SOME ASPECTS OF AETIOLOGICAL CLASSIFICATION OF DIFFERENT LEVELS OF, AND PARENTAL ATTITUDES TO, MENTAL RETARDATION IN GHANA

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APPROVAL SHEET

DECLARATION

I, Sarah Mary Adoo hereby declare that this thesis is entirely my own work, that references made to other people's work have been duly acknowledged and that this thesis has not been presented either in whole or in part to any educational institution for any degree.

Signed: .....
Candidate

Counter-signed: .....
Supervisor

TO MY PARENTS

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ABSTRACT

The aims of the studies presented in this paper were to investigate the causes of mental retardation in Ghana and the attitude of parents towards their mentally retarded children. There was the need for this type of investigation because what people think is the cause of mental retardation affects their attitude towards it.

The sample comprised 120 rural and urban literate and illiterate parents and their mentally retarded children. A questionnaire was used for investigating the causes of mental retardation. In addition to this questionnaire, the case records of the mentally retarded children whose parents were used for the study were examined for more reliable information on the causes of mental retardation.

It was found that the major causes of mental retardation in the children studied were epilepsy, brain injury, birth trauma and Down's syndrome.

The following hypotheses were tested in the study on parental attitudes.

1. Literate parents will have a more positive attitude towards their mentally retarded children than illiterate parents.
2. Urban parents will have a more positive attitude towards their mentally retarded children than rural parents.

3. Mothers will have a more positive attitude towards their mentally retarded children than fathers.

4. Parents of children with mild retardation will have a more positive attitude than parents of children with moderate and severe retardation whilst parents of children with moderate retardation will have a more positive attitude than parents of children with severe retardation.

A modified version of the Thurston Sentence Competion Form (TSCF) was used for the study on parental attitudes.

The main conclusions from the results obtained from the statistical analyses were that education and urbanization have no effect on the attitude of parents towards their mentally retarded children. Fathers were found to have more positive attitude towards their mentally retarded children than mothers and the degree of retardation did not have any effect on the attitude of parents towards their mentally retarded children.

INTRODUCTION

Definition of Intelligence

"Intelligence is the ability to solve problems, adapt to new situations, form abstract concepts and profit from experience." (Freeman, 1955). Apart from the regulation of internal homeostasis, the prime function of the central nervous system is adaptation of the organism to his environment. The adaptability of each species is determined in part by the form, structure and function of its central nervous system. Man is born with the least differentiated and most adaptable central nervous system.

The human potential for intelligence is inherited as a multi-factorial genetic trait and like similar traits, it follows an essentially 'normal' frequency distribution curve but the lower end of the curve is skewed by increased numbers of severely retarded individuals who may be regarded as "reproductive casualties."

Factors Affecting Intelligence

The undifferentiated state of the human infant's brain makes the infant dependent on others for a long time. During the prolonged dependency, environmental factors play a crucial role in determining whether the individual develops his full intellectual potential which is a

reflection of his biologic endowment. Intellectual functioning on the other hand is the summation of the interplay of biologic endowment and environmental factors. An optimal environment may enhance intellectual functioning by 10 - 20 points as measured on Intelligence Quotient tests whereas an intellectually adverse environment may lead to profound or lesser degrees of subnormality. During early infancy and childhood, absent or deficient maternal care may be the major factor leading to varying degrees of mental subnormality. At this early stage, subnormality due to these adverse environmental influences may be corrected by providing an intellectually stimulating environment but as the child approaches maturity his intellectual functioning becomes fixed. During later years too, complex cultural and socio-economic factors may result in a lower level of intellectual functioning.

Measurement of Intelligence

Just as individuals differ in physical stature so also do they differ in intellectual capabilities. The majority of the population can be said to have an average or normal intelligence of 100 but undoubtedly, as with stature, there are cases of gross deviations from the normal or average. Outstandingly clever people and very dull people are to be found in the general population. One extreme is

exemplified by men of genius and the other extreme is represented by idiots who in the most profound cases cannot be credited with any mental processes at all.

Intelligence is expressed in terms of scores obtained on a standardized test of intelligence such as the Stanford-Binet Intelligence Scale or the Wechsler Intelligence Scales. The scores are then expressed in terms of an intelligence quotient (I.Q.) index which is defined as the measured mental age (MA) expressed as a percentage of the chronological age at the time of testing. That is,

$$IQ = \frac{\text{Mental Age (MA)}}{\text{Chronological Age (CA)}} \times 100$$

This is a ratio IQ because it represents the ratio of MA to CA.

> Mental age is defined in terms of a child's ability to do successfully tests which the average child of a given age can do. Thus, a child who can only solve problems which 50 per cent of nine year olds can solve has a mental age of nine regardless of his chronological age. If he himself is nine years old at the time of testing, he is said to be of average intelligence with IQ of $\frac{9}{9} \times 100$ which is equal to 100. If his chronological age happens to be six, he is obviously a bright child very advanced with an IQ of $\frac{9}{6} \times 100$ which is 150. With a chronological age of 12, he is a retarded child with an IQ of $\frac{9}{12} \times 100$, this being 75. (Eysenck, 1974).

The simple IQ ratio discussed above, has been abandoned in favour of the deviation IQ which is a form of standard

score in which the obtained distribution of IQs is converted to a normal distribution with a mean of 100 and a standard deviation which is the same at every age. The Stanford-Binet, for example, uses a standard deviation of 16 and the Wechsler and most other intelligence tests use a standard deviation of 15. Although these scales do not employ identical standard deviations, the differences are ordinarily of minor psychological significance.

The deviation IQ has the advantage of establishing IQs which are more nearly comparable and more stable from one age level to another than can be attained with the ratio IQ. The deviation IQ expresses the relative standing of a child with respect to the scores of the children of his own age and is easily convertible to a percentile rank which is a simple and widely accepted statistical expression. It also permits easy comparison of standard scores on one test with those on another, provided that their means and standard deviations are made comparable.

Concept of Mental Retardation

(i) Definition

Mental retardation is not the same as mental illness. Mental retardation refers to an individual's intellectual level and is present at birth or early childhood as an

outstanding characteristic whereas mental illness usually refers to one's emotional and behavicural state and arises mostly during later adolescence or adult life.

Mental retardation which is synonymous to mental deficiency, mental subnormality, and amentia has had different definitions. The Mental Hospital Act of Ontario, Canada (1937), defines the mentally defective as "a person in whom there is a condition of arrested or incomplete development of mind arising from inherent disease or injury and who requires care, supervision and control for his own protection or for the protection of others." In Great Britain, emphasis has been placed on the social inadequacy of the mentally retarded individual. Thus, in Britain a mentally retarded or defective individual is seen as "one who by reason of incomplete mental development is incapable of independent social adaptation."

In the 1973 revised edition of the manual on terminology and classification by the American Association on Mental Deficiency (AAMD), mental retardation is defined as "significantly subaverage general intellectual functioning existing concurrently with deficits in adaptive behaviour, and manifested during the developmental period." As an integral part of this definition, the key words are defined as follows:-

> Intellectual functioning may be assessed by one or more of the standardized tests developed for that purpose. Significantly subaverage refers to performance which is more than two standard deviations from the mean or average of the tests. On the two most frequently used tests of intelligence, Stanford-Binet and Wechsler, this represents IQs of 67 and 69 respectively. The upper age limit of the developmental period is placed at 18 years....
>
> Adaptive behaviour is defined as the effectiveness or degree with which the individual meets the standards of personal independence and social responsibility expected of his age and cultural group. Since these expectations vary for different age groups, deficits in adaptive behaviour will vary at different ages.... Delays in the acquisition of sensori-motor, communication, self-help and socialisation skills represent potential deficiencies in adaptive behaviour and become the criteria for mental retardation.
>
> In the adult years, vocational performance and social responsibities assume prime importance assessed in terms of the degree to which the individual is able to maintain himself independently in the community and in gainful employment as well as by his ability to meet and conform to standards set by the community.... Only those individuals who demonstrate deficits in both measured intelligence and adaptive behaviour are classified as being mentally retarded....

According to the AAMD definition, the retarded person is judged in terms of his success with the developmental tasks appropriate for his age. During the pre-school years sensori motor behaviours assume greatest importance; during the school years academic ability is paramount; and during adulthood economic independence and the ability to function within the social standards of the society take

precedence.

Putting these three definitions together, mental retardation may be defined as a condition of arrested or incomplete development of the mind existing from birth or from early childhood and is of such a degree as to render the affected individual incapable of independent social adaptation and thereby in need of special care or training.

(ii) Historical Background

The history of mental retardation began with a serious attention on the severest cases of defect. At that time there was no distinction among the various levels of defects and the term 'idiot' which was derived from a Greek word 'idios' used to describe a person who did not participate in public life was applied to the whole class of retardates.

Idiots, as they were called, were looked down upon with contempt and were got rid off from society by throwing them into the sea or by allowing them to perish by some other means. In medieval Europe, superstitions connected with witchcraft often determined harsh treatment for defectives. Some of the defectives were even believed to be without human souls.

Protestantism did not immediately improve the position of defectives. It is reported that Calvin denounced them

as filled with Satan and Luther (1576) was of the opinion that idiots were illegitimate children of the devil and even on one occasion recommended that a 12 year old defective girl be drowned.

In contrast to the rather hostile attitude to defectives and their association with the devil, others believed them to be evidence of divine inspiration and were thus regarded as holy. This attitude to the defective was more characteristic of the Eastern rather than the Western world. Both Confucius and Zoroaster, for example, instructed their followers to care for the weak-minded, to clothe them and treat them kindly.

Medical and scientific study of mental retardation began with the acceptance of defectives as belonging to the rest of humanity. The first person to study the defective scientifically in 1798 was a Frenchman by name Itard who unsuccessfully tried to educate a defective young boy found wandering in the forest. This boy is often referred to as "the wild boy of Aveyron". Although he was unable to educate this young boy, he gave the first clear account of the psychology of a mentally retarded person which sort of stimulated others to study the problem of educating the weak-minded and as early as 1837, Seguin who was a pupil of Itard founded the first school for idiots

in Paris. Seguin's mission was regarded as "the removal of the mark of the beast from the forehead of the idiot" (Penrose & Haldane, 1969). Soon afterwards, the need for providing special institutions for the retardates began to be felt in other places and through the efforts of Andrew Reed who was a philanthropist, the first asylum for idiots in England was founded at Park House Highgate in 1840. In the United States, a commission was appointed to look into the condition of idiots in Massachusetts and New York and not long afterwards, schools for the retarded were opened in these two states in 1848. At about the same time, such institutions for the defectives began to spring up in Switzerland and Germany and in other countries in the world. In all these countries however, attention was on defectives who would be termed today as severely or profoundly retarded. During the latter half of the 19th century, however, there was an extension of the concept of defect. Subnormals of high mental capacity, that is, the mildly retarded began to be recognised and incorporated into training programmes.

(iii) Classification

The mentally retarded are always differentiated from the general population through the use of standardized intelligence tests, the first of which was developed by Binet and Simon in Paris to separate into special classes

children who did not reach normal standards of educability. For psychological and administrative purposes, such individuals are further classified into different grades according to their performance on these intelligence tests.

The most widely accepted classification system based on the severity of the symptoms (in this instance, IQ) is the one suggested in the 1973 manual of the American Association on Mental Deficiency (AAMD). The manual uses four categories of retardation - mild (IQ 55 - 69), moderate (IQ 40 - 54), severe (IQ 25 - 39) and profound (IQ < 25) (Grossman, 1973).

In Ghana, classification of the mentally retarded, to a large extent, follows the American system. Mental retardation ranges from borderline cases with IQ between 70 - 84 to the profoundly retarded with IQ below 20. It is estimated that 75 - 90 per cent of the mentally retarded are only mildly so (Amarquaye, 1977).

Each grade of retardation is associated with certain general characteristics although an individual classified under any one of the categories need not possess all the characteristics of that particular category.

The severely retarded patients or those who were formerly named 'idiots' are incapable of living independent

lives or of guarding themselves against serious exploitation. Such individuals are so defective that they are unable to protect themselves from common physical dangers such as fire, heights or inedible matter and as such need complete physical care. They hardly use any language at all. The moderately retarded individuals, to a considerable extent, are able to protect themselves from these physical dangers mentioned above but cannot be considered to be of a standard to lead independent lives. They have limited vocabulary which permits communication but they are usually unable to read or write. The mildly retarded are not capable of receiving proper benefit from the instructions given in ordinary schools and therefore have to attend special schools where their handicaps are given due attention. After the appropriate training, they can read or write and do jobs of a simple routine nature within the limits of their mental capacity and can therefore make the necessary social adjustment to maintain themselves independently in the community. The borderline defectives who are also referred to as high grade defectives are sometimes difficult to distinguish from the normals or the non-defectives. This group of individuals can benefit from special classes but while in school they can show undesirable and problematic behaviours and are easily led into

delinquent or other forms of antisocial behaviour.

It is obvious that the first two groups, that is, the severe and moderately retarded, at some time will require institutional care but through the devotion of some parents and relatives, a number of them are retained at home and become a sacred trust, receiving a measure of love and care which no institution can match. The higher grades, in most cases can live in the community with some support either from the family or the social services. They are, however, vulnerable as has already been pointed out and can frequently be tempted to petty crime and prostitution. They do not have the ability to respond to ordinary corrective measures and may therefore be committed to institutions because their families or society are unable to control their behaviour.

(iv) Prevalence

Prevalence refers to the number of cases of a condition identified in a population at a given point in time. Studies on prevalence are initiated for different purposes and hence the actual figures obtained will to some extent depend on the purpose of the particular survey.

Binet and Simon (1907) undertook a survey aimed at saving wasted effort and expense in Paris schools. The

purpose, therefore, was to assess educability of children of school-going age. They reported defective prevalence of 1.9 per cent.

In another study reported by the 'Royal Commission on the Care and Control of the Feebleminded in Britain' (1908), the purpose of the study was to make provisions for the care of the mentally retarded. Out of a population of 32,527,843, 149,628 or 0.46 per cent were found to be mentally defective.

Lewis (1929) in another survey on the prevalence of mental retardation found 8.6 persons per thousand in the general population to be mentally defective with the distribution of the categories severe, moderate and mild in the ratio 1 : 4 : 15. The survey also indicated that prevalence was low between the ages of 0 - 4 years and 20 - 60+ years. Prevalence was highest between the ages of 10 - 14 years.

Lewis explained the low level of prevalence in the early years by saying that in early life mental defectives are very difficult to distinguish except in extreme or severe cases and up to the age of four years not much is expected of the child. On the other hand, during the school years, intellectual deficit begins to show itself with prevalence being highest between the ages of 10 - 14 years when scholastic demands are greatest. The drop in

defcctives at the end of the school period can be attributed to the fact that the rigid standards of scholastic environment no longer apply. Also by choosing suitable employment out of the many which are available one has ample opportunities for adjustment. With advancement in age, the continuous reduction in the prevalence of mental retardation may be attributed to selective mortality favouring the normals.

Estimates of prevalence of mental retardation are also affected by the limits and scope of investigations, the definitions used and the type of measuring instrument employed. In general, the rates found indicate that 1 - 3 per cent of the population are mentally retarded with the prevalence being higher at school-going age than before or after partly because schools emphasize intellectual functioning.

Few attempts have been made to assess the prevalence of mental retardation in different countries and where this has been done, the proportions of children regarded as mentally retarded vary according to the criteria used. Dutch estimates based on eight large cities give a mean rate of 2.6% and French estimates range from 1.5% to 8.6%. Varying estimates have been given in different States of America and in Switzerland. All these estimates are valid only for the time and place at which they are made.

It is however agreed that the number of mildly retarded individuals far exceeds that of more severe cases. English statistics indicate that among every hundred mentally retarded individuals, seventy-five are likely to be mildly retarded, twenty moderately retarded and five severely retarded. This shows that the majority of the retarded are of the mild grade. Although the mildly retarded are more numerous, they are more difficult to detect and often remain unrecognised because they are able to fulfil certain functions that are expected from them especially in a simple rural community where very little emphasis is placed on education and where collective co-operation rather than individual striving and competition is the general rule.

Very little is known about prevalence of mental retardation in Africa. Kenya perhaps is the only black country which has figures on prevalence of retardation. William Robertson (1976) has given an estimate of 400,000 mentally retarded persons in that country.

In Ghana, until 1971, there were no institutions to cater for mentally retarded children. All of them were looked after in their own homes and although there are institutions to cater for such children in the country now, many are still kept at home and are even hidden from public eyes. Due to the large number of cases kept under

these conditions, it is difficult to get accurate statistics on the prevalence of mental retardation in Ghana.

The prevalence of the problem of mental retardation depends, among other things, on the available facilities for its recognition. In a community with highly developed social services, compulsory education and adequate record systems, very few will escape detection while in less highly organised societies the problem can pass unnoticed. In a developing country, for example, where there is very little opportunity for formal schooling and much of the population may be doing unskilled work, few people are found to be mentally retarded.

It has been found that there are differences in the prevalence rates of mental retardation in urban and rural areas with the rural areas having higher rates. In a study conducted in the city of Lucknow by Gupta and Sethi in 1970, prevalence rates of 25.3 per thousand and 18.5 per thousand were found in the rural and urban areas respectively. The fact that prevalence of mental retardation tends to be more in rural areas has been reported from other countries as well.

Aetiology of Mental Retardation

Mental retardation has been found to be caused by both hereditary and environmental factors. However there is confusion sometimes because of the failure to distinguish clearly between pure 'hereditary' characteristics and 'congenital' defect. As a result of this, it is considered simpler to use Lewis' (1933) aetiological classification of 'subcultural' and 'pathological' types. According to Lewis, subcultural defect is inherited but can also be precipitated by unfavourable environmental conditions. The pathological defect is caused by some alien factors of pathological nature which are not found in normal constitution.

From what has been discussed above, the aetiology of mental retardation can be considered under five main categories as indicated below.

i) Syndromes due to chromosomal aberrations like Down's syndrome.

ii) Disorders due to specific dominant genes such as epiloia.

iii) Disorders due to specific recessive genes with examples being phenylketonuria, infantile amaurotic idiocy or Tay-Sachs disease and microcephaly.

iv) Sex-linked disorders.

v) Environmentally determined disorders.

The aetiology of mental retardation is very complex and the little that has been said about it in this section will suffice as an introduction. A sound and detailed theoretical discussion of it has been made elsewhere in this paper.

Parental Attitudes Towards Mental Retardation

The attitudes and emotional reactions of the parents of a handicapped child play an important role in the treatment and rehabilitation of the child. The parents' failure to encourage the maximum growth that is consistent with the child's handicap may contribute to his inability to cope with his environment. Thus, overprotection or rejection are detrimental to the handicapped child's emotional and physical development.

Every culture or society places much emphasis on the production of highly intelligent children and because of this parents become emotionally upset when they happen to produce a mentally defective child. Parents go through a number of crises which are reflected in the attitudes they adopt in trying to adjust themselves to their misfortune.

The kind of attitude shown by the parents of a mentally retarded child is partly determined by the reaction of their neighbours and relations. Parents are worried about

what the society will say about them and their retarded child and this, in fact, forms the basis of their fears, hesitations and actions.

The few studies that have been done on the attitude of parents towards mental retardation have been discussed in detail in one section of this paper. Since very little is known about this important area, an attempt has been made in the present paper to study the parental attitudes towards mental retardation so that more knowledge can be provided on this aspect.

Social and Educational Provision for the Mentally Retarded in Ghana.

In Ghana, much is being done for the mentally retarded in terms of institutionalisation, socialisation and rehabilitation. Attention is also being paid to both psychological and medical problems. One organisation which is deeply concerned about the welfare of mentally retarded children in Ghana is "The Society of Friends of Mentally Retarded Children" which was formed in March, 1968. Shortly after the Society was founded, counselling services were organised at the Young Men's Christian Association (YMCA). They dealt mainly with social problems like threatened break-up of the family as a result of the

presence of a mentally retarded child. The Society also saw to it that any psychiatric difficulties or problems associated with the retardation were managed by a psychiatrist at the Accra Mental Hospital, that any recurrent physical illness was treated in the same hospital and that psychiatric illness of a parent precipitated by disappointment, marital discord or management problems associated with the retardation was also appropriately handled.

The Society started a school for mentally retarded children at the Accra Community Centre in 1968 with sixteen children. The school moved to its present premises at Achimota in 1971. The school at its inception catered for all the three grades of retarded children but with the take-over by the Ministry of Education in 1974, the school was officially designated 'The Home and School for Mentally Retarded Children' and it now caters for only the mild and moderately retarded children. The Home and School presently has a total enrolment of 106 retarded children with 58 boarders and 48 day pupils. The severely retarded children have been hospitalised in the Accra Psychiatric Hospital since 1974 and are still under the care of the Ministry of Health. The Society continues to play an active role in the running of the Home and School at Achimota.

A second school which caters for the mildly retarded children is the New Horizon School in Accra. This is a private International Day School which was started in 1971 by a group of mothers of mentally retarded children and some philanthropic friends. The New Horizon School was registered with the Ministry of Education in 1973 and was incorporated under the Laws of Ghana as 'a voluntary, non-profit making, non-racial and non-sectarian organisation with the broad aim of helping educable and trainable mentally retarded children and their families.'

Concern for retarded children is not only centred in Accra. The Society of Friends of Mentally Retarded Children hopes to penetrate other regions of the country, with the aim of establishing at least a branch in each region. As a step in this direction, branches have been opened in Kumasi and Sekondi.

It is believed that those who benefit from these services and might continue to benefit from them are the severely retarded children because firstly, physical symptoms such as brain damage and epilepsy are associated with the defect and by going in for ordinary medical treatment, these patients are referred to appropriate specialists for help. Secondly, such severely retarded children come to the attention of their care-takers because they are

incapable of an independent existence. Thus they become a burden at home and are therefore referred to the appropriate institutions for help. The mentally retarded children who are capable of an independent existence and who show no physical symptoms, that is, the mildly retarded, may go unattended. Since 75 - 90 per cent of the mentally retarded in Ghana are only mildly retarded, the majority of retarded children could be left uncared for. (Amarquaye, 1977).

Scope of Present Study

The present study covers the cause or aetiology of mental retardation as well as the parental attitudes towards mental retardation in Ghana. What people think is the cause of mental retardation affects their attitude towards it. An attempt has therefore been made in this study to find out the actual causes, and the attitude of parents towards mental retardation. It is also important to know the cause of mental retardation in Ghana so that measures can be taken to prevent it as it is being done in other countries.

AIMS AND OBJECTIVES OF STUDY

The aims of the present study are:

1. to investigate the aetiology or causes of mental retardation in Ghana, using questionnaires and case notes, and
2. to investigate the attitudes of parents of mentally retarded children towards mental retardation, using the sentence completion method.

Knowledge of the aetiology or the cause of mental retardation may help in the prevention of its occurrence in families who already have them and in the community at large and thus help to lower its incidence in the general population. Prevention is the ultimate goal of all efforts to combat mental retardation and therefore identification of aetiological factors in mental retardation is essential to a sound programme of prevention.

Primary prevention which relates to measures taken to prevent the initial occurrence of the handicap includes a stimulating environment, adequate medical care during the pre-natal and peri-natal periods, genetic counselling, rubella vaccination, management and intensive care of babies with low birth weight and prevention of birth injury.

Secondary prevention relates to early discovery, early diagnosis and, early and continuous care, and thus, methods of secondary prevention aim at lessening the consequences of disability to enable the affected children to make the most out of their limited abilities.

The investigator in this present study hopes that identification of the major causes of mental retardation in Ghana would help in the primary prevention of mental retardation in the country.

The second aim is to investigate the attitudes of parents of mentally retarded children towards mental retardation, using the sentence completion method.

The presence of a mentally retarded child or a handicapped child in general imposes strains on the parent-child relationships and to plan for adequate treatment and rehabilitation of the affected child, the nature and implications of these relationships need to be known. The attitudes of the parents determine the kind of relationship that exists between the child and his parents and therefore to understand and help the handicapped child, one needs to understand fully the attitudes and emotional reactions of his parents. It is therefore hoped that information derived from the present study on attitudes of parents of

mentally retarded children towards mental retardation would open the professional worker's eye to a wide range of areas in which he can help such parents in the form of counselling and education. Through counselling, desirable attitudes can be encouraged and undesirable or negative ones modified, changed or extinguished entirely. For example, it is known that the initial reaction of parents when they get to know that their child is mentally retarded is a strong emoticnal one and as such subsequent counselling sessions are needed in order to help the parents stabilise their reactions and help them to accept the child's retardation.

It is hoped that the information obtained from the study of causes of, and parental attitude towards mental retardation would form a basis for future systematic research in the area of mental retardation in Ghana on which there is little information at present.

CHAPTER I

SOME AETIOLOGICAL FACTORS IN MENTAL RETARDATION

Section A: Literature Review

Mentally retarded individuals do not constitute one homogeneous class. There are variations which imply that there are variations in causation. Inquiry into the aetiological factors responsible for mental retardation results in the discovery of a wide variety of causal agencies, which singly or in various combinations produce the observed deficiencies. The aetiology of mental retardation is a complex subject, however, an attempt will be made to give a sound theoretical discussion of it in this chapter.

As every living organism is the product of both hereditary and environmental influences, the problem of finding a cause for any given peculiarity resolves itself into an examination of both types of agency. The variation of intelligence within groups is generally agreed to be largely a function of genetic and environmental components but the relative contributions of each have raised a lot of arguments in various circles. Jensen's (1969) article which was published in the Havard Educational Review, was a lengthy exposition of the heritability of intelligence and one of his major conclusions was that heredity has a far greater role to play than environment. Gregg and Sanday (1975) define heritability as a measure of the extent to which the variability in a trait is due to genetic factors relative to

environmental factors and not a measure of the magnitude of the genetic contribution to a given trait (as Jensen makes us to believe). For example, in a uniform environment, the heritability estimate will be high. Correspondingly, in a population which is genetically uniform, the environmental estimate will be high. Neither of these cases provides information on the magnitude of the genetic or the environmental contribution to the development of the trait itself.

These two terms - heredity and environment - cause so much confusion. With hereditary cases, confusion sometimes arises due to the failure to distinguish clearly between pure 'hereditary' characteristics, that is, characteristics transmitted through the germ cells and 'congenital' defect which refers to defect present at birth or defect due to the cellular environmental causes before birth, which did not result from any germ cell transmission. Because of the confusion over what defect to put under heredity and environment, Lewis' (1933) aetiological classification of mental retardation which is based on extensive field work and has a sound theoretical basis will be adopted in this chapter.

Lewis suggested the division of the mentally retarded into two main types, namely, the 'pathological type' and the 'subcultural type'. Lewis' subcultural category, unlike the pathological, includes defective cases in which no alien or pathological factors are identified. Rather the defect or

deficiency is only an extreme case of the normal variation of mental endowments.

According to Lewis, subcultural defect is inherited but he does not deny the fact that unfavourable environmental conditions may precipitate the defect. Studies relating to the aetiological factors in subcultural defect are so numerous, vary so much in method and validity and have sometimes produced such apparently contradictory results that it is difficult to draw any satisfactory conclusion. Certain facts, however, seem to be fairly well established. The argument for the hereditary determination of subcultural defect rests largely on the evidence of family histories. It has been found that subcultural mental defectives have a higher proportion of dull and deficient parents, siblings and other relatives than do members of the normal population and that the closer the blood relationship, the closer the similarity in intellectual and social status. These remarks apply to individuals who are brought up in poor homes or in institutions where the environment may be assumed to be below normal and in some cases, markedly adverse. Moreover, there is good evidence that early adverse environments and experiences may have a disturbing effect on intellectual, physical, emotional and social development.

It seems likely that the basic resources of the central nervous system, hereditarily determined, allow a

range of possibilities of development, depending upon the individual's interaction with his environment, which in turn may modify the quality of the nervous system by what is broadly termed 'learning'. It also seems likely that subcultural defectives function near the lower end of their potential while they are exposed to adverse environments but that if removed from these adverse environments sufficiently early before any psychological damage becomes irreversible, a change can occur. This is clearly important in the aetiology and prognosis of subcultural defect and has some implication for members of the normal population.

Where environments are moderately uniform, it is not possible to measure the full effect of the environment. Only where there are marked differences between the worst and best conditions within a given culture, and secondly, when the children are transferred from one environment to the other can environmental effects reveal themselves.

In the 'pathological' group, aetiological factors involve some alien factors of pathological nature which under normal circumstances would not be found in normal constitution.

In view of what has been discussed, aetiology of mental retardation can be considered under the following categories.

i. Syndromes due to chromosomal aberrations.

ii. Disorders due to specific dominant genes.

iii. Disorders due to specific recessive genes.

iv. Sex-linked disorders.

v. Environmentally determined disorders.

Syndromes Due To Chromosomal Aberrations

An example of a mental defect due to chromosomal aberration is Down's syndrome or 'trisomy 21'. Down's syndrome is known to be caused by the presence of an extra chromosome 21 through the mechanism of non-disjunction. This results in three chromosomes instead of two and hence its other name 'trisomy 21'.

It is well established that the probability of the occurrence of this chromosomal aberration rises markedly with the age of the mother. Mikkelsen and Stene (1970) have shown the risk of Down's syndrome rising from one in 1,500 in mothers under thirty years to one in 65 in mothers above forty-five. After thirty years of age, the likelihood approximately doubles for each successive five year period. Higher estimates have been found by Lindsjö (1974) in Sweden. He found an overall incidence of one in 755 and one in 1,133 for ages twenty-five to twenty-nine. He also found an incidence of one in 687 for ages thirty to thirty-four, one in 277 for thirty-five to thirty-nine, one in 67 for forty to forty-four and one in 16 for women over forty-five. The incidence of Down's syndrome thus increases sharply after the age of about

thirty-five. Various explanations have been advanced to account for the relationship between maternal age and the incidence of Down's syndrome. Some believe that a pathological condition of the uterine mucosa immediately preceding pregnancy is responsible (Engler, 1952), others that uterine exhaustion or degeneration of the ovarian corpus luteum is the main factor involved. One factor which has recently been identified as predisposing to maternal nondisjunction in the formation of the egg is autoimmunity (Fialkow, 1967).

Analysis of familial instances reveals that transmission through the mother predominates over that through the father. The most striking examples of maternal transmission are those in which the mother herself has the syndrome. Further evidence of genetical causation of Down's syndrome has come from the study of twins. Several pairs of uniovular twins have been recorded in which both twins had Down's syndrome.

Mongols or individuals with Down's syndrome constitute about five per cent of institutionalised defectives and because of their obvious stigmata have been recognised as a distinct group for years. The physical characteristics of Down's syndrome are dwarfed stature, small head and dysplastic face. The head is notable for its small dimensions and the face too is notable for its flatness and hypoplastic nature with a short and squat nose and small rounded ears which

project from the side of the head. The eyes are small, almond shaped, slanting and widely spaced with narrow palpebral fissures and epicanthic folds. Cataract, strabismus, myopia and speckled iris are common and conjunctivitis and blepharitis often develop. The mouth is notable for a protruding chin and lower lip, thickened buccal mucosa and a fissured tongue. Unusual susceptibility of mucous membranes to infection is indicated by the prevalence of nasal and respiratory catarrh. The teeth may be irregular and their development retarded. Speech defects are commonly present. The limbs are stumpy like the trunk. The skin tends to be rough, dry and scaly and hair is straight and sparse. The hands and feet are broad and clumsy with webbed fingers and toes. The little finger tends to be very short and curves inward. Of particular interest are the configurations of the flexion creases and of the dermal ridges of the palms and soles. A single transverse crease often runs across the palm of the hand, two creases on the little finger may be replaced by only one and a marked cleft occurs between the first and second toes. The dermal ridges have a more transverse arrangement than is usual in normal hands. An ulnar loop is the characteristic finger-print pattern. On the neurological side, the absence of signs of organic disease is remarkable.

The diagnosis of Down's syndrome may sometimes be difficult because any of the above mentioned physical signs may exist in other types of amentia or even in normal members of the population. It is therefore somewhat arbitrary how many of the characteristics must coexist in the patient in order to be described as having Down's syndrome and further, it is occasionally difficult to decide whether in fact a particular characteristic is sufficiently pronounced to be regarded as a pathognomonic sign. Several authorities hold that three or four characteristics such as fissured tongue, epicanthic folds, transverse palmar lines, flattened occiput, when found together in one patient may be taken as crucial indicators.

Down's syndrome children do not usually appear very abnormal at first in mental (Sensorimotor) development, although they may appear 'floppy' and the physical stigmata are recognizable at birth. The typical developmental course of such children exhibits a relative decline during the first year or two of life, followed by a slower decline in developmental quotient to three or four years of age and then a relative levelling off (Cowie, 1970; Dicks-Mireaux, 1972; Lodge & Kleinfeld, 1973). The modal IQs of school-age Down's syndrome children living at home are in the moderately retarded range (40 - 54), with a few in the mildly retarded range and a few are severely retarded. Of children living

in an institution, the majority tend to have IQs below 35 (Lodge & Klenfeld, 1973). Apart from overall deficits in intellectual competence of Down's syndrome children there is evidence of limitations in higher level integrative abilities, such as concept formation, abstraction and expressive language (Cornwell, 1974). Their capacities for imitation and their memories for people, for music and for complex situations may be found to range far beyond their other abilities.

Many Down's syndrome children have cheerful and friendly personalities and are more easily managed than other retarded children, although they are also reputed to be capable of unusual stubbornness. Benda (1946) described Down's syndrome children as follows: "Mongoloid children, if treated well, are lovable little creatures full of affection and tenderness .... They come up and put their arms around the stranger as confidently as a puppy jumping up on a visitor, and though not understanding a word said to them, good naturedly answer yes to any question, hoping that will please." Reviewing the empirical evidence bearing on this stereotype, Belmont (1971) concluded that as a group, Down's syndrome individuals do show fewer instances of severe disturbance and that they "seem to find themselves in a somewhat more pleasant or promising condition than do other retarded children."

Disorders Due to Specific Dominant Genes

All the diseases concerned with dominant genes are rare. This is a necessary biological consequence of their severity which exposes them to the action of natural selection. This phenomenon tends to eliminate diseases caused by dominant genes from the population efficiently but it has far less influence on diseases caused by recessive genes. The result is that dominant traits connected with mental retardation are fewer in number and less regular in manifestation than recessive traits.

In human genetics a dominant defect is an abnormality which depends on the presence of a gene in heterozygous form. As pointed out by Penrose, dominant defects in man have characteristic pedigrees but in the standard case where each heterozygote carries the gene there is a sharp distinction between affected and unaffected persons in the same family. Every affected person has an affected parent and approximately one half of the children are affected in every sibship when there is an affected parent.

In practice these conditions are rarely satisfied in every detail in each case but certain clinical types conform sufficiently well for there to be considerable evidence that a single dominant gene is the main causal factor. A Medical Research Council Report (1956) indicates that conditions of

defect due to dominant genes "form four per cent of all surviving cases of severe mental defect."

An example of a defect due to a dominant gene is epiloia. This condition was first recognised by Bourneville (1880) and the name epiloia was suggested by Sherlock (1911) to cover the whole variable pathological complex. Some call this syndrome 'adenoma sebaceum' and others refer to it as tuberose sclerosis, all with reference to its constituent factors. The most noticeable characteristic of this syndrome is the butterfly shaped collection of reddish yellow, circumscribed, solid elevations usually on the cheeks alongside the nose called adenoma sebaceum. This is caused by an overgrowth of sebaceous glands in a vascular matrix. It appears in early childhood and develops slowly and according to Wallin (1949) this butterfly rash constitutes the best means of diagnosing the condition. Epiloia is also characterised by tuberose sclerosis of the brain. Multiple nodules are found in the cortex and other parts of the brain substance. The consistency of these tumours has been likened to cartilage, rubber or potato, hence the name tuberose. Histologically, they are shown to be mainly gliomata containing large multi-nucleated cells and undifferentiated nerve elements. Other rare types of tumour are found in different parts of the body. These include striated muscle tumour (rhabdomyoma) of the heart and a mixed kidney tumour also containing striated muscle cells.

The mental symptoms of the condition vary from profound retardation to psychosis. Epilepsy is almost always present in severe cases. There may be long intervals between fits but sometimes they are of extremely frequent occurrence.

The disease shows a perplexing variety of manifestations in different patients and cases with almost every combination of signs have been found. Faber's (1951) autopsy records of 27 cases of rhabdomyoma of the heart indicates an association of the disease with tuberose sclerosis in 18 cases, kidney tumours in 14 cases and sebaceous adenoma in at least four cases. The presence of two or more of these rare conditions in the same individual can hardly be attributed to chance.

Disorders Due to Specific Recessive Genes

Recessive genes can also cause mental retardation. This occurs in an individual possessing the same pathological gene in duplicate with one gene inherited from each parent. In rare diseases with this type of causation, the homozygous recessive defective has normal parents who are both heterozygous for the gene in question. Rare recessively determined defects are usually more severe and their manifestations vary less from patient to patient than dominant abnormalities. Affected and unaffected persons in the same family can be sharply distinguished and it has also been found that such affected individuals are born of cosanguineous parents.

Diseases roughly conforming to these criteria include phenylketonuria (PKU), amaurotic idiocy or Tay-Sach s disease and microcephaly.

An essential feature of phenylketonuria is the urinary excretion of about one gram daily of phenylpyruvic acid which gives the characteristic transient olive-green colour with 10 per cent ferric chloride solution. The excretion is first observable in early infancy and is usually continuous throughout life. Occasional cases showing intermittent excretion have been recorded.

Phenylketonuria is due to a recessive gene defect leading to the absence of an enzyme which normally converts phenylalanine to tyrosine. Phenylketonuria could be detected in the homozygote by biochemical examination of the blood and urine and in the heterozygote, that is, the parents, by the phenylalanine tolerance test. The condition when detected early in life could be alleviated by administering a low phenylalanine diet and by trying to bring down the levels of serum phenylalanine.

The clinical picture of phenylketonuria is peculiar in many ways. Sixty per cent of the cases have been found to be of the severe grade and thirty per cent are moderately retarded. The grades of the remaining ten percent range from mild subnormality to average. People with phenylketonuria are

distinguishable by their unpleasant behaviour from others of the same mental level. According to Wright and Tarjan (1957), "none could be described as friendly, placid or happy". Apart from completely helpless, bedridden cases, phenylketonuric persons are restless, jerky and fearful. Their behaviour ranges from that of the shy, anxious and restless moderately retarded patient who may be subject to night terrors, to the destructive and noisy psychotic episodes sometimes seen in the more severely affected. Hyperactivity, irritability and uncontrollable temper tantrums are the reasons usually given for admitting these patients to institutions. Some of the patients have epileptiform seizures in infancy and childhood. Phenylketonuria has been ascertained more frequently in females than in males probably because the females are healthier and live longer than the males.

Among the distinctive physical features in severe cases are dwarfed stature, fair hair colour, reduced head size and widely spaced incisor teeth which make it possible occasionally for the skilled observer to make a correct diagnosis before a urine test has been performed. On the neurological side, the usual feature is accentuation of all reflexes, both superficial and deep, in a manner reminiscent of the brisk responses obtained in hyperthyroidism. Ordinarily, there is no paralysis and no increase in muscular tone. No characteristic pathological changes have been observed at autopsy and

in summarizing reports on 24 examinations, Crome and Pare (1960) concluded that diminished brain size and fibrous gliosis of white matter were the main abnormalities. On the whole, the physical health of these patients is surprisingly good.

Infantile amaurotic idiocy or Tay-Sachs disease is a condition in which there is recessively inherited disturbance of lipid metabolism. Clinically, the disease usually begins insidiously by the age of six months with listlessness, weakness, feeding difficulty, hypotonia, spasticity, a characteristic hypersensitivity to sounds (startle reaction) and visual difficulties due to the depositions of lipid material in the light sensitive macula of the eye. In the course of a year or so, the condition advances to a state of profound retardation, with paralysis, complete optic nerve atrophy and blindness (amaurosis). If the child learns to sit, he loses that ability; by two years of age, he is unable to initiate any spontaneous motor activity. The cerebral pathology consists of a degeneration first of the nerve cells of the pyramidal system and later of all the other nerve elements. This appears to be due to a biochemical deficiency which prevents the body from utilizing certain essential lipid constituents of the brain cells. Death usually occurs by the age of three years or so from intercurrent infections.

Microcephaly is a descriptive term based on a relatively arbitrary criterion of head size. Any cranium noticeably below the average size, appropriate to the age and sex of the individual can be called microcephalic.

One clinical tradition, with no specification of age, confines the description to heads measuring less than 32.5 cm. in circumference. According to the phrenologist, F.J. Gall, this measurement represents a minimum below which idiocy or subnormality is inevitable.

Abnormally small heads may be associated with a variety of aetiological factors, an example being exposure of the mother to excessive dosages of x-ray during pregnancy or rubella in the first months of pregnancy. Smallness of the head is common in many types of mental defect such as Down's syndrome and phenylketonuria but according to Yannet (1952) and Penrose (1954) there is a separate clinical condition which is due to a single recessive gene. Abnormally small heads can be separated from the normal by actual measurement if suitable norms are provided but the shape of the head is also important. A class of cases can be clinically distinguished from the rest of defectives by the fact that the head is diminished greatly in the vertical measurement and in width but is less abnormal in length. This results in a low cephalic index (breadth/length). By limiting the

term 'microcephaly' to this class, Down's syndrome persons, acrocephalics and other defectives who may have small heads of quite different shapes can be excluded. This primary form of microcephaly which occurs without environmental cause is transmitted by a recessive gene.

According to Tredgold and Soddy (1956), the majority of microcephalics are moderately retarded though severe and mild types are sometimes found. Sensory defects are usually absent and some cases tend to be extremely active and physically fairly healthy. Although they are reputed to be querulous and bad tempered, they are among the happiest and most harmless of patients if well treated.

Sex-linked Disorders

Some pedigrees of rare defects show a pattern traditionally interpreted as resulting from a gene carried on the X-chromosome. All such sex-linked genes must have arisen originally by mutation and such conditions as moderate retardation associated with myopathy have occasionally been found as sex-linked types and so also is the syndrome characterised by absence of sweat glands accompanied by other skin abnormalities. The number of persons affected are exceedingly small and a Medical Research Council Report (1956) estimates that these 'can hardly exceed half of one per cent of severe cases.'

Environmentally Determined Disorders

To a certain extent every disease is the product of inherited susceptibilities and environmental agencies. The main differences between these two types of influences are the points of time in the life cycle at which they act. Any event that affects development after fertilization of the ovum can be classed as environmental. An event might occur earlier as in the case of maternal syphilis or abnormal antibody formation but since its influence is exerted on the foetus only after fertilization it can be considered as part of 'foetal environment'.

Environmental influences which have adverse effects on the foetus are very numerous and many of them are liable to cause damage to the central nervous system resulting in defective mental development of the pathological type if the infant survives long enough for this to be seen. Birth trauma and post-natal accidents or diseases are also important environmental causes of mental retardation.

The first important group of environmental influences are the prenatal influences which act adversely on the foetus. These include maternal intercurrent infections, maternal syphilis and x-rays.

It has been firmly established that rubella or German measles in the early months of pregnancy can affect the

foetus and give rise to various abnormalities like deafness, blindness due to cataract, heart malformation, microcephaly and mental retardation. Most reported cases of mental defect due to maternal rubella have been severe and therefore relatively easy to detect in early childhood. In 791 moderately and severely retarded children, Kirman (1955) found seven children whose defect was thought to be due to maternal rubella. In an Australian survey, Pitt (1961) found one subnormal case among 61 children born to mothers who had rubella in the first trimester of pregnancy. These children were aged one to four years at the time of investigation. Chess, Korn and Fernandez (1971) found mild to profound mental retardation in one-fourth of a group of 153 affected children studied prospectively, and borderline retardation in another one-fourth. It may well be that minor degrees of intellectual retardation will be detected more frequently in long-term follow-up enquiries.

Congenital syphilis is a classical example of intrauterine infectious disease associated with mental defect. The foetus usually becomes infected through the placental circulation of a syphilitic mother. If the infection of the foetus occurs early, miscarriage results. When it occurs later on in pregnancy the child is born with signs of congenital syphilis. Although the incidence of syphilitic

infection has been reduced by medical advances in treatment of the disease in the parents and by compulsory blood tests of pregnant women seen in prenatal clinics, new cases do occur.

The development of the fertilized ovum in its very early stages can also be interferred with by radiation. It is well known that x-rays and similar irradiation are harmful to human tissues and cause damage to the brain. Cases have been reported in which very large therapeutic doses of x-rays have been given in the second month of pregnancy with the aim of producing an abortion. There was a direct effect on the foetus and miscarriage invariably resulted. Murphy (1929) however, found evidence that therapeutic maternal irradiation during pregnancy might not always produce abortion but could still affect the growing embryo. In a series quoted by Penrose (1969) of 74 recorded cases, there were only 36 normal children born, 23 moderately retarded with heads of abnormally small size, and 15 were otherwise malformed or diseased. Penrose (1969) points out however that this rarely occurs since the exposure of x-ray necessary to produce such abnormalities must be usually large, about 100 times that used for ordinary x-ray photography.

Radiation hazards to the foetus from atomic explosions are also known. In studies of the effects of the atomic bomb explosions in Hiroshima and Nagasaki, high frequencies of mental retardation and/or microcephaly were found in those individuals whose mothers had been within 1,200 to 1,500 metres of the atomic bomb blast and who had been between seven to fifteen weeks gestation (Wood et al. 1967).

Malnutrition especially protein deficiency during pregnancy also affects brain development and children born of mothers with poor nutrition may get damaged brain.

Birth injury as one of the natal influences has been regarded as of considerable importance in the aetiology of mental retardation since Little drew attention to it as a causal agency in cerebral palsy in 1862. Kirman (1952) states that birth injury accounts for about five per cent of all cases labelled as mental defect. A number of factors, singly or in combination have been considered relevant in this case. Prolonged and difficult labour may cause mechanical injury to the body. The injury may be a rupture of the cerebral blood vessels with resultant haemorrhages or anoxia which is particularly damaging to the nervous system. During prolonged labour the supply of oxygen to the brain may be reduced to a low level. Wallin (1949) in particular thinks that lack of oxygen or asphyxia may play a very large part in birth injury whether arising [illegible]esthetics, twisting of the cord with

consequent impairment of foetal blood supply, injury to the medulla, respiratory weakness due to prematurity and so on.

It is becoming increasingly evident that prematurity is likely to be an important factor in mental retardation, possibly because the fragile, immature brain is unable to withstand certain minor adverse perinatal insults which are well tolerated by the mature brain. Of the many things that can go wrong with premature babies is that they become jaundiced. If adults are jaundiced, the brain is protected from any harmful effect from the bile in the blood because there is an enzyme in the liver which makes it harmless. This enzyme is not, however, developed in babies born prematurely at seven months of pregnancy so if they become jaundiced, the brain can be seriously damaged. Forceps delivery too is sometimes implicated in brain damage.

While the effects of injury are not necessarily apparent at birth or may not be considered cogent until developmental anomalies occur some years later, nevertheless, such factors as cyanosis due to asphyxia, limpness and initial failure to breathe, abnormal high-pitched screaming, stupor, twitching and convulsions followed in some cases by paralysis are all significant signs. Here, too, the mental and physical effects of birth injury vary markedly. In order to prove

conclusively that a child has become mentally defective as a result of injury at birth, one needs evidence of its mental normality before birth and this obviously cannot be obtained. There is, nevertheless, a good deal of indirect evidence that birth injury or birth trauma is the decisive factor in a limited number of mentally defective cases. The points in favour of this diagnosis are asymmetrical neurological signs which can be interpreted as due to cerebral injury, coupled with a history of abnormal or protracted birth. Asymmetrical spastic lesions can also be due to other causes but symmetrical lesions are rarely due to mechanical injury. Normal intelligence in the parents and in all other siblings are also points in favour of the diagnosis of the traumatic origin of mental defect in a patient.

Postnatal factors which could result in mental retardation are varied. Traumas in childhood, postnatal diseases like meningitis, measles, epilepsy and unfavourable early experiences can all cause mental retardation. In populations of mentally retarded patients, including all grades of retardation and all age ranges, the role of postnatal injury as a cause of defect is greater. Intellectual impairment in postnatal traumatic cases is more often mild than gross and it may be closely related to behaviour disorder and personality

change. Manifestations can include inattention, lack of concentration and indifference with consequent poor results at school and at work or on intelligence testing. Newell (1937) found that five out of twenty patients with head injury attending child guidance clinics showed impaired mental efficiency as indicated by poor school work.

A considerable number of postnatal diseases have from time to time been regarded as causes of mental retardation. As many of these diseases occur in early infancy, there is often great difficulty in attributing the defect conclusively to such a cause because of the uncertainty about the mental level before the illness. The possibility that some coincidentally present cause of mental retardation may not manifest itself clinically till some time after birth must also be borne in mind. The position is further complicated by the fact that the patient is frequently not brought to the notice of an expert before the acute illness has long been over. It is then extremely difficult to trace the exact history of mental deterioration and to relate it precisely to the disease to which it has been attributed. Until records of routine mental tests done before and at intervals after such illnesses are obtained, the precise effects on intellect will remain doubtful. Nevertheless, there is a good deal of evidence implicating various postnatal diseases in the causation of mental retardation.

Inflammation of the brain (encephalitis) or its lining membrane (meningitis) due to infections by bacteria, viruses or tuberculosis organisms account for some cases of mental retardation attributable to postnatal physical causes, but mainly in children infected during infancy. Encephalitis is caused by viruses including measles, chickenpox, whooping cough and influenza and occasionally the inflammation results in lesions which obstruct circulation of cerebrospinal fluid, causing hydrocephalus. Levy and Perry (1948) thought that as many as 2% of defective patients admitted to a Washington State Institution appeared to owe their intellectual retardation to whooping cough. Mental deterioration is probably more frequent following some specific infectious fevers than available data suggest because it may only become apparent some time after the acute illness. As relatively few cases are followed up, the defect or its link with the original illness may be missed.

In addition to viral and bacterial infections, postnatal involvement of the nervous system by ricketsia, protozoa, fungi and parasitic worms may produce cerebral damage and hence mental retardation in survivors. Such cases are very rarely established in mental retardation practice and their contribution to the sum total of mental retardation is presumably extremely small.

With starvation a horrifying reality in much of the less developed world, compelling questions are being asked about the effects of various degrees and kinds of poor nutrition during the developmental years. Of all the factors contributing to mental retardation, malnutrition and hunger are the most politically charged.

Malnutrition seldom appears in isolation. Social status, educational level, incidence of infections and other diseases, and various prenatal and perinatal hazards are compounded in human populations and deter efforts to assess the impact of poor nutrition on development. Severe protein-calorie under-nutrition can cause infantile marasmus (wasting) and 'kwashiorkor.' The term 'kwashiorkor' denotes a syndrome of dry skin and rash, potbelly and oedema, weakness and irritability and digestive disturbances. Kwashiorkor is found in children who are not weaned until the second or third year of life and are therefore deprived of sufficient protein. The affected children are extremely vulnerable to infection, with a vicious cycle of chronic diarrhoea, metabolic demands, decreased food intake and poor absorption, further infection, and inevitable deterioration.

Lead poisoning is also sometimes a cause of mental retardation and instances are reported from time to time. Gibb and

MacMahon (1955) have described the case of a young child who showed a marked mental deterioration. This boy was found at the age of seven and half years to have absorbed lead over a long period, having acquired a taste for it four years earlier when he was given a set of very old lead soldiers. Subsequently he ate lead paint scratched from walls. The authors point out that although the grave consequences of lead poisoning in terms of mortality, paralysis, paresis and optic atrophy are widely recognised, the disastrous effects on the progress of mental development are underestimated. It should be noted that mental deficiency resulting from lead poisoning is extremely rare and is mentioned here as an example of an impairment arising from ingestion of a highly toxic substance. It is a matter of speculation how many other such substances may be responsible for cases of mental retardation.

Unfavourable early experiences are also among the post-natal factors which can result in mental retardation. Deprivation of stimulation can have harmful effects on the young organism and some theorists have even developed a model which explains mental retardation primarily as "a function of the deficits in attention, activity, language, and motivation which are known to follow early human deprivation" (Yarrow, 1980).

Skeels and Dye (1939) have shown that early experiences such as maternal deprivation have adverse effects on intellectual development. Maternal deprivation here is defined as the absence of an emotionally satisfying relationship between a child and its primary caretaker who could be either the mother or mother substitute.

Skeel's and Dye's study was conducted with two retarded children under 18 months old who were resident in a state orphanage. There were no indications of organic defects and IQ results on the Kuhman-Binet test for these children were 46 and 35. They were transferred to a school for the mentally retarded where they were placed in a ward of older females aged between 18 and 50 years. The two children were re-examined on the same test six months later and their new IQs were 77 and 88 respectively. A year later they had IQs of 100 and 88 and at three and half years they scored 95 and 93 respectively.

Skeels and Dye explain the results by saying that the ward attendants took a particular interest in these two babies, the only pre-school children in their care. They were taken out often and given play materials. The older inmates in the ward also became attached to the babies and played with them a lot. One striking thing was that similar children who were left at the orphanage made no gains in mental growth probably because of the minimum amount of adult

care. Thus, the stimulating environment that was created for the two babies that were taken from the orphanage accounted for the intellectual growth. A replication of the study under more controlled conditions using 13 children aged between seven and thirty months with IQ ranging from 35 to 89 yielded similar results.

In another study by Bühler (1936), two groups of two-year-old children living in the same institution were segregated from each other and subjected to two divergent types of treatment. One group was given very little tenderness although adequately cared for in every other respect. In the older group, a nurse was assigned to each child and there was no lack of tenderness and affection. At the end of half a year the first group which lacked affection was mentally and physically retarded in comparison with the second group.

Another investigation on the effect of environment on intellectual development was done by Freeman, Holzinger and Mitchell in 1928. They studied the effects of environment upon the intellectual level of 401 children who were not brought up in their own homes. The children were given intelligence tests before being put in their foster homes and also at intervals whilst being kept in the foster homes. The new environment, from the point of view of educational opportunity as well as social training, was on the average an

improvement upon the original home environment, though their foster parents varied in intellectual and social level. There was a significant resemblance between the mental level and behaviour of the foster children and their foster parents after being in the foster home for some time. The longer the period of adoption, the more marked was the change. With a correlation of 0.48 between intelligence and foster home rating, these investigators concluded that improvement in the environment increased intelligence. Burks (1928) replicated the above study and obtained similar results, asserting that "seventeen per cent of the variances of IQ was contributed by home environment and that an exceptionally good environment could raise the IQ rating of intelligence more than 20 points" (Penrose 1969).

It has been recognised that children's IQs tend to vary with the status of their families. Many investigators have found that children's scores on conventional intelligence tests are substantially correlated with the father's occupation, the parent's education, and family income (Matarazo, 1972; Roberts & Engel, 1974; Willerman, 1972).

The results of a study on IQ levels of children and the occupation and education of their parents indicated that children of literate parents have higher IQs than those of illiterate parents. Preda and Mates (1939) found a mean IQ of

115 for children of parents with academic training, a mean of 105 for children whose parents were engaged in clerical work and 91 for those whose parents were unskilled. Penrose (1969) studied the distribution of defective children at the Royal Eastern Countries' Institution in Colchester according to mental grade and occupation of the father. The summarised data indicated that out of a total of 653 severe cases of mental defect, approximately 25.3% of them had professional or clerical parents, 41.2% of the patients had parents engaged in unskilled labour and the parental occupations of 5% of the patients were unknown. Penrose also found that out of a total of 627 higher grade defectives, that is, mild and borderline cases studied, approximately 12.1% of the patients had professional or clerical parents, 52.6% had parents engaged in unskilled labour and the parental occupations of 9.2% of the patients were not known.

It can be seen from the above that professionals contribute much less to the higher grade defective class and that the unskilled labourers and others of unascertained occupations contribute greatly to the number of children in this class. This is so because whilst severe cases are more often than not associated with biological causes, mild cases are associated with social factors. It is sometimes said that improving the socio-economic environment could alleviate mental retardation

The reports of the Scottish Council for Research in Education, 1949, which is cited in the proceedings of the Royal Society of Medicine indicated that there is an adverse relationship between family size and intelligence due to the effect of reduced opportunity in a large family. Burt (1946) found a correlation of 0.35 between backwardness and size of family. Further investigations have been done by Clausen and Clausen (1973), and Davie and others (1972), and it is now well established that children from larger families are at a disadvantage in intellectual development. It has also been found that within such large families, birth rank order has an effect on intelligence test performance with the earlier born children putting up better performance. This may be explained by the fact that the earlier born children can have more parental attention and can be better catered for.

To summarise what has been discussed in this chapter, mental retardation can be classified under two main headings according to aetiology, these being Lewis' subcultural and pathological clasges. The majority of the subcultural group must be regarded as biologically normal variants and their defects are assumed to be due to a combination of poor heredity and adverse environmental or cultural backgrounds. Heredity,

here, is taken to be a complex of multiple, additive genes, determining the limits of potential abilities. These must be seen as a product of the reciprocal interaction of the constitution with the environment.

Pathological defect comprises a considerable variety of clinical conditions arising from numerous causes. Some are due to genetic accidents, and their transmission, unlike cases of subcultural defect, can be traced more readily according to Mendelian Laws since there is commonly a sharp distinction between affected and unaffected members of the same family. Others are due to environmental accidents which may affect the foetus as in cases of defect following maternal rubella or which may affect the organism at any time during the life span, including such factors as meningitis, head injury or very rarely, the ingestion of lead. Of defects arising from genetic causes, those due to the action of recessive genes are the largest group. The environment as a whole contributes a lot to one's development and many factors in the environment can cause mental retardation as has been fully discussed in this chapter. Among the various environmental variables are poverty and illiteracy which bring about inadequate and insufficient standards of living. These in turn can lead to a type of cultural deprivation which can lead to a higher occurrence of milder forms of mental retardation.

In short, it can be said that poor environment could lead to psychological deprivation which in turn could have adverse effect on cognitive development or the growth and development of intellectual functioning. Thus, a stable and stimulating early psychological environment is necessary for normal cognitive development. Such an environment is first provided by the home.

It is obvious from this chapter that not only is the aetiology of mental retardation an extremely complex subject, but also that the factors involved are sometimes in dispute, and as yet only partially understood. It is hoped that with the development of new and more refined techniques, advances can be expected in the understanding of the aetiology of mental retardation.

Section B: Methodology

The sample was made up of 120 literate and illiterate parents within the age range of 25 - 45 years. Some of these parents had their children on admission at the Accra Psychiatric Hospital, the Home and School for Mentally Retarded Children and the New Horizon School. Others had their chilren as outpatients at the Accra Psychiatric Hospital and the Child and Adolescent Psychiatric Clinic at Kotobabi, a suburb of Accra. These parents who had their mentally retarded

children in the above mentioned places lived in all parts of the country. The sample was therefore made up of both rural and urban parents. The urban parents lived in places like Accra, Sekondi and Kumasi and the rural parents lived in places like Prampram, Adawso and Obogu, just to mention a few.

The questionnaire on causes of mental retardation was translated into Twi and Ga by experts at the Language Centre of the University of Ghana, Legon, so that it could be administered to the illiterate parents. These translated versions were further given to two Ga and two Twi speaking people to ensure that the items would be understood by the average Ga and Twi speaker. These translations suggested some colloquial changes which were incorporated in the final translated questionnaire (Ref. Appendices, IIA, IIB and IIC for the English, Twi and Ga versions of the Questionnaire on Causes of Mental Retardation).

The translated versions and the English one were pretested on 20 parents of mentally retarded children. This comprised five literate and five illiterate urban parents, five literate and five illiterate rural parents. This pretest helped in finding out the parents' understanding of the items in the questionnaire. There was no need for further changes after the pretest because the parents used understood all the items.

Two hundred questionnaires on the causes of mental retardation were mailed to rural and urban literate parents of mentally retarded children together with a cover letter explaining the nature and purpose of the study (Ref. Appendix I for Cover Letter). Out of this number, 60 completed forms were returned. The translated versions of the questionnaire were administered to 60 rural and urban illiterate parents who were contacted personally. The case histories of the mentally retarded children whose parents were used were also examined from their medical records to get extra and reliable information on the causes of mental retardation.

To find out the relationship between mental retardation and the socio-economic background of the parents, the occupations of the parents were categorised into 'non-manual', 'manual' and 'farm'. The 'non-manual' comprised the parents who by virtue of their positions are recognised as senior officers in the Ghana Civil Service and elsewhere. These included professionals, managers, business executives and commissioned army and police officers. The 'manual' group comprised skilled, semi-skilled and unskilled workers. These included mechanics, technical assistants, cashiers, typists and others engaged in the wide range of clerical duties and other persons of comparable standard. Labourers, messengers and traders were considered under this group.

'Farm' comprised farmers, farm labourers and fishermen.

Those in the 'non-manual' group were considered to be of high socio-economic status and those in the 'manual' and 'farm' categories were considered to be of low socio-economic status.

Section C : Results

The mentally retarded children used for this study comprised 66 males and 54 females making a total of 120 retarded children. The ages of these children ranged from 5 - 18 years with a modal age of 13 years. The mean age of all the children was 11.7 years. This was the same for males and females and for rural and urban children.

The sample was made up of 44.2% mildly retarded children, 25.8% moderately retarded children and 30% severely retarded children. The rural sample had 38.4% mildly retarded children, 25% moderately retarded children and 36.6% severely retarded children. The urban sample comprised 50% mildly retarded children, 26.6% moderately retarded children and 23.4% severely retarded children.

Out of the 120 parents used for the present study, 35% of them were in the 'non-manual' category with 53.3% in the 'manual' group and 2.5% in the 'farm' group. The occupations of 9.2% of the parents were not given. Thus, 35% of the

parents of the mentally retarded children were of high socio-economic status whilst 55.8% were of low socio-economic status. Further analysis revealed that children with mild and moderate degree of retardation were more in the families of low socio-economic status. The parents of 52.4% of the children with mild and moderate retardation were of low socio-economic status whilst 38.1% of them had parents of high socio-economic status. The parental occupations of 9.5% of the children with mild and moderate retardation were unknown. Out of the children with severe retardation, 27.8% of them had parents of high socio-economic status and 63.9% had parents of low socio-economic status. The parental occupations of 8.3% of them were not known.

There were 34.2% first borns in the overall sample of children used. Out of this number, 23% were the only children in their families, 24% came from large families of four children and above and the remaining 53% came from small families of less than four children. The first borns comprised 51.2% mildly retarded children, 24.4% each of moderately and severely retarded children.

Considering families of less than four children as small and families of four children and above as large, 55.8% of the retarded children came from small families and the remaining 44.2% came from large families.

Surprisingly enough, the rural and urban parents in this study expressed no traditional beliefs concerning the cause of their children's retardation.

Mental retardation is scientifically caused by both genetic and environmental factors as has already been discussed in detail at the beginning of this chapter. From the parents' responses to the items in the questionnaire on causes of mental retardation and the case notes on the retarded children, the causes of mental retardation in the children studied are as shown in Table I.

The ages of the mothers at the time of birth of these retarded children ranged from 17 - 40 years with the majority around the 20's. The ages of 14 mothers at the time of birth of their children with Down's syndrome also ranged from 17 - 40 years with only four of them above the age of 35.

TABLE I

CAUSES OF MENTAL RETARDATION IN 120 MENTALLY RETARDED CHILDREN

Sex of Child	CAUSES								
	Epilepsy	Brain Injury	Birth Trauma	Down's Syndrome	Infection	Micro-cephaly	Psychosis	Not Stated	Total
Male	16	14	15	6	8	2	1	4	66
%	13.3	11.7	12.5	5.0	6.7	1.7	0.8	3.3	55.0
Female	14	8	7	8	4	6	1	6	54
%	11.7	6.7	5.8	6.7	3.3	5.0	0.8	5.0	45.0
Total	30	22	22	14	12	8	2	10	120
%	25.0	18.4	18.3	11.7	10.0	6.7	1.6	8.3	100.0

Section D : Discussion

Children with mild retardation constituted a majority of the sample of retarded children studied. This is in line with the literature on the prevalence of mental retardation which says that children with mild retardation form the largest proportion of all cases of mental retardation.

The results of the present study indicated that any normal couple, rich or poor, literate or illiterate, rural or urban, can have a mentally retarded child. Mental retardation is therefore no respecter of persons and cases occur at all socio-economic levels. However, the number of cases of mental retardation in the different socio-economic levels differ. The present study showed that parents of high socio-economic status contributed less to the milder forms of retardation whilst the parents of low socio-economic status contributed more. This is so because the milder cases are more often caused by social factors like poverty, malnutrition and unstimulating environment which prevail more in the homes of parents of low socio-economic status.

It has been found that with large families, birth rank order has an effect on intelligence test performance with the earlier born putting up a better performance. This was found to be true in this study. As can be seen from the results of this study, the majority of the first born children were

mildly retarded. Although all the children studied were mentally retarded, the mildly retarded ones were of better intelligence than the others. They had higher IQs than those with moderate and severe retardation.

On the whole, the results of this study do not prove that there is an adverse relationship between family size and intelligence because the sample comprised a larger number of children from small families who were as retarded as those from large families. Being in a small family was therefore not advantageous to these children. A look at the causes of mental retardation in these children indicated that their condition was caused by factors other than social ones.

Contrary to what Danquah (1976) found, that both literate and illiterate, rural and urban subjects in his study believed that the retarded children were either snakes (pythons) or fish in human forms and were therefore got rid of by performing certain rituals, the subjects in the present study held no such belief. This was so probably because these parents did not want to think of their own children as being some kind of animals and therefore did not entertain such beliefs. It must be added that Danquah's sample included parents of non-retarded children, the majority of whom held these beliefs.

The results of the present study indicated that epilepsy, brain injury and birth trauma are the major causes of mental retardation in the children studied. It has been found that birth trauma results from prematurity, Caesarean section, high forceps delivery and anoxia or respiratory distress all of which can cause brain damage in the child. In view of this, birth trauma can be grouped with brain injury. If this is done, brain injury or brain damage then becomes the major cause of mental retardation in the children studied, followed by epilepsy. Not all the cases put under the diagnostic category of epilepsy had recurring fits as was seen in the case histories of these children. Some of them had convulsion very early in life and afterwards showed signs of retardation while others had fits at intervals. Postnatal infections like measles and jaundice were found to contribute to 10% of mental retardation. These infections can damage the brain and cause mental retardation.

It is generally recognised that prevention is the ultimate goal of all efforts to combat mental retardation and therefore a knowledge of aetiological factors involved in mental retardation is essential for effective prevention. If the causes are identified or known, measures can be taken to prevent the initial occurrence of the retardation. It has been found that early discovery, early diagnosis and

early and continuous care can also help in secondary prevention. These help in lessening the consequences of the disability and enable the retarded children to make the most of their limited abilities.

As has already been discussed in detail at the beginning of this chapter, genetic factors play an important role in the causation of mental retardation. In the present study, it was found that 11.7% of the cases was caused by Down's syndrome which results from a chromosomal abnormality. It has been found that very little can be done at present to prevent such cases caused by chromosomal abnormality. However, it has been suggested that the knowledge that the occurrence of trisomies like Down's syndrome increases with increasing maternal age can help in their prevention. Older women, over 35 years can be advised on their raised risk for bearing children with Down's syndrome. If the age of child-bearing could be terminated at 37 - 38 years by judicious family planning, the number of children born with Down's syndrome would be cut down considerably.

The knowledge that radiations, certain chemical agents and specific infections have a harmful effect on chromosomes also suggests that the avoidance or control of such mutagenic agents could be helpful in limiting the number of chromosomal diseases.

It has also been suggested that genetic counselling can help to prevent mental retardation due to genetic factors to some extent. It has been found that parents who already have one mentally retarded child and who want information about the risk of having another retarded child are those who usually ask for genetic counselling. Some parents who are already burdened with a severely retarded child are usually not prepared to undertake another pregnancy. They feel that they already have as much as they can cope with in the case of one abnormal child, and with such parents no amount of reassurance that the risk of having another retarded child is small can help. There are also a few parents who because they have an abnormal child are all the more determined to try to have a normal one. Evidence shows that many parents are however prepared to ask for and accept advice with regard to the risk involved and genetic counselling therefore helps a lot in this respect.

In the present study 18.3% of the cases was caused by birth trauma or birth injury due to prolong labour, difficult birth, high forceps delivery and neo-natal distress. To prevent this, it is suggested that delivery should be conducted whenever possible by a trained person or specialist especially in cases where a problem is anticipated.

Apart from the causes that were found in the present study, there are other causes of mental retardation as can be seen from the literature review on the aetiology of mental retardation. The importance of these other causes cannot be overlooked. Recommendations are therefore made here regarding how these can be prevented.

Mental retardation can be caused by inborn errors of metabolism like phenylketonuria (PKU). It is known that phenylketonuria can be detected in the homozygote by biochemical examination of blood and urine and in the heterozygote (the parents) by the phenylalanine tolerance test. When PKU is detected early in life, the condition can be alleviated by administering a low-phenylalanine diet or by trying to bring down the levels of serum phenylalanine. It has been found that mental retardation due to other inborn errors of metabolism caused by genetic defects can be successfully alleviated by dietary therapy.

It has also been found that medical care during the prenatal and perinatal period is an important means of preventing mental retardation. During the perinatal period, for example, the technique of amniocentesis or amniotic puncture can be used to find out whether the baby is affected at a stage early enough to terminate the pregnancy without an open operation. Amniocentesis therefore helps in advising

therapeutic abortion in indicated cases. Vaccination of prospective mothers with rubella and other maternal infections during the perinatal period can also help in the prevention of the birth of a mentally retarded child. It is recommended that adequate nutrition for women before and during pregnancy should also be promoted. Mental retardation of postnatal origin, whether caused by toxins, infections or nutritional factors is known to be amenable to prevention by immunization.

In some cases of mental retardation it is not possible to identify the aetiological factors. In the present study, for example, 8.3% of the cases could not be attributed to any specific cause. It has been found that several causal agents, often bio-social in nature interact to cause mental retardation in these cases. There is ample evidence that environmental influences make a significant contribution to variation in intelligence. This type of mental retardation is a socio-cultural problem. Seriously disadvantaged children are deprived of growth-promoting experiences and interventions can modify the condition. In countries where children grow up in poverty and in comparatively static rural environment where schooling is non-existent or of a low quality, the problem of mild retardation due to lack of social stimulation is something that cannot be overlooked. Its prevention, however, is linked to the overall socio-economic growth of the countries concerned and with the improvement of the

quality of life.

Mental retardation is very common. It is best recognised in developed countries where education and techniques are advanced. It is likely that with appropriate measures like better prenatal, perinatal and postnatal care and better social conditions including the control of malnutrition, poor environment and improved educational facilities, the number of mentally retarded children can be considerably reduced.

Section E : Summary and Conclusions

This study was conducted to find the causes of mental retardation in Ghana. The subjects for the study were 120 rural and urban mentally retarded children and their parents.

A questionnaire on causes of mental retardation was pretested on 20 parents before it was used for the main study. In addition to the questionnaires, the case notes on the mentally retarded children were examined to get more reliable information on the causes of mental retardation.

The results were that 25% of the 120 mentally retarded cases was caused by epilepsy. Brain injury contributed to 18% of the cases. Another 18% was caused by birth trauma and 12% was caused by Down's syndrome. Other causes were

microcephaly, psychosis and infections like measles and jaundice.

The conclusions from these results is that the major causes of mental retardation in the children studied were epilepsy, brain injury, birth trauma and Down's syndrome. Less than 20% of the retarded cases was caused by microcephaly, psychosis and postnatal infection.

Knowledge of the aetiological factors involved in mental retardation is necessary for effective prevention. Down's syndrome, for example, can be prevented by genetic counselling. It is recommended that mothers should have good medical care and good nutrition during the prenatal, perinatal and post-natal periods to prevent mental retardation. In cases where mental retardation is due to environmental factors, better social conditions can help in reducing the number of mentally retarded children.

CHAPTER II

PARENTAL ATTITUDES TOWARD MENTAL RETARDATION

Section A : Literature Review

The path of parenthood is never completely smooth. Patience, understanding, ingenuity, good humour and strength are demanded in large measure from the parents of any child and for the family of a handicapped child, the situation is even more complicated and hazardous.

The attitudes and emotional reactions of the parents of a handicapped child are of crucial importance in planning for his effective treatment and rehabilitation. The emotional reaction of the handicapped child and his level of maturity are also a reflection of the degree of nurturance, care and security that he derives from the parents. The parents' failure to encourage the maximum growth that is consistent with the child's handicap may enhance his inability to cope with his environment. If the handicapped child is over-protected or rejected, this in itself can produce emotional difficulties and behaviour problems which are imposed upon the already existing physical or mental disability. Over-protection tends to perpetuate the child's dependence on his parents, prevents him from mastering skills of which he is capable and may even lead to a decrease in IQ

(Sharlin & Polansky, 1971). Thus, a child who is over-protected characteristically fails to develop adequate habits of dependence. While the handicapped child is able to adjust within the narrow confines of his home, he may tend to be quiet and afraid when entering new situations. He may be inclined to withdraw and keep away from others. This behaviour in turn prevents him from being exposed to new learning experiences. He flees from participation in group projects because he is fearful and acutely uncomfortable in situations that make demands upon him that he has not learned to handle. He fails to develop fully as a person. The child who is neglected or rejected might develop somewhat different but similarly incapacitating adjustive techniques. Gallagher (1956) defines rejection as "the persistent and unrelieved holding of unrealistic negative values of the child to the extent that the whole behaviour of the parent toward that child is coloured unrealistically by this negative tone". Rejection can be expressed by strong under-expectations of achievement, or by setting unrealistic goals, or by escape as through desertion or unwarranted institutionalization or by reaction formation which is defined as masking the rejection by espousing precisely the opposite view.

The adjustment of the parents themselves is also of great importance. Every culture places great emphasis on the production of highly intelligent children; and accordingly the production of a mentally defective child may have vast psychological impact on the parents. No parent, however, has a mentally defective child by choice and the usual response to the birth of such a child is a profound feeling of shock, confusion, frustration and disappointment. As Smart (1953) has indicated, the production of such a defective child "strikes at the vital emotional core of the parents." From the very outset, parents may become frightened and concerned, guilty and anxiety ridden. They worry about the diagnosis, where to go for treatment, the slowness of progress, the cost of therapy or about any of the hundreds of problems that can arise when they attempt to assist in the treatment or rehabilitation of the child.

One way of conceptualising the changes in adjustment which occur over time is to look at the different kinds of crises which families face with their handicapped children. Wolfensberger (1967) and Menolascino (1968) have distinguished among three different crises namely, the novelty shock crisis, the crisis of personal values and the reality crisis. The novelty shock crisis refers to the demolition of parental expectations which occurs with the birth of an abnormal child.

The crisis of personal values refers to the reaction to the mental deficit and its manifestations which are unacceptable in the parents' hierarchy of values. The dreams of the parents concerning the future are shattered and their own feelings of adequacy are seriously shaken. Many parents experience a grief reaction during which they may withdraw from others and even from the child in preoccupation with their own sorrow. This reaction probably affords an opportunity to face the problem and its implications profoundly and intimately and to emerge with thoughtfully considered attitudes. In part, the parents may be mourning the loss of a hoped-for fantasy child (Solnit and Stark, 1971). The reality crisis involves the day-to-day management problems which make living with the handicapped child difficult. According to Wolfensberger and Menolascino, parents undergoing novelty shock can profit best from information and support; those in the value crisis may need prolonged counselling and personal therapy and those in the reality crisis need help with down-to-earth issues concerned with care of the child and perhaps in deciding upon residential placement.

The basis of the feeling of shock and humiliation that the parents experience at the birth of a mentally retarded child is the reaction they expect from their neighbours and relations. Society usually regards the child as a kind of stigma on the family and therefore social ostracism in some

form is the greatest fear in an average parents' mind. Mental retardation is a great deviation from the normal as accepted by the society and very often the parents experience a very subtle ostracism. Nobody wants to marry a girl from a family which has a mentally retarded child and people are usually reluctant to visit families when there is the embarrassment of facing a child or an adult who has just not grown up in the usual sense of the term.

Several parents, especially mothers are blamed by their families for giving birth to a mentally retarded child. Parents also have to experience the humiliation of various suggestions from the so-called well-meaning people - friends and acquaintances - who suggest various ways of treating this child. Suggestions are made to take him to a miracle curer who has cured similar cases or to hide the retarded child from the public eye by sending him to an asylum or locking him up in the house. Parents are worried about what the society will say not only about their retarded child but about themselves as well. This is the basis of all their fears, hesitations and actions. This feeling of shame, the fear of what others will say lead them to hide their problems.

Very little has been written about the attitudes of families who are unfortunate enough to bring into the world a

defective child and the effect this experience may have on them. Repond (1963) after many years experience in conducting mental health services in the mountainous Canton of Valais in Switzerland, organised a social survey of the attitudes of parents towards their abnormal children. Many of his findings have wide applicability.

Repond found that the shock of the birth of an obviously defective child was much more severe for the mother than the father. The degree to which the father feels deeply responsible for the event or the degree to which he can detach himself roughly depends on the extent of his identification with his wife in the common experience of parenthood. Many fathers when they are highly identified with their wives are unable to think clearly after childbirth and fail to grasp the significance of what has happened to them. They do not appreciate that the baby is abnormal and some repress all realization of it.

Further stresses may emanate from discrepancies in the parents' reactions. There may be a tendency for fathers to perceive children more in terms of practical problems such as financial concerns or obtaining a high school diploma, whereas mothers react more in terms of the emotional issues, familial and extra-familial relationships (Gumz & Gubrium, 1972). There is some indication that fathers tend to react by extremes of great involvement or total withdrawal if the

retarded child is a boy, whereas the sex of the child has little influence on the mother's relationship with him (Tallman, 1965). There has been in fact very little research about the role of the father which is a very serious gap in understanding family relationships.

According to Repond, when subnormality is obvious at birth or when the realization slowly dawns over the first year or two, the most serious problems are aroused by parental guilt at having produced such a child. Again and again, the parents come back to the question: "what was it in us that produced this?" In other words, most parents seek the cause of the tragedy that has beset them. At least two kinds of motivation seem to underlie this search. The first and more rational is a hope that, in discovering the aetiology of the disorder, they may find a way to cure it or to prevent its occurrence in any future children they may have. Additional motivation can stem from an ardent wish for relief from a heavy burden of responsibility of guilt (Korkes, 1955). In one way or the other, many parents feel that the blame for the child's handicap rests with them. They may, for example, be concerned because they allowed the baby to roll off a bed or failed to call a physician when he was ill. These are common events of childhood which would have been forgotten had the child not been subnormal and which unfortunately may

be overemphasized by the clinician who also has the professional and personal need to make a diagnosis. In some parents, the most primitive kinds of thinking determine beliefs about the actiology of the handicap. Sometimes the retarded child becomes the focus of all past wrongdoings of which the parents feel ashamed.

In a small percentage of cases, the parents are realistic in their belief that they are at least in part, to blame for the child's condition. An unsuccessful attempt to abort an unwanted pregnancy, misuse of drugs during gestation, a negligent automobile accident resulting in head injury to the child, failure to recognise the severity of an illness with high fever or dehydration, even beating a child about the head in a fit of temper are all burdens with which some parents have to come to terms. They are not so uncommon as we are apt to believe. In 3% of one clinic population, for example, the parents admitted to abortion attempts (Wortis, 1965). Even when parents have not been at all instrumental in the original condition, guilt can continue to assail those who harbour destructive impulses toward the child.

Most parents find some relief when they learn of the many families who share their problems, of the multiplicity of factors which can interfere with the delicate balance of normal development and of the overwhelming likelihood that their

child was damaged before birth by causes over which they had no control. Wolfensberger (1967) has suggested that not all guilt is necessarily disruptive, that "perhaps a bit of guilt may go a long way in motivating a parent to provide the extra attention, effort and even the love a child may need.... Some parents may need to be helped to a realistic and manageable dose of it."

Repond found out from his investigation that well-assorted couples who love each other and are bound together by strong mutual sympathy tend to become even more firmly united to form a close, defensive triangle, comprising of mother, father and defective child, a triangle from which even the older children may be excluded if parental guilt is very great. Clinical experience abound with examples of admirable couples, well-fitted to bring up a large family, settling down after one misadventure, to atone for their guilt in devoting themselves exclusively to their defective child. On the other hand, if the bonds between the couples are not strong or already under strain, the experience commonly has a disastrously disrupting effect. Each tends to blame the other, increasingly to find fault and criticise, dissension increases and each denies to the other more children because of the dark thought that the baleful influence of the other will result only in more defective children. In this way, mutual recrimination may lead even

to separation, family break-up and divorce.

Repond set out in his social enquiry to find out whether mothers loved their obviously subnormal babies or not and the unequivocal answer was that they tended to love them most of all the family. This was a guilty love and most mothers were very self-conscious about showing it and therefore hid it. This guilt and shame has primitive origins. Until at least the 17th century and in most European countries, the mother of a subnormal child was regarded as a witch and as Repond remarked, the burning of a witch after torture seems to have been a highly necessary part of medieval civilization. Repond noted that mothers who were deeply religious appeared to accept the situation more easily than those who were not religious. The projection of guilt onto the subnomal child served to relieve the mother of the main burden of guilt. She had been taught that "the Lord loveth whom He chasteneth," and she might even extract some uneasy comfort from the visitation of the sins of the father to the children even to the third and fourth generation.

Most of the more intelligent and well educated parents will derive considerable benefit from a discussion with the doctor of the known principles of human heredity as applied to subnormality. They will at least grasp that the matter was and still is beyond their control. Most parents will derive something

from a simple explanation of the distribution of subnormality in the community and from the assurance, if this be possible, that the chances of the next child being subnormal are no greater and no less than they would be if the defective child had been normal.

The role played by a parent is very important in the development of a mentally retarded child. Mentally retarded children have various serious problems which were discussed in the introduction of this paper and the solution to these problems lies essentially in the degree of security these children experience in infancy and as they grow older and face the progressive steps in emotional growth and development. For this reason, it cannot be said too often that the most important responsibility parents have is to give their children the feeling that they are genuinely wanted and loved. All children need this feeling and mentally retarded children need it most. The presence of a handicapped child imposes a strain on the parent-child relationship. These strains take varying forms and to plan for adequate treatment and rehabilitation, the nature and implications of these relationships must be taken into account. To understand and help the handicapped child, one must understand fully the attitudes and emotional reaction of his parents.

It would be best if an assessment of the attitudes and emotional reactions of parents could be undertaken routinely as one part of the regular procedures involved in diagnosis and treatment of the handicapped child. As a general rule, however, this is seldom done. Many physicians are too pressed with time or tend to avoid this emotionally-charged area. Some diagnostic and treatment centres do make an effort to obtain this important information through personal interviews by a medical social worker. However, these appraisals require considerable time that is not always available. In many cases, it would appear that the requests for detailed evaluations of parental attitude come after rather severe personality difficulties are noted in the handicapped.

There are varied approaches to studies on parental attitudes toward mental retardation. However, the information derived from all these studies is of value in parental counselling. Condell (1966) investigated the attitudes of parents living in a rural section of western Minnesota toward mental retardation using the Thurston Sentence Completion Form (TSCF). Parents whose children had been seen for a full evaluation were the subjects for the study, and, complete staff agreement of a diagnosis of mental retardation was the criterion for inclusion in the study.

The result of this particular study indicated that the largest number of the parents had strong emotional reactions when they learned that their child was retarded. The usual behaviour of crying, questioning, running from specialist to specialist and the like was carried out by this group of parents. Interestingly enough 21% accepted and 21% failed to accept the knowledge that their child was retarded. For the most part, the knowledge was obtained from the family physician but 35% found out in the family setting by observing the child in his play activity, his eating behaviour and his motor development and so on. One should remember that during the early phase of life, one can judge the intellectual growth of the child by observing his physical, motor and language developments. If the parents are careful, they can observe roughly the time when the child started sitting, standing, walking and talking. Children do these at expected times. It is a warning signal if there is a long or undue delay in the development in any of these stages. The earlier one detects the presence of mental retardation, the better it is for future management and welfare of the retarded child. Only 5% of the parents that Condell studied found out that their children were retarded through an evaluation at the clinic. It is evident that most families knew that their child was retarded at the time of the evaluation but a sizeable minority failed to accept the knowledge.

These parents found it hard to accept the presence of retardation, needed help in getting more knowledge of the child's condition and recognised a mistake in not seeking help earlier. They also verbalized mistakes in their child-rearing practices such as overprotecting the child.

Forty-five per cent of the sample felt that education was the best thing that had happened to their child. Only 10% felt that the best thing was medical or related treatment. The parent's attitudes with regard to the child's satisfaction - discomfiture were positive in that the parents expressed the good things about their child. One interesting observation is found about the responses made to one of the items in the questionnaire. Twenty-nine per cent of the parents felt that the child's greatest difficulties were speech and 26% of them felt these were rather motor functions. Only 11% recognised academic accomplishment as a difficulty. Reading, writing and memory factors were seen as the disturbing factors in this sample. With regard to questioning of siblings about their child's retardation, the parents either indicated that the siblings answered the questions frankly or denied the retardation. When the siblings themselves asked questions of the parents, 65% stated that they tried to help them accept the child. Only 10% of the parents evaded the

questions asked by the siblings.

The parents expressed satisfaction about the attitudes and behaviour of their neighbours in relation to the retarded child. They liked to talk to other parents of retarded children because that created a type of common bond and there could also be an exchange of ideas. The negative aspect of getting together was about negligible.

The results of this study also indicated that there was a feeling of great concern about the future, particularly the child's future. The parents wondered what would happen to the child if something should happen to them. "Will he have enough education to help himself?" is one type of question asked. It was felt by 44% of the parents that relatives would care for the child but 29% realised that institutional care would be the final answer. The majority of the parents desired for happiness and a normal life for their retarded children.

There have been few studies on parental reactions and the effects of a mentally retarded child on the lives of the family but as indicated by Sarason (1957), very little thought has been given to the influence these family reactions have on the child. The personality dynamics of the

parent as well as those of the child determine the behaviour of the child and therefore the extent to which parental attitude is reflected in the attitude of the mentally retarded child should also be determined. A study along this line was conducted by Peck and Stephens (1960) using ten adolescent boys and girls and their respective parents as subjects.

Since there is a paucity of tests designed to measure attitudes and behavour in mentally retarded children and their parents, two companion tests, the Fels Parent Behaviour Scales and the Fels Child Behaviour Scales were used in this study. The Fels Parent Behaviour Rating Scales assessed parental behaviour and the psychological aspects of home environment. In addition to these two scales, a Rating Scale for Child Concept by Worchel was used to secure an objective measure of a parent's acceptance or rejection of his mentally retarded child because these two concepts have great influence on the emotions and behaviour of the retarded child.

Data in the study indicated that parents of mentally retarded children as a group tended to be less sociable than other parents. When there were social activities, for example, the mentally retarded children often were not included. These parents had their homes organised around

interests other than those of the mentally retarded children. They tended to give these children only perfunctory interest during contacts with them. The group mean showed that the needs and capacities of these mentally retarded children were frequently not met and understood by the parents and the parents as a group exhibited little attempt to accelerate the children's progress and development. The group mean of the parents also showed that there was a marked tendency to criticise and evaluate the children's behaviour, and, their approach to the mentally retarded children was coloured more by emotion than by intellect. These attitudes of the parents toward their mentally retarded children had various effects on the children. The mentally retarded children as a group were not particularly successful in their approaches to peers and they were unsuccessful also in their attempts to be leaders. Alliances were seldom rejected; they were willing to play with anyone. Little physical apprehension was exhibited. The mentally retarded children were oblivious to actual dangers and needed to be persuaded to exercise caution. Individual case analysis revealed that the parent's willingness to answer his child's questions had a direct relationship to an exploring, questioning attitude in the child. Affectionateness,

understanding, and rapport between the parents and their mentally retarded child were reflected in the child's ability to relate successfully with other adults. This type of case study would be of great value in planning counselling, therapy and education.

Parental attitudes also have effect on what a retarded child can achieve. Case studies indicate that there is some correlation between the parental attitudes and the level of functioning of the retarded child in relation to his capacity but no systematic research has been reported. Stoddard (1959) conducted a study with the aim of discovering the relationship between parental attitudes and the level of achievement of the 'trainable' mentally retarded child. A trainable individual as proposed by Wirtz and Guenther (1959) is "one who because of retarded mental development would not profit from public school classes for the educable mentally handicapped, but who possesses potentialities for learning (a) self care (b) social adjustment in the home and neighbourhood and (c) economic usefulness in the home, in a sheltered environment, or in the community under supervision." It is felt by many that the climate of the home has an effect on the child's ability to profit from a training situation. Studies dealing with

the various phases of the functioning of trainable classes indicate that the children improved under the educational programmes provided but implicit in the reports are indications that parental attitudes need further study in relation to the achievement of the trainable child. Among 11 cases studied at the City College Education Clinic, in one case in which the parent was found to accept the child's limitations, the child was able to make a good adjustment socially and to utilise his capacities to the fullest. This, in fact, does not differ at all from the knowledge we have of parent-child relationships in general, except that the parent's personality is exposed to more trying experiences with the abnormal child than with the normal.

In the regular classroom in the West, each year more children are rated by school psychologists to have serious problems of learning or adjustment which have their roots in family situations. Many of these problems stem from the child's inability to attain the parent's expectations, whether these are of academic achievement or of acceptable behaviour. The expectations are much more obviously unfulfilled in the case of a retarded child who is also frequently the personification of the parents' interpersonal problems. As has been discussed already, with a retarded

child, the personal problems are accentuated by parental feelings of inadequacy and failure in procreation. Thus, the extra strain on the parental emotions is reflected in extra burdens in the emotional life of the retarded child. In much the same manner as occurs among children with average or higher intelligence, the emotional adjustment of the retarded child determines his response to a learning situation. One case study shows how a retarded boy was able to improve his performance after intensive parental counselling with the parents.

Stoddard's (1959) study was an attempt to compare the parental attitudes with the growth made by the children using the following procedure:

i. "Measurement of the attitudes of parents towards their trainable mentally retarded children;

ii. classification of the parental attitudes in terms of the degree of their awareness and acceptance of the child's limitations, and their readiness to plan realistically for the child's future;

iii. classification of the level of achievement of trainable mentally retarded children in a school programme;

iv. correlation of the parental attitudes with the level of achievement attained by the children."

It was assumed that parental attitudes could be determined and classified by the method used in the study and that teachers of trainable mentally retarded children were able to detect and report the achievement levels as a result of class participation. The study was designed to test the hypotheses that,

i. "there is a relationship between the achievement that a trainable mentally retarded child attains and the parental awareness and acceptance of the nature of the child's defect and,

ii. there is a relationship between the achievement that a trainable mentally retarded child attains and the reality level with which the parent views the present and future needs of the child."

During the study, 32 children were rated on a Behaviour Rating Scale to measure the level of achievement they had attained, their respective parents were interviewed by a skilled interviewer and their attitudes measured according to their responses to certain key questions. An attempt was then made to correlate the children's achievements and the parents' attitudes. No correlation was found between

parental awareness and the acceptance of the nature of the defect and the growth a trainable mentally retarded child makes. It is believed that the period of one year used for this study was not long enough for this effect to be seen. Large-scale longitudinal studies over as long a period of time as feasible would be better. No correlation was also found between the reality level with which the parent views the present and future needs of a child and the growth a trainable mentally retarded child makes. The lack of correlation was considered to be insufficient proof that there is no relationship between parental attitudes and the achievements of a retarded child and it was felt that the lack of relationship in this study was probably due mainly to the inadequacy of the instruments used. It was suggested that longitudinal studies over a period of at least 10 years beginning in early childhood and using more refined instruments will be necessary to discover the significance of the many factors affecting the growth of the trainable retarded child and can contribute to the understanding of the processes of learning in all children.

Very little is known about mental retardation in Ghana because few researches have been undertaken in this important area. The present research is therefore undertaken as a

continuation of one of the researches done in this area by Danquah (1976).

The aim of Danquah's study was to investigate the beliefs and attitudes of the public, especially those of parents towards severely retarded children in Ghana. In addition to 306 parents of the severely retarded, 800 individuals who came from the towns and villages from where the retarded children were brought to the Accra Psychiatric Hospital were interviewed. The purpose of these interviews was to find out the following:

i. the respondents' understanding of mental retardation and its causes in Ghana;

ii. the usual methods employed in handling the retarded children by the parents, other relatives and the neighbours or the public;

iii. reasons for employing such methods as described by the respondents; and

iv. the nature of advice given to the parents by others concerning the severely retarded children.

The results of the study indicated that educated and uneducated parents held similar beliefs about the cause of severe retardation in children. They believed that this condition comes about through a curse by a supernatural being.

Seventy per cent of the formally educated group believed it was God's punishment for their evil deeds while about 75% of the uneducated believed the cause could be attributed to witchcraft and sorcery (juju). The difference here is in what these two groups regard as a supernatural being. The educated parents regard God as the supernatural being while the uneducated ones look upon evil spirits and malevolent human beings as supernatural beings. The uneducated parents also believed that any interaction with a retarded child, especially by a pregnant woman, could result in the birth of such a child.

The rural and urban respondents did not differ from the educated and uneducated respondents in what they believed to be the cause of severe mental retardation. Just like the educated and uneducated groups, both rural and urban subjects attributed the cause to supernatural beings. The rural educated respondents felt it was God's punishment and the rural uneducated individuals attributed the cause to witchcraft and juju. One striking difference between the rural and urban respondents was that about 70% of the rural educated and uneducated neighbours and non-relatives of the parents with retarded children believed that a severely retarded child is an animal like a python, a fish or an

amphibian in a human form. Only 15% of the educated urban parents viewed their child's retardation as an act of fate or predestination.

How the severely retarded children are handled is based on the above beliefs of the parents and the public in general about the cause of the retardation. The methods given by the respondents varied from infanticide to hiding these children at home. Seventy-five per cent of the respondents who do not have such retarded children in their homes suggested infanticide as a method of getting rid of these children. Another popular method was by leaving the child alone on a river bank or near the sea with mashed yam and eggs. A gun is then shot and it is believed that such an 'animal-like human being' would change into whatever animal he is, eat the food and crawl into the river or sea where it is believed to have come from. This particular method is carried out by juju men who are supposed to be experts in performing such rituals.

The majority of both urban and rural parents on the other hand prefer to hide such children in their homes to bringing them to public attention because these children are looked upon with scorn by the more fortunate ones who do not have such children. The puhlic looks on parents with retarded

children with suspicion. If such parents happen to be wealthy, it is believed that they have acquired their wealth by some supernatural powers using their severely retarded child.

Only 5% of educated urban respondents attributed the cause of severe mental retardation to genetic or biological and metabolic processes. Based on what they believed to be the cause, this small group felt that the children should be sent to hospital for treatment.

The mothers and fathers seemed to differ in their attitudes towards these children. About 55% of the fathers, irrespective of their educational background and ethnicity tended to blame the mothers for the children's retardation and had very little to do with these children. These fathers insisted that the children should be permanently kept in the appropriate institutions for such children. About 25% of the mothers too shunned their children by leaving them in the care of maid servants at home. It was found out from this study that some of the mothers of these retarded children become emotionally disturbed because of their predicament of having such a child and eventually end up in the psychiatric hospital to seek for their own emotional problems.

Although there is a relationship between the present study on attitude and that of Danquah, there are some differences which need to be pointed out. The differences are that Danquah's study dealt with the beliefs and attitudes about the causes of severe mental retardation as indicated by the public in general and by parents of severely retarded children in particular whereas the present study covers a wide range of attitudes of parents of children with mild, moderate and severe retardation. It is hoped that the present study will open the professional worker's eye to a wide range of areas in which he can offer assistance to such parents in the form of counselling and education.

Section B : Hypotheses

It would be realised that with the exception of Danquah's study which dealt with parameters like education and urbanization none of the studies that have been reviewed in this paper dealt with these parameters. In line with Danquah's study, the following hypotheses were tested in the present study.

1. The literate parents will have a more positive attitude towards their mentally retarded children than the illiterate parents.

This is contrary to what Danquah found in his study. As pointed out earlier on, Danquah investigated attitudes and beliefs about the cause of severe mental retardation and found no difference in the attitudes and beliefs of the literate and illiterate subjects he studied. Jahoda (1970) also found that education has no effect on one's belief in supernatural beings as causing various misfortunes that befall mankind.

Danquah and Jahoda studied the attitudes and beliefs of people who were not personally involved with the problem under study but the present study deals with parents whose children are mentally retarded and are therefore personally involved. It is assumed that where one's own child is mentally retarded, the literate parents will have a better means of assessing the situation and the avenues open to them. By so doing, they may gain information which may not be available to the illiterate parents and this may result in a difference in their attitudes. Repond (1963) found out from his study that most of the literate parents derived considerable benefit from a discussion with the doctor of the known principles of human heredity as applied to mental retardation.

2. The urban parents will have a more positive attitude towards their mentally retarded children than the rural parents.

This hypothesis is also contrary to what Danquah found in his study for the same reason given for the first hypothesis, that is, the differences in the problems studied.

Here it is assumed that like the literate parents, the urban parents will be exposed to more information and facilities which will tend to make them more positively inclined towards their retarded children than the rural parents.

Mentally retarded children are not hidden at home in the urban areas as it is done in the rural areas. In Accra, for instance, there are special institutions and hospital which cater for these children and some parents of such children have become aware of the existence of such facilities and have therefore availed themselves of these opportunities. By having their mentally retarded children in such institutions which occasionally provide opportunities for the parents to meet, there is some interaction among the parents. They gain moral support from each other and it is assumed that this eventually brings about a change in their attitudes.

3. Mothers will have a more positive attitude towards their mentally retarded children than fathers.

This hypothesis is being tested in this study in response to a suggestion made by Stoddard (1959) to study the difference between maternal and paternal attitudes towards mental retardation.

Danquah found a difference in the attitude of the mothers and fathers he studied. The above hypothesis indicates that this difference will be in the direction of mothers being more positive than fathers.

All parents are charged with the responsibility of bringing up the children they bring into the world but it is the mother who plays a major role during the initial stages of the development of the child leading to a greater attachment between mother and child. If the child happens to be mentally retarded, this attachment may be even stronger. Repond (1963) found out from his investigation that mothers love their subnormal babies more than any other member of the family.

4. Parents of children with mild retardation will have more positive attitude than parents of children with moderate and severe retardation whilst parents of children with moderate retardation will have more positive attitude than parents of children with severe retardation.

Mild, moderate and severe retardation are associated with certain characteristics as were discussed in the introduction of this paper. From these characteristics, it is assumed that the severer the retardation, the less positive the attitude of a parent toward that child.

Section C : Methodology

i. Definitions

The term 'attitude' has been variously defined through its use by psychologists and sociologists over a long period of time. A definition that includes many of the central ideas used by attitude theorists is that one by Triandis (1971). He defines an attitude as "an idea charged with emotion which predisposes a class of actions to a particular class of social situations." This definition implies that attitudes have three components, namely, a cognitive component, an affective component and a behavioural component.

The cognitive component is an idea or some category used by people in thinking. This cognitive category is associated with pleasant or unpleasant events or desirable or undesirable goals. The affective component is the emotion which charges the idea. For instance, if a person 'feels good' or 'feels bad' when he thinks about the category, it is said that he has a positive or negative affect towards the members of this category. The behavioural component is a predisposition to action. In short, attitudes involve what people think about, feel about and how they would like to behave toward an attitude object.

These three components of attitude are indicated by various responses. The cognitive component is indicated by perceptual responses and verbal statements of belief. The affective component is indicated by verbal statements of affect and the behavioural component is indicated by overt actions and verbal statements concerning behaviour.

The instrument used for the present study had items related to all the three components of attitude. Examples of sentence stems which indicated the cognitive component were 'when I think of my child...,' or 'when I think of my child's future...' and 'I think that getting together with parents of other mentally retarded children to talk over

problems is a (good) (poor) thing.' Sentence stems like 'what I would like to see my community do for the mentally retarded is...,' 'when I am with my mentally retarded child I like people to...' and when my child comes home, he (or she) wants most to....' were used to measure the behavioural component of the parents' attitude. The affective component of the parents' attitude was expressed by sentence stems like 'I (do) (do not) feel free to discuss my child's retardation with my friends and neighbours' and 'my child is (happy) (unhappy) at Hospital/Institution.' (Ref. Appendix III).

The hypotheses for this study were centred around positive and negative attitudes and therefore these had to be identified and categorised accordingly. Responses like 'I think that getting together with parents of other mentally retarded children to talk over problems is a good thing,' 'when I am with my retarded child, I like people to behave nicely to him/her' and 'I feel free to discuss my child's retardation with my friends and neighbours,' indicated positive attitudes. Responses in the opposite direction, like 'I think getting together with parents of other mentally retarded children to talk over problems is a poor thing' and 'I do not feel free to discuss my child's retardation with my friends and neighbours,' indicated negative attitudes.

ii. Instrument Used For Present Study

Attitudes are usually operationalised verbally either through a response to an attitudinal statement, a reaction to a projective technique or a completion of a word-association or incomplete sentence measure. In the present study a modified version of the Thurston Sentence Completion Form was employed to investigate the attitudes of parents towards mental retardation in Ghana.

The Thurston Sentence Completion Form (TSCF)

This research instrument was devised by Thurston in 1959 and was first used in a comprehensive study of attitudes of parents or close relatives of cerebral palsied patients at the Northern Wisconsin Colony and Training School at Chippewa Falls, Wisconsin. An initial analysis of the responses obtained indicated that the form promised to be a very effective means of studying the attitudes and emotional reactions of parents of handicapped children. This instrument has subsequently been used by Condell (1966) to study the attitudes of parents living in a rural setting toward mental retardation and also by Appell, Williams and Fishell (1964) in a study of the changes in attitudes of parents of retarded children effected through group counselling.

The Thurston Sentence Completion Form (TSCF) consists of 45 incomplete sentences which were selected out of 150 sentence stems on the basis of their relevance, clarity and their potentiality for yielding rich response. The final form of 45 items is of sufficient length to gain reliable information in the areas of interest and at the same time short enough to encourage responses from as many parents as possible.

The items of the TSCF are divided into seven significant areas as follows:

1. Reactions and concerns of parents.
2. Attitudes regarding the handicapped child's satisfaction-discomfiture.
3. Reactions of brothers and sisters.
4. Reactions of community, friends and neighbours.
5. Attitudes towards the Institution/Hospital/treatment centre and the staff.
6. Attitudes relating to the hopes and expectations of the parent for the handicapped child.
7. Attitudes of a general nature.

The original TSCF was modified by excluding the fifth and seventh areas in the Form used for the present study because they were not areas of interest in this study.

Also 'mentally retarded child' was substituted for 'handicapped child' in the original Form.

The items in the TSCF were translated into Twi and Ga by experts at the Language Centre of the University of Ghana, Legon, so that it could be administered to the illiterate parents in the sample. The translations were further given to two Ga and two Twi speaking people to ensure that the items would be understood by the average Ga and Twi speaker. These translations suggested some colloquial changes which were incorporated in the final Form. The translated version and the English one were pretested on twenty parents of mentally retarded children. This comprised five literate and five illiterate urban parents, five literate and five illiterate rural parents. It must be mentioned here that these were the same parents that were used for pretesting the questionnaire on the causes of mental retardation. The pretest helped in finding out the parent's understanding of the items in the TSCF. There was no need for any further modification after the pretest because all the parents understood all the items. (Ref. Appendices IIIA, IIIB and IIIC for the English, Twi and Ga versions of the TSCF).

The modified Thurston Sentence Completion Form used for the present study was divided into five reactional and attitudinal areas as follows:

1. Reactions and concerns of parents:
   Items 2, 4, 7, 10, 11, 12, 15, 16, 17, 18, 19, 20, 24, 26, 29 covered the personal reactions and worries of the parents.
2. Attitudes regarding the child's satisfaction/discomfiture:
   Items 1, 8, 21, 25, were related to specific things or circumstances the child either likes or dislikes.
3. Reactions of brothers and sisters:
   Items 9 and 27 gave information about how the siblings feel about the mentally retarded child.
4. Reactions of community, friends and neighbours:
   Items 3, 5, 14, 22, and 28 showed how the community and its members relate to the mentally retarded child and his treatment.
5. Attitudes relating to hopes and expectations:
   Items 6, 13, 23, and 30, gave clues to the parental hope or ambition for the retarded child.

iii. Sampling

Parents from both rural and urban areas in Ghana bring their mentally retarded children to the Accra Psychiatric

Hospital for consultation. Some also attend a Child and Adolescent Psychiatric Clinic at Kotobabi, a suburb of Accra. Some other parents have mentally retarded children in the Home and School for Mentally Retarded Children and in the New Horizon School, all in Accra.

A sample of 120 rural and urban literate and illiterate parents of mentally retarded children were used for this study. These were the same parents that were used as subjects for the study on the causes of mental retardation. All these parents had their retarded children in the above mentioned places. Some of these parents lived in rural areas like Prampram, Adawso and Obogu, and some lived in urban areas like Accra, Sekondi and Kumasi. Only illiterate parents who could speak Twi and Ga were used because these were the only Ghanaian languages that the investigator could speak and write well.

Parents within the age range of 25 - 45 years, which is within the child-bearing age were selected for the present study. These parents were neither too young nor too old. The sample included both mothers and fathers. A breakdown of the sample is as shown in Table II.

TABLE II

A BREAKDOWN OF SAMPLE USED

Category of Parent	Sample Size
Urban Literate	30
Urban Illiterate	30
Rural Literate	30
Rural Illiterate	30
Mothers	70
Fathers	50

iv. Procedure

Two hundred Thurston Sentence Completion Forms (TSCF) were mailed to rural and urban literate parents of mentally retarded children together with a cover letter explaining the nature and purpose of the study. The TSCF was also administered to 60 rural and urban illiterate parents who were contacted personally.

Almost all the parents left a few sentence stems uncompleted. Some of these parents were contacted personally to find out why these sentences were not completed. It was found that this was due to emotional breakdown and not that they did not understand these items.

All parents were assured of the confidentiality of their responses by using code numbers instead of names. This was also done to ensure that the parents gave honest responses so that the effects of bias due to the desire to please the investigator by giving acceptable answers could be minimized.

The responses of the parents to the sentence stems were independently scored by the investigator in terms of positive and negative attitudes as defined earlier on. It would be realised that this involves subjective judgement and therefore all the responses were scored again by an independent judge and the few disagreements were resolved by mutual discussion*

v. Analysis of Data

The overall total responses as well as the total positive responses of each parent was found. All the parents were supposed to complete 30 sentence stems but as said earlier on, not all of them did so because some parents broke down emotionally when it came to completing some of the items which were emotionally charged. Therefore the percentage of each parent's positive responses was calculated in terms of the total number of responses made by each parent. (Ref Appendices IV - VII). The percentage positive responses were then used to test the hypotheses. (Ref. Appendices VIII-X).

The independent variables in this study were urbanization, education, sex and degree of retardation. The dependent variable was the attitude of the parents. Hypotheses 1 and 2 were tested by 2 x 2 analysis of variance. The groups involved here were independent from one another and the observations were randomly sampled. The groups were urban literate and urban illiterate parents, rural literate and rural illiterate parents. With this factorial analysis of variance, the two independent variables, education and urbanization, could vary independently to produce variation in the dependent variable, this being the attitude of the

parents. Hypothesis 3 was tested by the t-test and hypothesis 4 was tested by the simple analysis of variance, that is, the F-test.

It must be said here that the children whose parents were used for this study were already classified into three groups, namely, mild, moderate and severe retardation by a Clinical Psychologist after testing them on the Seguin Form Board, the Children's Progressive Matrices, the Denver Developmental Scale and the Bender - Gestalt Test.

Section D : Results

Out of the 200 questionnaires that were mailed to the literate parents, 60 were completed and returned. The remaining 60 questionnaires were obtained from the illiterate parents. The total number of respondents was therefore 120 and this comprised 70 mothers and 50 fathers.

The mean ages of the different categories of parents are as shown in Table III. There was very little difference among the mean ages, and of all the groups, the fathers were older than the mothers which seems to be the case in many families in Ghana.

TABLE III

MEAN AGES OF THE DIFFERENT CATEGORIES OF PARENTS

Category of Parent	Mean Age In Years
All Parents	39.4
Literate Parents	40.1
Illiterate Parents	38.8
Rural Parents	39.3
Urban Parents	39.6
Mothers	38.0
Fathers	41.5

Of the 60 literate parents that were used for this study, 10% had University education, 15% had Post Secondary education, 32% had Secondary, Commercial and Technical education and the majority of them, 43%, had Elementary education. Some of those with Post Secondary education had Training College education and others had Nursing education.

The data used for testing the hypotheses in this study are presented in Appendices VIII - X.

Hypothesis 1 which states that literate parents will have more positive attitude than illiterate parents and hypothesis 2 which states that urban parents will have more positive attitude than rural parents were both not confirmed by the results. For education : $F = 0.30$; $df = 1$; $p > 0.05$. For urbanization: $F = 3.06$; $df = 1$, $p > 0.05$. There was no interaction between education and urbanization. (Ref. Table IV for results of the statistical test for hypotheses 1 and 2).

Results indicated that there was a significant difference between the attitude of mothers and fathers but the difference was not in the hypothesized direction. Instead, fathers were more positive than mothers ($t = 3.79$; $df = 118$; $p < 0.05$, one-tailed).

The fourth hypothesis which states that parents of children with mild retardation will have more positive attitude than parents of children with moderate and severe retardation whilst parents of children with moderate retardation will have more positive attitude than parents of children with severe retardation was not confirmed by the results. (Ref. Table V).

TABLE IV

RESULTS OF STATISTICAL TESTS FOR HYPOTHESES 1 & 2

Source of Variance	Ss	df	ms	F	p
Total	13887.71	119	-	-	-
Education	34.49	1	34.49	0.30	$p > 0.05$
Urbanization	355.69	1	355.69	3.06	$p > 0.05$
Education x Urbanization	0.48	1	0.48	0.01	$p > 0.05$
Error	13497.05	116	116.35	-	

	Literate		Illiterate	
	$\bar{X}$	σ	$\bar{X}$	σ
Rural	60.99	10.09	57.79	5.22
Urban	64.31	10.99	63.36	14.14

TABLE V

RESULTS OF STATISTICAL TEST FOR HYPOTHESIS 4

Source of Variance	Ss	df	ms	F	p
Total	13887.71	119	-	-	-
Between Groups	597.85	2	298.92	2.63	$p > 0.05$
Within Groups	13289.86	117	113.58	-	-

	$\bar{X}$	σ
Parents of Mildly Retarded Children	61.16	11.37
Parents of Moderately Retarded Children	65.85	10.28
Parents of Severely Retarded Children	60.31	9.38

So far only the quantitative aspect of the attitudes expressed by the parents has been discussed but for counselling purposes there is also the need to discuss the qualitative nature of the responses given by these parents.

The results obtained from this study indicated that 38% of the parents became disturbed, worried and anxious and 35% of them felt sad when they learned that their children were mentally retarded. Consequently, 55% of them sought medical or professional help. The results also showed that 25% of the parents found it difficult to understand why their children should be mentally retarded. These parents expressed the need to be educated on the cause of mental retardation as well as on what can be done to improve the condition of these unfortunate children. Neglection of these retarded children was cited by 37% of the parents as being one of the mistakes made in their child-rearing practices. A minority, 3%, of them saw the treating of these children differently from the other siblings as being one of the common mistakes made by the parents.

The parents showed a feeling of great concern about their children's future. A sizeable number,(30%), of the parents said they worry most about the education of their retarded children and 11% said they worry about the future

happiness of these children. The majority of the parents were quite optimistic about the future of their retarded children. Most of them saw the future as being bright or hopeful. Only 14% of them saw the future as being hopeless or gloomy. A few of them, (16%) were not sure of what the future would be for their retarded children. Although a large number of these parents were positive about the future they still showed feelings of great concern about their children's future if something should happen to them (the parents). The majority of them (62%), felt that their retarded children would not have anybody to take good care of them should something happen to the parents and as a result their retarded children would be lonely and miserable. Few parents believed that their children would continue to have attention because they would be cared for by their brothers and sisters and other members of the family.

Few of these parents (13%) wanted their retarded children placed or confined in hospital because they felt they would be treated there. The majority of them (64%), wanted their retarded children institutionalised because they believed these children would be educated and taught some vocation which would be beneficial to them in future. Those parents (48%) who already have their children institutionalised

remarked that there has been remarkable improvement in their children's behaviour and in their condition as a whole. Some of the parents (32%), were against confining their retarded children in a hospital or an institution because their children are either too young or that they are happy and better cared for at home.

Almost all the parents, 98%, liked to talk to other parents of retarded children because they got emotional or moral support from each other and it also helped in the exchange of ideas concerning how to handle and care for these children. The sharing of experience unfolds before them innumerable ways of solving similar problems. It also gives the parents of the mentally retarded children confidence in themselves.

On the whole, the attitudes of the parents regarding the child's satisfaction - discomfiture were positive in that the parents expressed the good things about their children. For example, 46% of them said their retarded children were happy when they played with the parents, siblings, friends, or with other children and 18% said their children were happy when well fed. According to 15% of the parents, their children wanted most to help with the household chores that were not beyond their capability when

they came home.

When the siblings were asked about the child's retardation, the parents indicated that 6% of the siblings were sympathetic and 12% were worried and upset. When the siblings themselves asked the parents questions about the retarded child, 18% said that they told the siblings that the retarded child was under treatment and that he or she was improving. The sentence stems related to the reactions of the siblings were not completed by 58% of the parents because the brothers and sisters were too young to be asked any questions about the retarded child.

With regards to the reactions of the community, friends and neighbours, the parents expressed satisfaction about the attitudes and behaviour of their neighbours in relation to the retarded child. It was indicated by 47% of the parents that their neighbours were friendly and sympathetic towards their mentally retarded children and some even gave advice on how to handle and care for these children. Only 8% indicated a negative attitude by saying that their neighbours gossiped and ridiculed the retarded children and their families. The majority of the parents said they wanted others to treat or regard the children as normal. Many parents, 48%, wanted the community to build more schools for the retarded children

where they could be trained to be independent in future.

The parents had some hopes and expectations for their retarded children. Some parents, 29%, wished that their retarded children could learn some trade or vocation so that they would become independent in future. Others, 23%, wished that these children could have some formal education and many of them, 42%, desired happiness and normal life for their retarded children.

Section D : Discussion

This study was conducted to find the effect of education, urbanization, sex and degree of retardation on the attitudes of parents towards their mentally retarded children using the Thurston Sentence Completion Form (TSCF).

There was 30% return rate of the TSCF that were sent to the literate parents. This outcome may be attributed to the high mobility of families leading to changes in addresses which might not be known to the authorities concerned.

A breakdown of the level of education of parents (Ref. p.118) indicate that mentally retarded children come from all sections of the society. This indicates that anybody can have a mentally retarded child no matter his educational background or his socio-economic status.

The results indicated that there was no significant difference in the attitudes of literate and illiterate parents towards their mentally retarded children. Thus, hypothesis 1 which states that literate parents will have more positive attitude towards their mentally retarded children than illiterate parents was not substantiated. Education, therefore, does not have any significant effect on the parents' attitude towards mental retardation.

This may probably be due to the fact that both the literate and illiterate parents in this study have been exposed to the facilities available for these children as a result of which they have some of these children institutionalised and some as in-patients or out-patients in the Psychiatric Hospital and Clinic. These parents are therefore aware of what can be done for these children and their understanding of the whole situation is such that there is no difference between their attitudes despite the difference in their educational background.

The results also indicated that there was no significant difference in the attitudes of rural and urban parents towards their mentally retarded children. Thus, hypothesis 2 which states that urban parents will have more positive attitude towards their mentally retarded children than rural

parents was also not substantiated.

Here, too, both the rural and urban parents are aware of the facilities available for these children and have them institutionalised or hospitalised. It is likely that they have similar understanding of the whole problem that there is no significant difference in their attitudes towards it.

The third hypothesis states that mothers will have more positive attitude towards their mentally retarded children than fathers. The results indicated that fathers had a higher mean positive response than mothers. This showed that the fathers were more positively inclined towards their mentally retarded children than the mothers and it was this difference between the two categories of parents that was found to be significant. Hypothesis 3 as stated was therefore not substantiated by the data obtained from this study but rather its converse was found to be true. Thus, fathers were found to have more positive attitude towards their mentally retarded children than mothers.

This was found to be the case in this study because it seems the fathers who completed the questionnaires were those who cared and were concerned about their retarded children. Some of these fathers even brought their retarded

children to the hospital themselves and readily obliged to complete the questionnaires on their retarded children. Not all the fathers to whom questionnaires were sent completed and returned them and it can be assumed that it was those who loved and cared for their mentally retarded children who completed the questionnaires. Few fathers were even the sole guardians of their children because the mothers were deceased and were therefore very much attached to these children. Some fathers even indicated playing with these children and so on. These, therefore, might be some of the reasons why these fathers were more positively inclined towards their mentally retarded children than the mothers.

Hypothesis 4 was also not substantiated. It seems that the degree of retardation is not a crucial factor in determining the kind of attitude expressed towards these mentally retarded children. What most of the parents know is that their child is retarded and therefore the degree of retardation does not mean much to them.

Apart from the quantitative aspect of this study, there is also the need to discuss the qualitative aspect which also helps in the understanding of the problem of mental retardation to some extent.

It was found that the initial reaction of parents when they got to know that their child was mentally retarded was a strong emotional one. Here, it is recommended that the professional worker in this field should offer some kind of assistance to the parents in the form of counselling. This will help the parents to stabilise their reactions and help them to accept the child's retardation.

Most parents saw that neglecting the retarded child was a mistake other parents were making. This indicated that most of the parents have accepted their children's retardation. It needs to be emphasized here that the retarded child needs love and patience in addition to acceptance.

Acceptance involves a warm respect for the child as he is, appreciation of his assets, tolerance for his shortcomings and active pleasure in relating to him. As the retarded child has poor attention and concentration, he cannot withstand frustration and failure. Therefore, it is recommended that tasks given to him should be well within his capacity and should be something that can be done within a short time. Criticism of failure should be avoided while praise and concrete reward should be given on completion of even small tasks. This acceptance builds up the child's self-image, gives him confidence and lowers his

tendency to withdraw. Comparing them or their work with other normal children should be avoided. However, they should be subjected to mild and consistent family discipline.

Patience is also necessary on the part of the parents as the retarded child is slow to grow, grasp or learn anything. Some mothers reject or ignore their retarded children while others overprotect them. Ideally, the emotional attitude of mothers or parents towards the retarded children should be the same as towards the normal children except that the retarded ones need more attention and patience. The normal siblings should also be taught and encouraged to accept the retarded child. Where parents have been able to give the right lead, the attitude of the btothers and sisters towards the retarded child will be positive.

Despite the fact that most of the parents in the present study have accepted the retarded children as they are, the majority of them (64%) still wanted their retarded children to be institutionalised and a sizeable number (32%) were against it. It has been recommended that when mental retardation has been diagnosed in a child, the first consideration should be to provide support for the family to enable the child to remain at home where possible. The

WHO Expert Committee on Mental Health is also of the opinion that "no institution can provide an adequate substitute for the essential emotional interaction between parents and child and this opportunity for interplay is of paramount importance in the case of the handicapped child whose parents can only slowly evolve a realistic and constructive attitude towards the situation." (WHO Technical Report Series, 1954, Vol. 75).

These days, it is recommended that the mentally retarded child should be brought up in the family unless the subnormality is very severe or the retention of the child in the home is likely to bring about serious maladjustment or the disintegration of other aspects of family life. As a general rule, home care is to be recommended whenever possible. Even children who are severely retarded may be kept at home if the parents are able to take a realistic view of the situation and if they are able to make full use of the comprehensive maternal and child health services available.

Among the many factors which favour home care is that normal children living in the same family can be of great help in promoting the development of a subnormal child, if home conditions are good. For instance, most retarded children are impaired in speech which is essential for

communication and elaborate social interactions. Institutionalised retarded children have been found to be more impaired in speech than those living at home who are exposed to the meaningful use of words at home.

Another factor in favour of home care is that a child living in his own home has a very flexible environment. Attention is likely to be paid to his wishes as expressed by gestures or by word. It is therefore worthwhile for him to make his desires known. In an institutional environment, this may not seem worthwhile. In an institution or hospital, there is a big turnover of staff that a particular nurse may never get to know a particular child sufficiently well to understand his likes and dislikes. In the institution for instance, the children may be regularly toileted at the same time that there is very little opportunity for initiative by the retarded child. These and other similar factors tend to further retard the mental growth of the already retarded child in an institution and it has been found that almost all retarded children do best in their own home with their parents and with the opportunity to be introduced gradually to the wider community through special schools and other means.

It must be realised that caring for a mentally retarded child at home is a very big responsibility and if parents and families are to be able to perform their duty well in this regard, they must be helped, informed and educated. Most parents are quite unacquainted with the problem of mental retardation until they themselves have one. In the present study, quite a number of parents expressed the need to be educated in order to understand and help their retarded children. This is in the right direction because it has been found that proper information or education helps the parents considerably in accepting the fact of having a retarded child and also in accepting the child himself. It helps them not only to understand the problem they have to face and its attendant difficulties but also helps them to understand the child's educational possibilities, his capacities as an adult and how much they can hope for. It has also been found that proper education also helps the parents to combat prejudices that may exist in many families which may be harmful for the retarded children as well as for the families themselves. Through education some negative attitudes like excessive strictness, over-protection and rejection of the retarded child can be prevented.

Being properly educated or informed will also make the parents aware of the services that exist for the retarded children. Proper information will go a long way to help the parents to understand the realities of the special education programmes that are provided for these children. From the medical point of view, proper information of the parents is indispensable in order to ensure the parents' co-operation in any treatment that would be given and also to convince them that there is no cure and thus prevent them from running from doctor to doctor in the hope of a miraculous cure.

A number of parents found it necessary to discuss their problem with others. One way of achieving this would be through Associations of parents of retarded children, or better still, associations including both parents and professional workers. Educational advice can be given to the parents by social workers or welfare nurses or by educators, either in the home or in specialised centres.

Most parents in the present study hoped that their retarded children could learn some trade or vocation so that they would become independent or earn their own living in future. Here in Ghana, there is very little opportunity for giving these children some vocational training.

The children at the Home and School for Mentally Retarded Children are taught dressmaking or tailoring and carpentry. Those attending the New Horizon School are also taught similar things. It would be realised that these two schools alone cannot cater for all the retarded children and even what is taught is not enough. There is therefore the need for the Government to set up special vocational training centres for retarded children. This can be the joint responsibility of the Ministries of Education, Social Welfare and Health. These vocational centres to be set up can operate on day basis where the children will be brought for training and taken back home later on in the day so that they can still have the home care.

In giving these children some vocational training, it must be realised that the degree of independence, the extent to which the retarded child can earn his living and make his own decisions are determined partly by the child's level of intelligence or in other words, by the degree of retardation. What should be expected of the child, therefore, should be within the limits of the child's capabilities.

Most of the parents in this study wished that their retarded children become normal or completely cured, but this, as a matter of fact is impossible. Parents need to

know this so that they do not expect too much from these children. This can be done through counselling. It must be emphasized that mental retardation is not a disease and therefore cannot be cured by any medicine but with an effective education and good training programme the outcome is not hopeless.

Section F: Summary and Conclusions

The present study was conducted to find the effect of education, urbanization, sex and the degree of retardation on the attitude of parents towards their mentally retarded children.

A modified version of the Thurston Sentence Completion Form (TSCF) for investigating parental attitudes towards mental retardation was used. After pretesting this Form on 10 literate and 10 illiterate rural and urban parents, 200 TSCF were mailed to rural and urban literate parents of mentally retarded children. A return rate of 30% was obtained. In addition to this, the translated versions of the TSCF were administered to 60 rural and urban illiterate parents who were contacted personally. A total sample of 120 parents including both mothers and fathers in the age range of 25-45 years was used for this study.

A 2 x 2 analysis of variance was used to test the effects of education and urbanization on the parents' attitude towards their mentally retarded children. The effect of sex was tested by the t-test and the effect of the degree of retardation was tested by the simple analysis of variance.

Below are the main findings of this study on parental attitudes towards mental retardation.

1. There was no significant difference in the attitude of literate and illiterate parents.
2. There was no significant difference in the attitude of rural and urban parents.
3. Fathers have more positive attitude towards their mentally retarded children than mothers.
4. There was no significant difference in the attitude of parents of children with mild, moderate and severe retardation.

Hypotheses 1 and 2 were not substantiated by the results of this study. It was suggested that this was due to equal awareness of the available facilities for these children and equal understanding of the problem by the literate and illiterate parents and the rural and urban parents. Hypothesis 3 as stated was not substantiated but rather its converse was

found to be true. This was found to be due to the fact that the fathers in this study were very much attached to their retarded children. Hypothesis 4 was not substantiated probably because the degree of retardation did not mean much to the parents.

It can be concluded from this study therefore that neither education nor urbanization has any effect on the attitude of parents towards their mentally retarded children. It was also found that fathers had a more positive attitude than mothers and that the degree of retardation does not have any effect on parental attitude towards mental retardation.

Findings from this study point to the need for counselling and education of parents of mentally retarded children and the need for services to train these retarded children for the future.

PROBLEMS OF PRESENT STUDY

A number of methodological problems were encountered in the course of this study which need to be discussed here.

First of all, two different methods, namely, the mail questionnaire and the interview method were used in collecting data on parental attitudes towards mental retardation. The use of these different methods which have a number of advantages and disadvantages introduced certain variances into the study.

One method should have been used for the data collection and since the sample included illiterate subjects who could not read nor write, the interview method should have been used. Nevertheless, it was not possible to use the interview method alone mainly because of the cost involved and also because it would have been virtually impossible to locate most of the respondents who were scattered all over Ghana, in both rural and urban areas. The interview method was therefore used to collect data from the illiterate subjects only. Despite the disadvantages of the mail questionnaire method, it was employed in collecting data from the literate subjects. This made it possible to save time and money and also to obtain more thoughtful and perhaps accurate responses because the respondents were not pressed for time to complete

the sentence stems. There was a low return rate of these questionnaires probably because some of the respondents were either unable to complete the sentences due to lack of understanding or unwillingness to provide the information. This may also be probably due to the fact that the addresses were not up to date.

Despite the use of these two different methods for the literate and illiterate subjects, which introduced certain variances into the study, there was no difference in their attitudes.

The use of both literate and illiterate subjects resulted in the translation of the questionnaires into Twi and Ga. This was done by experts at the Language Centre of the University of Ghana, Legon. To avoid what Werner and Campbell (1970) term as "stilled academic translation versions," the translation was done again by two Twi and two Ga speakers and the necessary colloquial changes were made to make sure that the items were understood by the average Twi and Ga speaker before the translated questionnaires were administered to the illiterate respondents.

Because of these problems which introduced certain variances into the study, the obtained results can only be said to be tentative.

RECOMMENDATIONS FOR FUTURE RESEARCH

Very little research has been done on mental retardation in Ghana and the present research was an attempt to broaden one's knowledge as well as to stimulate more research into this important but seemingly neglected field in psychiatry.

The present study on parental attitudes has thrown some light on the kinds of attitudes held by parents towards their mentally retarded children. It is believed that through counselling the desirable attitudes can be encouraged and the undesirable or negative ones modified, changed or extinguished entirely. This points to the need for further studies to provide information on the type of changes that take place in previous attitudes as a result of counselling. There is also the need to research into the short and long term effects of these changes and the kind of parents that change their attitude.

The present study on attitudes failed to reveal the effect of education on the attitude of parents towards their mentally retarded children. Further research along these same lines but including a sample of parents who have not sought any medical or institutional help for their retarded children and a sample of parents of non-retarded children may give additional information concerning the effect

of education on attitudes towards mental retardation.

Danquah's study revealed some interesting traditional beliefs about the cause of mental retardation but the subjects in the present study did not attribute the cause of their children's retardation to any supernatural powers. It would be interesting to research further into this aspect of mental retardation using a larger sample of parents and non-parents of mentally retarded children. The results obtained from such a study may give some insight into educating the parents of mentally retarded children and the public at large on the causes of mental retardation and what can be done to prevent or reduce the incidence of this unfottunate condition.

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APPENDIX 1

COVER LETTER

c/o Department of Psychology,
University of Ghana,
Legon.

Dear Sir/Madam,

A research is being conducted to find out the Causes of Mental Retardation in Ghana as well as the Parental Attitudes towards Mental Retardation and you have been selected as one of the subjects for this study. Attached hereto are questionnaires covering these two areas.

In order to help you express some of your thoughts, the questionnaire on attitudes is made up of a number of incomplete sentences which you can complete by yourself. An example is given below to aid you in understanding how to complete the sentences.

When I think of Christmas, I always.....

Now this can be completed in many different ways. You might finish it by saying "remember the Christmas I had as a child" or "begin to worry about getting ready for it" or "think of the church services."

There are no right or wrong answers so please feel free to express any ideas that you have concerning your child.

It would be much appreciated if you could spare a little of your precious time to complete the questionnaires and let me have them in due course.

Thanks for your co-operation.

Yours sincerely,

Sarah M. Adoo (Miss)

APPENDIX IIA

QUESTIONNAIRE ON CAUSES OF MENTAL RETARDATION

1. CODE:.....

2. AGE OF CHILD:..... 3. SEX:.....

4. FATHER'S OCCUPATION
   a) Professional/Managerial/Business Executive
   b) Senior Civil Servant
   c) Teacher/Clerical/Trader
   d) Skilled Manual
   e) Unskilled Manual
   f) Farmer

5. MOTHER'S OCCUPATION
   a) Professional/Managerial/Business Executive
   b) Senior Civil Servant
   c) Teacher/Clerical/Trader
   d) Skilled Manual
   e) Unskilled Manual
   f) Farmer

6. NATURE OF CHILD'S ABNORMALITY

7. WHAT DO YOU THINK IS THE CAUSE OF YOUR CHILD'S ABNORMALITY?

8. (a) HOW DO YOU AS A PARENT HANDLE THIS CHILD?
   (b) WHY DO YOU USE SUCH METHOD?

9. (a) HOW DO OTHER RELATIVES HANDLE THIS CHILD?
   (b) WHY DO THEY USE SUCH METHOD?

10. (a) HOW DO YOUR NEIGHBOURS OR THE PUBLIC HANDLE THIS CHILD?
    (b) WHY DO THEY USE SUCH METHOD?

11. (a) WHAT IS THE TRADITIONAL METHOD OF HANDLING SUCH A CHILD?
    (b) WHY IS SUCH METHOD USED?

12. WHAT SORT OF ADVICE ARE YOU GIVEN BY RELATIVES/NEIGHBOURS CONCERNING YOUR CHILD?

13. (a) DID THE CHILD'S MOTHER HAVE ANY ILLNESS/DISEASE DURING PREGNANCY?

YES:.....NO:.....

(b) If YES, please specify

14. (a) DID THE CHILD'S MOTHER HAVE ANY X-RAY DURING PREGNANCY?

YES:..... NO:.....

(b) If YES, which part of the body was X-rayed?

15. (a) DID THE CHILD'S MOTHER USE ANY DRUG OUTSIDE MEDICAL PRESCRIPTION DURING PREGNANCY?

YES:..... NO:.....

(b) If YES, which drug, and for what reason was the drug taken?

16. (a) WERE THERE ANY COMPLICATIONS DURING THE BIRTH OF THE CHILD?

YES:..... NO:.....

(b) If YES, please specify

17. HOW OLD WAS THE MOTHER AT THE TIME OF THE BIRTH OF THE CHILD?

18. WAS THE CHILD A FULL TERM BABY?

YES:..... NO:.....

19. (a) DID THE CHILD HAVE ANY ILLNESS/DISEASE DURING INFANCY/CHILDHOOD?

YES:..... NO:.....

(b) If YES, please specify

(c) At what age did the child have this illness?

(d) Where was the child treated?

20. (a) At what age were signs of the child's present illness/disease first detected?

(b) What was the nature of these signs?

(c) What kinds of treatment were sought?

(d) Why were these sought?

21. IS THERE ANY CASE OF MENTAL ILLNESS IN THE FAMILY?

YES:..... NO:.....

If YES,

(a) What is the nature of the illness?

(b) What is the child's relationship to this/ these person(s)?

22. DO YOU HAVE ANY OTHER CHILDREN APART FROM THIS CHILD?

YES:..... NO:.....

If YES, what is their	(a) Age	(b) sex
	i)	i)
	ii)	ii)
	iii)	iii)
	iv)	iv)
	v)	v)

APPENDIX IIB

TWI VERSION OF THE QUESTIONNAIRE ON CAUSES OF MENTAL RETARDATION

1. NEA WƆDE HYƐ ABOFRA NO NSOW:.....
2. MFE A ABOFRA NO ADI: .....
3. ƆYƐ ƆBARIMA ANAA ƆBEA: .....
4. ADWUMA A ABOFRA NO AGYA YƐ:
   a. Nsa ano adwuma/ɔyɛ adwuma mu panyin/ɔyɛ n'ankasa adwuma.
   b. Aban Dwumayɛfo Panyin.
   c. Ɔkerɛkyerɛfo/Krakye dwumayɛfo/Oguadini.
   d. Ɔpaani a ɔkosuaa n'adwuma.
   e. Ɔpaani a onnim n'adwuma ho hwee.
   f. Okuafo.
5. ADWUMA A ABOFRA NO NA YƐ
   a. Nsa ano adwuma/ɔyɛ adwuma mu panyin/ɔyɛ n'ankasa adwuma.
   b. Aban Dwumayɛfo Panyin.
   c. Ɔkyerɛkyerɛfo/Krakye dwumayɛfo/Oguadini.

d. Opaani a okosuaa n'adwuma.

e. Opaani a onnim n'adwuma ho hwee.

f. Okuafo.

6. SƐNEA ABOFRA NO ADWENEM YARE NO TE

7. WUGYE DI SƐ DƐN NA ƐDE ABOFRA NO ADWENEM YARE NO BAE?

8 (a) WO A WOWOO ABOFRA NO. ƆKWAN BƐN SO NA WOFA KURA NO?

(b) DƐN NTI NA WOFA SAA KWAN NO SO?

9 (a) NA WO ABUSUAFO A AKA NO NSO WOKURA ABOFRA NO DƐN?

(b) DƐN NTI NA WƆFA SAA KWAN NO SO?

10 (a) ƆKWAN BƐN SO NA WO MFƐFO ANAASƐ ƆMANFO FA KURA ABOFRA NO?

(b) DƐN NTI NA WƆFA SAA KWAN NO SO?

11(a) NA EFI TETE. ƆKWAN BƐN SO NA WƆFA KURA ABOFRA A ƆTE SƐƐ?

(b) DƐN NTI NA WƆFA ƆKWAN A ƐTE SƐƐ SO?

12. AFOTU BƐN NA WO NKURƆFO/MFƐFO DE MA WO A ƐFA WO BA YI HO?

13 (a) BERE A ABOFRA NO NA NINSƐN NO NO, ƆYARE BI KAA ƐNA NO ANAA?

YIW ..... DABI .....

(b) Sɛ ɔyaree a, ɛnde kyerɛ yare ko no ne sɛnea ɛyɛɛ no fae.

14 (a) ABOFRA NO NA NINSƐN NO NO, WOTWAA NO MFONINI WƆ AYARESABEA ANAA?

YIW ..... DABI .....

(b) Sɛ wotwaa no bi a, ne he pɔtee na wotwae?

15 (a) SO BERE A WONINSƐN ABOFRA NO, ƐNA NO YƐƐ ADURU FOFORO BI KAA NEA DƆKETAFO DE MAA NO NO HO?

YIW ..... DABI .....

(b) Sɛ ɛte saa a, dɛn aduru na ɔyɛe na dɛn nti na ɔyɛɛ saa aduru no?

16 (a) BERE A WƆREWƆ ABOFRA NO, AWO NO MU YƐƐ DEN ANAA?

YIW ..... DABI .....

(b) Sɛ emu yɛɛ den a, ende kyerɛkyerɛ mu kakra.

17. ƐNA NO REWO ABOFRA NO. NA WADI MFE AHE?

18. ABOFRA NO DII ASRAM AKRON WO YAFUNU MU ANSA NA WOREWO NO?

YIW ..... DABI .....

19 (a) SO OYARE DI BOO/KAA ABOFRA NO NE NKOKOA BERE ANAA MMOFRAASE MU?

YIW ..... DABI .....

(b) Sɛ oyare boo no a, ɛnde kyerɛkyerɛ mu kakra.

(c) Saa yare no boo abofra no, na wadi mfe ahe?

(d) Ɛhe na wokɔsaa no yare?

20 (a) Okwan ben so na yare no fa yii ne ho adi ma wohui sɛ ebi aka abofra no?

(c) Ayaresa ahorow ben na mode no koe?

(d) Den nti na mopee sɛ mofa saa akwan no so sa no yare?

21. SO ADWENEM YARE NO BI AKA ABOFRA NO AGYA, NE NA NE NE NUANOM NE WON NKUROFO NU DI PƐN?

YIW ..... DABI .....

SƐ EBI AKA WƆN MU BI PƐN A,

(a) Na **oyare no su te dɛn?**

(b) Abofra **no dɛn potee** ne saa onipa/nnipa no?

22. SO WOWƆ MMA FOFORO BI KA SAA ABOFRA YI HO?

YIW ..... DABI .....

SƐ WOWƆ BI A,

a) **Wɔadi mfe** ahe? (b) **Ɔyɛ ɔbea** anaa **ɔyɛ ɔbarima**?

i) **i)**

ii) **ii)**

iii) **iii)**

iv) **iv)**

v) **v)**

APPENDIX IIC

GA VERSION OF THE QUESTIONNAIRE ON THE CAUSES OF MENTAL RETARDATION

1. OKADI .....

2. AFI NI GBEKƐ LƐ EYE .....

3. NUU LOO YOO .....

4. ETSƐ NITSUMƆ

   a. Mɔ ni tsuɔ lɛ diɛntsɛ nitsumɔ/Nitsumɔŋ-onukpayeli/ Dzrayeli nitsumɔ anɔ kwɛlɔ nukpa.

   b. Onukpa yɛ maŋkwralɔi anitsumɔ he.

   c. Tsɔɔlɔ/Wolɔŋmalɔ/Dzrayelɔ.

   d. Ninenaanitsumɔ.

   e. Apaayelɔ.

   f. Okwaafonyo.

5. ENYƐ NITSUMƆ

   a. Mɔ ni tsuɔ lɛ diɛntsɛ nitsumɔ/Nutsumɔŋ-onukpayeli/ Dzrayeli nitsumɔ anɔ kwɛlɔ nukpa.

   b. Onukpa yɛ maŋkwralɔi anitsumɔ he.

   c. Tsɔɔlɔ/Wolɔŋmalɔ/Dzrayelɔ

   d. Ninenaanitsumɔ.

   f. Okwaafonyo.

6. TE OBILƐ LƐ YITSOŋ HELA LƐ YƆƆ TƐŋ?

7. MƐNI DZI NƆNI ODZWƐƆ AKƐ ƒI NO HA NI OBILƐ LƐ NA NAKAI YITSOŋ HELA?

8(a) AKƐ FƆLƆ DZI BO LƐ. TE OHIƆ GBEKƐ NƐƐ TƐƐ?

(b) MƐNI HEWƆ OHIƆ LƐ NAKAI?

9(a) TE OWEKUMƐI KROKOMƐI HU HIƆ GBEKƐ NƐƐ TƐƐ?

(b) MƐNI HEWƆ AMƐ HIƆ LƐ NAKAI?

10(a) TE AKUTSO KƐ MAŋ BII LƐ HIƆ GBEKƐ NƐƐ TƐƐ?

(b) MƐNI HEWƆ AMƐ HIƆ LƐ NAKAI?

11(a) MƐNI DZI BƆNI AHIƆ GBEKƐ NƐƐ YƐ KUSUM NAA?

(b) MƐNI HEWƆ AHIƆ LƐ NAKAI?

12. MƐƐ ŋAAWOO OWEKUMƐI KƐ AKUTSO MLI BII HAA BO YƐ OBI NƐƐ HE?

13(a) ANI GBEKƐ LƐ MAMI HE YE BENI EHIƐ LƐ MUSU LƐ?

HƐƐ..... DABBI .....

(b) KƐ HƐƐ LƐ; ofai nɛ tsɔɔmɔ hela ni dzi.

14 (a) ANI ASHA GBEKƐ LƐ MAMI MFONIRI YƐ HELATSAMƆHE BE MLI NI EHIƐ MUSU LƐ?

HƐƐ ..... DAABI .....

(b) KƐ HƐƐ LƐ, EGBOMƆTSO LƐ HEGBƐ ASHA?

15 (a) ANI GBEKƐ LƐ MAMI KƆ TSOFA KO NI DZEE DATREFONYO HA LƐ BENI EHIƐ LƐ MUSU LO?

HƐƐ ..... DAABI .....

(b) KƐ HƐƐ LƐ, mɛni tsofa ni, ni mɛni hewɔ ekɔ?

16 (a) ANI NAAGBAI KOMƐI BA YƐ GBEKƐ LƐ FƆMƆ MLI?

HƐƐ ..... DAABI .....

(b) KƐ HƐƐ LƐ, tsɔɔmɔ naggbai ni dzi.

17. AFII ENYIƐ NYƐ LƐ EYE BE MLI NI AFƆ GBEKƐ LƐ?

18. ANI GBEKƐ LƐ BEE ʃɛ DANI EFƆ LƐ?

HƐƐ ..... DAABI .....

19 (a) ANI HELA MƆ GBEKƐ LƐ YƐ EGBEKƐBIIASHI?

HƐƐ ..... DAABI .....

(a) KƐJI HƐƐ LƐ, mɛni hela ni?

(c) Afii enyiɛ gbekɛ lɛ ye ni nakai hela lɛ mɔ lɛ?

(d) Nɛɛgbɛ atsa gbekɛ lɛ yɛ?

20. (a) Afii enyiɛ gbekɛ lɛ eye ni ana klɛŋklɛŋ akɛ eetao ena yitsoŋ helɛ nɛɛ?

(b) Mɛɛ okaadi nɛkɛ?

(c) Mɛni tsamɔ aha lɛ?

(d) Mɛni hewɔ ni atao nakai tsamɔ?

21 (a) ANI MYTSOŊ HELA KO YƐ WEKU LƐ MLI LO?

HƐƐ ..... DAABI .....

KƐJI HƐƐ LƐ,

(a) Te hela lɛ yɔɔ tɛŋ?

(b) Mɛni yeɔ yitsoŋ hela nɛɛ yɛ weku lɛ mli lɛ emɛni dzi gbekɛ lɛ?

22. ANI OYƐ BII KROKOMEI FATA GBEKƐ NƐƐ HE?

KƐJI HƐƐ LƐ,

(a) Afii enyiɛ amɛye	(b) Nuu loo Yoo
i.	i.
ii.	ii.
iii.	iii.
iv.	iv.
v.	v.

APPENDIX IIIA

QUESTIONNAIRE ON ATTITUDE OF PARENTS TOWARDS MENTAL RETARDATION

CODE:.....

1. AGE OF PARENT:.....
2. PLACE OF RESIDENCE:.....
3. PLEASE CHECK YOUR RELATIONSHIP TO THE CHILD.
   (a) Mother..... (b) Father.....
4. FATHER'S EDUCATION
   a) University Education
   b) Post Secondary Education
   c) Secondary/Training College/Commercial/Technical/QRN Nursing.
   d) Elementary Education
   e) No Education.
5. MOTHER'S EDUCATION
   a) University Education
   b) Post Secondary Education
   c) Secondary/Training College/Commercial/Technical/QRN Nursing.
   d) Elementary Education
   e) No Education

INSTRUCTIONS

Below are a number of incomplete sentences. By completing these sentences you can express how you feel about your mentally retarded child. Please finish each sentence as well as you can. Feel free to express any ideas that you have concerning your child. There are no right or wrong answers so please write whatever you wish.

1. What makes my child the happiest is.....
2. When I think of my child, I .....
3. What I would like to see my community do for the mentally retarded is .....
4. I think that getting together with parents of other mentally retarded children to talk over problems is a (good) (poor) (Cross out the one which does not apply) thing because .....
5. When people know you have a mentally retarded child, they .....
6. What I want my child to get out of life is.....
7. When it appeared that my child was mentally retarded, I, ...
8. When my child comes home, he (or she) wants most to ... .
9. When the brothers and sisters are asked about the retardation, they.....
10. The future looks.....
11. What most parents find hardest to accept about the mental retardation of their child is.....
12. When I first learned that my child was mentally retarded, I,.....
13. When I think of my child's future, I.....
14. When I am with my mentally retarded child, I like people to.....
15. The most common mistake others make in bringing up a mentally retarded child is.....
16. The best thing that has happened to my child is.....
17. My biggest fear is.....
18. I (want/wanted) (do not want/did not want) (Cross out the ones which do not apply) my child placed at Hospital/Institution because..... .....

19. What bothers me most about my child's retardation is....
.....
20. If something were to happen to me, my child .....
21. My child becomes most easily disturbed when.....
22. I (do) (do not) (cross out one) feel free to discuss my child's retardation with my friends and neighbours because.....
23. Although my child is mentally retarded, I would like him (or her) to.....
24. I worry most about.....
25. My child is (happy) (unhappy)(cross out one) at Hospital/ Institution because.....
26. When I visit my child, he (or she).....
27. When my child's brothers and sisters ask about him (or her) I tell.....
28. When I talk to my friends and neighbours about my retarded child, they think I should.....
29. What will help me most in understanding my retarded child would be.....
30. If I could be granted one wish for my child, it would be
.....

APPENDIX IIIB

TWI VERSION OF THE QUESTIONNAIRE ON ATTITUDE OF PARENTS TOWARDS MENTAL RETARDATION.

AWOFO NO HO NSƐM

NEA WƆDE HYƐ AWOFO YI NSOW .....

1. MFE A WADI .....
2. BAABI A WOTE .....
3. WO DƐN NE ABOFRA NO?

   a) Ne na ..... b) N'agya .....

4. AGYA NO NIOMASUA

   a. Ɔkɔɔ Sukuupon (University).

   b. Ɔwiee Ntoaso Sukuu no, ɔkɔtoaa n'adesua so bio.

   c. Ɔkɔɔ Ntoaso Sukuu/Akyerɛkyerɛfo Nteteebea/Sukuu a wosua taapobo (typing)/Mfiri, ɛlɛtrik ne nnade ho nnwuma sukuu/'Nurse' a wankɔ Ntoaso Sukuu (QRN).

   d. Mmofra mmofra sukuu (Class 1 - Form 4).

   e. Wankɔ sukuu koraa enti onnim nhoma.

5. ƐNA NO NHOMASUA

a. Ɔkɔɔ Sukuupɔn (University)

b. Owiee Ntoaso Sukuu no, ɔkɔtoaa n'adesua so bio.

c. Ɔkɔɔ Ntoaso Sukuu/Akyerɛkyerɛfo Nteteebea/Sukuu a wosua taapobɔ (typing)/Mfiri, ɛlɛtrik ne nnade ho nnwuma sukuu/'Nurse' a wanko Ntoaso Sukuu (ORN).

d. Mmofra mmofra sukuu (Class 1 - Form 4).

e. Wankɔ sukuu koraa enti onnim nhoma.

Ɔkasamu ahorow a edidi so yi biara nni hɔ a edi mu. Wopɛ sɛ wuwie biara ma edi mu na nea wɔde bɛsɔw biara so no bɛkyerɛ w'adwene a wowɔ wɔ wo ba a ɔyare n'adwenem no ho. Wo de, mma hwee nnhaw wo na ka nea wunim wɔ wɔ ba no ho nyinaa, nnyaw biribiara. Biribiara nni hɔ a woka a obi bɛka sɛ eye anaa enye, enti wo de ka nea wopɛ sɛ woka nyinaa.

1. Nea ɛma me ba no ani gye yiye koraa ne .....
   .....
2. Sɛ midwen me ba no ho a, me .....
3. Nea anka mepɛ sɛ ɔmanfo a mete wɔn mu no bɛyɛ de aboa nnipa a ɛyare wɔn adwenem no ne sɛ .....

4. Migye di sɛ sɛ awofo bi a wɔn mma yare wɔn adwenem ne afoforo bi a won mma yare saa ara behyia adwene nea ɛhaw wɔn ho no (yɛ adɛ pa) (enye koraa) (twa nea ɛho nhia no mu), efisɛ .....

5. Sɛ nnipa hu sɛ wo ba bi yare n'adwenem a, ɛnde wɔ ... .

6. Ade titiriw a mepɛ sɛ me ba yi benya wɔ ne wiase asetena mu ne .....

7. Bere a ɛyɛɛ sɛ me ba no aya adwenem yare no, me ....

8. Sɛ me ba no ba fie a nea ɔpɛ sɛ ɔyɛ titiriw ne ....

9. Sɛ wobisa abofra no nuabarimanom ne ne nuabeanom biribiara a ɛfa won nua no adwenem yare no ho a, wɔ..... .....

10. Wedaakye asetena yɛ .....

11. Nneɛma bi a ɛfa adwenem yare ho a ɛyɛ den ma awofo bi sɛ wobegye atom wɔ won mma ho ne .....

12. Bere a mihuu kan koraa sɛ me ba anya adwenem yare no, me .....

13. Sɛ mewɔ hɔ na me ba yi daakye asetena besi me tirim a, me.....

14.. Sɛ me ne me ba yarefo yi wɔ hɔ a, mepɛ sɛ nkurofo .....

15. Mfomso kɛse a ebinom yɛ wɔ mmofra a wɔwɔ adwenem yarɛ yi yɛn ho ne .....

16. Ade a ayɛ me ba yi ma m'ani agye ho papaapa ne .....

17. Ade a misuro koraa ma no ne .....

18. (Mepɛ sɛ/Mempɛ sɛ) (Mepɛɛ sɛ/Mampɛ sɛ) (twitwa nea ɛho nhia no mu) anka wɔde me ba no bɛto ayaresabea/ sukuu bi mu, efisɛ .....

19. Nea ɛhaw m'adwene yiye wɔ me ba yi adwenem yare yi ho ne .....

20. Sɛ anka mprempren yi ara asɛm bi to me a, me ba yi .....

21. Bere a asɛm taa haw me ba no paa ne .....

22. Mepɛ/Mempɛ (twa nea ɛho nhia no mu) koraa sɛ me ne me nnamfo ne me mfɛfo bɛbɔ me ba no yare no ho nkɔmmɔ biara, efisɛ.....

23. Ɛwom sɛ me ba no adwene nyɛ adwuma papa biara de, nanso anka mɛpɛ sɛ ɔbɛ .....

24. Nea ɛhaw me koraa ne .....

25. Sɛ me ba yi wɔ ayaresabea anaasɛ sukuu mu a, (n'ani gye) (n'ani nnye) (twa nea ɛho nhia no mu), efisɛ .....

26. Sɛ me ba no wɔ baabi na mekɔsra no hwɛ a, ...

.....

27. Sɛ me ba no nuanom mmarima ne mmea bisa me ne ho asɛm a, meka kyerɛ won sɛ .....

28. Sɛ meka me ba yarefo yi ho asɛm kyerɛ me nnamfo ne me mfɛfo a, wosusuw sɛ ɛsɛ sɛ me .....
.....

29. Nea anka ɛbɛboa me ma mate me ba yarefo yi ase yiye koraa ne .....

30. Sɛ anka obi bebisa me nea wode ma me ba no anaasɛ wɔyɛ ma no a n'ani begye ho anaasɛ ne ho bɛto no a, anka mɛ.....
.....

APPENDIX IIIC

GA VERSION OF THE QUESTIONNAIRE ON THE ATTITUDE OF PARENTS TOWARDS MENTAL RETARDATION

OKADI .....

1. AFI NI FƆLƆ EYE .....
2. NƐƐGBƐ OYƆƆ .....
3. OFAI NƐ MƐNI MLIGBLAMƆ YƆƆ OKƐ OBILƐ TEŋ?

   (a) Enyɛ ..... (b) Etsɛ .....

4. TSƐ TSƆSEMƆ

   (a) 'University' tsɔsemɔ.

   (b) 'Post Secondary' Tsɔsemɔ.

   (c) Secondary/Training College/Commercial/Technical/ QNR Nursing.

   (d) Elementary Education.

   (e) Eya ko skul dã̃.

5. NYƐ TSƆSEMƆ

(a) 'University' tsɔsemɔ.

(b) 'Post Secondary' tsɔsemɔ.

(c) Secondary/Training College/Commercial/Technical/ ƆRN Nursing.

(d) Elementary Education.

(e) Eya ko skul dã̃,

Aŋmara saji fãfaafai yɛ shishigbɛ. Kɛji obo mɔdeŋ oha saji nɛɛ yeyee emuji lɛ nomɛi baatsɔɔ bɔni osusuɔ yɛ obi ni ena yitsoŋ hela nɛɛ he. Ofai nɛ muu saji lɛ eko fɛɛ eko naa bɔni ooonyɛ. Jiemɔ oyiŋtoo fɛɛ ni ohiɛ yɛ obi lɛ he lɛ kpo bɔni sa. Kaakɛɛ akɛ sane lɛ eko ja loo eko ejaaa koni oŋmara bɔni ji oyiŋtoo lɛ pɛpɛɛpɛ.

1. Nɔni haa mibi lɛ naa miŋʃɛɛ waa dzi .....

2. Kɛdzi midzwɛɔ mibi lɛ he lɛ, mi .....

3. Nɔni masumɔ akɛ mikutsoŋbii afee aha mɛi ni yitsoŋ bɛ dzogbaŋ dzi .....

4. Efeɔ mi akɛ kɛ dzi mikɛ foloi krokomɛi ni yɔɔ gbɛkɛbii ni bɛ odzogbaŋ fee ekome kɛsusu nibii ahe lɛ (ehi) (ehii) (foo nɔni esaa mli) edzaakɛ .....
.....

5. Kɛdzi mɛi na amɛle akɛ oyɛ bi ni dzwɛŋmɔ bɛ odzogbaŋ lɛ amɛ .....

6. Nɔni misumɔ akɛ mibi lɛ ana yɛ edzeŋ ʃihilɛ dzi .....

7. Beni tamɔ mibi lɛ bɛ odzogbaŋ lɛ, mi .....

8. Kɛ mibi lɛ ba shĩa lɛ, nɔni esumɔɔ ni efee waa dzi .....
.....

9. Kɛdzi abi enyɛmimɛi yei kɛ hii saneko yɛ amɛ nyɛmi ni bɛ odzogbaŋ lɛ he lɛ, amɛ .....

10. Be ni ka ehiɛ feɔ tamɔ .....

11. Nɔni wa ha fɔlɔi pii ni amɛ ŋɔ yɛ amɛbii ni bɛ odzogbaŋ lɛ he dzi .....

12. Beni mina mile klɛŋklɛŋ akɛ ʃi mibi lɛ bɛ odzogbaŋ lɛ, mi .....

13. Kɛdzi midzwei mibi lɛ wɔsɛɛ shihilɛmli lɛ, mi .....
.....

14. Kɛ mibi ni bɛ dzogbaŋ lɛ yɛ mimasɛi lɛ, misumɔɔ ni mei
.....

15. Nɔ kpakpa krɛdɛɛ ni eba mibi lɛ nɔ dzi .....
.....

16. Tɔmɔ wulu ni mei feɔ kɛdzi amɛ mlitsɔse gbekɛ ni bɛ odzogbaŋ lɛ dzi .....

17. Nɔni miʃeɔ gbeyei waa dzi .....

18. (Miŋsumɔ/miŋsumɔɔ) (foo nɔni bɛ ogbɛ faŋ mli) akɛ atsi mibi lɛ nɛɛ naa yɛ Helatsamɔhe aloo Tsɔsemɔhe edzaakɛ .....
.....

19. Nɔni gbaa minaa waa yɛ mibi lɛ hela lɛ he dzi .....
.....

20. Kɛdzi eeeba lɛ akɛ noko aaaba minɔ lɛ, mibi lɛ .....
.....

21. Mibi lɛ tsui shaa lɛ kɛdzi .....

22. Mihe (tseɔ) (tseee) (foo nɔni kɔɔ ohe lɛ mli) mi kɛji mikɛ minanemɛi kɛ mikutsoŋbii gbaa sane yɛ mibi lɛ ehe edzaakɛ .....

23. Mibi lɛ yitsoŋ bɛ odzogbaŋ moŋ ʃi mɔsumɔ ni .....
.....

24. Nɔni yeɔ mitsui waa dzi .....

25. Mibi lɛ (naa miishɛɛ) (naaa miishɛɛ) (foo ɛkome mli) yɛ Helatsamɔhe aloo amɛ Tsɔsemɔhe edzaakɛ .....
.....

26. Kɛdzi miya sra mibi lɛ lɛ e .....

27. Kɛdzi enyɛmimɛi hii kɛ yei bi ehe sane lɛ, mikɛɔ .....

28. Kɛdzi miwie mibi lɛ he mitsɔɔ minanemɛi kɛ mikutsonbii lɛ, amɛdzwɛɔ akɛ sani .....

29. Nɔni baawa mi waa ni manu mibi lɛ ʃiʃi dzi .....

30. Kɛdzi abaafee nɔ ko aha mibi lɛ, masumɔ ni .....

APPENDIX IV

SEX, AGE, DEGREE OF RETARDATION OF CHILDREN AND RAW SCORES OF RURAL LITERATE PARENTS

Ss	Sex	Age in yrs.	Degree of Retardation of child	Total Responses	Total Positive Responses	% Positive Responses
1	F	43	Moderate	26	14	53.85
2	F	35	Mild	25	13	52.00
3	F	32	Moderate	23	8	34.78
4	M	36	Mild	28	17	60.71
5	M	32	Mild	27	17	62.96
6	M	45	Moderate	29	19	65.52
7	F	45	Moderate	21	13	61.90
8	F	39	Severe	27	16	59.26
9	F	30	Severe	28	17	60.71
10	M	45	Moderate	27	19	70.37
11	M	45	Severe	23	11	47.83
12	M	36	Mild	29	19	65.52
13	F	34	Severe	28	16	57.14
14	F	45	Severe	26	13	50.00
15	F	39	Moderate	27	17	62.96
16	F	34	Mild	25	19	76.00
17	F	45	Mild	23	16	69.57
18	F	45	Moderate	12	10	83.33
19	F	39	Moderate	27	18	66.66
20	F	45	Severe	27	20	74.07
21	M	45	Severe	23	13	56.52
22	M	40	Severe	16	11	68.75
23	M	43	Severe	25	16	64.00
24	F	37	Severe	25	11	44.00
25	F	40	Severe	26	14	53.85

APPENDIX IV (CONT'D.)

Ss	Sex	Age in yrs.	Degree of Retardation of child	Total Responses	Total Positive Responses	% Positive Responses
26	M	39	Severe	26	18	69.23
27	M	45	Severe	28	20	71.43
28	F	42	Severe	28	17	60.71
29	F	42	Mild	24	14	58.33
30	M	45	Severe	23	11	47.83

M = Male F = Female

APPENDIX V

SEX, AGE, DEGREE OF RETARDATION OF CHILDREN AND RAW SCORES OF URBAN LITERATE PARENTS

Ss	Sex	Age in yrs.	Degree of Retardation of Child	Total Responses	Total Positive Responses	% Positive Responses
1	F	28	Moderate	29	19	65.52
2	F	30	Severe	24	12	50.00
3	F	45	Mild	27	18	66.66
4	F	35	Mild	29	21	72.41
5	M	33	Mild	26	17	65.38
6	F	28	Moderate	26	20	76.92
7	F	31	Severe	23	12	52.17
8	M	45	Moderate	28	15	53.57
9	M	45	Severe	26	23	88.46
10	M	45	Moderate	12	8	66.66
11	M	40	Severe	23	17	73.91
12	M	45	Moderate	17	14	82.35
13	F	43	Mild	27	20	74.07
14	M	45	Mild	29	18	62.07
15	M	42	Mild	27	14	51.85
16	M	38	Mild	13	9	69.23
17	M	40	Moderate	23	12	52.17
18	F	44	Mild	17	13	76.47
19	F	43	Mild	25	12	48.00
20	F	41	Moderate	22	15	68.18
21	F	45	Moderate	28	17	60.71
22	F	45	Mild	19	10	52.63
23	M	45	Moderate	8	5	62.50
24	F	41	Mild	30	24	80.00
25	M	45	Mild	27	20	74.07

APPENDIX V (CONT'D.)

Ss	Sex	Age in yrs.	Degree of Retardation of child	Total Responses	Total Positive Responses	% Positive Responses
26	F	34	Mild	28	17	60.71
27	M	43	Mild	28	15	53.57
28	F	40	Mild	27	14	51.85
29	F	34	Moderate	26	18	69.23
30	M	40	Severe	25	12	48.00

M = Male F = Female

APPENDIX VI

SEX, AGE, DEGREE OF RETARDATION OF CHILDREN AND RAW SCORES OF RURAL ILLITERATE PARENTS

Ss	Sex	Age in yrs.	Degree of Retardation of Child	Total Responses	Total Positive Responses	% Positive Responses
1	F	45	Mild	28	15	53.57
2	F	27	Severe	24	15	62.50
3	M	40	Mild	25	17	68.00
4	F	34	Mild	25	16	64.00
5	F	25	Mild	18	10	55.56
6	F	45	Moderate	29	18	62.07
7	M	40	Mild	26	16	61.54
8	F	33	Severe	24	12	50.00
9	M	31	Mild	24	14	58.33
10	M	45	Mild	30	18	60.00
11	F	36	Mild	28	15	53.57
12	F	33	Severe	25	16	64.00
13	M	40	Mild	26	18	69.23
14	F	39	Mild	25	16	64.00
15	F	29	Mild	20	12	60.00
16	F	38	Moderate	29	18	62.07
17	M	42	Mild	26	15	57.69
18	F	40	Severe	25	13	52.00
19	M	41	Mild	23	14	60.87
20	M	38	Mild	30	18	60.00
21	F	37	Moderate	28	15	53.57
22	F	34	Severe	24	15	62.50
23	M	45	Mild	25	17	68.00
24	F	42	Moderate	29	18	62.07
25	F	40	Mild	20	10	50.00

APPENDIX VI (CONT'D.)

Ss	Sex	Age in yrs.	Degree of Retardation of Child	Total Responses	Total Positive Responses	% Positive Responses
26	F	45	Moderate	29	18	62.07
27	M	45	Moderate	29	18	62.07
28	F	38	Severe	24	12	50.00
29	M	40	Moderate	29	18	62.07
30	M	41	Severe	24	15	62.50

M = Male F = Female

APPENDIX VII

SEX, AGE, DEGREE OF RETARDATION OF CHILDREN AND RAW SCORES OF URBAN ILLITERATE PARENTS

Ss	Sex	Age in yrs.	Degree of Retardation of child	Total Responses	Total Positive Responses	% Positive Responses
1	F	32	Mild	24	8	33.33
2	F	45	Severe	24	17	70.83
3	F	39	Mild	27	12	44.44
4	F	32	Mild	25	15	60.00
5	F	45	Severe	21	12	57.14
6	F	26	Severe	23	15	65.22
7	M	45	Moderate	27	20	74.07
8.	M	45	Mild	28	20	71.43
9	M	40	Mild	27	22	81.48
10	M	45	Mild	25	21	84.00
11	F	39	Mild	25	10	40.00
12	F	36	Severe	26	17	65.38
13	F	43	Mild	27	12	44.44
14	F	40	Mild	25	15	60.00
15	F	36	Severe	21	12	57.14
16	F	40	Severe	23	14	60.87
17	M	45	Moderate	27	20	74.07
18	M	43	Mild	28	18	64.29
19	M	42	Mild	27	20	74.07
20	M	40	Mild	27	21	77.77
21	F	40	Mild	24	8	33.33
22	F	44	Severe	24	17	70.83
23	F	38	Mild	27	12	44.44
24	F	34	Mild	25	15	60.00
25	F	30	Severe	21	12	57.14

APPENDIX VII (CONT'D.)

Ss	Sex	Age in yrs.	Degree of Retardation of child	Total Responses	Total Positive Responses	% Positive Responses
26	F	40	Severe	23	15	65.22
27	M	35	Moderate	26	19	73.08
28	M	40	Moderate	28	20	71.43
29	M	45	Moderate	27	22	81.48
30	M	36	Moderate	25	21	84.00

M = Male F = Female

APPENDIX VIII

DATA FOR TESTING HYPOTHESES 1 & 2

FACTOR I : EDUCATION

		LITERATE PARENTS		ILLITERATE PARENTS	
		Ss	% Positive Responses	Ss	% Positive Responses
		1	53.85	1	53.57
		2	52.00	2	62.50
		3	34.78	3	68.00
		4	60.71	4	64.00
		5	62.96	5	55.56
		6	65.52	6	62.07
		7	61.90	7	61.54
		8	59.26	8	50.00
		9	60.71	9	58.33
FACTOR II	RURAL	10	70.37	10	60.00
URBANI-	PARENTS	11	47.83	11	53.57
ZATION		12	65.52	12	64.00
		13	57.14	13	69.23
		14	50.00	14	64.00
		15	62.96	15	60.00
		16	76.00	16	62.07
		17	69.57	17	57.69
		18	83.33	18	52.00
		19	66.66	19	60.87
		20	74.07	20	60.00
		21	56.52	21	53.57
		22	68.75	22	62.50
		23	64.00	23	68.00

DATA FOR TESTING HYPOTHESES 1 & 2 (CONT'D.)

FACTOR I : EDUCATION

		LITERATE PARENTS		ILLITERATE PARENTS	
		Ss	% Positive Responses	Ss	% Positive Responses
FACTOR II URBANIZATION	RURAL PARENTS	24	44.00	24	62.07
		25	53.85	25	50.00
		26	69.23	26	62.07
		27	71.43	27	62.07
		28	60.71	28	50.00
		29	58.33	29	62.07
		30	47.83	30	62.50
	URBAN PARENTS	1	65.52	1	33.33
		2	50.00	2	70.83
		3	66.66	3	44.44
		4	72.41	4	60.00
		5	65.38	5	57.14
		6	76.92	6	65.22
		7	52.17	7	74.07
		8	53.57	8	71.43
		9	88.46	9	81.48
		10	66.66	10	84.00
		11	73.91	11	40.00
		12	82.35	12	65.38
		13	74.07	13	44.44
		14	62.07	14	60.00
		15	51.85	15	57.14
		16	69.23	16	60.87
		17	52.17	17	74.07
		18	76.47	18	64.29
		19	48.00	19	74.07

DATA FOR TESTING HYPOTHESES 1 & 2 (CONT'D.)

FACTOR I : EDUCATION

		LITERATE PARENTS		ILLITERATE PARENTS	
		Ss	% Positive Responses	Ss	% Positive Responses
FACTOR II : URBANIZATION	URBAN PARENTS	20	68.18	20	77.77
		21	60.71	21	33.33
		22	52.63	22	70.83
		23	62.50	23	44.44
		24	80.00	24	60.00
		25	74.07	25	57.14
		26	60.71	26	65.22
		27	53.57	27	73.08
		28	51.85	28	71.43
		29	69.23	29	81.48
		30	48.00	30	84.00

APPENDIX IX

DATA FOR TESTING HYPOTHESIS 3

MOTHERS		FATHERS	
Ss	% Positive Responses	Ss	% Positive Responses
1	65.52	1	65.38
2	50.00	2	53.57
3	66.66	3	88.46
4	72.41	4	66.66
5	76.92	5	73.91
6	52.17	6	82.35
7	74.07	7	62.07
8	76.47	8	51.85
9	48.00	9	69.23
10	68.18	10	52.17
11	60.71	11	62.50
12	52.63	12	74.07
13	80.00	13	53.57
14	60.71	14	48.00
15	51.85	15	60.71
16	69.23	16	62.96
17	53.85	17	65.52
18	52.00	18	70.37
19	34.78	19	47.83
20	61.90	20	65.52
21	59.26	21	56.52
22	60.71	22	68.75
23	57.14	23	64.00
24	50.00	24	69.23
25	62.96	25	71.43

DATA FOR TESTING HYPOTHESIS 3 (CONT'D.)

MOTHERS		FATHERS	
Ss	% Positive Responses	Ss	% Positive Responses
26	76.00	26	47.83
27	69.57	27	74.07
28	83.33	28	71.43
29	66.66	29	81.48
30	74.07	30	84.00
31	44.00	31	74.07
32	53.85	32	64.29
33	60.71	33	74.07
34	58.33	34	77.77
35	33.33	35	73.08
36	70.83	36	71.47
37	44.44	37	81.48
38	60.00	38	84.00
39	57.14	39	68.00
40	65.22	40	61.54
41	40.00	41	58.33
42	65.38	42	60.00
43	44.44	43	69.23
44	60.00	44	57.69
45	57.14	45	60.87
46	60.87	46	60.00
47	33.33	47	68.00
48	70.83	48	62.07
49	44.44	49	62.07
50	60.00	50	62.50
51	57.14		
52	65.22		
53	53.57		
54	62.50		

DATA FOR TESTING HYPOTHESIS 3 (CONT'D.)

MOTHERS		
Ss	% Positive Responses	
55	64.00	
56	55.56	
57	62.07	
58	50.00	
59	53.57	
60	64.00	
61	64.00	
62	60.00	
63	62.01	
64	52.00	
65	53.57	
66	62.50	
67	62.07	
68	50.00	
69	62.07	
70	50.00	

APPENDIX X

DATA FOR TESTING HYPOTHESIS 4

PARENTS OF MILDLY RETARDED CHILDREN		PARENTS OF MODERATELY RETARDED CHILDREN		PARENTS OF SEVERELY RETARDED CHILDREN	
Ss	% Positive Responses	Ss	% Positive Responses	Ss	% Positive Responses
1	66.66	1	65.52	1	50.00
2	72.41	2	76.92	2	52.17
3	65.38	3	53.57	3	88.46
4	74.07	4	66.66	4	73.91
5	62.07	5	82.35	5	48.00
6	51.85	6	52.17	6	59.26
7	69.23	7	68.18	7	60.71
8	76.47	8	60.71	8	47.83
9	48.00	9	62.50	9	57.14
10	52.63	10	69.23	10	50.00
11	84.00	11	53.85	11	74.07
12	74.07	12	34.78	12	56.52
13	60.71	13	65.52	13	68.75
14	53.57	14	61.90	14	64.00
15	51.85	15	70.37	15	44.00
16	52.00	16	62.96	16	53.85
17	60.71	17	83.33	17	69.23
18	62.96	18	66.66	18	71.43
19	65.52	19	74.07	19	60.71
20	76.00	20	74.07	20	47.83
21	69.57	21	73.08	21	70.83
22	58.33	22	71.43	22	57.14
23	33.33	23	81.48	23	65.22
24	44.44	24	84.00	24	65.38

DATA FOR TESTING HYPOTHESIS 4 (CONT'D.)

PARENTS OF MILDLY RETARDED CHILDREN		PARENTS OF MODERATELY RETARDED CHILDREN		PARENTS OF SEVERELY RETARDED CHILDREN	
Ss	% Positive Responses	Ss	% Positive Responses	Ss	% Positive Responses
25	60.00	25	62.07	25	57.14
26	71.43	26	62.07	26	60.87
27	81.48	27	53.57	27	70.83
28	84.00	28	62.07	28	57.14
29	40.00	29	62.07	29	65.22
30	44.44	30	62.07	30	62.50
31	60.00	31	62.07	31	50.00
32	64.29			32	64.00
33	74.07			33	52.00
34	77.77			34	62.50
35	33.33			35	50.00
36	44.44			36	62.50
37	60.00				
38	53.57				
39	68.00				
40	64.00				
41	55.56				
42	61.54				
43	58.33				
44	60.00				
45	53.57				
46	69.23				
47	64.00				
48	60.00				
49	57.69				
50	60.87				
51	60.00				
52	68.00				
53	50.00				