MENTAL RETARDATION

Degree Course (Three Years)

Psychology Honours

B. A. Part– I Honours Paper II : PSYCHOPATHOLOGY

Unit 10

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Structure

1.0 Introduction

Mental retardation, as a developmental disability, has attracted considerable public attention. Its general debilitating character has made it a distinct category of disability. Individuals with mental retardation, face considerable difficulty in their lives in adapting to the demands of day-to-day life. Although a wide range of other disabilities may be associated with mental retardation, the primary deficits are intellectual. Therefore, some authors prefer to label the condition as 'intellectual handicap' instead of 'mental retardation'. There are other terms like 'feeble mindedness', 'mental handicap' or 'retardation' which are used interchangeably referring to the same condition. Throughout the present work, however, we would maintain the term 'mental retardation' as it has gained wide acceptance and has been adopted by most major systems of classification.

Mental retardation affects from 2 to 3 per cent of the total population. According to a WHO estimates, the retarded population in India would be anywhere between 18 to 20 million with an annual increase of about 40 lakh retarded individuals (Sen & Sen, 1984). In 1996 Boi estimated that 19.4 million people in India are mentally retarded. Now the figure must be much higher than this.

2.0 Objectives

After reading this unit, the student will be able to:

(1) Define mental retardation.

(2) Explain the nature of mental retardation

(3) Describe the causes of mental retardation

(4) Explain the measures to be taken to prevent mental retardation

3.0 Definition

Mental retardation has been defined by using various criteria. However, for our discussion, we shall focus on some of the major diagnostic nomenclatures. International Classification of Disease, 10th edition (ICD-10, WHO, 1993), for instance, defined mental retardation as a condition of arrested or incomplete development of mind which is especially characterized by impairment of skills manifested during the developmental period, which contribute to intelligence. Accordingly, sub-normality of intelligence is a key indicator of mental retardation, which is manifested in retardation of cognition, language, motor and social abilities of the individual. Thus, diagnosis of mental retardation was based on assessment of intelligence through use of standardized tests having a mean of 100 and screening of adaptive behaviour. It is also important to know that individual's current level of intellectual and adaptive functioning is evaluated without regard to its nature of causation.

Another classification system Diagnostic and Statistical Manual of Mental Disorders (APA, 1980) in its 3rd edition and in its subsequent version (e.g. DSM-IV-TR, APA, 2000) provides a similar definition of mental retardation defining it as a condition characterized by significantly sub-average intellectual functioning, resulting in or associated with, deficits or impairments in adaptive behaviour. It occurs during the developmental period, i.e., before 18 years of age. Both the above classification systems consider intelligence quotient (IQ) of mentally retarded people to be below 70 (When a similar condition arises after the age of 18 years it is described as dementia). In its later edition (DSM-IV, APA, 1994), the classification was made more flexible regarding the range of intelligence and adding three educational categories like educable, trainable and custodial to its nomenclature. Accordingly, mild mental retardation is put under 'educable', the moderate, under 'trainable' and the rest of the group below this, that is, severe and profound levels of retardation are considered as 'custodial' group.

American Association on Mental Deficiency (AAMD), viewed mental retardation as "significantly sub-average intellectual functioning resulting in or associated with concurrent impairments of adaptive behaviour, manifested during the developmental period" (Grossman,

1983, p.11). This definition is focused on the same principal descriptors: sub-average intellectual functioning, impairment in adaptive behaviour during the developmental period. Base on the above definitions, the tow major characteristics of mental retardation are sub-average intelligence and deficits in adaptive behaviour.

4.0 Sub-average intelligence

Sub-average intellectual functioning is the core deficit in this condition. Considerable importance is often assigned to it as it leads to difficulty in an individual's adaptation to the demands of day-do-day life. In the general population, when we measure intelligence quotient (IQ) by using standardized tests of intelligence, sub- average intelligence refers to the level of intelligence which is at least 2 standard deviations below the population mean. As stated earlier, the mean is considered to be 100. The assessment is done by individually administered standardized tests of intelligence. IQ is calculated by dividing the Mental age (MA) with Chronological Age and multiplying it with 100. Mental age refers to the individual's age in as observed in ability to perform age appropriate standardized tasks in a test of intelligence. Chronological age (CA) on the other hand, it is the age calculated in terms of his/her date of birth. Accordingly, a person with MA of 5 and CA of 10 would yield an IQ score of 50.

Intelligence is believed to be normally distributed in the general population. This expressed through a bell-shaped normal probability curve, as the largest number of people would have 'average' score in a standardized test of intelligence. They would fall at the middle part of the curve and those with above or below average intelligence will fall on both sides, symmetrically. Thus in a very large population, it is theoretically assumed that there will be symmetry in distribution of intelligence with equal amount of area on both sides of the midpoint. It also assumed that the mean, median and mode fall at the middle of it at the same point. Most standard deviation (SD) of 2 on both the sides as the range of average intelligence, which is about 15 points, approximately. Thus, the average range of intelligence is considered to be IQ which range between 85 to115.

The intelligence tests which are used most frequently in the West are Wechsler Scales Intelligence, Stanford-Binet Test. The developmental tests at erly age included Baley's Scale of Development and Vineland Social Maturity Scale. among tests of social and adaptive behaviour

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5.0 Deficit in adaptive behaviour

Every individual requires certain competencies to adapt to the demands of day to day life. With progress of development individuals acquire adaptive behavior necessary of their adjustment, however, some fail to do so and lag behind. This is viewed as deficit in adaptive behaviour, which is often associated with poor intellectual development.

Precisely speaking, adaptive functioning refers to the efficacy of an individual to cope with common life demands and meeting the standards of personal independence expected from the same age group, socio-economic background and community setting (DSM-IV, APA, 1994). Three major determinants of adaptive behaviour may be considered here: (1) maturation, (2) learning and (3) social adjustment. *Maturation* refers to sequential development, i.e., self-help skills of infancy and early childhood, such as sitting, crawling, standing, walking, talking interaction with peers, and other behavioural development. *Learning*, that is, the ability to learn new behaviors is an important prerequisite to acquisition of adaptive behaviour. *Social adjustment* refers to the degree to which an individual is able to maintain himself independently in the community and in gainful employment as well as his/her ability to meet and conform to other personal and social responsibilities and standards set by the community (Heber, 1959).

In the subsequent revisions of the manual, the concept of adaptive behaviour was tied to the individual's chronological age by associating the skills of adaptation to specific age periods. In infancy and early childhood adaptive behaviour is characterized by sensori-motor communication, self-help and socialization skills. In childhood and early adolescence it is indicated by abilities involving learning processes like academic skills, mastery of the environment, and interpersonal social skills, in the late adolescence and adulthood, emphasis is placed on vocational skills and social responsibilities. Thus, the adaptive behaviour is age-specific.

6.0 Classification

Four levels of mental retardation have been recognized for classification of mental retardation, such as mild (IQ 50-69), moderate (IQ 35-50), severe (IQ 20-34) and profound (IQ below 20). The

IQ range between 71-85 is considered to be borderline intelligence. Although there are minor variations in the range of intelligence, most prevalent statistics refer to IQ 70 as the cut-off point for all practical purposes. A comparative classification is provided below:

Table 1. Classification of mental retardation by intelligence

Levels of Retardation	Baley Scales & Stanford-Binet Test	Wechsler Scales of Intelligence	AAMD	ICD-10	DSM-IV-TR
Mild	55-69	52-67	55-70	50-69	50-70 to 70
Moderate	40-54	36-51	40-54	35-49	35-40 to 50-55
Severe	25-39	20-35	25-49	20-34	20-25 to 35-40
Profound	Below 25	Below 20	Below 25	Below 20	Below 20 or25

7.0 Nature of retardation

People with *mild* mental retardation constitute the largest section (about 75-85 per cent) of people with mental retardation. They have minimum impairment in sensori-motor skills at pre-school age. Most of them cannot be distinguished from the other people, until they advance in age. Their poor social and communication skills can be developed to a large extent through education. They can learn academic skills up to 6^{th} grade and can be guided for social conformity, hence, they are considered as educable. Those who have *moderate* level of retardation, can talk or learn to communicate, but poor in awareness. They have deficits in self-help skills but can profit from systematic training in these skills. *Severely* retarded people have poor motor development during the pre-school years and have minimum language skills. They generally do not profit from training in self-help and have very little from communication training. At school age they can pick up some basic skills to communicate. Elemental self-help skills can be taught to them through systematic laboratory training. *Profoundly* retarded people have minimum level of sensori-motor skills, although some levels of motor development may present. They hardly respond to training. Constant and close supervision is required for self-care needs.

8.0 Assessment

All contemporary schemes of classification of mental retardation accept intelligence as the basic parameter of defining the degree and severity of the condition. Reference is made to IQ measured individually tests of intelligences like Wechsler's Scales or Stanford Binet Test of Intelligence and for very young children, Baley's Developmental Scales or Vineland Social Maturity Scales, and AAMD Adaptive Behaviour Scales are used for assessment of their development. In India many of these scales have been adapted for use, such as Bhatia's Performance Battery of Intelligence, Binet-Kamath Test, Vineland Social Maturity Scale (Nagpur) etc .

There is more convergence of opinion on the concept of intelligence, than on other measures like adaptive behaviour. There is a fund of statistical information within and across cultures for analysis of intelligence test scores; therefore, comparison with a variety of population is possible. This is the reason for which very few prevalent studies have used adaptive behavior for identification of the cases with mental handicap. On the other hand, there are series of non intellectual variables such as mental set, motivation or experience of the examiner witch have little to do with intelligence but do influence the scores on intelligence test (Zigler, 1970), therefore, it should not be used as the sole measure for diagnosis. Therefore, both intelligence and adaptive behaviour should be assessed for all practical purposes.

Vineland Social Maturity Scale (Doll, 1941) is perhaps the best single measure of adaptive behaviour (Heber, 1959). However, it cannot be used as the sole determinant of mental retardation. It should be supplemented by other relevant data. The test is most adequate for measuring adaptive behaviour during infancy and childhood. AAMD Adaptive Behaviour Scale was introduced by Hinira and his associates in 1969. Although there is considerable emphasis on assessment of adaptive behaviour along with IQ, it has received secondary attention (Kurtz, 1977). Further, it argued that there is no adequate measure of adaptive behaviour, therefore, its use in definition of mental retardation brings a great deal of subjectivity (Clausen, 1967). In an excellent discussion on adaptive behaviour, Patton, Beirne-Smith and Payne (1990) concluded that although it is mandated by professional guidelines and law, the use of adaptive behaviour as a criterion for

determining retardation is clouded by confusion. Thus a total emphasis on adaptive behaviour will have limited value. Looking at this controversy some authors have even gone to the extent of suggesting that IQ score should alone be used in definition of mental retardation, as it is more acceptable and relatively culture-free. Even physicians prefer to discount their own judgment when they do not coincide with psychological evaluation of IQ (Adams, 1973), although dual criteria is suggested by most classification systems.

9.0 Causes of mental retardation

Mental retardation is caused by a number of factors that affect human development at the prenatal, natal, post-natal stages of life. Medical literature reports about 500 different causes of mental retardation, out of which, only 6-17 per cent causes are identifiable. Lesser the degree of severity, lesser is the likelihood of ascertaining the cause of mental retardation. Only a small number of those suffering from severe or profound retardation are believed to have biological deficits. As per the American Association on Mental Deficiency classification of etiology of mental retardation, there are following 10 broad groups of causes: (1) Infection and intoxication, (2) Trauma and physical agents, (3) Metabolism and Nutrition, (4) Gross Brain Disease, (5) Other unknown Prenatal Influence, (6) Chromosomal Anomalies, (7) Other conditions originating at Birth, (8) Following Psychiatric Disorders, (9) Environmental Influences, (10) Other conditions. Here, we have attempted to focus on some major causes of mental retardation.

1. Infections and Intoxication

Infections and intoxication may cause retardation either in to-be-mother, infant or early childhood. The brain is especially susceptible to malformation through infection or intoxication during the first three months of pregnancy.

Rubella

Congenital *rubella* (German measles) is a major cause of retardation. If the mother suffers from rubella in the first trimester of pregnancy the effects are most dangerous. The child may exhibit a

number of abnormalities such as congenital heart diseases, cataracts, microcephaly, deafness and micropthalmia. About 10-15 per cent children are affected with mental retardation.

Syphilis

Syphilis is a chronic systemic infectious disease caused by a slender cork-screw like spirochete. It is primarily transmitted by sexual contact, occasionally by kissing or biting. In majority of cases it invades central nervous system. Syphilis in pregnant women is a major cause of mental retardation.

Alcohol

Excessive consumption of alcohol by pregnant women risks causing serious damage to the developing brain of the fetus. The newborn brain is most vulnerable to the effects of alcohol during the "brain growth spurt period" in the last trimester of pregnancy as exposure to alcohol can kill millions of neurons in the brain. Studies have shown that alcohol destroys 30 per cent of brain cells where it is injected. There are many actions of alcohol on the brain but what is responsible for damaging effects on the brain is the blocking of its receptors. The severity of brain damage is more correlated to the rate at which alcohol is consumed and the length of time the blood ethanol level is maintained above the toxic threshold than the total amount of alcohol administered.

Lead poisoning

Lead-poisoning is quite common in large cities and urban slums. This has neurotoxic properties when lead content high in the brain. Lead enters into circulation after inhalation and via gastrointestinal absorption. Thus, it can be permanently or progressively toxic to the central nervous system. Even low dose of lead adversely affects its functioning. High level of lead in the brain may cause lead encephalitis. Objects of daily use containing lead like water pipes, lead-based paints used in old houses, breathing lead polluted air, traffic congestion may increase concentration of lead in blood.

Blood group incompatibility

Blood group incompatibility between mother and fetus of Rh incompatibility is a cause of mental retardation. Rh factor is a special protein on surface of the red blood cells (RBC). Rh positive contains the protein whereas Rh negative does not. When an Rh positive man and Rh negative woman conceive Rh positive baby, neither the mother nor the baby is adversely affected. However, at birth, the mother's immune system will react to the fetus' Rh positive blood by forming antibodies to the Rh factor. These antibodies remain in the mother's system and will enter to the blood stream of the next Rh positive baby conceived, attacking its central nervous system which may cause mental retardation.

Consanguinity

Marriage among blood-relatives increase the incidence of mental retardation. This has been reported by a number of investigators. First cousin marriages accounted for about 32 per cent of the consanguinity, whereas uncle-niece marriages were present in 11.2 per cent cases. In 30.9 per cent cases they were born of consanguineous marriages (Madhavan, & Narayan, 1991).

Age of the Mother

Mothers under 20 and above 35 tend to have high risk of giving birth to retarded children. (Pasamanick, & Lilienfield, 1955). This is due to the fact that inadequate development of reproductive system in younger women and progressive decline of reproductive function in older women. A baby is considered premature when the birth weight is less that 1,500 grams. Prematurity not only causes intellectual deficits but also other complications like sensory handicaps, convulsive disorders and emotional problems. Prolonged experience of labour is another cause of insult to the brain of the neonate, causing mental retardation.

2. Trauma and Physical Agents

Insult to the brain during pre-peri, and post-natal periods caused by oxygen deprivation, accidents or child abuse may cause mental retardation. Oxygen deprivation (anoxia) may result from knotted umbilical cord, cardiovascular disorders, vaginal hemorrhage and premature separation of placenta. Trauma involved in mechanical act of delivery and certain anaesthetic procedures may cause retardation. Over dose of some chemical substances which are used as a relaxant during pregnancy may cause severe physical deformities in newborns, including mental retardation, . Trauma may be cause by irradiation. Small amount of *irradiation* such as these of exposure to X-ray may not have any known damage to the fetus, but high degree irradiation, such as large therapeutic dosage may cause damage to the CNS. Pauling (1962) reported over 16 million cases of mental and physical defects due to fall out of nuclear weapon testing and exposure to carbon-14. It may cause depletion of the sex-chromosomes that make other cells of the body. In a study on the survivors of Hirosima and Nagasaki, Miller (1970) reported more than normal incidence of mental retardation associated with microcephaly.

Cranial Anomalies

Abnormalities in the size of cranium (head) are often associated with mental retardation. These are two such known conditions which are most closely associated with mental retardation: (1) Microcephaly and (2) Hydrocephaly.

Microcephaly is a congenital anomaly of the cranium characterized by poor development of the brain. The cranium is usually less than two standard deviations below the average circumference for age, sex, race, and period of gestation (Udang & Swallow, 1983). The head circumference is not more than 16 inches, as compared to the normal cranium approximately 22 inches (normal size) (Penrose, 1963). Their stature is usually very short but having relatively normal musculature and sex organs, with curved spine, the scalp may be loose and wrinkled. The forehead is narrow and flat at the back. Although, frequently the lower jaw recedes, the facial feature may be normal. This condition is transmitted by recessive gene or may be caused by secondary environmental factors (Gerald, 1982; Robins, & Robins 1965; Telford & Swavey, 1979).

Hydrocephaly occurs due to accumulation of abnormal amount of cerebrospinal fluid (CSF) within the cranium. This is characterized by an increase in the circumference of the head of more than 1 inch during each of the first two months of life, (2) circumference of the head exceeds the circumference of the chest. Prominent veins in the scalp, separation of the sutures of the skull, widely spaced eyes and somewhat flattened nose are some other features of hydrocephalus. It causes damage to the brain tissue and gradual enlargement of the cranium out of proportion to the rest of the body. The cranium may have either already enlarged at birth or begin to enlarge just after birth. Prenatal disturbance in the formation and absorption CSF may be the cause of hydrocephalus. This may also occur due to brain tumour, subdural haematoma, meningitis and other conditions that block the CSF pathway (Koch, 1967). When it occurs after the cranial sutures are closed the brain gets compressed downward, causing impairment in cognitive functions.

1. Metabolic and Nutritional Factors

Malnutrition

Nearly 300 million children in the world are retarded due to malnutrition, a proven killer of young children (Boerma, 1971). Mothers on low protein and low calorie-diet during pregnancy tend to deliver children with anatomical defects of the nervous system (Davidson, & Dobbing, 1966) and children with low intelligence (Klein et al, 1972). Nutritional disorders particularly during the last 6 months of pregnancy may hinder development of 40 per cent of brain cells and the damage is irreversible.

Malnutrition may have two principal types of manifestations: (1) Protein deficiency or Kwashiorkor and (2) overall food, i.e., calorie deficiency or Marasmus. Kwashorker results in stunted growth, edema (accumulation of water in the body), skin sores and reduced pigmentation of hair, apart from cognitive deterioration. It occurs mostly after weaning, when milk is replaced by high starch but low-protein food. The clinical features of marasmus include wasting away of tissues and extreme growth retardation.

Phenylketoneuria (PKU)

Phenylketoneuria is a metabolic disorder (Folling, 1934) which is caused by autosomal recessive gene. Children suffering from PKU lack an enzyme that breaks down an amino acid phenylalanine which is normally found in protein food. The accumulated phenylpiruvic acid (a neurotoxic substance) affects the growth of the central nervous system. It results in moderate to severe mental retardation. PKU is associated with other clinical features like a peculiar musty body odour, infantile eczema, seizures, pale colouring of eyes, skin and hair, hyperactivity, aggressiveness, destructiveness and other disruptive behaviour. It becomes apparent between 6-12 months after birth. Phenylpiruvic acid can be detected from the patient's urine. Early identification is quite essential for treatment of this disorder. Low phenylalanine diet is often prescribed before six months of age, before the development of the brain structures. Elimination of food like fish, meat, eggs from child's diet can alter the process.

4. Gross Post-Natal Brain Disease

Rare dominant gene disorders like tuberous sclerosis, meningitis, Huntigton's chorea attack brain cells and cause irreversible damage to the brain. This may lead to deterioration of intellectual functioning and mental retardation.

5. Chromosomal anomalies

Down's Syndrome

Down's syndrome is a well established autosomal anomaly that causes mental retardation. It is often caused by trisomy 21. In this genetic aberration, the chromosome numbered 21 either floats freely in the cell of the nucleus or is situated on the top of another chromosome. Trisomy 21 may occur due to failure of one pair of parental chromosome to separate at conception. As a result of which, the child may have 47 instead of 46 chromosomes. In a small number of cases, Down's syndrome is caused by translocation of the splitted extra chromosome in the 21 pair that gets attached to another chromosome. Translocation of the chromosome pair 13 of 15 may form partial trisomy leading to Down's syndrome as well. A third possible reason is mosaicism, that is caused by uneven division of chromosomes. This happens more frequently among older females.

Downs syndrome children share several common physical characteristics such as upward slanting of the eyes with epicanthic folds, i.e., an extra flap of skin over the innermost corner of the eyes, single crease on the palm, small mouth and fissure on the tongue. Due to short roof, the tongue protrudes and they have difficulty in articulation. Apart from that, they have marked degree of hypotonia, i.e., loss of muscle tone and hyperflexibility of limbs. Many of them have congenital heart disorders. Short hands, incurving fingers and poor sexual development are the other commonly associated features. However, the number of these features does not predict their degree of mental retardation, nor they predict the developmental outcome.

Edward Syndrome

Most children suffering from this autosomal disorder do have Trisomy 18. Most fetus with Trosomy 18 are spontaneously aborted, only 10 per cent of them survive. They are often severely retarded, have low birth weight, low birth cry and do have poor response to sound. Abnormality may be noticed in the shape of their skulls. They may have low set car lobes, cardiac defects overlapping fingers and small jaws are some of the clinical features of this syndrome.

Patau Syndrome

This syndrome is caused by trisomy 13-14, which is most uncommon. Severe mental retardation, growth retardation, congenital defects in lips, nose, eyes, scalp and forebrain are the distinguishing clinical features of this syndrome. Some may have extra fingers, curved finger nails and cardiac defects.

Fragile X Syndrome

This is an abnormality in the X chromosome, found more in males and carried out to females. The main features of fragile X syndrome is mild to moderate mental retardation. Recent findings revealed that they are not retarded in all cognitive functions, but in specific ones, like performing on Koh's Block Designs. When there is an extra sex chromosome, abnormality in cognitive

functions, particularly lower verbal IQ, increase in speech and language disorders are always noticed.

Lesch-Byhan Syndrome

It is an X-linked recessive genetic disorder, more common among males (Lesch & Nyhan, 1964). Apart from several mental retardation, the other symptoms of this syndrome include self-injurious behaviour, distinctive loss of tissue around the lips or fingers, use of obscene language, spitting, biting and screaming.

Although a variety of dramatic chromosomal disorders are often reported as the cause of mental retardation, such possibility is as rare as 0.5 per cent.

Turner's syndrome

Only females suffer from this disorder. The common features of Turner syndrome are short stature, infantile sexualism, incomplete ovarian development (ovarian dysgenesis), congenital heart disease and elbow deformities. In a study of cognitive ability and everyday functioning of a group of 23 adult women with Turner's syndrome, Downey and his associates (1991) observed that, they have specific deficits in the area of spatial and mathematical ability and poor visual memory as observed in WAIS and Benton Visual Retention Test-Revised (BVRT-R) as compared to matched controls with constitutional short stature (SSC). The significant group difference in performance IQ and full scale IQ was attributed to specific deficits in spatial and mathematical ability. They were also significantly lower in educational attainment than controls but did not differ significantly on verbal IQ from their non-handicapped siblings. They had poor IQ occupational attainment in comparison to both the control groups.

Klinefelter's syndrome

It is a specific form of hypogonadism that occurs with males. An extra X chromosome is found in this case. Klinefelter syndrome (47 XXY) have lower verbal than performance IQ. Psychological

findings in 49 XXXXY syndrome revealed that their range of intelligence varied greatly from moderate to profound retardation and there is progressive deterioration of intelligence with age. Language development is severely retarded particularly in comprehension and expression (Cures, 1990). Some may have extra Y chromosomes too. Their IQs lies in the range of borderline intelligence. The syndrome is characterized by excessive growth of mammary glands, small testes and other underdeveloped sexual characteristics. The body proportion is often slim.

6. Psychosocial Causes

Although a large number of biological causes are believed to be associated with mental retardation, only a small number of severely and profoundly retarded population is affected by them. In a majority of cases there is no identifiable biological defect or physical trauma. They are due to psychosocial and environmental reasons. An overwhelming majority of mentally retarded people are found in the disadvantaged and culturally deprived communities and slums. The estimated prevalence rate of mental retardation is between 10 to 30 per cent. Whereas, in the general population this rate is about 3 per cent. In high poverty areas and slums the children encounter a galaxy of adverse environmental and psychological conditions that retard their intellectual development and achievement motivation, leading to poor scholastic achievement. Socially deprived families have lower income, poor housing and more difficult family circumstances, this may cause real deficits in development, but the deficits are not primarily psychological in origin. However, one should be cautious in interpreting 'deprivation' or 'lack of culture'. Even if certain homes are without books, radio, newspaper, or television, may have rich custom, ritual mythology and medical knowledge. These children may show little cognitive deficit on culture-fair tests and may not have any adaptive behaviour deficit in their own culture.

In these disadvantaged areas, the women get lesser care during pregnancy. Malnutrition and unhygienic delivery are most often cited cause of retardation. Poor early stimulation is another consequence of poverty that increases the risk of brain damage and consequent intellectual retardation.

Emotional Problems

Mental retardation may be consequence of a number of social disadvantages. Children born in slums, ill defined families and those who are brought up under multiple caretakers at the early stages of their development have high chances of intellectual retardation. Therefore, the lowest 15-20 per cent families produce the largest segment of culturally determined mental retardation. This is primarily because of the distorted attachment and inconsistent social demands. They live in a hostile world of punishment, hopelessness and lack of encouragement, remaining preoccupied with developing necessary defenses to cope with this threatening environment. As a result of which development of skills and general intelligence required for adaptation to the demands of day-to-day life is affected. This has been widely discussed and considered recently as a causative factor.

Language

Early language stimulation also affects development of intelligence. Bernstein (1962) made a distinction between two types of language; public or 'restricted-code' language and formal or 'elaborate code' language. Children from poor socio-economic background use more restricted-code language that leads to limits in behaviour and learning and leads to a low level of conceptualization. Children from 'deprived' background lack crucial language stimulation from their mothers. It leads to poor acquisition of linguistic skills which is basis for intellectual development.

10.0 Prevention of mental retardation

Mental retardation is preventable to a large extent through psycho-social and educational and medical intervention at the early stage. A large variety of causative facts can be detected through modern techniques of investigation. Some of the important modes of prevention have been discussed below. Prevention can be conceptualized at three levels: primary, secondary and tertiary. Primary prevention refers to those measures which prevent occurrence of an event such as birth of children with mental retardation. These are the measures which has a basic purpose to see that a disorder does not occur in specific community, whereas, secondary prevention is focused on early

detection and care of the clients, so that the condition does not waste. The last type of prevention is tertiary, which is largely focused on treatment and rehabilitation of people suffering from a specific disorder or condition.

Public awareness

Lack of knowledge about the causes of mental retardation itself is a major cause of early childhood mortality and retardation. Many people still share the superstitions that mental retardation is caused by supernatural forces like, visitation of spirits or as a consequence of acts of previous birth. Hence, spreading public awareness about this condition through various means of mass communication plays a significant role. The target populations are not always the illiterate ones; even among some literate people ignorance exists about this condition. Special attention should be given to those who come from the underprivileged backgrounds and from the geographical regions where the chances of malnutrition, iodine deficiency, lead poisoning are high and the chances of environmental stimulation for the newborn are low. Video films, radio broadcasts, street plays, slogans, public discussion, leaflets or posters may improve the early identification and care of children and reduce the chances of mental retardation. Improvement in their socioeconomic standards of living, provision of balanced diet and medical care to the pregnant mother and the newborn can reduce the prevalence of mental retardation significantly.

Genetic counseling

Te purpose of genetic counseling is to sensitize people about the genetic aspect of mental retardation, particularly young people and couples. It requires involvement of psychologists, educators and physicians who discuss on the genetic aspect of mental retardation. The genetic counselor explains about the desirability of the future offspring by the parents, siblings and sometimes more distant relatives. The likelihood of having a second offspring with mental retardation is often the major focus of the counselor. Most often it is preceded by exact diagnosis through biochemical and cytogenetic studies. When the reasons are not clear, it is advisable to leave it to the evaluation centers. On many occasions they give counseling to the parents and other family members regarding the procreation of offspring by the person with mental retardation as

well. Such counseling also requires involvement of the legal experts for advice on certain issues concerning the subject.

Secondary prevention

Early detection and treatment can prevent mental retardation. These are the focus of secondary intervention. Major areas which are covered under secondary intervention are: Early identification and treatment of genetic conditions that cause mental retardation, medical treatment and surgical intervention, early stimulation and training in child rearing in specific conditions.

Mass screening of the newborn errors of metabolism by team of specialist may prevent certain conditions to aggravate, for instance PKU, galactocemia, for with early dietary treatment can help. Similarly hypothyroidism detected during the first 6 months can be treated effectively. Similarly dietary treatment is now available for maple syrup disease. Antibiotics can prevent bacterial meningitis, similarly immunization can prevent viral meningoencephalitis. Ensuring lead-free decent housing condition can prevent lead-poisoning to a large extent. Surgical intervention at early stage may prevent hydrocephaly in certain cases. Evacuation of subdural hematoma caused by trauma or meningitis and treatment for epilepsy at the early stage may reduce the chance of mental retardation.

The early history of prenatal, perinatal or postnatal complicacies in children may lead to behavioural difficulty are suggestive of continuation of these complicacies. Such effects can be reduced through training of the parents for early intervention. This will facilitate maturation process of the central nervous system. On the other hand, failure to recognize these conditions , inability to conduct compensatory behavioural programmes and use of early intervention pogramme may fail to prevent some types of mental retardation.

Early states of distractibility hyperactivity, hypoactivity, hypersensitivity or hypersensitivity to stimuli are some of the indicators of brain damage. Further deterioration of brain function can be prevented through early stimulation programmes and removal of some of the environmental hazards.

Tertiary prevention

People with mental retardation may have wide range of behavioural difficulties many of them could be different from that of intellectually average people. These problems need to be dealt specially. Some conventional methods like play therapy, communication training or speech training can be beneficial for them. Establishing meaningful relationship with the child through various shared activities and emotional support may help them to overcome certain emotional problems. Emotional problems like negativism, stubbornness, aggressive acting out can be effectively dealt through psychotherapy. Even medication may be required to deal with hyperactivity and restlessness.

Counseling parents to deal with behavioural and emotional problems and foster independence in children with mental retardation is an important component of tertiary prevention. Parent training is considered as a viable alternative to the impersonal, understaffed institutional placement for the people with mental retardation, that cause deprivation of natural learning environment. However, behaviour of some parents is much worse than institutions. Under this situation, even institutional treatment is preferred for fostering skill development. Many institutions in modern times are well equipped with trained professionals to take care of the special needs of these children. These institutions not only provide better training and medical supervision that can be ensured or thought of in certain homes, (for instance in underprivileged homes) but also facilitate parent-child interaction combining the bests of both the worlds—home and the institution.

Special education for the people with mental retardation occupies a prominent position in their total rehabilitation. It prepared the mentally handicapped people for their future adjustment to the demands of the day-to-day life. It helps in developing their full potential as humanbeings.Two types of special educational programmes are often conducted: (1) individualized training programme, (2) group training programme. The former is tailored according to the individual need of the child, whereas the latter is designed according to the social and community needs. Various programmes are conducted from time to time depending on the special needs for the children.

Vocational rehabilitation is required for people with mild or moderate mental retardation who are adolescents and approaching their adulthood. Training in pre-vocational skills that prepares the individual for taking up a vocation or job is a crucial requirement for them. These programmes are required to be tailored according to their individual skills and competencies. Sheltered workshops are organized for them before putting them in independent employment. In sheltered workshops they work under supervision and support of skilled staff to attain independence in specific skills. This may be considered as a bridge between vocational training and employment.

Advocacy for the people with mental retardation is a prominent issue, which is closely linked with their protection and legitimate care. Legislation has been made to protect them from exploitation, discrimination and deprivation, so that they can lead their lives with dignity and self-respect.

11.0 Let us sum up

Mental retardation is a condition of sub-average intelligence which may occur along with impairment in adaptive behaviour or as a consequence and it occurs during the developmental period of life, that is from birth to 18 years of age. Thus assessment of intelligence as well as adaptive behaviour plays a crucial role in diagnosis of this condition. There are four levels of retardation, such as mild (IQ 50-69), moderate (IQ 35-49), severe (IQ 20-34) and profound (IQ under 20). From educational perspective, the first group is considered as educable, the send as trainable and the last two groups are custodial, which need close supervision even for self-help skills.

Various psychological measures such as intelligence tests and adaptive behaviour scales have been used to assess the degree of retardation. The scales which are most widely used to assess intelligence are Wechsler Intelligence Scales, and Stanford-Binet Scales. For children the developmental scales which are used for assessing their levels of independence. Baley Scales, Vineland Social Maturity Scale, AAMD Adaptive Behaviour Scales are some of the examples.

Mental retardation is caused by many factors that influence an individual's cognitive development at prenatal, perinatal and post natal life during the developmental period. Some of the prominent causes are, infection and intoxication, physical trauma, impaired metabolism and nutritional deficiencies, gross brain disease, prenatal influence, chromosomal anomalies, other

conditions originating at birth, following psychiatric disorders, environmental influences, psychosocial causes and there unknown causes. However, in a majority the causes are psychosocial and that are preventable.

Timely intervention can prevent mental retardation to a large extent. There are three types of preventive measures can be classified as primary prevention, secondary prevention and tertiary prevention. The former focuses on public education, medical screening and genetic counseling. Whereas, the secondary prevention includes early medical intervention, and early stimulation programmes for the individuals at risk of mental retardation. Tertiary prevention involves special education, vocational rehabilitation and other forms of treatment after the condition is identified.

12.0 Unit end questions

1. What is mental retardation? Discuss about its nature
2. How do you assess people with mental retardation? Discuss.
3. What are the causes of mental retardation, explain.
4. How would you prevent mental retardation in the community, prepare an outline.

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