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Research Paper

How To Identify And Prevent Intellectual Disability: The Methods And Measures

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ABSTRACT
Intellectual disability is an interdisciplinary and complex issue. It is a developmental disability that occurred due to hereditary, socio-economic and environmental reasons. The incidence of intellectual disability took place around 3% of populations irrespective of the socio-economic status but its prevalence rate was found more among lower class and lower middle class than the upper class. It is important to note that this developmental disability occurred at any time before the age of eighteen years. The Persons with intellectual disability is the most vulnerable group among all other disabilities. It is also most difficult to understand and identify them due to its multiplicity of causes- the known and also the unknown. Therefore it is a challenging task to intervene intellectual disability especially with its treatment and prevention. In India, for the first time Disability got due attention and full coverage in the National Census Survey, 2001 with the crucial authentic data about disability.

KEY WORDS: *Intellectual disability, Inter-disciplinary, Prevalence rate, Intervene, Authentic data.*

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I. INTRODUCTION:

The British Mental Deficiency Act (1981) defined Mental Retardation is a condition of arrested or incomplete development of mind exiting before the age of 18 years whether arising from inherent causes or induced by disease or injury.

There is an estimated 600 million people with disabilities in the world today. The **World Health Organization** estimated that roughly 10 percent of any given populations are likely to have some form of disability. The **Census Report of India** (2001) indicated that there are 21.9 million persons with disabilities in India which constitutes 2.13 percent of the total population. **Rudiger Vonwechman**, former president of U N. General Assembly in a message (1981) urged that we have to remember that the problems of disabled are the problems of society as a whole and we have the responsibility to encourage and help them to lead useful and meaningful lives. This we must not do as an act of charity but because it is their right, and by seeing that the rights of the disabled are recognized and their needs fulfilled, society as a whole will benefit the disabled who are asking to be accepted for their disabilities.

Australian Disability discrimination Act (2005): Before any adjustments are made 'consultation' may be required with the principal, class teachers, support teachers, parents, the professional expertise of therapist and the community service providers. The purpose of consultation is to identify learning barriers so that proper adjustment could be made. As per the **Standards,** the process of consultation should take place regularly and should continue for the whole time.

The conceptual approach on with intellectual disability is based on sociological and psychological view point. The Sociologist emphasizes on social Criteria i.e. adaptive behavior and psychologist emphasizes on the I.Q. criterion for diagnosing and leveling intellectual disability. But it is important to analyze intellectual disability in terms of developmental disability. Earlier, the developmental period was considered from birth to 16 years till 1959 according to Haber. Since 1973 conceptual change observed about intellectual retardation when developmental period was described as birth to 18 years and I.Q. was considered about 70 and below instead of I.Q. range 70-85 in a given standardized test. Thereafter, a landmark development took place since 1983, with the new definition by Grossman (AAMR), when developmental period was considered from conception to 18 years. This allowed the medical professionals to make decisions on treatment when the baby is still in mother's womb and suspected to be abnormal.

Statement of the problem

The statement of the problem is identification and prevention of intellectual disability. Identification refers to the action or process by which one ascribes to oneself the qualities or characteristics of another person. It also means recognition or diagnosis of the prescribed problems. Prevention refers to the act of preventing or adopting measures for the prevention of incidence or accident of intellectual disability.

Objectives of the study:

1. To develop a conceptual ideas on intellectual disability.
2. To study the method of identification
3. To study how to prevent the incidence of intellectual disability.

Research questions

The basic research questions are:

1. How to identify the children with intellectual disability?
2. What measures are adopted to prevent the incidence of intellectual disability

II. REVIEW OF LITERATURE:

Reviewing is significant to understand the concept, methods of identification and prevention of intellectual disability. Similarly understanding the causes and incidence of mental disability is also quite relevant for preventing intellectual disability.

Elliot (1979) since most of the children fall in the mild range of intellectual disability, there is a higher incidence of identified intellectual disability during the school age years and a lower identified incidence during the preschool years and adulthood. American Association on mental deficiency requires two types of assessment for children to be identified as intellectual disability. Intelligence must be tested and adaptive behaviors must be analyzed. The assessment procedures should include teacher observations of behavior and the results of standardized achievement tests. Haywood (1974), Hobs (1975) was of the view that intelligent tests are imperfect, imperfectly understood, used for classification purposes, assignment of levels, and placement of children or adults in special programs. They are sometimes of questionable validity, since generally no more than 50 percent of academic achievement is associated with intelligence. The remainder of individual differences are presumably determined by the child's motivation, work habits, experience in taking tests, and acceptability within the school setting. Some educators argue that current school achievement predicts future school achievement as well as and sometimes better than do intelligent tests. But Hobbs (1975) said despite these limitations, intelligence tests, when used appropriately, can be highly useful when making special education eligibility decisions. They can be of real value in design of appropriate instructional programs.

Grossman (1983) viewed that adaptive functioning is required in the identification of intellectual disability. To be classified as mentally retarded, an individual must be clearly below normal in measurements in adaptive behavior. Operationally, this means that there are clear deficits in the effectiveness or degree to which the individual meets the societal standards of personal independence and social responsibility that are expected of his or her age and social group.

Adaptive behavior measures are essential in identifying mild mental retardation and avoiding misdiagnosis and misplacement of children with problems other than retardation. Adaptive behavior is also a measure of how well children adapt to school as well as to the environment outside of school.

Shankar, U. (1976) an Indian expert stated, the percentage of hereditary origin of intellectual disability, estimated by various authorities were as such, Galton (1869) 100 percent, Woods (1906) 85 percent, Goddard (1912) 77 percent, Hollingworth (1920) 90 percent, Tredgold (1929) 80 percent, Doll (1934) 33 percent, Penrose (1941) 29 percent, Cyril Burt (1935) 14 percent.

The expert in a WHO sponsored National Seminar (1994) Reported that chromosomal disorders (Down Syndromes) which accounts for 30% of severe intellectual disability, fragile-X syndrome with an estimated incidence of 1:2000. In addition there are other known disorders with abnormalities of the number or structure of chromosome 1%-4% and the inborn errors of metabolism summation of these causes lead to the conclusion that more than 50% of severe intellectually disable is genetically determined. Tests are available to detect any of these problems.

III. METHODOLOGY:

This is a conceptual paper based on literature i.e. books, research journals, seminar proceedings and several case study results on intellectual disability.

IV. IDENTIFICATION OF INTELLECTUAL DISABILITY: ANALYSIS OF RESULTS

a) The comparison of normal development and delayed development:

Developmental milestone of children with intellectual disability is delayed. Developmental delay means slow rate of development which is below than the expected rate or slow than the peer age group. Developmental milestones of mentally handicap are delayed. **The Voluntary Health Association of India (1989) –**Developmental mile-stone refers to all children that grow step by step. These steps are like milestones on a road which tell how much of the road is still left. Children are able to do particular activity by a particular period. These steps are called milestones of development. Mentally retarded children do not grow at the same rate as normal children grow. Parents must be conscious if a child is not able to do some particular activities meant for him within a given time as indicated.

Table: I. The Common Milestones of Development and Milestone delay.

Milestones	Normal Age Range	Milestone Delay
Recognizes mother	1--------3 months	4th month
Smiles	1--------4 months	6th month
Roles over	4--------5 months	6th month
Holds head steady when placed on stomach on flat surface	2--------6 months	6th month
Sits without support	5------1o months	12th month
Stands without support	9------14 months	18th month
Walks well	10----20 months	20th month
Says pa-pa, Ma-Ma	10-----12 months	3rd year
Talks in 2-3 Sentences	16-----30 months	4th year
Feeds Self	2--------3 years	4th year
Tells name	2--------3 years	4th year

The above table would help to identify children with intellectual disability after comparing the normal development and delayed development of the child.

For scientific diagnosis of intellectual disability, there are three approaches:- 1. The developmental history of the child should be considered i.e. when the child begin to sit, crawl, stand walk and talk? Besides this his behavior, habits and understanding have to be studied. 2. Childs' mental capacity as revealed in his behavior and achievement in comparison with the average child of his age , has to be estimated. 3. The more certain procedure is to apply objective tests of intellectual capacities or educational attainments, if the child has had some schooling.

The pick period for recognition of intellectual disability is between 6years to 18 years when formal schooling seems to be started. As per UNESCO report (1955) 2.56% of children in the school population were mentally subnormal with an IQ below 70. Gore, S.P (1980) Children with borderline mental handicap are not generally distinguishable from normal children except for the facts that that they couldn't study beyond matriculation and seem to be exceptionally dull.

Identification is a process of recognizing the children with intellectual disability. In the present context, how and what techniques are used to confirm whether the case is intellectually disable. Social competence is an important criterion for the detection of intellectual disability.

Doll (1941) remarked that the concept of social 'competence' is the valid criteria for identification of intellectual disability. But Penrose (1949) rejected the view and remarked to make a diagnostic inference of intellectual disability on the basis of a finding of social incompetence in a particular environment at a particular time is unjustifiable since the same person might well be found competent in a different environment or to different standards. Supporting this argument Arthur (1950) stated that criterion on social competence would place a person in the awkward position of having to consider a intellectually disable in one situation but not in another.

Again educational performance on standardized intelligence test is important criterion of intellectual disability. But Tredgold (1952) rejected both educational achievement and performance on standardized intelligence tests as satisfactory criterion of intellectual disability. He stated that social competence was "not only the most logical and scientific concept of intellectual disability, but the only criterion which the community can justify. Intellectual disability is characterized by significant limitations both in intellectual function and adaptive behavior as expressed in conceptual, social and practical adaptive skills. Limited intellectual function can be evaluated but individual administration, by an appropriately trained professional of socio-metric tests appropriate to the individual's mother tongue and native culture. In case of severely disability cases who are totally unable to cooperate /or to cope up with test administration or where appropriate professionals or tests are not available , the mental age can be estimated and it's ratio to the chronological age expressed as Developmental Quotient (DQ).

b) The diagnostic tests:

Intellectual disability can't be simply diagnosed on the basis of test performance simply because many intelligent people demonstrate sub-normal performance on IQ test due to sensory/ or perceptual problems, and motor problems. The standardized tests, used for assessment of intellectual ability are as follows -

1) Malin's Intelligence scale is the Indian version of Weschler Intelligence Scale (1969). Malin's test is Individual Intelligence test which is meant for the age group between 6—15 years old children. Basically two types of information are collected. (a**) Verbal information** comes in the form of comprehension, arithmetic, vocabulary and digit span. (b) **Performance related activities** are picture arrangement, picture completion, block design, object assembly coding and mazes. It follows the test retest method to find co-efficient of correlation. It has 12 sub-tests at all in the entire process of testing.

2) **Seguin Form Board test** was developed by a French doctor named Seguin in 1907 to identify the mentally weak children. This is a very useful and practical test. It is applied on 10 year old children and sometimes it is used for persons with old age. The test contains of 10 items of small blocks of different sizes which is placed before the subject by an expert. The subject has to arrange them immediately in a tray in appropriate columns .The responses and time taken by them is recorded and scored by a professional soon after the experiment is completed and appropriate analysis and interpretation is done. This experiment is conducted thrice as a part of one experiment and each time responses are scored and interpreted.

3. The Stanford-Binet Intelligence Scale (SB-IV). This test consist of items that progress in difficulty from manipulative skills to verbal and abstract skills, testing memory, perception, information, and logical reasoning (Thorndike, Hagen & Sattler, (1986).

4. The Revised Wechsler Intelligence Scale for Children (WISC-III). This test consists of two major areas, verbal and performance. Verbal tasks measure vocabulary, comprehension, and arithmetic skills. Performance tests measure skills in picture completion, block design, using codes, and solving mazes (Wechsler, 1974)

5. Kaufman Assessment Battery for Children (K-ABC). This alternative test of intelligence measures intelligence as manifested by information processing abilities (Kaufman & Kaufman, 1983).

6) Ravens Progressive Matrices: Test conduction and administration should be done by trained psychologist and careful interpretation should be made before classifying.

7) Norm-Reference Tests: The Norm –Reference test makes provision for a comparable norm of the child of the same age, and thereby makes provision for a relative comparison of scores between the child under reference and the standardized norms of pupils of the same age.

8) Criterion-Referenced Tests: The criterion-Referenced test on the contrary, makes provision for comparison of the child's score under reference with a predetermined criterion score that has a predictive significance. The Criterion-Reference test is often developed by class room teachers, and makes provision for direct measurement of the educational deficits of children with intellectual retardation.

6. Prevention of intellectual disability: Analysis of results

How to prevent the incidence of intellectual disability? What are the ways and means to treat the children with intellectual disability? Prevention in general sense is defined as a process of inhibiting the development of a disorder before it occurs. Broadly speaking, the term prevention includes measures or interventions that interrupt or slow the progression of a disorder. The occurrences of incidence of intellectual disability manifest during the developmental period i.e. from pre-natal to the post natal period. There are viable methods to curb the occurrence of intellectual disability at the levels of primary and secondary prevention. Proper mechanism and well coordinated programmes at all levels are required detection and intervention at the early stage.

a) Primary measures of prevention:

The primary prevention is related with general and specific measures. It pertains to genetic and environmental factors that eliminate or reduce the damage of a developing organ or system. Good anti-natal care can significantly reduce the impact of maternal conditions during pregnancy on the developing foetus. Pregnancy and genetic counseling should be regularly available in the primary health center. All pregnant women must get regular check up facility, especially in first trimester to intervene its incident. The pregnant mothers should be advised against intake of drugs, alcohol and tobacco and should be free from emotional trauma and depression. The over- aged pregnancy increases the risk of incidence of intellectual disability in the newborn baby. The study also reported that there is a correlation between the mother's age and Down's syndrome case. The married women should be conscious about the risk of pregnancy after 40 years of age. The Government should collaborate with responsible non-government organization for seminars and workshops in backward and rural areas about the risk of over-aged pregnancy, consanguine marriage, hypertension and shortage of oxygen at delivery period. Access of primary health care service systems should be available to mother and child. Ministry of health may develop massive programme of action for mass immunization through vaccination to all sections of populations at grass root levels through primary health centers. The Department of family planning may launched nation-wide awareness programme on marriage and reproductive age especially

among unprivileged and backward section of people and to discourage Consanguinity. Effective counseling on family planning may be provided to the married couples. Educational programmes on nutrition and diet especially for mothers need to be arranged.

b) Secondary measures of prevention:

As soon as the child is born as intellectually impaired the immediate task is early detection and intervention. When compared the tools of "Normal Developmental Milestones", with the "Delayed Developmental Milestones" through a process of screening, one can easily understand and identify the retarded cases on the basis of degrees of delayed developmental milestones. This method of screening and comparison could easily detect the moderate to profoundly impaired children. Early detection as well as correct diagnosis is crucial for providing early stimulations and continuous reinforcement within few months or a year or two, may help overcome the problems. The secondary prevention also involves curative measures and effective public education to improve and increasing use of health services. Training should be imparted to all health personnel to prevent its occurrences. Trained personnel and village health workers can perform delivery and complicated cases may be referred to specialist to deal the problems of prolonged and difficult labor and birth asphyxia.

V. CONCLUSION:

Identification and prevention is most crucial along with the causes of intellectual disability. Any country with almost 2-3% of its population with intellectual disability is an alarming situation in terms of human resource management, education, employment and human rights. The article will necessarily help people-parents, teachers, philanthropist, and school administrator to understand how to intervene the intellectual retardation.

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