The paper addresses the implications for mentally retarded children of three trends: (1) prevention, research, and curative approaches; (2) normalization; and (3) the reduction of the mentally retarded population by definition. Future preventive measures which will reduce moderate and severe retardation in the U.S. population are envisioned to include utero surgery or fetal therapy to treat problems causing brain dysfunction. Improved treatment of secondary symptoms of retarded persons is also predicted. The acceleration of the normalization principle and the resulting deinstitutionalization is noted. Effects of past definitional changes on the incidence of mental retardation are discussed, and projections are made for future prevalence to be as low as 1% of the general population. It is concluded that reduction in the numbers of persons considered retarded and eligible for service will allow resources to be concentrated on a population with more common characteristics. (CL)
FUTURE PERSPECTIVES: MENTAL RETARDATION

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FUTURE TRENDS

Nine "current-future" trends were recently listed for handicapped children and youth by the Council for Exceptional Children (Menolascino, 1979). These nine are: prevention and research, normalization, community based service systems, parents of the handicapped, self advocacy for retarded citizens, consumer and community services, home training, curative approaches, and cost-service benefits.

Of particular importance for mentally retarded children and youths are the trends of 1) Prevention, research and curative approaches, 2) Normalization. In addition, and possibly the most important trend, is 3) the reduction of the mentally retarded population by definition.
PREVENTION AND RESEARCH

The future will see the reduction of moderate and severe retardation in our population. Preventive measures will come from: prenatal care, particularly the development of regional pre-natal care centers; prevention of pre-natal and post-natal infections that cause mental deficiencies; improved and new pre-natal diagnostic techniques (amniography, amniocentesis, ultra sonargraphy, utero surgery); continued legal use of abortions; genetic counseling and increased public awareness of good prenatal care.

Of the above, the most significant may be utero surgery or fetal therapy to ameliorate problems that arise in fetal development that cause brain dysfunction and consequently mental retardation. The prevention of multiple handicaps will also be an asset to the future life of retarded persons. Fetal therapy and surgery actually may lead to treatment decisions rather than abortion decisions (Harison, 1981).

Secondary symptoms of retarded persons will be better controlled in the 1980's. Research will lead to more effective medical control of seizures and behavior. Results of brain and neurological systems research may enhance the actual intellectual functioning of the retarded individual.

Research in the Medical and Educational fields will (Menolascino, 1979):

A) Clarify some of the inborn enzyme errors of metabolism
that can be reversed by the vitrocultured and implanted skull fragments.

B) Illustrate that neuronal regeneration in the spinal column and brain is possible.

C) Delineate psycho-pharmacological agents with memory and/or learning enhancement characteristics.

D) Develop theoretical schemata to reduce the RNA turnover rate in extra chromosome disorders such as Down's syndrome and,

E) Utilize amniocentesis to detect pre-natal signs of neural tube defects so intrauterine surgery on the fetus may be possible to correct central nervous system disorders.

NORMALIZATION

The normalization principle means making available to the mentally retarded, patterns and conditions of everyday life which are as close as possible to the norms and patterns of the mainstream society (Nirje, 1969). The principle has led to basic changes in the delivery of mental health and educational services to the mentally retarded person. Stemming from normalization is the concept of deinstitutionalization resulting in community living facilities and mainstreaming resulting in the elimination of separate classes for the mildly retarded. This process will accelerate in the 1980's.
To facilitate normalization, computers and mechanical instrumentation to facilitate learning and interactions in society will be developed and experimented with in the 1980's. Curricular adjustment from teaching rigid academics to specific daily living skills, vocational skills, and, most important, social skills will occur. All education will be more goal directed to permit the retarded child and adult to achieve as normalized a life experience as possible.

CHANGES IN DEFINITION

The early history of the study of mental retardation can be characterized by a lack of definition of who were considered to be mentally retarded. Mentally retarded persons were not differentiated from the physically deformed, the deaf, epileptics, and mentally ill populations. Only the most severe forms of mental retardation were reported in the literature (Penrose 1966).

As society emerged into the industrial age in the 18th and 19th centuries, education and training for specific skills became important. The concept of mental retardation was broadened to those who had difficulty carrying out simplistic working skills. For the first time, retardation was distinguished from other handicaps. The first most acceptable, universal definition was written by the American Association on Mental Deficiency (1959). Mental retardation refers to:
Subaverage general intellectual functioning which originates in the developmental period and is associated with impairment in adaptive behavior.

The AAMD definition according to MacMillan (1977) differed from previous definitions in several ways:

1) The cut off (of 84 or 85) was considerably higher than previous definitions (16% of the population).
2) The diagnosis of mental retardation is made on the basis of present functioning.
3) The definition did not attempt to differentiate mental retardation from other disorders of childhood.

Between 1959 and 1973, socio-political factors such as: litigation on behalf of minority children, particularly pertaining to issues concerning intelligence testing, and the effects of labeling, led to changes that significantly reduced the number of retarded citizens from the cut off of 84 to 70. Also deficits in adaptive behavior became a co-requisite.

(See Tables 1 and 2). The present definition is:

Mental retardation refers to significantly subaverage general intellectual functioning existing concurrently with deficits in adaptive behavior manifested during the developmental period.

The effect of the 1973 revision was to lower the statistical percentage of the population considered retarded from almost 16% to only 3%.
Reducing the number of persons defined as mentally retarded will continue into the 1980's particularly if the present economic pressures continue. The projected future prevalence of mentally retarded citizens may be as low as 1\% (Dunn 1973, Mercer 1973) (Table 2). This in effect would eliminate the socio-economic factor that appears to contribute to presently labeled mildly retarded individuals (Table 3).

TABLE 2
PERCENTAGE OF PERSONS CONSIDERED MENTALLY RETARDED

<table>
<thead>
<tr>
<th>Year</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1990</td>
<td>0.13%</td>
</tr>
<tr>
<td>1973</td>
<td>2.14%</td>
</tr>
<tr>
<td>1959</td>
<td>13.59%</td>
</tr>
</tbody>
</table>

TABLE 3
RETARDATION INCIDENCE PER 1,000 SCHOOL-AGE CHILDREN BY EDUCATIONAL CLASSIFICATION AND SES LEVEL OF COMMUNITY*

<table>
<thead>
<tr>
<th>Degree of Impairment</th>
<th>SES Level</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>High</td>
</tr>
<tr>
<td>Totally dependent (IQ below 20)</td>
<td>1</td>
</tr>
<tr>
<td>Trainable (IQ 20 to 50)</td>
<td>4</td>
</tr>
<tr>
<td>Educable (IQ 50 to 75 or 80)</td>
<td>10</td>
</tr>
<tr>
<td>Slow Learner (IQ 75 or 80 to 90)</td>
<td>50</td>
</tr>
</tbody>
</table>

*IQ ranges are given for the convenience of the reader. They represent approximate ranges that vary to some degree depending on the source of data.
<table>
<thead>
<tr>
<th></th>
<th>1959</th>
<th>1973</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Deficits in Adaptive Behavior</strong></td>
<td><strong>Subaverage Intelligence</strong></td>
<td><strong>Average Intelligence</strong></td>
</tr>
<tr>
<td>Mentally Retarded*</td>
<td>a</td>
<td>b</td>
</tr>
<tr>
<td>Mentally Retarded</td>
<td>c</td>
<td>d</td>
</tr>
<tr>
<td>Average in Adaptive Behavior</td>
<td><strong>Not Mentally Retarded</strong></td>
<td><strong>Not Mentally Retarded</strong></td>
</tr>
</tbody>
</table>

* Ages 18 and younger only
The trends of prevention, research, normalization and redefining mental retardation can be expected to accelerate. As a result, the percentage of persons considered retarded and eligible for service will be reduced. This will enable resources to be concentrated on a population with more common characteristics. The educational service systems available to the mentally retarded will actually better be able to define its goals and interventions. Thus, service to those eligible will be enhanced.
REFERENCES


Nirje, B. Toward new service models. In Changing Patterns In Residential Services For The Mentally Retarded. R.B. Kugel, and W. Wolfensberger (Eds.) Monograph, President's Committee on Mental Retardation.