ঃ

(অভিভাবকদের নিজস্ব বর্ননা) বিভিন্ন চিকিৎসা সম্পর্কে ঃ

প্রতিবন্ধীকে পর্যবেক্ষনের পর গবেষকের নিজস্ব মতামত ঃ

গবেষক প্রতিবন্ধীকে কোথায় পর্যবেক্ষন করলেন?

তারিখ	সময়	পর্যবেক্ষনের স্থান	মন্তব্য

Appendix - II

Questionnaire

1. Name and address of the day centre in which the mentally retarded person is affiliated:

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2. Date of data collection.

3. Relationship between the respondent and Mentally Retarded person.

General Information of the Mentally Retarded Person

Full Name: ----------Nick Name:

Father's Name: ----------Father's Education

Mother's Name: ----------Mother's Education

Full Residential Address: ----------

House Name: ---------- House No: ----------

Name of House Owner: ---------- Village: ----------

Road No: ---------- P.S. ----------

P.O: ---------- Dist.: ----------

Tel. No. ----------

With whom the mentally retarded person lives: ----------

Special Identity of the Mentally Retarded Person

Date of Birth: ----------Age: ----------Birth Place: ----------

Birth Place: Town / Village Male/ Female Height: ----------Weight: ----------

Physical Structure: Fat / Average / Thin / Very Thin

Hair Colour: ----------Eye: ----------Skin: ----------

Identification Mark: ----------Religion: ----------Language: ---------

Behavioural Assessment of the Subjects

Grades: V: Very good, IV: Good, III: Average, IV: Poor, I: Very Poor

Behavioural Conditions	I	II	III	IV	V	Remarks
Toilet training						
Clothing						
Self - eating						
Gesture						
Speech						
Hearing						
Follow instructions						
Physical development						
Activity level						
Visual condition						
Smell sensation						
Auditory sensation						
Skin sensitivity						
Intelligence						
Memory						
General knowledge						
Behaviour at school						
Behaviour at home						
Play behaviour						
The level of common diseases in different seasons						
The level of different diseases for the change of temperature						
The level of affected in water born diseases						
The level of affected in air born diseases						
The level of affected in infectous diseases						
The level of cold and pneumonia						
Behaviour with parents						
Behaviour with Sibling						
Behaviour with Known people						
Behaviour with unknown people						
Behaviour with same age group						
Cleanliness						

Different diseases of a child after birth

Age	Description of illness	Change of behaviour for illness
First 14 days		
15 days – 2 years		
2 yrs –6 yrs		
2 yrs – 12 yrs		
12 yrs –14 yrs		
14 yrs – 17 yrs		
17 yrs –21 yrs		
21 yrs – 40 yrs		
40 yrs – 60 yrs		

Parents will describe. Researcher will record. If possible, the photocopy of prescriptions should be collected.

Description of special problems of the retarded person.

A. General problems

I. Does your retarded child go to school?

II. Does the retarded child like to go to school?

III. Does the child like to read books?

IV. Can the child recognize alphabets

V. Can the child repeat anything after learning's

VI. Is the child depressed mostly?

VII. Can the child express hunger?

VIII. Can the child speak orderly?

IX. Can the child express the toilet problems?

B. Physical problems and diseases

I. Does the retarded child have any physical problem?
II. Of what kind (if there is any physical problem)?

a. Can not speak.
b. Salivation.
c. Can not lift any thing or do hard job
d. Can not walk or does not get any strength in leg.
e. Can not hear.
f. Weak in vision.

III. Does the retarded person suffer from convulsion?
IV. The duration of convulsion.

a. Few minutes.
b. Around 10 to 15 minutes.
c. Around an hour.
d. More than an hour
e. Irregularly

V. How does the retarded person behave when sick?

a. Lie down calmly
b. Becomes restless
c. Becomes ill tempered
d. Loss of appetite
e. No change in food habits
f. Sleep increases unusually
g. Sleeping hour decreases
h. Others

C. Social problems (among friends, streets, play grounds)

I. How does the retarded person behave in the presence of guests

a. Keeps calmness
b. Wants to speak to the guest
c. Gets annoyed to see the guest

II What does the retarded person like?

a. Listening to music
b. To watch television
c. To play
d. To see magazines or pictures

III Does the retarded person like to play alone?
IV Does the retarded person walk calmly or to and fro in the street?
V Does your retarded person have any friend?

General questions

I. When did you come to know that the retarded person?

How many days after birth?

a. Between 2 weeks to 2 years
b. Between 2 years to 4 years
c. After 4 years

II. How did you come to know that the child is retarded?

III. What kind of treatment has been given for the retarded person?

a. Ayurvedic
b. Faith healing
c. Homeopathy
d. Allopathic

IV. What kind of treatment is given at present?

a. Ayurvedic
b. Faith healing
c. Homeopathy
d. Allopathic
e. None

V. Does the retarded person take any medicine at present?

(If so)
a. What is the medicine?
b. Dosage of the medicine?
c. What happens if no medicine is given?
d. Who changes the dose of medicine? Doctor / Guardian

VI. Do you treat your retarded person equally with the other children?
VII. Do you take the retarded person to the relatives or to other functions?
VIII. Do you have a future plan for the retarded person?
IX. Does the retarded person suffer from diseases more than the other retarded person?
X. How do you respond when the retarded person is annoyed?

a. convince with sympathy
b. give punishment
c. Keep him/ her closed
d. Others

XI. Does the retarded person often goes alone from home?
XII. Have your child-attained maturity in time?
XIII. Do you think yourselves, responsible for the birth of the retarded?
XIV. Do you think your child is given proper treatment?
XV. Do you think your child will cure in proper treatment?
XVI. Are you anxious with the future of the retarded person?
XVII. Are you interested to get the retarded person married?
XVIII. Does your relatives accuse you for the retarded condition of your child?
XIX. Do others in the society criticize you?
XX. Who should take the responsibility of the retarded child?

a. Family
b. NGOs engaged in social welfare
c. All in the area / village
d. Government
e. Others / Family and government

XXI. What measures the government you think should take?

Description of Viral and Bacterial diseases

Since its birth what kind of diseases has your retarded person undergone?

Viral diseases		Bacterial diseases		Viral and Bacterial diseases	
Influenza	How many times		How many times		How many times
Cold		Pneumonia		Meningitis	
Chicken pox		Typhoid		Diarrhea	
Measles				Hepatitis	
Mumps					

The relation between the Viral diseases and the retarded child

A. Influenza

I. Did problems below were seen in your retarded person?

a. Fever with cough
b. Headache
c. Muscles pain and stiffen
d. Fever cures with sueating
e. fever attacks with cold
f. The fever continues for seven days

II. In which age the child has undergone these problems?
III. How many times did the person have these problems?
IV. What treatment was given to the person this time?
V. What physical problems did it undergo?
VI. Was there any behavioral change?

a. Behavior before exploring medicine
b. Behavior at the time of exploring medicine
c. Behavior after cure

B. Cold

I. Did your child ever have any symptom below?

a. The nostril is affected
b. Coughing
c. Vocal cord effect
d. The body temperature reduces from 100^0 F to 99^0 F

II. In which age the child has undergone these problems?
III. How many times did the person have these problems?
IV. What treatment was given to the person this time?
V. What physical problems did it undergo?
VI. Was there any behavioral change?

C. Chicken pox

I. Has your child been ever affected by the following problems?

a. Feverish feeling
b. Red rash on the skin and pain in the back, chest, neck, hair and other parts
c. The rash turning boil a few days after
d. The external cover explores within two or four days
e. The cover begins to drop from 9 to 13 days

II. In which age the child has undergone these problems?
III. How many times did the person have these problems?
IV. What treatment was given to the person this time?
V. What physical problems did it undergo?
VI. Was there any behavioral change?

D. Measles

I. Did problems below were seen in your retarded person?

a. Catches cold, fever, temperature rises up to 104^0 F
b. Excess cough
c. Sunken eyeball and tear
d. Rash breaks out around the mouth behind the ear, forehead and beside hair within 3-4 days

II. In which age the child has undergone these problems?
III. How many times did the person have these problems?
IV. What treatment was given to the person this time?
V. What physical problems did it undergo?
VI. Was there any behavioral change?

E. Mumps

I. Did problems below were seen in your retarded person?

a. The gland near the ears increases and the mouth pains
b. Fever
c. Headache
d. The cheek extends

II. In which age the child has undergone these problems?
III. How many times did the person have these problems?
IV. What treatment was given to the person this time?
V. What physical problems did it undergo?
VI. Was there any behavioral change?

F. Typhoid

I. Did problems below were seen in your retarded person?

a. Acute pain and continuous fever
b. Lacking appetite, always keep restless
c. Feeling very weak
d. Constipation and consequent diarrhoea occur
e. Does it deficate with blood sometimes

II. In which age the child has undergone these problems?
III. How many times did the person have these problems?
IV. What treatment was given to the person this time?
V. What physical problems did it undergo?
VI. Was there any behavioral change?

G. Pneumonia

I. Did problems below were seen in your retarded person?

a. Catching cold with
b. Temperature increases up to 105^0 F
c. Acute chest pain
d. Headache, no appetite, vomiting tendency
e. Fast breathing and pulse beat
f. Pain in the muscles and joint

II. In which age the child has undergone these problems?
III. How many times did the person have these problems?
IV. What treatment was given to the person this time?
V. What physical problems did it undergo?
VI. Was there any behavioral change?

H. Hepatitis

I. Did problems below were seen in your retarded person?

a. Yellow urine
b. Destruction of hunger
c. Vomiting tendency
d. Little temperature
e. The stool turns pale or muddy

II. In which age the child has undergone these problems?
III. How many times did the person have these problems?
IV. What treatment was given to the person this time?
V. What physical problems did it undergo?
VI. Was there any behavioral change?

I. Meningitis

I. Did problems below were seen in your retarded person?

a. Fever
b. Headache
c. Vomiting tendency
d. Muscles pain and stiffen
e. Physically and mentally tired
f. Convulsion

II. In which age the child has undergone these problems?
III. How many times did the person have these problems?
IV. What treatment was given to the person this time?
V. What physical problems did it undergo?
VI. Was there any behavioral change?

I. Diarrhea

I. Did problems below were seen in your retarded person?

a. Repeated loose motion
b. Feverish feeling
c. sunken eyeball
d. Convulsion

II. In which age the child has undergone these problems?
III. How many times did the person have these problems?
IV. What treatment was given to the person this time?
V. What physical problems did it undergo?
VI. Was there any behavioral change?

Description of disease (if any):

Description of the guardian about different treatment

The fellow's own opinion after the observation on the retarded person

Where the research fellow observed the retarded child

Date	Time	Place of observation	Remarks

Appendix III

Synopsis of some selected case studied

Synopsis of ten selected cases is given in the following pages. The parents/ guardians permitted the researcher to mention their names and ailments etc. to include only in this thesis, but not for publication in any newspaper, journal, websites, etc.

Name: Mirium Rani Buske
Age: 7 Years
Sex : Female
Father: Mr. Vadu Buske,
35 Years, Service holder
Mother: Mrs. Asha Lata,
34 Years, Women's
hostel manager
Number of Siblings:
3 (2 male, 1 female)

Mother claimed that she had a normal birth at Rajshahi Mission hospital and was possibly developing normally.
On the 14th day after her birth she had severe fever. The temperature quickly rose up to 105°F and the baby experienced severe convulsion. She was taken to the hospital on the second day when the temperature did not reduce and convulsion continued. She was in the hospital for about 15 days under constant care of the nurses. The physicians diagnosed that she had meningitis. Ultimately she recovered from her fever but many secondary complications developed. At age 1 year she had two consecutive attacks of severe fever and Diarrhoea. She was given treatment by graduate physicians. Her development was not normal from the very beginning. She could not sit, stand and walk at proper ages. Yet she is having many complications. She possesses speech impairment, can not eat food without help, and needs help in toilet, dress up and all other aspects of Daily Living Activities. Though she needs help of others in all DLA, she also feels uneasy when other people touch her, but she can not tell why she feels uneasy.

It is understood that she was not given appropriate treatment during first attack of severe fever and her brain and motor nerves were seriously affected.

Name : Nahid
Age : 30 Years
Sex : Female
Father: Late Abul Hashem Khan,
75 Years, Business
Mother: Khudista Hashem,
60 Years, House wife
Number of Siblings: 4(3male,
1 female)

It is clearly seen that she is a Downs Syndrome mentally retarded woman. Her mother claims that she had a normal birth but she was not developing normally. At age 1 year she was attacked by Measles. Since then she is always sick with Influenza, diarrhea and pneumonia. She developed cataract at age 17 years. Yet her cataract was not taken care. She possesses speech impairment as well as hearing impairment. She can perform nearly all works of Daily Living Activities without help of others. But she works very slowly. She has obesity, too.

She attended the special school for the mentally retarded children from 1983 to 1988. Since 1989 she is remaining at home and do not possess enough motivation to go outside her home. She watches TV but she can not explain whether she views clearly.

After joining the special school she developed significantly in toilet training, eating, dressing skills. She developed colour concepts, form concept, learned some social skills which she did not know before coming to the special school. But she has again forgotten many of the items she learnt at the special school as she is not attending the school anymore.

The parents of this woman are educated. She was born when her mother was over 35 years in age and the father was much older. It is mentionable, in Sweden, it is a law that all mothers who conceive after the age of 35 must undergo amniocentesis test to detect whether the fetus has some disability. The mothers are given options whether she should proceed with the pregnancy or prefer abortion. Such tests are easily done in all urban areas in India but not in any clinic in Bangladesh.

Name: Mina
Age : 16 Years
Sex : Female
Father: Mr. Abdul Mannan, 55 Years , Service holder
Mother: Mrs. Halima Khatun , 32 Years , House wife
Number of siblings: 6(3 male, 3 female)

Mother claimed that she had a normal birth and was developing normally. At age 2 years she had an attack of Typhoid. She was given treatment by a graduate physician but the actual diagnosis took little more time than usual. She was cured within one month from fever but her illness continued for several months including secondary diseases. Since then she has partial paralysis in her face. She has developed some secondary disabilities, mainly motor disabilities.

Among the physiological problems constant salivation is the major problem. She has suffered in pneumonia and severe influenza when she was 4 years old. She can do most of her Daily Living Activities by herself but with lot of difficulties. But she wants do these by herself without taking help of others. Her mother has taught her to take care of keeping herself clean during monthly periods and she can take care.

Though the primary diagnosis was not proper, it is understood that she was given appropriate treatment during first attack of Typhoid but her motor nerves were somewhat affected.

She was given admission to the local special school but she did not attend the special classes regularly because of her own physiological problems and distance of the school from her home. At home she wants to help her mother but can not help in all household activities.

Name: Raju
Age: 12 years
Sex: Male
Father: Mr. Kasem Uddin
59 Years, Chowkidar
Mother: Amina Khatun
45 Years, Housewife
Number of Siblings: 4 (2 male, 2 female)

Razu is a Downs Syndrome boy. His birth was normal and did not suffer in any serious disease except severe diarrhea several times during last 12 years. He suffers more in diarrhea than his siblings. He was born when his father was aged 47 years and mother was 33 years.

Razu's main problems are severe speech impairment and intellectual disabilities. He is very social and plays well with the children of the neighborhood. He becomes aggressive if he is humiliated by anyone.

He had measles when he was 3 months old. The parents did not arrange any treatment for measles except bringing homeopathic medicines from the village shop. He had high fever several times, but the temperature was never measured by thermometer. He was always given homeopathic medicines. However, his parents tried ayurvedic medicines and took him to the faith healers.

Razu does not know the names of the colours and he can not count items properly. He can not recall the names of his playmates properly but can distinguish known and unknown persons. He can perform his daily living activities by himself but the performance level is not perfect.

He was not taken to any ophthalmologist and his eye sight was not assessed, but the researcher observed that he his eyesight has reduced during last four years. Nowadays he sometimes tries to complain that he is having headache and neck pain but can not explain his real problems.

Name : Shekh Anser Ali Rubel
Age : 13 Years
Sex : Male
Father: Shekh Khorshed Alam
55 Years, Labour
Mother: Rokhsana Alam
42 Years, Housewife
Number of siblings: 3 (2 male, 1 female)

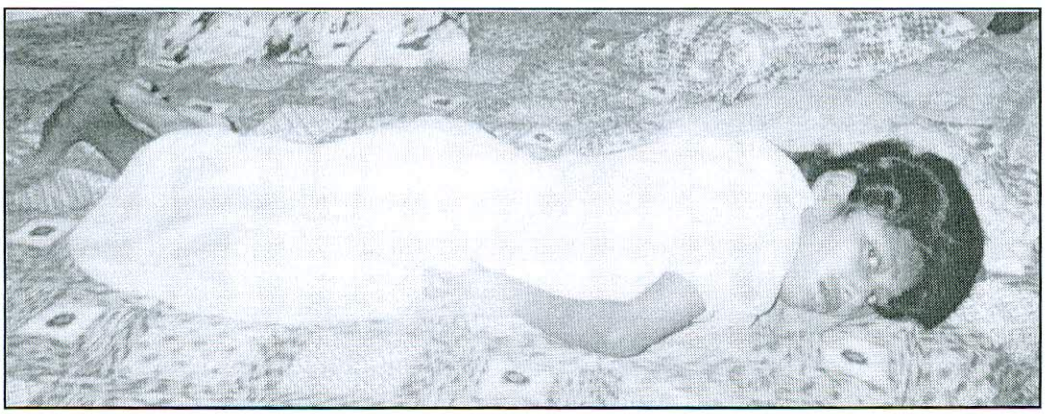
Rubel is also a Downs Syndrome boy living in Rajshahi. His mother claimed that he had a normal birth and was developing normally. At age 6 months he was attacked by very high fever. He was given treatment by a graduate physician and was cured within 14 days. Now he has some difficulties in walking and in other fine motor activities. He is physically weak, too compared to his age group's Downs Syndrome children. He can perform all the Daily Living Activities without help, but the performance level is moderate. He is a downs syndrome boy. His problems include speech impairment, motor disorders, intellectual deficiency, sudden emotional changes and severe sleep disturbances.

His diseases were not diagnosed properly and appropriate pathological tests were never done. From the symptoms described by his mother it was understood he has suffered in severe pneumonia and since last six years having chronic diarrhea.

He can not communicate his physiological problems to his parents but it seems that he wants to inform that he experiences pain in shoulder region, neck and head. Sometimes he clearly expresses symptoms of respiratory problems.

Generally he is calm but becomes very aggressive and restless when he suffers in any disease. Due to his weak health he deteriorates in his performances in Daily Living Activities during his illnesses.

Name: Mita; Age: 16 Years; Sex: Female
Father: Mr. Selim, 43 Years, village shop owner
Mother: Mrs. Ruma, 34 Years, Housewife
Number of siblings: 3 (1 Male, 2 Female)



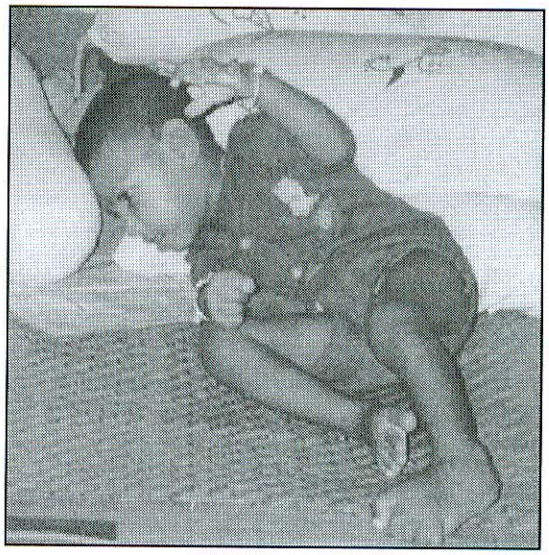
She was born at the village home and there was no trained midwife during delivery. The labour pain of the mother was prolonged but she was not moved to any hospital. Since birth she had many complications. All developmental aspects were delayed. The girl is now not only mentally retarded, she is also physically handicapped. She needs all support in all Daily Living Activities including toilet, dress up and eating. He mostly remains inside the room on bed or on a cot in the inner courtyard of the house. She can not communicate anything. But she smiles when she is happy.

She has suffered severe diarrhea, severe pneumonia and also typhoid during last 15 years. It was found that the parents did not take appropriate medical help from qualified physicians. She was treated by homeopathic and ayurvedic medicines, too.

She never went outside home and to any special education centre. She is always confined at home and remains depressed most of the time. She also experiences some hallucination and she is confused about many social interactions.

It is assumed that she had oxygen deprivation at the time of birth and her motor nerves were affected during birth. During perinatal period she was always sick. All her developments were significantly delayed. She also suffers in chronic gastrointestinal problems. It is assumed that her mental age is like 3 – 4 years children.

Name: Sumona
Age: 6 Years
Sex: Female
Father: Mr. Rafiqur Rahman
28 Years, village shop keeper
Mother : Mrs. Saleha,
22 Years, Housewife
Number of siblings:
No sibling.



Sumona was born by caesarian section and had asphyxia. She did not cry after birth. When she was 4 months old, for the first time she had a severe convulsion. During last six years she experienced several convulsion associated with very high fever.

Sumona's mother had Typhoid when she was three months pregnant and she was given antibiotics at that time.

When Sumona was 1 year old, she had severe pneumonia. She was given treatment by qualified physician and was cured within one week. Since then she is always ill. She has gastrointestinal problems as well as breathing problems. She is frequently having fever and mild convulsion.

Her physical development is slow and she is having a little larger head. She can not seat, speak or express any emotions other than crying.

She is a totally dependent on others for all the activities including toilet, eat, dress, wash, etc. She is on semi-solid food since last six years. She always remains in bed inside the room. She does not have control over her neck and possesses severe motor disorders.

Her parents tried some treatments until last year. Now they are not motivated to undertake serious initiatives.

Name: Mahfuzur Rahman Rafique
Age: 16 Years
Sex: Male
Father: Mr. Monsur Rahman,
48 Years, Businessman
Mother: Mrs. Roquea Begum,
45 years, Teacher
Number of Siblings: 2 (Male)

Rafique's mother informed that she had Prolonged labour pain and finally the boy was born with the help of forceps at clinic in Rajshahi city. Since birth Rafique is a subject of febrile convulsion.

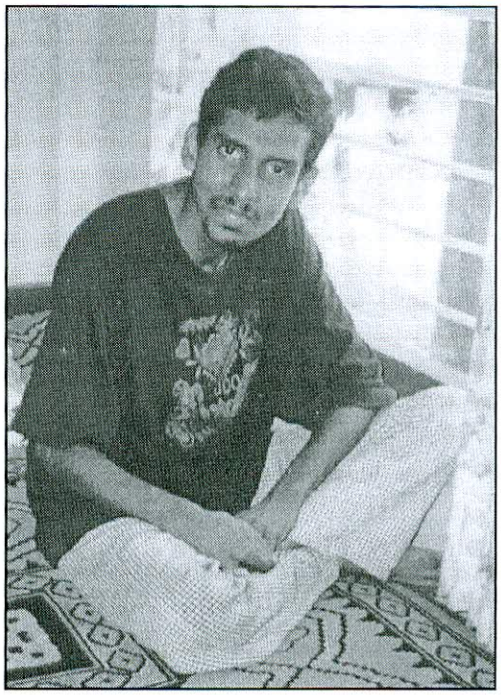
When he was one year old he had meningitis. He was given treatment by qualified physicians and was cured within two weeks.

He has significant difficulties in speaking and understanding. He has very poor body control and movement. He can not walk properly. His controls over his hand movements are also very poor.

He is a completely dependent child. He needs all help in toilet, eating, dressing and all activities of Daily Living Activities.

He was completely dependent on psychotropic drugs until he was 14 years old. At the present he is taking homeopathic medicines and sometimes experience mild convulsion.

He can express some of the emotions but as he can not speak well he can not clearly explain his biological problems. The researcher tried to administer Colour Progressive Matrices to assess his intellectual level, but he could not concentrate to the items of the test.



Name: Mishu
Age: 25 Years
Sex: Male
Father: Late Mustafizur Rahman
Mother: Afsari Rahman,
50Years, Housewife
Number of Siblings:
3 (1 Male, 2 Female)

Mishu is the son of highly educated mother and father. His mother claimed that she had a normal birth at a clinic and was developing normally. When he was about 3 months he had severe fever. Temperature was always very high. He also had periodic convulsion. He was given treatment by a graduate physician and was cured within one week. He had normal physical development until now. He possesses serious speech impairment. Sometimes he becomes aggressive and attacks the family members. Since his first illness during 3rd month he is on psychotropic drugs. It is difficult to assess his mental age because he does not concentrate to any psychological test.

He attended the special school from 1984 to 1992. He improved in some social interactions. But yet he needs lot of help in all Daily Living Activities at home. His father suddenly died when he was about 7 years old. His mother used to take him out of home until he became adult. Now he is always spending time at home watching television and listening music. He possess some emotional problems and his behaviour is sometimes unpredictable. He can not communicate his personal problems to others. Only his mother and his sisters understand what he wants to say. When consulted, the Psychiatrist mentioned that he is also having some psychotic problems. Whenever the psychotropic drugs are withdrawn he shows some behaviour problems.

Name: Umme Aysha Nomita
Age: 10 Years
Sex: Female
Father: Late Ishaque Ali
Mother: Late Monira Ahmed
Number of Siblings:
3 (1 Male, 2 Female)

It is not exactly known whether she has got any chromosomal anomalies. Apparently she is a healthy girl. Her mother died when she was about 3 years old and her father died when she was 8 years old. Her father and siblings tried their best to give her all nourishment and warmth. Her father was a lawyer. In addition, her family possesses huge agricultural lands and buildings. She also inherited wealth after the death of her father but now lives under the care of her elder sister in Rajshahi city.

Her birth was normal, at home, in the presence of a qualified lady doctor. At birth it was observed that her legs are slightly bended near knee areas. At age one month she was attacked by severe pneumonia and was treated by qualified physicians. All her physical developments were delayed. She walked at 2 years and at 6 years age she started speaking a little. She suffers in chronic fever with cold and cough. Until last year she had constant salivation. Now salivation has reduced but tongue remains slightly outside her lips. When she sleeps her lips remain open. She does not have enough urine and stool control; needs complete help to dress up. She can eat by herself but the performance level is poor.

She is very aggressive to possess items but when given she continues with that item for few days then loose interest in that item. Her emotions are unpredictable and it is very difficult to understand whether she likes or dislikes anyone. Sometimes she cry alone for a longer period without any apparent reason. She likes to sleep on the floor. Only 2 – 3 years ago she was very aggressive and was attacking family members, now she has become depressed. At present no treatment is being done.