

The Representation of High School Students Receiving
Vocational Rehabilitation Services in Minnesota

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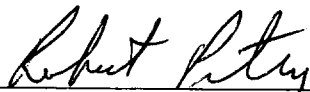
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Abstract

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Many high school students with disabilities receive vocational rehabilitation services, especially those students who are placed in special education. This paper examines the number of high school students classified as having a disability, receiving vocational rehabilitation services. A survey was designed by the investigator and will be distributed to vocational rehabilitation counselors in the state of Minnesota. The survey was developed to obtain knowledge about the number of high school students receiving rehabilitation counseling services. The investigator will receive data from vocational rehabilitation counselors employed by the Minnesota Department of Economic Security (Division of Rehabilitation Services). The focus of this research is on the number of students with disabilities between the years of 1997-2000, receiving vocational rehabilitation services. The investigator will also review information provided by Minnesota Rehabilitation Council, Minnesota Children, Families, and Learning Center, and the National Data Resource Center. The findings can be used to examine how effectively Minnesota Rehabilitation Services are

working with students with special needs. Future research can examine if there is an increased need for rehabilitation counselors and other possible changes necessary for the potential growth. It can give school administrators and staff, vital information on possible classroom accommodations and management. A focus on school-to-work transitional services can also be reviewed. Since many of the students are leaving high school and entering into society, the research can help local employers, colleges and communities to implement changes necessary to benefit these students.

This paper outlines a historic overview of special education legislation and the Division of Rehabilitation Services. It examines the definition, diagnosis, incidence, and characteristics of the following disabilities: Chemical Dependency, Deaf/Hard of Hearing, HIV/AIDS, Learning Disabilities, Mental Retardation, Serious Mental Illness, Traumatic Brain Injury, Attention Deficit Disorders, and Epilepsy. It reviews minorities in special education. The research also lists vocational rehabilitation services provided among disability, race, and gender of students enrolled in Minnesota Public School districts.

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The Representation of High School Students Receiving Vocational Services in Minnesota

Chapter I

Introduction

Academic settings are very frustrating at times for all children. For individuals with disabilities these times are often more devastating because of the struggles that they must bear in order to succeed. Imagine having difficulty expressing ideas and needs. Or trying to read or add but not being able to make sense of the letters or numbers. Although different from person to person, these difficulties make up the common daily experiences of many students with disabilities. A person with a disability may experience a cycle of academic failure. According to Lavoie (1994), having to compensate for having trouble reading, writing and speaking, school becomes a challenge. Dealing with a short attention span, fidgeting and impulsiveness, students have trouble learning classes. Minority students with and without disabilities are sometimes labeled because of stereotypes and misconceptions. These students with disabilities find school a place of loneliness, misunderstanding and frustration [On-line].

According to Kraus, Stoddard & Gilmartin (1996),

An estimated 19.4 % of noninstitutionalized civilians in the United States, totaling 48.9 million people, have a disability. Of these people, an estimated 24.1 million people can be considered to have a severe disability. Of the 34.8 million 15 to 24 year olds, there are 3.5 million (10.0%) with a disability and 1.2 million (3.3%) are classified as severely disabled. Of all noninstitutionalized persons age 15 over in the United States, 17.5 percent have functional limitation (34.2 million people) (pp. 3-8).

The Individuals with Disabilities Education Act (IDEA), Public Law 101-476, lists 13 separate categories of disabilities under which children may be eligible for special education and related services. The following are the Federal Disability Categories: autism; deafness; deaf-blindness; hearing impairment; mental retardation; multiple disabilities, orthopedic impairment, other health impairment; serious emotional disturbance; specific learning disability; speech or language impairment; traumatic brain injury; and visual impairment (Waterman, 1994, p.3). To

determine if a child is eligible for classification under one of these areas of exceptionality, an evaluation, or assessment of the child must be conducted. “Every year millions of children, ages three and up, are assessed for the presence of a disability and are found eligible for special education and related services because they are in need of support in order to achieve success in school” (Waterman, 1994).

Berdine & Meyer (1987), reported that assessment in educational settings serves five primary purposes:

- (1) Screening and identification: to screen children and identify those who may be experiencing delays or learning problems;
- (2) Eligibility and diagnosis: to determine whether a child has a disability and is eligible for special education services, and to diagnose the specific nature of the student’s problems or disability;
- (3) IEP development and placement: to provide detailed information so that Individualized Education Program (IEP) may be developed and appropriate decisions may be made about the child’s educational placement;
- (4) Instructional planning: to develop and plan instruction appropriate to the child’s special needs; and
- (5) Evaluation: to evaluate student progress (p. 5).

The Code of Federal Regulations states the child must be assessed “in all areas related to the suspected disability, including, if appropriate, health, vision, hearing, social and emotional status, general intelligence, academic performance, communicative status, and motor abilities” (34 CFR 300.532 (f)). The information can be used to determine the specific nature of the child’s special needs, whether the child needs special services and to design an appropriate program. Many of the students are placed into special education programs. Students with disabilities may also participate in vocational planning. Vocational rehabilitation services are designed into many of the student’s IEPs to assist students with disabilities transition into society. Successful transition is necessary due to the startling results for students with disabilities. Between 1985 and 1990, the National Longitudinal Transition Study of Special Education Students (NLTS) collected data on students with disabilities, determining their post secondary education participation, employment, residential arrangements, and community participation. This study reported that students with disabilities were less likely than non disabled students to be enrolled in post secondary academic program since high school, to be enrolled in post secondary vocational program since high school, competitively employed, and living independently (Valdez, 1990).

Blackorby and Wagner (1996) reported the following results: ■ Competitive employment of students with disabilities lagged significantly behind the employment rate of peers in the general population at two years and at three to five years after completing school.

- High school graduates with disabilities were significantly more likely to be employed than were peers with disabilities who had dropped out of school.
- Only 14 percent of youth with disabilities who had been out of school for two years attended some type of post secondary school, as contrasted to 53 percent for youth in the general population.
- Only 13 percent of youth with disabilities lived independently less than two years after completing two secondary school, as contrasted to one-third of youth in the general population.
- Three to five years after completing school, the proportion of youth with disabilities earning more than \$6.00 per hour increased fourfold, from 9 percent to nearly 40 percent.
- Women with disabilities were less likely to be employed and more likely to live independently as compared to men with disabilities.
- White youth with disabilities had higher rates and received higher wages than their counterparts who were African American and Hispanic (p.11).

Until the last several years the major criterion for progress in special education was, how many more students were being served since IDEA was enacted. Turnbull (1999) indicated that now the concern of students is how that are transition into adult-life. The challenge that faces special education today is to improve student's results of independence, productivity and integration. "Integration is defined as persons with disabilities will use the same community resources and participate in the same community activities as persons who do not have disabilities, they will have regular contact with those citizens, and they will reside in homes or in home-like settings near community resources. This goal is also known as inclusion by educators. Independence is defined as persons with disabilities will assert control and choice over their own lives. This goal is also known in the federal special education law as independent living. Productivity is defined as persons with disabilities will have income-producing work, or their work will contribute to a household or community. This goal is also known as employment in the federal special education law" (p.13).

Many students with disabilities qualify for services according to the Rehabilitation Act. According to Turnbull (1999), the Rehabilitation Act helps to establish employment opportunities for students who have disabilities. If a person has a severe disability, but, with

rehabilitation is able to work. despite the disability, the person is entitled to two types of vocational services. First, when they are sixteen years old, these individuals can receive from their state vocational rehabilitation agencies work evaluations, financial aid so they can pursue job training, and job locator services. Second, some of them can receive supported employment. Supported employment means the employment of a person with a disability for at least the minimum wage, working alongside other employees who do not have disabilities. Education and rehabilitation are necessary to alleviate the effect of the student's disability.

Statement of the Problem

The purpose of this study was to discover the prevalence of vocational rehabilitation services provided to students with disabilities, which are enrolled in Minnesota Public School districts.

Research Questions:

1. Which disability receives the most services from vocational rehabilitation counselors?
2. Are males diagnosed with disabilities receiving more vocational rehabilitation service more than females?
3. How many students participating with DES with IEPs received Living Services compared to the students participating with DES without IEPs during 1999-2000?
4. How many students participating with DES with IEPs received Medical, Psychological, Prosthetic, and Rehabilitation Technology Services compared to those students participating with DES without IEPs during 1997-2000?
5. How many students participating with DES with IEPs received medical, vocational and other evaluations compared to those students participating with DES without IEPs during 1997-2000?
6. How many students participating with DES with IEPs received training services compared to those students participating with DES without IEPs during 1997-2000?
7. How many students participating with DES with IEPs received planning and employment services compared to those students participating with DES without IEPs during 1997-2000?
8. Based on DES records, are minorities diagnosed with disabilities increasing more than non-minorities during 1997-2000?
9. Based on DES records, are there more minorities in special education than non-minorities?
10. Based on proportions as compared to the general population, are more Caucasian students receiving vocational rehabilitation services than minorities?

Definitions of Terms

Academic Skills Disorders: Students with academic skills disorders are often years behind their classmates in developing reading, writing, or arithmetic skills. The diagnosis in this category include: developmental reading disorder, developmental writing disorder or developmental arithmetic disorder (Turnbull, 1999).

American With Disabilities Act (ADA): Prohibits discrimination against individuals with disabilities at work, at school, and public accommodations, and is not limited to those organizations and programs that receive federal funds. It requires that schools make reasonable accommodations for individuals with disabilities, and it applies to both public and private nonsectarian schools, from day care to graduate school (Turnbull, 1999).

Assessment: Is also known as evaluation, can be seen as a problem-solving process that involves many ways of collecting information about a student. Involves observing, interviewing, examining the student; as well as reviewing medical and developmental histories (Waterman, 1994).

Attention Deficit Disorders: Was formerly classified as Attention Deficit Hyperactivity Disorder (ADHD). Attention Deficit Disorder (ADD) is a syndrome, which is usually characterized by serious and persistent difficulties resulting in poor attention span, weak impulse control, and hyperactivity (not all cases). ADD also has a subtype which includes hyperactivity (ADHD) (Turnbull, 1999).

Autism: A developmental disability significantly affecting verbal and non verbal communication and social interaction, generally evident before age 3 (Waterman, 1994).

Deafness: A hearing impairment that is so severe that the child is impaired in processing linguistic information, with or without amplification (Waterman, 1994).

Deafness-Blindness: Simultaneous hearing and visual impairments (Waterman, 1994).

Developmental Arithmetic Disorders: Also called dyscalculia. Involves difficulty recognizing numbers and symbols, memorizing facts, aligning numbers, and understanding abstract concepts like place value and fractions (Brown, 1987).

Developmental Articulation Disorder: A disorder in which individuals have trouble controlling their rate of speech or they may lag behind peers in learning to make speech sounds (Brown, 1987).

Developmental Expressive Disorder: A disorder in which an individual with language impairments, have problems themselves in speech (Brown, 1987).

Developmental Reading Disorder: also known as dyslexia. It is an inability to distinguish or separate the sounds in spoken word (Brown, 1987).

Developmental Receptive Language Disorder: A disorder in which individuals have trouble understanding certain aspects of speech (Brown, 1987).

Developmental Speech and Language Disorder: Individuals with this disorder have difficulty producing speech sounds, using language to communicate, or understanding what other people say. The specific diagnosis, may be developmental articulation disorder, developmental expressive language disorder or developmental receptive language disorder (Brown, 1987).

Emotional Disturbance Disorder: (I) A condition exhibiting on or more of the following the characteristics over a long period of time and to a marked degree, which adversely affects educational performance: (A) an inability to learn which cannot be explained by intellectual sensory or health factors; (B) an inability to build or maintain satisfactory interpersonal relationships with peers and teachers; (C) inappropriate types of behavior or feelings under normal circumstances; (D) a general pervasive mood of unhappiness or depression; or (E) a tendency to develop physical symptoms or fears associated with personal or school problems. (II) the term includes children who have schizophrenia. The term does not include children who are socially maladjusted, unless it is determined that they have a serious emotional disturbance (Brown, 1987).

Enrollment: The total number of students registered in a given school at a given time, generally in the fall of the year (NCES, 1998).

High School: A secondary school offering the final years of high school work necessary for graduation, usually including grades 10, 11, 12 (in a 6-3-3 plan) or grades 9, 10, 11 and 12 (in a 6-2-4 plan) (NCES, 1998).

Individuals with Disabilities Act (IDEA): Provides a free appropriate education and needed services for those who are eligible. A child must be evaluated as having one or more specified physical impairments, and must be found to require special education and related services by reason of these impairments (Turnbull, 1999).

Individualized Educational Plan (IEP): Outlines the specific skills the student needs to develop as well as appropriate learning activities that builds on the student's strengths. Parents must be included in meetings and given opportunity to review and approve their child's IEP. The special educator, working with parents, the school psychologist, school administrators, and the classroom teacher, must assess the child's strengths and weaknesses and design an IEP (Turnbull, 1999).

Mental Retardation: significantly sub average general intellectual functioning existing concurrently with deficits in adaptive behavior (Waterman, 1994).

Multiple Disabilities: The manifestation of two or more disabilities (such as mental retardation-blindness), the combination of which requires special accommodation for maximal learning (Waterman, 1994).

Orthopedic Impairment: physical disabilities, including congenital impairments, impairments caused by disease, and impairments from other causes (Waterman, 1994).

Other Health Impairments: Having limited strength, vitality, or alertness, due to chronic or acute health problems such as a heart condition, tuberculosis, rheumatic fever, nephritis, asthma, sickle cell anemia, hemophilia, epilepsy, lead poisoning, leukemia or diabetes, which adversely affects a child's educational performance. Eligible children with ADD may also be classified as other health impairment (Waterman, 1994).

Public School or Institution: A school or institution controlled and operated by publicly elected or appointed officials and deriving its primary support from public funds (NCES, 1998).

Racial/Ethnic Group: Classification indicating general racial ethnic heritage based on self-identification, as in data collected by the U.S. Bureau of the Census or on observer identification, as in collected by the Office for Civil Rights. These categories are in accordance with the Office Management and Budget standard classification scheme presented below:

White/Caucasian: A person having origins in any of the original people of Europe, North Africa, or the Middle East. Normally excludes persons of Hispanic origin (NCES, 1998).

Black/African American: A person having origin in any of the black origins racial groups in Africa. Normally excludes persons of Hispanic origin (NCES, 1998).

Hispanic/Latin American: A person of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin, regardless of race (NCES, 1998).

Asian/Pacific Islander: A person having origins in any of the original peoples of the Far East, Southeast Asia, the Indian subcontinent, or the Pacific Islands. This area includes, for example, china, India, Japan, Korea, the Philippine Islands, and Samoa (NCES, 1998).

American Indian/Alaskan Native: A person having origins in any of the original peoples of North America and maintaining cultural identification through tribal affiliation or community recognition (NCES, 1998).

School District: An education agency at the local level that exists primarily to operate public schools or to contact for public school services. Synonyms are “local basic administrative unit” and “local education agency” (NCES, 1998).

Secondary School: In this research includes only regular school (i.e, schools that are part of state and local school systems, and also most not-for-profit private secondary schools, both religiously affiliated and nonsectarian). Schools not reported include subcollegiate departments of institutions of higher education, residential schools for exceptional children, federal schools for American Indians, and federal schools on military posts and other federal installations (NCES, 1998).

Section 504: Children may qualify for services to individuals with disabilities under Section 504 of the Rehabilitation Act of 1973 if the disability substantially limits a major life activity. It prohibits programs that receive federal dollars from discriminating against individuals with disabilities. It requires public schools to make reasonable accommodations for eligible children whether or not they qualify for special education services under IDEA (Turnbull, 1999).

Serious Emotional Disturbance: A disability where a child of typical intelligence has difficulty, over time and to a marked degree, building satisfactory interpersonal relationships; responds inappropriately behaviorally or emotionally under normal circumstances; demonstrates a pervasive mood of unhappiness; or has tendency to develop physical symptoms or fears (Waterman, 1994).

Special Education: Direct instructional activities or special learning experiences designed primarily for students identified as have exceptionalities in or more aspects of the cognitive process or being underachievers in relation to general level or model of their overall abilities. Such services are usually directed at students with the following conditions: (1) physically handicapped; (2) emotionally handicapped; (3) culturally different, including compensatory education; (4) mentally retarded; and (5) students with learning disabilities (NCES, 1998).

Specified Learning Disability: A disorder in one or more of the basic psychological processes involved in understanding or in using language, spoken or written, which may manifest itself in an imperfect ability to listen, think, speak, read, write, or to do mathematical calculations. The term includes such conditions as perceptual disabilities brain injury, minimal brain dysfunction, dyslexia, and developmental aphasia. The term does not include children who have learning problems, which are primarily the result of visual, hearing, or motor disabilities, of mental retardation, of emotional disturbance, or of environmental, cultural, or economic disadvantage (Turnbull, 1999).

Speech or Language Impairment: A communication disorder such as stuttering, impaired articulation, a language impairment, or a voice impairment (Waterman, 1994).

Testing: Is the administration of specifically designed and often standardized educational and psychological measures of behavior and is part of the assessment process (Waterman, 1994).

Traumatic Brain Injury: An acquired injury to the brain caused by external physical force, resulting in total or partial functional disability or psychosocial impairment, or both (Waterman, 1994).

Visual Impairment: A visual difficulty (including blindness) that, even with correction, adversely affects a child's educational performance (Waterman, 1994).

Vocational Education: Organized educational programs, services, and activities which are directly related to the preparation of individuals for paid or unpaid employment, or additional preparation for a career, requiring other than a baccalaureate or advanced degree (NCES, 1998).

Chapter II

Review of Related Literature

It took several hundred years to evolve the current social and legislative climate. Before 1960 there were rare incidents of concern for students with learning disabilities. Mercer (1991) wrote that Rhode Island passed a compulsory education law in 1840, that gave exceptional children legal precedent for the right to an education. From 1800 to 1957 there was little federal involvement, however, in 1931 the Department of Special Education in the U.S. Education in the U.S. Office of Education was established. In 1975, when IDEA was first enacted it defined special education “as specially designed instruction including instruction in physical education, to meet the unique needs of the student with a disability. A student is eligible for special education services if the student has a disability and needs related services” (Turnbull, 1999, p.11). Included in one of the related services in IDEA, are rehabilitative counseling services. “Rehabilitative counseling services is defined as planning for career development, employment preparation, achieving independence, and integration in the workplace and community” (Turnbull, 1999, p. 24). Until 1997, the U.S. Department of Education required states to count students with disabilities according to their type or category of disabilities. This paper will examine the following disabilities: chemical dependency; deaf/hard of hearing; HIV/AIDS; learning disabilities; orthopedic impairments; serious mental illness; traumatic brain injury; and other health impairments such as attention deficit disorders.

Chemical Dependency

Alcohol and drug abuse and its related problems cost society many billions of dollars each year. Estimates of the economic costs are due to alcohol/drug-related problems and opportunities lost (Rice, 1997). The National Institute on Drug Abuse reported the following as commonly used drugs: Amphetamine is also known as black beauties. Cocaine is also known as crack. Methamphetamine is also known as crystal or speed. Methylphenidate is also known as Ritalin. Nicotine is also known as cigarettes. LSD is also known as acid. Mescaline also known as buttons. Phencyclidine is also known as angel dust. Psilocybin is also known as magic mushroom. Amphetamine is also known as ecstasy. Marijuana is also known as pot. Codeine is also known as emperin, Heroin is also known as smack. Morphine is also known as roxanol.

Opium is also known as dover's powder. Barbiturate is also known as barbs. Benzodiazepine is also known as roofies or tranks. Methaqualone is also known as ludes. Alcohol is also a commonly used drug.

In a study conducted by the National Institute on Drug Abuse it was reported that during 1997, 37.3 % of male high school seniors smoked cigarettes and 35.2% of female seniors. In 1998, 36.3% of male high school seniors smoked cigarettes and 33.3% female seniors. Marijuana usage in 1997 was 26.4% male high school seniors, and 20.3 % female seniors. In 1998, 26.5% male high school seniors, and 18.8% female seniors. Cocaine usage in 1997 was 2.8 % by male high school seniors and 1.6% female seniors. In 1998, cocaine usage was 3.0% male high school seniors and 1.7% female seniors. Alcohol usage in 1997, was 52.7% male high school seniors and 48.9% female seniors. In 1998, it was 52% male high school seniors and 46.9% female seniors. Heavy alcohol, which is defined as five or more drinks in a row at least once in the prior two-week period. Male high school seniors reported 37.9% usage and females reported 24.4% in 1997. In 1998 males reported 39.2% and females reported 24.0%.

Diagnostic Criteria for Cocaine

According to Long (1995):

- A. Cocaine abuse is a destructive pattern of cocaine use, leading to significant social, occupational, or medical impairment.
- B. Must have three (or more) of the following, occurring when the cocaine use was at its worst:
 1. Cocaine tolerance:
Either need for markedly increased amounts of cocaine to achieve intoxication, or markedly diminished effect with continued use of the same amount of cocaine.
 2. Cocaine withdrawal symptoms:
Either (a) or (b).
 - (a) Two or more of the following, developing within several hours to a few days of reduction in heavy or prolonged cocaine use:
 - sweating
 - increased hand tremor
 - insomnia
 - nausea or vomiting
 - physical agitation

- anxiety
- transient visual, tactile, or auditory hallucinations or illusions
- grand mal seizures

(b) Cocaine is taken to relieve or avoid withdrawal symptoms

3. Greater use of cocaine than intended:
Cocaine was often taken in larger amounts over a period than was intended
4. Unsuccessful efforts to cut down or control cocaine use:
Persistent desire or unsuccessful efforts to cut down or control cocaine use
5. Great deal of time spent in using cocaine, or recovering from hangovers
6. Cocaine caused reduction in social, occupational, or recreational activities:
Important social, occupational, or recreational activities given up or reduced because of cocaine use.
7. Continued using cocaine despite knowing it caused significant problems:
Continued cocaine use is continued despite knowledge of having a persistent or recurrent physical or psychological problem that is likely to have been worsened by cocaine (e.g., current cocaine use despite recognition of cocaine-induced depression)(pp.1-2).

Incidences of Chemical Dependency

Nearly one-fifth of patients treated in general medical practice report drinking at levels considered "risky" or hazardous and may be at risk for developing alcohol-related problems as a result. In 1990, 68.3 percent of whites, 64.5 percent of Hispanics, and 55.6 percent of blacks used alcohol (National Institute on Drug Abuse, 1994). Although these percentages seem similar, they vary in prevalence of different patterns of use, abuse, and other alcohol-related problems. In 1991, 54.5 patient discharges for alcohol related diagnosis for every 10,000; however that rate for blacks was 102.9 per 10,000 population. Because it is not known whether the rates of under-reporting are equal among ethnic groups, it is difficult to interpret the meaning of such reported differences (Windle, 1992, p.5).

Fetal Alcohol Syndrome

The prevalence of fetal alcohol syndrome ranges from 1 to 3 per 1,000 in the United States. Cultural influences, patterns of alcohol consumption, nutrition, and differing rates of alcohol metabolism or other innate physiological differences may account for the varying FAS rates among Indian communities (Aase, 1981). The incidence of FAS among blacks appears to be

seven times higher than among whites, although more blacks than whites abstain from drinking. The reasons for this difference in FAS rates are not yet known (Chavez, 1989).

Genetic Traits

Certain minority groups may possess genetic traits that either predispose them to or protect them from becoming alcoholic. The flushing reaction is a trait that has been linked to variants of genes for enzymes involved in alcohol metabolism. It involves a reddening of the face and neck due to increased blood flow to those areas and can be accompanied by headaches, nausea, and other symptoms. Flushing can occur when small amounts of alcohol are consumed (Thompson, 1993).

Diagnostic Criteria for Alcohol

At least 39 diagnostic systems had been identified before 1940. In 1941 Jellinek first published theory of subtypes of what was, until 1980, termed alcoholism. Jellinek associated the subtypes with different degrees of physical, psychological, social and occupational impairment. The American Psychiatric Association's publication of the Diagnostic and Statistical Manual of Mental Disorders, first edition (DSM-I) and Second Edition (DSM-II) categorized alcoholism as a subset of personality disorders, homosexuality, and neuroses. Several years later, Edwards and Gross focused solely on alcohol dependence. They considered essential elements of dependence to be drinking repertoire, drink-seeking behavior, tolerance, withdrawal, drinking to relieve or avoid withdrawal symptoms, subjective awareness of the compulsion to drink, and a return to drinking after a period of abstinence. In 1980, the Diagnostic and Statistical Manual of Mental Disorders, Third Edition (DSM-III) described dependence as including both psychological symptoms such as tolerance and withdrawal, and behavioral symptoms, such as impaired control over drinking. In DSM-III-R, abuse became a category for diagnosing those who never met the criteria for dependence, but who drank despite alcohol-related physical, social psychological, or occupational problems, or who drank in dangerous situations, such as conjunction with driving. The DSM-IV in 1994 provides the sub-typing of dependence based on the presence or absence of tolerance and withdrawal. The criteria for abuse in DSM-IV were expanded to include drinking despite recurrent social, interpersonal, and legal problems as a result of alcohol use. In addition, DSM-IV indicates that symptoms of certain disorders, such as anxiety or depression, may be related to an individual's use of alcohol or other drugs (Schickit, 1996).

Assessment

The goal of assessment is to determine personal characteristics that can influence the treatment of a patient's alcohol problem. It is comprised of four tasks:

- 1) to aid in the formal diagnosis of the patient's alcohol problem; 2) to establish the severity of the alcohol problem; 3) to guide treatment planning; and 4) to define a baseline of the patient's status, to which his or her future conditions can be compared (Sobell, 1988, p. 19).

Assessment is an ongoing process, used to evaluate a patient's progress and adjust treatment. Every patient entering alcoholism treatment presents a unique combination of medical and psychological characteristics. The clinician may use clinical interviews and/or assessment instruments. Formal instruments relating to alcohol problems can be used to assess beliefs about the effects of drinking, levels of alcohol dependence, high-risk drinking situations and resources that will aid in recovery. "General psychological instruments can be used to assess personality cognition and neurological characteristics. Most alcoholism assessment instruments are standardized, self-administered questionnaires (or tests). These instruments offer comprehensiveness, consistency, ease of administration, and low cost" (McLellan, 1989, 54). Standardized instruments provide a quantitative scale of alcohol problems, which can be useful when attempting to measure the patient's current need for treatment and future progress.

Medication

According to O'Malley (1992), two types of medications have been introduced to reduce drinking: one to deter drinking and another to reduce the craving for alcohol. Treatment outcome research has examined a wide range of medications including the use of disulfiram, a medication that deters drinking, antidepressants and lithium. In preliminary studies, new pharmacotherapies are being investigated for example, opiate antagonist and naltrexone, which appears to reduce the frequency of relapse. Alcoholism affects an individual's perception of the world around them. Individuals with hearing loss are also affected by their perception of the world around them.

Deaf/Hard of Hearing

Defining hearing loss is difficult because it is difficult to monitor when hearing stops being normal and begins being a disability. Hearing impairment and deafness are two categories in the American with Disabilities Act. It defines deafness as, "Hearing impairment that is so

severe that the individual is impaired in processing linguistic information through hearing, with or without amplification, that adversely affects a child's educational performance" (Turnbull, 1999, p. 23). IDEA's defines hearing impairment as "an impairment in hearing whether permanent or fluctuating, that adversely affects a child's educational performance but which is not included under the definition of deafness in this section" (Turnbull, 1999, p. 23). The National Information Center for Children and Youth with Disabilities (1999) indicated that "deafness may be viewed as a condition that prevents an individual from receiving sound in all or most of its forms. In contrast, a child with a hearing loss can generally respond to auditory stimuli, including speech" (p.1).

Causes of Hearing Loss

According to Turnbull (1999), there are two different types of causes of hearing loss prelingual, and postlingual. Prelingual causes occur at birth or before the child has learned language. Ninety-five percent of deaf or hard of hearing children are prelingual. This hearing loss is caused by premature birth, heredity, maternal rubella, congenital cytomegalovirus and unknown causes. Hearing loss is one of the symptoms that may occur due to low birth weight, possible hemorrhage in the brain or due to lack of oxygen to the inner ear. "Heredity childhood deafness is a primary feature of 150 and 175 different genetic syndromes, and there is an additional 16 types of genetic deafness that are not associated with other anomalies" (Bess and Humes, 1995, p. 16). In 1964-1965 a rubella epidemic increased the incidences of hearing loss in children. The cytomegalovirus is a common virus that can remain in an inactive state in the body. Pregnancy can reactivate the virus and can be contracted within the uterus through passage down the birth canal, or through breast milk (Schildroth, Rawlings, & Allen, 1989).

Postlingual occurs after the child has developed language. Five percent of students have postlingual hearing loss. The most common postlingual hearing losses are those resulting from meningitis, recurring middle-ear infections, side effects from medications, and unknown causes. Meningitis is a disease of the central nervous system that extends to other organs including the ear (Northern & Downs, 1991). Otitis Media or inflammation of the middle ear, is common in young children. Between 76 and 95 percent of children experience otitis media at least once by the time they are six years old (Bess & Humes, 1995).

Incidences of Hearing Loss

Hearing loss and deafness affect individuals of all ages and may occur at any time from infancy through old age. The U.S. Department of Education (1998), reports that during the 1996 to 1997 school year, 68, 766 students aged 6 to 21 (or 1.3%) received services under the category of “hearing impairment” (NICHCY, 1999). Northern and Downs (1991) reported useful facts about the prevalence of hearing loss:

- One child in 1,000 is born with profound deafness.
- An additional two children in 1, 000 will become deaf in early childhood.
- Newborn infants requiring intensive medical care are at risk, resulting in one in fifty children becoming deaf or hard of hearing.
- Ear infection, the most common infectious disease, is associated with hearing loss.
- Nearly all children from birth to eleven years of age will develop some period of hearing loss related to ear infections.
- Ten to fifteen percent of children who receive school hearing screenings fail because they do not hear within normal limits (p.87).

Diagnostic Criteria for Hearing Loss

Hearing loss or deafness does not affect a person’s intellectual capacity or ability to learn. However, children who are either hard of hearing or deaf generally require some form of special education services in order to receive adequate education.

“Sound is measured by its loudness or intensity (measured in units call decibels, dB) and its frequency or pitch (measured in units called hertz, Hz). Impairments in hearing can occur in either or both areas, and may exist in only one ear or both ears. Hearing loss is generally described as slight, mild, moderate, severe, or profound, depending upon how well a person can hear the intensities or frequencies most greatly associated with speech. Children whose hearing loss is greater than 90 decibels (dB) are considered deaf for the purposes of educational placement” (NICHCY, 1999 p. 1).

There are four types of hearing loss. Conductive, sensorineural, mixed and central. Conductive hearing losses are caused by diseases or obstructions in the outer or middle ear.

Conductive loss usually affect all frequencies of hearing evenly and do not result in severe losses. An individual may be able to use a hearing aid well or can be helped medically or surgically. Sensorineural hearing loss result from damage to the delicate sensory hair cells of the inner ear or the nerves which supply it. The hearing loss can range from mild to profound. A person with sensorineural hearing loss may perceive distorted sounds sometimes making the successful use of a hearing aid impossible. A mixed hearing loss refers to a combination of conductive and sensorineural loss and means that a problem occurs in both the outer or middle and the inner ear. A central hearing loss results from damage or impairment to the nerves or nuclei of the central nervous system, either in the pathways to the brain or the brain itself (NICHCY, 1999).

Children who are hard of hearing may find it more difficult than children with normal hearing to learn vocabulary, grammar, word order, idiomatic expressions, and other aspects of verbal communication. Children with HIV also experience difficulty in auditory processing.

HIV/AIDS

HIV is a condition that gradually infects and eventually destroys important cells in the immune system, which protects the body from disease. T4 immune cells are a major target of HIV. This makes the body unable to fight infections. As the virus progresses and the immune system becomes weaker, a person with HIV is more susceptible to opportunistic infections. The germs or viruses from this infection are usually harmless for the general population. Opportunistic infections associated with HIV include some cancers, recurrent fungus infections, pneumonia, and tuberculosis (Turnbull, 1999).

Characteristics of HIV/AIDS

HIV progresses through distinct stages. Increased levels of illness and severity of symptoms mark the progression, from one stage to another. People in the earliest stage of HIV called the latency stage, have the virus in their bloodstream but do not have outward symptoms of illness. In adolescents and adults who contract HIV through contaminated body fluids, symptoms may not develop for eight to twelve years (Prater & Serna, 1995).

When HIV progresses to the middle, symptomatic stage, the virus reproduces more actively, the immune system begins losing its effectiveness, and individuals begin to experience

minor symptoms. Fatigue is a common symptom of HIV at this stage. Other symptoms include persistent fevers, night sweats, chronic diarrhea, recurring vaginal yeast infections, and swollen glands. As their immune system weakens individuals in this stage experience more frequent illnesses and opportunistic infections.

In the final stage of the condition, which is known as acquired immune deficiency syndrome (AIDS), the opportunistic infections increase in frequency and severity. Symptoms often include seizures, memory lapses, impaired vision, blindness, and in children loss of cognitive abilities. Eating usually is difficult, and the body's ability to obtain nutrients are often seen in people in the late stage infection. Cancerous lesions and respiratory infections are common. Antibiotic and antiviral therapies have only a minimal effect because of the low number of T4 cells. Pain is usually severe and death is imminent. The Center for Disease control (CDC) specify that HIV has progressed to the AIDS stage if a person's T4 cell count is less than 200 and if he/she has developed one or more specified opportunistic infections (Prater & Serna (1995)

Prevalence of HIV/AIDS

The cumulative number of AIDS cases reported in 1998 was 688, 200. Adult and adolescent AIDS cases total 679,739 with 570,425 cases in males and 109, 311 cases in females. In 1998, it was reported that 8,461 AIDS cases were children under age 13. Total deaths of persons reported with AIDS are 410, 800 including 405, 816 adults and adolescents, and 4,984 children under age of 15. There were 304, 094 Whites diagnosed; 251,408 African Americans; 124,841 Hispanics; 4,974 Asians; 1,940 Native Americans; and 943 race unknown. Data from prevalence surveys continue to reflect the disproportionate impact of the epidemic on racial/ethnic minority populations, especially women, youth and children (Prater & Serna, 1995).

Surveys suggest that young men who have sex with men remain a population at high risk for HIV infection. Declines in AIDS incidence and deaths, first reported in 1996, continued through 1997 and provide evidence of the widespread beneficial effects of new treatment regimens.

Students with HIV may develop any or all of the following (Vincent, 1991):

- behavioral extremes,
- being easily over-stimulated,
- testing limits,
- inability to read social cues,
- low tolerance for change,
- poor peer relationships,
- language delays, sporadic skill mastery,
- difficulty initiating and organizing play,
- poor attention and concentration,
- difficulty with auditory processing and word retrieval and
- poor problem solving skills.

Many of these symptoms are characteristics of learning disabilities.

HIV/AIDS and Special Education

The general classroom is the most appropriate placement for the majority of students with HIV (Prater & Serna, 1995). Sometimes, however, a student will need to receive educational services at home or in a school setting that allows for individualized instruction, perhaps because the student's behavior or medical condition (biting, open sores, lack of control over body secretions) creates risks for other children (Wishom, 1989). This approach is also appropriate if the student's at risk of contracting infections from other students or if the condition has caused academic limitations. The academic limitations often lead to students with HIV/AIDS to be diagnosed with learning disabilities.

Learning Disabilities

According to Turnbull (1999), in 1968, the National Advisory Committee on Handicapped Children (NACHC) was formed to develop a definition. The term, specific learning disabilities was developed and implemented in the Disabilities Act of 1969 (Public Law 94-142). The law ensured the provision of a free appropriate education to all children with disabilities; establishes evaluation and assessment; guarantees the right to due process of law and establishes a process for financial support special education, teacher preparation, early childhood education and parent learning. In 1986, Public Law 99-457 was passed to extend services to infants and preschoolers. Madeline Will stated that students with learning disabilities should be educated in regular classrooms and maintained that pull-out programs are ineffective. She developed the

Regular Education Initiative (REI). In 1990, President Bush signed the Education of the Handicapped Act Amendments, Individuals with disabilities Education Act (IDEA), (Public Law 101-476) into law. Turnbull (1999) reported IDEA, originally named the Education For All Handicapped Children Act when it was authorized in 1975 was designed

“To assure that all children with disabilities have available to them...free appropriate [emphasis added] public education which emphasizes special education and related services designed to meet their unique needs in the least restrictive environment.” The term is replaced with the term disability (pp. 3-25).

Levine (no date) indicated that the term “learning disability” is described as a neurobiological disorder in which an individual’s brain is structured or functions differently [On-line]. The article “Tell me the facts about learning disabilities,” states that fifteen percent of the United States population has some type of learning disability. As many as 80% of students with disabilities have learning problems” National Adult Literacy and Learning Disabilities Center (NSLLDC) (1994) [On-line]. Although individuals with learning disabilities may have similar characteristics as other disabilities they should not be confused with other disabilities such as mental retardation and autism. However, learning disabilities often occur at the same time as attention deficit disorder and attention deficit hyperactivity disorder.

Definitions of Learning Disability

In order to define learning disability there has to be an understanding of what constitutes a disability in general. Disability is defined as

An individual whose important life activities are restricted as to conditions, manner or duration under which they can be performed in comparison to most people...taking into consideration both (or expected duration of the) impairment and the extent to which it actually limits a major life activity of the affected individual (Shrey and LaCrete, 1995, p.5).

The term Learning Disability has many definitions that vary across organizations.

According to Turnbull (1999), Education For All Handicapped Children Act, Public Law 94-142 defines learning disabilities (LD) as

A disorder in one or more of the basic psychological processes involved in

understanding or using language, spoken, or written, which may manifest itself in an imperfect ability to listen, think, speak, read, write, spell or perform mathematical calculations. LD includes perceptual handicaps, brain injury, minimal brain dysfunction, dyslexia, and developmental aphasia (p.123).

According to the law,

LD does not include learning problems that are primarily the result of visual, hearing, or motor handicaps, mental retardation, or environmental, cultural or economic disadvantage. Also required is a severe discrepancy between the child's potential (as measured by IQ) and his or her current status (as measured by achievement tests) NICHCY, 1996, p.1).

The National Adult Literacy and Learning Disabilities Center (1995) reported the definition for the following organizations. 1977, U.S. Office of Education (the basis for determining learning disabilities among school-aged children) defined the term

“specified learning disability” as a disorder in which one or more of the basic psychological processes involved in understanding or in using language, spoken or written, which may manifest itself in an imperfect ability to listen, speak, read, write, spell or to do mathematical calculations (p.5).

The Learning Disabilities Association of America (one of the largest advocacy groups for LD in the U.S.) defines it as chronic condition of presumed neurological origin, which selectively interferes with the development, integration, and/or demonstration of verbal and/or nonverbal abilities. LD exists as a distinct handicapping condition and varies in its manifestations and in degree of severity. It affects self-esteem, education, vocation, socialization, and/or daily living activities.

The Interagency Committee on Learning Disabilities defined (LD) as

a generic term that refers to a heterogenous group of disorders manifested by significant difficulties in acquisition and use listening, speaking, reading, writing, reasoning, or mathematical abilities, or of social skills. These disorders are intrinsic to the individual and presumed to be due to central nervous system dysfunction, (definition was acceptable to federal agencies on the committee, except for the U.S. Department of Education) (p. 13).

Rehabilitation Services Administration (focuses on work) states that

a specific learning disability is a disorder in one or more of the central nervous system processes involved in perceiving, understanding, and/or using concepts through verbal (spoken or written) language or nonverbal means. This disorder manifests itself with deficit in one or more of the following areas: attention, reasoning, processing, memory, communication, reading, writing, spelling, calculation, coordination, social competence, and emotional maturity (pp1-2).

Incidence of Learning Disability

“Education for students with learning disabilities is a field unequalled in growth by any other area of education for exceptional students” (Mercer, 1991, p.1). “Students with learning disabilities (ages six to twenty-one) constitute the largest percentage of students served in special education” (Turnbull, 1995, p.149). Many different estimates of the number of children with learning disabilities have appeared in the literature (ranging from 1% to 30% of the general population). During the 1986-89, 1,926,097 individuals were classified as having a learning disability (LD). In 1987, The Interagency Committee on Learning Disabilities concluded that 5% to 10%, is a reasonable estimate of the percentage of persons affected. Turnbull (1995) also wrote,

“In 1990-91, students with learning disabilities accounted for more than 50 percent of all students between the ages of six and twenty-one. Between 1976-77 the percentage increased from approximately 783,000 to 2,117, 087. Today, there are nearly 4 million school-aged children with LD. Of these, at least 20 percent have a type of disorder that leaves them unable to focus their attention” (p.149).

The U.S. Department of Education, Annual Report to Congress on the Implementation of the Individuals with Disabilities Education Act estimated that there were 78, 193 students reported with disabilities during 1993-1994. Out of those numbers, 34, 165 were reportedly diagnosed as having a specific learning disability.

Causes of Learning Disabilities

The article, "Learning Disabilities: Decade of the Brain" (no date), indicated that the error in fetal brain development, genetic factors, tobacco, alcohol and other drug use, problems during pregnancy and delivery, toxins in the environment, and chemotherapy and radiation treatment may be the leading causes of learning disabilities.

Error in fetal brain development is a possible cause. Throughout the pregnancy, the brain development is vulnerable to disruptions. If the disruption occurs early, the fetus may die, or the infant may be born with a disability. If the disruption occurs later, when the cells are becoming specialized and moving into place, it may leave errors in the cell makeup, location or connections. Some scientists believe that these errors may later show up as learning disorders.

Genetic factors are also a possible cause. The fact that learning disabilities tend to run in families, indicate that there may a genetic link. According to Learning Disabilities: Decade of the Brain (NIH) (no date):

Children who lack some of the skills needed in reading, such as hearing the separate sounds of words, are likely to have a parent with a related problem. However, a parent's learning disability may take a slightly different form in the child. A parent who has a writing disorder may have a child with an expressive disorder. For this reason, it seems unlikely that specific learning disorders are inherited directly. Possibly, what is inherited is a subtle brain dysfunction that can turn into a learning disability [on-line].

Some learning difficulties may stem from the family environment. For example some parents who have expressive language disorders may communicate less with their child, or language may be unclear. In such cases, the child lacks a good model for acquiring language and therefore may seem learning disabled.

Tobacco, alcohol and other drug use may have damaging effects on the unborn child. Research shows that a mother's use of cigarettes, alcohol, or other drugs pass directly to the fetus. Mothers who smoke tend to have smaller babies. Newborns weighing less than five pounds tend to be at risk for a variety of problems, including learning disabilities. Alcohol distorts developing neurons. Heavy alcohol use during pregnancy has been linked to fetal alcohol syndrome, a condition that can lead to lower birth weight, intellectual impairment, hyperactivity.

and physical defects.

Drugs such as cocaine seem to affect the normal development of brain receptors.

According to Learning Disabilities: Decade of the Brain (NIH) (no date),

Brain cells help to transmit incoming signals from our skin, eyes, and ears, and help regulate our response to the environment. Because children with certain learning disabilities have difficulty understanding speech sounds or letters, some researchers believe that the learning disabilities, as well as ADHD, may be related to faulty receptors. Current research indicates that drug abuse is a possible cause of receptor damage [on-line].

Problems during pregnancy or delivery can cause the mother's immune system to react to the fetus and attack it as if it were an infection. This cause the newly formed brain cells to settle in the wrong part of the brain. During delivery the umbilical cord may become twisted and temporarily cut off oxygen to the fetus. This too can impair brain functions and lead to LD.

Environmental toxins are also a possible cause of learning disabilities. By disrupting childhood brain development or brain processes. Cadmium and lead are becoming the leading focus of neurological research. Cadmium used in making some steel products can get into soil then into the food we eat. Lead was once common in paint and gasoline and is still present in some water pipes.

In addition, learning problems may develop in children with cancer who have been treated with chemotherapy or radiation at an early age [on-line].

Characteristics of Learning Disabilities

A learning disability is not a disorder that an individual "grows out of." According to Brown (1987), LD is a permanent disorder affecting how people with normal or above-average intelligence process incoming information, outgoing information, or both. A learning disability (LD) is a hidden handicap. A learning disability doesn't disfigure or leave visible signs that would invite others to be understanding or offer support. Learning disability is a disorder that affects people's ability to either interpret what they see and hear or to link information from different parts of the brain. These limitations can show up in many ways. Some may manifest as specific difficulties with spoken and written language, coordination, self-control, or attention. Such difficulties extend to schoolwork and can impede learning to read or write, or to do math.

Learning disability can be a lifelong condition that, in some cases, affect many parts of the person's life; school or work, daily routines, family life, and sometimes even friendships and play. In some people, many overlapping learning disabilities may be apparent. Other people may have a single, isolated learning problem that has little impact on other areas of their lives.

“Learning disability is not a diagnosis in the same sense as “chickenpox” or “mumps. ” Rather, LD is broad term that covers a poll of possible causes, symptoms, treatments, and outcomes. Partly because learning disabilities can show up in so many forms, it is difficult to diagnose or pinpoint the causes. And no one knows of a pill or remedy that will cure the disorder” (Brown, 1987, p.12).

Not all, learning problems are necessarily learning disabilities. Many children are simply slower in developing certain skills. Because children show natural differences in their rate of development, sometimes what seems to be a learning disability may simply be a delay in maturation. To be diagnosed as a learning disability, specific criteria must be met.

Learning disabilities can be divided into three broad categories (Coordinated Campaign For The Learning Disabled, 1994): Developmental speech and language disorders, academic skills disorders, and “other,” a catch-all that includes certain coordination disorders academic handicaps not covered by the other terms. (1) *Developmental speech and language disorders* are often the earliest indicators of a learning disability. Language provides the foundation upon communication, problem-solving, and expanding, integrating, analyzing, and synthesizing knowledge take place. Deficits in language, therefore, can have a profound impact on the ability of an individual to learn, function, and interact in the world around them. Waterman (1994) states,

“Language is complex and involves multiple domains - nonverbal, oral language (i.e., listening and speaking), written language (i.e., reading and writing), pragmatic language (i.e., using language for a specific purpose such as asking for help), phonology, and audiology. How quickly a person can access words or ideas in memory further influences his or her language” (p.22).

People with developmental speech and language disorders have difficulty producing speech sounds, using spoken language to communicate, or understanding what other people say.

Depending on the problem, the specific diagnosis may be: *Developmental articulation disorder*.

developmental expressive language disorder, and developmental receptive language disorder.

Developmental articulation disorder- children with this disorder may have trouble controlling their rate of speech. Or they may lag behind playmates in learning to make speech sounds.

Developmental articulation disorders are common. They appear in at least ten percent of children younger than age eight. Fortunately, articulation disorders can often be outgrown or successfully treated with speech therapy.

Developmental expressive language disorder- some children with language impairments have problems expressing themselves in speech. Their disorder is called, a developmental expressive language disorder.

*Developmental receptive language disorder-*some people have trouble understanding certain aspects of speech. It's as if their brains are set to a different frequency and the reception is poor.

Because using and understanding speech are strongly related, many people with receptive language disorders also have an expressive language disability. (2) *Academic skills disorders.*

Students with academic skill disorders are often years behind their classmates in developing reading, writing, or arithmetic skills. The diagnosis in this category includes *developmental reading, writing, and language disorders.*

Developmental reading disorder is known as dyslexia. In fact reading disabilities affect two to eight percent of elementary school children. Scientists found that a significant number of people with dyslexia share an inability to distinguish or separate the sounds in spoken words.

Developmental arithmetic disorder. Arithmetic involves recognizing numbers and symbols, memorizing facts such as the multiplication table, aligning numbers, and understanding abstract concepts like place value and fractions. Any of these may be difficult for children with developmental arithmetic disorders. Problems with numbers or basic concepts are likely to show up early. Disabilities that appear in the later grades are more often tied to problems with reasoning. Many aspects of speaking, listening, reading, writing, and arithmetic overlap and build on the same brain capabilities. It is not surprising that people can be diagnosed as having more than one area of learning disability.

(3) Other learning disabilities. DSM IV also lists additional categories such as "motor skills disorders" and "specific developmental disorders not otherwise specified: These diagnoses

include delays in acquiring language, academic, and motor skills that can affect the ability to learn, but do not meet the criteria for specific learning disability. Also included are coordination disorders that can lead to poor penmanship, as well as certain spelling and memory disorders.

Signs of Learning Disabilities

Coordinated Campaign For The Learning Disabled (1994) wrote, common Signs of Learning Disabilities:

- Preschool:*
 - Pronunciation is difficult
 - Vocabulary growth is slow
 - Rhyming words is difficult
 - Trouble interacting with peers
 - Speaks later than most children
 - Trouble learning numbers, alphabet, days of the week, colors and shapes
 - Difficulty following directions
 - Slow to develop fine motor skills

- Grades K-4:*
 - Confuses basic words (dog, run, and want)
 - Difficulty learning the connection between letters and sounds
 - Unstable pencil grip
 - Makes spelling and reading errors consistently
 - Make errors in letter reversals (b/d), inversions (m/v), transpositions (felt/left), and substitutions (house/home)
 - Remembers facts slowly
 - Transposes number sequences and confuses arithmetic signs (+, -, x, /, =)
 - Slow to learn new skills, relies heavily on memorization
 - Impulsive, difficulty planning
 - Poor coordination, unaware of physical surroundings, prone to accidents

- Grade 5-8:*
 - Reverses letter sequences (soiled/solid, left/felt)
 - Avoids reading out loud
 - Trouble with word problems
 - Avoids writing compositions
 - Slow to learn prefixes, suffixes, root words, and other spelling strategies
 - Difficulty recalling facts
 - Difficulty interacting with peers
 - First-like, award, or tight pencil grip
 - Trouble understanding body language and facial expressions

- High School:*
 - Avoids reading and writing tasks
 - Misreads information
 - Difficulty adjusting to new settings
 - Poor grasp of abstract concepts
 - Either pays too little attention to details or focuses on them too much
 - Works slowly

Trouble summarizing

Continues to spell incorrectly, frequently spells the same word differently in a single piece of writing (pp.1-2).

According to LaVoi (1994), learning disabilities typically affect five general areas:

- (1) Spoken language: delays, disorders and deviations in listening and speaking
- (2) Written language: difficulties with reading, writing and spelling
- (3) Arithmetic: difficulty in performing arithmetic operations or in understanding basic concepts
- (4) Reasoning: difficulty in organizing and integrating thoughts
- (5) Memory: difficulty in remembering information and instructions [on-line].

LaVoi (1994) also indicated other symptoms commonly related to learning disabilities are *academic, cognitive, physical* and *behavioral/social symptoms*. *Academic symptoms* include poor performance on group tests, reversals in reading and writing, difficulty copying accurately from a model, slowness in completing work, easily confused instructions, and difficulty with task requiring sequencing. *Cognitive symptoms* includes: difficulty discriminating, size, shape, and color; difficulty with time concepts, distorted concept of body language, poor organizational skills, difficulty with abstract reasoning and/or problem solving, disorganized thinking, often obsesses over one topic or idea, poor short term or long term memory, lags in development milestones. *Physical symptoms* includes: general awkwardness, poor visual-motor coordination, hyperactivity, overly distractible, difficulty concentrating, and lack of hand preference or mixed dominance. *Behavioral/social symptoms* includes: impulsive behavior, lack of reflective thought prior to action, low tolerance for frustration, excessive movement during sleep, poor peer relationships, overly excitable during group play, poor social judgement, inappropriate, unselective, and often excessive display of affection, behavior often inappropriate for situation, failure to see consequences for his/her actions, overly gullible, easily led by peers, excessive variation in mood and responsiveness, poor adjustment to environmental changes and difficulty in making decisions [on-line]. Hyperactivity, inattention, and perceptual coordination problems may also be associated with LD, but are not examples of LD. Many students are labeled both LD and ADHD.

Mental Retardation

Mental retardation was defined by the American Association on Mental Retardation (AAMR) in 1921, it has revised and republished its definition and classification system nine times since then (Reiss, 1994). The 1997 IDEA definition states that mental retardation refers to significantly sub-average general intellectual functioning existing concurrently with deficits in adaptive behavior and manifested during the developmental period that adversely affects a child's educational performance (34 C.F.R., Sec 300.7 [b] [5]). McMillian (1993) indicated that the AMMR 1983 classification system categorized "significantly sub-average general intellectual functioning" as existing at mild, moderate, severe, profound levels. In 1992 AAMR published a new definition:

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 (Luckasson, 1992, p.5).

A diagnosis of mental retardation under both the 1983 and 1992 AAMR definitions requires an IQ score of 70 to 75 or below. This score is two or more standard deviations below the mean of 100 on an individually administered intelligence test. Individuals with MR may have difficulty in the following areas: Attention, memory, generalization, motivation, adaptive skill areas, self-direction, functional academics, and independent living skills (McMillian, 1993).

Incidences of Mental Retardation

During the 1994 to 1995 school year, 569, 533 students with mental retardation, ages six to twenty-one received special education services. This represents 12 percent of all children/youth receiving special education. Numerous factors seemed to have contributed to the substantial shift in identification of students. Students are now classified as limited in English proficiency instead of placing them into special education and considering them as cognitively disabled. Because it is difficult to measure the population, there is only general agreement on how many people have mental retardation. While estimates of the percent in the U.S. population

range from .67 percent to 3 percent, the most accepted estimates found approximately 1 percent of the non-institutionalized population has mental retardation. Additionally in 1995, there were an estimated 346,659 people with mental retardation in residential settings and institutions: 33,943 are in nursing homes; 62,028 are in state institutions, 37,311 reside in private institutions with 16 or more residents; and 213,377 live in community facilities. Another estimated 1,400 persons with mental retardation are in the non-mental retardation/developmental disabilities units of psychiatric hospitals (Peter, 1998).

Causes of Mental Retardation

Biomedical causes develop within the individual. Two biomedical causes are chromosome disorders and oxygen deprivation. A chromosomal disorder occurs when a parent contributes too much (an extra chromosome is added) or too little (all or part of a chromosome is missing) genetic material. Oxygen deprivation reduces (hypoxia) or terminates (anoxia) the flow of oxygen. Oxygen deprivation however, does not necessarily result in mental retardation; the adverse effects depend on variables such as the area of the brain affected and the length of time the child is deprived of oxygen (Kozma & Stock, 1993).

The majority of cases of mental retardation are the result of adverse psychosocial influences (Batshaw & Shapiro, 1997). The precise nature between poverty and mental retardation is not clearly identified, but children with economic disadvantages clearly grow up in environments that can impair their physical, mental, and behavioral development (Baumeister, 1989).

Orthopedic Impairments

Although IDEA uses the term orthopedic impairments, educators typically use the term physical disabilities, when referring to the same students. The individuals with disabilities Education Act (IDEA) refers to orthopedic impairments as: a severe orthopedic impairment that adversely affects a child's educational performance. The term includes impairments caused by congenital anomaly (e.g. clubfoot, absence of some member, etc.), impairments caused by the disease (e.g. poliomyelitis, bone tuberculosis, etc.), and impairments from other causes (e.g.

cerebral palsy, amputations, and fractures or burns that cause contractures) (Turnbull, 1999).

Incidences of Orthopedic Impairments

Orthopedic impairments are conditions that often occur with other disabilities. In 1996, the U.S. Department of Education reported that schools served 60, 552 students age six to twenty-one in 1994-1995 school year with orthopedic impairments (Turnbull, 1999).

Serious Mental Illness

The total estimated economic cost to society of mental illness in 1994 was about \$204.4 billion. About \$91.7 billion (44.9%) of the total economic cost of mental illness were due to the costs of treatment and other direct costs for medical care. The rest of the total costs were morbidity and mortality costs, that is, the costs associated with loss of productivity due to illness (43.2%) and with premature death (8.1%) (Rice, 1997). Morbidity costs primarily include lost or reduced productivity and is measured by the estimated lifetime effect on current income for those persons affected by the mental disorders included in this study: anxiety disorders, schizophrenia, affective disorders and other disorders such as psychosis and cognitive disorders. Mortality costs are discounted (at 6%) lifetime productivity losses for persons who died as a result of a mental disorder. The cost is the number of deaths multiplied by the expected value of future earnings, with gender, and age taken into account. Other related costs include those associated with crime and incarceration, social welfare administration, and family care giving (Rice, 1997). Affective disorders such as depression have greater mortality costs due to premature deaths (mainly suicides) than any other major health disorders. Anxiety disorders (such as panic disorder, phobias and generalized anxiety disorder) have greater morbidity costs (such as reduced or lost productivity) than other major disorders (Rice, 1997).

Incidences of Serious Mental Illness

Long(1995) reported that is estimated that as many as one in five children or adolescents may have a mental health disorder that can be identified and treated. At least 1 in 10 or as many as 6 million young people have a serious emotional disturbance.

Definition of Serious Mental Illness

The term refers to a mental health problem that severely disrupts a person's ability to function socially, academically, and emotionally (Turnbull, 1999)

Serious emotional illness is also known as serious mental illness. The Individual's with Disabilities Education Act (IDEA), as reported by Long (1995), defines emotionally disturbed as

- (i) The term means a condition exhibiting one or more of the following characteristics over a long time and to a marked degree that adversely affects a student's educational performance:
 - An inability to learn that cannot be explained by intellectual, sensory, or other health factors
 - An inability to build or maintain satisfactory interpersonal relationships with peers and teachers
 - Inappropriate types of behavior or feelings under normal circumstances
 - A general pervasive mood of unhappiness or depression
 - A tendency to develop physical symptoms or fears associated with personal or school problems.
- (ii) The term includes schizophrenia. The term does not apply to children who are socially maladjusted, unless it is determined that they have an emotional disturbance (IDEA, 1977).

The Mental Health and Special Education Coalition (MHSEC) developed the following definition:

- (A) The term emotional or behavioral disorder means a disability that is
 - (i) characterized by behavioral or emotional responses in school programs so different from appropriate age, cultural, or ethnic norms that the responses adversely affect educational performance, including academic, social, vocational, or personal skills;
 - (ii) more than a temporary; expected response to stressful events in the environment;
 - (iv) consistently exhibited in two different settings, at least one of which is school-related; and
 - (v) unresponsive to direct intervention applied in general education interventions would be insufficient.

(B)The term includes a disability that co-exists with other disabilities.

(C) The term includes a schizophrenia disorder; affective disorder; anxiety disorder, or

other sustained disorder of conduct or adjustment, affecting a child if the disorder affects educational performance as described in paragraph (i).

Emotional characteristics DSM-IV applies to children and adolescents. Few of the most common emotional and behavioral disorders are: anxiety, major depression, bipolar disorder, oppositional defiant disorder, conduct disorder, eating disorders and schizophrenia (Long, 1995).

Anxiety disorders

Anxiety disorders is the most common of childhood disorders. They affect an estimated 8 to 10 of every 100 children and adolescents. These young people experience excessive fear, worry, or uneasiness that interferes with their daily lives. Anxiety disorders include: Phobia, an unrealistic and overwhelming fear of some object or situation. Generalized anxiety disorder, a pattern of excessive unrealistic worry not attributable to any recent experience. Panic disorder, terrifying panic attacks that include physical symptoms such as rapid heartbeat and dizziness. Obsessive-compulsive disorder, being trapped in a pattern of repeated thoughts and behaviors such as counting or hand washing. Post-traumatic stress disorder, a pattern of flashbacks and other symptoms that occurs in children who have experienced a psychologically distressing event such as physical or sexual abuse, being a victim or witness of violence, or exposure to some other traumatic event such as a bombing or hurricane (Long, 1995).

Major Depression

Major depression is recognized increasingly in young people. Years ago many believed that major depression did not occur in childhood. Today it has been proven that the disorder can occur at any age. Studies show that 6 out of every 100 children may have depression. The disorder is marked by changes in: emotion, the child often feels sad, cries, looks tearful, feel worthless. Motivation-schoolwork declines, the child shows no interest in play. Physical well-being- there may be changes in appetite or sleep patterns and vague physical complaints. Thoughts- the child believes that he or she is ugly, that he/she is unable to do anything right, or that the world or life is hopeless. Some adolescents with depression may not place any value on their own lives, which may lead to suicide (Long, 1995).

Bipolar disorder (Manic-depressive illness)

Bipolar depression in children and adolescents is marked by exaggerated mood swings between extreme lows (depression) and highs (excitedness or manic phases). Periods of moderate mood occur in between. During the manic phase, the child or adolescent may talk nonstop, need very little sleep, and show poor judgement. Bipolar mood swings recur throughout life. Adults with bipolar disorder, (as common as 1 in 100 adults), often experienced their first symptoms during teenage years (Long, 1995).

Conduct Disorder

Conduct disorder causes children and adolescents to act out their feelings or impulses toward others in destructive ways. Young people with conduct disorder repeatedly violate the basic rights of others and the rules of society. The offenses that these children and adolescents commit often get more serious over time (Long, 1995).

Eating Disorder

Eating disorder can be life threatening. A Young person with anorexia nervosa cannot be persuaded to maintain a minimally normal body weight. This child or adolescent is intensely afraid of gaining weight and doesn't believe that he or she is underweight. Anorexia affects 1 in every 100 to 200 adolescent girls and a much smaller number of boys. Youngsters with bulimia nervosa feel compelled to binge (eat huge amounts of food at a time). Afterward, to prevent weight gain, they rid their bodies of the food by vomiting, abusing laxatives, taking enemas, or exercising obsessively. Reported rates vary from 1 out of 3 out of every 100 young people (Long, 1995).

Schizophrenia

Young people with schizophrenia have psychotic periods when they may have hallucinations (sense things that do not exist, such as hearing voices). Withdraw from others and lose contact with reality. Other symptoms include delusional or disorders thoughts and an inability to experience pleasure. Schizophrenia is even more rare than autism in children under 12, but occurs in about 3 out of every 1000 adolescents (Long, 1995).

Traumatic Brain Injury

Individuals with Disabilities Education Act defines traumatic brain injury as "an injury to the brain caused by an external physical force, resulting in total or partial functional disability or psychosocial impairment, or both, that adversely affects a child's educational performance" (Turnbull, 1999, pg. 46). The term applies to open or close head injuries resulting in impairments in one or more areas such as cognition; language; memory; attention; reasoning; abstract thinking; judgement; problem-solving; sensory, perceptual, and motor abilities; psychosocial behavior; physical functions; information processing; and speech. The term does not apply to brain injuries that are congenital or degenerative, or brain injuries induced by birth trauma.

Under IDEA, a student can receive services for closed head injury or an open head injury. A closed head injury results when the brain is forced back and forth during an accident, causing it to rub against and bounce off of the rough, jagged skull interior. Bleeding and swelling usually results (Neurotrauma Law Center, 1996). A mild closed head injury may not show damage on medical tests but results in changes in personality or cognitive functioning (Brain Injury Association of Connecticut, 1996).

Symptoms of Traumatic Brain Injury

May Institute Center For Education and Neurorehabilitation (1985) reported the symptoms of mild head injury are:

- Becomes restless or fussy
- Doesn't pay attention
- Forgets things
- Gets mixed up about time and places
- Takes longer to get things done
- Doesn't act the same
- Acts without thinking
- Becoming easily upset
- Loses his her temper a lot
- Tires easily or needs extra sleep
- Doesn't see or hear well
- Drops things or trips a lot
- Develops problems with words or sentences
- Has a harder time learning (p. 12).

Open head injury results from an insult to the specific area or focal point of the brain. This can be caused by a gunshot wound or a blow to the head. An open head injury generally affects only those functions controlled by the injured part of the brain.

Characteristics of TBI

Department of Education (1995) reported in the Traumatic Brain Injury: Guidebook for Education, the following key points about brain injury characteristics:

- (1) Each student with brain injury has a unique pattern of abilities and deficits.
- (2) Initial physical effects of injury resolve quickly. Long-term cognitive, behavior and sensorimotor difficulties are often present.
- (3) Memory, attention, and executive function difficulties are common.
- (4) Slowed processing of information is common.
- (5) Pre-injury skills may be preserved but are not predictive of new learning abilities.
- (6) Psychosocial problems are complex and often the most debilitating.
- (7) The relationships among cognitive, communication, social, behavioral, and physical difficulties have significant and complicating effects on the student's school success.

Other Health Impairments

Students who receive services under the health impairment category of the Individuals with Disabilities Education Act (IDEA) vary greatly in their educational, social, medical and emotional needs. The three major criteria of the other health impairment category are limitations in strength, and vitality or alertness in this research the investigator will focus on the alertness criterion. This is usually diagnosed as an Attention Deficit Disorder (Turnbull, 1995).

Attention Deficit Disorder (ADD)

Although attention deficit disorder is not defined in the Individuals With Disabilities Education Act, there are features of ADD that have been recognized in many children with learning disabilities. Attention deficit disorders, with or without hyperactivity, are not considered learning disabilities in themselves. However, because attention problems can seriously interfere with school performance, they often accompany academic skills disorder. "Attention deficit disorder (ADD) is a syndrome which is usually characterized by serious and persistent difficulties resulting in poor attention span, weak impulse control, and hyperactivity (not all cases). ADD also has a subtype, which includes hyperactivity (ADHD).

It is a treatable (note not curable) complex disorder” (Parker, 1995, p.1). During the early 1900's in the United States, children who had difficulty learning were labeled emotionally disturbed, culturally disadvantaged, or mentally retarded. The first official diagnostic classification appeared in the Diagnostic and Statistical Manual of Mental Disorders, Second Edition (DSM-II, American Psychiatric Association, 1968). The term “hyper-kinetic reaction to childhood” was used and with it the notion of the hyperactive child. In 1982, the Third Edition of this manual, DSM-III, reflected new research and changed the name to attention deficit disorder (ADD) to emphasize that distractibility was the key clinical issue (American Psychiatric Association, 1982). The fourth edition, DSM-IV, was published in 1994, and it included the term attention deficit hyperactivity disorder. This diagnosis included the impulsivity and hyperactivity may be present. In attentiveness, impulsivity and often time hyperactivity, are common characteristics of the disorder.

Attention deficit disorder and attention deficit hyperactivity disorders are diagnoses applied to children who consistently display certain characteristics over a period of time. According to Jennings (1994)), the most common fall into three categories: inattention, hyperactivity, and impulsivity. People with inattentive behaviors have a hard time concentrating on one idea, they become bored easily. People with hyperactive behaviors have a difficult time sitting still, they have to constantly be in motion. People with impulsive behaviors usually act before thinking. If these disorders go unidentified and untreated, it will increase the risk of impaired educational performance, decreased self-esteem, social problems, family difficulties, and potential long-term effects. Busch, B. (1993) reported statistics that 75% of individuals with ADD get divorced, 50% stay behind a grade, 46% have been suspended from school and 11% have been expelled (p.23).

Characteristics of Attention Deficit Disorder

Ten most frequently mentioned characteristics are presented (Anderson, 1997, p. 187):

- (1)Hyperactivity motor behavior that doesn't appear to be goal oriented and is often disruptive.
- (2)Perceptual-motor impairments. Problems in coordinating auditory or visual input with a motor response.

(3) Emotional lability. Wide swings in mood behavior that do not appear to be directly related to the situation.

(4) General orientation deficits. Difficulty with various motor developments.

(5) Disorders of attention. Short attention span and general distractibility.

(6) Impulsivity. Behavior without thinking of the consequences.

(7) Disorders of memory and thinking. Difficulty in recalling information that should have been mastered and problems in comprehending abstract concepts.

(8) Specific learning disabilities. Difficulty in understanding or remembering spoken language, deficits in articulation, and difficulty in expressing oneself verbally using correct vocabulary and syntax.

(9) Disorders of speech and hearing. Difficulty in understanding or remembering spoken language. Deficits in articulation, and difficulty in expressing oneself verbally using correct vocabulary and syntax.

(10) Equivocal neurological signs. Irregular EEG patterns and “soft neurological signs.

Symptoms of ADD are excessively fidgets or squirms, difficulty remaining seated, easily distracted, difficulty awaiting turn in games, blurts out answers to questions, difficulty sustaining attention, shifts from one activity to another, difficulty playing quietly, often talks excessively, often interrupts, often doesn't listen to what is said, often loses things, and engages in dangerous activities. “ADHD affects approximately three to six percent of the population (70% in relatives of ADD children)” (Buchoff, 1990, p.8).

Age of Onset

From birth, ADD children with hyperactivity may show their dislike of being cuddled. Their sleep patterns may be irregular (Hunsucker, 1993, p.8). During infancy the child may be irritable, to have colic, and to have sleep disturbances (Wender, 1987, p.19). Between the age of two and three the child may increase in non-compliant behaviors. Parents may have to repeat directions many times before the child will follow or complete the task. These children may be more accident prone due to their inability to recognize situations that could result in physical harm (Hunsucker, 1993,p.28). Although their behavior are more intensified.

As an ADHD child reaches preschool and kindergarten age they are likely to receive the attention of school professionals. The child may seem excessively active, non-

compliant, jump from one activity to another, or may have social difficulties. These children may also seem more aggressive than their peers. Since they can tolerate more pain than other children, they may feel that others can tolerate as much pain as they can (Hunsucker, 1993, p.12).

Their low frustration level, short attention span and their temper tantrums make nursery school participation difficult. They also began to tease and annoy other classmates. The most common performance deficits associated with this disorder include: inappropriate attempts to join ongoing peer group activities, poor conversational behaviors, interruptions, minimal attention to what others are saying, employing aggressive solutions to interpersonal problems. And being prone to losing temper control when conflict or frustration is encountered in social situations (Guevremont, 1990, p.19). Punishment may prove ineffective as a deterrent to maladaptive behaviors. When punished, ADD children become angry and have temper tantrums. They are unable to see how their behavior contributes to their punishment. They may blame their problems on other people (Hunsucker, 1993, p.27). Toilet training is also difficult. Many are not bowel trained until after three (Ingersol, 1988, p.6).

Problems are for ADD children continue through elementary school. The hyperactive child with his or her restlessness and short attention span is quickly labeled "immature." The hyperactive child appears disorganized, forgetful and messy. The child is usually rejected by peers and may become sad, angry, bossy, or withdrawn (Ingersol, 1988, p.8). Problems vary by age.

Characteristics Vary With Age

ADD clinical presentation, (what you can see), is not exactly the same at various times in a person's life. According to ADD Medical Treatment Center of Santa Clara Valley (1998), wrote:

Children exhibit:

- Hyperactivity or fidgetiness,
- Impulsivity,
- Inattention for boring or unexciting experiences,
- Often including school work,
- Walking slowly or being disorganized and/or grumpy in the morning unless expecting to participate in a high excitement activity,
- Falling asleep slowly at night,

- Spatial dyslexia (writing mirror-image reversals of letters, difficulty with left-right discrimination, and difficulty properly sequencing letters, words, or numbers),
- Episodic explosiveness (often called temper tantrums), with hitting, biting, kicking,
- Bed-wetting,
- Unexplained emotional negativity.

Teenagers exhibit:

- Fidgetness or some degree of hyperactivity
- Impulsivity
- Inattention for boring or unexciting activities, including schoolwork
- Waking slowly in the morning, unless expecting to participate in a high excitement activity
- Falling asleep with difficulty at night, often staying up late until overwhelmingly tired
- Spatial dyslexia and sometimes verbal dyslexia (reversing the order of words while speaking)
- Episodic explosiveness and significant physical manifestations such as hitting others, breaking inanimate objects and screaming uncontrollably
- Bed-wetting may still be present (pp1-3).

Diagnostic Criteria For Attention Deficit (Hyperactivity) Disorder

Diagnostic criteria for attention deficit hyperactivity disorder according to the American Psychiatric Association (1994):

A. Either 1 or 2.

a) Six or more of the following symptoms of inattention have persisted for at least six months to a degree that is maladaptive and inconsistent with developmental level:

Inattention

- a) Often fails to give close attention to details or makes careless mistake in schoolwork, work, and other activities.
- b) Often has difficulty sustaining attention in tasks or play activities.
- c) Often does not seem to listen when spoken to directly.

- d) Often does not follow through on instructions and fails to finish schoolwork, chores, or duties in the workplace (not due to oppositional behavior or failure to understand instructions).
- e) Often has difficulty organizing tasks and activities.
- f) Often avoids, dislikes, or is reluctant to engage in tasks that requires sustained mental effort (such as schoolwork or homework).
- g) Often loses things in necessary for tasks or activities (e.g. toys, school assignments, pencils, books, or tools).
- h) Is often easily distracted by extraneous stimuli.
- j) Is often forgetful in daily activities.

2. Six or more of the following symptoms of hyperactivity-impulsivity have persisted for at least six months to a degree that's maladaptive and inconsistent with developmental level:

- a) Often fidgets with hands or squirms in seat
- b) Often leaves seat in classroom or in other situation in which remaining seated is expected.
- c) Often runs about climbs excessively in situations in which it is appropriate (in adolescents or adults, may be limited to subjective flings of restlessness.
- d) Often has difficulty playing or engaging in leisure activities quietly.
- e) Is often "on the go" or often acts as if driven by a motor.
- f) Often talks excessively.

Impulsivity

- g) Often blurt out answer before questions have been completed.
- h) Often has difficulty awaiting turn.
- i) Often interrupts or intrudes on others.

Some hyperactive-impulsive or inattentive symptoms that caused impairment were present before age seven years.

- C. Some impairment from the symptoms is present in two or more settings.
- D. There must be clear evidence of clinically significant impairment in social,

academic, or occupational functioning.

E. The symptoms do not occur exclusively during the course of a Pervasive Development Disorder, schizophrenia, or other Psychotic Disorder and are not better accounted for by another mental disorder (e.g., Mood disorder, Anxiety Disorder, Dissociative Disorder, or a Personality Disorder).

The DSM IV sorts the symptoms into three subtypes of the disorder: (1) Combined Type: multiple symptoms of inattention, impulsivity, and hyperactivity. (2) Predominantly Inattentive Type: multiple symptoms of inattention with few, if any, of hyper-impulsivity. (3) Predominantly hyperactive-impulsive type: multiple symptoms of hyperactivity-impulsivity with few, if any attention (NICHCY, 1998, p.3).

Neurological Abnormalities

The diagnosis of ADHD must be made clinically. It is dependent on the presence of at least several of the following ten neurological abnormalities:

- Academic underachieving and/or inattentiveness due to difficulty processing and understanding information.
- Hyperactive or excessively fidgety behavior of varying intensity.
- Impulsivity: a. Verbal (blurting or interrupting others) and b. Action (acts before thinking).
- Enuresis (bed-wetting)
- Dyslexia: a. Spatial (writing in reversals or revering number sequences) and b. Verbal (inverted meanings).
- Falling asleep slowly (even tired).
- Coming awake slowly (unless excited)
- Frequent irritability and easy frustration
- Negativity with or without “awful feelings”. A. Holding on to anger and B. Holding on to negative thoughts.
- Episodic or “rage” or “tantrums” typically over “little things” or minor issues (Coward,1988, p.25).

The symptoms of attention deficit disorders (ADD) exist on a continuum. Everybody has some of these symptoms some of the time. However, individuals with ADD have symptoms that interfere with an individual's ability to function normally in academic, work and social settings, and to their potential.

Treatment For Attention Deficit Disorder

According to Woods (1988) there are three different kinds of treatment: medication, psychological management, and educational management. The most commonly used medications are the stimulant drugs (Hunsucker, 1993). The stimulant that is used most frequently is Methylphenidate known by the trade name Ritalin. Another stimulant used less frequently is amphetamine called Dexedrine. Hunt (1991) discussed a recent survey that found 80% of children with Attention Deficit Disorder received Ritalin. Ritalin is thought to enable a child to pay better attention, control impulses, and become less distractible and less hyperactive (Fornes, 1988). When children ingest a stimulant drug, 75% became calmer and less active. Their attention spans increased and they exhibited better organizational skills. They also are less impulsive and showed improved motor control while becoming more sensitive to the feelings of others, thus their social relationships improved. Side effects to stimulant medication are interrupted sleep patterns, decrease in appetite (Buchoff, 1990).

Psychological management is where a child learns and understands the disorder and its effects in them. They learn how to handle a situation when it arises. The child does better when they take responsibility for their actions (Wender, 1987). The parents can help the child increase their self-control, self-esteem, and their frustration tolerance. Ziegler (1988), indicated how this can be utilized:

CHILD AND FAMILY MODEL FOR LEARNING
DISABLED AND ATTENTION DEFICIT DISORDER CHILDREN

SELF-CONTROL

- *Therapeutic Objective: Increase behavioral controls and problem-solving abilities.
- *Task for Child: Accept behavior charts and discuss problem areas.
"I can boss myself."
"I can talk about my mistakes."
- *Task For Parent: Learn behavior shaping skills. Provide structure. Discuss problem in a neutral way.
- *Desired Outcome: Self-control
Increased trust between parent and child.
Increased ability to communicate.

SELF-ESTEEM

- *Therapeutic Objective: Define realistic behavioral and educational goals while anticipating progress (realistic grieving).
- *Task For Child: Accurate but positive acceptance of self.
Some things are hard for me. "I can still do O.K."
- *Task for Parent: Accurate but positive acceptance of child.
Manage grief.
Accept disability.
- *Desired Outcome: Increased self-esteem. Decreased anxiety.

FRUSTRATION TOLERANCE

- *Therapeutic Objective: Support tolerance for frustration while maintaining effort .
- *Task For Child: Recognize anger and the wish to quit.
"This makes me mad."
"I can try."
"I can ask for help and learn new ways to do it."
- *Task For Parent: Tolerate frustration.
Support new and varied effort.
- *Desired Outcome: Positive management of frustration.
Recognition of compensations.
Support for new avenues of development.

Educational management helps the child to succeed in the educational setting. If the child knows what is expected of him or her, and the teacher understands the strategies needed to help the child; then together they can make the educational experience more desirable. Hyperactivity is a behavioral characteristic commonly associated with children labeled LD. However, not all children with learning disabilities are hyperactive. People with AD(H)D are often inconsistent. One day they can do it and the next they can't. They have difficulty remembering simple things yet they can remember more complex issues. To avoid disappointment, frustration, and discouragement, don't expect their highest level of competence to be the standard. It's an unrealistic expectation of a person with ADD. Many ADD and ADHD students are placed in special education programs because they are inhibited in reaching the standard requirements.

Minorities in Special Education

To determine if a child is eligible for classification under one of these exceptionalities, an evaluation, or assessment, of the child must be conducted. "Every year, millions of children, ages three and up are assessed for the presence of a disability and are found eligible for special education and related services because they are in need of support in order to achieve success in school" (Waterman, 1995, p. 1). Errors in diagnosis of attention deficit disorder led to mistakes in treatment, and many children with symptoms of attention deficit were inappropriately placed in classrooms for the emotionally handicapped or learning disabled (Brown and Arylawd, 1987). Mann (1992) states,

"The diagnosis of attention deficit disorder and other disruptive behavior disorders is based more on an assessment of developmentally inappropriate intensity, frequency, and/or duration of the behavior rather than its mere presence. Such judgements increase the possibility of observer bias. In particular, different culturally determined standards for normal behaviors may influence ratings of observed behaviors. Especially in non-psychotic psychiatric illness, cultural background has been demonstrated to have substantial influence on the interpretation of behavior as normal or pathological. This suggests that prevalence studies for any disorder should not be undertaken in the absence of prior knowledge about cross-cultural differences in the interpretation of the behaviors of interest" (p.1539).

Ethnicity and Special Education

The disproportionate numbers of African American children and families, especially in urban areas, example.” Data from the 1990 census indicate that 31.9% of African Americans lived below poverty level” (Jennings, 1994, p.58).

“Despite their socioeconomic disadvantages as a group, blacks begin school with test scores that are fairly close to the test scores of whites their age. The longer they stay in school, however, the more they fall behind; for example, by the sixth grade blacks in many school districts are two full grade levels behind whites in achievement. This pattern holds true in middle class nearly as much as lower class. This record does not improve in high school” (Tillman, 1995, p.167).

Even for blacks who make it to college, the problem doesn't go away.

“Seventy percent of all black students who enroll in four-year colleges drop-out at some point, as compared with 45 percent whites. At any given time nearly as many black males are incarcerated as are in college in this country. And the grades of black college students average half a letter below those of their white classmates” (Steele, 1992, p.1).

This is due to the misunderstanding of behaviors that are exhibited by different cultures.

“Culturally different youths and youth's with disabilities are more likely to be programmed into punishment facilities such as juvenile court rather than treatment, given more pathological labels than warranted, and less likely to have appropriate family involvement in their treatment plans” (Fornes, 1988, p.5).

These statistics are alarming for not only African Americans, but for other people of color. Other disturbing statistics include the fact that males are placed in serious emotional and behavioral disorders three and half times more often than females (NIMH, 1994, p.12).

Gender and Special Education

According to the American Association of University Women (1995), boys outnumber girls in special education programs by startling percentages.

“More than two-thirds of all students in special education placements are male. In fact, the more subjective the diagnosis, the higher the representation of boys. It is possible that rather than identifying learning problems, school personnel may be mislabeling behavioral problems. Boys with ADD tend to outnumber girls 3 to 1. Although ADD in girls is under-identified. Girls who sit quietly are ignored. Boys who act out are placed in special education programs that may not meet their needs” (p.5).

Soderman and Phillips (1986) concluded that there are five areas of difference between young female and male students:

- (1) Psychosexual differences. Males exhibit aggressiveness, desire to explore, and rough and tumble behavior because of hormones that exist before birth.
- (2) Structural differences in the brain. Boys appear to experience slower growth in the left hemisphere of the brain. Though the male may perform better than girls on tasks that require mechanical and geometric skill, the delayed growth puts the young male at risk for language and speech problems, stuttering even allergies. By themselves, these symptoms are not serious, but when combined, they are associated with reading/spelling difficulties, attention and concentration deficiencies, hypersensitivity to criticism, memory, and sequencing problems.
- (3) Developmental differences. In terms of cognitive development, boys lag behind girls anywhere from 6 to 18 months. Their visual development is slower and boys are physically less mature.
- (4) Academic achievement difference. Sex differences have been strongly correlated with academic achievement. For example, when compared with girls, kindergarten boys consistently score lower on tests designed to measure academic potential and language skills.
- (5) Differences in perceptions. Urban males of color are often feared and perceived as dangerous and in need of control. Biases and expectations having a strong impact on educational and occupational outcomes. Instead of getting attention, the positive reinforcement, and nurturing that promotes growth and success, males are often labeled slow learners or behavior problems. They are suspended from school, locked up in juvenile detention facilities and adult jails

far more often than females and their counterparts from other ethnic backgrounds (p.67).

Minorities who are enrolled inappropriately in special education classes face limited educational opportunities and carry a lifelong label. The need to address cultural issues related to the education of minority students is a difficult challenge for educators in today's schools. This challenge becomes more difficult when these issues are confounded with learning and behavior problems.

Individualized Education Plan (IEP)

IEPs are a requirement of Part B of IDEA. IDEA authorizes federally funded programs from children and youth at the beginning of age three to twenty-one or leave school, whichever comes first. Students ages fourteen to twenty-one who are participating in transition from school to postschool activities have outcome oriented rights. One transition component must be added when the student reaches the age of fourteen. Another transition component must be added at least when the student is sixteen, and third one must be added one year before the student reaches the age of majority (Turnbull, 1999).

Developing the IEP

In 1997 amendments increased the number of participants to the team. In the past, the membership and participation was optional, now it is mandatory. The IEP is based on the student's evaluation. The IEP's content is the foundation for the student's appropriate education; it is the assurance that the student will benefit from special education and have real opportunities for the outcomes of independence, productivity, and inclusion. Turnbull (1999) also reported that in addition to the required content, IDEA also requires the IEP team, when developing each IEP, to consider the following:

- The students' strength
- The parent's concerns
- The results of all evaluations
- Special factors,

For students whose behavior impeded their own or others' learning, appropriate strategies, including positive behavioral interventions, strategies, and supports, to address that behavior

For students with limited English proficiency, their language needs

For students who are blind or visually impaired, the use of Braille or other appropriate reading and writing media

For all students, their communication needs and for students who are deaf or hard of hearing, their language and communication needs, opportunities for direct communications with peers and professionals in their own language and communication mode, academic level, and full range of needs

For all students, whether assistive technology devices and services appropriate (p. 65).

Transition Services

The IEPs for students who are in transition from school to postschool activities describe the needed transition services” the student will get, beginning at age sixteen (or sooner).

Transition services promote movement from school to these seven specific adult outcomes:

Post secondary education (e.g., college or university)

Vocational training (e.g., junior college or technical institute)

Employment (including supported employment) in a setting where there are workers without disabilities (called integrated employment because the person with a disability is included in the workforce with people without disabilities)

Continuing and adult education (e.g., formal and informal courses)

Independent living (living alone, with or without assistance)

Community participation (use of public and private services available in the community to people without disabilities) (Turnbull, 1999).

IEPs are to be developed for all students, ages three to twenty-one, and to be in effect at the beginning of each school year. The requirement that the IEP must be in effect when schools starts. It must be reviewed and if appropriate revised at least once a year and more if conditions warrant or if the student’s parents or teachers request a review.

The IEP must be revised to address five separate matters (Turnbull, 1999):

Any lack of progress toward the student's annual goals and any lack of progress in the general curriculum

The results of any reevaluations

Information about the student provided to or by parents

The student's anticipated needs

Other matters (e.g., increasing inclusion in extracurricular activities) (p.67).

Implementation

Once the plan is developed next is implementation. Implementation involves placing the student in a least restrictive environment and providing supplementary aids and services to ensure that the student will benefit from that placement. It means providing the necessary related services so that the student will benefit from the specially designed instruction. Two issues to be addressed in implementation include the selection of appropriate instructional methods and strategies for evaluating student progress (Turnbull, 1999).

Summary

There have been an increasing number of researchers analyzing disabilities during the past 15 years. The number of students now diagnosed with disabilities has also increased. There are many different characteristics of each of the disorders. Although they are not the same, they often have similar characteristics. These characteristics along with behavior problems may lead to misdiagnosis. As reported, cultural behaviors are sometimes mistaken for these characteristics leading to over-diagnosis of people of color. Many of these disabilities affect students' self-esteem, education, vocation, socialization and daily living skills.

The purpose of this study was to discover the prevalence of vocational rehabilitation services provided to students with disabilities, which are enrolled in Minnesota Public School districts. The methodology, subjects, instrumentation, analysis of data and limitations of research are discussed in Chapter III.

Chapter III

Methodology

- Subjects** The subjects consisted of 166 vocational rehabilitation counselors, who are employed with the Minnesota Department of Economic Security, Division of Rehabilitation Services.
- Instrument** The following survey was designed to review the vocational rehabilitation services of students in public high schools in Minnesota. The researcher designed the survey to collect pertinent information from several sources. Department of Education data was gathered from a website that published aggregate demographic data of students in public high schools. Department of Vocational Rehabilitation information was gathered from the Minnesota Economic Security database and identified the number of students receiving services. Students are identified as having an IEP because of participation with the special education component of the school the student attends. Students without an IEP are students with a disability who are eligible for DES services but not participating in special education services at school the student attends.
- The purpose is to examine the number of students enrolled in the Minnesota Public School district, receiving vocational rehabilitation services and compare services by age, race, gender and disability.
- The following specific questions were asked about vocational rehabilitation consumers **ages 14-22** during the **1997-1998, 1998-1999, and 1999-2000** school years?

How many consumers were the following:

| | With IEPs | Without IEPs |
|----------------|------------------|---------------------|
| Male: | _____ | _____ |
| Female: | _____ | _____ |

This questions will help research gender differences as it relates to students who are receiving vocational rehabilitation services. The comparison will address the research question, are males with disabilities are receiving more vocational rehabilitation services than females with disabilities?

How many consumers ages 14-22 during the 1997-1998, 1998-1999, and 1999-2000 school years have the following primary disabilities?

| | With IEPs | Without IEPs |
|----------------------------------|------------------|---------------------|
| Cognitive Disabilities? | _____ | _____ |
| Chemical Dependency ? | _____ | _____ |
| Deaf /Hard of Hearing? | _____ | _____ |
| HIV/AIDS? | _____ | _____ |
| Learning Disability? | _____ | _____ |
| Serious Mental Illness? | _____ | _____ |
| Traumatic Brain Injury? | _____ | _____ |
| Other Health Impairments? | _____ | _____ |

The disabilities listed above relate to the federal coding of disabilities as required under IDEA. These disabilities are also listed within the vocational rehabilitation disabilities codes. The disabilities will be compared between students with IEPs who receive vocational rehabilitation services and those students without IEPs who receive vocational rehabilitation services. The comparison will also be among the 1997-1998, 1998-1999, and 1999-2000 school years.

The comparison will address the research question, which disability receives the

most services from vocational rehabilitation counselors?

How many of the following consumers ages 14-22 during the 1997-1998, 1998-1999, and 1999-2000 school years were provided vocational rehabilitation services?

| | With IEPs | Without IEPs |
|-------------------------|------------------|---------------------|
| African American | _____ | _____ |
| American Indian | _____ | _____ |
| Asian American | _____ | _____ |
| Caucasian | _____ | _____ |

The comparison between the different ethnic groups will provide information on how vocational rehabilitation agencies are serving minority as well as non-minority groups. The ethnicity will be compared among school years, students with IEPs and students without IEPs who are receiving vocational rehabilitation services. The comparison will address the research questions:

Based on DES records, are minorities diagnosed with disabilities increasing more than non-minorities during the 1997-2000 school years? Based on DES records, are there more minorities in special education than non-minorities? Are proportionally more Caucasian students receiving vocational rehabilitation services than minorities?

How many consumers 14-22 during the 1997-1998, 1998-1999, and 1999-2000 school years received the following services?

| | With IEPs | Without IEPs |
|--|------------------|---------------------|
| Independent Living | _____ | _____ |
| Medical, Psychological, Prosthetic, and Rehabilitation Technology | _____ | _____ |
| Medical, Vocational and other Evaluations | _____ | _____ |
| Planning and Employment Services | _____ | _____ |
| Training Services | _____ | _____ |

Vocational rehabilitation services provide consumers with many services. For the purpose of this research, only the above services will be viewed. The comparison will be between school years, services, and students with IEPs, and students without IEPs who are receiving vocational rehabilitation services. The comparison will address the research questions:

How many students participating with DES and with IEPs received Independent Living Services compared to the students participating with DES without IEPs during the 1997-2000?

How many students participating with DES with IEPs received Medical, Psychological, Prosthetic, and Rehabilitation Technology Services compared to those students participating with DES without IEPs during 1997-2000?

How many students participating with DES with IEPs received medical, vocational and other evaluations compared to those students participating with DES without IEPs during 1997-2000?

How many students participating with DES with IEPs received training services compared to those students participating with DES without IEPs during 1997-2000?

How many students participating with DES with IEPs received planning and employment services compared to those students participating with DES without IEPs during 1997-2000?

For the purpose of this study, the researcher has not identified reliability. Content validity has been established due to data found in the DES policy, which provided the bases for the survey questions.

| | |
|-------------|---|
| Procedures | Surveys was mailed to the counselors employed at the Minnesota Department of Economic Security in Minnesota through the intra-agency mailing system, on April 24, and returned by mail to P.O. Box 801, Menomonie, WI by April 28, 2000. Each DES agency will be assigned a number. Those surveys that were not returned within this time frame will be sent the same identical survey again and given a due date of May 5, 2000. |
| Unknowns | Extraneous variables such as socioeconomic factors, heredity, environmental factors, willingness to participate and rate of response may negatively effect the results of the study. |
| Limitations | The study only represent students enrolled in Minnesota Public School districts and only those receiving services of the Minnesota Department of Economic Security. Generalizations cannot be made to other states or regions. |
| Results | The subjects were vocational rehabilitation counselors employed by the |

Minnesota Department of Economic Security. The rate of response will be 85.5%. 166 out of 173 state employed Minnesota rehabilitation counselors responded.

Analysis of Data

Questions were analyzed by frequency and percentage. This due to the disability, ethnicity, and services provided will be available. Possible post hoc analysis will include mean comparisons and chi square tests to help determine population representation.

Summary

The purpose of this study was to discover the prevalence of vocational rehabilitation services provided to students with disabilities, which are enrolled in Minnesota Public School districts using a survey designed by the researcher. The results, evidence that supports or fails to support research questions, unanticipated findings and summary of findings will be discussed in Chapter IV.

Chapter IV

Results

The purpose of this study was to discover the prevalence of vocational rehabilitation services provided to students with disabilities, which are enrolled in Minnesota Public School districts. A survey was designed to address the research questions:

1. Are males diagnosed with disabilities receiving vocational rehabilitation services more than females?
2. Which disability receives the most services from vocational rehabilitation counselors?
3. How many students participating with DES with IEPs received Independent Living Services compared to the students participating with DES without IEPs during 1997-2000?
4. How many students participating with DES with IEPs received Medical, Psychological, Prosthetic, and Rehabilitation Technology Services compared to those students participating with DES without IEPs during 1997-2000?
5. How many students participating with DES with IEPs received medical, vocational and other evaluations compared to those students participating with DES without IEPs during 1997-2000?
6. How many students participating with DES with IEPs received planning and employment services compared to those students participating with DES without IEPs during 1997-2000?
7. How many students participating with DES with IEPs received training compared to those students participating with DES without IEPs during 1997-2000?
8. Based on DES records, are minorities diagnosed with disabilities increasing more than non-minorities during 1997-2000?
9. Based on DES records, are there more minorities in special education than non-minorities?
10. Based on proportions as compared to the general population, are more Caucasian students receiving vocational rehabilitation services than minorities?

Questions were analyzed by sum, mean and standard deviation. This due to the descriptive study to compare the types of services, gender, disability, and ethnicity. Possible post hoc analysis will include mean comparisons and chi square tests to help determine population representation. Evidence that address research questions and summary of findings are as followed:

Table 1
Means and Standard Deviations of consumers in 1997-1998:

| Scale: Gender | Mean | Standard Deviation | % | Total |
|----------------------------|-----------------|--------------------|-----------|-------------|
| Males with IEP | 6.271084 | 4.354587 | 60 | 1041 |
| Males without IEP | 0.325 | 0.048263 | 3 | 54 |
| Females with IEP | 3.46988 | 2.734016 | 33 | 576 |
| Females without IEP | 0.373494 | 0.497529 | 04 | 62 |

Table 1:B

| Scale: Disability | Mean | Standard Deviation | % | Total |
|---|------------------|--------------------|-----------|------------|
| Chemical Dependency with IEP | 0.024096 | 0.153812 | 1 | 4 |
| Chemical Dependency without IEP | 0 | 0 | 0 | 0 |
| Deaf/Hard of Hearing with IEP | 0.457831 | 1.059459 | 5 | 76 |
| Deaf/Hard of Hearing without IEP | 0.03012 | 0.171436 | 1 | 5 |
| Cognitive Disabilities with IEP | 1.927711 | 2.842462 | 9 | 320 |
| Cognitive Disabilities without IEP | 0.090361 | 0.131179 | 2 | 15 |
| HIV/AIDS with IEP | 0 | 0 | 0 | 0 |
| HIV/AIDS without IEP | 0 | 0 | 0 | 0 |
| Other Health Impairments with IEP | 2.03012 | 2.542785 | 20 | 337 |
| Other Health Impairments without IEP | 0.319277 | 0.713839 | 5 | 53 |
| Learning Disabilities with IEP | 3.421687 | 3.031633 | 34 | 568 |
| Learning Disabilities without IEP | 0.078313 | 0.347998 | 2 | 13 |
| Serious Mental Illness with IEP | 0.1427711 | 2.397767 | 14 | 237 |
| Serious Mental Illness without IEP | 0.0162651 | 0.47103 | 3 | 27 |
| Traumatic Brain Injury with IEP | 0.204819 | 0.834978 | 4 | 34 |
| Traumatic Brain Injury without IEP | 0.012048 | 0.15523 | 0 | 2 |

Table 1 (cont'd)

Table 1:C

| Scale: Ethnicity | Mean | Standard Deviation | % | Total |
|------------------------------|----------|--------------------|-----|-------|
| African American with IEP | 0.463855 | 1.449591 | 4 | 77 |
| African American without IEP | 0.024096 | 0.153812 | .30 | 4 |
| Asian American with IEP | 0.210843 | 0.711892 | 2 | 35 |
| Asian American without IEP | 0.036145 | 0.217188 | .50 | 6 |
| Caucasian with IEP | 8.644578 | 4.96169 | 85 | 1435 |
| Caucasian without IEP | 0.626506 | 0.904009 | 6 | 104 |
| American Indian with IEP | 0.190184 | 1.033705 | 2 | 31 |
| American Indian without IEP | 0.012048 | 0.19431 | .20 | 2 |

Table 1:D

| Scale: | Services | Mean | Standard Deviation | % | Total |
|---|----------|----------|--------------------|----|-------|
| Independent Living services with IEP | | 0.072289 | 0.357877 | 1 | 12 |
| Independent Living services without IEP | | 0.006024 | 0.077615 | 0 | 1 |
| Restoration services with IEP | | 0.03012 | 0.171436 | 0 | 5 |
| Restoration services without IEP | | 0.012048 | 0.109431 | 0 | 2 |
| Evaluations with IEP | | 4.18073 | 3.468104 | 41 | 694 |
| Evaluations without IEP | | 0.548193 | 0.884597 | 5 | 91 |
| Planning and Employment with IEP | | 2.457831 | 2.113743 | 24 | 408 |
| Planning and Employment without IEP | | 0.060241 | 0.324715 | 1 | 10 |
| Training with IEP | | 2.76506 | 3.40929 | 27 | 459 |
| Training without IEP | | 0.072289 | 0.322232 | 2 | 12 |

Table 2**Means and Standard Deviations of consumers in 1998-1999:**

Table 2:A

| Scale: Gender | Mean | Standard Deviation | % | Total |
|----------------------------|-----------------|--------------------|-----------|-------------|
| Males with IEP | 6.46988 | 4.239318 | 58 | 1074 |
| Males without IEP | 0.343373 | 0.0501076 | 3 | 57 |
| Females with IEP | 3.915663 | 2.73121 | 35 | 650 |
| Females without IEP | 0.409639 | 0.583327 | 4 | 68 |

Table 2: B

| Scale: Disability | Mean | Standard Deviation | % | Total |
|---|-----------------|--------------------|-----------|------------|
| Chemical Dependency with IEP | 0.012048 | 0.109431 | 0 | 2 |
| Chemical Dependency without IEP | 0.048193 | 0.361935 | 0 | 8 |
| Deaf/Hard of Hearing with IEP | 0.49759 | 1.052839 | 4 | 73 |
| Deaf/Hard of Hearing without IEP | 0.042169 | 0.277487 | 0 | 7 |
| Cognitive Disabilities with IEP | 2.144578 | 2.828995 | 19 | 356 |
| Cognitive Disabilities without IEP | 0.042169 | 0.229688 | 0 | 7 |
| HIV/AIDS with IEP | 0 | 0 | 0 | 0 |
| HIV/AIDS without IEP | 0 | 0 | 0 | 0 |
| Other Health Impairments with IEP | 1.939759 | 2.560063 | 17 | 322 |
| Other Health Impairments without IEP | 0.391566 | 0.768896 | 4 | 65 |
| Learning Disabilities with IEP | 3.879518 | 2.972185 | 35 | 644 |
| Learning Disabilities without IEP | 0.114458 | 0.41797 | 1 | 19 |
| Serious Mental Illness with IEP | 1.789157 | 2.709826 | 16 | 297 |
| Serious Mental Illness without IEP | 0.10241 | 0.391261 | 1 | 17 |
| Traumatic Brain Injury with IEP | 0.19084 | 1.033704 | 3 | 30 |
| Traumatic Brain Injury without IEP | 0.012048 | 0.15523 | 0 | 2 |

Table 2 (cont'd)**Table 2:C**

| Scale: Ethnicity | Mean | Standard Deviation | % | Total |
|-------------------------------------|-----------------|---------------------------|------------|--------------|
| African American with IEP | 0.475904 | 1.451026 | 4 | 79 |
| African American without IEP | 0.024096 | 0.153812 | .40 | 4 |
| Asian American with IEP | 0.210843 | 0.711892 | 2 | 35 |
| Asian American without IEP | 0.013306 | 0.171436 | .50 | 5 |
| Caucasian with IEP | 9.572289 | 4.599494 | 85 | 1589 |
| Caucasian without IEP | 0.680723 | 0.9788 | 6 | 113 |
| American Indian with IEP | 0.175758 | 1.017838 | 2 | 29 |
| American Indian without IEP | 0.018072 | 0.133616 | .10 | 3 |

Table 2:D

| Scale: | Services | Mean | Standard Deviation | % | Total |
|--|-----------------|-----------------|---------------------------|-----------|--------------|
| Independent Living services with IEP | | 0.03012 | 0.203744 | 0 | 5 |
| Independent Living services without IEP | | 0 | 0 | 0 | 0 |
| Restoration services with IEP | | 0.012048 | 0.109431 | 0 | 2 |
| Restoration services without IEP | | 0 | 0 | 0 | 0 |
| Evaluations with IEP | | 3.891566 | 2.789643 | 51 | 646 |
| Evaluations without IEP | | 0.068703 | 0.885175 | 7 | 89 |
| Planning and Employment with IEP | | 1.361446 | 1.494055 | 17 | 226 |
| Planning and Employment without IEP | | 0.024096 | 0.189155 | 0 | 4 |
| Training with IEP | | 1.83135 | 1.635361 | 23 | 304 |
| Training without IEP | | 0.174699 | 0.592548 | 2 | 29 |

Table 3

Means and Standard Deviations of consumers in 1999-2000:

Table 3:A

| Scale: Gender | Mean | Standard Deviation | % | Total |
|----------------------------|-----------------|--------------------|---|-------------|
| Males with IEP | 6.120482 | 4.575925 | | 1016 |
| Males without IEP | 0.210843 | 0.451398 | | 35 |
| Females with IEP | 3.457831 | 2.771287 | | 574 |
| Females without IEP | 0.162651 | 0.370163 | | 27 |

Table 3:B

| <i>Scale: Disability</i> | Mean | Standard Deviation | % | Total |
|---|-----------------|--------------------|------------|------------|
| Chemical Dependency with IEP | 0.06265 | 0.563845 | 1.4 | 11 |
| Chemical Dependency without IEP | 0.006024 | 0.077615 | 0 | 1 |
| Deaf/Hard of Hearing with IEP | 0.391566 | 1.043154 | 4 | 65 |
| Deaf/Hard of Hearing without IEP | 0.018072 | 0.133616 | .20 | 3 |
| Cognitive Disabilities with IEP | 1.927711 | 2.842462 | 19 | 320 |
| Cognitive Disabilities without IEP | 0.023494 | 0.478871 | 2.5 | 39 |
| HIV/AIDS with IEP | 0 | 0 | 0 | 0 |
| HIV/AIDS without IEP | 0 | 0 | 0 | 0 |
| Other Health Impairments with IEP | .024242 | 2.541657 | 20 | 336 |
| Other Health Impairments without IEP | 0.060241 | 0.238653 | 1.4 | 10 |
| Learning Disabilities with IEP | 3.421687 | 3.031633 | 35 | 568 |
| Learning Disabilities without IEP | 0.054217 | 0.275374 | 1 | 9 |
| Serious Mental Illness with IEP | 1.427711 | 2.397767 | 14 | 237 |
| Serious Mental Illness without IEP | 0.03012 | 0.171436 | .50 | 5 |
| Traumatic Brain Injury with IEP | 0.060241 | 0.238653 | 1 | 10 |
| Traumatic Brain Injury without IEP | 0.006024 | 0.077615 | 0 | 1 |

Table 3 (cont'd)**Table 3:C**

| Scale: Ethnicity | Mean | Standard Deviation | % | Total |
|-------------------------------------|-----------------|---------------------------|-----------|--------------|
| African American with IEP | 0.475904 | 1.451026 | 5 | 79 |
| African American without IEP | 0.024096 | 0.153812 | 0 | 4 |
| Asian American with IEP | 0.210843 | 0.711892 | 2 | 35 |
| Asian American without IEP | 0.018072 | 0.133616 | 0 | 3 |
| Caucasian with IEP | 8.560602 | 4.954175 | 88 | 1436 |
| Caucasian without IEP | 0.259036 | 0.650694 | 3 | 43 |
| American Indian with IEP | 0.190184 | 1.033705 | 2 | 31 |
| American Indian without IEP | 0.012048 | 0.109431 | 0 | 2 |

Table 3:D

| Scale: Services | Mean | Standard Deviation | % | Total |
|--|-----------------|---------------------------|-----------|--------------|
| Independent Living services with IEP | 0.06265 | 0.563845 | 1 | 11 |
| Independent Living services without IEP | 0.006024 | 0.077615 | 0 | 1 |
| Restoration services with IEP | 0.03012 | 0.171436 | 0 | 5 |
| Restoration services without IEP | 0 | 0 | 0 | 0 |
| Evaluations with IEP | 4.180723 | 3.468104 | 44 | 694 |
| Evaluations without IEP | 0.277108 | 0.657143 | 3 | 46 |
| Planning and Employment with IEP | 2.457831 | 2.113743 | 25 | 408 |
| Planning and Employment without IEP | 0 | 0 | 0 | 0 |
| Training with IEP | 2.639759 | 2.560063 | 27 | 439 |
| Training without IEP | 0 | 0 | 0 | 0 |

Summary of the Findings

Figure 1 indicated that more consumers ages 14-22 were served in the year 1998-1999 (n=1849) than 1997-1998 (n=1733) and 1999-2000 (n=1652). Figure 2 indicated that consumers with IEPs in 1998-1999 comprised of 34% (n=1724) of the total population served during 1997-2000 (n=5234). The research indicated that males with Individualized Education Plans (60%) were served more than males without IEPs (3%), females with IEPs (34%), and females without IEPs (3%). Figure 3 indicated that 3131 males ages 14-22 were served during 1997-2000. Figure 4 reported that many consumers ages 14-22 who received vocational rehabilitation services with IEPs, were diagnosed more often with specified learning disabilities. The report indicated that of consumers ages 14-22 who received vocational rehabilitation services without IEPs, more were diagnosed with other health impairments than the other reported disabilities. Chart Figure 5, 6, and 7 indicated that during 1997-2000, Caucasian consumers age 14-22 with IEPs receive more rehabilitation services than other ethnic groups with and without IEPs. Chart 8 indicated during 1997-2000 medical vocational and other evaluations was the service provided more often for consumers age 14-22.

The research investigator will provide a conclusion to this study and implications of this research for future investigation in Chapter V.

Chapter V

Conclusions and Recommendations

As reported by the National Institute on Drug Abuse, there has been an increase of chemical dependency usage by students. In 1997-1998 there were four students with IEPs diagnosed with chemical dependency. In 1999-2000 this number increased to 11.

Hearing loss decreased from 76 in 1997-1998 to 65 in 1999-2000. Although there was an increase of students diagnosed with cognitive disabilities from 320 in 1997-1998 to 356 in 1998-1999, in 1999-2000 the number of students decreased again to 320. Other health impairments decreased from 53 in 1997-1998 to 10 in 1999-2000 for students without IEPs

Turnbull (1995) reported that students with learning disabilities constitute the largest percentage of students served in special education. This research indicated that many consumers receiving vocational rehabilitation services during 1997-2000 was diagnosed with learning disabilities more than the other reported disabilities.

Peter (1998) reported that students with mental retardation represented 12 percent of the total population of children receiving special education services. This research indicated that consumers with mental retardation were reported as 335 in 1997-1998, 363 in 1998-1999, and 359 in 1999-2000.

Long (1995) reported that as many as five children or adolescents have a mental health disorder. This study reported that consumers age 14-22 has a total population of 820 whom received vocational rehabilitation services during 1997-2000.

This research has reported that the common characteristics of consumers ages 14-22 are Caucasian males diagnosed with a learning disability receiving medical, vocational and other evaluations.

When students are diagnosed appropriate and accurate assessment tools are necessary for proper diagnosis.

For future research investigators should explore what type of transitional preparation that

the students may have obtained in an academic setting. Counties should be investigated separately to examine if a disability is diagnosed more in a particular county compared to others. Client counselor relationships should be investigated to determine if same race client and counselor have more successful closures. Vocational rehabilitation services are available to students with a disability. Providing students with the support they need to reach their vocational goal is its major priority.

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APPENDIX

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Appendix A

Project Title: The Representation of High School Students Receiving Vocational Rehabilitation Services in Minnesota.

(Name of the County), University of Wisconsin-Stout is conducting a research project titled, The Representation of High School Students Receiving Vocational Rehabilitation Services in Minnesota. Your help is greatly needed and appreciated to make this research relevant.

RISK: It is not anticipated that this study will present any medical risk or social risk to you.

CONFIDENTIALITY: The information gathered would be kept strictly confidential and my report of findings of this research will not contain your name or any other identifying information.

Once the study is completed, the analyzed findings would be available for your information. In the meantime if you have any questions, please contact: Nannette Moore-Walker, (715) 235-6416 or Dr. Robert Peters, CRC, Graduate Program Director, Research Advisor, Department of Rehabilitation and Counseling, College of Human Development, Email: PETERSB@UWSTOUT.EDU. Phone number (715) 232-1983. FAX (715) 232-2356.

Note: Questions or concerns about participation in the research or subsequent complaints should be addressed first to the researcher or research advisor and second to Dr. Ted Knous, Chair of UW-Stout Institutional Review Board for the Protection of Human Subjects in Research, 11 HH, UW-Stout, Menomonie, WI 54751, phone (715) 2321126.

I understand that by returning the questionnaire, I am giving my informed consent as a participating volunteer in this study. I understand the basic nature of the study and agree that any potential risks are exceedingly small. I also understand the potential benefits that might be realized from the successful completion of this study. I am aware that the information is being sought in a specific manner so that no identifiers are needed and so that confidentiality is guaranteed. I realize that I have the right to refuse to participate and that my right to withdraw from participation at any time during the study will be respected with no coercion or prejudice.

Appendix B

Please answer each of the following questions about vocational rehabilitation consumers ages 14-22 during the 1997-1998 school year? (October-September)

How many consumers were the following:

| | With IEPs | Without IEPs |
|-------------------|------------------|---------------------|
| 1. Male: | _____ | _____ |
| 2. Female: | _____ | _____ |

How many consumers have the following primary disabilities:

| | With IEPs | Without IEPs |
|--------------------------------------|------------------|---------------------|
| 3. Cognitive Disabilities? | _____ | _____ |
| 4. Chemical Dependency ? | _____ | _____ |
| 5. Deaf /Hard of Hearing? | _____ | _____ |
| 6. HIV/AIDS? | _____ | _____ |
| 7. Learning Disability? | _____ | _____ |
| 8. Serious Mental Illness? | _____ | _____ |
| 9. Traumatic Brain Injury? | _____ | _____ |
| 10. Other Health Impairments? | _____ | _____ |

How many of the following consumers were provided vocational rehabilitation services:

| | | |
|-----------------------------|-------|-------|
| 11. African American | _____ | _____ |
| 12. American Indian | _____ | _____ |
| 13. Asian American | _____ | _____ |
| 14. Caucasian | _____ | _____ |

How many consumers received the following services:

| | With IEPs | Without IEPs |
|--|------------------|---------------------|
| 15. Independent Living | _____ | _____ |
| 16. Medical, Psychological, Prosthetic, and Rehabilitation Technology | _____ | _____ |
| 17. Medical, Vocational and other Evaluations | _____ | _____ |
| 18. Planning and Employment Services | _____ | _____ |
| 19. Training Services | _____ | _____ |

Please answer each of the following questions about vocational rehabilitation consumers ages 14-22 during the 1998-1999 school year? (October-September)

How many consumers were the following:

| | With IEPs | Without IEPs |
|--------------------|------------------|---------------------|
| 20. Male: | _____ | _____ |
| 21. Female: | _____ | _____ |

How many consumers have the following primary disabilities:

| | With IEPs | Without IEPs |
|--------------------------------------|------------------|---------------------|
| 22. Cognitive Disabilities? | _____ | _____ |
| 23. Chemical Dependency ? | _____ | _____ |
| 24. Deaf /Hard of Hearing? | _____ | _____ |
| 25. HIV/AIDS? | _____ | _____ |
| 26. Learning Disability? | _____ | _____ |
| 27. Serious Mental Illness? | _____ | _____ |
| 28. Traumatic Brain Injury? | _____ | _____ |
| 29. Other Health Impairments? | _____ | _____ |

How many of the following consumers were provided vocational rehabilitation services:

| | | |
|-----------------------------|-------|-------|
| 30. African American | _____ | _____ |
| 31. American Indian | _____ | _____ |
| 32. Asian American | _____ | _____ |
| 33. Caucasian | _____ | _____ |

How many consumers received the following services:

| | With IEPs | Without IEPs |
|--|------------------|---------------------|
| 34. Independent Living | _____ | _____ |
| 35. Medical, Psychological, Prosthetic, and Rehabilitation Technology | _____ | _____ |
| 36. Medical, Vocational and other Evaluations | _____ | _____ |
| 37. Planning and Employment Services | _____ | _____ |
| 38. Training Services | _____ | _____ |

Please answer each of the following questions about vocational rehabilitation consumers ages 14-22 during the 1999-2000 school year? (October-March)

How many consumers were the following:

| | With IEPs | Without IEPs |
|--------------------|------------------|---------------------|
| 39. Male: | _____ | _____ |
| 40. Female: | _____ | _____ |

How many consumers have the following primary disabilities:

| | With IEPs | Without IEPs |
|--------------------------------------|------------------|---------------------|
| 41. Cognitive Disabilities? | _____ | _____ |
| 42. Chemical Dependency ? | _____ | _____ |
| 43. Deaf /Hard of Hearing? | _____ | _____ |
| 44. HIV/AIDS? | _____ | _____ |
| 45. Learning Disability? | _____ | _____ |
| 46. Serious Mental Illness? | _____ | _____ |
| 47. Traumatic Brain Injury? | _____ | _____ |
| 48. Other Health Impairments? | _____ | _____ |

How many of the following consumers were provided vocational rehabilitation services:

| | | |
|-----------------------------|-------|-------|
| 49. African American | _____ | _____ |
| 50. American Indian | _____ | _____ |
| 51. Asian American | _____ | _____ |
| 52. Caucasian | _____ | _____ |

How many consumers received the following services:

| | With IEPs | Without IEPs |
|--|------------------|---------------------|
| 53. Independent Living | _____ | _____ |
| 54. Medical, Psychological, Prosthetic, and Rehabilitation Technology | _____ | _____ |
| 55. Medical, Vocational and other Evaluations | _____ | _____ |
| 56. Planning and Employment Services | _____ | _____ |
| 57. Training Services | _____ | _____ |

Thank You for Your Participation

Appendix C

My name is Nannette Moore-Walker. I'm a graduate student at the University of Wisconsin-Stout. My graduate studies are in the Vocational Rehabilitation Counseling and Evaluation field.

The purpose of this descriptive study is to review the number of students diagnosed with a disability receiving vocational rehabilitation services. The research will list vocational rehabilitation services provided for students between the ages of fourteen and twenty-two enrolled in the Minnesota Public School Districts. The research will view the number of students receiving services between specific disabilities. Also gender, ethnicity, and services provided will be examined between 1997-2000 school years.

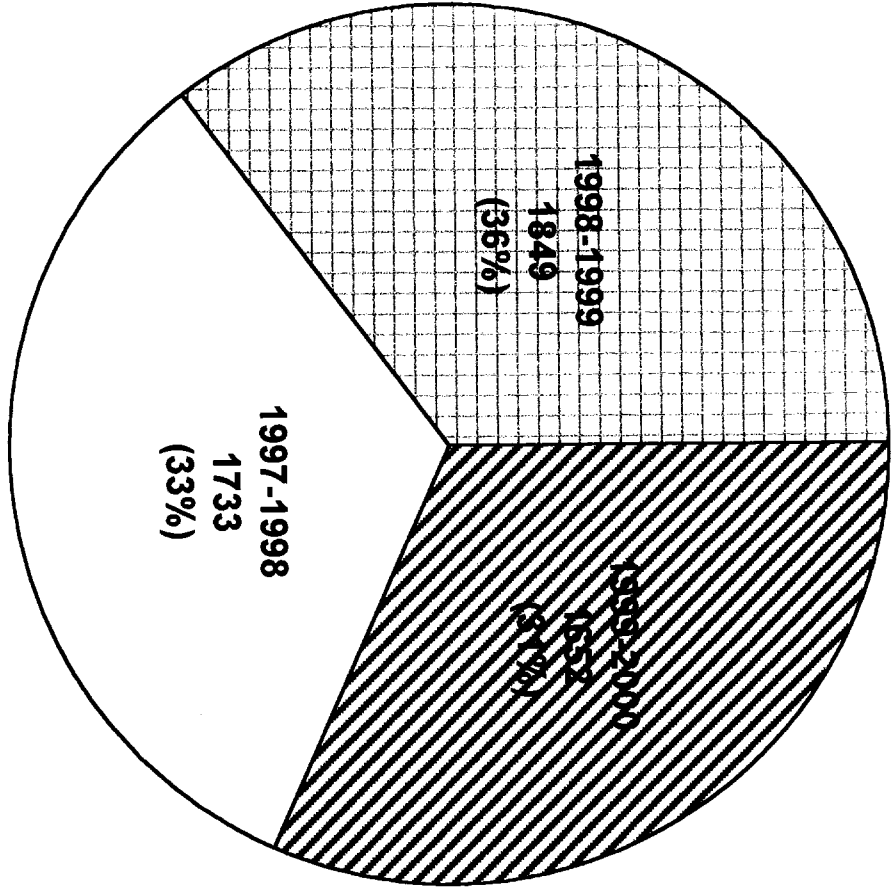
The following survey was designed to review the diagnosis of students who have disabilities as classified in the DSM IV. The focus is on the diagnoses of disabilities of high school students in the Minnesota Public School district and vocational rehabilitation services offered.

As a vocational rehabilitation counselor employed by the Minnesota Department of Economic Security, your help is needed in order to obtain accurate and vital information for successful research. The survey should take no longer than 15 minutes. The following information should be present before beginning the survey. Student population of consumers, special education demographics, IEPs and employment plans.

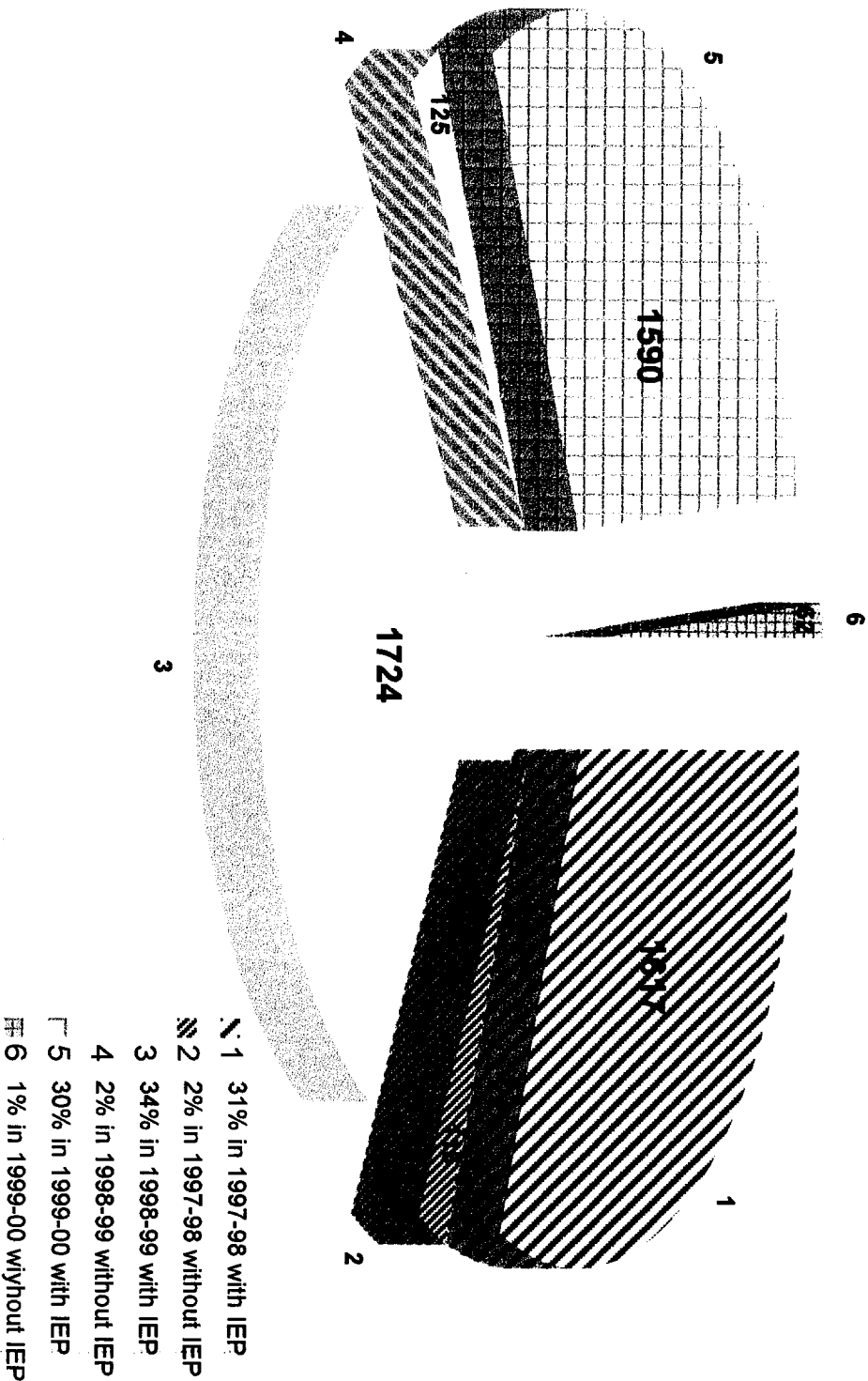
Your assistance is greatly needed and appreciated.

This information is vital because of the increasing number of students leaving high school with disabilities, in need of vocational rehabilitation services.

Total Population of Consumers Ages 14-22 Receiving Vocational Rehabilitation Services

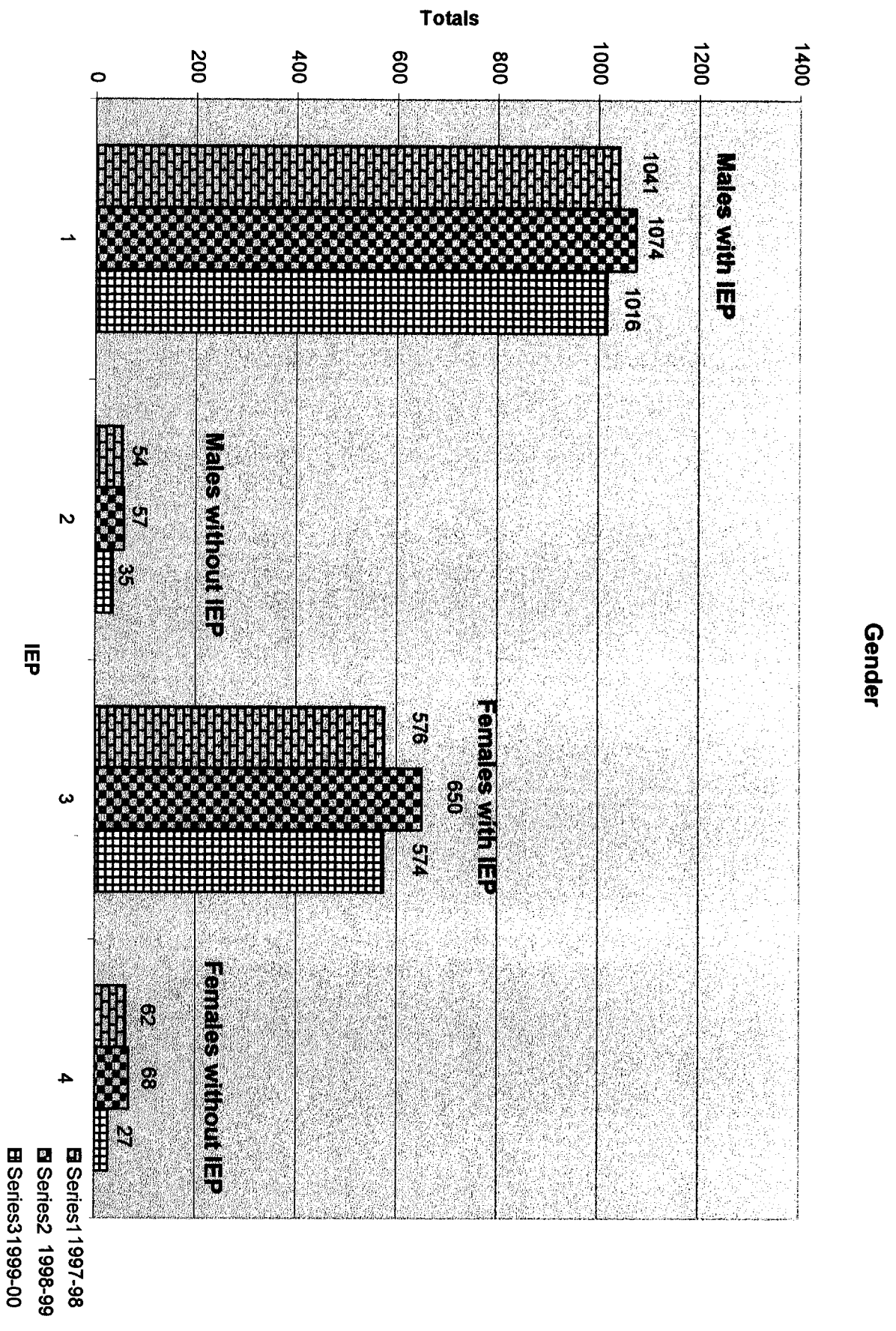


Total Population Of Consumers Ages 14-22 Receiving Vocational Rehabilitation Services



- 1 31% in 1997-98 with IEP
- 2 2% in 1997-98 without IEP
- 3 34% in 1998-99 with IEP
- 4 2% in 1998-99 without IEP
- 5 30% in 1999-00 with IEP
- 6 1% in 1999-00 without IEP

Chart 3



Disabilities of Consumers Ages 14-22 Receiving Vocational Rehabilitation Services During 1997-2000

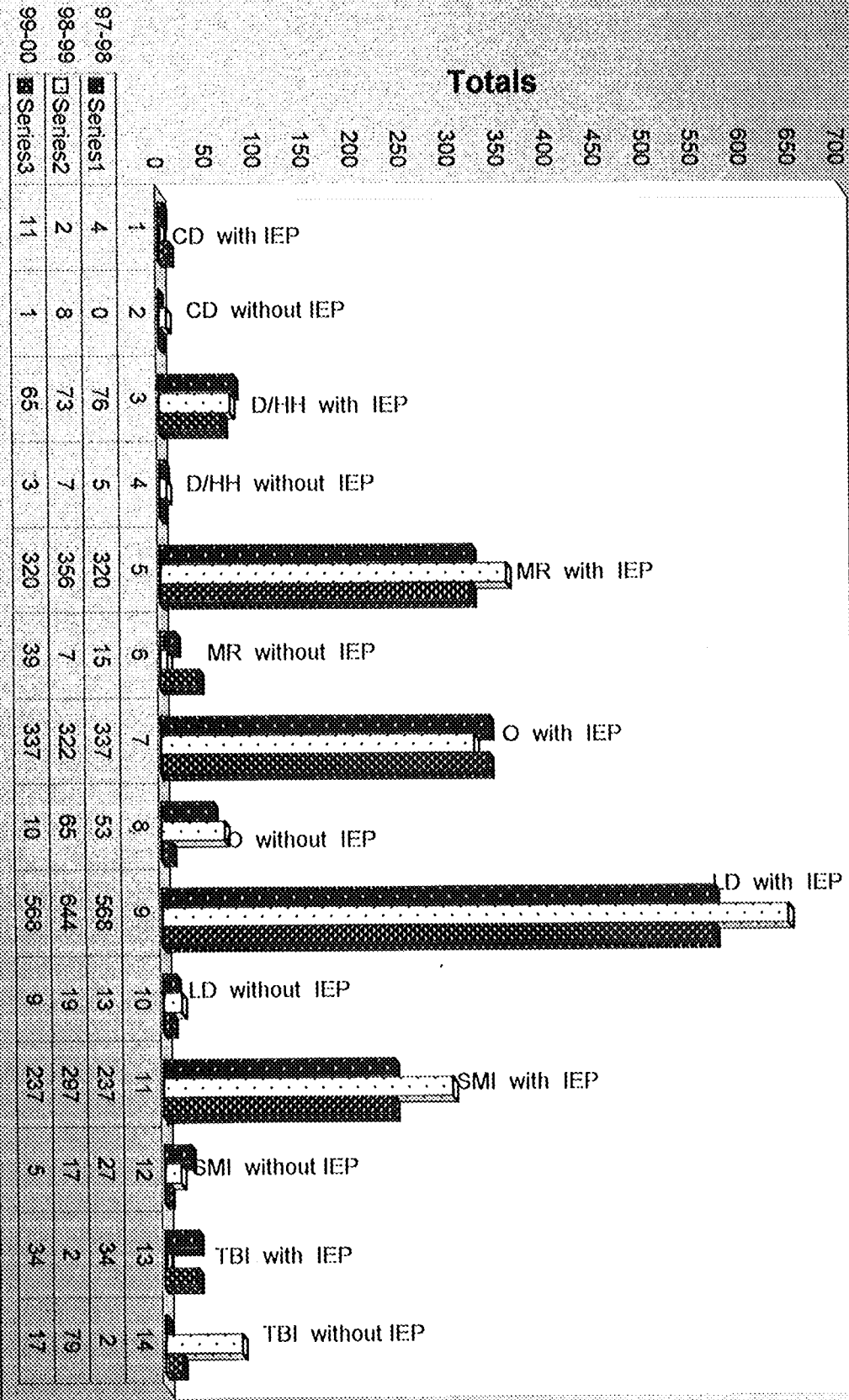


Chart 5

Ethnicity 1997-1998

- 1 5% African Americans with IEP
- 2 0.02% African Americans without IEP
- 3 2% Asian Americans with IEP
- 4 0.04% Asian Americans without IEP
- 5 85% Caucasians with IEP
- 6 6% Caucasians without IEP
- 7 2% Native Americans with IEP
- 8 0.01% Native Americans without IEP

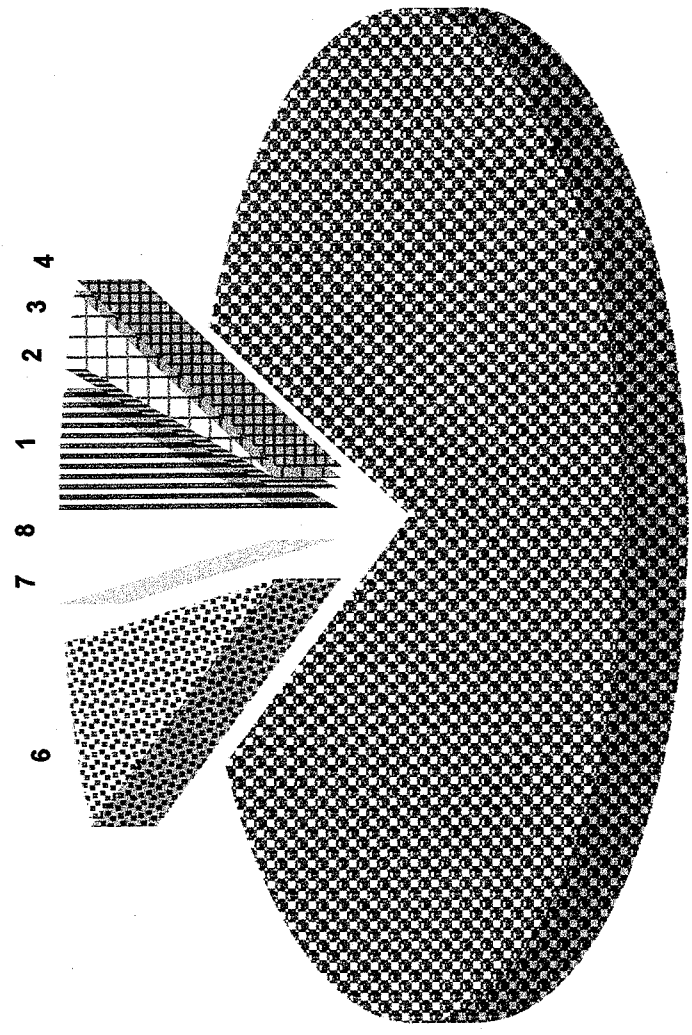


Chart represents consumers ages 14-22 receiving vocational rehabilitation services

Ethnicity 1998-1999

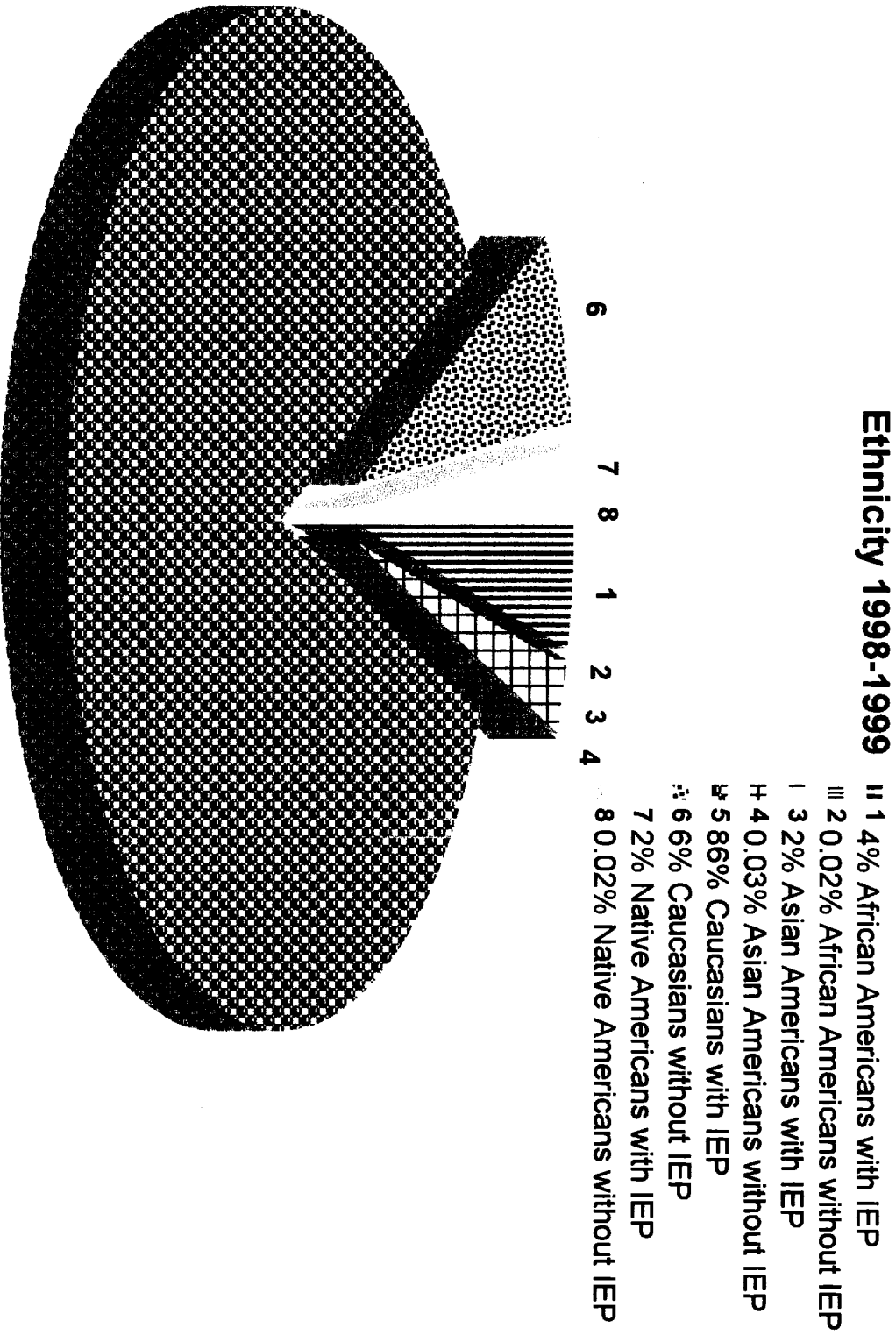


Chart represents consumers ages 14-22 receiving vocational services

Ethnicity 1999-2000

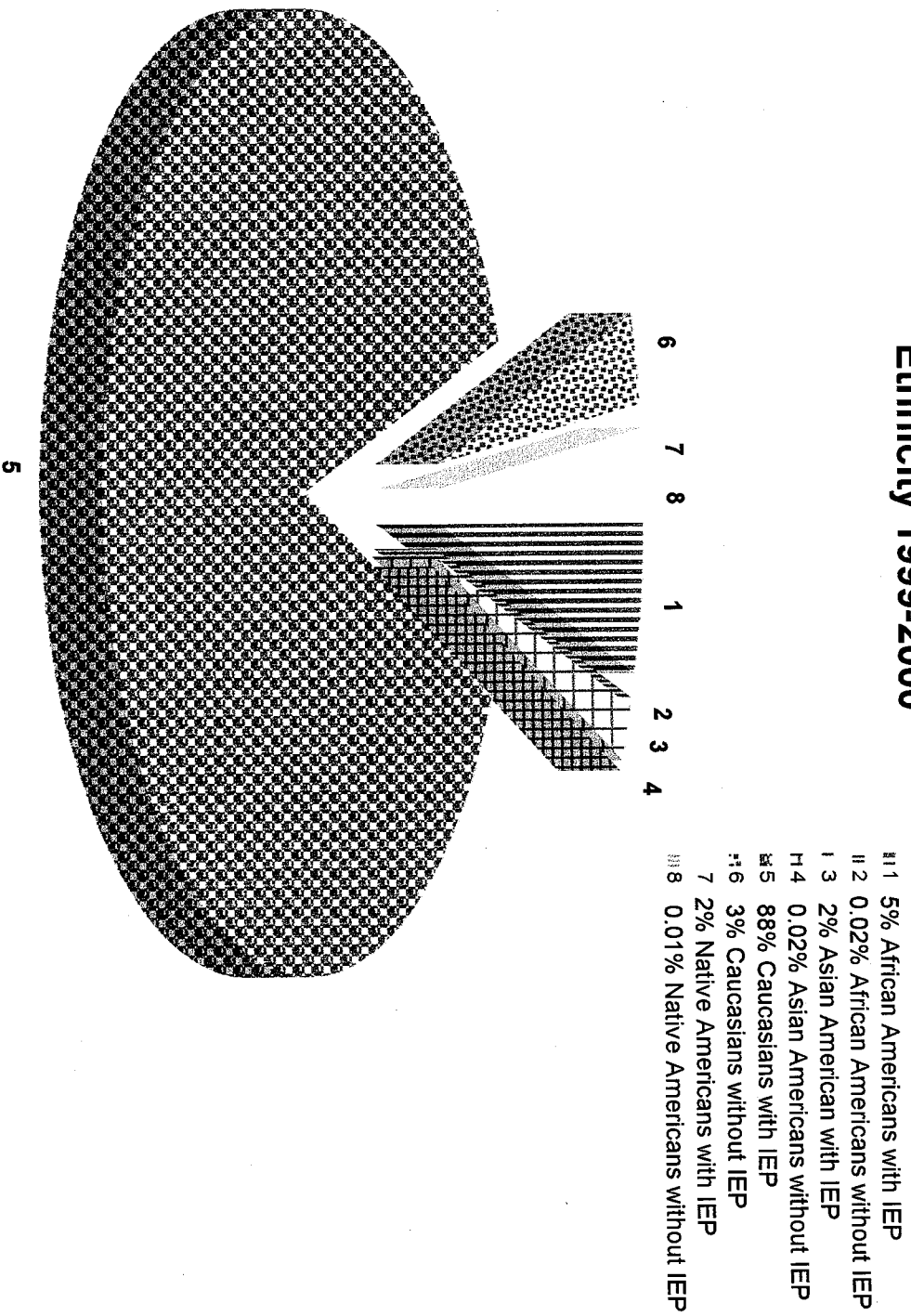


Chart represents consumers ages 14-22 receiving vocational rehabilitation services

Vocational Rehabilitation Services

