

**Standardization of the
Aberrant Behaviour
Checklist for Witrand
Hospital**

by

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CHAPTER ONE INTRODUCTION, PROBLEM STATEMENT AND AIM

1.1 Introduction and problem statement

Aberrant behaviour such as hyperactivity, inappropriate speech and stereotypic behaviour has a high incidence among institutionalized mentally retarded people (Eyman & Call, 1977). Witrand Hospital (a hospital for the mentally retarded) is no exception and it often happens that aberrant behaviour needs to be treated by the physicians or psychologists who work at Witrand Hospital. The effects of treatment need to be measured in order to determine their efficacy. In such cases a global impression of the patients' functioning may not be adequate to evaluate treatment effects, as these effects may be subtle.

Mentally retarded people exhibiting psychotic behaviour are not usually diagnosed as psychotic and their odd behaviour is ascribed to them being mentally retarded. DSM-III-R (American Psychiatric Association, 1987) criteria may make possible the identification of psychosis among mentally retarded individuals. In this study, DSM-III-R criteria are to be used to measure psychosis as there is no other diagnostic system for measuring psychosis among mentally retarded people (Matson, Kazdin & Senatore, 1984).

Aberrant behaviours are common among mentally retarded people (Eyman & Call, 1977) and these behaviours are often the main reason for their institutionalization (Hill & Bruininks, 1984). Interventions in this population are usually instigated by unacceptable levels of aberrant behaviour. Aberrant behaviour also prevents an individual from learning adaptive skills. Thus aberrant behaviours among mentally retarded people need to be investigated.

The Aberrant Behaviour Checklist is a psychometrically valid standardized instrument that is sensitive to treatment effects (Aman, Singh, Stewart, & Field, 1985). This instrument is used in Witrand Hospital but the researchers who developed this checklist (Aman & Singh, 1986) recommend that separate norms be developed for every population that the instrument is used on.

Within Witrand Hospital most of the staff are Afrikaans-speaking. This necessitates that the checklist be translated and technical terms explained in Afrikaans. At present without a translated checklist being available, the ABC is not administered in a standard manner at Witrand Hospital. In addition many of the examples proposed in the ABC are not relevant to the population at Witrand Hospital one example is in item 31 - Disrupts group activities, the person joins in late and wants group's attention (Aman & Singh, 1986). This item is not relevant for many of the patients because

they are usually physically taken to any activity that they are able to participate in and other activities are structured around the patients within the activity room of their ward.

A new standardized form of the ABC is therefore required for use within Witrand Hospital.

The new form of the ABC should be:

- * in Afrikaans;
- * have a clear set of instructions;
- * with relevant examples; and
- * technical data (such as taking relative frequency into account for each behaviour specified) and instructions should be explained clearly.

A new form of the ABC will assist the functioning of the multidisciplinary treatment team approach as followed in Witrand Hospital. The members of the team require a reliable and valid instrument by which treatment effects can be measured so as to determine the efficacy of treatment. When recommending an intervention the members of the team should be referring to the same behaviour or problem. The ABC may enable one set of constructs to be used consistently, thus making possible more effective communication.

The instrument used for the evaluation of treatment effects needs to be sensitive to treatment effects so that the

psychologist or psychometrist who administered the instrument would be able to assess the effects of an intervention objectively. Sometimes the changes brought about by treatment are very subtle and in only obtaining a global, clinical impression of the person, these effects may be overlooked thus the ABC is potentially a valuable instrument.

1.2 Justification of the project

The ABC is a psychometrically valid instrument and for it not to be administered in a standardized way reduces the effectiveness of the scale. Thus one has access to a valid scale but the application is not effective as one cannot draw inferences regarding the population. Therefore it would have made little or no sense simply to obtain data and establish norms for the checklist without also developing a standardized way for administering the checklist in Witrand Hospital.

An instrument that allows for the systematic identification and diagnosis of psychosis among severally and profoundly retarded people does not exist (Aman & Singh, 1986; Kazdin, Matson & Senatore, 1983). If one were able to identify behaviour manifestations of psychosis among mentally retarded people one may also be able to measure the treatment effects of anti-psychotic medication (major

tranquillizers). The reason for the priority of this research is the urgent need for a standardized instrument that is sensitive to the effects of therapeutic interventions.

1.3 Research question to be answered

To determine the usefulness of the ABC for Witrand Hospital and to determine the relationships between different constructs and ABC scores.

1.4 Main aims

The basic aims of the study are to standardize the ABC for the Witrand Hospital population, obtain norms, compare these norms with the existing norms for the ABC and to construct and test items that will measure psychotic behaviour of the subjects.

The standardization procedure includes translating the checklist into Afrikaans, and identifying relevant examples for the population. Following the completion of the above, a new format for the test could be proposed so that the test might be administered in a more controlled manner. Norms will be obtained once this new format of test has been applied to the standardization sample. Items that identify

psychosis will be generated and then this new instrument will be administered to the standardization sample.

1.5 Detailed aims

The detailed aims are:

- 1.5.1 To determine the correlation between the period spent within Witrand Hospital and the scores obtained on the sub-scales of the ABC.
- 1.5.2 To determine the correlation between the age of patients in the Witrand Hospital standardization sample and the scores obtained on the sub-scales of the ABC.
- 1.5.3 To determine the correlation between Fairview ages of patients and the scores obtained on the sub-scales of the ABC
- 1.5.4 To determine whether there is a significant difference between the scores obtained on the sub-scales of the ABC for the different genders.
- 1.5.5 To determine whether there is a significant difference between the scores obtained on the sub-scales of the ABC for the subjects in the different Wards in Witrand Hospital.
- 1.5.6 To determine whether there is a significant difference between the scores obtained on the sub-scales of the ABC for the subjects who are constructively busy during the day and those subjects who do nothing.

- 1.5.7 To determine whether there is a significant difference between the scores obtained on the sub-scales of the ABC for the subjects who are diagnosed as being epileptic and those subjects who are not.
- 1.5.8 To determine whether there is a significant difference between the scores obtained on the sub-scales of the ABC for the subjects who receive major tranquillizers and those subjects who do not.
- 1.5.9 To determine the correlation between the scores obtained for the USA sample and the Witrand Hospital sample.
- 1.5.10 To determine the correlation between scores on the ABC's sub-scales for the two raters.
- 1.5.11 To determine the Cronbach's coefficient alpha of the sub-scales of the ABC.
- 1.5.12 To determine whether there are any clusters of second order factors identified for the ABC.
- 1.5.13 To determine percentile ranks for the sub-scales of the ABC and the Fairview Scale.
- 1.5.14 To develop a Psychosis Scale based on DSM-III-R criteria.
- 1.5.15 To obtain the mean and standard deviation on the Psychosis Scale of the sample members who use major tranquillizers and those who do not.
- 1.5.16 To determine the correlation between the Psychosis Scale and the ABC sub-scales.

1.5.17 To determine the number of patients in the sample who had a positive point score on any items of the Psychosis scale.

1.6 Hypothesis to be tested

1.6.1 There is no correlation between the period spent within Witrand Hospital and the scores obtained on the sub-scales of the ABC.

1.6.2 There is no correlation between the age of patients in the Witrand Hospital sample and the scores obtained on the sub-scales of the ABC.

1.6.3 There is no correlation between Fairview Scale Scores of patients and the scores obtained on the sub-scales of the ABC

1.6.4 There is no significant difference between the scores obtained on the sub-scales of the ABC for the different genders.

1.6.5 There is no significant difference between the scores obtained on the sub-scales of the ABC for the subjects in the different Wards in Witrand Hospital.

1.6.6 There is no significant difference between the scores obtained on the sub-scales of the ABC for the subjects who are constructively busy during the day and those subjects who are not constructively busy.

1.6.7 There is no significant difference between the scores obtained on the sub-scales of the ABC for the

subjects who are diagnosed as being epileptic and those subjects who are not.

1.6.8 There is no significant difference between the scores obtained on the sub-scales of the ABC for the subjects who receive major tranquillizers and those subjects who do not.

1.6.9 There is no correlation between the scores obtained for the USA sample and the Witrand Hospital sample.

1.7 Deployment of this report

Chapter Two through Five of this report are the literature study. The following will be discussed:

- * Chapter Two deals with mental retardation , definitions, description and etiology also the manifestation of mental retardation. This chapter includes the management of mentally retarded people.
- * In Chapter Three aberrant behaviour and the manifestation of aberrant behaviour is discussed.
- * In Chapter Four the focus is on the evaluation of mentally retarded people.
- * Chapter Five is concerned with the standardization of psychometric instruments.
- * Chapter Six is concerned with the research design of this report, containing the research design and the method of the study.

- * Chapter Seven contains the results obtained in this study and a discussion of these results.
- * Chapter Eight presents the conclusions and recommendations emanating from this research.

CHAPTER TWO MENTAL RETARDATION

2.1 Introduction

Mentally retarded people appear to suffer from all the maladies that are part of the human condition but in addition to that they have fewer skills to cope with daily stresses.

Mental retardation is a disorder which is characterized by unique combination of symptoms, such as severe intellectual impairment and deficits in adaptive behaviour that manifests in the developmental stages. These symptoms are often caused by genetic factors or precipitating events (such as birth traumas) and tend to run a predictable course.

Mental retardation cannot be cured but many of the problems that mentally retarded people suffer may be addressed. For the problems retarded people experience to be alleviated or removed and for these special people to achieve their potential, research into their condition is necessary. Mentally retarded people require the special understanding of professionals who are able to research the particular environments and situation that they (as mentally retarded people) live under. The limited resources that mentally retarded people are able to muster to cope with their situations also require a keen appreciation. Mentally

retarded patients require special skills and dedication from their care-givers and therapists. A non-verbal patient should become a challenge as one tries to make contact, understand and treat that person, but too often such a person simply becomes a neglected patient (Skandesman & Sackett in Meyers, 1978). To assist the low-functioning individuals who have very limited resources, one should have access to ways in which to analyse their behaviour systematically and to develop new behaviour management techniques.

2.2 Definitions

2.2.1 Mental retardation

Mental retardation as defined by the American Association of Mental Deficiency requires deficits to be noted in both intelligence and adaptive behaviour (Grossman, 1977; Heber, 1961). When a mentally retarded person is compared to someone of a similar chronological age on a standardized intelligence test and measures of adaptive behaviour, the mentally retarded person will perform significantly below the mean - greater than two standard deviations below the mean, according to one definition (Zigler, Balla & Hodapp, 1984). According to Taylor (1980) one criterion for the classification of mental retardation is a score of at least two standard deviations below the mean on measures of

intelligence. The various levels of retardation are specified by further standard deviation intervals.

Usually one finds that intellectual deficiencies are emphasized but lack of adaptive behaviour is also an important part of mental retardation (Heber, 1961).

Adaptive behaviour may be defined as an ability to function independently in terms of basic needs and the ability to maintain social relationships (Balthazar, 1973; Heber, 1961; Nihira, 1969).

According to the Diagnostic and Statistical Manual of Mental Disorders (Third Edition - Revised), referred to hereafter as DSMIII-R (American Psychiatric Association, 1987:28)

"...the essential features of this disorder are:

- a) significantly sub-average general intellectual functioning, accompanied by*
- b) significant deficits or impairments in adaptive functioning, with*
- c) onset before the age of 18"*

General intellectual functioning is defined as *"... the results obtained by assessment with one or more of the individually administered general intelligence tests developed for the purpose of assessing intellectual functioning"* (Grossman, 1983:1). Freedman, Kaplan and Sadock

(1992) state that mental retardation is a term which includes all forms of intellectual impairment. They indicate that it is all sub-normal intellectual functioning that originates during the developmental period, before sixteen, and is associated with impairment of either learning and social adjustment or maturation or both, as does Lubetsky (1986).

Intellectual ability only is a misleading index for labelling a mentally retarded person as it gives little indication of the individual's social functioning or ability to function independantly and how that individual meets the demands of the environment. The tendency of clinicians or researchers not to consider measures of adaptive behaviour, a criterion delineated in the AAMD definition, has put an emphasis on the use of an intelligence quotient and intelligence tests. Smith and Polloway (1979) found that in fewer than ten percent of cases researchers included a measure of adaptive behaviour and in other cases relied solely on a measure of intelligence for the diagnosis of mental retardation. Adaptive functioning indicates living skills. Mental retardation is not only concerned with cognitive impairment but also with the inability of an individual to deal effectively with societal and environmental demands.

2.3 Degrees of severity of mental retardation

These can be summarized as follows (American Psychiatric Association, 1987):

- * Mild Mental Retardation: IQ scores of 50-55 to approx. 70: About the same as "educable".
- * Moderate Mental Retardation: IQ scores of 35-40 to 50-55.
- * Severe Mental Retardation: IQ scores of 20-25 to 35-40.
- * Profound Mental Retardation: below IQs of 20 or 25.
- * Unspecified: The DSM-III-R advises that this category should be used when the person is untestable by standard intelligence tests due to impairment or lack of cooperation of the person.

Zigler, Balla and Hodapp (1984) provide the following categories of mental retardation:

- * People with an IQ of around 70 should not be labelled as mentally retarded - it may be less stigmatizing for them to be referred to as slow learners.
- * People with IQ's between 50-70 often have no demonstrable organic etiology and often their parents are also retarded. This group correlates highly with low socio-economic status, their siblings also have low intelligence, they tend to have normal health and appearance and are less likely to have physical handicaps. These people may be able to

function independently with some support, they are likely to marry, have children and would probably have neglected homes that require intervention by the welfare services.

- * People with IQs between 0-50 may come from all socio-economic strata. The siblings of these individuals may be of normal intelligence. These people tend to have major health problems and appearances marred by physical stigmata. They tend to have a high incidence of other physical handicaps like epilepsy or cerebral palsy. Often there is a demonstrable organic reason for the retardation and people in this group tend to be dependent on the care of other people. Such individuals are unlikely to marry and are usually infertile (Grossman, 1983).

2.4 Characteristics of mentally retarded people

2.4.1 Developmental characteristics

2.4.1.1 Profoundly retarded people

Profoundly retarded people may be expected to develop some motor development and they may respond to limited training in self-help. They may develop some motor and speech abilities. These people may also achieve very limited self-

care. These people do, however, require nursing care (Kaplan & Sadock, 1991).

2.4.1.2 Severally retarded individuals

Severally retarded individuals may learn to talk or learn to communicate. They may also be trained in basic health habits. These people may benefit from systematic habit training but cannot profit from vocational training. Constant supervision is required when they operate in a controlled environment (Kaplan & Sadock, 1991).

2.4.1.3 Moderately retarded individuals

Moderately retarded people may profit from training in social and occupational skills and they may achieve self-maintenance in unskilled or semi-skilled work under sheltered conditions. These individuals require constant supervision and are unable to cope with mild social or economic stress (Kaplan & Sadock, 1991).

2.4.1.4 Mildly retarded individuals

Mildly retarded people may be guided toward social conformity and may achieve limited academic skills. Mildly retarded adults can generally achieve a minimum level of support (Kaplan & Sadock, 1991).

2.4.2 Behavioural symptoms commonly associated with mentally retarded people

At present there is no satisfactory sub-classification of behavioural symptoms associated with mental retardation in the DSMIII-R. Behaviours such as passivity, dependency, low self-esteem, low frustration tolerance, aggressiveness, poor impulse control, stereotyped self-stimulating and self-injurious behaviour are often ascribed to the mentally retarded individual (Berkson & Davenport, 1962; Rutter, 1975; Schroeder, Schroeder, Smith & Daldorf, 1978). Shapiro and Barrett (1983) indicate that mentally retarded people also tend to lack self-care skills. These deficits are present in the following areas: eating, dressing, toileting, cleanliness and other independent living skills. In addition to these, Grossman (1977) states that mentally retarded individuals are by definition lacking in social skills. Intellectual deficiencies lead to difficult social adjustment and limit the individual's ability to understand and solve these social adjustment problems.

2.5 Etiology of mental retardation

There is no one specific cause for the mental retardation suffered by the patients in Witrand Hospital as some patients suffer from genetic disorders, others have parents

who are retarded and are unable to care for their children, and still other patients are in Witrand Hospital due to a form of trauma or head injury.

2.5.1 Brain damage as a cause of mental retardation

Brain damage may be accepted as the cause of mental retardation if demonstrable anatomic lesions or an alteration in the basic structure of the brain can be found. This means the involvement of constituents of the brain tissue; it may also mean that there is a failure to develop. This failure may include defective myelogenesis, defective neuronalglial migration states, defective axodendritic interconnections, metabolic disturbance of the nerve cells, diminished capacity of interneuronal impulse transmission, or a combination of all these factors (Grossman, 1983; Freedman, Kaplan & Sadock, 1992).

2.5.2 Biological abnormalities as the cause of mental retardation

It seems that twenty-five percent of all cases of mental retardation can be ascribed to biological abnormalities (Grossman 1983; Kaplan & Sadock, 1991). These abnormalities include chromosomal abnormalities (Down's syndrome) and some metabolic disorders, for example phenylketonuria (PKU). There are, however far fewer people who are mentally

retarded due to biological causes than due to psychosocial causes (Grossman, 1983).

2.5.3 Psychosocial causes for mental retardation

Psychosocial disadvantage means that the individual is caught up in a set of circumstances none of which are sufficient to cause mental retardation but the interactive and cumulative effect may predispose a person to mental retardation (Grossman, 1983). These environments are psychologically, socially and economically inadequate. An inadequate environment means that housing, hygiene and nutrition and medical care are inadequate. Infectious diseases are also rife and one or more of the parents and siblings are often mentally retarded (Grossman, 1983). Psychosocial disadvantages emphasize the developmental impairment in infancy and preschool years, on learning difficulties in scholars and in poor socio-vocational adjustment in adulthood.

2.5.4 The socio-cultural adaptation model

The socio-cultural adaptation model seeks to diagnose retardation of the person in terms of social functioning and general adaptation to certain norms. Society judges people according to variable cultural norms and not against neuropathology, or by the degree of organic impairment that

person has suffered. A person's performance will be decisive in determining the degree of social adequacy of that person. That means that some people have an inability to learn and adapt to the demands of a society and to be self-sufficient. Thus a person in a westernized community or a technologically advanced society will more easily be diagnosed as mentally retarded people by peers than someone in a primitive or less technologically demanding society (Grossman 1983). This means that more people will be diagnosed as mentally retarded if the society they live in is highly demanding, stressful and emphasizes technological abilities.

2.6 The management of mentally retarded people

2.6.1 Role of institutionalization

Hill and Bruininks (1984) indicate that mentally retarded people are often institutionalized because of aberrant behaviour. This means that the families of retarded people can no longer cope with the aberrant behaviour that mentally retarded individuals exhibit and they are then institutionalized. Hill and Bruininks (1984) also found that the behaviour that leads to institutionalization of a mentally retarded individual would not be sufficient to lead to the institutionalization of the person if he/she were not mentally retarded.

There are also other reasons for institutionalization of mentally retarded individuals. Begab (1975) provides the following:

- * financial considerations, a poor socio-economic situation combined with the potentially high cost of medical care;
- * problems envisaged for the future of both the family and the patient;
- * marital problems and poor communication due to the stress of having a retarded person in the home;
- * disadvantages to the family - real or perceived;
- * too large families may cause neglect of the retarded person;
- * deterioration of community values, people who do not conform to the norms of society are kept separate from society;
- * stigmatization of the community;
- * potential danger to the community or to the person.

There are criteria for the admission of mentally retarded people to state institutions. In terms of Circular 34 of 1987 (the recommendations of the Van Wyk Commission and the Inquiry into the care of Mentally Deficient Persons of 1967) the Department of Health and Welfare has decided the following:

- * State institutions will admit those "defectives" requiring specialized medical treatment which cannot be provided at licensed homes.
- * They will also admit mentally retarded individuals between the ages of 3 and 18 who are trainable and educable but who exhibit behaviour problems that are unacceptable to the community and have been certified.
- * They will admit adult mentally retarded people who exhibit behavioural problems and maladjustment within the community and who have been certified.
- * Children under the age of three are admitted only if they exhibit gross deformities and their disabilities are of such a nature as to require supervision and care for twenty-four hours a day and if giving this care is detrimental to the child, his family or his parents' marriage. This is also done if the child is in need of care according to the Child Care Act 74 of 1983.
- * Children who are mentally retarded and autistic are admitted.
- * Temporary admission to an institution is permissible if parents need to go on vacation, or when there is a crisis, or when the family is in need of respite, or for an evaluation period of three months.
- * Approved applications are admitted for a trial period of three months.
- * Section 4 admissions are encouraged so that parents remain responsible for their children.

- * Adult mentally retarded individuals, who are not able to compete in the open labour market, are admitted if their parents are no longer capable of caring for them, or if their parents become invalids, or if siblings care for the individual but this care is a poor influence on family life.

2.6.2 Disadvantages of institutionalization

A potential disadvantage of institutionalization is for example, institutional neuroses. An institutionalized person may:

- * become apathetic;
- * become lacking in initiative;
- * become lacking in interest and motivation;
- * exhibit a deterioration in personal habits, behaviour or standards;
- * become less individualistic, experience low self-esteem and exhibit learned helplessness;
- * show little intellectual stimulation as different age groups may be grouped together. The atmosphere may not be stimulating this may lead to enforced idleness;
- * develop a lack of concern with privacy as all activities may occur in one venue and the person may never have time alone from other patients;
- * have a fixed time schedule that does not allow

initiative as this schedule may allow long periods of inactivity;

- * have a lack of opportunity to learn from his/her own mistakes;
- * result in the loss of the individual in the crowd as all the patients may, on occasion, dress the same or be busy with similiar activities;
- * suffer cultural deprivation;
- * develop a lack of skills to adapt to the community outside an institution, thus leading to socially inappropriate behaviour;
- * experience a loss of prospects outside the institution;
- * experience sexual inadequacies, leading to social withdrawal, shyness and perhaps frustrated desires for the opposite sex (Barton, 1973; Duminy, 1989; Rosen, Floor & Baxter, 1973).

2.6.3 Advantages of institutionalization

The following potential advantages of institutionalization are found, according to Gunzberg (1973) in Gunzberg, Kurtz (1977) also Brechin, Liddiard and Swain (1981) and Roswell-Harris (1973):

- * specialized care, especially when a multidisciplinary approach is followed and the care-givers are registered with their professional boards;

- * institutions tend to have operational philosophies and therefore patients and the parents or guardians of the patient may be able to prepare themselves for the nature of the care within the institution;
- * a haven of emotional security;
- * the presence of a peer group;
- * a chance at comparison with people who are more disabled;
- * mentally retarded people may benefit more by treatment than non-retarded people;
- * an integrated training programme that relates to normal life practices;
- * an opportunity to learn skills that may enable the patient to leave the institution and function independently. This means that the institution may be seen as playing a significant role in the preparation of the patient for the outside community. This may occur even if the person will never be able to function independently;
- * the opportunity to work within a sheltered workshop.

2.6.4 Rehabilitation

Reber (1985:628) provides the following definition for rehabilitation: "1. To restore to good form or proper functioning condition. 2. To restore to a previous condition or status" Plug, Meyer, Louw and Gouws (1989) add to the

above definition by indicating that rehabilitation is a process that restores a person to a satisfactory level of functioning. This may be physical, psychological, or social functioning after an accident, illness, aberrant behaviour or psychopathology.

2.6.5 Habilitation

Duminy (1989) agrees with the above definitions of rehabilitation and she indicates that when working with mentally retarded people it is more correct to refer to their habilitation rather than to rehabilitating them.

Gunzberg (1973) explains that habilitation is any attempt that leads to better functioning of the individual. If one accepts the first definition for rehabilitation (see 2.6.4) then it appears that rehabilitation is not a term to be used when referring to mentally retarded people. Habilitation may be more meaningful, as it encompasses any attempt to assist a person to obtain an optimal level of functioning according to each person's own ability (Hardy & Cull, 1974). To determine these levels of ability one requires professionals with adequate experience working among mentally retarded people and one requires suitable measuring instruments (Duminy, 1989; Gunzberg, 1973). Habilitation of the person and enabling them to meet their full potential is and will remain the primary goal of those professionals who have been

trained and have chosen to serve mentally retarded people who are in need of their particular skills (Johnson, 1975).

For the mentally retarded persons to be successfully habilitated they should have sufficient access to educational and training facilities (Gunzberg, 1973 in Gunzberg, 1973). This training should ideally be done while the person is in the community so that the mentally retarded person is able to adapt to the community, and also feel at ease in that atmosphere. The greatest stumbling block in the effective habilitation of mentally retarded persons appears to be their general lack of ambition and motivation (Gunzberg, 1973).

2.6.6 Normalization

The "normalization principle" may be interpreted as allowing mentally retarded people to obtain an existence as close to normal as possible (McCarver & Craig, 1974). Thorne (1975) maintains that to speak of normalizing the retarded by treating them normally is a contradiction in terms; treating them normally will leave them functioning as retarded. Retarded by definition means retarded under ordinary conditions. Only extraordinary conditions, those that treat retarded people as non-normal by identifying their special needs, can result in diminishing retarded states, i.e. making the retarded more normal. Aanes and Haagenson (1978)

seem to agree and indicate that normalization as a method is only relevant if normal methods, such as main stream schooling, are the best way to a desirable outcome. Normalization is a noble endeavour but it tends to ignore the sharp differences among individuals who are mentally retarded. The majority of residents in institutions are there because the best efforts to rehabilitate them have not been effective.

2.6.7 The role of psychoactive drugs in the management of mentally retarded people

The term psychoactive drugs will be used to refer to any substances which produce behavioural, emotional or cognitive changes. This includes anti-convulsants because these medicines are not always prescribed just to control seizures, but often also to change behaviour. Stores (1978) indicates that anti-convulsants are regarded as having psychoactive effects because they have an influence on the chemistry of the brain. This means that under certain circumstances they affect mental functioning. Some professionals disapprove of the use of medicine. This may be due to (Aman in Matson & Andrasik, 1983):

- * the belief that medication may interfere with the way patients react to therapy;

- * non-medical specialists seeing pharmacotherapy as a means of defining mental retardation as a medical domain; and
- * a fear that people may be caught in medical strait-jackets; this means that symptoms are suppressed and nothing is done to assist development. Perhaps development may even be retarded.

With modern medication and research into the development and application of drugs, pharmacotherapy is used in the hope of reducing pathology and ultimately encouraging development of adaptive behaviour. Hollis and St. Omer (1972:403) maintain that *"... drugs can merely accelerate or decelerate behaviors which are already in a person's repertoire or change the probability of their occurrence"*. Thus drugs provide nothing which is not already possessed by the person. If one knows the direction of change required then it may be that medication can change the frequency of a behaviour. Psychoactive drugs may therefore be applied to treat behavioural problems.

When it comes to the prevalence of drug treatment, the kind and amount of medication depend on the institution and the professionals employed there, but it seems obvious that psychoactive drugs are an important part of therapy for mentally retarded people. Thus, according to Aman (in Matson & Andrasik, 1983), professionals involved with the treatment of mentally retarded individuals, regardless of their

professional affiliation, need to understand the use, abuse and risks involved in the use of psychoactive treatment. Drug therapy may also assist in treating behavioural disturbances and may increase the ability of mentally retarded individuals to benefit from psychotherapy (Kalkman, 1974).

2.6.8 Witrand Hospital

Witrand Hospital is a licensed institution in accordance with the provisions of the Mental Health Act, Section 46, of 1973 (Government Gazette, April, 1973). Witrand Hospital is an institution that caters specifically for the needs of mentally retarded people, although legally there is no differentiation between patients at Witrand Hospital and any other psychiatric hospital, like, for instance, Sterkfontein Hospital. The superintendent is at the head of Witrand Hospital and he uses a multidisciplinary team to assist him in therapeutic evaluation and intervention. To assist the team and the patients, psychologists have a responsibility to develop evaluation aids specifically for the mentally retarded population (Reiss, Levitan & Szysko, 1982; Reiss & Szysko, 1983).

The multidisciplinary team is goal-oriented, this goal being the welfare of the patient both as an individual and as a member of a family. This means that the team does not have a

custodial nature but one of evaluation, diagnosis, therapy and the evaluation of the intervention. The team, at Witrand Hospital, is traditionally made up of the following disciplines: A medical doctor, psychiatric social worker, genetic nurse, psychiatric nurse, psychologist, occupational therapist and school principal. Additional members may include post-graduate students, teachers, or a pharmacist.

2.7 Résumé

In Chapter Two literature regarding the nature of mental retardation, definitions of mental retardation, the etiology of mental retardation and the characteristics of mentally retarded people. The management of mentally retarded people is also included in Chapter Two with emphasis on institutionalization. Witrand Hospital is also discussed. In Chapter Three aberrant behaviour and its' manifestation among mentally retarded people is discussed.

CHAPTER THREE ABERRANT BEHAVIOUR

3.1 Aberrant behaviour

Aberrant behaviour may also be described as maladaptive behaviour as it prevents the acquisition of adaptive behaviour. Adaptive behaviour, according to Grossman (1977), is the effectiveness or degree with which individuals meet the standards of personal independence and social responsibility expected of their age and cultural group. According to Aman (in Matson & Barrett, 1982) a study among the personnel at an institution for mentally retarded people found that the most common maladaptive behaviour rated (with the greatest frequency) by the staff was hyperactivity, followed by aggressiveness, while running around and self-destructiveness followed in frequency. Rutter (1975) found that autism, disintegrative psychosis and hyperkinetic syndromes have a high incidence among mentally retarded people. It has also been found that self-injurious behaviour (SIB) has a higher incidence among mentally retarded people (Schroeder, Schroeder, Smith & Daldorf, 1978). Some studies did not have control groups but it appears that there is a high incidence of behaviour problems among the mentally retarded population. Among the institutionalized mentally retarded people one would expect even higher rates of aberrant behaviour because aberrant behaviour is the most

common reason for institutionalizing a person (Hill & Bruininks, 1984).

3.1.1 Aberrant behaviour and the period spent in institutions

The literature does not refer directly to the period spent in institutions and aberrant behaviour, but Hill and Bruininks (1984) found that a significant number of the admissions at mental institutions were not first admissions but readmissions.

3.1.2 Aberrant behaviour and gender

Koller, Richardson, Katz and McLaren (1983) found that mentally retarded boys tend to exhibit more aggressive behaviour and hyperactivity than mentally retarded girls. The girls were found to have higher rates of emotional disturbance.

Aman, Singh, Stewart and Field (1985) could not find any significant differences between genders for the USA and New Zealand populations. They concluded that gender was not a variable requiring consideration. In concurrence with the above, Richardson, Koller, Katz and McLaren (1981) found, when studying epilepsy, that there was no significant

difference in the aberrant behaviour exhibited by the two genders when the subjects had IQs lower than 60.

3.1.3 Aberrant behaviour and the age of patients

Richardson, Koller, Katz, McLaren and Rubinstein (1979) found in a cross-sectional study that the incidence of mental retardation increases with age. Koller, Richardson, Katz and McLaren (1983) found that aberrant behaviour tends to change in both intensity and manifestation in a longitudinal study of mentally retarded children from 5 years of age to 22.

3.1.4 Aberrant behaviour and the Fairview Scale Score of the patient

Norms for mentally retarded people may be more meaningful when presented in terms of a functional age or score on an adaptation scale because their chronological age tends to be misleading (Grossman, 1977).

Aman, Singh, Stewart and Field (1985) found the ABC to be moderately negatively related to scales of adaptive behaviour.

3.1.5 Aberrant behaviour and different wards in institutions

Aman and Singh (1986) indicate that ABC scores for each institution will be unique therefore it would seem that each ward in an institution would also generate different results. This may be due to different wards managing different kinds of people with different functional ability and with different disabilities.

Costello (1982) also indicates that particular forms of mental disease will manifest in ways that are subtly different in different settings. This means that the particular environment that a patient is in may have an effect on the manner in which that patient behaves. It would then seem that Costello's (1982) findings support the idea that different wards could have different ABC scores.

3.1.6 Aberrant behaviour and constructive activity

Aman and Singh (1986) found that patients who are kept occupied exhibit fewer aberrant behaviours. This may be because people who are selected for activities are people who initially exhibit less aberrant behaviour or it may be that because they are kept busy they have less opportunity or need to exhibit aberrant behaviour. Other research workers who also found that patients who exhibit less

aberrant behaviours are kept busy are Gibbs and Thorpe (1983) as well as Moore, Thuline and Capes (1968).

3.1.7 Aberrant behaviour and epilepsy

Aman and Singh (1986) found that, for both the USA and New Zealand samples, residents with epilepsy were found to have significantly higher scores on the Irritability, Lethargy and Hyperactivity sub-scales of the ABC.

Eyman, Moore, Capes and Zachofsky (1970) also found that subjects who suffer from epilepsy tend to exhibit high rates of aberrant behaviour. Higher rates of aberrant behaviour among the epileptic patients may be due to the greater amount of brain damage these people may have. This generalized damage may be an underlying cause for disruptive behaviour (Kaplan & Sadock, 1989).

3.1.8 Aberrant behaviour and psychosis

The classification of psychosis depends on the manifestation of some of the following symptoms (Rowe & Mink, 1989):

perceptual disturbances, bizarre content of thought, disturbances in form of thought, inappropriate affect, disturbed sense of self, withdrawal from the external world, psychomotor disturbances, dysphoric mood and poverty of speech.

It would seem that patients who are psychotic and exhibit these symptoms will also be exhibiting aberrant behaviours. It would appear that there may be a direct relationship between psychosis and aberrant behaviour as Aman and Singh (1986:14) report, that subjects who are psychotic "...had markedly and statistically significantly higher scores on all five sub-scales".

3.2 Stereotyped behaviour

3.2.1 The prevalence of stereotypic behaviour

Berkson and Davenport (1962) report that about two-thirds of institutionalized mentally retarded individuals exhibit aberrant behaviour. Approximately half the children in institutions exhibit stereotypic behaviours (Berkson & Davenport, 1962; Kauffman & Levitt, 1965). LaGrow and Repp (1984) found that because it is a common form of aberrant behaviour, with a high frequency among mentally retarded people, stereotypic behaviour is often studied. Stereotypic behaviour is easily recognizable among mentally retarded people but it lacks a broadly accepted definition (Jones, Wint & Ellis, 1990).

* Stereotypic behaviour may be referred to as self-stimulatory behaviour. Foxx and Azrin (1973) define stereotypic behaviour as behaviour that has

no apparent function or effect on the environment. Examples of this kind of behaviour are rocking, repetitive jumping, pacing, spinning objects, eye-rolling, toe-walking and arm-flapping.

- * The most generally acceptable definition is that *"... stereotyped behaviour refers to highly consistent, repetitious motor or posturing responses which generally occur at excessively high rates, and do not appear to have any adaptive function "* (Jones, Wint & Ellis, 1990:261).
- * Berkson and Davenport (1962) defined stereotypic behaviour as complex movements. Examples of these are: swaying, rocking, twirling, eye poking, shaking, nodding, banging, wringing, flick-shaking, hand held before eyes, pill rolling and lip contortion. These examples indicate a wide diversity in behaviours identified as stereotypic.
- * Singh and Blampied (1983) indicate that body rocking, head rolling, complex hand movements, digit sucking and various forms of self-injurious behaviour are also stereotypic behaviours.
- * Stereotypic behaviour is a common form of a behavioural excess and it has been demonstrated to interfere with learning in the mentally retarded (Berkson & Mason, 1964; Lovaas, Litrownick & Mann, 1971; Repp, Singh, Karsh & Deitz, 1991; Repp, Singh, Olinger & Olson, 1990). This form of behaviour is particularly

maladaptive and tends to be consistent because it seems to be self-reinforcing and is therefore maintained by the person.

- * LaGrow and Repp (1984) indicate that stereotypic behaviour may take the form of repetitious motor behaviour or posturing. LaGrow and Repp, (1984) defined stereotypic behaviour as repetitious acts with no apparent function. They recognized that stereotypic behaviour is displayed by both non-retarded and retarded individuals. This behaviour may be socially acceptable (e.g. pencil tapping) or unacceptable and stigmatizing (e.g. constant rocking or head waving).

3.2.2 The stigmatizing effects of stereotypic behaviour

During socialization people learn a sophisticated set of expectations about how people should speak, move and behave (Richardson, Koller & Katz, 1985). An amount of variation about these norms is allowed but when an individual's behaviour exceeds these limits people tend to react with emotional arousal and/or fear. This emotional reaction causes people to treat the individuals who are behaving differently in ways that are not usual or normal, thus these individuals are stigmatized. According to Jones, Wint and Ellis (1990:267), "... there are negative social consequences of stereotyped behaviour for those who exhibit

it" This indicates that the negative perceptions are harmful to the person.

Denny (1980) proposes two main reasons for the incidence of stereotypic behaviour, viz.

- * sensory isolation (this means that the person has extensive physiological barriers to perceiving stimulation) and;
- * a reinforcement imbalance (this means that there is little reinforcement for activities directed outward and a very high level of reinforcement for activities that are directed toward the person him/herself) (Denny, 1980).

Stereotypic motor movements often occur among the blind, mentally ill and mentally retarded people (Berkson, 1967). Hollis (1978) indicates that stereotyped movements are observed when people have been exposed to long periods of isolation, physical restriction or stimulus deprivation. This means that the environment has been devoid of contingencies and consequences that maintain adaptive behaviour. Thus Denny's theory may be substantiated. Some stereotypic behaviours are a normal part of development of normal motor sequence. Regardless of the reason for the aberrant behaviour, it remains disruptive and incompatible with learning (Deitz, Repp & Deitz, 1976).

3.2.3 The treatment of stereotypic behaviour

Currently chemical and physical restraints are used to control inappropriate behaviour in mentally retarded people and they are accepted means of treatment (Deitz, Repp & Deitz, 1976). These treatments are in fact an attempt to enhance the dignity of these individuals by reducing primitive and stigmatic behaviours. It is important to treat stereotypic behaviour because this behaviour interferes with the performance of previously acquired desirable behaviour and also prevents the person from paying attention.

3.2.4 Stereotypic behaviours among non-ambulatory profoundly mentally retarded individuals

Little research has been done regarding the prevalence of stereotyped behaviour among non-ambulatory profoundly mentally retarded individuals and according to Skandesman and Sackett, (in Meyers, 1978) it appears that these behaviours do occur among the non-ambulatory profoundly mentally retarded individuals but that they are expressed in the following ways:

- * small peripheral limb movements;
- * wandering or blinking eyes;
- * mouthing or grimacing; and
- * repetitive reflexive types of patterns.

3.3 Hyperactivity

In their research into the manifestation of hyperactivity among mentally retarded people, Philips and Williams (1977) found that there was no difference in the manifestation of hyperactivity even when obvious organicity or even psychosis was present. They also found that hyperactivity is not inevitable if one is mentally retarded or brain-damaged.

3.4 Self injurious behaviour (SIB)

SIB is any self-inflicted behaviour that leads to lacerations, bruising or abrasions of the patient's body. This includes any form of tissue damage. Apparently it has a high prevalence among mentally retarded people (Repp, Singh, Olinger & Olson, 1990). Singh (1977) found that 23% of mentally retarded individuals in institutions in New Zealand exhibited these behaviours. In addition to the above Winchel and Stanley (1991) report that between 3.5% and 40% of institutionalized mentally retarded people exhibit self-injurious behaviour. This type of behaviour is stigmatizing and interferes with normal social and intellectual development. Winchel and Stanley (1991) report that SIB often requires that a patient be restrained, but even when restrained it appears that patients are still able to injure themselves by digit sucking, chewing their lips and other oral tissue.

3.5 Inappropriate speech

This describes the physical nature of speech, such as the rate of production, quantity and the quality. Inappropriate speech may be explained in two broad categories:

- * disturbances of speech e.g. pressure of speech, volubility,
- * or poverty of content of speech; and
- * aphasic disturbances (disturbances in language output) (Kaplan & Sadock, 1991).

Moran, Money and Leonard (1984) found that articulation errors among mentally retarded people, are systematic modifications or simplifications of standard adult speech. It appears that these errors are not random aspects of speech. The speech patterns studied were exhibited by mentally retarded people who have no organic reason for poor articulation. Cashdan (1973) found that mentally retarded people do not achieve language skills because they may lack the curiosity and initiative of normal children, thus they are not constantly experimenting with language.

The failure to develop effective communication limits cognitive development, social opportunities and the ability to learn from the world around the patient. Shapiro and Barrett (1983) indicate that mentally retarded people have speech and communication problems because their expression

is late and slow in developing, their comprehension is also slower and often articulation is affected. DeMyer, Barton, Alpern, Kimberlin, Allen, Young and Steele (1974) found that cognitive levels influence the receptive language abilities of mentally retarded children.

3.6 The manifestation of psychosis among the mentally retarded

A large body of research evidence exists to indicate that some mentally retarded people suffer from psychosis:

- * 17,8% of 2000 patients diagnosed in different mental institutions could be certified as retarded and this may indicate that many retarded people may be institutionalized for psychopathology (Duncan, Penrose & Turnbull, 1936).
- * Menolascino (1965) recognized high rates (31%) of diagnosable psychiatric disorders among mentally retarded children.
- * Neuer (1947) found that 28% of 300 patients tested were psychotic or neurotic, and a survey of out-patient clinics also found that 38% of the patients exhibited psychotic behaviour.
- * Iverson and Fox (1989) found that 35,9% of mentally retarded subjects had at least one significant psychopathological disorder and he relates level of pathology to level of retardation.

- * Matson, Kazdin and Senatore (1984) agree that the prevalence of psychopathology is four or five times higher among mentally retarded people than people who are not retarded.
- * Jacobson (1990) found high rates of schizophrenia and psychotic disorders among the mentally retarded population he researched.

Psychopathology and the symptoms of psychopathology are difficult to diagnose among mentally retarded people, because of the range of behaviour and variations in thought processes among mentally retarded people. There is also a wide range of behavioural and intellectual behaviours (Matson, 1983).

Silverstein and Olvera (1987) and Matson (1983) indicate that the maladaptive behaviours of mentally retarded people need to be measured systematically. Jacobson and Ackerman (1989) surveyed 75 psychologists, and the responses of these psychologists indicated that they relied on clinical history, observation and behaviour checklists to evaluate and treat patients. Improved evaluation by psychologists may assist in the treatment of problems that are remediable (Lubetsky, 1986). If a modus operandi could be determined for the identification of psychosis within the population then this psychopathology may be more readily treated. If mentally retarded people are susceptible to psychosis, it

seems sensible that one should attempt to find some instrument to measure psychosis among mentally retarded population. In the ABC's manual (Aman & Singh, 1986) it is mentioned that a psychotic person will score higher on all the factors, but there are no items specifically for the measurement of the manifestation of psychosis. Although psychosis is a common diagnosis within a mentally retarded population (Iverson & Fox, 1989, & Glue, Webb & Surgenar, 1988), it is recognized that no objective measure of psychosis exists for this population.

3.7 Epilepsy among mentally retarded people

Due to the lack of uniformity in the definition of both mental retardation and epilepsy, the prevalence of epilepsy among mentally retarded people is difficult to determine (Richardson, Koller, Katz & McLaren, 1981). The identification of seizures among the mentally retarded population is also difficult and can often only be diagnosed with the aid of an EEG. Richardson, Koller, Katz and McLaren (1981) indicate that the prevalence of seizures may contribute to the admission of individuals to institutions. They also found that previous studies show that the frequency of seizures among mentally retarded individuals tends to be higher than the frequency of seizures for non-retarded individuals. It seems that, in institutions, the

proportion of seizures appears to increase with the severity of mental retardation.

3.8 Résumé

Chapter Three is concerned with a literature review regarding the nature and manifestation of aberrant behaviour. Chapter Four focusses on the assessment of mentally retarded people.

CHAPTER FOUR ASSESSMENT OF MENTALLY RETARDED PEOPLE

4.1 Assessment of mentally retarded people

4.1.1 Introduction

Assessment of mentally retarded people poses problems that do not typically occur with other populations. Mentally retarded people do not usually self-refer but are often referred by helping professionals (Shapiro & Barrett, 1983). The fact that they do not self refer could be indicative of their limited insight into their problems and their motivation to cooperate.

Mentally retarded people may also not be aware of their limitations, abilities or aberrant behaviour. In view of this the use of the interview method is rare among the mentally retarded patients due to the problem of poor reliability and validity in their reporting (Ciminero & Drabman, 1977; Evans & Nelson, 1977; Meyer, Liddell & Lyons, 1977). Clinical interviews may provide an opportunity for the functional analysis of the mentally retarded patients' behaviour and in addition to an interview with the mentally retarded person an interview is scheduled with a knowledgeable informant so as to obtain information pertaining to the patients' past and present behaviour. This is known as a third person interview.

4.2 Dilemmas when diagnosing mentally retarded people

4.2.1 Diagnostic overshadowing

Reiss, Levitan & Szysko (1982) explain that intellectual sub-normality is such an important part of mental retardation that accompanying emotional disturbances are overshadowed in significance by the presence of intellectual retardation. This may also be described as diagnostic labelling bias, and it means that (for example) mentally retarded peoples' aberrant behaviours are ascribed to the fact that they are mentally retarded and often not to other forms of psychopathology like psychosis. Research shows that experienced clinicians also tend to diagnose less psychopathology among mentally retarded people. When presented with two identical protocols that have mental retardation as the only difference between them the mentally retarded individual was often diagnosed as having less psychopathology (Reiss, Levitan & Szysko, 1982).

Alford and Locke (1984) found that psychologists rated psychopathology as less severe when a classification of mental retardation was present. Reiss, Levitan and McNally (1982) found that mentally retarded people who suffer from phobias, schizophrenia and personality disorders are often not diagnosed as such as their symptoms are ascribed to mental retardation. Kazdin, Matson and Senatore (1983)

generally agree that a high incidence of psychiatric psychopathology may be overlooked in mentally retarded people due to the more conspicuous behavioural characteristics attributed to their retardation. According to Reiss and Szysko (1983) overshadowing may in practice cause emotional problems of mentally retarded people to be viewed as less important than their other needs. This means that to prevent overshadowing the mental health needs of the retarded need to be focused upon. Reiss and Szysko (1983) explain that diagnostic overshadowing occurs due to the difficulty in distinguishing between symptoms characteristic of mental retardation and psychopathology.

Costello (1982) postulates that psychosis, in terms of the DSM-III-R criterion, is a difficult diagnosis to make among mentally retarded people because:

- * the emphasis on the motor symptoms and catatonia of psychotic patients has been reduced; and
- * delusions that occur in mentally retarded people may be excessively ornate and may compensate for the persons' disability. Often ideas of insertion and thought control are too complex for the patient and thought disorders and may be too difficult to elicit in mentally retarded patients; and
- * blunt affect may be difficult to assess; also
- * particular care should be taken not to interpret a misunderstanding of a phrase or situation as

the presence of a hallucination. Perceptual distortions due to cognitive inability may also seem to be a hallucination; and

- * deterioration in appearance may be due to psychosis but it may also be explained in terms of the nature of the care the patient receives. In one ward emphasis may be placed on learning to shave, while in another ward a patient is shaved by the staff and therefore never acquires the skill.

The ambulatory status and the level of mental retardation a person exhibits tend to play a significant role in the identification of psychopathology among mentally retarded people (Matson, Coe, Gardner & Savner, 1991). This seems to validate the idea that Reiss and Szysko (1983) propose - that diagnostic overshadowing is a bias phenomenon and as such it is resistant to change. This prejudice can unfortunately influence the delivery of services to mentally retarded people.

4.2.2 The lack of a systematic classification systems of psychopathology for mentally retarded people

Matson, Coe, Gardner and Savner (1991) have found that at present there is little knowledge about types and severity of psychopathology among mentally retarded people, as the classification systems developed for people of normal IQ

have uncertain validity when used with mentally retarded people. It seems that to effectively study psychopathology among mentally retarded people a complete taxonomy of disorders needs to be established.

4.2.3 Lack of South African instruments and norms

Although a variety of instruments developed specifically for use with the mentally retarded population are available for the American, Australian and New Zealand populations, no publications regarding the standardization of these instruments for the South African population could be obtained. No publication seems to exist of a standardized test of aberrant behaviour, adaptive behaviour or any other checklist designed specifically for the mentally retarded population of South Africa.

Norms are restricted to the particular normative population (Anastasi, 1976), and these values are not universal or permanent. The norms of one institutions population may differ significantly from another due to the selection or admission procedures followed in that institution.

The demographics in Witrand may be different from other institutions. Therefore it may be meaningless to compare one population with another as the two different institutions

for mentally retarded people may accommodate significantly different people. Aman and Singh (1986) developed the norms for the ABC in 1985 and norms may change with time.

Shapiro and Barrett (1983) found that there have of late been a proliferation of checklists that are not standardized. These instruments may undermine the credibility of instruments that have good norms and good psychometric properties. It appears that relevant norms are important to the above authors yet no South African norms for any psychometric instruments for mentally retarded people are available in the literature.

The lack of tests for mentally retarded people in South Africa is exacerbated when it becomes apparent that the available tests designed for mentally retarded people in other countries have not been standardized under local conditions.

In concurrence with the above, Aman and Singh (1986) indicate that for the ABC to be effectively applied in a particular institution specific norms are required (for each population). Separate norms are required because the groups may be differently selected. Institutions may have different admission requirements or their policies on patient care may differ in that some institutions emphasize custodial care and others concentrate on rehabilitating their patients.

Standardized instruments for people of normal intelligence may not be suitable or relevant to the mentally retarded population because of their developmental disabilities. People of comparable chronological age with different intellectual abilities may perform significantly different on a given test, (not an intelligence test) and the performance may be due to intellectual ability and not the construct that is measured.

Mentally retarded people have adaptive deficits and these need to be considered when evaluating them on tests for non-mentally retarded people. For many severely mentally retarded people paper and pen tests are unfair because they are physically unable to be evaluated by these instruments. Mentally retarded people may not be able to perform on a test that has strict time limitations because of their developmental disadvantage and for this reason mentally retarded people require separate norms if they are going to be evaluated on the same instruments as non-mentally retarded individuals.

4.2.4 Different levels of functioning

There is large variation in the abilities of mentally retarded people and often no distinction is made whether an instrument is designed for mildly, profoundly or severely

retarded people.

Not only do the tests need to distinguish between intellectual and adaptive variation but the patient's motor abilities also need to be considered. Many of the instruments are also specifically designed for patients who are ambulatory. An example of these tests is the Psychopathology Inventory for Mentally Retarded Adults (PIMRA). Little research has been done regarding the non-ambulatory profoundly mentally retarded individuals according to Skandesman and Sackett (1978). This indicates that research is required in order to better assist this particular sub-group .

4.2.5 The lack of reliable reporting

Parent interviews are often as suspect as self-report information (Ciminero & Drabman, 1977) due to the fact that the parents may be biased or subjective. When parents want their children to be admitted to Witrand Hospital one finds they may tend to exaggerate aberrant behaviour so as to explain why they are no longer able to take care of the child in their own homes. In other situations it may also occur that parents do not report aberrant behaviour as they are shy and do not want to be embarrassed. This means that parents may provide little meaningful information on which to base treatment plans. Interviews and self-report measures

provide limited information that may also be inaccurate. The ABC is different from other interviews and self-report measures in that a knowledgeable person, a member of the hospital staff, provides the information it is also a relatively short checklist that provides a large amount of information (Aman & Singh 1986). The items of the ABC are not vague and the respondent does not need to make inferences as the items are direct behavioural observations. If the items are vague one tends to find high levels of subjectivity, poor inter-rater reliability and a lack of consistency over time (Aman & White, 1986).

In many cases one is not able to obtain information directly from the patient, and in many cases one also struggles to motivate the patient to participate in an evaluation. The single best way of recording information about a patient is to observe the patient but this is expensive and time-consuming (Shapiro & Barrett, 1983). For behavioural observations there tends to be a lack of normative data, thus incorrect conclusions may be drawn by an inexperienced or a biased observer. One therefore needs to rely upon checklists, rating scales and tests that have been standardized and have normative data.

4.3 Methods of evaluation

4.3.1 Intelligence tests

Intelligence tests provide a measure of intelligence commonly known as an intelligence quotient or IQ. Gunzberg (1973) emphasizes that intelligence tests are an important part in determining mental retardation but that they should be used in conjunction with other tests.

There is no known technique for direct assessment of intelligence or intellectual potential that can measure the IQ of a person who has no expressive ability and is unable to use his/her limbs. Neither is there a correlation of intellectual potential with anatomical and functional impairment of the central nervous system (Freedman, Kaplan & Sadock, 1978). Within Witrand Hospital, clinical impressions that the multidisciplinary team have regarding the patient, play a large role when level of retardation is evaluated and treated. This impression is usually backed up by psychometric information if the person is able to participate in an evaluation, otherwise the behaviour of the patient is observed and evaluated. Observations are however sometimes not accurate, valid or reliable and often do not afford an opportunity for scientific measurement. The patients are evaluated for a period of at least three months and in this time the multidisciplinary team is able to draw

an accurate and reliable impressions of the patient.

4.3.2 Checklists

It is indicated by Ciminero and Drabman (1977) and Shapiro and Barrett (1983) that checklists are quick and effective measures that provide a relatively comprehensive survey of problem areas and yield quantifiable data. They can also be used effectively for a number of clinical purposes, including behavioural descriptions and the evaluation of treatment regimes. Thus checklists are important in the designing of an effective habilitation plan for each patient. According to several authors rating scales are the mainstay in the assessment of behavioural changes (Achenbach & Edelbrock, 1978; Dreger, 1982; Quay, 1979; Werry, 1978).

4.3.3 Advantages of checklists

- 1 These instruments are relatively cheap to acquire and administer.
- 2 One is able to measure behaviour over time, thus enabling one to administer a pre-test and a post-test.
- 3 One can be very specific in goals to achieve and also in the items included in the checklist.
- 4 Items in the checklist may involve behaviour that is infrequent and this behaviour may not be observed in vivo.

- 5 Items on the checklist may be generated so as to be relevant for the adjustment level of the individual.
- 6 Checklists are a useful tool in the evaluation of care-givers' perceptions.
- 7 Normative data may be available for the checklist and then one can make inferences regarding the subject's performance. Norms may also provide different types of supportive information.
- 8 An advantage over using clinical impressions or an overall impression of the patient where one is given little indication of the nature of perceived changes is that checklists can indicate changes on an item or sub-scale .
- 9 A checklist may be reliable as an index of change.
- 10 Checklists are relatively quick and efficient measures that provide a relatively comprehensive survey of problem areas.
- 11 Checklists may be effective in the planning of policy and the prediction of behaviour.
(Ciminero & Drabman, 1977; Shapiro & Barrett, 1983; Steenekamp, 1984; Werry, 1978).

4.3.4 Disadvantages of checklists

- 1 There may be a high degree of subjectivity but if one does not require the rater to make inferences the data become more reliable. If the rater is subjective

then the reliability of the instrument is low and inter-rater reliability is low because of the lack of consistency among raters.

- 2 There may be a rater set or tendency of the (poor) rater to score subjects high or low irrespective of their attributes. This reduces the sensitivity to treatment effects and reduces the reliability of the instrument.
- 3 Checklists are susceptible to halo effects. This means that raters may not rate all traits but instead give general impressions of the individual. This reduces the information obtainable from sub-scales.
- 4 Practice effects can affect the reliability of a scale, because the rater may report fewer problems at the end of an instrument.
- 5 A checklist alone cannot be taken to establish a diagnosis. It is unlikely that a single cut-off score on any checklist can be an adequate substitute for a systematic evaluation using several data sources.
- 6 Long checklists may be demoralizing for both the testee and administrator of the test (Aman & White, 1986; Isett & Spreat, 1979; O'Leary, 1981; Steenekamp, 1984).

4.4 Other evaluation measures

The following evaluation techniques may also be used when working with mentally retarded people.

4.4.1 Intelligence tests used for the placement and diagnosis of mentally retarded people

The Junior South African Individual Scales (JSAIS)

This scale was standardized in 1979. It has three aims viz.

- * to measure intelligence related mental abilities that are closely related to effective school functioning.
- * to measure Spearman's factor g; and
- * to aid in the diagnosis of mental retardation (Owen & Taljaard, 1989).

This scale is meant for children between the ages of 3 and 7 years and 11 months (Owen & Taljaard, 1989).

Senior South African Individual Scale-Revised (SSAIS-R)

The main aims of this scale, according to Owen and Taljaard (1989) are as follows:

- * to be a reliable and valid instrument in the assessment of the testee's general intellectual ability;
- * to provide a measure of the child's intellectual

problem-solving ability involving words and symbols and also a measure of the ability to solve problems involving the observation of visual patterns and the manipulation of objects; and

- * to provide measures of intelligence that have clinical significance.

The test is designed for people between the ages of 7 years to 17 years and 11 months.

The rationale for the test is stated as follows by Owen & Taljaard (1989:108): "*The assumption is made that intelligence comprises related problem solving abilities,...*" The total score obtained is an indicator of Spearman's g factor (Owen & Taljaard, 1989).

South African Wechsler Adult Individual Intelligence Scale

This scale was adapted from the Wechsler-Bellevue Adult Intelligence Scale. It aims to measure a number of aspects of intelligence that may be clinically useful in providing separate measures of Verbal IQ, Performance IQ and total IQ (Owen & Taljaard, 1989).

Aman and White (1986) indicate that IQ tests are not overly useful for the measurement of treatment effects because in their nature they are designed to render consistent scores on repeated administrations. Also IQ tests cannot be administered too often as this would invalidate the scores

due to practice effects. Werry (1978) believes that some treatment effects are too subtle or specific to be evaluated by global indices such as IQ tests.

4.4.2 Tests to measure other aspects of functioning of mentally retarded people

Nurses' Observation Scale for Inpatient Evaluation (NOSIE)

This scale was developed for adult psychiatric and geriatric patients (Honigfield, 1974). The scale has 30 items that are separated into 7 subscales;

- * social competence;
- * social interest;
- * personal neatness;
- * irritability;
- * manifest psychosis;
- * psychomotor retardation;
- * depression.

According to Aman and White (1986) this scale is not relevant to a population of mentally retarded people because the factorial breakdown of the scale is based on analyses of subjects with a diagnosis of schizophrenia.

Devereaux Child Behaviour Scale

This scale was developed for mild and moderately retarded people in residential treatment centres. The test was standardized on children, schizophrenics, brain-damaged people and some mentally retarded people. It is an empirically derived scale with 95 items and 17 factors. According to Aman and White (1986) this scale is not sensitive to treatment effects.

Psychopathology Inventory for Mentally Retarded Adults (PIMRA)

This scale is designed for people who are diagnosed as mentally retarded and mentally ill. The scale is made up of two structured interviews, one with the parent or teacher of the patient and the other with the patient. According to Matson (1988) this scale is useful for the following:

- * planning a psychologically orientated mental health intervention;
- * evaluating the effects of treatment;
- * diagnosing psychopathology;
- * listing psychiatric symptoms.

This scale is, however, only useful for an ambulatory population of mildly or moderately retarded individuals as

it was standardized on a population with basic self-help skills (Matson, 1988).

The Staff Intensity Scale (SIS)

This scale was developed by Silverstein and Olvera (1987) and standardized on adults with developmental disabilities in institutions, and can be used for determining the functional relationship between maladaptive behaviour and resource allocation.

Adaptive Behaviour Scale (ABS)

A scale that has significantly contributed to the study of the behaviour of mentally retarded people is the ABS of the AAMD (McDevitt, McDevitt & Rosen, 1977). There are, however, items that are inappropriate for the majority of the Witrand Hospital population, such as

- * using a telephone directory;
- * understanding and knowing postage rates;
- * an ability to deal with simple injuries; and
- * a working knowledge of welfare facilities in the community.

The administration of the test is time-consuming and the norms are based on the administration of the complete test. McDevitt, McDevitt and Rosen (1977) indicate that if an item

is omitted the data cannot be compared with the norms and the amount of information available is limited.

McDevitt, McDevitt and Rosen (1977) state that individuals who receive ratings for many kinds of mildly inappropriate behaviours will have higher scale scores of aberrant behaviour than individuals who are rated on one or more kinds of severally antisocial behaviour.

The ABS has limited value in the classification of a mentally retarded person because it has a number of items that lack objectivity according to Shapiro and Barrett (1983).

4.5 Discussion of checklists used in this study

4.5.1 The Aberrant Behaviour Checklist

4.5.1.1 Description of the ABC

This is a scale developed with the intention of measuring treatment effects on the moderately to profoundly mentally retarded institutionalized people (Aman, Singh, Stewart, & Field, 1985). The items of the ABC were factor-analytically derived so that the resulting sub-scales would be factorially valid. This means that the five sub-scales are empirically derived (Aman, Singh, Stewart & Field, 1985).

The 58 items are made up of relatively concrete, simple, descriptive items.

The sub-scales are:

- I. Irritability, agitation, crying (made up of 15 items);
- II. Lethargy, social withdrawal (made up of 16 items);
- III. Stereotypic behaviour (made up of 7 items);
- IV. Hyperactivity, non-compliance (made up of 16 items);
- V. Inappropriate speech (which consists of 4 items).

The assumption is that the patient being tested is sensitive to the subtle and perhaps transitory effects of treatment (Aman, Singh, Stewart, & Field, 1985). It is a short scale and with experience takes between five and ten minutes to administer.

4.5.1.2 Administration and scoring

At Witrand Hospital the scale is administered as a third-person interview and the person who is asked to complete the scale is someone who has good knowledge of the patient's behaviour (Aman & Singh, 1986).

The maximum and minimum scores obtainable on the subscales are as following:

- I. Irritability; 0 - 45.
- II. Lethargy; 0 - 48.

III. Stereotypic behaviour; 0 - 21.

IV. Hyperactivity; 0 - 48.

V. Inappropriate speech; 0 - 12.

4.5.1.3 Application of the ABC

The ABC may be used to help plan mental health treatment for people who are mentally retarded and may help identify specific psychopathological behaviours that need to be treated. It is also useful to aid in the evaluation of treatment effects. This checklist was specifically developed as an instrument for objectively measuring aberrant behaviour as it appears among mentally retarded people. Considerable research has been performed with respect to determining the psychometric qualities of the ABC (Aman, Richmond, Stewart & Bell, 1987; Aman, Singh, Stewart & Field, 1985a; Aman, Singh, Stewart & Field, 1985b; Aman & Singh, 1982; White & Aman, 1985 & Aman, White & Field, 1984). This means that it is a well-studied instrument in the field of mental retardation. The items of the ABC have been empirically derived. It is not an assessment tool for placement or abilities. It may be used as a *before* and *after* baseline for treatment effects and does not rely on clinical impression only. It is useful in planning psychotherapeutic interventions. Dickens and Stallard (1987) indicate that it is important to have an assessment device of a person's functioning that is as objective as possible.

The advantages of the ABC are not an argument for the superiority of the instrument overall or a proposal for the exclusion of other instruments or measures. Reliance on one kind of measure can be damaging to progress in the field of mental retardation. To advance the knowledge gained in this field a multitude of appropriate measures should be employed to supplement each other (O'Leary, 1981; Wolf, 1978).

Different types of indices cause more hypotheses to be generated, therefore more options for treatment and a variety of therapeutic interventions become possible.

The ABC will usually be part of a comprehensive evaluation. On every occasion it is administered the rationale for the use of the ABC should be clearly explained, in that it is a behaviour checklist designed to measure treatment effects and obtain a baseline of the individual's behaviour.

An appointment should be made so that the nursing staff member has the time to assist the interviewer in completing the checklist. The checklist requires that the nursing staff member be objective and truthful. Both these aims can be better met if the person has time scheduled for the completion of the structured interview instead of having to do it while performing other duties. It is therefore important that the administrator of the test should attempt to establish rapport with the respondent and the completion of the checklist should occur after the respondent has

clearly understood the purpose of the checklist. It is also important that the respondent have enough time to complete the checklist.

4.5.1.4 Reliability of the sub-scale

According to Aman, Singh, Stewart, and Field (1985:493) the calculated coefficient alpha for the sub-scales is as follows: " I. Irritability, .92; II. Lethargy, .91; III. Stereotypic Behaviour, .90; IV. Hyperactivity, .94; and V Inappropriate speech, .86" With the scale having a Cronbach's coefficient alpha of between .86 and .95, there is good internal consistency. In addition an inter-rater reliability of .63 was obtained.

4.5.1.5 Disadvantages of the ABC

- * Checklists cannot be used on their own to make a diagnosis. It is very unlikely that a single cut-off score on any rating scale will be an adequate substitute for the systematic evaluation of a patient using several sources of data.
- * On the sub-scale Inappropriate speech a person, if he/she does not have understandable speech, tends to have low scores on the scale even though verbigerations may occur.

- * The need to obtain norms for every population as suggested by Aman and Singh (1986) is a disadvantage when administering the ABC.
- * The format of the checklist which does not include the items and the examples of the items on one page, thus making administration a process which includes a lot of paging around.

4.5.1.6 Discussion of the ABC

Kline (1975) indicates that the main use for testing a person is to enable one to describe the patient in standard terms. Checklists should not be administered in isolation because the informant may not be reliable, thus to give the patient the benefit of the doubt one should spend some time directly observing the patient. Perhaps one may obtain information from the source of referral. According to Shapiro and Barrett (1983) there has of late been a proliferation of checklists that have not been standardized. These instruments may undermine the credibility of instruments that have good norms and good psychometric properties. According to Matson (1988) it is not sufficient for a checklist to measure self-injurious behaviour and aggression and he states that these problem behaviours have enjoyed most research. The ABC does not limit its focus to these problems. DSM-III-R criteria should be used in conjunction with a clinical judgement of general adaptation.

The interview should be held with a person who knows the subject and information obtained from that person who spends the greatest number of waking hours with the patient.

4.5.2 The Fairview Self-Help Scale

4.5.2.1 Application of the Self-Help Scale

This scale was developed by R.T.Ross specifically for the Fairview Hospital in California USA (Grossman, 1983). The Fairview self-help scale was developed to provide the nursing staff of a hospital with a score for self-help ability given in months. The scale has limited functional value and limited content. The need in Witrand Hospital is for a scale that is able to identify, classify or assist in the planning of interventions but the Fairview has not been developed specifically for these purposes (Grossman, 1983). The chronological age of the mentally retarded patient is not always a useful parameter as abilities within age groups differ greatly. It would seem sensible to compare people who have some other ability in common. For the purposes of this study the social functioning or self-help age of the person is obtained for the patient. The chronological age is not neglected and comparisons are also drawn for the different age groups.

4.5.2.2 Description of the Fairview Self-Help Scale

The scale is divided into the following sections:

- * Motor development:
mobility both standing and walking; arm-hand coordination; and muscle coordination.
- * Toilet training:
the degree of training;
enuresis;
self-management in the toilet;
flushing of the toilet;
washing of hands.
- * Dressing:
the ability to do this independently;
tying shoe-laces;
undressing.
- * The ability to eat and drink independently
- * Self-care:
washing of hands;
brushing teeth;
cleaning of the nose;
salivation; and
bathing.
- * Communication abilities:
use of speech;
clarity of speech and the ability to understand speech.
- * Social interaction:

the patients' ability to identify her/himself;
repetition of words;
response to questions;
assistance to others and contact with others

* Independance:

ability to move about independently;
ability to play;
ability to complete domestic tasks;
concept of time or numbers and the ability to read.

There are 35 items and the responses may range from 0 (no ability) to 4 (a good ability).

• 4.5.2.3 *Advantages of the Fairview Self-Help Scale*

The Fairview is used within the Witrand Hospital setting and it is practice that the nursing staff administer the scale. This means that each patient has a Fairview score available on file.

This scale was included in the study because it may not always be meaningful to compare similar chronologically aged patients. In using this scale the comparison of people who have similiar self-help abilities can be compared. Similiar independent functioning abilities may also be compared.

4.5.2.4 Disadvantages of the Fairview Self-Help Scale

- * A disadvantage of the Fairview is that a person with a physical handicap but with good self-help skills tends to have lower scores than a person who has fewer skills but no physical disability.
- * The test is not administered by a psychometrist or psychologist but by the ward staff.
- * There is no manual available for the scale.
- * The Fairview has not been standardized and therefore no psychometric properties are available (Personal communication, Mrs Strachan, HSRC Test Library).

4.6 Résumé

Chapter Four is concerned with a literature review regarding the assessment of mentally retarded people with an emphasis on the instruments used in this study. Chapter Five discusses standardization with respect to psychometric instruments.

CHAPTER FIVE STANDARDIZATION

5.1 Definition of standardization

Reber (1985:726) states that to standardize a test is "...to establish, for a particular test, the set of procedures for its administration, the scoring techniques to be used and the methods of evaluation and interpretation of obtained scores". A further requirement of standardization, according to this dictionary, is that norms or standards must be established. Standardization with respect to objective psychological assessment techniques refers to the uniformity of the test material, administration and scoring procedures of the device (Huysamen, 1984).

Roscoe's (1975) definition of standardization adds another dimension to the explanation of standardization in that he indicates that the test needs to be administered to a well-defined group and careful records need to be kept with respect to the group's performance. These records are then referred to as norms. According to Roscoe (1975) standardization is an essential attribute of a good measurement device.

For an instrument to be standardized it appears that (Smit, 1986):

- a) Specific instructions for the administration of the test need to be established. Even the words to be used when giving instructions should be specified so that results obtained on different occasions or by different individuals may be comparable.
- b) Specific materials are available for a test. This means that a person administering the test on any occasion will be using a standard set of materials. These materials include the questions to be asked or the tasks to be performed and the materials required for those tasks (pencils, blocks, checklists or stimulus cards).
- c) Scoring instructions and a score key need to be available, so that the same method of scoring the test occurs on every occasion. This means that all people who administer the test will mark and award scores in one specific way.
- d) Norms must be available to enable interpretation of the scores obtained. This allows the relative position of an individual, with regard to a particular population, to be determined. The norms should include a manual which explains the psychometric properties and the uses of the instrument.

An instrument is standardized (viz. there are specific materials, a set of instructions, a definite manner of scoring and interpretation, and relevant norms) so that when the test is administered the only variable being measured by that test is the individual being evaluated (Roscoe, 1975).

5.2 Normalization versus standardization

Norms are the normal or average performance of the standardization sample. A norm is not necessarily the most desirable score but is an indicator of typical performance (Anastasi, 1976).

Once an assessment device has been carefully developed in terms of:

- * materials to be used;
- * the administration procedure; and
- * the procedure for scoring,

that device may be used in the same manner by different people on different occasions, but to allow the scores obtained on different occasions to be compared it is advisable to establish norms for this device.

The establishment of norms is an important part of standardization because a raw score does not provide much information regarding an individual's relative position with regard to what is being measured. An individual's score

needs to be compared with scores obtained by a group on the same test. For the comparison to be meaningful the comparison group needs to be a group of similar people or people with a similar background (Huysamen, 1989).

Norms provide a frame of reference because they are the actual scores obtained by the standardization sample. Norms are obtained when the instrument is administered to a large representative sample. This provides the actual scores of the representative sample and any individual's score may then be compared with the scores of the group.

The distribution of scores of the sample is then obtained and one can determine where an individual's performance lies in the distribution - in other words, whether the score is average, slightly below average or near the upper end of the distribution (Anastasi, 1988).

Norms allow an individual's performance to be evaluated in terms of the performance of the most nearly comparable standardization group. Norms do not only allow people's scores to be compared with other individuals' scores but the same person's scores on different sub-scales may be compared because the sub-scales may be converted to the same unit, thus allowing comparison. This means that relative performance on different scales may be compared. For norms to be of any value the standardization sample needs to be

large enough and representative of the total population. If two sets of norms are drawn up for one population they should not differ. If they do, the data can be regarded as having been poorly generated (Van den Berg & Heinichen, 1982).

According to Anastasi (1988) there are two major ways in which derived scores can be expressed: the developmental level attained, or a relative position within a specified group, an example of this is a percentile. This means that the raw scores are converted to some relative score or a derived score (a stanine is an example of a derived score) and then this score is used to interpret the data. The derived scores are computed in a manner so as to provide immediate normative interpretation of test performance. Relative scores indicate the relative position that an individual occupies within a specified population for a specific trait. With relative scores one assumes that equal increments in numbers indicates equal increments of a trait.

Norms are restricted to the particular population for which they have been derived (Anastasi, 1976). Norms only represent the performance of the standardization sample. The norm group should therefore be large enough so as to enable inferences to be made from this information. The standardization sample should also be representative of the population. Anastasi (1976:90) refers to the idiosyncratic

nature of different populations when she says: "Selective factors likewise operate in other institution samples, such as prisoners, patients in mental hospitals, or institutionalized mental retardates. Because of many special factors that determine institutionalization itself, such groups are not representative of the entire population of criminals, psychotics, or mental retardates". This is an indicator that each institution should generate norms for its own specific population. Thus in this case it is necessary for the generation of norms for the unique population of Witrand Hospital patients on the ABC.

5.3 Scores obtained on tests

The data obtained when the instrument is applied to the standardization sample are known as norms. The norms obtained in this project will be expressed as percentiles as a single score is meaningless. A score only takes on a meaning when compared with the appropriate standardization samples' score. Percentile ranks are easily interpretable and relatively simple.

Percentile scores are expressed in terms of the percentage of persons in the standardization sample who fall below a given raw score (Roscoe, 1975). A percentile provides one with an indication of an individual's relative position in the standardization sample (Runyon & Haber, 1980).

Percentiles are not the same as percentage scores. Percentile ranks are derived scores expressed in terms of percentage of persons. Percentile scores are easy to understand and interpret (Huysamen, 1989).

The percentile score obtained on a scale is intended to convey the relationship of a given score to the group. Percentile scores divide a scale into one hundred units. A person may obtain a percentile score of 75 it will be clear that 75 percent of the population that the person is being compared to have obtained scores equal to or less than that obtained by a the particular individual.

Advantages of percentile ranks according to Guilford and Fruchter (1978) are that they:

- * make comparison of different sub-scales possible;
- * make use of the mean or median as main point of reference
- * are easily understood by a person not familiar with psychometry.

Guilford and Fruchter (1978) also present a disadvantage of percentiles by stating that they are only ranks and do not represent equal units of individual differences. These inequalities in their units occur especially at the extremes of the distribution (Guilford & Fruchter, 1978).

5.4 Theoretical considerations when standardizing a test

* The specific aim of the test

The aim of the test is to measure some construct and this means that the reason for measuring that construct should also be mentioned. Before a test is created it is important to identify probable uses for the instrument. The potential group of people that the instrument is to be administered to also need to be identified, as do the potential situations in which the instrument will be used and the potential stimulus material used in the test (Van den Berg & Heinichen, 1982). Other important considerations are the length of the test, administration procedure and scoring procedure and these are all determined by the specific aim of the test (Huysamen, 1989).

* The construct to be measured by the test

Van den Berg and Heinichen (1982) state that often the characteristics or constructs to be measured by a test are relatively difficult to define. When these characteristics are relatively abstract and not directly measurable another means of measuring these constructs need to be found. This means that for the purposes of evaluation a directly observable behaviour (that experts agree has a connection to the construct) is measured. This measurement is then used

and inferences are made about the characteristic, or construct, that is not directly observable. The use of the information obtained by the observations of the measurable behaviour allows one to obtain information about some human characteristic that is not directly observable or measurable (Van den Berg & Heinichen, 1982). This means that the construct needs to be clearly defined and its limits clearly set. Experts need to be consulted during this stage (Van den Berg & Heinichen, 1982).

The nature of the test will be determined by the kind of construct to be measured or the criterion used to define the construct. The nature of a test may be that of a measure of typical performance or a predictive test. A predictive test is used to predict performance regarding some aspect of the person's functioning. This is important for selection, classification, diagnosis, and placement (Huysamen, 1989).

* The format of the test

There are several different formats for tests. Among these one finds:

- * open end response;
- * multiple choice;
- * true or false statements; or

- * a semantic differential (Heinichen, 1982; Huysamen, 1989).

- * The generation of items

The generation of items is a critical part in the development of an instrument. Items must be worded so as to elicit the required information. To this end:

- * Items should be as clear and as concise as possible - the simpler the language the better.
- * Sentences should be short and language should be correct.
- * All relevant information should be provided and the respondent should not have to guess about the information required to answer an item.
- * A testor must not try to mislead a respondent (Heinichen, 1982; Huysamen, 1989; Smit, 1986).

- * A pilot study

After sufficient items have been generated these items are presented to a panel of professionals for evaluation. Their recommendations are used to alter the items. Then a small representative sample, for which the instrument is intended, is tested using the instrument. The data obtained are evaluated and items are then selected. This data may lead to information on the following:

- * items that are not clear or do not make sense;
- * the ability the items have to discriminate between subjects who have and do not have certain variables that are being measured;
- * the proposed length of the test;
- * the time it takes to score the test;
- * ambiguous instructions;
- * the reliability of the items (Heinichen & Van den Berg, 1982; Smit, 1986).

The statistical processing of the information allows one to select the items and then the final format may be created. The instrument is then ready to be administered to a large representative sample so that norms may be determined.

* Standardization of the test procedures

For an instrument to be standardized the content of the test should be relevant for the population it is intended to evaluate.

The administration instructions should be absolutely constant at each administration and therefore these instructions should be clearly stated for both the testee and testor. The scoring procedures are also important and clear instructions for scoring should also be available (Smit, 1986).

* The development of norms

Once the test has been created, the items selected and instructions generated the test needs to be administered on a large representative sample. Then norms may be generated for the whole population and perhaps even for subgroups (Heinichen & Van den Berg, 1982).

* Technical evaluation of the instrument

The psychometric properties of the test need to be determined so that the reliability and validity indices of the instrument are known (Smit, 1986).

5.5 Requirements for standardization of checklists

The following then need to be considered for the standardization of checklists: administration procedure; administration instructions; administration time; and scoring procedures.

* Administration procedures

Chadwick, Bahr and Albrecht (1984) recommend that to reduce interviewer effects the same procedure be followed by each interviewer. This means that in some cases there are very specific questions that are read by the interviewer and that the responses to the questions are specified and provided for the interviewee to select from. There is also a system

for completing the instrument. This system reduces the necessity for interviewer judgement. The fixed administration procedure makes data analysis easier. The availability of a fixed or standard manner for the test to be administered ensures that the test is always administered in one specific way. The results obtained from using the instrument as it is intended then allow results from different occasions or for different subjects to be compared as the same set of rules is applied on all occasions. Also, if the test is administered in a specific manner, then different examiners or administrators of the test should obtain identical results for a given individual. With the existence of one way of administering the test a less experienced testor is able to use the instrument in as professional a manner as a more experienced examiner by following the standard administration procedure. One way of administering the test allows the administrators of the test to be able to repeat the test situation because of the fixed nature of administering the test. A standard procedure for administering a test allows not only for comparisons of scores obtained but ensures that the subject is being evaluated by the instrument and not on the administrators' ability. The presentation of a fixed procedure in the administration of a standardized instrument is of vital importance.

* Administration instructions

The instructions used when the checklist is administered need to be those that will be used when the checklist is in its final form, the standardized form (Huysamen, 1989). The instrument is then used with the same set of instructions on every occasion, these instructions are available in the manual on the instrument. All administrators of the test use exactly the same instructions, verbatim. No subject has the advantage of receiving hints that other subjects do not receive and the different administrators do not have the opportunity of developing a particular style or manner of presenting the test if it is not specified in the manual. The results obtained on a particular instrument by different individuals or of the same individual on different occasions may be compared because the instructions used on the different occasions will be the same. By ensuring that the instructions of an instrument are explicit and repeated verbatim at every administration the subjects' performance or ability on the instrument is being evaluated and not the ability of the administrator to interpret the instructions. This allows for a more standard instrument.

* Administration time

The time allocated should be adequate to allow as many respondents as possible to complete each item. A checklist is not a speed test and as such does not have time limits (Huysamen, 1989).

* Scoring procedures

A fixed manner of scoring the performance of an individual on any standardized instrument is important so that all administrators of the instrument allocate the same number of points for any given manifestation. Different administrators with identical protocols will then allocate identical raw scores for those protocols. Raw scores need to be calculated but this information provides no information as to how the individual performs on whatever is being measured as compared with the group. This means that the data need to be transformed or converted in order to be compared with the standardization group (Huysamen, 1989). The raw data need to be transformed in the same manner. A standardized test allows a test administrator to transform test scores in fixed ways and this allows comparisons of the data obtained.

For the effective transformation of raw scores, norms need to be present. For the checklist to be standardized it needs to be administered to the norm group, that is, a large random sample representative of the population on which the checklist is to be used. The establishment of valid norms is an important part of standardization so that scores obtained by different individuals may be compared in a meaningful manner.

Smit (1986) emphasizes the importance of standardized scoring procedures particularly with respect to achieving:

- a) unambiguous responses to the test items;
- b) objective scoring of the test; and
- c) a fixed manner of comparing a testee's results with the norm group.

The above measures all contribute to a uniformity in the test. This means that any subject being evaluated by the instrument is subjected to exactly the same procedure no matter where, when and by whom the test is administered (Huysamen, 1984).

5.6 Significance of standardization

Standardization allows the results obtained on an instrument by different people or by one individual on different occasions to be compared because there has been uniformity in the use of the instrument and the interpretation of the results. Rubin (1983) emphasizes the importance of standardization so that the data obtained are reliable.

Smit (1986) indicates that the standardization of a psychological assessment device is important because it allows the following:

- * comparison between individuals on the same test;
- * comparison of scores obtained by the same individual on different occasions;
- * comparison of individuals with a norm group.

Standardization is required so that scores on the same test obtained by different administrators of the test may be compared and so that there is some form of control over the way one uses an instrument. This implies a uniformity in administration and scoring of the test. Thus materials need to be the same, as do the instructions, time limits, preliminary instructions, ways of handling queries from subjects and other subtle factors which may influence performance on an instrument (Anastasi, 1988). Huysamen (1984:10) states that if the requirements for standardization are not met for an instrument, "*... there is a possibility that the scores obtained by different subjects on different administrations of the test are not comparable*"

Guion (1965) emphasizes the importance of standardization of a test in the obtaining of accurate objective information from that test. Standardization, he indicates, allows for the gathering of unambiguous information because factors that may affect a subject's performance have been eliminated.

Roscoe (1975) indicates that standardization can reduce or eliminate the effects of personal judgement of any individual who is scoring the test. This will mean that several qualified people will give identical scores for a particular individual.

5.7 Theoretical considerations necessary when standardizing the ABC for a new population

5.7.1 Introduction

The ABC is a psychometric instrument that may only be administered by a psychologist or a psychometrist under the guidance of a psychologist because the test has not yet been classified by the Test Commission of South Africa (Owen & Taljaard, 1989). Thus within Witrand Hospital it must be administered by one of the registered psychologists or by one of the intern psychologists. According to Aman and Singh (1986) any hospital staff can be trained in the administration of the ABC and then they may administer it. However because of the ruling by the Test Commission, the administration within the Witrand Hospital setting will be done by the ward psychologist or an intern psychologist under the supervision of a psychologist.

The frame of reference of the respondent is a significant factor to be taken into account when an objective assessment measure is being established (Steenekamp, 1984). This means that the respondents should all be able to understand the items and have comparable levels of training and experience in the wards. The respondents also need to know the patients so that they are able to report on their behaviour.

Steenekamp (1984) emphasizes that concepts or jargon need to be clearly explained so as not to confuse the respondent. For this purpose the ABC has simple instructions and the items are behaviour manifestations, thus inferences need not be made. It is of the utmost importance that the theme, concepts and frame of reference of the respondent be familiar to the person using the instrument. Because of the overwhelming numbers of staff at Witrand Hospital who are not conversant in English it was essential that the ABC be translated from English into Afrikaans.

The formulation of instructions is an important part of standardization and these specific directions should be provided in Afrikaans at the beginning of each checklist. The instructions are to be read before completion of the checklist. The person who is to administer the test must ensure that there is a separate checklist for every individual who is to be evaluated. The instructions are to be read clearly and slowly before the checklist is completed.

It is very important initially to explain the rationale for the evaluation and this should be done when the appointment is made for the evaluation.

5.7.2 Compiling and translating the checklist

The items of the ABC as generated by Aman and Singh (1986) are used when administering the instrument in Witrand Hospital. The existing 58 items have been retained but they have been translated into Afrikaans. Although the items of the ABC were not changed the examples used were not all the original examples as provided by Aman and Singh (1986) but ones that are changed so as to be relevant to the Witrand Hospital population. The examples were generated with the assistance of the psychologists at Witrand Hospital who use the instrument. The examples need to be relevant to the abilities of the population. The instrument may now be administered in a more valid manner due to the examples being relevant for the Witrand Hospital population. Only the examples in the checklist may be used when the checklist is used, and at every administration the same examples are used.

5.7.3 Materials used in administration

The translated ABC was used with the examples available on the checklist itself so as to reduce the amount of paging around in the manual. Aman and Singh (1986) developed the checklist and they present the examples separately in the manual, but the Witrand Hospital format has the examples included on the checklist.

The standard score sheet with the five sub-scales marked on it is used for scoring.

5.7.4 Method of administration

The checklist is to be completed by a member of staff who is well acquainted with the patient who is to be evaluated. The setting should offer good light (so as to complete the checklist) and adequate seating arrangements.

There is no time limit on the time taken to administer the checklist but it usually takes about five minutes to complete.

5.7.5 Administration instructions

The instructions, according to the ABC manual (Aman & Singh, 1986), at the beginning of the checklist are read slowly to the person who is to provide the information about the patient. This means that the person is to evaluate each item as to whether it had been a problem in the past four weeks, and if it had been a problem, to what extent this would be the case. The person is to take relative frequency of behaviour into account for each item. The patient's behaviour with other members of staff also needs to be taken into account. The rater is also asked to determine whether the nature of the behaviour is maladaptive and not only

whether it is disruptive. Raters should also take behaviour reported by other members of staff into account when replying.

No other examples for the items are to be used except those that are provided on the checklist sheet. This ensures uniformity.

The manual of the ABC does not really provide clear norms for the different populations and has little information to enable one to make inferences regarding the results (Aman & Singh, 1986).

5.7.6 Scoring procedures

The standard score sheet is to be used. From this score sheet any of the percentile values (of the Witrand Hospital sample) for the particular sub-tests may be determined. If available, second order factors that might be generated from this study may be determined.

5.7.7 The selection of the standardization sample

A realistic way of obtaining norms is by standardizing a test on a narrowly defined population chosen specifically for the purposes of the study. With Witrand Hospital one is able to fulfill this requirement.

When selecting a standardization sample or norm group one must take care to select a sufficiently large and representative sample and not a group which is incidentally or explicitly selected, the distribution will then be skewed and the norms obtained poor. Standardized instruments have the advantage that they have smaller rates of error than do data obtained from informal observation and interviews (Grossman, 1983). In the light of the preceding information it is clear why one should establish clear norms for the ABC if it is to be a useful instrument within Witrand Hospital, because of the idiosyncratic nature of the population and its staff. Witrand Hospital patients' performance will then be compared with the performance of their peers.

For the purposes of standardizing the ABC for Witrand Hospital patients 200 patients were randomly selected. This represents almost 20% of the total population of 1079 patients. The sample needs to be large enough so that the results generated will allow inferences to be made regarding the nature of the population.

5.7.8 Norms obtained for the Witrand Hospital population

A registered psychometrist administered the instrument. The ABC was administered in a standard manner and the format used was that of the ABC specially generated for the Witrand Hospital population. Each subject was reported on by two independent raters on separate occasions.

The data obtained during the administration of the instrument were processed by the Statistical Consultation Services of the PU for CHE. The norms generated for the population were in the form of percentiles because of the easy nature of interpretation. Ease in interpretation is important because in the multidisciplinary meetings in which findings about the subjects' are discussed a simple means of describing a subject will be most effective.

5.8 The development of the psychosis sub-scale

5.8.1 The aim of the psychosis checklist

Traditionally there has been some difficulty in determining a distinction between people who are mentally retarded and those who are severally psychotic. Romanczyk and Kistner (1982) found that diagnoses of mental retardation and psychosis are mutually exclusive. Gunzberg (1973) indicates that a well-defined system of diagnosis is required for

mentally retarded individuals. The challenge for mental health professionals is to find a means of overcoming the effects of mental retardation and helping retarded individuals to adjust to the demands of daily life, both in and outside institutions. This is not a spectacular achievement but, as Gunzberg (1973:8) writes, *"...there is fascination and value in bringing a human being, who would otherwise be condemned to almost vegetable existence, to a fuller use of his potential"*.

The demands placed on treatment or care of mentally retarded people and people who are psychotic are dissimilar. People who are mentally retarded and those who are psychotic require different treatment, and for this reason these individuals need to be clearly identified and defined. Parameters for the diagnosis of these individuals are required.

Costello (in Matson & Barrett, 1982), notes that there are different patterns in the way that mentally retarded people develop emotionally and cognitively from people of normal development. Mental retardation does not guarantee mental health and it even seems as if mental retardation predisposes an individual to mental illness or psychopathology (Costello, 1982). The manifestation of psychopathology depends on the level of ability of the individual (Costello, 1982). Costello (1982) also indicates

that the chronically psychotic patient may be misdiagnosed as mentally retarded by an unwary clinician. Costello (1982) also states the converse, that a person who is mentally retarded may not be as aware of socially acceptable behaviour and may therefore seem more disturbed while actually only exhibiting behaviour symptomatic of mental retardation.

Psychotic behaviour is not always easily identifiable among mentally retarded people and, as Costello (1982) states, *"... many of the major criteria cannot be elicited if the IQ is much below 45"*.

Romanczyk and Kistner (1982) found that a descriptive diagnostic process was necessary rather than a class diagnostic process. The diagnostic categories of personality disorders, of the DSM-III-R, do not generally refer to mental retardation, thus a combined diagnosis is required. Due to the multi-axial diagnostic classification of the DSM-III-R, a dual diagnosis is possible. A behavioural system of classification lends itself strongly to the use of the DSM-III-R criteria. Unfortunately no reference is made to psychiatric disorders within the sub-groups of mentally retarded individuals (Romanczyk & Kistner, 1982). The DSM-III-R classification system does not imply that diagnoses of mental retardation and psychosis are mutually exclusive. Systematic evaluation of behavioural characteristics is important as it may assist in determination of appropriate

treatment procedure. Unfortunately this is not a predictor of ultimate success in therapy (Romanczyk & Kistner, 1982).

5.8.2 *The construct to be measured*

The proposed instrument attempts to measure or identify the extent of psychotic behaviour. To this end the criteria identified in the DSM-III-R for psychosis is used as the criteria for psychosis. The DSM-III-R is used because it is a systematic classification method and it also describes behavioural manifestations. The proposed instrument is to be a checklist and therefore a classification system describing behavioural manifestations is valuable in assisting in the generation of items.

According to Rowe and Mink (1989) and Kaplan and Saddock (1991) the essential features of psychosis are disturbances of:

* Content of thought

Abnormalities here include different kinds of delusions or overvalued ideas - these are defined in terms of being "...unreasonable, sustained false belief maintained less firmly than a delusion" (Kaplan & Saddock, 1991:218). Another indicator of a disturbance in content of thought is poverty of thought.

* Form of thought

Disturbances in form of thought may be expressed as a loosening of association, poverty of speech content, neologisms, perseveration, clannish association, word salad, echolalia, verbigeration or blocking (Rowe & Mink, 1989; Kaplan & Sadock, 1991).

* Perception

When there is impairment in reality - testing hallucinations indicate psychosis (Kaplan & Sadock, 1991).

* Affect

Blunting or inappropriateness may indicate disturbances of affect (Kaplan & Sadock, 1991).

* Volition

The patient is unable to sustain or initiate goal-directed activity (Rowe & Mink, 1989).

* Relationship to the external world

Problems in this sphere are apparent when the patient withdraws from any social activity or opportunities of social interaction and "*becomes preoccupied with illogical egocentric ideas and fantasies..*" (Rowe & Mink, 1989:274).

* Psychomotor behaviour

Disturbances in psychomotor behaviour may be observed when the patient is non-reactive to the environment or the person may maintain a rigid posture or exhibit stereotypic behaviour. The patient may also exhibit

posturing, waxy flexibility, mannerisms or grimacing
(Rowe & Mink, 1989; Kaplan & Sadock, 1991).

5.8.3 *The nature of the test*

It appears that there is consensus regarding the need for a systematic approach that may determine whether a mentally retarded patient is psychotic or not (Costello, 1982; Romanczyk & Kistner, 1982; Matson, Kazdin & Senatore, 1984). This will allow appropriate intervention and may prevent the use of antipsychotic medication when it is not relevant (Schalock, Foley, Toulouse & Stark, 1985). In an attempt to find a systematic manner (which uses only behavioural manifestations) of assessing mentally retarded people, the diagnostic criterion of the DSM-III-R was used for the generation of items in the psychosis checklist. The symptoms described in the DSM-III-R were used as criteria to generate items for the psychosis checklist and by this means fifty-six items were identified. The use of antipsychotic medication is used as an criterion for a diagnosis of psychosis.

The items may allow one to determine or demonstrate a nosology of symptoms more evident in people who are mentally retarded.

The psychosis checklist or sub-scale contains 56 items and is divided into the following sections:

- * disturbances in thought content;
- * disturbances in form of thought;
- * disturbances in interpersonal relationships;
- * psychomotor disturbances; and
- * volition.

The instrument is a predictive test because it is used to predict the performance of a subject regarding the level of psychotic behaviour a person exhibits. This is important for selection, classification, diagnosis, and placement.

5.8.4 The format of the psychosis scale

In order that this instrument eventually be included in the ABC it should be of the same format as the ABC. This means that the format of the sub-scale is that of a Likert scale.

The scale consists of the following:

- * D often;
- * S seldom;
- * N never;
- * K cannot say.

5.8.5 Generation of items for the sub-scale

In the development of the psychosis sub-scale for Witrand Hospital the DSM-III-R criteria was used to generate items. These items were then discussed at several staff meetings of the psychologists. Once the psychologists agreed that the items were clear and correct, 56 items were selected, by the Witrand psychologists, for administration.

Fifteen items were related to disturbances of thought content. Disturbances in the form of thought generated seventeen items. Nine items were concerned with affect disturbances. Difficulties with interpersonal relationships were covered by three items. Psychomotor disturbances accounted for all but one of the rest of the items (ten) and the last item attempted to enquire about the level of a subject's volition.

The 56 items of the psychosis sub-scale were thought to have relevant content by the panel of psychologists, because the DSM-III-R provides a list of behavioural manifestations that need to be present for a diagnosis to be made.

From these items the final selection of items will be made, after the data from the pilot study have been statistically analyzed.

5.8.6 The pilot study

This study was done to determine whether the psychosis sub-scale is able to differentiate between psychotic and non-psychotic patients at Witrand Hospital. The 200 subjects on whom the ABC was standardized were used as subjects on whom the psychosis sub-scale was administered. These subjects, it was anticipated, would be a large enough group so that the items that differentiate between psychotic and non-psychotic patients could be determined.

5.8.7 Statistical analysis

Student's t-tests were to be completed on the data obtained by administering the instrument by the Statistical Consultation Services of the PU for CHE. The percentages of subjects who scored more than zero on any item were also to be calculated so that those items which are able to differentiate between the psychotic and non-psychotic patients and occur frequently among the patients may be included in the final draft of the sub-scale.

In this study the use of major tranquillizers is also used as a criterion for determining whether a patient is psychotic or not. According to a senior registered nurse (Sr. Barnard, 1992) the Witrand Hospital pharmacist (Francois Myburg, 1992) and the Specialist Physician (Dr.

Burger, 1992) major tranquillizers are used in this hospital in the following cases exclusively:

- * when patients exhibit bizarre behaviour; or
- * for patients who are psychotic; or
- * when patients exhibit hallucinations; or
- * for paranoia.

Thus it is a valid interum or substitute criterion, as described by Van den Berg and Heinichen (1982), for determining whether a patient is psychotic or not. Van den Berg and Heinichen (1982) refer to available criterion as being either true criteria or substitute (also called interum criteria). True criteria have already been proven to be correct but often there are no established true criteria available, so that use is made of interum criteria in the hope that its usefulness may be established as true criteria (Van den Berg & Heinichen, 1982).

5.9 Résumé

In Chapter Five standardization of psychometric instruments was researched according to the literature. This was done in an attempt to sketch the background against which the ABC was standardized for Witrand Hospital.

In the next chapters research methodology and results obtained in this project will be discussed.

CHAPTER SIX EMPIRICAL STUDY

6.1 Research design

This study is primarily intended to be the standardization of an existing psychometrically valid instrument. This is therefore not experimental research, as variables are not subject to direct manipulated but have to be chosen after the fact. The variables that are to be studied already exist and that they are to be studied retrospectively and selected instead of being manipulated. This is ex post facto research (Roscoe, 1975). Plug, Meyer, Louw and Gouws (1989) describe ex post facto research as research that makes use of groups that represent a certain level of an independent variable , so that the researchers are unable to manipulate the variable. It literally means " *on the strength of that that was done afterwards.*" (Plug, Meyer, Louw and Gouws, 1989:96).

The variables selected are the responses to the items of the sub-scales of the ABC and the data regarding this scale are collected for a large representative sample of the Witrand Hospital population.

According to Smit (1986) the standardization of a test occurs with respect to administration procedures, instructions, time and scoring. In addition the definitions

of Roscoe (1975), Anastassi (1988) and Reber (1985) indicate that standardization also includes the collection of a distribution of raw scores in a large representative sample. This information is then converted to some meaningful interpretable scale like percentile ranks.

6.2 Research subjects

6.2.1 Population

The Patient Register of Witrand Hospital as on 16 July 1992 was drawn at the hospitals' admissions office. The total population on 16 July 1992 was 1079. The names of the people in the population were arranged in alphabetical order. For sampling and research purposes each member of the population was allocated a number.

6.2.2 Sampling procedure

The population is defined as the population of Witrand Hospital as on 16 July 1992. The computer was then programmed to generate 200 random numbers from the 1079 patient numbers. These patients were then included in the standardization sample. Thus random sampling was done which means that numbers were selected from the population in such a way that every number had an equal chance of being selected for the sample. Ten extra numbers were selected in

case any subjects were unable to complete the study. As it happened one subject selected passed away before the research was started and that person's number was replaced by the first number on the additional list.

6.3 Research procedure

6.3.1 Introduction

The procedure followed in completing the research include:

- * translating the ABC;
- * changing the format of the ABC;
- * generating the items for the psychosis sub-scale;
- * selecting raters;
- * administering the checklists; and
- * statistically analyzing the data obtained.

6.3.2 Translation of the checklist

Due to the lack of fully bilingual nursing staff members it was necessary to translate the checklist into Afrikaans. The ABC was initially translated by a professional translator. However, the purely linguistically correct translation of the items altered their face validity and the emphasis of some of the items was lost. The psychologists at Witrand Hospital who use the checklist were asked to assist in the re-translation of the problem items. It was concluded that

after the second translation this form of the ABC was linguistically sound, had understandable and clear instructions and the items retained their initial meaning.

6.3.3 Alteration of the format

The examples given in the ABC's manual were translated and the psychologists gave the examples they would use for different items. These new examples were included with the original examples, if the Witrand Hospital psychologists agreed that it was a relevant item. The original format was that of having only the items on the checklist and the examples for each item were available in the manual. The format was altered so as to ensure that the examples were at hand when the checklist was administered. This was done by including the examples on the checklist with the items, so that one does not need to consult the manual or generate one's own items. The administration of the checklist in this way is potentially more controlled or standard.

6.3.4 The role of the raters

6.3.4.1 Selection of raters

The raters are of great importance as everything depends on their reported observations. To ensure that the raters are able to understand the instructions and are able to report

on the subjects only members of staff who are registered nurses or registered nursing sisters were used. They also had to have been in the ward for longer than one year, so as to ensure that they were familiar with the patient. For the purposes of this study the registered nursing sister of a ward and the registered nurse of a particular block, who knows and works with a patient are the raters that were selected.

6.3.4.2 Significance of the raters

The behaviour of the standardization sample was to be measured by means of the Aberrant Behaviour Checklist and also a new sub-scale consisting of items generated by using the DSM-III-R criteria for symptoms of psychosis. The information was to be obtained by means of a third-person interview. In this case a third-person interview is a structured interview in which a person who knows the patient, and is able to give a good report of the patient's behaviour, is questioned regarding the patients' aberrant behaviour. This third person may be a parent, or as in this study, a registered member of the nursing staff who knows the patient. This third person is generally referred to as a rater. In a third-person interview the administrator of the test does not have direct contact with the patient.

To determine reliability of the scale two raters were used for each subject. The raters were interviewed separately and asked not to confer, they also usually worked different shifts and they were therefore unlikely to confer.

6.3.4.3 Briefing of raters

The raters were not trained in the use of the checklist as the checklists were administered by the researcher. They were, however, briefed in the reason for the use of the checklist and the importance of honest and reliable reporting. It was explained to them that certain questions would be posed to them and their answers recorded on the checklist. Efforts at establishing rapport were made and the importance of honest reporting emphasized. Raters were not interviewed simultaneously and it was emphasized that the answers given should not be discussed with the other rater until both had had an opportunity to respond to the questionnaires.

6.3.4.4 Establishment of rapport with the raters

The following efforts at establishing rapport were made:

- * The aims of the study were discussed at a multidisciplinary meeting and the role of the raters was emphasized.

- * Appointments were made well in advance and the list of patients to be discussed were provided on these occasions.
- * The researcher enquired about the rules regarding access to files as these differ because of the personal differences, in the different wards, in carrying out hospital policy.
- * The researcher went to the wards to discuss appointments or to make appointments when the patients did not need bathing or feeding.
- * The researcher made appointments over weekends when the patients had visitors or were on leave so that the personnel had time to spend.
- * At every appointment the researcher made sure that the evaluation was convenient because unforeseen circumstances may have arisen.
- * The researcher was interested and enquired about the ward activities, like the baking in ward 12
- * The checklist was administered in as natural a setting as possible
- * The rationale for the project was explained to the raters and the value of their role in the scheme of the project explained.
- * The raters were informed that there were no wrong or correct answers as the information obtained was the impression of a qualified person who had previously had extensive contact with the patient.

6.3.4.5 Administration procedure of the test

This occurred in two stages, and on two different occasions viz. the first for administration of the ABC and the second for the administration of the psychosis checklist.

The following steps were followed:

- * Before visiting the wards the researcher informed the relevant ward personnel of the patients selected for evaluation.
- * An appointment was made at a time convenient to the selected staff.
- * At the appointed time the researcher made sure that it was a convenient time to administer the checklist.
- * To determine whether a rater knew a patient the researcher would only provide the rater with the subject's surname and initials upon which the rater would be asked to give the subject's first name and a little background information regarding the patient. The rater would also have to have been in the ward for at least one year.
- * The instructions regarding the checklist were then explained to the rater and any uncertainties cleared up.
- * The ABC was then administered. It usually took about five minutes to complete the checklist per patient.
- * After each protocol a rest period of a few minutes was

allowed. Several different protocols of different patients were usually administered on each occasion so as not to trouble the rater too often. However not more than ten protocols were administered at one session. A rest period was allocated so as to give the rater an opportunity to relax between protocols.

- * The second rater was not in the office while the first rater was being interviewed, and the raters were asked not to confer as there were no incorrect answers - just opportunities to gather more information regarding the patient. The administration of the test on all occasions was in a standardized manner.
- * After the administration of the checklists the medication, daily activities, Fairview Scale Scores and other biographical information of each subject was obtained from the patients personal file.

6.3.4.6 Statistical analysis

After the administration of the checklist the data obtained were statistically analyzed (for details see 6.5.).

6.4 The evaluation instruments

6.4.1 Introduction

The instruments administered for each patient were the ABC and the Psychosis checklist. The ABC has been discussed at length in Chapter Two and will only be referred to here. The Psychosis checklist will be discussed in this section. Fairview Scale Scores were obtained from the patients' file and not administered during the time of this research.

6.4.1.1 ABC (see 4.5.1)

This information was obtained by means of completing the checklist by interviewing two separate individuals who qualified as raters (see 6.3.4.1 for selection of raters).

6.4.1.2 Fairview Scale (see 4.5.2)

This information was obtained from the medical file of the subject.

6.4.1.3 Psychosis checklist

6.4.1.3.1 Rationale for the psychosis checklist

The psychosis sub-scale is not meant to be used on its own as it is intended to be purely a part of the ABC used within Witrand Hospital. It is intended to be an instrument to be used in conjunction with other measures in a test battery or comprehensive evaluation of the subject.

The instructions of this sub-scale or checklist were discussed with all the Witrand Hospital psychologists and they agreed that the instructions were clear and unambiguous.

6.4.1.3.2 The design of the psychosis checklist

The criterion against which this instrument is measured to determine whether it is useful as a measure of psychosis rests on whether the ward physician has prescribed anti-psychotic medication or not. This criterion is available in Witrand Hospital because the medical records provide information regarding the medication that each patient receives.

This is a partially relevant criterion because
a) there is no other available criterion within the

Witrand Hospital setting and this criterion may provide some information regarding psychotic states among mentally retarded people; and

- b) good records of the subjects' medication are available.

Due to the exploratory nature of this criterion (i.e. the anti-psychotic medication as an external criterion) it would, according to Van den Berg (1982) be necessary to determine a correlation coefficient between the individual items of the instrument and the external criterion once the instrument has been administered. The higher the correlation coefficient between these the better the criterion validity of the instrument. This correlation coefficient provides an index of how effective the instrument is in predicting certain behaviour in a subject (Huysamen, 1984).

6.4.1.3.3 Item selection for the final psychosis sub-scale

The complete psychosis sub-scale was completed by one of the two raters (who completed the ABC). Once all the data have been collected this information will be statistically analyzed.

Those items which are able to differentiate between the subjects who are psychotic and the non-psychotic patients,

according to the external criterion of using anti-psychotic medication or not, are selected. Of these items that are able to distinguish between the groups only those that occur in 10% or more of the population are selected for the subscale. This is in line with the manner in which the items were selected for the original ABC by Aman and Singh (Aman & Singh, 1986).

6.5 Statistical analysis

6.5.1 Statistical analysis of the data

After the two hundred subjects had been rated by both raters and the data put into the computer, the data were transferred to the Department of Statistical Services at the Potchefstroom University for Christian Higher Education.

The data obtained were subjected to the following procedures:

- 1) The calculation of means so as to measure the central tendency of different groups and to compare those tendencies (Runyon & Haber, 1980). The mean was calculated so as to give an indicator of the "...level of a group's characteristics or performance" (Kerlinger, 1986:70).
- 2) The standard deviations enable the dispersion of scores to be studied (Runyon & Haber, 1980). Guilford

and Fruchter (1978) indicate that the standard deviation is a dependable estimate of the variation around the mean in the population from which the sample came. Another advantage of using the standard deviation according to Roscoe (1975:70), is that *"...as a descriptive measure of dispersion ...it is expressed in the same units as the original measures"*.

- 3) Variance is an indicator of how the scores are distributed. According to Kerlinger (1986:70) *"...it describes the extent to which the scores differ from each other"*.
- 4) Student's t-tests were used for purposes of testing statistical hypotheses with unknown parameters (Runyon & Haber, 1980).
- 5) Use was made of analysis of variance to make possible the assessment of significant differences when more than one comparison is being made (Runyon & Haber, 1980). Analysis of variance allows one to determine whether any variance between groups is due to variance between the groups, variance caused by chance error or within-group variance (Kerlinger, 1986). The F-ratio is used to determine whether the variance due to any source is statistically significant. This means that the F-ratio allows the investigation of specific hypotheses (Runyon & Haber, 1980).

- 6) Factor analysis was used in this study "...to reduce large sets of indicators to one or a few composite scales" (Chadwick, Bahr & Albrecht, 1984:386).
- 7) Correlations were determined so as to measure the association between variables (Chadwick, Bahr & Albrecht, 1984).
- 8) Percentile ranks were determined because this allows the score of an individual to be compared to the scores obtained in a comparison group (Runyon & Haber, 1980). Percentiles allow scores to have a common frame of reference, thus enabling meaningful comparison of scores obtained by different individuals or scores obtained on different sub-tests by the same individual (Guilford & Fruchter, 1978). Percentiles were used in this study because, as Huysamen (1989:192) indicates "...their meaning can be conveyed quite easily to statistically unsophisticated persons".

The statistical programme SAS was used (SAS Institute).

6.6 Hypothesis to be tested

- 6.6.1 There is no correlation between the period spent within Witrand Hospital and the scores obtained on the sub-scales of the ABC.
- 6.6.2 There is no correlation between the age of patients in the Witrand Hospital sample and the scores obtained on the sub-scales of the ABC.

- 6.6.3 There is no correlation between Fairview Scale Scores of patients and the scores obtained on the sub-scales of the ABC
- 6.6.4 There is no significant difference between the scores obtained on the sub-scales of the ABC for the different genders.
- 6.6.5 There is no significant difference between the scores obtained on the sub-scales of the ABC for the subjects in the different Wards in Witrand Hospital.
- 6.6.6 There is no significant difference between the scores obtained on the sub-scales of the ABC for the subjects who are constructively busy during the day and those subjects who are not constructively busy.
- 6.6.7 There is no significant difference between the scores obtained on the sub-scales of the ABC for the subjects who are diagnosed as being epileptic and those subjects who are not.
- 6.6.8 There is no significant difference between the scores obtained on the sub-scales of the ABC for the subjects who receive major tranquillizers and those subjects who do not.
- 6.6.9 There is no correlation between the scores obtained for the USA sample and the Witrand Hospital sample.

6.7 Résumé

Chapter Six is concerned with the nature of the empirical study. The project has an ex post facto research design. Some variables under consideration include age, gender, period in the hospital, anti-psychotic medication prescribed or not, epilepsy diagnosis or not, ABC scores, Fairview scores, and psychosis sub-scale scores of the 200 randomly selected subjects in Witrand Hospital.

Chapter Seven is concerned with the results obtained and the interpretation of those results.

CHAPTER SEVEN RESULTS AND INTERPRETATION OF THE RESULTS

The results and interpretation of the results obtained in this study will be presented in the following manner:

- * Description of the standardization sample (7.1)
- * Biographic information (7.2) this information was obtained from the files of the subjects included in the study.
- * Results obtained on the ABC (7.3)
- * Results obtained on the Psychosis Scale (7.4)
- * Hypotheses to be tested (7.5)

7.1 Description of the standardization sample

Witrand Hospital has a total population of 1079. A random sample of two hundred people was selected and this represents 18,5% of the total population. These members of the population were used for the purposes of standardizing the ABC for the Witrand Hospital population.

Of the two hundred subjects 95 were male and 105 female. All were permanent residents within Witrand Hospital at the time of the research.

In the standardization sample, 52 of the 200 subjects have been diagnosed as being epileptic.

According to information obtained from the medical files of the subjects in the standardization sample, 97 of the subjects have a constructively activity during the day and 103 of them do not.

In the standardization sample, 37 of the subjects receive major tranquillizers and 163 subjects do not receive major tranquillizers.

Ten extra patients were initially selected in the event that any subject might not be able to complete the study. One subject passed away at the beginning of the study and the next one was included from the ten extra. The remaining nine subjects' data were not used.

7.2 Biographical information

TABLE 1

The year the patient was admitted and the period spent in Witrand Hospital by the standardization sample

YEAR ADMITTED	YEARS	NO. PATIENTS	PERCENT
0-33	92-59	6	3
34-38	58-54	3	1.5
39-49	53-43	14	7.0
50-59	42-33	38	19
60-69	32-23	42	21
70-79	22-13	38	19
80-89	12- 3	39	19.5
90-92	2-0	20	10

The time spent in Witrand Hospital is provided in years. From Table 1 it seems that the largest group of patients, 42, have been in Witrand Hospital for between 23 and 32 years.

TABLE 2

The frequency distribution of the standardization sample's age

AGE GROUP	NO. PATIENTS	PERCENT
5-10	2	1.0
11-15	4	2.0
16-20	8	4.0
21-30	34	17.1
31-50	89	44.7
51+	63	31.5

The average age of a male patient in Witrand is 51 years, and for for females it is 49 years.

TABLE 3

The number of subjects in the standardization per wards

WARD	NUMBER OF PATIENTS IN THE SAMPLE	PERCENT
R	17	8.5
V1	6	3.0
1D	3	1.5
10	19	9.5
11	11	5.5
12	22	11.0
2	19	9.5
3	25	12.5
4	18	9.0
5	9	4.50
6	13	6.5
7	19	9.5
8	13	6.5
9	6	3.0

From Table 3 it appears that ward 3 has the largest number of patients in this study viz. 12.5%. The ward with the lowest number of patients is ward 1D, here there are only 3 subjects (that is, 1.5% of the sample).

TABLE 4

The distribution of subjects in the standardization sample according to medical diagnosis available on their files

DIAGNOSIS	NUMBER OF PATIENTS	PERCENTAGE OF THE SAMPLE
MR & Autistic	1	.5
MR & Cri-du-chat	1	.5
MR & Diabetic	1	.5
MR & Downs syndrome	4	2.0
MR & Hyperactive	1	.5
MR & Epilepsy	52	26
MR only	140	70

MR indicates mental retardation.

The files of every patient in the sample were checked for the presence of a medical diagnosis which is reflected in Table 4.

There is a paucity of diagnoses on file for the Witrand Hospital population, as several patients have not appeared before the multi-disciplinary team and other patients have no diagnosis because of their low level of functioning. Reiss, Levitan and Szysko (1982:567) indicate that because intellectual impairment is such an important feature of mental retardation, other disturbances are often overlooked

or "...overshadowed in importance by the presence of intellectual retardation".

TABLE 5

The distribution of Fairview Scale scores for the standardization sample

Fairview	No. Patients	Percent
0-20	51	25.5
21-40	47	23.5
41-60	33	16.5
61-80	33	16.5
81-100	14	7
101-200	22	11

The **Fairview Scale** provides an indication of the patient's level of adaptive behaviour. From Table 4 it seems that 25.5% of the sample have an adaptive level of between 0 and 20 months. The Fairview Scale score is given in months. The implication is that a quarter of the patients in Witrand Hospital have adaptive behaviour levels less than that of "normal" two year olds.

7.3 Results obtained on the ABC

The mean scores for the female members of the Witrand Hospital sample and the standard deviation from the mean are reported in Table 6. The patients are divided into groups according to the categories that Aman and Singh (1986) used for the USA sample.

TABLE 6

The mean scores obtained by the Witransd Hospital sample for the females in the sample

Age	Irritability		Lethargy		Stereotypic		Hyperactivity		Inapp speech	
	mean	SD	mean	SD	mean	SD	mean	SD	mean	SD
5-10	0.0	.	0.0	.	0.0	.	0.0	.	0.0	.
11-15	0.0	.	0.0	.	0.0	.	2.0	.	0.0	.
16-20	1.0	1.73	0.0	0.0	0.0	0.0	1.0	1.73	2.67	4.61
21-30	8.11	12.03	8.17	12.68	5.17	7.35	9.411	13.83	1.94	4.09
31-40	8.22	8.74	7.06	9.33	2.75	5.41	9.31	9.99	1.12	3.07
41-50	8.21	11.79	4.28	7.09	0.42	1.08	9.0	12.26	1.21	2.51
51+	5.68	6.56	3.56	6.92	0.06	0.25	4.5	6.87	0.37	1.02

In Table 6 there is only one subject in the first category and where the (.) appears it indicates that the group is too small to determine the standard deviation as there is no deviation. From Table 6 it would seem that a female older than 51 would have a score significantly different from the mean (more than two standard deviations different) if the score is greater than 3 for the inappropriate speech subscale of the ABC.

TABLE 7

The mean scores obtained by the Witrand Hospital sample for the males in the sample

Age	Irritability		Lethargy		Stereotypic		Hyperactivity		Inapp speech	
	mean	SD	mean	SD	mean	SD	mean	SD	mean	SD
5-10	13.0	.	1.0	.	0.0	.	9.0	.	2.0	.
11-15	6.66	9.07	13.0	18.35	0.0	0.0	8.66	8.5	3.0	5.19
16-20	5.6	12.52	7.6	13.72	3.40	7.60	8.40	18.78	2.6	5.27
21-30	4.88	5.31	6.94	8.58	1.7	4.35	7.29	8.04	2.35	3.58
31-40	5.85	7.65	9.17	11.28	2.27	4.33	7.4	10.85	0.97	2.62
41-50	5.42	6.40	2.14	4.91	0.50	1.09	6.64	9.22	2.0	3.55
51+	5.93	7.93	5.53	7.89	2.66	5.06	5.60	6.10	1.73	2.65

In Table 7 SD=standard deviation mean=sample mean

Table 7 provides information regarding the mean scores and standard deviation from the mean for the male members of the Witrand Hospital standardization sample. A male who is 24 years old will have to obtain a score on the Irritability subscale of 15.50 to be significantly different from the mean. This is a score greater than two standard deviations from the mean for this population. To obtain this significantly different score the person will need to obtain a score on four or more items of the irritability sub-scale.

TABLE 8

The mean values of the ABC sub-scales obtained for the different categories of Fairview scores

FAIRVIEW SCORE	VARIABLE	MEAN	STANDARD DEVIATION
0-20	IRRITABILITY	8.132	9.456
0-20	STEREOTYPIC	3.792	5.944
0-20	LETHARGY	10.886	11.140
0-20	HYPERACTIVITY	9.433	10.779
0-20	SPEECH	1.235	2.673
21-40	IRRITABILITY	8.964	10.078
21-40	STEREOTYPIC	2.690	5.173
21-40	LETHARGY	6.940	10.192
21-40	HYPERACTIVITY	10.452	12.221
21-40	SPEECH	1.869	3.257
41-60	IRRITABILITY	6.357	8.803
41-60	STEREOTYPIC	0.985	2.956
41-60	LETHARGY	4.300	7.174
41-60	HYPERACTIVITY	6.120	9.001
41-60	SPEECH	1.542	3.113
61-80	IRRITABILITY	6.363	6.493
61-80	STEREOTYPIC	1.030	3.038
61-80	LETHARGY	3.257	5.346
61-80	HYPERACTIVITY	5.924	7.880
61-80	SPEECH	1.136	3.307
81-100	IRRITABILITY	3.966	6.867
81-100	STEREOTYPIC	0.500	1.052
81-100	LETHARGY	6.333	9.322
81-100	HYPERACTIVITY	4.900	6.708
81-100	SPEECH	1.100	2.479
101-200	IRRITABILITY	3.136	4.882
101-200	STEREOTYPIC	0.750	2.308
101-200	LETHARGY	2.522	4.948
101-200	HYPERACTIVITY	4.000	5.488
101-200	SPEECH	1.022	2.233

Table 8 gives the mean score obtained by the different groups of patients, according to their Fairview Scale score on the different sub-scales of the ABC. A patient who has a Fairview score of 102 needs to obtain a score of three on two of the items of the inappropriate speech scale to have a

score significantly different from the mean, for this population.

TABLE 9

The scores obtained by the different genders on the sub-scales of the ABC

Sub-scale	Male	Female	t-value
SPEECH	1.1456	1.6702	-1.20
HYPERACTIVITY	8.0971	7.2128	.61
IRRITABILITY	7.6796	5.8404	1.51
LETHARGY	5.8252	7.0532	-.90
STEREOTYPY	2.2427	1.9574	.43

* indicates significance at the .05 level and ** indicates
no asterisk indicates non-significant
significance at the .01 level,
t value = Students' t

From Table 9 no statistically significant difference could be found between the scores of males and females. Thus one may infer that gender is not a significant factor when considering aberrant behaviour for this population.

TABLE 10

The ABC sub-scale scores of patients constructively busy during the day and those who are not

Sub-scale	Mean Not busy	Mean Busy	t value
SPEECH	1.66	1.07	1.37
HYPERACT	0.23	4.74	4.01*
IRRITABILITY	8.78	4.49	3.66*
LETHARGY	9.79	2.75	5.59*
STEREOTYPIC	3.16	.91	3.51*

* Indicates a significant difference at the .05 level of
significance. t value = Students' t

According to Table 10 there appears to be statistically significant differences between the scores, on all the scales of the ABC except the inappropriate speech sub-scale, of those patients in the population who are constructively busy during the day and those who are not (at the .05 level of significance).

TABLE 11

The mean ABC sub-scale scores of epileptic patients and those who are not epileptic

Sub-scale	Mean Non-EP	Mean EP	t value
Speech	1.1734	1.9615	-1.65
Hyperactivity	5.9081	12.3076	-4.17*
Irritability	5.5612	10.5961	-3.38*
Lethargy	4.9761	10.3173	-3.32*
Stereotypy	1.6292	3.2115	-2.15*

* significant difference at the .05. EP= epileptic patient,
Non-EP= patient not suffering from epilepsy,
t value= Students' t,

From Table 11, a statistically significant difference occurs on the following sub-scales of the ABC: Hyperactivity, Irritability, Lethargy and Stereotypic behaviour for people in this population who suffer from epilepsy and those who do not suffer from epilepsy.

TABLE 12

The ABC sub-scale scores of patients using major
tranquillizers

Sub-scale	MEAN Non users	MEAN Users	t value
Speech	1.24	1.94	1.03
Hyperactivity	6.24	13.40	-4.07*
Irritability	5.63	11.40	-3.84*
Lethargy	5.47	10.35	-2.85
Stereotypic	1.63	4.00	-2.84

* indicates a significant difference at the .05 level of significance.

t value= Students' t

A statistically significant difference exists between the group of people using major tranquillizers and those who do not on the Hyperactivity and Irritability sub-scales.

TABLE 13

The relationship between the ABC's sub-scale scores and:
the period in Witrans Hospital, the age of the patients
and Fairview Scale Scores of the sample

	Speech	Hyper- activity	Irrit- ability	Leth- argy	Stereo typic
Period	-.0811	-.071	-.062	-.104	-.1022
Age	-.0241	-.2301	-.166	-.01993	-.300
Fview	-.005	-.174*	-.182*	-.23**	-.23**

* $p < .05$ and ** $p < .01$. Fview = Fairview Scale score.

From Table 13 the relationship between the age of the subject and the scores achieved on the sub-scales of the ABC appears to be non-significant. The relationship between age

and Stereotypic behaviour is .300 but the correlation is not statistically significant.

TABLE 14

Analysis of the variances of the scores of the sub-scales of the ABC for the different wards in Witrand Hospital

Dependant variable	F value	p-value > F
Irritability	2.95	0.0002*
Lethargy	2.65	0.0009*
Stereotypic	2.00	0.0154*
Hyperactivity	3.03	0.0002*
Speech	1.30	0.1992

* indicates significance at the .05 level

F value= F ratio, p value = significance of difference between means.

In Table 14 analysis of variance between the wards indicated that there were significant differences between the means on some of the scales of the ABC.

In the following tables the mean scores obtained for the Witrand Hospital sample and those scores reported by Aman and Singh (1986) are compared.

TABLE 15

Comparison of the USA sample means with the Witrand Hospital standardization sample means, for the male population

AGE	IRRIT pop1 / pop2		LETH pop1 / pop2		STEREO pop1 / pop2		HYPER pop1 / pop2		SPEECH pop1 / pop2	
5-10	7.67	13.0	3.84	1.0	2.89	0	14.27	9.0	1.62	.000
11-15	10.33	6.66	5.65	13.0	4.15	0.66	13.18	8.66	1.18	3.00
16-20	8.02	5.60	9.07	7.60	5.57	3.40	10.38	8.40*	1.65	2.60
21-30	8.64	4.88	9.70	6.94	5.94	1.70*	10.88	7.29	1.67	2.35
31-50	7.38	5.85	10.38	9.17	4.88	2.27	10.56	7.40	1.84	0.97
51+	3.43	5.42*	5.41	2.14*	1.40	0.50*	4.74	6.64	1.37	2.00

* indicates a statistical difference at the .05 level between the two samples

Irrit= Irritability sub-scale; Stereo= Stereotypic Behaviour sub-scale; Leth= Lethargy sub-scale; Hyper= Hyperactivity sub-scale and Speech= Inappropriate Speech sub-scale. (These abbreviations are also used in the table below)

In Tables 15 and 16 **population one** is the USA sample and **population two** the Witrand Hospital sample.

In Table 15 the mean scores obtained by the male subjects of the two different samples are compared. Statistically significant differences were found for males between 16 and 20 years old on the Hyperactivity sub-scale. Statistically significant differences between the two samples were also found for the age group 21-30 on the Stereotypic behaviour sub-scale and the group of men older than 51 obtain statistically significant differences on the Irritability, Lethargy and Stereotypic behaviour sub-scales.

In Table 16 the females from the two samples obtained statistically significant differences on the scores of the Lethargy subscale for women older than 51. This might be due to differences in functional abilities between the two samples.

TABLE 16

Comparison of the USA sample means with the Witrand Hospital standardization sample means, for the female population

AGE	IRRIT pop1 / pop2		LETH pop1 / pop2		STEREO pop1 / pop2		HYPER pop1 / pop2		SPEECH pop1 / pop2	
5-10	13.07	0.0	4.93	0.0	4.40	0.0	18.72	0.0	0.50	0.0
11-15	9.18	0.0	6.14	3.0	4.73	0.0	12.11	2.0	1.35	0.0
16-20	10.55	1.0	9.76	1.33	5.90	0.0	13.34	1.0	0.80	2.66
21-30	8.46	8.11	10.94	8.11	5.67	5.17	11.20	9.41	1.45	1.94
31-50	7.88	8.22	8.83	8.22	3.80	2.91	8.48	9.31	1.92	1.12
51+	5.97	8.21	6.54	8.21*	1.42	0.42	4.70	9.0	1.39	1.21

* Indicates a significant difference between the two at the .05. Pop1= USA sample, Pop2= the Witrand Hospital standardization sample.

The scores obtained by the females in the two samples seem to be similar and they differ significantly on the one subscale only.

Table 17

The size of the USA and Witrand Hospital samples according to age groups for the male subjects

Age group	Sample size for USA	Sample size for Witrand Hospital
5-10	18	2
11-15	67	3
16-20	83	3
21-30	142	19
31-50	109	37
51+	35	30
51-60	.	14
61-7-	.	16
71+	.	1

Table 17 provides information regarding the number of subjects in each age group of the two samples' male subjects. From Table 17 the USA sample has most of its' male subjects in the age group of between 21 and 30 while the Witrand sample has the largest number of subjects in the age group 31 to 50.

Table 18

The size of the USA and Witrand Hospital samples according to age groups for the female subjects

Age group	Sample size for USA	Sample size for Witrand Hospital
5-10	14	0
11-15	34	1
16-20	51	5
21-30	90	14
31-50	80	51
51+	31	32
51-60	.	14
61-7-	.	16
71+	.	2

Table 18 provides the number of female subjects in each age group of the two different samples. From the table the USA sample have a large part of the sample in the age group between 21 and 30 while the Witrand sample have a large group between 31 and 50 years of age. It seems that the largest part of these two groups are more or less the same age.

Due to the large differences in age in the 51+ group, the mean scores of people in Witrand Hospital are reported below. Because the population of Witrand Hospital seems to have more people in the older group than the groups that Aman and Singh (1986) report on, it seems appropriate to include a breakdown of the mean and standard deviation of the 51+ group.

From Table 19 it seems that there are not a sufficient number of individuals in the 71 and over group to make inferences regarding the mean scores and standard deviation. The male group between the ages of 61 and 70 obtained a mean score of 5.60 on the hyperactivity sub-scale, with a standard deviation of 6.103. This means that a person who obtains a score of between 0 and 11.703 does not have a score that differs significantly from the mean.

TABLE 19

The mean scores obtained by the 51+ Witrand Hospital sample

Age SD	Variable	Mean score for males	SD	Mean score for females	
51-60	Irritability	5.428	6.405	8.214	11.794
51-60	Stereotypic	0.5	1.091	0.428	1.089
51-60	Lethargy	2.142	4.912	4.285	7.097
51-60	Hyperactivity	6.642	9.228	9.	12.26
51-60	Speech	2.	2.	1.214	1.214
61-70	Irritability	5.933	7.932	5.687	6.569
61-70	Stereotypic	2.666	5.066	0.062	0.25
61-70	Lethargy	5.533	7.890	3.562	6.927
61-70	Hyperactivity	5.600	6.103	4.50	6.870
61-70	Speech	1.733	2.658	0.375	1.024
71	Irritability	1.	.	14.	16.970
71	Stereotypic	0	.	0.5	0.707
71	Lethargy	0	.	1.	1.414
71	Hyperactivity	0	.	7.5	9.192
71	Speech	0	.	0.	0.

In Table 19 the abbreviation SD stands for standard deviation.

From the above Table it would seem that a female subject between the ages of 51 and 60 who obtains a score of 3 or more has a score which differs significantly from the mean. One standard deviation is 1.089 and a score of more than 2.606 differs more than two standard deviations and is therefore significantly different.

Table 20

Means and standard deviation of the sample as obtained by rater one

Variable	Mean	Standard deviation
Irritability	6.70	8.53
Hyperactivity	7.57	10.04
Stereotypic	2.07	4.65
Lethargy	6.38	9.56
Speech	1.37	3.04

Table 20 provides a the mean of the scores given to the patients in the sample by the rater one.

Table 21

Means and standard deviation of the sample as obtained by rater two

Variable	Mean	Standard deviation
Irritability	6.98	8.88
Hyperactivity	7.53	9.83
Stereotypic	1.99	4.43
Lethargy	6.39	9.21
Speech	1.37	2.94

Table 21 provides the mean scores given to the patients by rater two. The means of the scores given by the two raters are not identical on any of the sub-scales.

Table 22

The correlation between the two raters scores for the sub-scales of the ABC is as follows:

	Irritability1	Hyperactivity1	Stereotypic1	Lethargy1	Speech1
Irritability2	0.94527				
Hyperactivity2		0.96029			
Stereotypic2			0.94189		
Lethargy2				0.94078	
Speech2					0.90375

0.0001 level of significance

Table 22 gives the Pearson product moment correlation of the scores given by the two raters. According to the above table there is a very strong correlation between the items. Due to this high rate of inter-rater reliability on the sub-scales it was decided to look at the individual items and determine

whether any significant differences between the scores of the raters on the items occurred. It was determined that the correlation coefficients varied from .6688 for item twelve to .933 for item fifty-four. The correlation coefficients of the items appear to be positive. Due to this high level of inter-rater reliability it was decided to combine the data for the purposes of statistical analysis.

The Cronbach's coefficient alpha of the sub-scales of the ABC, as obtained for the Witrand Hospital standardization sample, is as follows:

* Irritability	.857
* Lethargy	.879
* Hyperactivity	.924
* Stereotypic behaviour	.814
* Inappropriate speech	.675

Thus it is a good indicator of internal consistency.

Factor analysis (by means of the Carimac rotational method) of the scores obtained on the ABC sub-scales provided the following factors:

- * Factor one: The next factor identified had a lower correlation with the items but the items seem to indicate some kind of social unresponsiveness. Items included are: 28, 24, 40, 51, 37, 43, 58.
- * Factor two: This factor indicates social isolation. Items included are: 16, 42, 30, 5.

- * Factor three: This factor indicates hyperactivity. Items included are: 54, 48, 1, 15.
- * Factor four: This cluster seems to indicate inappropriate and disruptive behaviour. Items included are: 19, 39, 31, 8, 41.
- * Factor five: This cluster of items seems to suggest an irritability sub-scale. Items included are: 21, 10, 14, 7.
- * Factor six. The cluster of items that make up factor seven seems to have something to do with communication difficulties. Items included are: 33, 46, 22, 9.

The six secondary factors obtained for the Witrand Hospital sample may be used to draw inferences about the patients' behaviour in conjunction with other scales or assessment techniques. These secondary scales may add to the information obtained about the individual and may be valuable in the proving, or disproving, of hypotheses about an individual.

Clusters of second order factors identified for the ABC.

Factors identified that one may use as second order sub-scales are:

- * social unresponsiveness;
- * social isolation;
- * hyperactivity;

- * inappropriate and disruptive behaviour;
- * irritability;
- * communication difficulties.

This group of sub-scales is not intended to replace the usual five sub-scales, but the addition of these scales may assist in obtaining clear information regarding treatment effects.

The high values of Cronbach coefficient alpha indicate high internal consistency and also indicate that the test is highly specific and should tend to be sensitive to small changes. Values for Cronbach's coefficient alpha, found for the Witrand Hospital sample, are between .675 and .924. According to Aman and Singh (1986) the Cronbach's coefficient alpha for the population for which the ABC was developed are between .86 and .95

Percentile Ranks for the sub-scales of the ABC

The following table provides the information regarding the percentage of persons who score below a given raw score:

- * the administrator of the scale finds that a person who has a score of 14 on the Lethargy scale scores higher than 82% of the population. This person therefore has a score on the 82nd percentile;

TABLE 23

The Percentile Ranks of the Sub-scales of the ABC

PERCENTILE RANK	IRRIT ABILITY	LETH ARGY	STERE OTYPY	HYPER ACTIVITY	INNAP SPEECH
14	0	0	0	0	0
16	0	0	0	0	0
18	0	0	0	0	0
20	0	0.5	0	0	0
22	0	0.5	0	0	0
24	0	0.75	0	0	0
26	0	1.5	0	0	0
28	0	1.5	0	0.5	0
30	0	1.5	0	0.5	0
32	0	2.0	0	0.5	0
34	0	2.5	0	1.0	0
36	0	2.75	0	1.0	0
38	0	3.0	0	1.25	0
40	0	3.0	0	1.5	0
42	0	3.0	0	1.5	0
44	0.5	3.0	0	3.0	0
46	1.0	3.0	0	3.0	0
48	1.5	3.0	0	3.0	0
50	1.75	3.25	0	3.0	0
52	2.0	3.5	0	3.25	0
54	2.5	4.0	0	4.0	0
56	3.0	4.0	0	4.75	0
58	3.75	4.5	0	5.5	0
60	4.0	6.0	0	6.0	0
62	4.5	6.0	0	6.25	0
64	5.5	7.0	0	6.75	0
66	6.0	7.5	0	7.55	0
68	6.5	8.0	0.25	8.5	0
70	7.5	8.0	0.75	9.25	0
72	7.5	9.0	1.0	9.5	0.5
74	9.0	9.25	1.5	10.5	0.5
76	10.0	10.0	1.5	11.5	1.0
78	11.0	10.5	2.0	12.0	1.5
80	12.0	13.0	3.0	12.8	2.5
82	13.2	14.0	3.0	13.3	3.0
84	15.5	14.8	3.0	14.3	3.0
86	18.0	15.8	3.0	15.3	3.0
88	19.7	17.8	6.5	17.3	4.25
90	22.7	22.3	9.5	19.8	6.0
92	24.7	24.3	12.0	20.5	7.25
94	27.0	27.5	12.8	23.8	9.0
96	28.2	32.5	14.5	26.0	9.75
98	31.5	42.8	17.5	32.8	11.3
99	31.5	42.8	17.5	32.8	11.3

7.4 Results obtained on the Psychosis Scale

7.4.1 The mean and standard deviation on the Psychosis Scale of the sample members who use major tranquillizers and those who do not.

There are 37 people in the Witrand Hospital sample who receive anti-psychotic medication this represents 18.5% of the sample.

TABLE 24

Means and standard deviation values for the psychosis checklist

GROUP	MEAN	STANDARD DEVIATION
Total sample	8.7	12.06
No tranquillizer	8.2	12.17
Use tranquillizer	10.74	11.51

In Table 24 the mean score and standard deviation of the psychosis sub-scale are presented. In the Table above, **Total sample** means the total standardization sample.

7.4.2 The number of patients in the sample who scored on any of the items of the Psychosis scale

Aman and Singh (1986) report that they only selected items from their first ABC that were found in more than 10% of the population they used to develop the ABC. Table 25 provides

information regarding the items on which 10% or more of the sample scored. There are only thirteen of the total of fifty-six items in the checklist on which more than 10% of the subjects received scores. The psychosis checklist was not able to distinguish between any groups and the total population is referred to in the table below not any particular group.

TABLE 25

The items of the psychosis checklist on which more than 10% of the population scored

ITEM	PERCENTAGE OF SAMPLE WHO SCORED ON THE ITEM
9	10.0
10	11.5
13	21.0
14	18.5
15	18.5
18	13.0
32	18.0
33	20.5
34	19.5
36	10.5
42	31.5
45	17.0
56	53.5

The item on which a large part of the sample scored (53.5%) is item 56. This item has to do with volition. Due to the nature of mental retardation, people tend not to be motivated and they tend not to be able to generate a plan and carry that plan to fruition. Thus due to the nature of mental retardation, people have poor volition and this item would not be a diagnostical differential between psychosis

and mental retardation. Therefore the high number of patients who score on this item may not be psychotic - they may simply be exhibiting behaviour associated with mental retardation.

Item 42 has to do with whether a patient is able to maintain a friendship and get on with peers, and 31.5% of the sample scored on this item. This item would also seem to be not only be testing for typically psychotic behaviour. Another item on which a large part of the population scored (21%) is item 13. This item has to do with orientation with respect to time and location. Although this is a significant item in the recognition of psychotic behaviour, the limited capabilities of the subjects need to be taken into consideration.

The Psychosis Scale is criterion-related, but it was unable to distinguish between the patients who use major tranquillizers and those who do not. The use of major tranquillizers was used as an external criterion for the presence of psychosis, but this group could not be differentiated from any other by the Psychosis Scale.

Analysis of variance of the scores obtained on the Psychosis Scale indicated that there is no significant difference between the scores obtained by those people who use major tranquillizers and those who do not. This may be due to the limited number of patients who obtained scores on the sub-

scale and the few people using major tranquillizers (only thirty-seven patients) within the standardization sample.

Due to the problem of diagnostic overshadowing, few mentally retarded people are diagnosed as psychotic. Even when manifesting waxy flexibility, grimacing and catalepsia, a patient is not regarded as psychotic by the nursing staff. Few subjects were identified as potentially psychotic by the nursing staff. Perhaps the items are poor or poorly formulated or the external criterion is invalid. Thus it may be that major tranquillizers are prescribed for reasons other than psychosis or the antipsychotic medication is effective and thus there is no significant difference. Scores on the ABC, however, indicate significant differences between the individuals who receive major tranquillizers and those who do not. The psychosis checklist generated from DSM-III-R criteria may not be appropriate for mentally retarded individuals.

7.4.3 The correlation between the Psychosis Scale and the ABC sub-scales.

There is little or no correlation between the items of the ABC and the Psychosis Scale as indicated by determining the correlation coefficients, therefore no table with this information is provided. On the lethargy scale the highest correlation coefficient was .42736 (for item 42) and the

next highest correlation coefficient was for item 32 (a value of .35848).

None of these represents a statistically significant correlation. Therefore one may conclude that:

- * There is no correlation between the sub-scales of the ABC and the items of the Psychosis Scale.

7.5 Hypotheses to be tested

7.5.1 There is no correlation between the period spent within Witrand Hospital and the scores obtained on the sub-scales of the ABC.

In order to determine whether any significant relationship exists between the length of time the subjects had been in the institution (the period) and the aberrant behaviour that the person exhibits on the sub-scales of the ABC, the following information was obtained:

- * The year that the person was admitted to Witrand Hospital: by subtracting that year from 1992 the number of years that the person had been residing in Witrand Hospital could be determined. This information was available from each person's medical file; and
- * the scores the person obtained on the ABC's sub-scales.

According to Table 13, the correlation coefficient, it appears that there is a no statistically significant relationship between the time spent in Witrand Hospital and the scores a person receives on the sub-scales of the ABC. This means that there is no relationship between the number of years spent within Witrand Hospital and the ABC sub-scales' scores obtained. The null hypothesis may be accepted:

- * There is no significant correlation between the period spent in Witrand Hospital and the scores obtained on the sub-scales of the ABC.

7.5.2 There is no correlation between the age of patients in the Witrand Hospital standardization sample and the scores obtained on the sub-scales of the ABC.

While attempting to test the above hypothesis the ages of the patients in the sample were obtained from their medical files. **Age** is the chronological age of the patient to the nearest year. Table 2 provides an indication of the age distribution of the sample. The size of the intervals that the sample has been divided into has been allocated so as to facilitate comparison between the Witrand Hospital population and the population of Aman and Singh (1986). In Table 2 the patients' ages are given to the nearest year.

From Table 13 the relationship between the age of the subject and the scores achieved on the sub-scales of the ABC appears to be non-significant and negative. A negative relationship means that an inverse relationship exists, viz. when the one score is high the other is low. The relationship between the chronological age of a subject and the score that that person obtained on the sub-scales of the ABC is not significant, thus the null hypothesis may be accepted:

- * There is no significant relationship between the age of the subject and the score obtained on the sub-scales of the ABC.

7.5.3 There is no correlation between Fairview ages of patients and the scores obtained on the sub-scales of the ABC.

Table 5 puts the patients in the standardization sample into different groups according to their Fairview Scale scores. According to Table 5, 25.5% of the subjects in the standardization sample have an adaptive behaviour level of a person between the ages of zero months and twenty months. From Table 13 the Fairview score has an inverse correlation with ABC sub-scale scores. This means a person with a higher Fairview score may tend to have lower ABC scores. According to Table 6 there is a statistically significant relationship between the adaptive behaviour level an individual has

obtained and the scores that the individual obtains on the sub-scales of the ABC.

This negative relationship means that an individual who has high levels of adaptation will tend to score lower on the sub-scales of the ABC. The relationship between the Fairview age of a subject and the scores obtained on the sub-scales of the ABC causes the rejection of the null hypothesis and the acceptance of the alternate hypothesis:

- * There is a correlation between Fairview ages of patients and the scores obtained on the sub-scales of the ABC

7.5.4 There is no significant difference between the scores obtained on the sub-scales of the ABC for the different genders.

In Table 9 the means obtained by the two groups are reported, males and females, were compared by using the Student's t method and no significant difference was found on any of the sub-scales. Thus the null hypothesis is accepted:

- * There is no significant difference between the scores obtained on the sub-scales of the ABC for the different genders.

7.5.5 *There is no significant difference between the scores obtained on the sub-scales of the ABC for the subjects in the different Wards in Witrand Hospital.*

Wards refers to the different sections within Witrand Hospital. Table 3 refers to the number of patients in each ward that are part of the sample. The different wards are home to different types of patients thus the scores of the ABC for the different sub-scales were compared, and analysis of variance done to determine whether there are significant differences between the wards.

An analysis of variance between the wards (see Table 14) indicated that there were significant differences between the means on the following scales of the ABC:

- * Irritability;
- * Lethargy;
- * Stereotypic Behaviour; and
- * Hyperactivity.

On the Inappropriate Speech scale no significant difference was found. At the .05 level of significance there appears to be a significant difference for the different wards all but one of the sub-scales of the ABC. Thus the null hypothesis may be rejected:

- * There is a significant difference between the scores obtained on the sub-scales of the ABC for the subjects in the different Wards in Witrand Hospital.

7.5.6 There is no significant difference between the scores obtained on the sub-scales of the ABC for the subjects who are constructively busy during the day and those subjects who do nothing.

There is a statistically significant difference between the two groups on the following sub-scales of the ABC (from Table 10):

- * Hyperactivity;
- * Irritability;
- * Lethargy; and
- * Stereotypic behaviour.

There is a statistically significant difference between most of the ABC sub-scale scores of people who are constructively busy during the day. It indicates that people who are busy exhibit less aberrant behaviour. This means that the null hypothesis may be rejected and the alternate hypothesis accepted:

- * There is a significant difference between the scores obtained on the sub-scales of the ABC for the subjects who are constructively busy during the day and those subjects who do nothing.

7.5.7 *There is no significant difference between the scores obtained on the sub-scales of the ABC for the subjects who are diagnosed as being epileptic and those subjects who are not.*

Based on the results reported in Table 11, there is a statistically significant difference between the scores epileptic and non-epileptic patients obtained. The significant difference occurs on the on the following sub-scales of the ABC:

- * Hyperactivity;
- * Irritability;
- * Lethargy;
- * Stereotypic behaviour.

Due to the significant differences obtained on all the sub-scales the null hypothesis is rejected and the alternate hypothesis is accepted:

- * There is a significant difference between the scores obtained on the sub-scales of the ABC for the subjects who are diagnosed as being epileptic and those subjects who are not.

7.5.8 There is no significant difference between the scores obtained on the sub-scales of the ABC for the subjects who receive major tranquillizers and those subjects who do not.

Table 12 indicates that the ABC is able to differentiate between the two subgroups, at the .05 level of significance, on the following sub-scales:

- * Hyperactivity; and
- * Irritability.

There are significant differences between the scores obtained for patients who have major tranquillizers prescribed for them and those who do not, thus the null hypothesis may be rejected and the alternate hypothesis accepted:

- * There is a significant difference between the scores obtained on the sub-scales of the ABC for the subjects who receive major tranquillizers and those subjects who do not.

7.5.9 There is no correlation between the scores obtained for the USA sample and the Witrand Hospital sample.

According to Tables 15 and 16 there is a difference between the scores obtained by the Witrand Hospital population and the scores obtained by the populations Aman and Singh used on the following scales:

- * Males, fifty-one years and older are different on the irritability, lethargy and stereotypic behaviour sub-scale.
- * Males, between sixteen and twenty years of age are significantly different on the hyperactivity sub-scale. It seems that the males in this group exhibit significantly more hyperactive and impulsive behaviour than the USA sample.
- * Males, between the ages of twenty-one and thirty have significantly different scores on the stereotypic behaviour sub-scale.

The Witrand Hospital sample of males between 21 and 30 requires different norms from those of the USA sample because they tend to exhibit significantly more meaningless repetitive mannerisms.

- * Females, fifty-one years of age and older, have a significant difference on the lethargy sub-scale. This difference may be due to the nature of the Witrand Hospital sample and that of the USA sample. Perhaps the Witrand Hospital standardization sample is made up of more people who are inactive and tend to isolate themselves from the group.

Due to the significant differences found on the above scales, it seems that the USA norms for the group (males older than 51 years of age, 16-20 and 21-30 also females 51 years and older) are not appropriate for the Witrand

Hospital groups (males older than 51 years of age, 16-20 and 21-30 also females 51 years and older). The null hypothesis may be rejected and the alternate hypothesis accepted:

- * There is a significant difference between the scores obtained on the sub-scales of the ABC for the Witrand Hospital sample and the USA sample.

7.6 Résumé

In Chapter Seven the results obtained in the research project are reported. The interpretation of the results is given and in this regard thanks are expressed to Pirow Engelbrecht and Prof. HS Steyn. Chapter Eight is concerned with the conclusions drawn from the results obtained.

CHAPTER EIGHT CONCLUSIONS AND RECOMMENDATIONS

8.1 General conclusions regarding the hypothesis

Aman and Singh (1986) recommend that every institution that uses the ABC should generate norms for their specific population. This will enable one to make better inferences regarding the population. The ABC needs to be presented in a standard or controlled manner with administrators using the same examples and a standard set of items. For these purposes the ABC was standardized in Afrikaans with the examples presented on one sheet for use in Witrand Hospital. The ABC is to be administered by the psychologists or interns who work with the patients.

The results generated indicate that the Witrand Hospital population appear to have statistically significant different scores, on the sub-scales of the ABC, between epileptics and non-epileptics; those using tranquillizers or not; also between people who are constructively busy during the day and those who are not.

Good inter-rater reliability was found in this study and this may be an indication that the language used in the instructions is both clear and specific. The Afrikaans form to be used in Witrand Hospital made administration of the

ABC easier and may have contributed to the high inter-rater reliability.

The format of the ABC for Witrand Hospital is different, yet it is still quick to administer. The administration is more standardized because the items have examples with them and these are read to the rater.

The availability of norms aid the interpretation of results and will allow the psychologists to give meaningful feedback in meetings. The percentile ranks will be useful in that the transformed data are readily understandable by people who have little or no understanding of psychometry or statistics.

In all, with the instrument standardized for this population, the psychologist may be better able to assist the patient and multi-disciplinary team in Witrand Hospital in measuring treatment effects. The ABC is not to be used on its own, as it is intended as one instrument in an assessment battery intended to evaluate a patient.

The Psychosis Scale for the Witrand Hospital population was found to be unable to differentiate between the groups it was intended to identify - those who receive major tranquillizers and those who do not. The psychosis checklist presents inconclusive results but the ABC is able to

differentiate between the individuals who receive major tranquillizers and those who do not.

It appears that a checklist for psychosis, generated from the DSM-III-R, is not relevant for the Witrand Hospital population. Medication may not be a good external criterion, or DSM-III-R criteria for psychotic behaviour may not be appropriate for distinguishing psychotic behaviour among mentally retarded people. This may be due to a lack of psychotic patients in Witrand Hospital or because the medication used as criteria for determining whether a person is psychotic or not may be effective in reducing the psychotic behaviour. The ABC is able to differentiate between patients who use antipsychotic medication and those who do not, therefore if those are the criteria to be met, then another checklist or sub-scale is not required because the ABC is able to meet the requirements.

8.2 Specific conclusions

8.2.1 There is no correlation between the period spent within Witrand Hospital and the scores obtained on the sub-scales of the ABC.

8.2.2 There is no correlation between the age of patients in the Witrand Hospital Standardization sample and the scores obtained on the sub-scales of the ABC.

- 8.2.3 There is a correlation between Fairview ages of patients and the scores obtained on the sub-scales of the ABC.
- 8.2.4 There is no statistically significant difference between the scores obtained on the sub-scales of the ABC for the different genders.
- 8.2.5 There is a statistically significant difference between the scores obtained on the sub-scales of the ABC for the subjects in the different Wards in Witrand Hospital.
- 8.2.6 There is a statistically significant difference between the scores obtained on the sub-scales of the ABC for the subjects who are constructively busy during the day and those subjects who do nothing.
- 8.2.7 There is a statistically significant difference between the scores obtained on the sub-scales of the ABC for the subjects who are diagnosed as being epileptic and those subjects who are not diagnosed as epileptic.
- 8.2.8 Very few patients in Witrand Hospital have a medical diagnosis other than mental retardation on file.
- 8.2.9 There is a statistically significant difference between the scores obtained on the sub-scales of the ABC for the subjects who receive major tranquillizers and those subjects who do not.
- 8.2.10 There is a high rate of correlation between scores on the ABC's sub-scales for the two raters.

- 8.2.11 The Cronbach's coefficient alpha of the sub-scales of the ABC are high values this means that there is a high degree of internal consistency within the checklist.
- 8.2.12 Clusters of second order factors identified for the ABC.
- 8.2.13 The scores obtained for the USA sample and the Witrand Hospital sample do differ statistically significantly on some of the sub-scales.
- 8.2.14 No difference could be found on the scores of the Psychosis Scale of the sample memberso differ statistically significantly on some of the sub-scales.
- 8.2.14 No difference could be found on the scores of the Psychosis Scale of the sample members who use major tranquillizers and those who do not. By means of analysis of variance, no significant difference between the means of those subjects who receive major tranquilizers and those who do not could be found. Analysis of variance of the two groups gives a p-value of .2378, thus there is no statistically significant difference between the two groups. Aman and Singh (1986) found differences for these two groups of people on the ABC.
- 8.2.15 No correlation between the Psychosis Scale and the ABC sub-scales could be found.

8.2.16 Few patients in the sample scored on any of the items of the Psychosis scale.

8.3 Recommendations

Following this study the ABC is standardized for the Witrand Hospital population is available for use in this hospital setting. If this instrument is to be used in another hospital, it should be standardized or new norms generated for that population. These norms should be reassessed every few years because the demographics of the population change as do the kind of patients and the nature of treatment.

Future research may be directed at gathering norms for some of the other groups in Witrand Hospital. Perhaps epileptic patients in Witrand Hospital may be considered, or those who work outside Witrand Hospital in the community.

The need for the creation of a systematic form of diagnosis of psychopathology for mentally retarded people was identified in this study. A diagnostic system may assist all the Witrand Hospital patients and other mentally retarded populations. Zwick (1983) indicates that diagnostic systems have been called into question when they are related to external criteria. An effective diagnostic system for psychopathology among mentally retarded people seems to be an urgent requirement as Matson, Kazdin and Senatore (1984)

suggest. In this study it was found that psychotic mentally retarded individuals did not meet the DSM-III-R criteria for being diagnosed as psychotic.

The problem of diagnostic overshadowing causes people who are mentally retarded and psychotic not to be diagnosed as psychotic because their aberrant behaviour is ascribed to mental retardation. These people may be assisted with medication if they can be identified.

The systematic diagnosis of all the patients in Witrand Hospital, not simply in terms of their retardation but the nature of their functioning, may be of academic interest, but it may also assist the professionals to build up a bank of data regarding the Witrand Hospital patients.

To further describe the Witrand Hospital population and identify the manner in which psychopathology manifests, direct observation of identified individuals may be attempted. The results may enable one to identify patients with specific symptoms in Witrand Hospital and then describe their behaviour. Time-sampling or behaviour-sampling may assist one in identifying the behavioural manifestations of syndromes.

8.4 Résumé

The necessity for standardizing instruments on the population they are to be used on (so that the norms obtained are relevant) is emphasized in this chapter, as is the periodic review of those norms. At the end of the chapter, recommendations are made regarding ideas for possible areas of study for the Witrand Hospital population.

Abstract

The problem

Aberrant behaviour seems to be prevalent among institutionalized mentally retarded individuals. Perhaps they have been institutionalized precisely because of their aberrant behaviour. Often interventions are required because of aberrant behaviour, thus the necessity for a standardized instrument becomes necessary. The ABC is a standardized instrument sensitive to treatment effects. Norms for the Witrand Hospital sample were, however, not available and many of the examples quoted were not relevant to the Witrand Hospital population.

Aim

The main aim of this study was to generate and standardize a form of the ABC specifically for the needs of Witrand Hospital. In addition, norms needed to be generated and these norms were then compared to existing norms from other populations. A further aim was to generate a psychosis subscale based on DSM-III-R criteria for the measurement of psychotic behaviour among mentally retarded individuals.

Literature study

The literature described degrees of retardation, mentally retarded people and their characteristics. The etiology of mental retardation and the management of retarded people were investigated. The main reasons for institutionalization were found to be aberrant behaviours. Advantages and disadvantages of institutionalization and criteria for institutionalizing individuals were discussed.

Assessment of mentally retarded people was an important factor considered in this study and the use of checklists was emphasized. The standardization of checklists and other psychometric instruments was also taken into account.

Methodology

The ABC was translated from English into Afrikaans. The format was changed both as regards language and in that examples were put on the checklist. Then a random sample of two-hundred individuals was obtained. The checklist was administered using two raters for every subject in the standardization sample. Then the psychosis checklist, which had been generated using the DSM-III-R criteria for psychosis, was administered.

Results

It appears that the American population and the Witrand Hospital sample are not really comparable, as there are statistical differences between the two groups on a few of the sub-scales.

Within the Witrand Hospital sample the ABC indicates statistical differences between the following groups:

epileptics and non-epileptic patients;

people who are constructively busy and those who are not;

people who receive major tranquilizers and those who do not.

No difference between gender could be found and no correlation determined between the ABC sub-scales and age or period in Witrand Hospital.

The psychosis checklist was unable to differentiate between subjects who receive major tranquillizers and those who do not, but few people were found to use major tranquillizers (thirty-six) and few subjects obtained scores greater than zero on the psychosis checklist. Thus, as it stands now, the psychosis checklist is of very limited value.

Opsomming

Probleemstelling

Die Aberrant Behaviour Checklist (ABC) is 'n gestandardiseerde meetinstrument vir die meet van behandelingseffek onder geïntitutionaliseerde verstandelik vertraagde mense. Daar is nog nie 'n manier om psigotiese gedrag onder verstandelik vertraagde mense te meet nie. Gewoonlik word psigotiese gedrag wat onder verstandelik vertraagde mense presenteer aan vertraging toegeskryf.

Tans is daar nie 'n Afrikaanse weergawe van die toets nie en die voorbeelde kom nie voor op die huidige vorm nie.

Die studie het onderneem om norme van die ABC vir die Witrand Hospital populasie daar te stel en die afneem van die ABC vir Witrand Hospital te standardiseer.

Die DSM-III-R is gebruik om items vir die psigose vraelys te genereer omdat daar 'n sterk vermoede is dat psigotiese gedrag onder verstandelik vertraagdes net soos onder nie-verstandelik gestremde mense presenteer.

Literatuurstudie

Verstandelike vertraging, die etiologie daarvan asook tiepise gedrag van verstandelik vertraagdes is bestudeer. Aberrante gedrag soos dit presenteer onder verstandelik vertraagdes en die invloed van inrigtings op verstandelik vertraagde mense asook Witrand Hospitaal word beskryf en bestudeer. Maniere van evaluasie van verstandelik vertraagdes is bestudeer. Die standardisering van psigometriese instrumente is 'n belangrike punt.

Metode van ondersoek

Die ABC is eers vertaal en daarna is verskeie voorbeelde saamgestel. 'n Lys van al die pasiënte is verkry en tweehonderd is op 'n ewekansige basis gekies. Die vraelys is toe afgeneem op die tweehonderd mense wat in die ewekansige steekproef was. Die besonderhede is verkry van verpleegkundiges wat die pasiënte ken. Twee verpleegkundiges is vir elke pasiënt gebruik. Daarna is die psigose vraelys afgeneem.

Inligting verkry

Daar is gevind dat die Witrand Hospital steekproef nie werklik met die VSA-groep vergelyk kan word nie.

Daar is 'n betekenisvolle verskil tussen die volgende groepe verkry:

- * epilepties en nie-epilepties pasiënte;
- * mense wat sinvol besig is gedurende die dag en dié wat nie is nie;
- * mense wat anti-psigotiese middels kry en die mense daarsonder.

Daar is geen korrelasie gevind tussen die ABC en geslag, ouderdom en tydperk in Witrand Hospital nie.

Die psigose vraelys kan nie onderskei tussen dié mense wat nie antipsigotiese middels gebruik nie en dié wat dit wel gebruik nie. Dus is óf die kriterium onvoldoende of daar is nie psigotiese pasiënte in Witrand Hospital nie.

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Appendixes

Appendix A

Practical implementation of the ABC

The protocol of a Witrand Hospital patient

A is a female who has been in Witrand Hospital since 1970. At the time the data were collected she had been in Witrand Hospital for 22 years. She was born in 1965 and was 27. She suffers from epilepsy and is not constructively busy during the day.

Her scores are as follows:

- * Fairview Scale score: 36 months. This means that her score lies between the 25th and 50th percentile;
- * Irritability sub-scale score: 1 - her score lies below the 50th percentile;
- * Lethargy sub-scale score: 26. This means that her score lies below the 95th percentile;
- * Stereotypic behaviour sub-scale score: 0 - obtaining a score below the 50th percentile;
- * Hyperactivity sub-scale score: 4 this gives her a percentile score of between 75 and 50.
- * Inappropriate speech sub-scale score: 0 - a score below the 50th percentile.

From the data obtained it seems that on most of the sub-scales about half of the sample scored lower than As' score,

for the Lethargy scale A scored higher than 95 percent of the population. This indicates that A exhibits aberrant behaviour in that she is so lethargic that it effects her functioning. She also has a high score on the Hyperactivity scale and these two scores seem to be mutually exclusive thus more information is required regarding this patient.

A obtained no scores statistically significantly different from the mean. Her scores do not differ statistically significantly from those of other patients who suffer from epilepsy or those who are not constructively busy in the day.

A needs to be further evaluated before a comprehensive report about her may be filed. The psychologist should perhaps observe her behaviour and interview her before further recommendations can be made.

Appendix B

Psigose vraelys vir Witrand Hospitaal

Hoe gereeld sou u sê het die volgende gedrag by die pasiënt voorgekom oor die afgelope vier weke ?

DIKWELS =D
SELDE =S
NOOIT =N
KAN NIE SÊ NIE =K

1. Die pasiënt ly aan grootheidswaan bv: hy/sy dink hy/sy is 'n verlosser, koning of 'n magtige.
2. Die pasiënt ly aan vervolgingswaan bv: hy/sy dink mense wil hom/haar benaadeel of vermoor.
3. Die pasiënt dink dat dit wat ander mense sê altyd op hom/haar betrekking het.
4. Die pasiënt glo dat daar fout is met sy/haar liggaam of met sy/haar liggaamsfunksionering.
5. Die pasiënt gee eienaardige betekenis aan mense of dinge, die betekenis is gewoonlik negatief of verkleinerend.
6. Die pasiënt glo dat sy/haar gedagtes van buite hom beheer word.
7. Die pasiënt glo dat hy/sy ander mense se gedagtes kan rig of beheer, hy/sy kan gedagtes implant.
8. Die pasiënt glo dat niks werklik bestaan nie, daar is niks nie veral nie hy/syself of die wêreld nie.
9. Die pasiënt hallusineer, sien-goed wat nie bestaan nie.
10. Die pasiënt hoor geluide wat nie daar is nie.
11. Die pasiënt voel goed wat nie bestaan nie.
12. Die pasiënt proe goed wat nie bestaan nie.
13. Die pasiënt het nie plek oriëntasie nie: ken nie die naam van die inrigting waar hy hom/sy haar bevind nie.
14. Die pasiënt kan hom/haarself of ander bekendes of ander mense om hom/haar nie identifiseer nie ook nie die rol wat elkeen vervul nie. Soos hy/sy weet nie wie versorgers is nie en ook nie wie die pasiënte is nie.
15. Die pasiënt het nie liggaamsoriëntasie nie - die pasiënt kan nie sy/haar liggaamsdele identifiseer nie ook nie aandui waar hulle is nie.
16. Neologismes- die pasiënt maak sy/haar eie woorde wat net vir hom/haar betekenis het.
17. Eggolalie- herhaling van woorde of sinsnedes wat 'n ander persoon gesê het.
18. Mutisme- die pasiënt praat glad nie.
19. Hoogdrawende taalgebruik- gebruik verhewe taal in situasies waar dit nie van pas is nie.
20. Verbigerasie- sinnelos, betekenislose herhaling van woorde en frases.
21. Perseverasie- herhaling van dieselfde respons tot verskillende vrae.

22. Monotone spraak- praat op een, gewoonlik 'n vervelige, toonhoogte.
23. Inkoherensie- geen deurlopendheid van gedagtes, gesprek verloop nie sinvol nie. Die pasiënt kan nie 'n gesprek voer nie.
24. Verlies aan inhoud van spraak, die pasiënt praat genoeg maar sê baie min.
25. Die pasiënt is baie vaag, kon nie tot 'n punt nie as hy/sy iets vertel nie.
26. Woordslaaï- die pasiënt voeg woorde saam wat onsamehangend en onverstaanbaar is
27. Klankassosiasie- die gebruik van woorde se klank om assosiasies te skep nie die betekenis van die woorde nie. Dus sal die pasiënt woorde herhaal wat rym of soos mekaar klink en nie na die betekenis van die woord oplet nie.
28. Die pasiënt openbaar logoree- buitengewone spraaksaamheid.
29. Spraakdruk- volgehoue spraak wat vinniger as normaal geuiter word en moeilik is om te verstaan. Amper soos 'n kraan wat met hoogdruk spuit.
30. Gedagte opeenhoping- die pasiënt kla dat hy/sy verplig word om aan 'onderwerp te dink, die inhoud is gewoonlik ryk maar die pasiënt ervaar dit as onaangenaam.
31. Gedagtevlug- volgehoue vinnige vloei van spraak wat spring van een onderwerp na 'n ander sonder logiese verbintenis.
32. Die pasiënt is gepreokkupeer met sy/haar innerlike gedagtes, oormatig betrokke met sy/haar eie gedagtes en fantasieë.
33. Die pasiënt toon min of geen emosies nie.
34. Die pasiënt se emosies verander min, lyk vlak of ontoereikend.
35. Die pasiënt se emosies stem nie ooreen met die situasie nie bv. huil wanneer dit toepaslik sou wees om te lag (teenoorgesteld).
36. Die pasiënt het geen beheer oor sy/haar emosies nie en kan nie sy/haar eie emosies verklaar nie. Kan bv. nie verduidelik waarom hy/sy lag nie.
37. Die pasiënt meld dat hy/sy 'n gevoel van onwerklikheid in hom/haarself het.
38. Die pasiënt beskryf hom/haarself as anders as wat hy/sy voorheen was.
39. Die pasiënt meld dat die omgewing anders lyk, onwerklik, mistig of wasig.
40. Die pasiënt meld dat die huidige situasie alreeds voorheen ervaar is en dat hy/sy al voorheen dit ervaar het.
41. Die pasiënt meld dat hy/sy voel of hy/sy 'n situasie nog nie ervaar het nie al is dit 'n bekende situasie dit voel vir hom/haar of dit baie vreemd is.
42. Die pasiënt sukkel om vriende te maak en kan nie oor die weg kom met ander mense nie.

43. Die pasiënt hou aan ander mense vas, klou gedurig aan almal.
44. Die pasiënt is nie bewus van ander mense se persoonlike ruimte nie en staan dus te naby aan mense.
45. Die pasiënt het 'n verlies aan reaksie tot die omgewing. Hy/sy stel bv. nie in iets belang nie , kyk nie TV nie, weet nie wat om hom aangaan nie.
46. Die pasiënt praat baie stadig en voer take stadig uit.
47. Die persoon is nie in staat om stil te staan of sit nie "rustelose bene sindroom".
48. Katalepsie- die pasiënt is in 'n semibeswyming waartydens die liggaamsspiere vir redelike lang periodes verstuif.
49. Die pasiënt is baie aktief maar onproduktief ,herhalende gedrag bv. doen baie maar bereik niks nie.
50. Posturering- vrywillige inneem van 'n ontoepaslike of bisarre liggaamshouding.
51. Negativisties- die pasiënt werk nie saam nie, al het hy/sy die vermoë om 'n taak te verrig sal hy/sy dit nie uitvoer nie.
52. Mannerismes- koddige gedrag of afwykende bewegings wat voorkom en herhalend is.
53. Die pasiënt grynslag.
54. Wasagtigheid- persoon neem onnatuurlike soms ongemaklike houdings in indien in daardie posiesie geplaas word.
55. Eggopraksie- herhalings van bewegings wat deur ander mense uitgevoer word.
56. Die pasiënt het nie die vermoë om 'n taak te beplan en om dit logies uit te voer nie.

Appendix C

ABC vir Witrand Hospital

Instruksies

Beoordeel asseblief die pasiënt se gedrag vir die laaste vier weke. Besluit asseblief vir elke item of die gedrag 'n probleem is en omkring die gepaste nommer:

- 0 = glad nie 'n probleem nie
- 1 = die gedrag is 'n probleem maar in 'n geringe graad
- 2 = die probleem is matig ernstig
- 3 = die probleem is ernstig in graad

Met die beoordeeling van sy/haar gedrag, hou asseblief die volgende punte in gedagte:

- a) Neem relatiewe herhalendheid in ag vir elke spesifieke gedrag. Byvoorbeeld, indien hierdie pasiënt meer woede uitbarstings het as al die ander pasiënte in die saal, sou dit matig ernstig (2) of ernstig (3) wees as dit een of twee keer 'n week voorkom. Ander gedrag, soos weiering, sal moontlik meermale moet voorkom voordat dit 'n uiterste beoordeeling sal verg.
- b) Neem hierdie pasiënt se gedrag met alle lede van die personeel in ag, nie net uself nie. Indien hy/sy probleme het met ander maar nie met u nie, probeer om 'n totale prentjie in oënskou te neem.
- c) Beoordeelaars moet die beskouing van ander ook in ag neem - in besonder diene wat die pasiënt goed ken en in ander situasies kan waarneem bv. gedurende werkstye of weg van die saal.

Moet nie te lank op elke item beraadslaag nie - u eerste reaksie is gewoonlik die regte een.

1.	Oormatig aktief in die saal	0	1	2	3
*	<i>ontwrigtend, stoot stoele rond, loop of hardloop heen en weer, sit nie stil nie</i>				
2.	Beseer hom/haarself	0	1	2	3
*	<i>herhalende selfbeseerende gedrag soos bv. kopstamp, byt, knyp, krap, slaan, rektale grawery, haartrekkery, oogbesering en klap wat lei tot kneusing en/of bloeding</i>				
3.	Lusteloos, traag, onaktief	0	1	2	3
*	<i>moet dikwels fisies aangepor word om te beweeg of take te verrig, is konstant moeg of slaperig</i>				
4.	Aggressief teenoor ander pasiënte en personeel	0	1	2	3
*	<i>beseer ander deur hulle te stamp, stoot, slaan, gooi, krap of af te knou of op hulle te skreeu</i>				
5.	Sonder self van ander af	0	1	2	3
*	<i>bly onbetrokke, kommunikeer nie, is buierig, kruip weg soek 'n stil afgesonderde plek op, sit alleen in 'n hoek, beweeg weg as iemand nader kom</i>				
6.	Doellose, herhalende liggaamsbewegings	0	1	2	3
*	<i>doellose herhalende bewegings sonder enige klaarblykbare verlangde gevolg</i>				

7.	Ontstuimig	0	1	2	3
*	<i>ontoepaslik raserig en rof deur bv. ontoepaslik te gil en te skreeu en tydens spel ander pasiënte rond te stoot of te stamp</i>				
8.	Skreeu ontoepaslik	0	1	2	3
*	<i>skreeu sonder klaarblyklike rede, om aandag te trek sonder dat daar redes is vir onsteltenis. Sluit nie skreeu in reaksie op pyn nie</i>				
9.	Praat oormatig	0	1	2	3
*	<i>praat meeste van die tyd, maak nie noodwendig sin nie dikwels herhalend soos 'n plaat wat vassteek, dikwels op soek na aandag</i>				
10.	Woede uitbarsting (temper tantrums)	0	1	2	3
*	<i>pasiënt speel op, skreeu, huil van woede, stamp voete</i>				
11.	Stereotipe bewegings	0	1	2	3
*	<i>herhalende bewegings sonder enige verlangde resultate bv. kop rol, komplekse vingerbewegings, handbewegings ritmiese klap van hande op liggaam</i>				
12.	Gepreokkupeerd, staar in die niet	0	1	2	3
*	<i>dagdroom, gee eers aandag na verskeie pogings om aandag te trek</i>				
13.	Impulsief (tree op sonder om te dink)	0	1	2	3
*	<i>handel onoordeelkundig, skielik</i>				
14.	Geirriteerd (grommerig of temerig)	0	1	2	3
*	<i>neulerig, klaerig, kinderagtig, huil sonder rede raak omgekrap oor klein dingetjies</i>				
15.	Rusteloos, kan nie stilsit nie	0	1	2	3
*	<i>staan op om weer te gaan sit, beweeg gedurig rond</i>				
16.	Onttrekkend, verkies alleen aktiwiteite	0	1	2	3
*	<i>sosiaal geïsoleer en uitsonderlik stil, verkies afgesonderde aktiwiteite</i>				
17.	Eienaardige, bizarre gedrag	0	1	2	3
*	<i>repeteerende, ritualistiese vreemde handelinge</i>				
18.	Ongehoorsaam, moeilik om te beheer	0	1	2	3
*	<i>opstandig/agressief as eise aan hom/haar gestel word</i>				
19.	Skreeu op ontoepaslike tye	0	1	2	3
*	<i>onvoorspelbare, ontoepaslike verbale gedrag, nie noodwendig om aandag te kry nie</i>				
20.	Verstarde gesigsuitdrukking, gebrekkige emosionele responsiwiteit	0	1	2	3
*	<i>geen verandering in emosie nie, selfs wanneer daartoe aangemoedig bv. deur hom/haar te kielie</i>				
21.	Steur ander	0	1	2	3
*	<i>ontwrigtend, meng in met saal roetine</i>				
22.	Spraakherhalings	0	1	2	3
*	<i>herhaling van klanke woorde of sinne</i>				
23.	Doen niks, sit net en kyk vir ander	0	1	2	3
*	<i>reageer nie op situasies nie mag depressief wees</i>				
24.	Werk nie saam nie	0	1	2	3
*	<i>weier om eenvoudige opdragte uit te voer</i>				
25.	Depressiewe luim	0	1	2	3
*	<i>reageer nie op enige toenadering of ander sosiale stimuli nie, emosioneel afgestomp, hartseer, min oogkontak</i>				

26.	Bied weerstand teen fisieke kontak	0	1	2	3
*	<i>beweeg weg wanneer iemand nader kom, ongemaklik as iemand fisieke kontak maak, gereserveerd of afsydig</i>				
27.	Beweeg of rol kop voorentoe of agtertoe	0	1	2	3
*	<i>herhalende doelloose bewegings sonder 'n verlangde uitwerking</i>				
28.	Skenk geen aandag aan opdragte nie	0	1	2	3
*	<i>al begryp die pasiënt die opdrag moet die pasiënt fisies aangepor word om opdrag uit te voer</i>				
29.	Eise moet onmiddelik bevredig word	0	1	2	3
*	<i>is gewoon daaraan om sy sin te kry, raak omgekrap en speel op as daar nie dadelik aan sy eise voldoen word nie</i>				
30.	Isoleer hom/haarself van ander inwoners	0	1	2	3
*	<i>probleme om te sosialiseer</i>				
31.	Ontwrig groepaktiwiteite	0	1	2	3
*	<i>ontwrig en ontstel die groep, gooi apparaat of speelgoed rond, eis die groep se aandag</i>				
32.	Sit of staan vir 'n lang tyd in een posisie	0	1	2	3
*	<i>staan of sit doelloos, mag verveeld wees</i>				
33.	Praat hard met self	0	1	2	3
*	<i>gebruik woorde wat dalk nie sin maak nie, gradeer net as pasiënt nie met ander mense praat nie</i>				
34.	Kleinserig en huil oor kleinighede	0	1	2	3
*	<i>oormatig sensitief vir klein irritasies, huil of gekerm word nie deur die situasie regverdig nie</i>				
35.	Herhalende hand-, liggaam- of kopbewegings	0	1	2	3
*	<i>self-stimulerende gedrag</i>				
36.	Luim verander vinnig	0	1	2	3
*	<i>skielike gemoedswaai, van lag tot huil</i>				
37.	Reageer nie tydens saal aktiwiteite nie	0	1	2	3
*	<i>selfs met aanmoediging reageer die pasiënt nie, doen niks voltooi nie eers aktiwiteite nie</i>				
38.	Sit nie gedurende gestruktureerde aktiwiteite stil nie	0	1	2	3
*	<i>wandel rond tydens 'n bepaalde aktiwiteit</i>				
39.	Kan glad nie stilsit nie	0	1	2	3
*	<i>ooraktief, fisies rusteloos</i>				
40.	Is moeilik om te bereik- of om kontak te maak	0	1	2	3
*	<i>outistiese trekke, maak min oogkontak, reageer nie op sosial situasies nie</i>				
41.	Huil en skreeu ontoepaslik	0	1	2	3
*	<i>huil en skreeu sonder dat die omstandighede dit regverdig, sluit huil oor pyn uit</i>				
42.	Verkies om alleen te wees	0	1	2	3
*	<i>onsosiaal, skaam teruggetrokke, isoleer hom/haarself doelbewus van ander</i>				
43.	Probeer nie met woorde of gebare te kommunikeer nie	0	1	2	3
*	<i>afsydig, gereserveerd, probeer nie om behoeftes met woorde of gebare te kommunikeer nie</i>				
44.	Maklik afleibaar	0	1	2	3
*	<i>min konsentrasie, ongemotiveerd, beperkte aandagspan</i>				
45.	Waai of skud uiterste ledemate heftig	0	1	2	3
*	<i>stereotipe gedrag van arms, bene, vingers of tone met</i>				

	<i>geen klaarblyklike verlangde gevolge nie, mag ritualisties voorkom</i>				
46.	Herhaal 'n woord of sinsnede oor en oor	0	1	2	3
*	<i>soos 'n plaat wat vashaak, sê dieselfde ding oor en oor sonder dat dit op die situasie betrekking het</i>				
47.	Stamp voete, kap voorwerpe en slaan deure toe	0	1	2	3
*	<i>geniet dit om 'n geraas te maak of om personeel te irriteer, "tantrums" speel op, gee uiting aan frustrasies</i>				
48.	Hardloop of spring gedurig in vertrek rond	0	1	2	3
*	<i>oormatig energiek, fisies ooraktief</i>				
49.	Wieg liggaam heen en weer	0	1	2	3
*	<i>gedrag sonder enige klaarblyklike verlangde gevolge</i>				
50.	Doelbewusteselfbesering	0	1	2	3
*	<i>pynigende gedrag wat nie noodwendig tot bloeding lei nie bv. oormatige masturbasie</i>				
51.	Gee nie aandag as met hom/haar gepraat word nie	0	1	2	3
*	<i>onresponsief, gee nie gehoor nie, sluit doofheid uit</i>				
52.	Doen fisiese geweld aan eie persoon	0	1	2	3
*	<i>enige vorm van selfbesering</i>				
53.	Onaktief, geen spontane beweging nie	0	1	2	3
*	<i>afgerem, bedruk, abnormaal gekluister aan een plek</i>				
54.	Neig om oormatig aktief te wees	0	1	2	3
*	<i>deurgans aan die beweeg, oormatig energiek</i>				
55.	Negatiewe reaksie op toenadering	0	1	2	3
*	<i>hou nie daarvan om vasgehou, gesoen, gestreel of vertrotel te word nie</i>				
56.	Ignoreer doelbewus aanwysings	0	1	2	3
*	<i>eiesinnig, ongehoorsaam, hoor opdragte maar maak of hy/sy dit niegehoor het nie</i>				
57.	Woede uitbarstings indien hy/sy nie eie sin kry nie	0	1	2	3
*	<i>skreeu, stamp voete, raak agresief as daar nie aan sy/haar eise gehoor gegee word nie</i>				
58.	Toon weinig gesosialiseerde reaksie	0	1	2	3
*	<i>emosioneel onresponsief, asosiaal, neig om van ander te onttrek</i>				