Investigating adherence by parents to treatment recommendations following psychological assessment

by

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In the name of God, the most Kind, the most Merciful

Any person can be a mum or a dad,
but to be a parent takes something special.

Dedications

My parents
Suleman and Isha Khota

You raised me up so I can stand on mountains,
you raised me up to more than I can be.

My treasured sisters

You not simply my sister, you a little bit of my childhood
and a whole lot of friend, all wrapped into one.

My amazing husband,
Mohammed Behra

You're the one who held me up, never let me fall,
You see the best there is in me,
I am everything I am,
because you love me.

My perfect daughter
Nahla Behra

Love is a small word compared to the enormity of my feelings for you

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Abstract

Psychological assessment can be a valuable tool for understanding children's academic, emotional and behavioural functioning, with treatment recommendations proving to be an integral component of this process. For assessments to be worthwhile and effective, in particular those completed on children, it is important to know whether the treatment recommendations are initiated once received and whether treatment is adhered to once started. At present there is minimal research found, particularly in South Africa which examines whether parents or caregivers adhere to treatment recommendations provided in the assessment report for their children. To bridge this gap the study sought to gain information from parents on whether they implement treatment recommendations provided from a psychological assessment, and, if not, which recommendations have not yet been implemented. The research was also concerned with establishing the various reasons which may promote or impede on follow through of recommendations, making a mixed method design the most appropriate format for this purpose. Both the quantitative and qualitative data collection strategies were implemented using a questionnaire received from a total of 30 participants, who were the parents or caregivers of the children who completed a psychological assessment.

The findings of the study indicated a rate of 53% of participants either completing treatments fully or still continuing treatments which were recommended. Factors such as a strong need for assisting the child was found to be one of the aspects which promoted adherence. Other factors included support from family, teachers, doctors and health care workers, the practicality of accessing services, and success of the treatments influencing caregivers to continue with treatments. The high rate of non-adherence (47%) was found to be a result of time and financial resources, caregivers feeling as though the recommended treatments were unnecessary, and caregivers finding it difficult to accept responsibility for attending treatments. These factors seem to form a barrier for many children who should be accessing treatments, thus making it likely that many disorders in children are not being treated appropriately. The results of this study and specifically the factors which promote or impede adherence should be taken into account by psychologists, most importantly when feedback and recommendations are being provided to parents.

Although conducted specifically in a psychiatric facility, the study is seen to be beneficial to parents of children who may require psychological assessment and treatment; educational and neuropsychologists, clinical psychologists as well as health care professionals who may use an assessment method as a means to recommend further treatment intervention to parents or caregivers.

Future research includes exploring child and parent internal factors such as personality types and psychopathy, and the extent to which parents accept their part in the therapeutic process and are willing to attend therapies involving themselves. In addition, a deeper exploration into the factors which promote adherence is essential to understand how some caregivers, despite time or financial barriers still have the ability to provide the treatments for their children. The results would assist clinicians who are unable to change the barriers to adherence, to work instead on those factors which promote adherence.

Chapter One
Overview of Study

1.1. Introduction

Psychological assessment is a series of psychological tests which are written, visual or verbal evaluations administered to assess the cognitive and emotional functioning of children and adults (www.apa.org). Psychological assessment, which measures characteristics pertaining to all aspects of behaviour in human beings, has been a much discussed, debated and researched topic since its advent in the early 19th century (Kaplan & Saccuzzo, 2009; Flanagan & Harrison, 2005). Over the past few years, psychological assessment has come to be recognised for more than just its usefulness at the beginning of treatment. Its utility has been extended as a means of facilitating treatment and understanding behavioural health care problems throughout and beyond the episode of care. Psychological tests can be employed as tools (a) to assist in *clinical decision-making* activities, including screening, treatment planning, and treatment monitoring; (b) for *outcomes assessment* for the purposes of measuring and monitoring the effects of treatment, and outcomes management; and (c) used as *treatment techniques* in and of themselves (Maruish, 2000).

1.2. The Assessment Process

The assessment process is multidimensional in nature. It entails the gathering and synthesizing of information, as a means of describing and understanding functioning. Wagner (2003, p. 112) describes the information obtained during the assessment process as providing the "basis for determining the direction of therapy and evaluating the effectiveness of treatment services". This can inform appropriate decision-making and intervention (Foxcroft & Roodt, 2003).

Generally, within the hospital setting a psychological assessment is used for diagnostic purposes, referred to as a psychodiagnostic assessment. The process followed in a psychiatric diagnostic assessment is:

- Comprehensively evaluate an individual or family.
- Look for the presence or absence of certain psychological, neuropsychological, or physical symptoms.

- Compare the symptoms identified with standard psychiatric and neuropsychological disorders to determine in which category of disorders the individual best fits.
- Make a prognosis regarding the future course of the disorder and a prediction regarding the extent to which the person will benefit from psychotherapeutic intervention, as well as the need for other types of intervention (e.g. psycho-pharmacological treatment, occupational therapy).
- Prepare an oral or written report on the outcomes of the assessment, the resultant recommendations, and, in the case of a psycho-legal (forensic) assessment, to express an expert opinion on the matter being considered by the court (Foxcroft & Roodt, 2003).
- Inform parents of the results of the assessment and further recommendations.

Once a person has been referred for psychodiagnostic assessment, there are certain general steps which clinicians follow prior to treatment intervention. When a child is being assessed, one of these steps to be followed is that of parents initiating the interventions as illustrated in Figure 1.1 below:

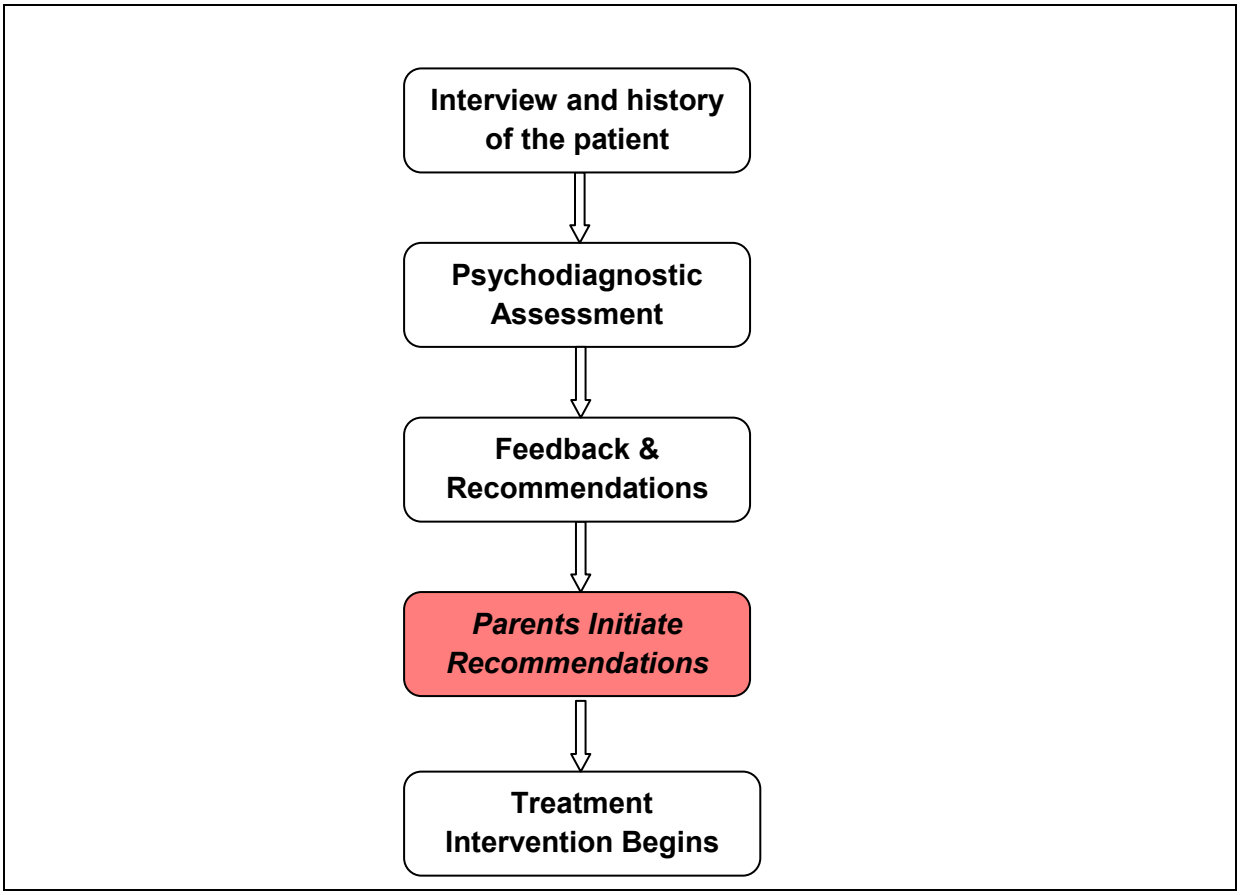


Figure 1.1 Psychodiagnostic assessment process

From the diagram above, it is clear that when children have difficulties and are referred for a psyodiagnostic assessment one of the purposes of the clinician is to provide recommendations for further treatment intervention. Recommendations refer to developing a plan, or explicit plans and suggestions to deal with the problem (Wodrich & Kush, 1990). These recommendations, as mentioned, may not necessarily be restricted to psychological treatments, but may incorporate alternate therapies, alternative school placements, and psychosocial treatments as well. According to Wagner (2003), the first step to effective treatment is a thorough assessment of the child. However prior to treatment being implemented, parents need to ensure that they make the necessary arrangements for the child to begin their treatment. This may involve accepting the feedback given, physically making the necessary appointments with various practitioners, and ensuring that the child is taken in for the necessary treatments.

There may be various factors which can influence whether parents initiate the treatment, either based on their varying circumstances, or at times access to these treatments. It is also important to note that certain recommendations may be easier for parents to follow up on than others. For instance parents, particularly in South Africa, may have better access to medical facilities than they do for psychological facilities. Thus we may find that parents follow up on medical treatments at times but not on psychological treatments. However at present this is a speculation and it is unclear as to which of these treatment recommendations parents do follow up on and which ones they may not. It is this step between the assessment and treatment process for which this research is being completed.

During the assessment process, emphasis has been placed not only on the assessment phase, but on the treatment planning and intervention phase as well. However treatment is unlikely to begin if parents, for various reasons, have difficulty in implementing the various treatments which are recommended to them, either by means of written or verbal feedback. The value of a psychological assessment depends largely on whether the recommendations are followed, however the question of whether parents and caregivers comply with assessment recommendations has rarely been investigated (Thibodeau, 2006).

In finding answers to some of the research questions above, we find that some research has suggested possible factors which may impact on parents' motivation to follow up on treatment recommendations, and at times adhering to treatments provided.

1.3. Treatment Intervention

It is the responsibility of the psychologist to translate into clinically meaningful language an integrated summary of the person's total test responses that will have practical usefulness in the diagnostic and therapeutic formulations. Once completed, the integration of the child's test performance should naturally lead to recommendations for treatment and disposition. The therapeutic plan is based on a comprehensive dynamic and developmental understanding of the person, and is not directly tied to a diagnostic label (Sternlight, 1985).

The immediate challenge to the clinician is to decide on the most productive intervention by which to commence treatment and engage the client. The clinician must develop a treatment plan that will be maximally effective in addressing the client's needs (Beutler, Wakefield & Williams, 1994). Mental health clinicians are employed in making differential treatment decisions from psychological assessments, which not only includes psychological treatments, but recommending alternate therapies and psychosocial treatments.

In working in a Child Psychiatric Unit at Tara Hospital, the treatments most commonly recommended were as follows:

- ***Placement in school,*** such as remedial learning support, remedial school, school for children with special needs.
- ***Individual/ Play therapy***, which refers to psychological therapy for a child. Children under 10 – 12 years usually do play therapy while older children have individual (talking) therapy.
- ***Parent Counselling*** helps parents to understand and cope better with the stresses and strains of parenting, particularly with children who have psychological difficulties or disorders.
- ***Individual Psychotherapy*** provides the individual with a space to express their emotions and experiences which may be causing difficulties in their lives. It provides them with an opportunity to feel understood in an atmosphere that is safe and accepting.
- ***Couples counselling*** helps couples to understand and resolve conflicts with the aim of improving and strengthening their relationship.
- ***Occupational Therapy*** helps children (and adults) with various needs to improve their cognitive, physical, and motor skills and enhance their self-esteem to achieve independence in all areas of their lives.
- ***Psychiatric management,*** referring to psychotropic drugs and scheduled appointments prescribed by the referring psychiatrist.

- ***Social Work Consultation,*** with the intent to improve the child or family's wellbeing or quality of life particularly with children who have severe financial or family difficulties, and at times for social disability grants.
- **Other medical/ health care interventions** which refer to consultation with a health professional for physical illnesses or disabilities.

It is likely that child psychologists who provide these recommendations to parents following the assessment make the recommendations to alleviate distress, improve functioning, or enhance the well-being in children. However, virtually no systematic research has investigated how many recommendations made by child psychologists are actually followed or whether following through with the recommendations leads to improvements in symptoms or in psychosocial functioning (Geffken, Keeley, Kellison, Storch, & Rodrigue, 2006).

There may be various other treatments recommended, depending on the nature of the results of the psychodiagnostic assessment. A particular treatment at times may elicit greater compliance than others, depending on the nature of the treatment, or may at times be more accessible, both practically and financially, than others. However it is not definitive as to which of these factors may or may not play a role in parents ensuring that their children receive these treatments which is what we are concerned in finding out.

1.4. Motivation for the study

The rationale for assessing a child's development at an early age is simple: the sooner a child's difficulties can be identified, the sooner an intervention can be implemented and, hence the sooner a child can be assisted (Foxcroft & Roodt, 2003). Children are usually assessed not at their own request but because they are referred by parents, the school or other interested parties. Parents are often mystified by psychological measures and subsequent intervention is dependent upon parents practically implementing the treatment into the child's life. However there is little research conducted on whether parents implement the treatments recommended to them by professionals subsequent to the psychological assessment having been completed. Given that a study such as this has not been conducted thus far, it is unclear as to whether these recommendations are realistic and practical enough for children to gain the necessary treatment.

The motivation for this study lies strongly in looking at which of the treatment recommendations parents may implement or not implement and for what reasons. The study thus aims to explore the specific factors which may promote or hinder the treatment process, as identified by parents who have had their children assessed.

This study contributes to an existing body of research on psychological assessment, therapeutic interventions and towards using psychological assessment for treatment outcomes. Although conducted specifically in a psychiatric facility, the proposed study is seen to be potentially beneficial to parents of children who may require psychological assessment and treatment; educational and neuropsychologists, clinical psychologists as well as other professionals who may use an assessment method as a means to recommend further treatment intervention to parents or caregivers.

1.5. Objectives of the study

The primary aim of the study is to gain information from parents as to whether they have followed up on implementing treatment recommendations provided from a psychological assessment, and if not, which recommendations have not been implemented as yet.

A secondary aim of the proposed study is to look at what specific factors may have impacted on the implementation of these treatment interventions. A better understanding of the factors that differentiate parents who adhere to recommendations made by child psychologists following psychological testing from those who do not adhere can guide the development of targeted interventions designed to maximize adherence within the psychological testing milieu (Geffken, Keeley, Kellison, Storch & Rodrigue, 2006).This will further lead to recommendations to those conducting psychological assessments on how to allow for more practical and useful treatment interventions to be implemented. It is likely that an awareness of the factors impeding the implementation of treatment to children will allow psychologists the opportunity to gain an understanding of the support or assistance that may be required by parents to ensure their children can have access to the necessary treatment interventions. This keeps in line with a concern regarding children's accessibility to services as well as a worldwide focus on treatment interventions through psychological assessment.

Chapter 2
Literature Review

2.1. The structure of the literature review

The literature review in this document follows a sequenced pattern in direct relation to the research question. The research question being "subsequent to a child completing a psychological assessment, which of the treatment recommendations provided do parents follow or not follow up on, and what are the possible factors that influence this adherence or lack thereof?". The literature review thus begins by looking in detail at what a psychological assessment is and the importance of providing recommendations as part of the assessment. It then goes on to explore the past and current, and national and international research in relation to parent follow-up on these recommendations. In this section the review looks at the prevalence of mental health needs in South Africa and the unmet mental health needs globally. The review concludes with the factors which may be involved in treatment implementation thus allowing us to understand the reasons why parents may or may not adhere to treatment recommendations made through the psychological assessment.

2.2. Psychological assessment

Psychological assessment is a service that entails a comprehensive assessment of psychological and psycho-educational functioning that may include clinician-administered measures; diagnostic interviews; self-report, parent-report, teacher-report questionnaires; computerized measures; and behavioural observations (Geffken et al., 2006).

Psychological assessment can be distinguished into various categories, such as neuropsychological assessment, career assessment, educational assessment, and psychodiagnostic assessment for the purposes mentioned above. The practice of psychodiagnostic assessment, also known as clinical assessment is defined as "the integration of multiple pieces of information into an overall evaluation of the present state of the individual being assessed" (Murphy & Davidshofer, 1991, p. 424). According to Foxcroft and Roodt (2003), one of the functions of gaining information from psychodiagnostic assessment is to make a psychiatric diagnosis and guide the nature of the intervention required. It is likely that psychologists who provide recommendations to parents following these assessments make these recommendations to alleviate distress, improve functioning, or otherwise enhance well-being in children (Geffken et al., 2006). Psychodiagnostic

assessment is most often used within clinical settings for these purposes and will be the assessment type for this research.

During the assessment process, by gathering a wide array of data, a richer and broader sampling of behaviour or functioning can be achieved. After gathering the information, it must be synthesized, clustered together, and weighed up so as to describe and understand the functioning of an individual, group, or organisation. On the basis of such descriptions, predictions can be made about future functioning, decisions can be made, interventions can be planned, and progress can be mapped, among other things (Foxcroft & Roodt, 2003).

Sattler (1992) divides the assessment process into three key stages: the input stage, intervening stage and output stage. The input stage consists of the pretesting events, such as the initial referral of the child for testing, the review of case history and prior test results, contact with parents and the selection of evaluation procedures. The intervening stage includes the actual interaction between the child and examiner, the testing and observation of the child, and interviews with significant adults. In the final stage, the output stage, the findings and recommendations are communicated to the child, parents, teachers, and school staff via conferences and a psychological report. Of the three stages in the assessment process, the psychological report has been the focus of the most research (Pinto, 2002). The psychological report sums up the production of the assessment by providing concrete information and evidences to parents, teachers, and health care providers.

A study by Tidwell and Wetter (1978) examined the extent to which parents value psychological reports prepared by school psychologists following a psycho-educational evaluation. The authors studied 44 parents whose children were brought to an outpatient clinic for evaluation. Parents completed a questionnaire at the conclusion of the assessment process. The results indicated that, on average, parents believed the report provided useful information and suggestions which would help them with their child's particular problem. Being an important document for all concerned with the child, it is without doubt that the report includes one of the most important functions of psychological assessment, that is, to generate information about a person that is useful in making treatment recommendations for further intervention, including the nature of the interventions which may be required.

In attempting to find research related to the specific topic, various search criteria relating to psychological and psychodiagnostic assessment, treatment interventions, recommendations, adherence, treatment recommendations, parent's role, and other such terms were used. In doing so, the following journal databases were explored:

- Accredited journal platforms such as Social Sciences and Arts and Humanities Citation index.
- E-journals at University of Pretoria.
- Many journal databases including EbscoHost, Highwire, Wiley Interscience, SpringerLink, Informaworld – Taylor&Francis, Sage and a few others.
- Open access journals such as AOJSA, SAbinet Online Ltd.
- The research specialist at University of Pretoria who searched various databases as well

Although these databases yielded certain results, (discussed in the previous section and below) with a few studies found internationally, none were found in South Africa which explores whether parents, subsequent to being provided with treatment recommendations, follow through on implementing the treatment or therapies for their children. A vast array of research has been found in relation to adherence to paediatric regimens (medical adherence) (De Civita & Dobkin, 2005; Gearing & Charach, 2009) and a good number of studies are found in relation to adherence to psychological treatments unrelated to a psychological assessment (Lyon & Budd, 2010; Moore & Symons, 2011). In relation to recommendations following a psychological assessment, there have been a few studies found internationally (Dreyer, O'Laughlin, Moore & Milam, 2010; Geffken et al., 2006) but thus far no studies in the searched databases found in South Africa.

Psychological assessment can be a valuable tool for understanding children's academic, emotional and behavioural functioning with treatment recommendations proving to be an integral component of this process. Every year thousands of Rands are spent both in the public and private sector to complete assessments on children with the intention to provide treatment recommendations. However there are no found studies in South Africa on whether parents follow through on these recommendations provided. Thus it seems essential for a local study to be carried out to examine parental adherence to recommendations made by their child's psychologist after a comprehensive psychological assessment. In an attempt to develop a better understanding of adherence and the factors that impact it, the literature relevant to this topic will be reviewed.

2.3. Adherence

2.3.1. Definitions of adherence

Adherence to (or compliance with) a treatment regimen is generally defined as the extent to which patients take or receive treatment as prescribed by their health care providers. Haynes (1979) defined *adherence* as the extent to which one's behaviour, (e.g., medication

management, dieting or executing life changes) coincided with medical or health advice. The word “adherence” is preferred by many health care providers, because “compliance” suggests that the patient is passively following the doctor’s orders and that the treatment plan is not based on a therapeutic alliance or contract established between the patient and the physician (Osterberg & Blaschke, 2005). Regardless of which word is used, both are used in relation to treatment or recommendation follow through based on the advice of the health care provider.

At times the word compliance does seem more appropriate and will be used interchangeably with adherence in this study with it being defined as “the extent to which the actions of patients, their families, and other professionals coincide with clinical therapeutic recommendations” (Cadman, Shurvell, Davies & Bradfield, 1984, p. 40).

Recommendation compliance may be conceptualized as a stage of change that precedes more active behavioural change and focuses on processes involved in preparing to change behaviour (i.e., making an appointment for treatment). From a help-seeking model perspective, recommendation compliance may be seen as part of the decision to seek help stage (e.g., decision to engage in further services) or the service selection stage (e.g., decision to seek formal or informal supports) (Dreyer et al., 2010). The difference between recommendation adherence and adherence to treatment intervention is slight, although treatment intervention (following a psychological assessment) is usually a result of recommendation adherence. Recommendation adherence refers to the acceptance of the process subsequent to the receiving of recommendations. This means accepting the necessary treatments and implementing the necessary measures to begin treatment. These steps include: recognition and acceptance of the problem by the guardian, understanding of the recommendations, identification of available recommended resources, and contact or initiation of the recommended intervention (Geffken et al., 2006). Adherence to the treatment intervention involves the actual psychological or other care which the person receives to improve their condition, in this case, once they have implemented recommendations.

An exploration on the research and studies conducted on *treatment intervention subsequent to psychological assessment*, found that numerous studies (as discussed below) were conducted with significant research results reported. The research found in relation to ‘treatment intervention by parents’ indicates that two South African studies were conducted, by Foxcroft and Roodt (2003) and Knoetze and Vermoter (2007), with more research found in other countries. Studies conducted in other countries which researched the importance of using psychological assessment to provide treatment interventions include Wodrich and Schmitt (2006); Murphy and Davidshofer (1991); Hurt, Reznikoff, and Clarkin (1991); Kazdin

(1991); Beutler, Wakefield and Williams (1994) conducted in the USA and Pearsall (1997) conducted in Canada. Some of these studies emphasize the need to assess outcomes once treatment has been in effect and the usefulness of the feedback process for therapeutic treatment.

However there were minimal found studies internationally (discussed below) which researched *whether parents follow up on the treatment recommendations provided* for their children, particularly those subsequent to a psychological assessment. Various databases were searched which found no relevant studies carried out in South Africa which relates to the current study. Although the child's parents are often the most important recipients of assessment findings, there has been little research evaluating assessments from their perspective (Pinto, 2002).

2.3.2. Treatment Adherence and its importance

Looking at the statistics of mental health in South Africa, it is estimated that one in five South Africans suffer from a mental disorder severe enough to affect their lives significantly. In addition, roughly 25% of all general practitioners' patients are ill due to psychiatric rather than general medical conditions (Limson, 2002). In the USA, the prevalence of psychopathology in children and adolescents is approximately 20% (Canino, Bird, Rubio-Stipec & Bravo, 1995; Cohen, Provet & Jones, 1996; Bird, 1996) and from that only a small proportion of these receive mental health services (Friedman, 1996). The World Health Organisation estimates that nearly two-thirds of people with a known mental disorder never seek help from a health professional, although treatment is available in many cases. Stigma, discrimination and ignorance are often barriers to treatment reaching people with mental disorders (Limson, 2002).

Sub-optimal adherence to prescribed treatment has been a well-documented problem in medical and behavioural literature for the past 60 years (e.g. Meichenbaum & Turk, 1987). Treatment adherence and compliance is a field that has been researched much in many of the health sciences fields, including the medical field (Broadbent, Donkin & Stroh, 2011; Bruce, Hancock, Arnett, & Lynch, 2010; Youngmee & Evangelista, 2010); the social sciences field (Fung & Tsang, 2008; Moore & Symans, 2009), the psychological arena (Gray, Bressington, Lathlean & Mills, 2008; Lopez-Jaramillo et al., 2010); as well as other fields, such as the physiotherapy field (Sandborgh, Asenlof, Lindberg, & Denison, 2010). In recent years much research has been conducted specifically in the area of HIV where non-adherence to treatments seems to be rife (Kalichman et al., 2011; Stubbs et al., 2009; Chaiyachati, Hirschhorn, Tanser, Newell, & Barnighausen, 2011; Henderson, Hindman, Johnson, Valuck, & Kiser, 2011).

Numerous studies to treatment adherence in the psychological field has been conducted, majority of which is in relation to schizophrenia (e.g. Buckley et al., 2007; Fung & Tsang, 2008) and ADHD (e.g. Springer, 2004; Wagner, 2008). In searching for information on adherence relating to the psychological field studies have been found on numerous disorders such as post traumatic stress disorder (e.g. Barber, Triffleman & Marmar, 2007); bipolar mood disorder (Berk et al., 2010); autism (Moore & Symans, 2009); and depression (Mitchell, 2006).

One reason adherence to treatment regimens has been widely researched is related to the high cost of non-adherence. In cases where individuals, parents or children do not carry out the actions to receive the necessary treatments the consequences can be vast. Non-adherence to medical treatment regimens may result in decreased success of the medication regimen, medical complications, increased number of hospitalizations and medical treatments, increased school absence and increased risk of morbidity (Butz, 2006).

In addition, non-adherence may lead to unnecessary clinic appointments, hospitalizations, time and money spent on testing and changing doctors to suit the patient and moreover poor adherence has been significantly related to the failure of medical interventions as well as relapse. Non-adherence may have severe implications for the control of symptoms, recovery time, quality of life and mortality (Zgibor et al., 2004). In terms of financial implications, there is likely to be considerable wastage when resources are directed at medical consultations, purchase of medication, transport to appointments, and other aspects surrounding medical care while adherence to treatment remains low (World Health Organisation, 2003). In addition non-adherence to treatments can be at its worst, fatal such as in the medical field where cancer is left untreated or in the psychological fields such as an eating disorder. Thus the financial and emotional aspects of non-adherence both to the family as well as the public sector are immense.

2.3.3. Adherence to Treatment Recommendations

A few studies, but not enough have been published examining adherence to psychological treatment recommendations subsequent to psychological testing for children, a disturbing reality given that early psychological intervention is paramount in the prevention of severe psychopathology later in life (Carter, Briggs-Gowan, & Davis, 2004). Geffken et al. (2006) have found that virtually no systematic research has investigated how many recommendations made by child psychologists are actually followed or whether following through with the recommendations leads to improvements in symptoms or in psychosocial functioning. They suggest the possibility that some of the recommended interventions may

be of little value if parents do not or are unable to access them once they have been recommended.

Historically, research has focused on identifying and modifying factors that are associated with non-adherence to medical regimens. This research is necessary, given that approximately 50%–55% of chronically ill paediatric patients are non-adherent to their recommended medical treatment regimen (Rapoff, 1999). However, comparatively less research has focused on non-adherence to recommendations made by child psychologists following psychological testing. Studies that have examined adherence to medication and psychotherapy recommendations in inpatient and outpatient diagnostic testing settings have found that the estimated rate of non-adherence to psychological treatment recommendations for children who have participated in psychological testing is greater than 50% (Joost, Chessare, Schaeufele, Link & Weaver, 1989; King, Hovey, Brand, Wilson & Ghaziuddin, 1997). This suggests that over half of child outpatients are possibly non-compliant on treatment or have little opportunity for starting treatment which is recommended to them.

Patients with psychiatric illness typically have great difficulty following a medication regimen, but they also have the greatest potential for benefiting from adherence (Zygmunt, Olfson, Boyer & Mechanic, 2002). Olfson and colleagues recently noted that just less than half of patients discontinued their antidepressant treatment during the first 30 days and 72% had stopped within 90 days (Olfson, Marcus, Tedeschi & Wan, 2006). Rates of adherence among patients with schizophrenia are between 50 and 60 percent, and among those with bipolar affective disorder the rates are as low as 35 percent (Colom, Vieta, Martinez-Aran, Reinares, Benabarre, & Gasto, 2000; Lacro, Dunn, Dolder, Leckband, & Jeste, 2002; Perkins, 2002.). In a systematic review by Cramer and Rosenheck (1998), among patients with physical disorders, the mean rate of medication adherence was 76 percent, whereas among those with psychoses the mean rate was 58 percent, and among those with depression the mean rate was 65 percent.

The above studies relate specifically to medication, or medication and psychotherapy recommendations, while the found studies relating to *all* treatment recommendations made are discussed below.

In a significant study very apt to the current study, carried out in the USA, the factors which promote or hinder parents' adherence to recommendations from psychological assessment was explored (Yerdonek, 2010). A sample of 30 parents of children between the ages of 4 and 16 who received a psycho-educational assessment was used. It was hypothesized that rates of adherence would differ depending on recommendation type, presenting symptoms

at the time of referral, perceived number and difficulty of barriers, and strength of the relationship with the diagnostician. The study indicated that (1) there is no significant difference between percentage of adherence to recommendations for professional non-psychological services (i.e. any treatments outside of the psychological field) and those for psychological services and (2) that on average, participants completed active self-help recommendations 72% of the time, while the average percentage of adherence to school-based recommendations was 56%. This may indicate that the sample was actually more likely to complete active self-help recommendations than to complete school-based recommendations; however, this difference was not significant. Statistical analyses did not reveal significant relationships between recommendation type, presenting symptoms, or perceived barriers and adherence to recommendations. However a significant relationship was found between the relationship with the diagnostician and adherence (Yerdonek, 2010). The study is interesting since it indicates most importantly that adherence to treatment from psychological services does not seem to have a significant difference when compared to treatment from non-psychological services.

A study conducted in Canada investigated which aspects of psychological assessment services are important to parents of children with learning disabilities (Williams, 2003). Variables related to parent satisfaction with school psycho-educational assessment services, compliance with recommendations, and the relationship between these variables were investigated. Findings from this study indicated that 62% of parents surveyed reported complying with the school psychologist's recommendations, despite the fact that several were dissatisfied with the services provided. Significant positive relationships were also found between compliance and satisfaction. The overall results suggested that as parents' satisfaction with services increases, the likelihood of their compliance with the subsequent recommendations also increases (Williams, 2003). However we need to consider that this study was carried out at a specific school thus indicating a possibility of all services being provided by the school. It would be interesting to see the statistics of parental compliance where all services are not gathered at the same institution.

In a similar study by Thibodeau (2006), carried out in an ADHD clinic, it was found that caregivers adhered to 81.5% of recommendations compared to the above study of 62%. However in this study parents were less likely to follow through on recommendations for psychological services (i.e. parent and child counselling) than to engage in self-help recommendations (i.e. parent education) and professional non-psychological services (i.e. consulting with a physician). A second study confirming these results was one by Dreyer et al. (2010) which looked at parental adherence to recommendations also carried out in an ADHD clinic. Eighty caregivers of children referred to an ADHD evaluation clinic completed a

telephone interview 4 to 6 weeks after receiving assessment feedback. The caregivers reported adherence to 81.5% of recommendations and were equally likely to engage in self-help recommendations (i.e., information on ADHD) and those for professional non-psychological services (i.e., medication consultation). It was found that caregivers were least likely to follow through on recommendations for psychological services (e.g., parental behaviour training, individual therapy for children with symptoms of anxiety/depression).

Contrary to this, the study by Yerdonek (2010) found there to be no difference between percentage of adherence to recommendations for professional non-psychological services and those for psychological services. The study by MacNaughton and Rodrigue (2001) found parental adherence to 67% of all recommendations, with the greatest adherence to those for non-psychological consultation (81% adherence) and the lowest adherence to psychological services (47% compliance).

It would be interesting to find conclusive evidence on this issue as people in general find it tougher to consult with psychological services than with non-psychological services, thus we would assume that parents would be more compliant following recommendations made for non-psychological services.

While there seem to be some studies, indicated above, looking at parents adherence to recommendations, it seem as though the scope of this is much broader. Within the juvenile court system mental health assessments are utilized in order to identify the complex treatment needs of juvenile offenders; however, implementation of the report recommendations also seems to be challenging (Johnson, 2009). In this study it was found that adherence to recommended interventions were very low for all youth. Barriers to recommendation adherence included lack of social support, unavailable services, and feelings that recommendations were inappropriate.

Adherence to psychological interventions and recommendations is generally low, but ranges widely from 40 to 70% (Brown, Border, & Cingerman, 1998). Non-adherence to psychological interventions may result from refusal to attend sessions, to participate during session, or to complete required assignments. Refusal to comply and participate in treatment typically results in attrition or removal from the program. For example, 50% of the juveniles in a sex offender program were lost to attrition, and an additional 22% of youth were expelled from the program for non-compliance (Orlando, Chan, & Morral, 2003). Youth who do not complete treatment are at higher risk for continued involvement in the legal system, recidivism, employment problems, interpersonal problems and minimized or ineffective treatment outcomes (Mateyoko-Scrivner, 2004). Additionally, delinquent youth are at high

risk for additional psychological difficulties including depression, anxiety, suicidal ideation and future hospitalization (Dierker, Nargiso, Wiseman, & Hoff, 2001).

When it comes to recommendation adherence, it seems as though studies carried out thus far differ in terms of statistics as well as types of services that people are more compliant with. In addition all of the studies discussed have been carried out internationally, thus opening up the gap for a study based in South Africa. Geffken et al. (2006) suggest that an investigation into other categories of barriers beyond those assessed in the above studies (e.g., access problems, financial problems, competing time or schedule demands, and negative attitudes/beliefs) may provide insight into the mechanisms through which non-adherence occurs. They state that in light of significant findings from MacNaughton and Rodrigue (2001), it is essential that researchers continue examining adherence at the point of initiation in the context of types of recommendations and barriers.

2.4. Factors involved in treatment implementation

There are many factors which may or may not influence parents to comply with treatment recommendations and although the list can be vast, we will discuss some of the known factors stemming from previous studies. Some studies have suggested that unmet mental health needs may be related to factors which include demographic features (gender, age, race), ethnicity, place of residence (location); economic factors (family income),access to health insurance, family factors (parental psychopathology, maternal educational level), family structure, academic factors (school grades), perceptions of mental health status and usefulness of mental health services, and barriers to access of mental health services (Pavuluri, Luk, & McGee, 1996; Hoberman, 1992; Jensen, Bloedau, & Davis, 1990; Hornblow, Bushnell, Wells, Joyce, & Oakley-Brown, 1990).

In addition to the above factors it is also found that parental stress, as well as family income, plays a key role in treatment adherence and may also play a key role in recommendation adherence (Andra & Thomas, 1998). In addition parents who terminate treatment prematurely were found to be younger, single, members of a minority group, and reported higher levels of stress. Early treatment termination was also found to be associated with minority status, poor living accommodations, family income, child contact with antisocial peers, poor adaptive functioning at school, and adverse family child-rearing practices (Kazdin & Mazurik, 1994).

In one study in the USA data was obtained from 1285 parent/ youth pairs to determine the extent of unmet needs for mental health services in community samples of children and

adolescents (Flisher et al., 1997). The results found that of the total sample, 17.1% had unmet mental health needs which they found was associated with economic disadvantage, opinions of the parents and children or adolescents that the latter had poor mental health; parental psychopathology; poor school grades; and parent-reported access barriers such as concern that the child would want to solve the problem unassisted, would refuse to attend mental health services, or would be hospitalized or taken away against the parent's will (Flisher et al., 1997).

In South Africa, Kagee (2004) suggests that barriers to adherence amongst historically disadvantaged rural patient populations are poorly understood and little research into treatment adherence has been conducted in rural and semi-rural community clinics in South Africa. Most South Africans from previously disadvantaged communities make use of primary health care clinics for their medical needs (McIntyre, 1998). Due to the country's history of racial discrimination, public hospitals and clinics are generally overcrowded, under-resourced, and understaffed (Mazibuko, Mckenzie, & Schneider, 1989). Moreover, competing demands on patients' time and resources create conditions under which adherence to medical recommendations is compromised. For example, funds to pay for medication, transport to and from clinics, and child care may not be readily available, leading to poor clinic attendance and non-compliance with medication regimens. Compromised health also has attendant consequences such as worker absenteeism and higher health care costs (Simoni, Fick, Lockhart, & Liebovitz, 2002), thereby placing further burdens on the nation's health system and economy.

A very relevant study by Pratt (1997) investigated compliance to recommendations following psychological assessment using four conditions – high information, prompting, providing incentives, and comparison control in increasing parental control. The results indicated that offering a reward to parents for compliance of a recommendation may be more effective than offering a small amount of extra information or prompting the parent once by phone. Although this study found that no significant socio-demographic predictors influenced parental compliance, other studies have found socioeconomic status, parental mental health, and perceived need to be factors related to compliance (Dunst, Leet, & Trivette, 1998).

One of the first direct examinations of parental adherence to the full range of recommendations for children made by psychologists following psychological testing was carried out by MacNaughton and Rodrigue in 2001. This pivotal study (one of the first studies found researching the current topic; formed the base for many future studies; and relates essentially to the current study) examined predictors of parents' adherence to recommendations made by psychologists after the evaluation of clinic-referred children.

Findings from this study indicated that the severity of the child's problem, parent's satisfaction with the child's psychological evaluation, and locus of control were not significantly associated with adherence. It was however found that the number of perceived barriers was the most salient predictor of adherence to recommendations, regardless of the type of recommendation (MacNaughton & Rodrigue, 2001). This indicates the significant influence of the sheer number of barriers on non-adherence; as the amount of identified barriers (regardless of the type of barrier) increased, rates of non-adherence also increased. These results are important to the current study as it suggests that even though we may determine what specific factors affect adherence, it may not be as important as finding out the *number* of factors which may affect adherence for each recommendation. Thus it makes no difference whether a barrier is seen as insurmountable or not, what matters is how many barriers there may be to traverse before accessing treatment.

Previous studies (Ackerman, Hilsenroth, Baity, & Blagys, 2000; Hilsenroth, Peters & Ackerman, 2004) have examined the interaction of the therapeutic alliance during the assessment phase of treatment. These studies refer to the person doing the psychotherapeutic treatment being the same person who assesses the patient and provides assessment feedback. The results have found that the psychological assessment process may impact the patient's experience of assessment feedback and aid in the development of a therapeutic alliance. The therapeutic alliance developed during the assessment was found to be related to an alliance early in psychotherapy (Ackerman et al., 2000). Although these studies do not specifically look at treatment adherence, it does suggest that patients are more likely to adhere to therapy when a strong therapeutic alliance is built as early as the psychological assessment phase, despite the feedback provided to the patient.

A study completed by Nordby, Kjonsberg and Hummelvoll (2009), which reviews the support of relatives to a patient with serious mental illness, gives strength to the above hypotheses. The study researched the active involvement of relatives in the treatment of a young family member. It was found that a good collaboration between relatives and staff is necessary to improve recovery and enhance the quality of lives for patients. A good encounter between the parties is characterized by sharing information, giving guidance and support according to the relatives' needs as well as addressing existential issues. This study illustrates what factors may be required for parents to become more involved in the treatment process of children.

In a study by Sullivan (1997) it was predicted that a positive interaction between the psychologist and parents at any time during the assessment process would increase parental follow through with recommendations. The study found a significant relationship

between these two aspects thus reiterating the necessity of a collaborative relationship between the assessor and the parent. In addition, Sullivan found a few significant results:

a. Information received from the psycho-educational evaluation had a positive effect on parents' understanding of their child's problems and feelings regarding their child's behaviour.
b. A positive interaction with the psychologist is related to perceived behaviour changes observed in the child on the part of the parent.
c. Perceived behaviour changes observed in the child were related to parents following the recommendations offered by the psychologist.

However there was no correlation found between parents not being able to understand the information presented and them following recommendations (Sullivan, 1997).

Aside from a good collaboration and the therapeutic alliance, effective communication throughout the assessment process and specifically during the post assessment feedback session has the goal of leading to a productive collaboration between parents and professionals on behalf of the child (Sullivan, 1997). This is particularly since parents are most often the ones responsible for implementing the recommendations, especially if these treatments are outside of the hospitals facilities.

A few studies have written about the role of feedback in adherence to treatments. Feedback, which seems to be the end of the assessment process, when used to convey recommendations to the parents after the assessment, also marks the beginning of the treatment process.

Smith, Wiggins and Gorske (2007) have stated that little is written about psychological assessment feedback methods and outcomes. They state that in addition to the limited research on common feedback practices, studies that assess the effects of psychological test feedback on variables related to client's treatment success are limited (Smith, Wiggins & Gorske, 2007). The results of their study indicate that 52% of the respondents perceived that the way in which feedback is provided usually enhances their motivation to follow recommendations. It was also found that most psychologists conducting assessments provide useful, in-person feedback and that the feedback is understandable and accurate. Thus clients feel motivated to follow recommendations as a result. However, in this study it was indicated that feedback most likely linked to information regarding the patient's personality and emotional status may be more difficult for clients to hear thus increasing the likelihood of uncomfortable feelings and rejection of the results during the feedback process

(Smith, Wiggins & Gorske, 2007). The above study focuses on the feedback process being a factor leading to the motivation to pursue treatment recommendations.

In a South African study by Knoetze and Vermoter (2007), it is reiterated that an often neglected part of the assessment process is the communication of assessment results. Wise (1989) strongly emphasises this aspect and points to the psychologist's responsibility not only to propose practical and pragmatically executable conclusions and recommendations, but also to mediate the implementation of recommendations. Because the assessment report provides such vital information, it is important to take into account the status of the person who is to receive the information, both in terms of general education level and in terms of that person's knowledge about psychology and psychometric testing (Anastasi & Urbina, 1997). These considerations are particularly important in light of the fact that children are not self-referred (Knoetze & Vermoter, 2007). Because parents are often the people who bring the child in for assessment, they are usually the ones who receive the feedback and assessment report for implementation of recommendations. Thus the role of the parent has become a vital part in the assessment process, particularly in their role in the practicalities for providing treatment.

An alternative study confirming the role of feedback in the assessment process was carried out by Finn and Tonsager (1997) who examined the impact of a collaborative sharing of psychological assessment test results with patients awaiting therapy. They reported that those patients who received collaborative test feedback showed a significant decline in symptomatic distress and a significant increase in self-esteem compared to patients who did not receive test feedback.

The conveying of feedback either during the assessment process or at the end in providing results to clients seems to be an important part of the assessment process, however a process which is sometimes neglected or omitted altogether (Tharinger et al., 2008; Ward, 2008). In addition to verbal feedback, the written report, which is a form of feedback, should provide clear and concrete recommendations (Sweet, 2008; Ward, 2008). It is emphasized that there should be practical recommendations that are specific which still needs to be conveyed during a verbal feedback session for parents to absorb and initiate the necessary interventions. The psychological assessment report is often written at a level that is above that of the average reader, indicating that many important facts may not be understood by parents when making treatment decisions for their child (Sullivan, 1997).

When pulling all the available research together we notice that despite the above trends, there are no found studies in South Africa examining the follow-up practices of patients,

particularly parents of children who complete psychological assessments, subsequent to them receiving recommendations for treatment, whether it is in the form of verbal or written feedback. It is unclear what percentage of parents follow through on treatment recommendations, and which of these treatment recommendations parents are more likely to put into practice for their children.

2.5. Conclusion

When it comes to assessing a child, parents are the ones responsible for implementing the recommendations of the evaluation, particularly if such recommendations involve additional services outside those provided by the hospital or clinic which they attend. Despite the expansive literature on adherence to medical recommendations and treatments, very little research has been conducted on the degree to which parents adhere to psychologists prescribed recommendations made on behalf of their children (Pinto, 2002).

The purpose to present this research is to fill the void in the literature. It is worthwhile to find out from this study as to the reasons why parents may not follow up on treatment recommendations so as to act on the information provided to better allow children access to these treatment services. A better understanding of the factors that differentiate parents who adhere to recommendations made through the psychological assessment from those who do not adhere can assist in developing treatment interventions which are better suited to maximise adherence.

Chapter 3
Research Methodology

3.1. Introduction

In this chapter the methodology used to determine parents adherence to treatment recommendations and the factors influencing them will be discussed. Shaughnessy and Zechmeister (1997, p. 451) explain the method to be "describing in detail how the study was conducted. Such a description enables the reader to evaluate the appropriateness of your methods and reliability and the validity of your results." The methodology specifies how the researcher may go about practically studying whatever he or she believes can be known (Terre Blanche & Durrheim, 1999).

3.2. Mixed Methods Research

Considering that this research is concerned with gaining information regarding whether parents follow up on recommendations provided to them and the various reasons which may impede on their follow through, the most appropriate format would be a mixed method design, combining the quantitative and qualitative approaches.

In a quantitative study data is collected in the form of numbers; possibly from many participants from many research sites; or by sending or administering instruments to participants. The intention is to ask closed-ended questions that test specific variables that form hypotheses or questions (Creswell & Plano Clark, 2007). The findings from a quantitative study are mainly the product of statistical summary and analysis (Shaughnessy & Zechmeister, 1997). The collection of data in a qualitative study is done using words and images; from a few participants at a few research sites; or by studying participants at their location. Qualitative data is analysed through text or image analysis; by identifying themes; or through larger patterns or generalisations (Creswell & Plano Clark, 2007).

According to Bergman (2008), mixed methods research is the combination of at least one qualitative and at least one quantitative component in a single research project or program. Because mixed method designs incorporate techniques from quantitative and qualitative research traditions, they can be used to answer questions that could not be answered in any other way (Mertens & McLaughlin, 2004). Morse (2002) states that the advantages of using mixed methods is that we are able to broaden the dimensions and hence the scope of our

project. By using more than one method within a research study, we are able to obtain a complete picture of human behaviour and experience. By using the mixed method approach in this study, we not only gain information regarding numbers and percentages of parents following specific recommendations but also understand the factors influencing parents in providing treatments for their children. Thus we are able to achieve our research goals more efficiently and effectively.

3.3. Research Design

As mentioned, the research process of this study consisted of 2 parallel phases of data collection. Figure 3.1 provides a schematic overview of the research process, followed by a discussion of the various components.

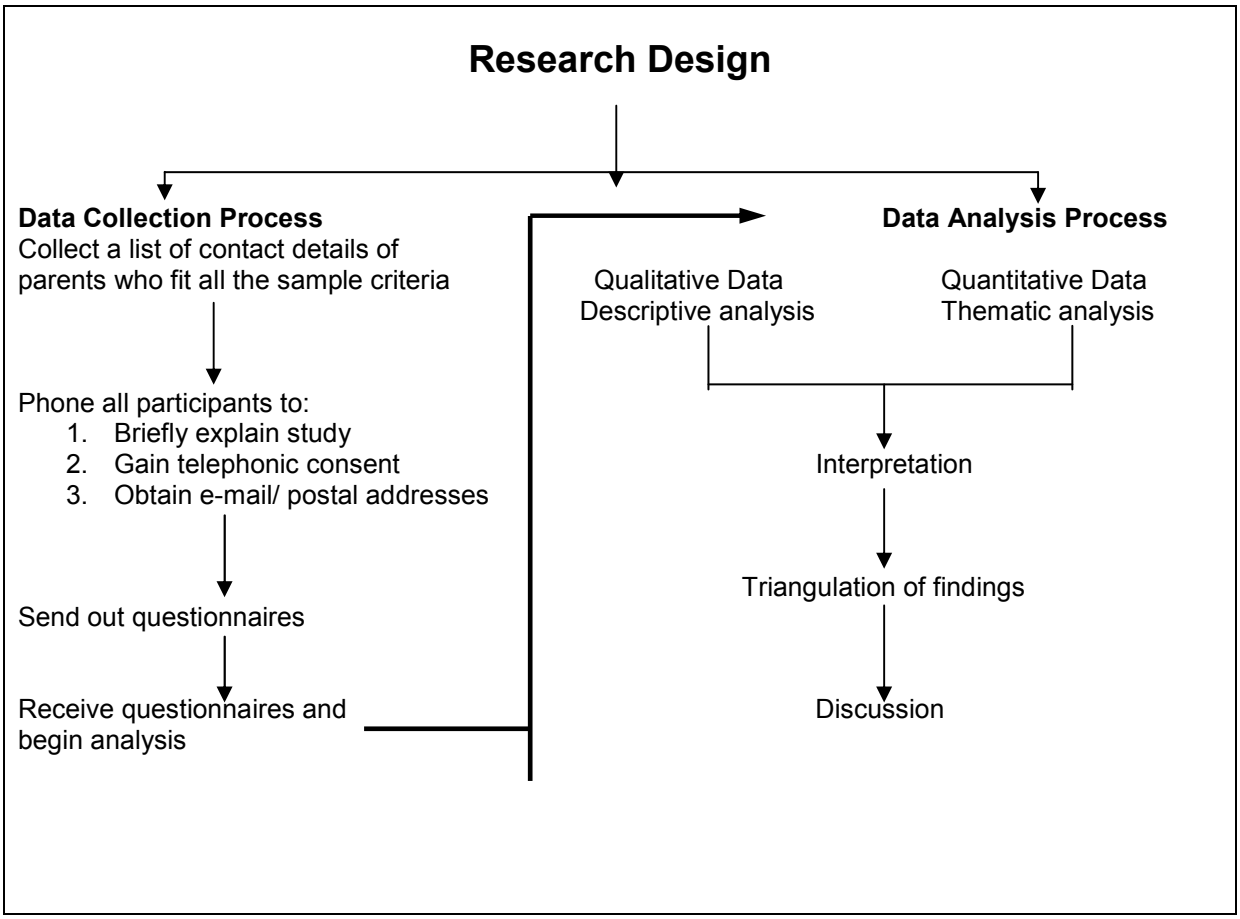


Figure 3.1 Schematic presentation of the research process

Adapted from the model by Hinckley (2005).

The mixed methods approach is one which combines the qualitative and quantitative approaches, in this case within a single study. Within the mixed methods design, qualitative

and quantitative data collection can occur in parallel form (in which two types of data are collected and analyzed concurrently) or sequential form (in which one type of data provides a basis for collection of another type of data) (Mertens & McLaughlin, 2004). The intention of this study is to use a questionnaire method of gathering all data, then separate it into the quantitative and qualitative data, and analyse it separately. Once data analysis is complete, information will be combined and the interpretation of the entire analysis will commence. This method is confirmed by Onwuegbuzie and Teddlie (2003 p. 351), where they state that "in a parallel mixed methods design, in which quantitative and qualitative data are collected at the same time, the data analysis occurs *after* all of the data have been collected."

As such within the initial part of the research, a quantitative approach was employed to determine the rate of parents who follow through on recommendations provided, and the extent of follow through on the various recommendations. A qualitative approach was used for the second section of the research which is to establish the various factors which influence the likelihood of parents providing their children with the recommended interventions.

3.3.1. Selection of participants (sampling)

Sampling involves decisions about which specific people, settings, events, behaviours and/or social processes to observe. Within the descriptive method, researchers will usually select participants from particular populations, thereby declaring an intention to generalise (Terre Blanche & Durrheim, 1999). Since the study being conducted is aimed specifically to parents of children who have been psychodiagnostically assessed, choosing a sample from this particular population was used.

Within the Johannesburg region, the two chosen psychiatric children wards within the public sector are situated in the Chris Hani Baragwanath Hospital and Tara H. Moross Psychiatric Hospital. Psychiatric hospitals are the principle setting in which psychological assessments are carried out and it is the principle setting in which many health professionals receive a significant portion of their training early in their careers (Hurt, Reznikoff, & Clarkin, 1991).The public and private sectors may vary in terms of their adherence to recommendations provided and their reasons for non-adherence may differ as well. The public sector would include private patients as well or those who may afford to continue with treatment in the private sector. This sector is therefore most representative of generalising within the population.

Purposive sampling techniques are primarily used in qualitative studies and mixed methods and may be defined as "selecting units (e.g., individuals, groups of individuals, institutions)

based on specific purposes associated with answering a research study's questions" (Teddlie & Yu, 2007, p. 77). Thus in purposive sampling, the sample units are chosen because they have particular features or characteristics which will enable detailed exploration and understanding of the central themes which the researcher wishes to study (Ritchie & Lewis, 2003). Since this study aims to explore specific themes related solely to parents of children who have been assessed psychologically, using purposive sampling seems apt.

The sample in this study consisted of thirty parents who met these specific characteristics.

- Adult Parents/ Legal Guardians/ Caregivers (named parents herewith for the purposes of this study) with children having been psychologically assessed between the ages 7 to 14 years. An age limit of 14 years has been included since children below 14 require parental consent for a psychological assessment to be completed.
- Participants are restricted to the parents of children who were outpatients at the hospitals. Children who are inpatients are within the treatment system thus the hospitals are responsible for arranging the treatments for the child.
- Males and females were used for both the children who were assessed as well as parents who were the actual participants. The research aim in this study seeks to understand from all genders the levels of adherence to recommendations, and has no need to restrict caregivers according to their gender.
- English speaking parents to ensure that the meaning behind the questionnaire is not lost in translation. English speaking parents were assessed through their ability to maintain and understand the initial telephonic conversation, as well as being asked telephonically if they are able to read and write English.
- Parents who have had a child/ children psychologically assessed at the above mentioned facilities between January 2009 and December 2010. These dates were chosen for the following reasons:
    - Parents are better able to recall the factors which made it possible/ difficult for them providing treatment to their children.
    - Parents are provided with enough time to date of conducting the research to have taken steps in implementing the recommended treatments.
- Due to there being an extremely low response rate for mailed questionnaires, sometimes as low as 10% (Bailey, 1994); parents were initially given a phone call to explain the study, to assess if they meet the criteria, and to gain telephonic consent. In this call postal and e-mail addresses were obtained.

Table 3.1.below indicates the numbers of possible participants:

Table 3.1. Number of possible participants

	No of parents meeting criteria	No of questionnaires sent out **	Total number of responses	Total Shortfall
Tara Hospital	90	50	30	181
CHBH	121	45		

** Although there were 211 parents who met criteria for participation, 116 of these parents' contact details were incorrect while less than 10 of these did not agree telephonically to participate in the study. Hence the small number of questionnaires being sent out.

Figure 3.2 below is a graph detailing the number of questionnaires sent, the total percentage of responses received and the percentage of shortfall of participants.

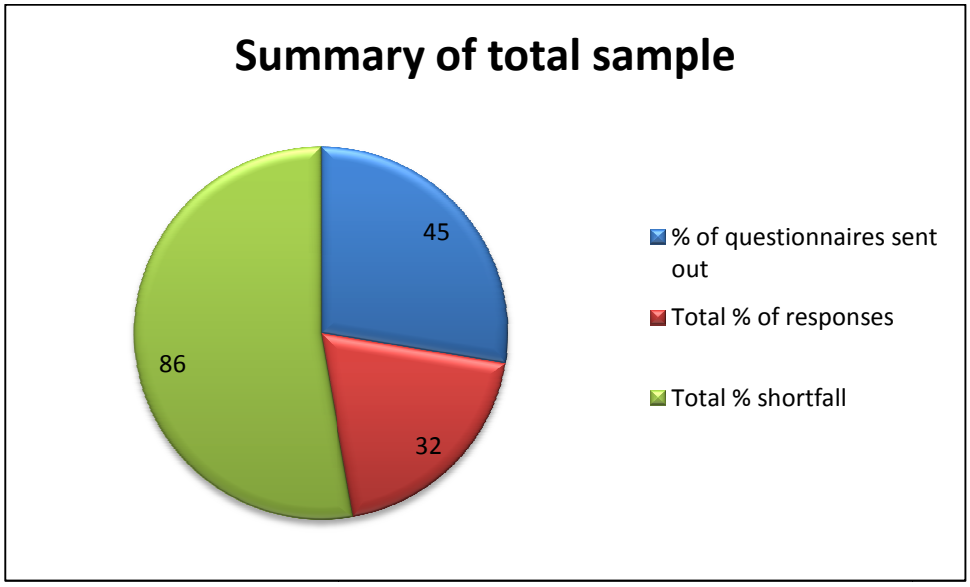


Figure 3.2 Summary of the total sample

3.3.2. Measurement instruments

A questionnaire can be defined as a group of written questions used to gather information from respondents, and is regarded as one of the common tools for gathering data in the social sciences (Vogt, 1993). When it comes to data collection strategies the concurrent use of open and close-ended items on a single questionnaire and the sequential use of an open-ended questionnaire and a close-ended questionnaire in a single research study are examples of *intramethod mixing.* Intramethod mixing is defined as "the concurrent or sequential use of a *single* method that includes both qualitative and quantitative components" (Johnson & Turner, 2002, p. 298).

The questionnaire used for this research included demographic information of each participant and their children, a list of close-ended questions aimed at answering the quantitative aspects of the research question, and a series of open-ended questions exploring the factors which may influence parents, better known as the qualitative aspects of the research questions (see appendix 1).

The questionnaire method was chosen for a two reasons:

1. Many of the participants, particularly those attending the CHBH are from lower income communities where both transport and financial resources are not easily available. The postal/ e-mail questionnaire would allow them to not use any of their personal resources to participate thus saving them the money for other necessities and presuming a higher rate of participation.
2. The questionnaire method is timeous, convenient and accesses a higher number of the population than many other methods.

Disadvantages of the questionnaire method:

1. The rates of non-participation were high (68%).
2. Conducting a telephonic interview may have allowed for a higher participation rate and possibly also mean less expenses than postal questionnaires. This is since out of 95 questionnaires being sent out 65 of these were unreturned thus the financial aspect of these unreturned questionnaires would have been saved.

3.3.3. Data Collection Procedures

The following provides a brief guide on the process followed for the study:

Step 1: Received approval from Tara and CHB Hospitals to conduct the research through their facilities.

Step 2:

- Researcher checks through appointment diaries for all assessments completed between January 2009 and December 2010.
- Researcher obtains parent contact details of all children within the 7-14 year age range.
- Phones one of the parents within the household where the child resides to explain the research, gain telephonic consent and obtain postal or e-mail addresses.
- Sends questionnaire and consent forms (appendix 2) via e-mail or postal delivery. A stamped, addressed envelope was included in all postal questionnaires.

Step 3: Receive all questionnaires and separate data into qualitative and quantitative. Keep on file consent forms.
Step 4: Quantitative data is analysed with the help of a statistician while still maintaining confidentiality.
Step 5: Self-analysis of the qualitative data.

3.3.4. Data analysis

Considering that the study is a mixed method design, the analysis proceeded separately for both quantitative and qualitative data, and thereafter the information was compared and integrated in the interpretation (or discussion) stage of the research.

To analyse quantitative data in this study, a descriptive perspective is used. Descriptive research, according to Mitchell and Jolley (2001, pg. 426) is “relatively straightforward because to describe behaviour, all you need to do is measure variables”. The key aim of descriptive research is to describe (Terre Blanche & Durrheim, 1999). At the most primitive level of describing behaviour, only a single variable needs to be measured, such as counting how many times something happens. At a more sophisticated level of description, the original variable and several other variables need to be measured to see if they are related. Thus descriptive research quickly progresses from describing a single variable to describing relationships among variables (Mitchell & Jolley, 2001).

Descriptive studies aim to describe phenomena accurately either through narrative-type descriptions, classification, or measuring relationships. It can also vary from describing a single variable to describing relationships among variables. This method allows for free discovery into whatever relationships exist between whatever variables are being explored (Mitchell & Jolley, 1992).

In considering that within the quantitative section, it will be a descriptive study, basic descriptive statistics will be used such as frequencies, means and correlations. Where necessary, contingency tables will be constructed in order to compare the relationship between two categorical variables. A loglinear analysis will be done to determine the influence of a number of categorical variables on cell frequencies. The various responses from the questionnaire will be sorted into categories according to their similarity across variables.

In the second section, involving the qualitative data, thematic analysis, a process to be used with qualitative information, is to be employed. Thematic analysis is a process for encoding

qualitative information and allows for the translation of qualitative information into quantitative data, if that is required by the study (Boyatzis, 1998). The encoding in this study will take place in the form of themes which refers to a pattern found in the information that at minimum describes and organises the possible observations and at maximum interprets aspects of the phenomenon (Boyatzis, 1998).Once the central themes have been identified, we will thereafter look for interconnectedness among these themes both vertically and horizontally. Thematic analysis is thus a method for identifying, analyzing and reporting patterns (themes) within data (Braun & Clarke, 2006).

Braun and Clarke (2006) have provided a guide through the six phases of analysis, summarized in Table 3.2.

Table 3.2. Phases of thematic analysis

Phase	Description of the process
1. Familiarizing yourself with your data:	Transcribing data (if necessary), reading and re-reading the data, noting down initial ideas.
2. Generating initial codes:	Coding interesting features of the data in a systematic fashion across the entire data set, collating data relevant to each code.
3. Searching for themes:	Collating codes into potential themes, gathering all data relevant to each potential theme.
4. Reviewing themes:	Checking if the themes work in relation to the coded extracts (Level 1) and the entire data set (Level 2), generating a thematic 'map' of the analysis.
5. Defining and naming themes:	Ongoing analysis to refine the specifics of each theme, and the overall story the analysis tells, generating clear definitions and names for each theme.
6. Producing the report:	The final opportunity for analysis. Selection of vivid, compelling extract examples, final analysis of selected extracts, relating back of the analysis to the research question and literature, producing a scholarly report of the analysis.

Once the results of the two data sets are completed, they need to be integrated in such a way that the essence of the study is brought forth. This is completed by means of triangulation.

3.3.4.1. Triangulation

When using a mixed method in a study, one of the key factors to consider is how the data will be integrated and at which point in the process will this integration take place. Creswell and Plano Clark (2007) states that a study that includes both qualitative and quantitative methods without explicitly mixing the data derived from each is simply a collection of methods. The procedures available for mixing the two sets of data include merging the data, embedding the data within each other or connecting the data (Creswell& Plano Clark, 2007).

The design used in this study is known as the Triangulation Design-validating quantitative data model (Creswell& Plano Clark, 2007). In this mixed methods design both types of data are collected concurrently from a survey and the intent is to use qualitative information to validate the quantitative results. Both sets of data are given equal weighting with the merging of the data occurring during the interpretation or discussion phase of the research. The rationale for this approach is that the quantitative data and their subsequent analysis provide a general understanding of the research problem. The qualitative data and their analysis refine and explain the statistical results by providing the factors which explain the quantitative results (Creswell& Plano Clark, 2007).

3.4. Conclusion

The current chapter focused on the research method and design to provide the reader with a comprehensive idea on how the study was carried out from start to finish. There are various ways in which research is conducted but this particular study used a mixed method, combining qualitative and quantitative methods and means of analysis with the aim of answering the research question and fulfilling the purposes of the study.

Chapter Four

Quantitative Results

4.1. Introduction

The quantitative results of the study, collected by means of a questionnaire (see appendix 1) included three sections – demographic information, assessment details and the details of the recommendations provided. Of the total sample we had thirty participants who completed the questionnaire completely.

4.2. Results: Demographic and Assessment Distributions

The quantitative results are illustrated by using graphs, beginning with the demographic and assessment distributions as shown from Figure 4.1.

In figure 4.1 the distribution of the sample's age is given. It can be seen that 50 % of the sample fell in the 30 to 40 age category, possibly indicating more maturity and participants probably being experienced parents. Some (26%) fell in the 40 - 50 age category. Thus the ages of the participants range mostly from 30 to 50 years. There were at least 4 persons (14%) younger than 30 years old and what is interesting is that 2 of these were younger than 20 years old. The three persons older than 50 are probably care givers although it depends on the age of the children. The children's age distribution can be seen in Figure 4.8.

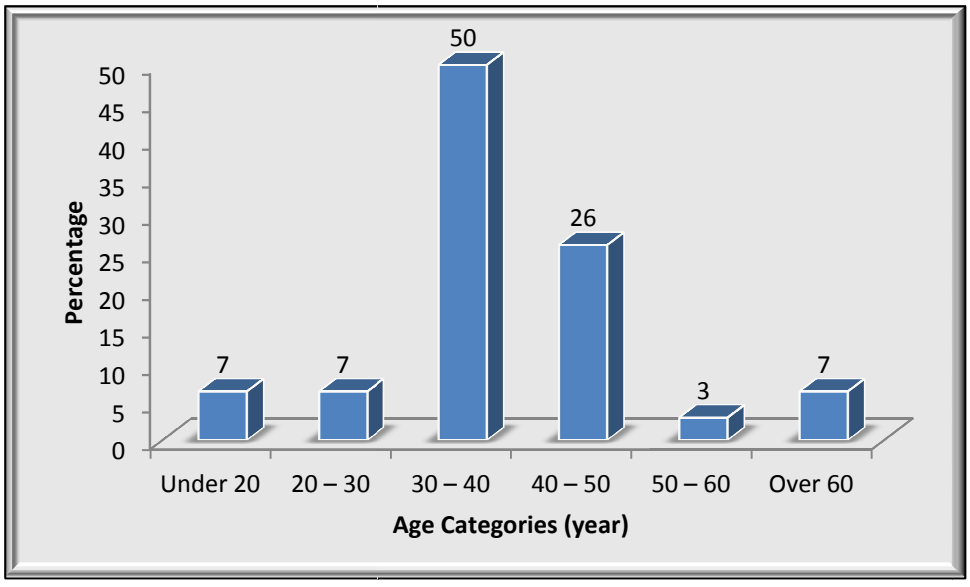


Figure 4.1 Age distribution of sample

Figure 4.2 shows that the majority of the participants were Black (70%) with 20% of White participants in the sample and 10% being Indian.

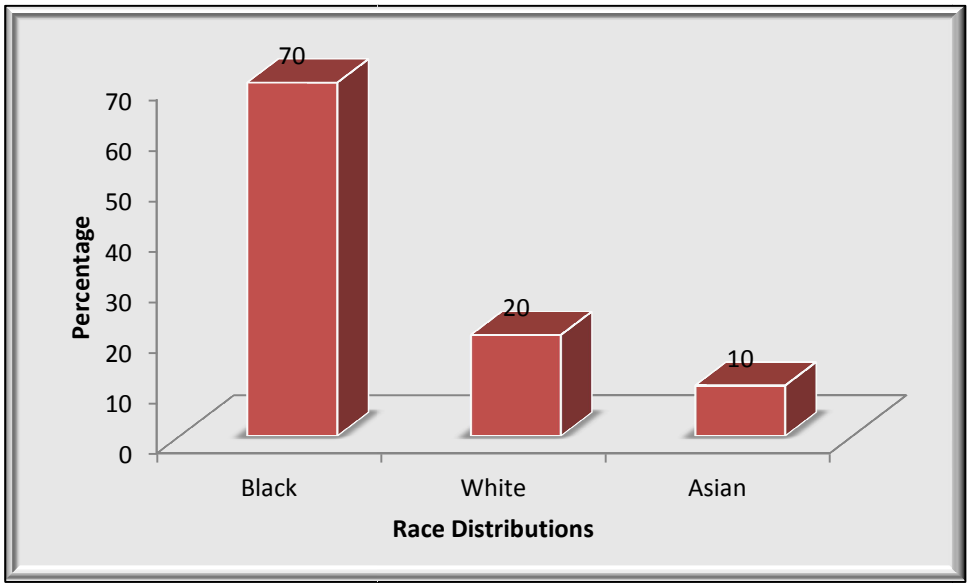


Figure 4.2 Race distribution of sample

Figure 4.3 below shows the marital status distribution of the total sample with almost half (47%) of the participants being married and 53% unmarried. While 43% are single parents (26% never married and 17% divorced), 7% are widowed and one person has a live-in partner. This indicates that half of the caregivers are currently single parents. It is unclear whether they were single at the time of the child's assessment however it makes the researcher wonder whether being a single parent makes it more difficult for parents to follow through with the recommended treatments.

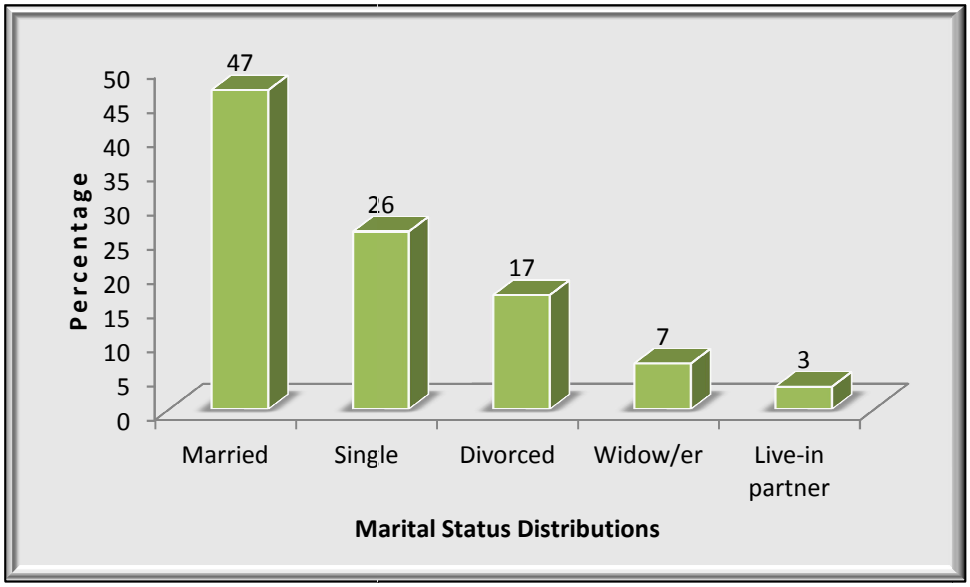


Figure 4.3 Marital Status

Figure 4.4 shows the employment status of the sample. 54% of the sample works full-time while 13% are employed part-time. Of the 30 participants 33% are not employed. There seems to be a relationship between employment status and adherence to treatment which will be discussed in Chapter 5.

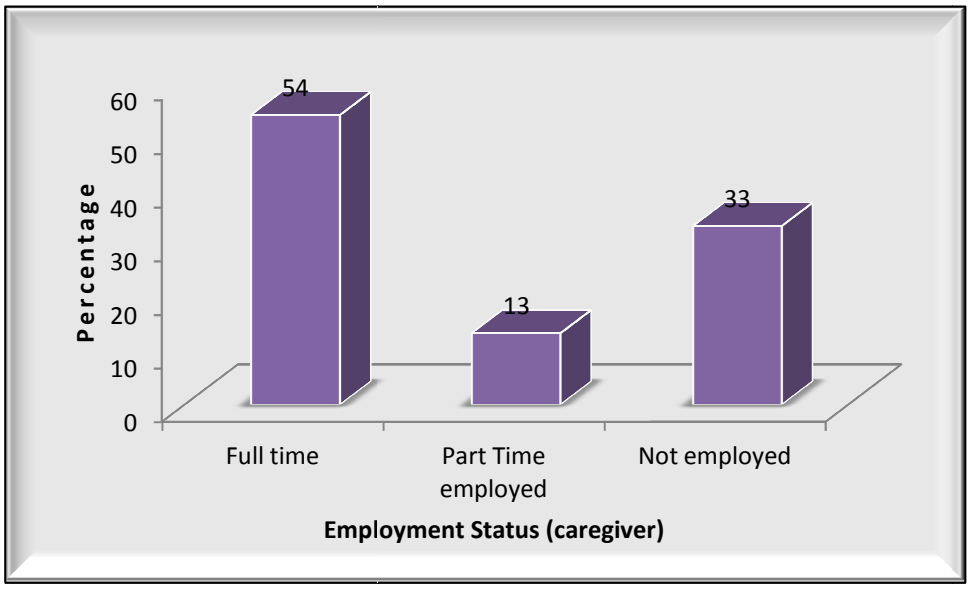


Figure 4.4 Employment status

Figure 4.5 provides information on the daytime caretaker of the child. Half of the children are cared for by their mothers while the other half have a fairly even distribution between the domestic worker, daycare, a family member and the school, with one child being looked after by the live-in partner. Of the sample, 7% did not respond as to who looks after the child during the day.

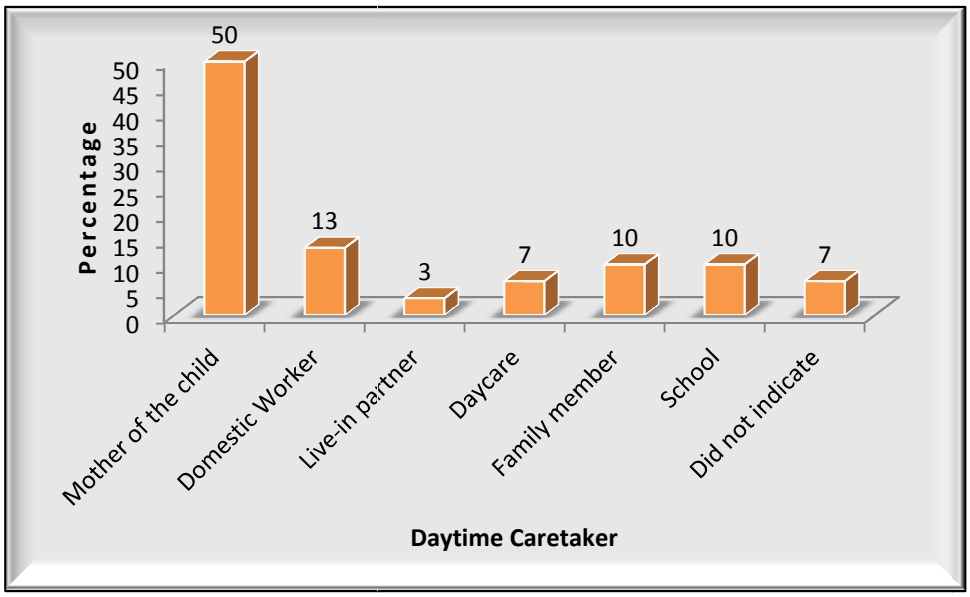


Figure 4.5 Daytime caretaker for child

The gender distribution of the children is illustrated in Figure 4.6. Of the 30 participants, 18 (60%) of the children were male and 40% were female.

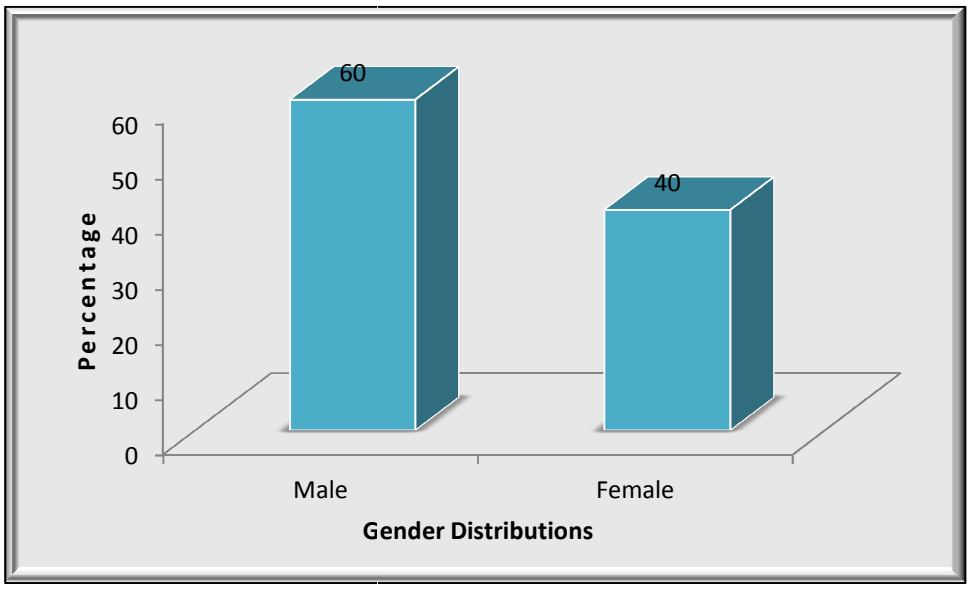


Figure 4.6 Gender distribution of the children

Figure 4.7 shows the relationship of the children to their siblings. Of the total sample ninety percent of the children had siblings while ten percent didn't. Of this ninety percent however, seven percent did not respond as to the relationship between the siblings. Almost half of the children (47%) are the youngest children in the family. Only 1 child (3%) is the middle child while thirty three percent of the children are the eldest.

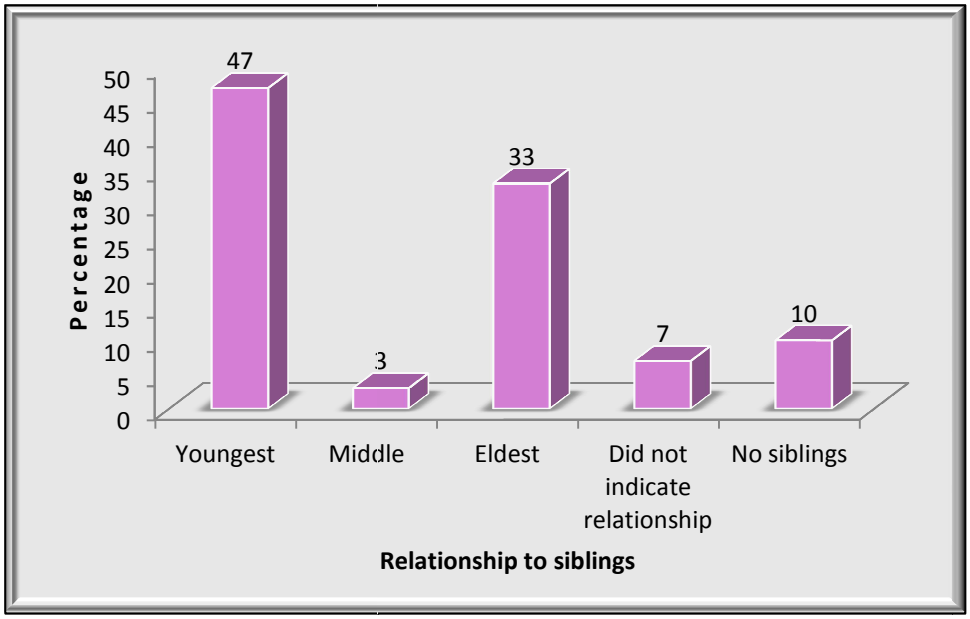


Figure 4.7 Relationship to siblings

Figure 4.8 shows the age distributions of the children at the time the assessment was conducted. Majority of the children (50%, n = 15) were between 7 and 10 years old indicating that they were still at the start of their schooling years. There were four children under 7 years (13%) while the rest of the 37% were between the ages of 11 and 16 years.

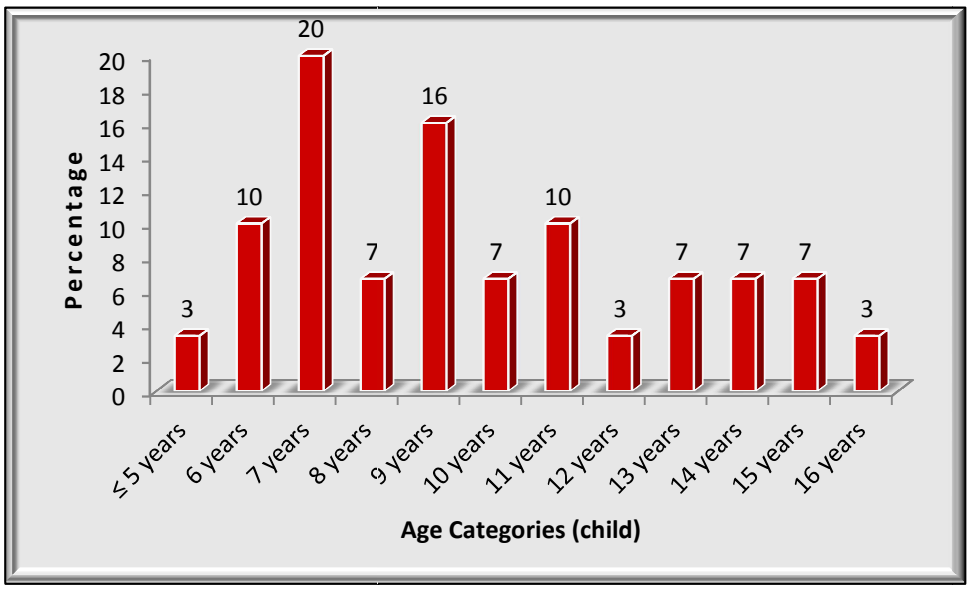


Figure 4.8 Age distribution of child at the time of assessment

In Figure 4.9 we see the grade distribution of the child at the time that the assessment took place. The graph shows that 10% of the children had not began school, 17% were in grade 1, 13% in grade 2 and 23% of the children were in grade 3. The response for 1 child was missing while the rest of the 34% sample was fairly evenly distributed between grades 4 to grade 8.

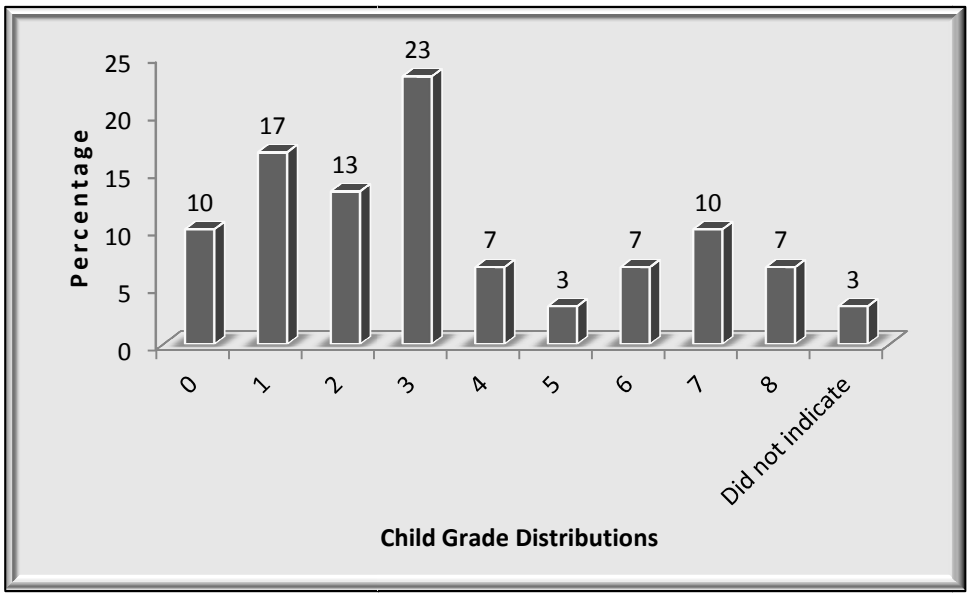


Figure 4.9 School grade distribution at the time of assessment

Although the questionnaires were sent to an unequal distribution between the 2 hospitals, the final response from participants were distributed evenly between CHBH and Tara H.Moross hospitals, as seen in figure 4.10 below.

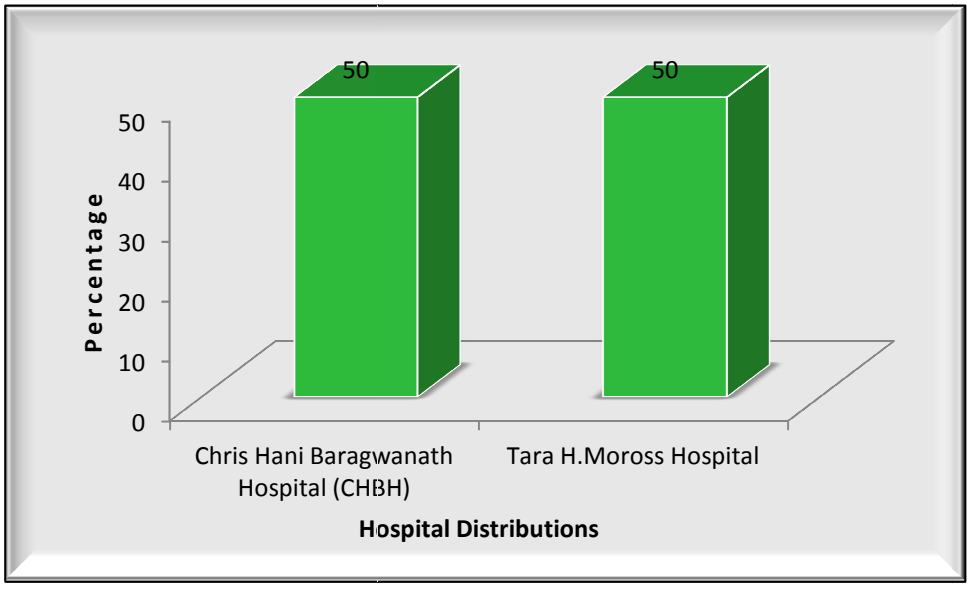


Figure 4.10 Distribution between the 2 hospitals

4.3. Results: Recommended Treatment Statistics

In this section, the categories listed in the graphs have been slightly changed from those reflected in the questionnaire. Firstly, some participants indicated that the child's treatment was still continuing so a category was created for this (treatments still continuing). Next the category known as "recommendations started" was discarded since all treatments falling under "treatments still continuing", "started but not completed" and "treatments fully completed" are from the discarded category.

Note in this section the graphs are in numbers of each treatment as opposed to percentages.

Figure 4.11 indicates the adherence or non-adherence to the treatments on the whole. In total, 87 treatments were recommended to the 30 children who were assessed. From the 87 treatments recommended only 30 have been completed while 24 were not started at all. Nineteen of the treatments were started but stopped prior to completion and 14 treatments are still continuing. The reasons for the gap between recommended treatments and completed treatments are discussed in the qualitative results to follow.

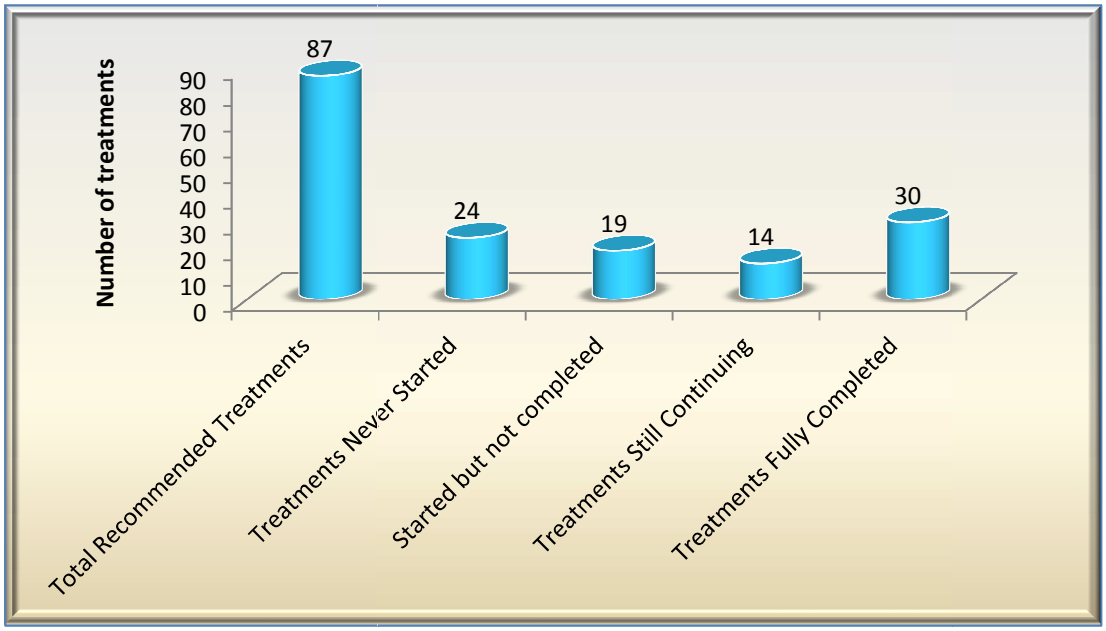


Figure 4.11 Compliance to Treatment Totals

The total recommended treatments include the following individual treatments (explained in chapter one):

- Play Therapy
- Parent Counselling

- STEP Program (Systematic Training for Effective Parenting)
- Remedial School
- Remedial Class
- Special School
- Occupational Therapy
- Social Work
- Medical Treatment (Includes consulting with a psychiatrist and medication)
- Speech Therapy
- Home Schooling

Figure 4.12 to 4.16 shows the rates of recommendations and adherence to the individual treatments.

In Figure 4.12 below, the total number of recommended treatments is split according to the individual treatments. The most highly recommended treatment is medical, most likely to be medication or recommendations to see a psychiatrist. Thereafter out of the 30 children, 17 of the parents were recommended to attend parent counselling and 13 children to attend play therapy. Twelve of these children were recommended to attend a remedial school and 9 for occupational therapy. The rest of the 13 treatments were distributed between attending the STEP program, being placed in a remedial class, being placed in a special school, having social work intervention, speech therapy and one child was recommended to do home schooling. The next few figures will indicate which of these recommended therapies were complied with and which not.

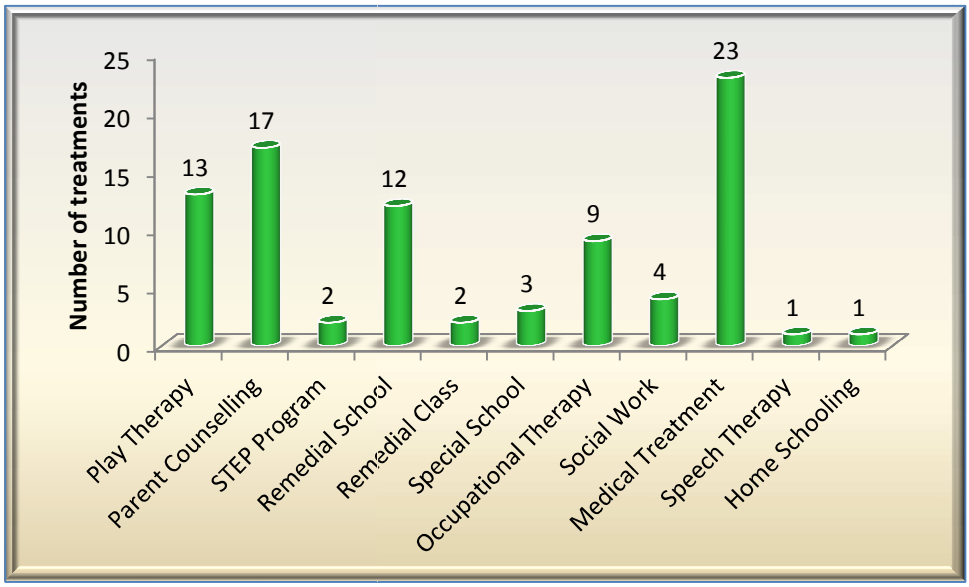


Figure 4.12 Totals for each recommended treatment (Total recommended treatments)

In Figure 4.13 the rates of children who did not begin the recommended treatments are shown. It can be seen that 12 children were not placed into remedial and special facilities even though it was recommended prior to December 2010. Four sets of parents had not initiated parent counselling while 3 children did not begin occupational therapy. The other 5 treatments not started were medical, play therapy, attending the step program and social work intervention.

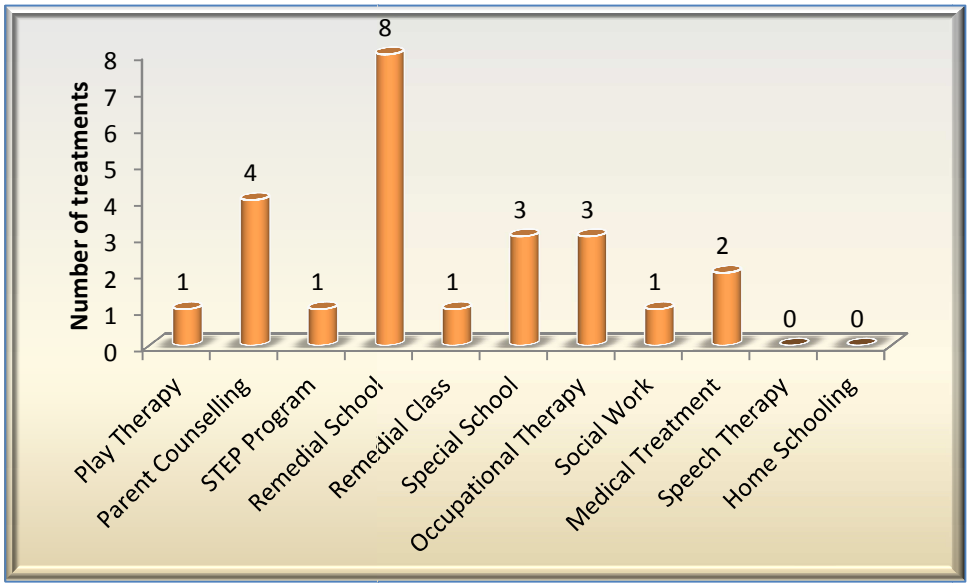


Figure 4.13 Rates of non-adherence to treatments (Treatments never started)

Figure 4.14 indicates the rates of children who began treatment but stopped it prior to completion for various reasons. It can be seen that 8 sets of parents stopped parent counselling, 7 of the children's' medical treatment was stopped while 3 children stopped play therapy. One set of parents began the STEP program but stopped this prior to completion. In Figure 4.12 we see that the STEP program was recommended only to 2 parents and none of these 2 have adhered to the treatment completely.

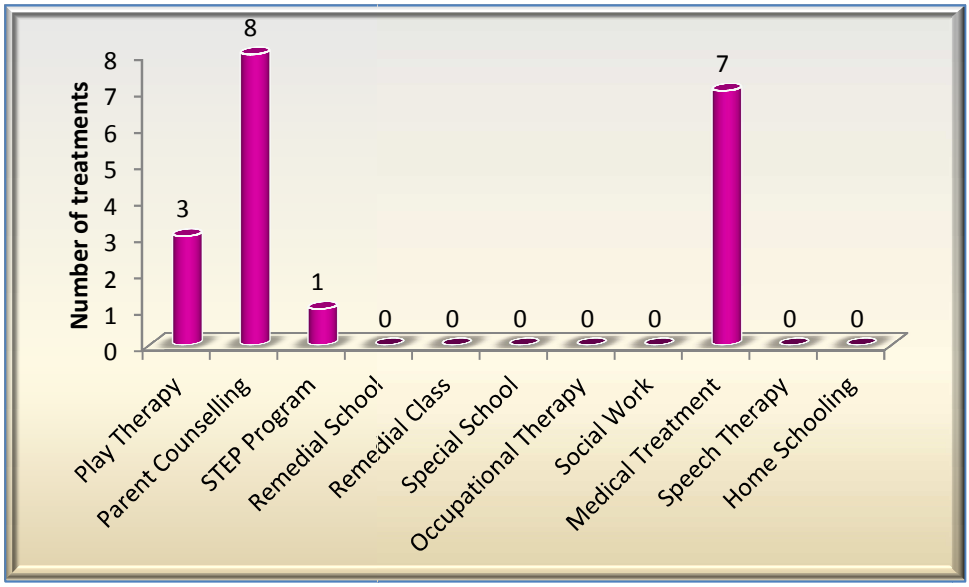


Figure 4.14 Rates of non-completion of treatment (Started but not completed)

In Figure 4.15 the rates of children and parents still continuing treatment can be seen. Seven children are still currently taking medication, while 2 are continuing occupational therapy and 2 are continuing play therapy. The last 3 are evenly distributed between parent counselling, remedial school and home schooling.

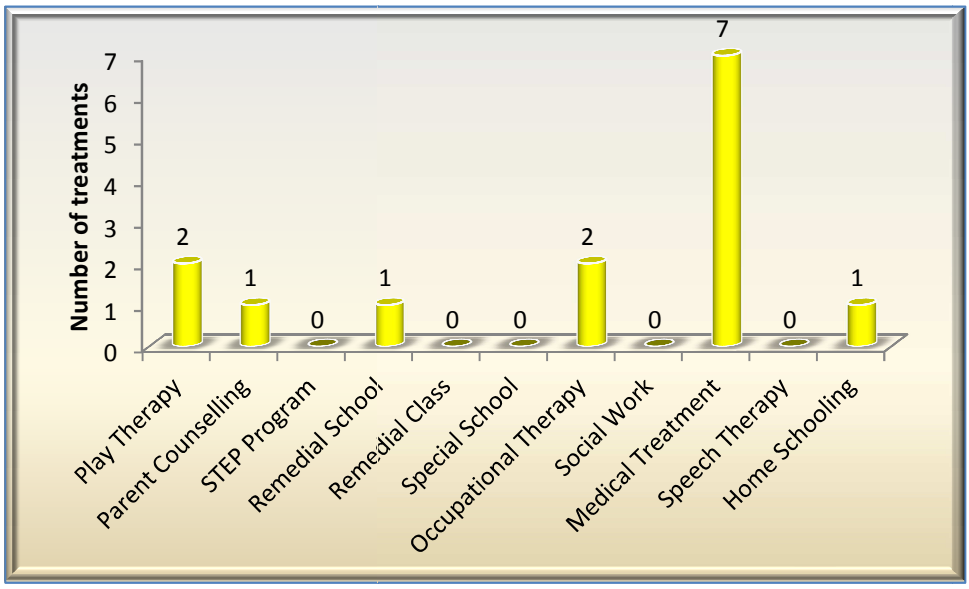


Figure 4.15 Rates of treatments still in progress (Treatments still continuing)

Figure 4.16 shows the treatments which have been completed in full by children and parents. The highest rates are for play therapy (7) and medical treatment (7). In addition, 4 parents have completed parent counselling and 4 children have completed occupational therapy. Three have been placed in remedial school and 3 had social work intervention. One child was placed in a remedial class with 1 child having completed speech therapy.

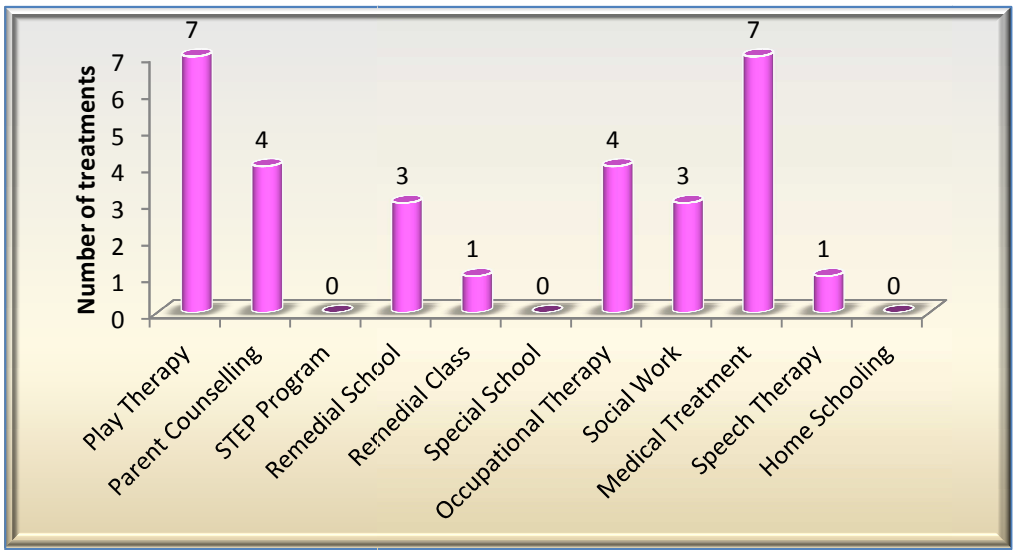


Figure 4.16 Rates of treatment completion (Treatments fully completed)

Figure 4.17 shows the adherence rates separately for each of the hospitals. Full adherence includes those participants who fully completed all recommended treatments. Participants whose treatments were divided between fully completed and still continuing treatments fall under part adherence. Those participants who did not start any treatments or stopped them prior to completion fall under the no adherence category in the below graph. The total participants per hospital were split equally (15 each) while the total adherence rate for both hospitals equalled 8 participants. The part adherence for both hospitals equalled 12 participants while total non-adherence was 10. This figure below illustrates that Tara Hospital has a higher full adherence rate (7) and a lower non-adherence rate (4). Baragwanath Hospital has an exceptionally low full adherence rate (1) while they have a high part adherence rate, with 8 participants following through on some of their therapies completely. Their non-adherence rate is 6 participants.

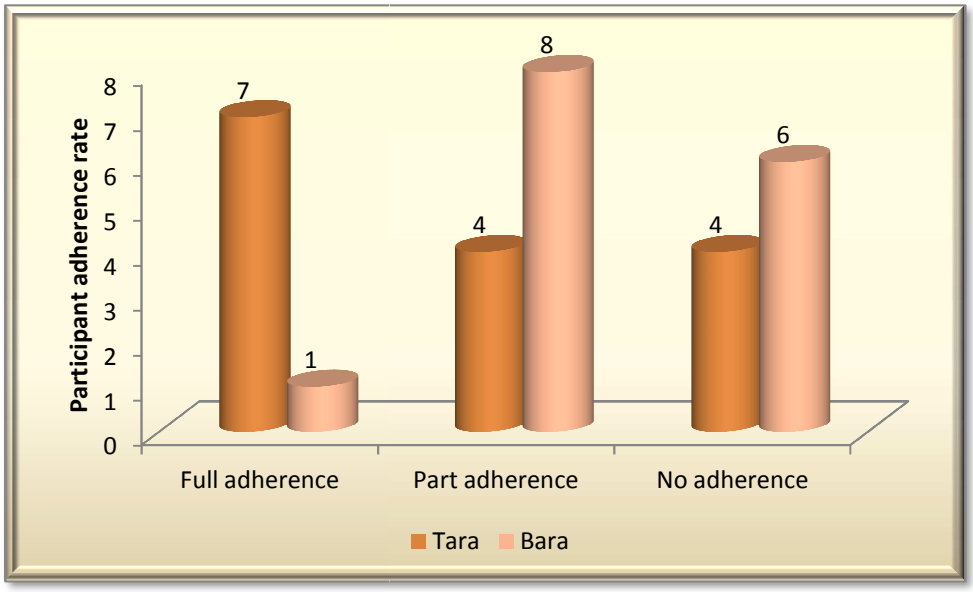


Figure 4.17 Adherence rates per hospital

In Figure 4.18 a summary of the rates of adherence and non-adherence to the various treatments is provided. Rates of non-adherence include treatments which were never started and those stopped prior to completion. Rates of adherence include those treatments which are still in progress and those fully completed. The figure indicates fairly equal distributions between adherence and non-adherence with the rates being 47% for non-adherence and 53% for adherence (not in above figure). With the individual treatments it can be seen that some parents and children seem to be more compliant with play therapy, occupational therapy, social work, and medical treatment with all of these being above 60% adherence. The non-adherence rates for parent counselling, the STEP program, placement in a remedial or special school were exceptionally high with all being over 65%.

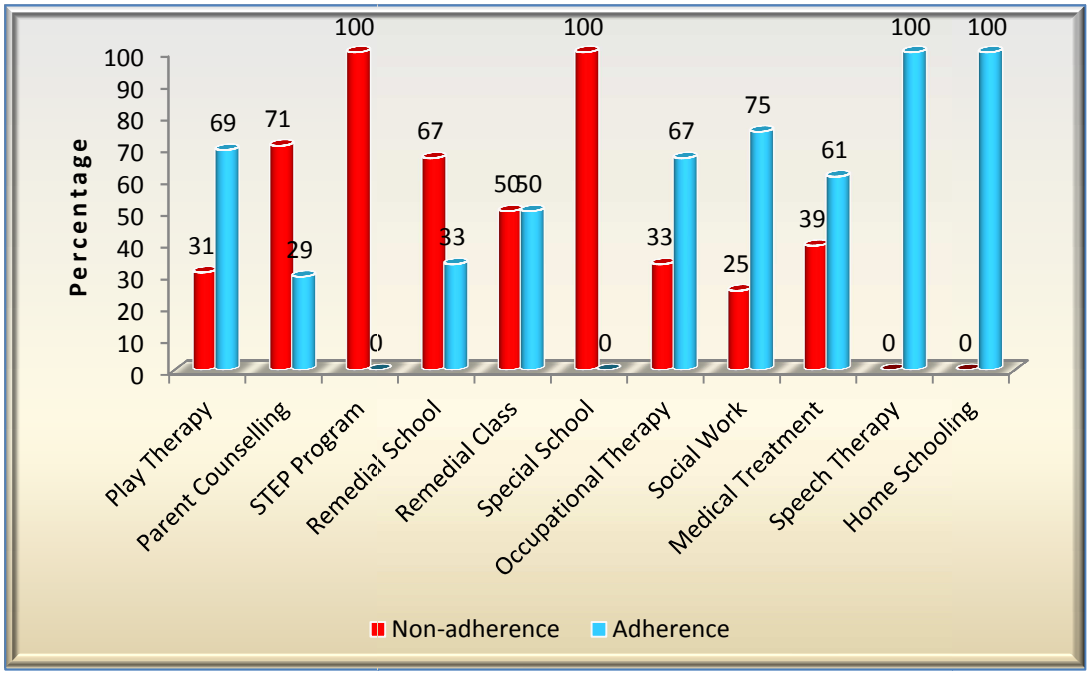


Figure 4.18 Summary of adherence and non-adherence

4.4. Relationships between variables

In addition to the categorical data received in the analysis, it was important to determine the relationship between adherence and some of the demographic data. To determine whether two categorical variables are related two variables were cross-tabulated and contingency tables constructed (see appendix 4). The important variable of interest is adherence. Thus the respondents were classified as either adhering to the treatment suggested by the clinician or not adhering to. This classification was done based on whether a respondent has a particular combination of responses to questions 4.1 to 4.5 in the questionnaire. A summary of these responses are provided in Table 4.1 based on Figures 4.11 to 4.17 discussed in the text.

Table 4.1 Summary of responses

	Recommended	Never started	Not completed	Stopped prior to completion	Continuing
4.1a Psychiatric	Added to medical treatments				
4.1b Play Therapy	13	1	3	7	2
4.1c Parent Counselling	17	4	8	4	1
4.1d STEP Program	2	1	1	0	0
4.1e Remedial School	12	8	0	3	1
4.1f Remedial Class	2	1	0	1	0

4.1g Special School	3	3	0	0	0
4.1h OT	9	3	0	4	1
4.1i Social work	4	1	0	3	0
4.1j Medical	23	2	7	7	7
4.1k Speech Therapy	1	0	0	1	0
4.1l Home Schooling	1	0	0	0	1
Total	**87**	**24**	**19**	**30**	**13**

A classification table was used to categorise respondents as adhering or not adhering. Thus if a person did not have a response on any of the categories for not completed, stopped, and continuing then a 0 or 1 was assigned. Table 4.2 was constructed for this purpose.

Table 4.2 Classification table

Not completed	Stopped prior to completion	Continuing	Implication	Code assigned
0	0	0	Not tested	0
0	0	1	Adherence	1
0	1	1	Adherence	1
1	1	1	Adherence	1
0	1	0	Non adherence	0
1	1	0	Non Adherence	0
1	0	0	Adherence	1
1	0	1	Adherence	1

All categorical variables were recoded if they had too few respondents in a category. For instance, caregiver was reclassified as mothers and others, daytime caretaker was reclassified into mothers and others, age of caregivers were categorised into smaller categories and so on.

All the categorical variables were then examined when cross tabulated with adherence to determine if the cells had enough respondents.

According to Field (2005), the requirement for Chi-square analysis is that (a) less than 20 % of cells should have expected frequencies of 5 and less and (b) observations should be independent i.e. each group in a variable (e.g. adherence vs. non adherence) should come from independent respondents.

The variables examined were: gender of caregiver, race group, gender of child, hospital, child's grade at the time of assessment, child's current grade, child's age at the time of assessment, child's current age, parent's age, caregiver, employment status, daytime

caretaker.

The contingency tables that met the criteria above (at least requirement (a), since all the groups were independent) and made conceptual sense to have an influence on adherence are 'daytime caregiver, hospital, and employment status' but the association between adherence and these variables were not significant.

In the analysis Fisher's exact test was determined along with the Pearson Chi-square because of the small sample size. The results are provided in Table 4.3. None were significant indicating no relationship between adherence and a number of sample characteristics.

Table 4.3 Summary of the Chi-square analysis

	N	Pearson Chi-Square				Fisher's Exact Test			
All variables below are determined according to relationship with adherence		**Value**	**Df**	**Asymp. Sig. (2-sided)**	**Exact Sig. (1-sided)**	**Value**	**df**	**Exact. Sig. (2-sided)**	**Exact Sig. (1-sided)**
Gender of caregiver	30	.679	1	.410	.367			.628	.367
Race Group	30	.233	2	.890		.430		1.000	
Gender of child	30	.362	1	.547	.410			.711	.410
Hospital	30	.136	1	.713	.500			1.000	.500
Child's grade at the time of assessment	29	.908	2	.635		.977		.644	
Child's current grade	29	4.506	3	.212		4.064		.276	
Child's age at the time of assessment	30	2.489	3	.477		2.399		.557	
Child's current age	25	3.806	3	.283		3.596		.347	
Parent's age	30	4.603	2	.100		4.609		.117	
Caregiver	30	.001	1	.977	.660			1.000	.660
Employment status	30	.621	1	.431	.339			.484	.339

Daytime caretaker	30	.136	1	.713	.500			1.000	.500

In order to determine whether there are significant interactions between variables a loglinear analysis was done with selected variables. Usually a loglinear analysis is done to explore theoretically driven hypotheses but in this case it was already apparent from the individual cross-tabulations that adherence were not influenced by other variables. In this case the focus was to identify interesting interactions missed in the above analysis. Loglinear analysis has as its response variable the cell frequencies and not a particular variable such as 'adherence' (Yang, 2010, p.101). The idea is to replicate the observed frequencies with the smallest number of parameters in a model. The full model, or saturated model, is taken as the starting point and terms are hierarchically removed until the model becomes non-significant (Field, 2005). In this way, the particular variables and interactions responsible for observed frequencies can be determined.

Similar variables as those provided in the contingency tables were analysed but all variables were dichotomised by collapsing categories. Thus a number of 2x2 tables were analysed in order to increase the cell frequencies because small cell frequencies invalidates the chi-square test (Field, 2005). The following variables were analysed as a multi-level table: Adherence, Employment Status, Daytime caretaker and Hospital.

The analysis indicated that removing the 2-way effects will significantly affect the model (Likelihood Ratio $\chi^2(6) = 22.130$, $p \leq 0.01$)(see appendix 4). The partial associations showed that employment status and the hospital attended influenced the 2-way interactions significantly. A contingency table examining these two variables showed that employment status influenced which hospital was visited (see Table 4.4 below). The relationship between employment status and hospital visited was significant ($\chi^2 = 13{,}39$, df = 1, $p \leq 0.001$)

Table 4.4 Relationship between employment status and hospital

	Employed	**Part/Unemployed**
Chris Hani Baragwanath Hospital (CHBH)	3	12
Tara H.Moross Hospital	13	2
Total	16	14

Chapter Five

Qualitative Results

5.1. Introduction

The qualitative aspect of the study involved open ended questions on the questionnaire involving factors which may hinder adherence and those factors which may promote adherence. In addition, information was gathered to reflect thoughts and feelings about the recommendations as well as factors which the participant thought may make it easier in future for recommendations to be adhered to.

5.2. Analysing the data

The main aim of including open ended questions was to gain information to answering the question of 'why' treatment recommendations may or may not be followed by these parents. The information from these questions were first divided into the various categories as per the questionnaire and thereafter each category was analysed qualitatively using Braun and Clarke's (2006) step-by-step guide to thematic analyses. The six phases of analyses used are discussed in Table 5.1 below with a brief description of how it was carried out.

Table 5.1 Six phases of thematic analysis

Phase (taken from Braun and Clarke, 2006)	**Description of the process (in relation to this study)**
1. Familiarizing yourself with your data:	Data was received both in paper and electronic format thus the analysis began by collating all the data into one method. Data was read and re-read to become familiar with the various themes which may be of importance.
2. Generating initial codes:	Data which seemed to be similar in nature was coded using an alphabetical system. Since it was in electronic format a spreadsheet was used to gather familiar information together according to the codes.
3. Searching for themes:	The data within each code was explored with the intention to pick out relevant themes. This process took some time but was a binding process to link relevant factors. Within this process sub-themes were generated as well.
4. Reviewing themes:	A 'thematic map' was used for all the themes to be viewed clearly.

	The themes and sub-themes were reviewed starting at the raw data up to the previous step to ensure nothing was overlooked.
5. Defining and naming themes:	The defining and naming of the themes happened to be a relatively straightforward process. Once all the themes and eliciting responses were gathered together, the common factor that bound that specific theme was given a name. The theme was then further defined to include all relevant sub-themes.
6. Producing the report:	This final and lengthy step began by selecting relevant extracts from the literature to place into a table to ensure a quick browse by the reader of the information at hand. In writing up the report we cross-referenced each theme with the rest of the themes since there were links between the themes as well. The analysis was related back to the research question and the demographics of the participants to ensure a well-rounded picture of the factors which impact adherence. The report was written up including all of these factors in relation to the various themes.

The initial sorting through the data felt overwhelming but by reading the raw data numerous times a feel of the themes emerged. The overall themes themselves were relatively simple to determine since many of them were amended from the questions. However to create subthemes and link the various information together seemed a daunting task. Much of the data was either the same across the questionnaires, or isolated data which was irrelevant to many of the themes. The information was analysed through a process of both induction and deduction. This meant that the information was read through to extract themes and information fitted into the themes derived, while the reverse process involved reading the themes and sub-themes and finding relevant information to fit into these.

5.3. Emerging Themes

The categories and themes that emerged from the qualitative data are presented in Table 5.2 below, and include selected responses to expound the results which follow.

Table 5.2 Themes and categories identified from the questionnaires

Emerging Themes	Sub-themes	Illustrating Responses
Thoughts and Feelings	Negative Perceptions	“Frustrated - length of time to provide results” “Not comfortable with following the recommendations” “Confused - not very informed” “Did not like it - thought child would outgrow it” “Worried about reaction to meds”

		"Nervous and scared" "Unsure of treatments helping" "Some treatments not required"
	Positive Perceptions	"Relieved as there was treatment to help my child" "Thought child will be helped if she goes for all the recommended treatments" "Grateful about the recommendations" "Happy with treatments" "Felt confident about the process" "Very happy"
Factors hindering adherence	Lack of Time	"The timing of the appointments - coincided with school" "Time not available during the week" "Taking time off from work"
	Financial Difficulties	"Lack of finances" "Financial constraints" "Lack of finances for transport" "Cost of hospital fees"
	Treatments Unnecessary	"No improvements seen from therapy - waste of time" "Thought the child would outgrow it" "I don't think my child needs medication" "It's the incorrect prescription"
	Shifting Responsibility	"Child refused further treatment" "It's not our problem" "We were not contacted for further appointments"
Factors allowing adherence	Need for assistance	"Desperate for help" "Need a better future for our child" "Our problems need to be attended to"
	Support	"The doctors were helpful and explained why we needed it" "Therapists were accommodating" "We explained to the child it was for her own good"
	Practicality of the services	"When finances were ok" "Going the private route" "Being able to practically attend" "The times made available"
	Success of the treatments	"The treatments were helpful" "The fact that the treatment is helping the child and parents" "Child relationship with therapist was good"
Factors to be implemented	Improvements to hospital services	"Therapy - shorter time intervals between sessions" "Services closer to home" "Services to accommodate parents who work full time"
	Improvements to school services	"OT - conducted by the school" "Parent counselling: Treatment offered at schools" "Schools to include remedial classes/ programs"
	Miscellaneous improvements	"School: promotes sports at school" "Parent counselling: Being given a booklet to read rather than attending therapy" "Parent counselling: One parent not fully committed"

Once the data was directly inserted into the themes, each theme was analysed separately. This involved looking at the demographic data of individuals and how their background may have affected their responses. The information in each theme was cross referenced to

demographic data, information from other themes and at times knowledge about the South African culture and services in the public sector.

5.4. The Qualitative Report

Theme 1: Thoughts and feelings regarding recommendations

The thoughts and feelings which participants experience as soon as being handed the recommendations are important to determine the resulting behaviours implemented by parents thereafter. Negative thoughts at a feedback session may spark similarly negative emotional and physiological responses which would lead to a problematic behavioural response. Instead of facing the situation and attempting to implement the necessary recommendations, at times parents may prefer to cancel or not even make the appointment to attend the various therapies. Positive thoughts would possibly initiate constructive emotions in parents leading to behaviours which are appropriate to the various therapies i.e. setting up appointments; attending therapy sessions; and seeking therapeutic assistance.

When it came to thoughts and feelings regarding the treatment recommendations provided, majority of participants commented positively while there seemed to be some real concerns and anxious feelings with other participants. Half of the parents agreed with the recommendations provided and felt that it would be helpful with their child's condition. Participants felt relieved that there are treatments available, and were generally trusting and hopeful with the process. Overall participants agreed with the recommendations provided and one person felt that it provided an understanding of the child's condition. Even though these comments pulled strongly towards accepting the recommendations, there were some concerns around the practicality of implementing them which comes through in many of the other themes derived.

A few participants felt unsure about whether the treatments would be helpful. Many participants came from homes where mental illness, particularly in children is unheard of, thus some caregivers felt confused, anxious, afraid, as well as pity for the child being different from other children. In addition one or two caregivers were not very accepting of the recommendations, stating that they were "not comfortable following the recommendations" and that their "child would outgrow it". One parent found the process of being provided with the recommendations to be quite frustrating as there was a long wait before being provided with the results.

Theme 2: Factors hindering treatment

This category included all factors which impedes on both the implementation of the various treatments as well as hinders the completion of treatments once they have begun.

The following (Figure 5.1) is a diagram on the themes derived in this category:

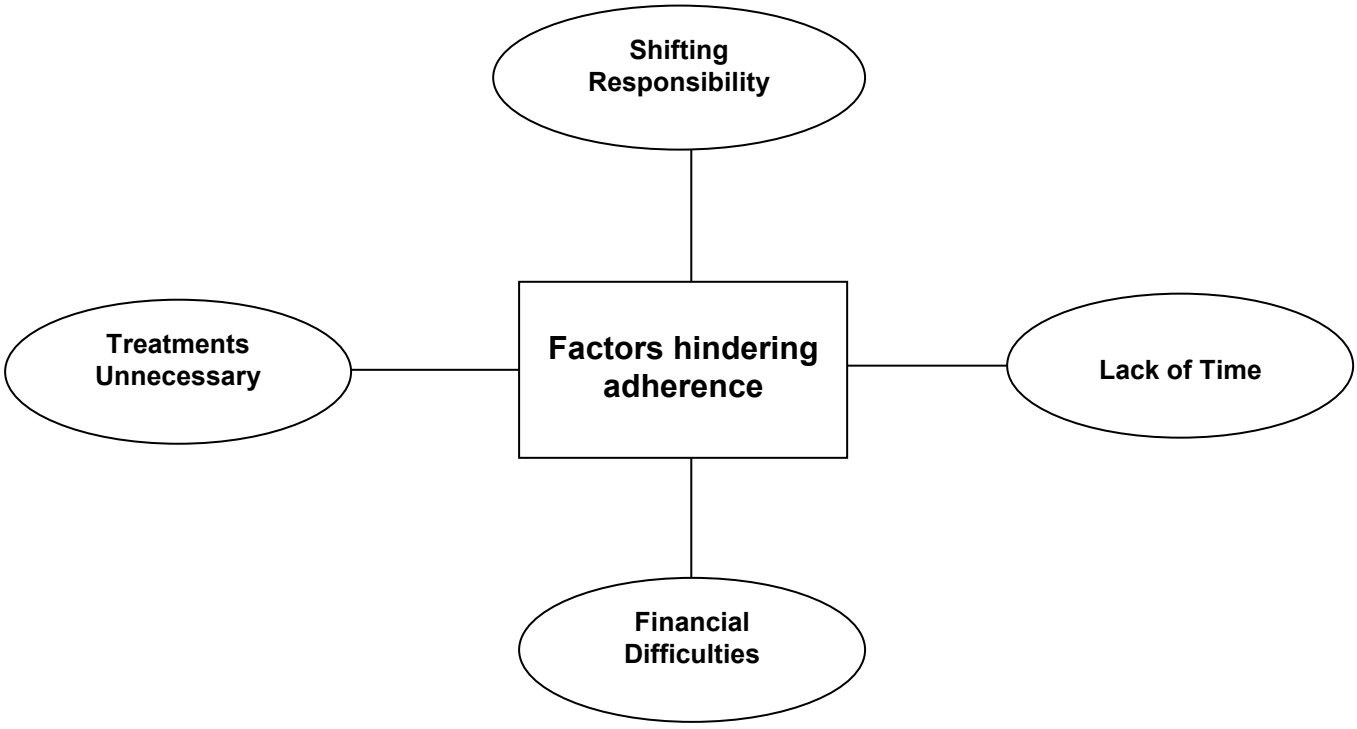


Figure 5.1 Factors hindering treatment

These four sub-themes prove to be a common occurrence amongst parents who find it difficult to implement recommendations. This refers to the very practical aspect of not having the time or financial resources to gain from the therapies.

a. Time, which most parents found to be an important factor, meant that children are in school during the times that therapies were available or that one or both parents work which becomes a very significant difficulty in accessing treatments. As we know parents who have the necessary financial resources available could possibly go the private route and access some of these services after hours. However in the public sector many services are available only between 8am and 4pm which becomes a difficulty particularly with the psychological therapies, occupational therapy and speech therapy where children and parents are required to attend on a weekly basis. When it comes to parent counselling, as indicated by the results, if one or both parents are required to attend therapy, the logistics surrounding this can become tiresome. There may be 2 or 3 persons' schedules to work around i.e. the counsellor, the mother and/or the father which can make it almost impossible to find

common times. This is indicated by some responses stating that both parents work and time and logistics involved to attend parent therapy together can hinder treatment. If only one parent is available to attend parent therapy, the concern raised was taking time off from work on a weekly/ twice a month basis which can be an obstacle to attending therapy. The time factor individually and combined with the next three factors can make it difficult for some parents to adhere to some or all treatments.

b. The next significant aspect which arose is the lack of financial resources for transport; hospital fees and some of the treatments prescribed. Although the public sector provides the most cost-effective means of treatment, for some of these parents even the bare minimum fee is too much to pay. Aside from that the cost of transport to and from the hospital is too pricey and they then choose between saving this money for basic necessities or taking their child for the necessary treatments. Considering that some treatments are required on a weekly basis, the cost of transport and payment of the hospitals fees can be more than both parents earn on one day. Although it can be a difficult choice for many, there may be times where using their financial resources on food and clothes may seem to be more apt than assisting their child with his/ her condition.

Lastly certain treatments may not be available at the hospital and parents may need to provide these treatments either privately or travel some distance to receive it in the public sector. This is mainly the placement into remedial or special schools which are not always available close to home. These schools in the public sector may have a higher school fee rate than that of the mainstream school and parents are then forced again to choose between using additional financial resources to provide this treatment for their child. Thus at times, the overall financial implications of implementing some, if not many of these treatments may be huge for some of these families.

c. The next relevant theme refers to parents questioning the necessity of the recommended treatments. Some parents thought that the treatments prescribed were unnecessary, the child would outgrow the disorder, the medical prescriptions were incorrect, that alternate treatments were more useful, and that there were no improvements seen from therapy thus it is a waste of time. All of these factors may or may not be true as it is the parents own thoughts which influence whether therapy begins or not and whether it continues once started. Thus the parents own cognitions create an emotional response of either anger, disappointment or sadness which leads to the behaviour of not implementing the recommended treatment or not taking their child for follow-up appointments. This being such an unpredictable factor and one which is not easily solved is of importance since it can lead to many parents following the route of non-adherence.

d. The next theme refers to the non-implementation of the treatment through parents believing it was outside of their control. In one instance the definite external locus of the parent impeded treatment of the child as the parent stated that it is not their problem. With other parents however the blame was placed on the child where parents claimed that the child decided to stop treatment, the child refused further treatment or the child denies having a disorder. In these instances it seems as though parents are shifting the responsibility of the treatment onto their children, instead of taking control of the situation and encouraging the child to attend their treatments.

Considering that these children are between the age of 7 to 14 years old, they are still under the care of their parents and having the child attend treatment is the parent's responsibility despite whether the child wants to attend or not. In other responses parents were not contacted by the hospital for the treatment, parents were not satisfied with the lengthy time periods, and after missing sessions, the hospital services cancelled further treatment.

The reason why this theme is so relevant is the lack of initiative by the parents. It comes down to the need to assist the child by any means necessary and the parent being willing to fulfil this need. Many of the above factors where parents shift the blame on others can probably be resolved through some initiative on the parent's side. This would include encouraging the child to attend treatments, contacting the therapists to ensure further appointments are set up, requesting times that are suitable for both parties and possibly even requesting reasons for treatment being cancelled by the therapists. As such accessing treatment should form a mutual give and take between the therapist and the parents, even though at times one party would need to put in a bit more effort to ensure the child is receiving adequate service from the therapists.

Theme 3: Factors promoting adherence

Themes related to factors promoting adherence include all those factors which made it easier for parents to begin therapy as well as continue until the therapy program was completed.

a. The first theme 'need for assistance' relates to the willingness of the parents to seek help and implement treatments for the child, no matter the cost. It relates to the scope of the child's difficulties outweighing any factors which may obstruct treatment. For many families where one person is diagnosed with a mental disorder or where children have behavioural or other difficulties, parents are often desperate for assistance. This desperation and strong need to help the child often leads to a motivation and willingness for the child's problems to

be attended to. Parents will thus take the recommendations provided and implement it as best they can to provide the services required. In some cases this not only provides relief for the child at hand but for the family as a whole.

b. Support, the second sub-theme was found to be important to both parents and children who receive treatment. The parents who receive support from the school, therapists and doctors, as well as their own family members play a vital role in the child continuing treatment. In addition the child who receives support from their own parents, who encourage and motivate the child to attend treatment provides the necessary support for the child to begin or continue the treatment process.

c. The next relevant sub-theme is that of the practicality of the treatments involved. Parents who had the time available, who could arrange transport to and from the services, and who could afford treatment, were able to provide the necessary treatments with ease. The time factor seems to be a sub-theme across many of the major themes which, within this theme parents stated that therapists provided times according to their schedules which allowed adherence. In addition, some treatment services are provided by the schools or the church which promoted adherence as it is within reach practically for both parent and child. Lastly some parents, even though they used the public hospitals for the assessment, could afford private health care services to their child thus adhering to the treatments.

d. The last sub-theme relates to the success of the treatment which motivates parents to continue treatment until it is complete. A few of the parents who began treatment found it to be helpful and found huge improvements in their child through the various therapies. These parents persist with treatments since it is proved to assist with the child's disorder and assist parents in their lives as well.

Theme 4: Recommendations to promote adherence

Participants perceptions of what is required for recommendations to be more fervently adhered to, involved changes by the hospitals, schools and a few other miscellaneous recommendations.

a. Hospitals:

Participants felt that hospitals need to be more efficient and consistent in terms of their services provided. Timeous setting up of appointments and providing results, obtaining consistent feedback from therapists as well as seeing the same doctors consistently came

through. The most important factor was providing services after hours which would mean later in the afternoons, possibly early evenings and weekends.

b. Schools:

A real and practical solution to the difficulties with transport, finances and times for therapy can be resolved by participants suggesting that schools begin to offer many of the treatments required. This would involve health care workers setting up an office at public schools, possibly providing weekly services, similar to those available at local clinics. An alternative such as this is practical since the child will not require additional transport to local clinics/ hospitals, but they can instead access the services at their school. These services include occupational therapy, play therapy and parent counselling as these are treatments which are required by the children and parents on a weekly basis. In terms of children being placed in remedial and special schools it was suggested that the schools are more affordable and available in terms of location.

c. Miscellaneous:

Other suggestions included that parents have access to full grants if their children are diagnosed with a mental illness which would possibly assist with the issues surrounding transport and financial difficulties. Two parents suggested that 'alternate therapies' such as physical activity be provided as recommendations.

5.5. Conclusion

When it comes to initiating recommendations by parents for children, there seems to be some important aspects for the public health care sector to address for children to gain the full benefit of a psychological assessment. Having worked in a mental outpatient unit for a year during internship, the themes which were derived in this chapter seem to be quite apt to those which I had witnessed in my work there. One of the most important aspects to take note of is that when recommendations are not initiated either by the hospital or by the caregiver, the child is the vulnerable one who has to endure the consequences of non-adherence. Parents, health care workers and other professionals need to make a concerted effort to address those factors which affect adherence, to work together and support each other for treatment to make a difference to the child.

Chapter 6
Discussion

Subsequent to a child completing a psychological assessment, which of the treatment recommendations provided do parents follow or not follow up on, and what are the possible factors that influence this adherence or lack thereof?

In the following section the findings are triangulated by merging results of the two data sets and integrating it into the discussion with relevant literature. The result of this process is a mixing of the findings which supplies answers to the research question above as posed in the study.

6.1. Introduction

The role and responsibilities of a parent, any parent is colossal. Not only does a parent have to look out for their child's basic physical and emotional needs, they need to give much of themselves to ensure that the child grows up to be a healthy, responsible adult. Thus when a parent learns that their child has greater psychological needs than what they have been providing, it can be quite devastating. In addition to the parents being provided with treatment recommendations to assist with the child's psychological difficulties, they are now faced with added emotional, financial, and at times social discomfort.

Thus parents' reactions towards both the assessment and the informing interview, as well as the clinician's conveying of the feedback may or may not influence the helpfulness of the information in providing further treatment for the child. In cases where a parent has an adaptive reaction to their child and the child's difficulties and the parent accepts the child, they adjust well to the recommendations. This situation is ideal since parents often are motivated to provide the treatments recommended in order for their children to improve and function at their optimal level (Gabel, Oster & Butnik, 1986).

6.2. Adherence to recommended treatments

The purpose of this research was to determine whether caregivers of children who complete a psychological assessment, follow through on treatment recommendations provided. The study was also used to explore whether caregivers provide their children with the recommended interventions or not, and the various factors which may influence this.

The results indicate that when it comes to adherence of recommendations, little more than half of caregivers either fully complied or are still in progress with treatment. These findings fall under total adherence by a participant to the recommendations provided. The non-adherence rate showed a percentage of 47% of caregivers who either did not comply with any of the treatments or stopped treatments prior to completing them.

In a study by Williams (2003) who explored rates of compliance following psychological assessment in children with learning disabilities, she found a 62% compliance rate by parents to recommendations provided by the school psychologist. A study completed by Thibodeau (2006) reinforced a higher compliance rate than the present study indicating a mean compliance rate of 68%. The study recruited 80 participants from an ADHD clinic and conducted interviews with caregivers who had received recommendations for treatment for their children.

From the current study and those above conducted in the USA, it seems as though these adherence rates are influenced by various factors. One of these factors seems to be the attitudes and beliefs of the parent in relation to the treatments. Acceptance of the recommendations could possibly have an impact on whether parents provide treatments for their children. The current study indicated that only half of the parents had a positive reaction to the treatments recommended which possibly filters through to the final figures indicating an adherence rate of just over half for all the treatments combined.

Studies have been carried out on how factors, such as negative perceptions and beliefs, become barriers to adherence while there were no studies found which indicates those factors which promote adherence. Although many a times the opposite of a specific barrier to adherence is that which would promote adherence, (for example, no time = non-adherence thus having time = adherence) there are other factors which promote adherence as well. The strong need for assistance by parents to provide treatment for the child and ultimately being ‘cured’ seems to be motivation enough for parents to comply with treatments. Support by family members, doctors, schools and others who are involved in the psychological assessment process is another aspect which results in parents complying with treatment regimens. Sajatovic, Chen, Dines and Shirley (2007) state that supportive caregivers with positive attitudes to treatment improve adherence while unsupportive or overly emotional/ demanding family or significant others can have a detrimental effect on adherence. Practicality, as indicated in the qualitative results, seems to be another influencing factor, which includes that of time available, convenient transport to access services and the financial means to provide the relevant treatments. These practical factors make the services seem more accessible to parents who in turn indicated compliance to

treatments. Once treatment had begun, the success of it was indicated by parents to be the motivation to continue attending treatments, while parents who felt as though the treatment was not helping their child, tended to stop treatment while in progress.

When looking at adherence specific to each recommendation type, it was assumed that parents would be more compliant to medical treatments than psychosocial treatments. This assumption however was incorrect. The split between adherence to medical treatments (61%) and psychosocial treatments (varying rates between 0% to 100% adherence) were inconsistent in this study. However the split between only medical treatment and pure psychological treatments (play therapy, parent counselling and the STEP program) indicates higher adherence to medical treatment (61%) as opposed to psychological treatment (33%). Previous studies have looked at adherence to varying treatments with one prominent study indicating a rate of only 53% to psychological recommendations (MacNaughton and Rodrigue, 2001). King, Hovey, Brand, Wilson, & Ghaziuddin (1997) also found differences in rates of adherence to medication regimens compared to those for psychological services. Their results indicated that 67% of parents adhered to medication follow-up recommendations, while 51% and 33% completed individual and family therapy recommendations, respectively. Such low adherence rates to psychological services, seem to be influenced by factors such as demographic features; ethnicity; economic factors; usefulness of mental health services; and barriers to access of mental health services (Pavuluri et al., 1996; Hoberman, 1992; Jensen et al. 1990; Hornblow et al. 1990). Medical treatments on the other hand are much simpler to be compliant with since follow-up appointments are once monthly, sometimes every three months and medication is usually administered within the home environment. Psychological treatments however are set up usually once weekly and must be attended at a hospital or clinic setting. With participants stipulating difficulties surrounding access to health services, time and financial constraints it is more likely that adherence rates would be much lower than those of medical.

Pratt (1997) states that parental adherence rates have been noted as problematic, with one fourth to two thirds of parents failing to comply with various recommendations, either initially or over time. The non-adherence to recommended treatments in this study indicated a rate of 47% of caregivers not having started treatments or stopping the treatments prior to completion, with the most dominant non-adherence rates being those of parent counselling, the STEP program and placement in a remedial or special school. Pratt's (1997) study indicated varying factors of non-adherence for each recommendation type. For instance she listed a study by Kolko, Parrish and Wilson (1985) looking at parents keeping their initial or second parent training appointment. It seems that adherence to this is associated with securing of transportation by the parent.

Although the current study does not look at each recommendation type related to the factors (as in Pratt's study), participants stipulated four main factors to have played a role in not complying with the treatments. Time factors on the side of the caregivers who mainly work during the day, the service provider who, in the public sector, only has appointments during the week, and the child who attends school during the day. Finding a common time between these 3 individuals can become tiresome and possibly result in caregivers giving up on the treatments. It influences parent counselling and the STEP program since parents find it difficult to take time off on a weekly basis to attend these treatments. We found placement in remedial and special school to be a difficulty as well which is influenced possibly by the next factor of non-adherence, financial difficulties. These schools are either not easily accessible or are more costly and parents thus find it difficult to afford to pay the fees or transport costs to move their children to these schools. In addition financial difficulties lead to non-adherence in relation to hospital fees and transport to the hospital. This is interesting since Geffken et al. in 2006 stated that an investigation into other categories of barriers beyond those assessed in the MacNaughton and Rodrigue study (e.g., access problems, financial problems, competing time or schedule demands, and negative attitudes/beliefs) may provide insight into the mechanisms through which non-adherence occurs. The factors suggested by Geffken et al. (2006) have been found to be the same factors influencing non-adherence in the current study.

The next two factors which hindered compliance was caregivers perceptions of treatments being unnecessary (i.e. thinking that therapy is a waste of time or that the child would outgrow their difficulties) and caregivers shifting responsibility, referring to them saying 'it's not my problem' or that the child or hospital stopped the treatments.

As mentioned above, it is found that demographic features, ethnicity and economic factors have an impact on parental adherence. In South Africa, the 2005 statistics indicate that close on two-thirds (63%) of African children live in ultra-poor households, compared to about a quarter (24%) of Coloured children, 15% of Indian children, and only 4% of White children (Leatt, 2006). The majority of the population is African, and this majority has one of the lowest incomes.

When looking at relationships between adherence and the demographic data using chi-square analysis, the contingency tables that met the criteria for validity and made conceptual sense to have an influence on adherence are 'daytime caregiver, hospital, and employment status' but the association between adherence and these variables are not significant.

As a result of there being no statistical significance, we looked at each variable according to the data shown in the graphs which proves to have some valuable information. When looking at the race group of participants, six participants were White and of these six, five of these had fully adhered to all recommendations indicating a percentage of 83%. In contrast, of the 21 black participants only three (14%) had fully complied with all recommendations received. This seems to be related to the fact that the majority of the black population in South Africa come from poor households with many of them living in the rural areas with little access to mental health services, both in terms of distance, financial viability as well as transport. Although the split between Baragwanath and Tara hospitals was equal, the 70% black participants found these factors to be major barriers to seeking treatments for their children. In addition half of the participants were single parents with no partner which possibly made the financial aspect of these treatments even more difficult.

With regards to employment status and adherence, a study by Andra and Thomas (1998) found that income was moderately associated with parent therapy attendance, with families of lower income attending fewer sessions. The results of the study suggest that parental stress, as well as family income, play a key role in treatment adherence and may also play a key role in recommendation adherence. There seems to be an interplay between two of the factors hindering adherence i.e. time and financial resources and the employment status of the caregivers. Time is a major factor for caregivers who are full-time employed which made up at least 50% of the participants. We can assume that since these caregivers are employed on a permanent basis they are able to afford the transport and minimum hospital fees to provide the treatments for their children. The results indicated that 75% of the parents who had full adherence were full-time employed while 55% of those caregivers who did not adhere to any recommendations were employed full-time. Only 42% of caregivers who complied partly with recommendations were full-time employed. Thus parents who are employed possibly overcome the financial and transport barriers but some may find time to be the barrier to their treatments. On the flip side the 46% of caregivers who are not full-time employed possibly have the time available to take their children for treatment or attend themselves but possibly find the financial aspect to be a major barrier to access services. In addition, half of the children are taken care of during the day by people other than their parents such as a daycare, domestic workers, the school or a family member. Many of these daytime caretakers are not responsible for taking the child for their treatments during the week with transport being a major hurdle to access treatments.

The marital status of the parent is important since it is believed that single parents would find it more difficult to provide treatment for their children. The barriers for these single parents are possibly the time and financial difficulties. However if a caregiver is married which was

47% of the caregivers in this study the factors which could possibly promote adherence would be the support from family members and the practicality to access the services. When looking at the overall demographics of parents who fully adhered to those who partly adhered or did not adhere to recommendations at all, there were no clear characteristics to distinguish the three groups. Further studies would need to be carried out to find relationships between marital status and adherence.

In looking at the demographics for the children it seems as if birth order could have a relationship to adherence to treatments. Almost half (47%) of the children in the study were the youngest child in the family which could mean that parents may find it more difficult to provide treatments. The barriers here would be financial difficulties in having more than one child, the dividing of both time and attention on other children and if there are older children with mental health needs parents may have difficulty in meeting the needs of both children.

From the information received from participants, adherence can be increased through hospitals/ clinics and schools. Although the public sector in most countries provide services only at specified times, in South Africa we could possibly improve adherence by providing some psychiatric, psychological and physical therapies after hours, including evenings and some time on the weekend. Providing after hours services would allow many of the parents who work full-time or have difficulties with transport the opportunity to access these services and possibly comply with treatment recommendations.

Public schools can assist adherence by providing some services at the school, such as occupational therapy, play therapy and parent counselling which are treatments that require attendance on a weekly basis. It is less time consuming, more convenient and more accessible for both parents and children who are required to attend these therapies. Lack of adherence to placement in remedial and special schools was high (83.5%) and suggestions from participants included that the schools be more affordable and available in terms of location.

Lastly, as mentioned above, for many parents, a strong “need for assistance” means that parents may find ways to overcome barriers to adherence if the scope of the child’s difficulties outweighs the factors which may obstruct treatment. Health care workers can possibly promote adherence by using this factor to their advantage. In providing recommendations to the parents, stressing the potential consequences of non-adherence, the path the disorder may follow without treatment, and the impact of the disorder on the child and family may create the “need for assistance” in caregivers who may be motivated to

seek treatment for the child. This factor however needs to be very carefully implemented so as not to create a “need” without health care providers being able to fulfil the need.

6.3. Challenges of the study

The first challenge when undertaking this study was accessing the sample through the hospitals. The process for permission to access patient files was lengthy - various bodies affiliated to the hospitals had to review the proposal and provide input on the study which set the study back by a few months. However once this process was completed the data collection ran smoothly.

The next challenge was the limited amount of published literature on recommendations especially in relation to psychological assessment. Looking at this in relation to children the literature was particularly scarce. As a result, alternate sources of information were consulted, in particular those of unpublished thesis from master’s and doctoral students, which gave weight to the review.

6.4. Limitations

Due to the nature of the sample being from low income homes, transport and scheduling times would have been a difficulty for participants if interviews were conducted for the data collection. It was decided that the qualitative data be received in the form of a questionnaire as well. However, the information received from the qualitative section would have been richer and of more substance if it was collected through telephonic or one-on-one interviews.

6.5. Recommendations for practice

Although we have received some pertinent information with regards to factors forming barriers to adherence, some of these barriers cannot be overcome without a change in the entire health services system. We will provide recommendations based on the factors received while being aware that it may not always be possible to implement these recommendations.

6.5.1. Feedback

We have discussed in chapter one the importance of feedback, which when used to convey recommendations to parents after the assessment, also marks the beginning of the treatment process. The results of this study indicate that many parents have negative

thoughts and feelings regarding the recommendations once received. Based on this, the person providing feedback needs to take time to handle any doubts or negative perceptions on treatments, to encourage parents to attend treatment and discuss in detail the impact of an untreated disorder on the child and the family. In addition it is recommended that the feedback session and assessment report stretch one step further to provide information on places where parents are able to access the services suggested. If parents are made aware that some of these services are available at their local clinics, not only at hospitals, and of the closest remedial and special schools in their area they may adhere more readily to the recommendations made.

On this note, Wagner (2003) states that as children age and develop, they become less dependent on their parents for basic needs. They begin to rely on other adults, including teachers, school counsellors and social workers. Therapists need to consider how these and other professionals influence children's development. They must collaborate with others in a multidisciplinary team effort that encourages each member to participate in the planning and delivery of services. This method is significantly different from the remedial therapies used with adults in which most clinicians only interact with the client. Therapists who work with children must cooperate with other professionals to design and implement comprehensive treatments that are appropriate to each client's needs (Wagner, 2003).

6.5.2. Ratings for recommended treatments

When parents receive the assessment report, looking at the sheer number of recommended treatments received can be overwhelming. It is suggested that the treatments are given ratings from the most urgent treatment required to the treatment which can be completed last. In this way if parents don't have the time or financial means to begin all treatments at once they can begin with one or two and work their way through the rest. Although this is not the ideal situation, we need to acknowledge the difficulties some parents face of taking a child for weekly appointments to a psychologist and occupational therapist, and then parents having to attend parent counselling as well. A rating scale will allow parents the opportunity to complete treatments in stages which will hopefully not feel like it's too much for them.

6.5.3. Accessibility of public services

Time and financial difficulties were found to be the most common barriers to adherence. One way to overcome the time barrier (and possibly financial barrier) is to provide these services at public schools. Clinics have health care professionals rotating on a once weekly basis, if the same health care workers rotate between schools, access to services such as play therapy, parent counselling, occupational and speech therapy may be more convenient for parents and children.

Although an ideal situation would be having health care workers provide after-hours services at hospitals particularly for parents who work full-time and are unable to take leave on a weekly basis for their sessions, this may not practical for the public health care sector. Thus implementing some of the above recommendations may improve the effectiveness of treatments and the value of the psychological assessment, which is particularly important since we are currently being effective with only half of all assessments conducted, a non-adherence rate of 47%.

6.5.4. Follow-up sessions

Parents found support to be one of the factors which promotes adherence to treatments. It is possible that clinicians who are more pro-active, who regularly contact parents and make an effort with appointments may have a higher adherence rate than those who leave the responsibility to the parents to set up appointments. One suggestion to promote adherence is for the person who provides feedback to review the patient file in 6-12 months from the feedback session and to set up a follow-up meeting with parents. In this way the parents feel supported, and the clinician has a second opportunity to contain the difficulties and assist with potential barriers to adherence.

6.6. Further Research

There seem to be a vast number of factors influencing parent and child adherence to recommendations, some of which were touched on in this study. Further factors to be researched include: 1.) the influence of demographic features (particularly in developing countries like South Africa), in particular household incomes, accessibility of households to each recommended treatment, birth order of the child in relation to the other siblings. 2.) Parent and child internal factors need to be explored. These include personality types and parent psychopathy which possibly influence parent acceptance or rejection of recommendations.

A second aspect to be researched would be looking at the extent to which parents accept their part in the therapeutic process and are willing to attend therapies involving themselves, such as parent counselling, family therapy, and the STEP program. Adherence rates to these therapies were low (parent counselling and STEP = non-adherence of 86%), and although time played a major role we need to explore whether other factors may have influenced non-adherence as well.

A further area which requires exploration is the characteristics of the clinician administering the treatment. It would be interesting to look at the difference in adherence rates between the clinician who leaves the responsibility to set up appointments on the parents and the clinician who puts in more effort to set up appointments themselves.

Although carrying out studies to find the full range of factors which lead to non-adherence is necessary, some of these factors, if not most, are factors which clinicians are unable to tackle by themselves. These may form social difficulties or are aspects which need to be looked at within the overall health care system. For this reason a deeper exploration into the factors which promote adherence is essential to understand how caregivers, despite time or financial barriers still have the ability to provide the treatments for their children. The results would assist clinicians who are unable to change the barriers to work on factors which would promote adherence instead.

6.7. Summary of study

This study aimed to determine rates and factors of adherence and non-adherence to recommendations received from a psychological assessment. Thibodeau (2006) states that the psychological assessment loses much of its value if parents fail to adhere to recommendations. For assessments to be worthwhile and effective, clinicians need to be aware of the barriers to compliance and find ways to work around these barriers to ensure that the purpose of the assessment, in most times the treatment, is not discarded.

Geffken et al. (2006) have found that virtually no systematic research has investigated how many treatment recommendations made by child psychologists are actually followed or whether following through with the recommendations leads to improvements in symptoms or in psychosocial functioning. They suggest the possibility that some of the recommended interventions may be of little value if parents do not or are unable to access them once they have been recommended.

For the study to be effective it was decided that a mixed method be used to determine both rates of adherence as well as factors which may influence adherence to recommended treatments. Questionnaires were sent out to all participants, the first section looking at rates of adhering to recommendations while the second section finding out the factors which promote or form barriers to adherence.

The responses indicated that a total of 11 different types of treatments were recommended for various participants. Rates of adherence were determined by looking at whether

participants began treatments, are still continuing treatments, have stopped treatment prior to completion or have completed the treatments. The results indicated a very low adherence rate of a little over half of participants either completing treatments fully or still continuing treatments which were recommended. In looking at the individual treatments, it was found that the highest adherence was for speech therapy, home schooling, social work and play therapy. Factors such as a strong need for assisting the child was found to be one of the aspects which promoted adherence. Other factors included support from family, teachers, doctors and health care workers, the practicality of accessing services and success of the treatments influencing caregivers to continue with treatments.

When it came to non-adherence half of the participants either did not begin any treatments or began treatment but stopped prior to completing them. Individual treatments indicated the highest rates for placement in a special school, the STEP program, parent counselling and placement in a remedial school. Many participants listed difficulties surrounding times of treatment to be the major factor influencing non-adherence, particularly for the STEP program and parent counselling. In addition financial resources played an important role for caregivers not initiating treatments. The last two factors were caregivers feeling as though the recommended treatments were unnecessary, and caregivers finding it difficult to accept responsibility for attending treatments. These four factors played an immense role in the high rate of non-adherence which is important for health care providers to keep in mind particularly during the feedback stage when recommendations are given to the caregiver.

6.8. Conclusion

When it comes to a psychological assessment, its usefulness goes as far as the purpose for which it was intended. If used as a tool for diagnosis and treatment, it would be most beneficial if treatment is initiated based on its recommendations. The study brought out some relevant information regarding adherence to recommendations within the South African public health sector. Based on this information an important aspect to realise as a clinician is that despite any barriers which may arise for children accessing treatment, parents need to be made aware of the benefits of treatment, and of the consequences of not initiating treatment for the child. If clinicians are able to create a gap, illustrating that the benefits of treatment outweigh the barriers to treatment, we may be able to increase adherence rates to some level. And this is what we should be aiming for if we would like the psychological assessment to be of maximum benefit to the child.

Appendix 1

Questionnaire:

For treatment recommendations following psychological assessment

Section A: Demographic Information

1. Primary Caregiver Biographical Details:

1.1.	Age:	☐ Under 20 ☐ 20 – 30 ☐ 30 – 40 ☐ 40 – 50 ☐ 50 – 60 ☐ Over 60
1.2.	Gender:	☐ Female ☐ Male
1.3.	Race Group	☐ Black ☐ White ☐ Coloured ☐ Asian
1.4.	Are you the:	☐ Mother of the child ☐ Father of the child ☐ Family member, please specify: _____ ☐ Other, please specify: _____
1.5.	Home Language:	_____
1.6.	Marital Status:	☐ Married ☐ Single ☐ Divorced ☐ Widow/er ☐ Live-in partner ☐ Partner not living with you
1.7.	Are you employed?	☐ Full time ☐ Part Time employed ☐ Not employed
1.8.	Is your partner/ spouse employed?	☐ Full time ☐ Part Time employed ☐ Not employed
1.9.	Who cares for your child during the day:	☐ Self ☐ Mother of the child ☐ Father of the child ☐ Domestic Worker ☐ Live-in partner ☐ Partner not living with you

☐ Daycare
☐ Family member, please specify: _____
☐ Other, please specify: _____

2. Child Biographical Details (of the child who completed an assessment)

2.1. Age: _____

2.2. Gender:
☐ Male
☐ Female

2.3. Current Grade: _____

2.4. Does the child have brothers and sisters?
☐ Yes
☐ No

2.5. If yes, please provide gender and ages of all siblings.

Section B: Assessment Details

3.1. Has your child completed a psychological assessment at Chris Hani Baragwanath or Tara Hospital?
☐ Yes
☐ No

3.2. At which hospital did your child complete the assessment:
☐ Chris Hani Baragwanath Hospital (CHBH)
☐ Tara H.Moross Hospital

3.3. What date was the assessment conducted?
_____

3.4. What was your child's age at the time of the assessment?
_____

3.5. What grade was your child in at the time of the assessment?
_____

3.6. Type of school at date of assessment
☐ Mainstream
☐ Remedial
☐ Special
☐ Other, please specify
_____

3.7. Current type of school?
☐ Mainstream
☐ Remedial
☐ Special
☐ Other, kindly specify
_____

Section C: Details of Recommendations Provided **(Indicate with an X)**

4. Treatments	**4.1. Which of the following treatment interventions were recommended for you/your child?**	**4.2. Which of the following treatment interventions were recommended but never started?**	**4.3. Which of the following treatment recommendations were started?**	**4.4. Which of the following treatment recommendations were stopped prior to completion?**	**4.5. Which of the following treatment recommendations were completed fully?**
• Psychiatric management					
• Play Therapy/ Psychotherapy/ Individual Therapy for child					
• Parent Counselling •					
• STEP Program •					
• Placement in remedial school					
• Placement in remedial class					

• Placement in special school					
• Occupational Therapy					
• Social Work Intervention					
• Medical Intervention					
• Other, please specify _____ _____					
• Other, please specify _____ _____					
• Other, please specify _____ _____					

Section D: General Questions regarding recommendations provided

Kindly provide detailed answers and be as honest as possible to help us understand your reasons!

5.1. What were your *thoughts* regarding the treatments that were recommended to you in (4.1.) above? Please explain.

_____
_____
_____
_____
_____
_____
_____

5.2. What were your *feelings* regarding the treatments that were recommended to you in (4.1.) above? Please explain.

_____
_____
_____
_____
_____
_____
_____

5.3. Please provide reasons that *prevented* you/ your child from attending the treatments listed in (4.2.) above?

_____
_____
_____
_____
_____
_____
_____

5.4. What factors *enabled* you/ your child to attend the treatments listed in (4.3.) above.

_____
_____
_____
_____
_____
_____
_____

5.5. What factors *prevented* you/ your child from *completing* the treatments listed in (4.4.) above.

5.6. What factors *enabled* you/ your child *to complete* the treatments listed in (4.5.) above.

5.7. In your opinion, what would have made it *easier* for you/ your child to attend the recommended treatments as listed below (answer only those which were recommended to you):

☐ Psychiatric management:

☐ Play Therapy/ Psychotherapy/ Individual Therapy for child:

☐ Parent Counselling:

☐ STEP Program:

☐ Placement in remedial class:

☐ Placement in remedial school:

☐ Placement in special school: _____

☐ Occupational Therapy: _____

☐ Social Work Intervention: _____

☐ Medical Intervention: _____

☐ Other, please specify: _____

Thank you for your valuable contribution!

Appendix 2

Informed Consent Form

Date:	1 June 2011
Study Name:	Investigating adherence by parents to treatment recommendations following psychological assessment.
Researcher:	Ms Shaheda Khota 083 44 66 427 Shaheda.khota@yahoo.com P.O. Box 21542 Roshnee 1936
Supervisor:	Prof DJF Maree (012) 420 2916 david.maree@up.ac.za

You are being invited to participate in a research study to investigate the adherence by parents to treatment recommendations following psychological assessment. This research study is being conducted by Ms Shaheda Khota of the University of Pretoria and is funded by the National Research Foundation. The objective of this research is to gain information from parents as to whether treatment recommendations have been implemented or not, and the factors influencing implementation.

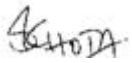
The research is being conducted through two hospitals in the Johannesburg region, Chris Hani Baragwanath Hospital and Tara Psychiatric Hospital. A questionnaire is being sent to parents of children who have completed a psychological assessment at these 2 facilities and is being sent via the postal service or e-mail. Should you decide to participate in this study, you will be required to complete the attached questionnaire which should take between 10-15 minutes to complete. The duration of the study is 4 months and it is kindly requested that the questionnaire be posted or e-mailed on or before 10 July 2011.

There are no known risks if you decide to participate in this research study, nor are there any costs for participating in the study. The information you provide will assist in understanding the factors which may influence implementation of treatment for children. The information collected may not benefit you directly, but what is learnt from this study should provide general benefits to parents, children, psychologists and researchers. Data collected will be stored in the Department of Psychology, University of Pretoria for a period of 15 years. Data is confidential and will only be used for research purposes for this study.

This questionnaire is anonymous. If you choose to participate, do not write your name on the questionnaire. No one will be able to identify you and no one will know whether you participated in this study or not. Your participation in this study is voluntary. If you choose to participate, please place your completed questionnaire in the self-addressed stamped envelope provided and post at your nearest post office. If you prefer, you may e-mail the questionnaire to: shaheda.khota@yahoo.com

If you have any questions or concerns about completing the questionnaire or about being in this study, you may contact the researcher, Shaheda Khota on 0834466427.

The University of Pretoria Research Review Board and the Wits University Ethics Committee has reviewed my request to conduct this project. If you have any concerns about your rights in this study, please contact Prof. David Maree on 012 420 2916.

	01-06-2011	Vereeniging
Ms Shaheda Khota Researcher	Date	Place
Participant Initials and surname	Date	Place

Appendix 3

Frequency Tables

1.1. Age

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Under 20	2	6.7	6.7	6.7
	20 – 30	2	6.7	6.7	13.3
	30 – 40	15	50.0	50.0	63.3
	40 – 50	8	26.7	26.7	90.0
	50 – 60	1	3.3	3.3	93.3
	Over 60	2	6.7	6.7	100.0
	Total	30	100.0	100.0	

1.2. Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	5	16.7	16.7	16.7
	Female	25	83.3	83.3	100.0
	Total	30	100.0	100.0	

1.3. Race group

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Black	21	70.0	70.0	70.0
	White	6	20.0	20.0	90.0
	Asian	3	10.0	10.0	100.0
	Total	30	100.0	100.0	

1.4. Caregiver

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Mother of the child	23	76.7	76.7	76.7
	Father of the child	3	10.0	10.0	86.7
	Family member	3	10.0	10.0	96.7
	Other	1	3.3	3.3	100.0
	Total	30	100.0	100.0	

1.5. Home language

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	English	2	6.7	28.6	28.6
	Zulu	2	6.7	28.6	57.1
	South Sotho	1	3.3	14.3	71.4
	Sesotho	1	3.3	14.3	85.7
	Xhosa	1	3.3	14.3	100.0
	Total	7	23.3	100.0	
Missing	System	23	76.7		
Total		30	100.0		

1.6. Marital Status

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Married	14	46.7	46.7	46.7
	Single	8	26.7	26.7	73.3
	Divorced	5	16.7	16.7	90.0
	Widow/er	2	6.7	6.7	96.7
	Live-in partner	1	3.3	3.3	100.0
	Total	30	100.0	100.0	

1.7. Employment status

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Full time	16	53.3	53.3	53.3
	Part Time employed	4	13.3	13.3	66.7
	Not employed	10	33.3	33.3	100.0
	Total	30	100.0	100.0	

1.8. Partner employment status

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Full time	15	50.0	71.4	71.4
	Part Time employed	2	6.7	9.5	81.0
	Not employed	4	13.3	19.0	100.0
	Total	21	70.0	100.0	
Missing	System	9	30.0		
Total		30	100.0		

1.9. Daytime caretaker

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Self	2	6.7	7.1	7.1
	Mother of the child	13	43.3	46.4	53.6
	Domestic Worker	4	13.3	14.3	67.9
	Live-in partner	1	3.3	3.6	71.4
	Daycare	2	6.7	7.1	78.6
	Family member, please specify:	3	10.0	10.7	89.3
	School	3	10.0	10.7	100.0
	Total	28	93.3	100.0	
Missing	System	2	6.7		
Total		30	100.0		

1.9.a. Daytime caretaker

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	8	3	10.0	37.5	37.5
	9	3	10.0	37.5	75.0
	10	2	6.7	25.0	100.0
	Total	8	26.7	100.0	
Missing	System	22	73.3		
Total		30	100.0		

2.1. Age

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	6	1	3.3	3.8	3.8
	7	3	10.0	11.5	15.4
	8	4	13.3	15.4	30.8
	9	4	13.3	15.4	46.2
	10	1	3.3	3.8	50.0
	11	2	6.7	7.7	57.7
	12	1	3.3	3.8	61.5
	13	1	3.3	3.8	65.4
	14	2	6.7	7.7	73.1
	15	4	13.3	15.4	88.5
	16	2	6.7	7.7	96.2
	17	1	3.3	3.8	100.0
	Total	26	86.7	100.0	
Missing	System	4	13.3		
Total		30	100.0		

2.2. Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	18	60.0	60.0	60.0
	Female	12	40.0	40.0	100.0
	Total	30	100.0	100.0	

2.3. Current Grade

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	1	3.3	3.6	3.6
	1	3	10.0	10.7	14.3
	2	4	13.3	14.3	28.6
	3	5	16.7	17.9	46.4
	4	3	10.0	10.7	57.1
	5	3	10.0	10.7	67.9
	7	2	6.7	7.1	75.0
	8	4	13.3	14.3	89.3
	9	1	3.3	3.6	92.9
	10	2	6.7	7.1	100.0
	Total	28	93.3	100.0	
Missing	System	2	6.7		
Total		30	100.0		

2.4. Brother or sisters

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	27	90.0	90.0	90.0
	No	3	10.0	10.0	100.0
	Total	30	100.0	100.0	

2.5. Relation to other siblings

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Youngest	14	46.7	56.0	56.0
	Eldest	10	33.3	40.0	96.0
	Middle	1	3.3	4.0	100.0
	Total	25	83.3	100.0	
Missing	System	5	16.7		
Total		30	100.0		

3.1. Completed assessment

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	30	100.0	100.0	100.0

3.2. Hospital

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Chris Hani Baragwanath Hospital (CHBH)	15	50.0	50.0	50.0
	Tara H.Moross Hospital	15	50.0	50.0	100.0
	Total	30	100.0	100.0	

3.4. Childs age at the time

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	3	1	3.3	3.3	3.3
	6	3	10.0	10.0	13.3
	7	6	20.0	20.0	33.3
	8	2	6.7	6.7	40.0
	9	5	16.7	16.7	56.7
	10	2	6.7	6.7	63.3
	11	3	10.0	10.0	73.3

	12	1	3.3	3.3	76.7
	13	2	6.7	6.7	83.3
	14	2	6.7	6.7	90.0
	15	2	6.7	6.7	96.7
	16	1	3.3	3.3	100.0
	Total	30	100.0	100.0	

3.5. Childs grade at the time

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	3	10.0	10.3	10.3
	1	5	16.7	17.2	27.6
	2	4	13.3	13.8	41.4
	3	7	23.3	24.1	65.5
	4	2	6.7	6.9	72.4
	5	1	3.3	3.4	75.9
	6	2	6.7	6.9	82.8
	7	3	10.0	10.3	93.1
	8	2	6.7	6.9	100.0
	Total	29	96.7	100.0	
Missing	System	1	3.3		
Total		30	100.0		

3.6. Type of school

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Mainstream	25	83.3	86.2	86.2
	Remedial	3	10.0	10.3	96.6
	Special	1	3.3	3.4	100.0
	Total	29	96.7	100.0	
Missing	System	1	3.3		
Total		30	100.0		

3.7. Current type of school

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Mainstream	20	66.7	69.0	69.0
	Remedial	4	13.3	13.8	82.8
	Special	3	10.0	10.3	93.1
	Home schooling	2	6.7	6.9	100.0
	Total	29	96.7	100.0	
Missing	System	1	3.3		
Total		30	100.0		

4.1a Psych

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	1	3.3	100.0	100.0
Missing	System	29	96.7		
Total		30	100.0		

4.1b Therapy

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	13	43.3	100.0	100.0
Missing	System	17	56.7		
Total		30	100.0		

4.1c PC

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	17	56.7	100.0	100.0
Missing	System	13	43.3		
Total		30	100.0		

4.1d STEP

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	2	6.7	100.0	100.0
Missing	System	28	93.3		
Total		30	100.0		

4.1e Rem School

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	12	40.0	100.0	100.0
Missing	System	18	60.0		
Total		30	100.0		

4.1f Rem class

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	2	6.7	100.0	100.0
Missing	System	28	93.3		
Total		30	100.0		

4.1g Spec school

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	3	10.0	100.0	100.0
Missing	System	27	90.0		
Total		30	100.0		

4.1h OT

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	9	30.0	100.0	100.0
Missing	System	21	70.0		
Total		30	100.0		

4.1i Social work

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	4	13.3	100.0	100.0
Missing	System	26	86.7		
Total		30	100.0		

4.1j Medical

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	22	73.3	100.0	100.0
Missing	System	8	26.7		
Total		30	100.0		

4.1k Speech

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	1	3.3	100.0	100.0
Missing	System	29	96.7		
Total		30	100.0		

4.1l Home schooling

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	1	3.3	100.0	100.0
Missing	System	29	96.7		
Total		30	100.0		

4.2a Psych

		Frequency	Percent
Missing	System	30	100.0

4.2b Therapy

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	1	3.3	100.0	100.0
Missing	System	29	96.7		
Total		30	100.0		

4.2c PC

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	4	13.3	100.0	100.0
Missing	System	26	86.7		
Total		30	100.0		

4.2d STEP

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	1	3.3	100.0	100.0
Missing	System	29	96.7		
Total		30	100.0		

4.2e Rem School

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	8	26.7	100.0	100.0
Missing	System	22	73.3		
Total		30	100.0		

4.2f Rem class

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	1	3.3	100.0	100.0
Missing	System	29	96.7		
Total		30	100.0		

4.2g Spec school

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	3	10.0	100.0	100.0
Missing	System	27	90.0		
Total		30	100.0		

4.2h OT

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	3	10.0	100.0	100.0
Missing	System	27	90.0		

4.2h OT

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	3	10.0	100.0	100.0
Missing	System	27	90.0		
Total		30	100.0		

4.2i Social work

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	1	3.3	100.0	100.0
Missing	System	29	96.7		
Total		30	100.0		

4.2j Medical

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	2	6.7	100.0	100.0
Missing	System	28	93.3		
Total		30	100.0		

4.2k Speech

		Frequency	Percent
Missing	System	30	100.0

4.2l Home schooling

		Frequency	Percent
Missing	System	30	100.0

4.4a Psych

		Frequency	Percent
Missing	System	30	100.0

4.4b Therapy

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	3	10.0	100.0	100.0
Missing	System	27	90.0		
Total		30	100.0		

4.4c PC

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	8	26.7	100.0	100.0
Missing	System	22	73.3		
Total		30	100.0		

4.4d STEP

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	1	3.3	100.0	100.0
Missing	System	29	96.7		
Total		30	100.0		

4.4e Rem School

		Frequency	Percent
Missing	System	30	100.0

4.4f Rem class

		Frequency	Percent
Missing	System	30	100.0

4.4g Spec school

		Frequency	Percent
Missing	System	30	100.0

4.4h OT

		Frequency	Percent
Missing	System	30	100.0

4.4i Social work

		Frequency	Percent
Missing	System	30	100.0

4.4j Medical

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	7	23.3	100.0	100.0
Missing	System	23	76.7		
Total		30	100.0		

4.4k Speech

		Frequency	Percent
Missing	System	30	100.0

4.4l Home schooling

		Frequency	Percent
Missing	System	30	100.0

4.5a Psych

		Frequency	Percent
Missing	System	30	100.0

4.5b Therapy

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	7	23.3	100.0	100.0
Missing	System	23	76.7		
Total		30	100.0		

4.5c PC

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	4	13.3	100.0	100.0
Missing	System	26	86.7		
Total		30	100.0		

4.5d STEP

		Frequency	Percent
Missing	System	30	100.0

4.5e Rem School

	Frequency	Percent	Valid Percent	Cumulative Percent

Valid	1	3	10.0	100.0	100.0
Missing	System	27	90.0		
Total		30	100.0		

4.5f Rem class

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	1	3.3	100.0	100.0
Missing	System	29	96.7		
Total		30	100.0		

4.5g Spec school

		Frequency	Percent
Missing	System	30	100.0

4.5h OT

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	4	13.3	100.0	100.0
Missing	System	26	86.7		
Total		30	100.0		

4.5i Social work

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	3	10.0	100.0	100.0
Missing	System	27	90.0		
Total		30	100.0		

4.5j Medical

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	7	23.3	100.0	100.0
Missing	System	23	76.7		
Total		30	100.0		

4.5k Speech

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	1	3.3	100.0	100.0
Missing	System	29	96.7		
Total		30	100.0		

4.5l Home schooling

		Frequency	Percent
Missing	System	30	100.0

4.6a Psych

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	1	3.3	100.0	100.0
Missing	System	29	96.7		
Total		30	100.0		

4.6b Therapy

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	2	6.7	100.0	100.0
Missing	System	28	93.3		

4.6b Therapy

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	2	6.7	100.0	100.0
Missing	System	28	93.3		
Total		30	100.0		

4.6c PC

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	1	3.3	100.0	100.0
Missing	System	29	96.7		
Total		30	100.0		

4.6d STEP

		Frequency	Percent
Missing	System	30	100.0

4.6e Rem School

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	1	3.3	100.0	100.0
Missing	System	29	96.7		
Total		30	100.0		

4.6f Rem class

		Frequency	Percent
Missing	System	30	100.0

4.6g Spec school

		Frequency	Percent
Missing	System	30	100.0

4.6h OT

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	1	3.3	100.0	100.0
Missing	System	29	96.7		
Total		30	100.0		

4.6i Social work

		Frequency	Percent
Missing	System	30	100.0

4.6j Medical

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	6	20.0	100.0	100.0
Missing	System	24	80.0		
Total		30	100.0		

4.6k Speech

		Frequency	Percent
Missing	System	30	100.0

4.6l Home schooling

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	1	3.3	100.0	100.0

Missing	System	29	96.7		
Total		30	100.0		

Appendix 4

Crosstabs

1.2. Gender of caregiver* Adherence

Crosstab

			Adherence		Total
			No Adherence	Adherence	
1.2. Gender	Male	Count	3	2	5
		Expected Count	2.2	2.8	5.0
		% within 1.2. Gender	60.0%	40.0%	100.0%
		% within Adherence	23.1%	11.8%	16.7%
		% of Total	10.0%	6.7%	16.7%
		Std. Residual	.6	-.5	
	Female	Count	10	15	25
		Expected Count	10.8	14.2	25.0
		% within 1.2. Gender	40.0%	60.0%	100.0%
		% within Adherence	76.9%	88.2%	83.3%
		% of Total	33.3%	50.0%	83.3%
		Std. Residual	-.3	.2	
Total		Count	13	17	30
		Expected Count	13.0	17.0	30.0
		% within 1.2. Gender	43.3%	56.7%	100.0%
		% within Adherence	100.0%	100.0%	100.0%
		% of Total	43.3%	56.7%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	Point Probability
Pearson Chi-Square	.679[a]	1	.410	.628	.367	
Continuity Correction[b]	.109	1	.742			
Likelihood Ratio	.673	1	.412	.628	.367	
Fisher's Exact Test				.628	.367	
Linear-by-Linear Association	.656[c]	1	.418	.628	.367	.273
N of Valid Cases	30					

a. 2 cells (50.0%) have expected count less than 5. The minimum expected count is 2.17.
b. Computed only for a 2x2 table
c. The standardized statistic is .810.

Symmetric Measures

		Value	Approx. Sig.	Exact Sig.
Nominal by Nominal	Phi	.150	.410	.628
	Cramer's V	.150	.410	.628
N of Valid Cases		30		

a. Not assuming the null hypothesis.
b. Using the asymptotic standard error assuming the null hypothesis.

1.3. Race group * Adherence

Crosstab

			Adherence		Total
			No Adherence	Adherence	
1.3. Race group	Black	Count	9	12	21
		Expected Count	9.1	11.9	21.0
		% within 1.3. Race group	42.9%	57.1%	100.0%
		% within Adherence	69.2%	70.6%	70.0%
		% of Total	30.0%	40.0%	70.0%
		Std. Residual	.0	.0	
	White	Count	3	3	6
		Expected Count	2.6	3.4	6.0
		% within 1.3. Race group	50.0%	50.0%	100.0%

		% within Adherence	23.1%	17.6%	20.0%
		% of Total	10.0%	10.0%	20.0%
		Std. Residual	.2	-.2	
	Asian	Count	1	2	3

Crosstab

			Adherence		Total
			No Adherence	Adherence	
1.3. Race group	Asian	Expected Count	1.3	1.7	3.0
		% within 1.3. Race group	33.3%	66.7%	100.0%
		% within Adherence	7.7%	11.8%	10.0%
		% of Total	3.3%	6.7%	10.0%
		Std. Residual	-.3	.2	
		Count	13	17	30
		Expected Count	13.0	17.0	30.0
Total		% within 1.3. Race group	43.3%	56.7%	100.0%
		% within Adherence	100.0%	100.0%	100.0%
		% of Total	43.3%	56.7%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	Point Probability
Pearson Chi-Square	.233[a]	2	.890	1.000		
Likelihood Ratio	.235	2	.889	1.000		
Fisher's Exact Test	.430			1.000		
Linear-by-Linear Association	.039[b]	1	.844	1.000	.516	.157
N of Valid Cases	30					

a. 4 cells (66.7%) have expected count less than 5. The minimum expected count is 1.30.
b. The standardized statistic is .196.

Symmetric Measures

		Value	Approx. Sig.	Exact Sig.
Nominal by Nominal	Phi	.088	.890	1.000
	Cramer's V	.088	.890	1.000
N of Valid Cases		30		

a. Not assuming the null hypothesis.
b. Using the asymptotic standard error assuming the null hypothesis.

2.2. Gender of child * Adherence

Crosstab

			Adherence		Total
			No Adherence	Adherence	
2.2. Gender	Male	Count	7	11	18
		Expected Count	7.8	10.2	18.0
		% within 2.2. Gender	38.9%	61.1%	100.0%
		% within Adherence	53.8%	64.7%	60.0%
		% of Total	23.3%	36.7%	60.0%
		Std. Residual	-.3	.3	
	Female	Count	6	6	12
		Expected Count	5.2	6.8	12.0
		% within 2.2. Gender	50.0%	50.0%	100.0%
		% within Adherence	46.2%	35.3%	40.0%
		% of Total	20.0%	20.0%	40.0%
		Std. Residual	.4	-.3	
Total		Count	13	17	30
		Expected Count	13.0	17.0	30.0
		% within 2.2. Gender	43.3%	56.7%	100.0%
		% within Adherence	100.0%	100.0%	100.0%
		% of Total	43.3%	56.7%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	Point Probability
Pearson Chi-Square	.362[a]	1	.547	.711	.410	

Continuity Correction[b]	.051	1	.821			
Likelihood Ratio	.361	1	.548	.711	.410	
Fisher's Exact Test				.711	.410	
Linear-by-Linear Association	.350[c]	1	.554	.711	.410	.246
N of Valid Cases	30					

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 5.20.
b. Computed only for a 2x2 table
c. The standardized statistic is -.592.

Symmetric Measures

		Value	Approx. Sig.	Exact Sig.
Nominal by Nominal	Phi	-.110	.547	.711
	Cramer's V	.110	.547	.711
N of Valid Cases		30		

a. Not assuming the null hypothesis.
b. Using the asymptotic standard error assuming the null hypothesis.

3.2. Hospital * Adherence

Crosstab

			Adherence		Total
			No Adherence	Adherence	
3.2. Hospital	Chris Hani Baragwanath Hospital (CHBH)	Count	6	9	15
		Expected Count	6.5	8.5	15.0
		% within 3.2. Hospital	40.0%	60.0%	100.0%
		% within Adherence	46.2%	52.9%	50.0%
		% of Total	20.0%	30.0%	50.0%
		Std. Residual	-.2	.2	
	Tara H.Moross Hospital	Count	7	8	15
		Expected Count	6.5	8.5	15.0
		% within 3.2. Hospital	46.7%	53.3%	100.0%
		% within Adherence	53.8%	47.1%	50.0%
		% of Total	23.3%	26.7%	50.0%
		Std. Residual	.2	-.2	
Total		Count	13	17	30
		Expected Count	13.0	17.0	30.0
		% within 3.2. Hospital	43.3%	56.7%	100.0%
		% within Adherence	100.0%	100.0%	100.0%
		% of Total	43.3%	56.7%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	Point Probability
Pearson Chi-Square	.136[a]	1	.713	1.000	.500	
Continuity Correction[b]	.000	1	1.000			
Likelihood Ratio	.136	1	.712	1.000	.500	
Fisher's Exact Test				1.000	.500	
Linear-by-Linear Association	.131[c]	1	.717	1.000	.500	.269
N of Valid Cases	30					

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 6.50.
b. Computed only for a 2x2 table
c. The standardized statistic is -.362.

Symmetric Measures

		Value	Approx. Sig.	Exact Sig.
Nominal by Nominal	Phi	-.067	.713	1.000
	Cramer's V	.067	.713	1.000
N of Valid Cases		30		

a. Not assuming the null hypothesis.
b. Using the asymptotic standard error assuming the null hypothesis.

3.5. Child's grade at time of assessment * Adherence

Crosstab

			Adherence		Total
			No Adherence	Adherence	
Child's grade at time of assessment	Grade 0 to 2	Count	6	6	12
		Expected Count	5.0	7.0	12.0
		% within Child's grade at time of assessment	50.0%	50.0%	100.0%
		% within Adherence	50.0%	35.3%	41.4%
		% of Total	20.7%	20.7%	41.4%
		Std. Residual	.5	-.4	
	Grade 3 to 5	Count	3	7	10
		Expected Count	4.1	5.9	10.0
		% within Child's grade at time of assessment	30.0%	70.0%	100.0%
		% within Adherence	25.0%	41.2%	34.5%
		% of Total	10.3%	24.1%	34.5%
		Std. Residual	-.6	.5	
	Grade 6 to 8	Count	3	4	7

Crosstab

			Adherence		Total
			No Adherence	Adherence	
Child's grade at time of assessment	Grade 6 to 8	Expected Count	2.9	4.1	7.0
		% within Child's grade at time of assessment	42.9%	57.1%	100.0%
		% within Adherence	25.0%	23.5%	24.1%
		% of Total	10.3%	13.8%	24.1%
		Std. Residual	.1	-.1	
Total		Count	12	17	29
		Expected Count	12.0	17.0	29.0
		% within Child's grade at time of assessment	41.4%	58.6%	100.0%
		% within Adherence	100.0%	100.0%	100.0%
		% of Total	41.4%	58.6%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	Point Probability
Pearson Chi-Square	.908[a]	2	.635	.644		
Likelihood Ratio	.923	2	.630	.644		
Fisher's Exact Test	.977			.644		
Linear-by-Linear Association	.190[b]	1	.663	.816	.422	.169
N of Valid Cases	29					

a. 4 cells (66.7%) have expected count less than 5. The minimum expected count is 2.90.
b. The standardized statistic is .436.

Symmetric Measures

		Value	Approx. Sig.	Exact Sig.
Nominal by Nominal	Phi	.177	.635	.644
	Cramer's V	.177	.635	.644
N of Valid Cases		29		

a. Not assuming the null hypothesis.
b. Using the asymptotic standard error assuming the null hypothesis.

2.3. Child's current grade * Adherence

Crosstab

			Adherence		Total
			No Adherence	Adherence	
Child's current grade	Grade 0 to 2	Count	2	6	8
		Expected Count	3.3	4.7	8.0
		% within Child's current grade	25.0%	75.0%	100.0%
		% within Adherence	16.7%	35.3%	27.6%
		% of Total	6.9%	20.7%	27.6%

		Std. Residual	-.7	.6	
		Count	6	5	11
		Expected Count	4.6	6.4	11.0
		% within Child's current grade	54.5%	45.5%	100.0%
	Grade 3 to 5	% within Adherence	50.0%	29.4%	37.9%
		% of Total	20.7%	17.2%	37.9%
		Std. Residual	.7	-.6	
		Count	4	3	7
		Expected Count	2.9	4.1	7.0
		% within Child's current grade	57.1%	42.9%	100.0%
	Grade 6 to 8	% within Adherence	33.3%	17.6%	24.1%
		% of Total	13.8%	10.3%	24.1%
		Std. Residual	.6	-.5	
	Grade 9 to 10	Count	0	3	3

Crosstab

			Adherence		Total
			No Adherence	Adherence	
Child's current grade	Grade 9 to 10	Expected Count	1.2	1.8	3.0
		% within Child's current grade	0.0%	100.0%	100.0%
		% within Adherence	0.0%	17.6%	10.3%
		% of Total	0.0%	10.3%	10.3%
		Std. Residual	-1.1	.9	
Total		Count	12	17	29
		Expected Count	12.0	17.0	29.0
		% within Child's current grade	41.4%	58.6%	100.0%
		% within Adherence	100.0%	100.0%	100.0%
		% of Total	41.4%	58.6%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	Point Probability
Pearson Chi-Square	4.506[a]	3	.212	.231		
Likelihood Ratio	5.620	3	.132	.202		
Fisher's Exact Test	4.064			.276		
Linear-by-Linear Association	.001[b]	1	.979	1.000	.568	.153
N of Valid Cases	29					

a. 7 cells (87.5%) have expected count less than 5. The minimum expected count is 1.24.
b. The standardized statistic is .027.

Symmetric Measures

		Value	Approx. Sig.	Exact Sig.
Nominal by Nominal	Phi	.394	.212	.231
	Cramer's V	.394	.212	.231
N of Valid Cases		29		

a. Not assuming the null hypothesis.
b. Using the asymptotic standard error assuming the null hypothesis.

3.4. Child's age at the time of assessment * Adherence

Crosstab

			Adherence		Total
			No Adherence	Adherence	
Child's age at the time of assessment	3 to 7	Count	4	6	10
		Expected Count	4.3	5.7	10.0
		% within Child's age at the time of assessment	40.0%	60.0%	100.0%
		% within Adherence	30.8%	35.3%	33.3%
		% of Total	13.3%	20.0%	33.3%
		Std. Residual	-.2	.1	
	8 to 10	Count	4	5	9
		Expected Count	3.9	5.1	9.0
		% within Child's age at the time of assessment	44.4%	55.6%	100.0%
		% within Adherence	30.8%	29.4%	30.0%

		% of Total	13.3%	16.7%	30.0%
		Std. Residual	.1	.0	
	11 to 13	Count	4	2	6
		Expected Count	2.6	3.4	6.0
		% within Child's age at the time of assessment	66.7%	33.3%	100.0%
		% within Adherence	30.8%	11.8%	20.0%
		% of Total	13.3%	6.7%	20.0%
		Std. Residual	.9	-.8	
	14 to 16	Count	1	4	5

Crosstab

			Adherence		Total
			No Adherence	Adherence	
Child's age at the time of assessment	14 to 16	Expected Count	2.2	2.8	5.0
		% within Child's age at the time of assessment	20.0%	80.0%	100.0%
		% within Adherence	7.7%	23.5%	16.7%
		% of Total	3.3%	13.3%	16.7%
		Std. Residual	-.8	.7	
Total		Count	13	17	30
		Expected Count	13.0	17.0	30.0
		% within Child's age at the time of assessment	43.3%	56.7%	100.0%
		% within Adherence	100.0%	100.0%	100.0%
		% of Total	43.3%	56.7%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	Point Probability
Pearson Chi-Square	2.489[a]	3	.477	.557		
Likelihood Ratio	2.586	3	.460	.557		
Fisher's Exact Test	2.399			.557		
Linear-by-Linear Association	.041[b]	1	.840	.869	.488	.130
N of Valid Cases	30					

a. 6 cells (75.0%) have expected count less than 5. The minimum expected count is 2.17.
b. The standardized statistic is .202.

Symmetric Measures

		Value	Approx. Sig.	Exact Sig.
Nominal by Nominal	Phi	.288	.477	.557
	Cramer's V	.288	.477	.557
N of Valid Cases		30		

a. Not assuming the null hypothesis.
b. Using the asymptotic standard error assuming the null hypothesis.

2.1. Child's current age * Adherence

Crosstab

			Adherence		Total
			No Adherence	Adherence	
Child's current age	3 to 7	Count	1	3	4
		Expected Count	1.8	2.2	4.0
		% within Child's current age	25.0%	75.0%	100.0%
		% within Adherence	9.1%	21.4%	16.0%
		% of Total	4.0%	12.0%	16.0%
		Std. Residual	-.6	.5	
	8 to 10	Count	5	4	9
		Expected Count	4.0	5.0	9.0
		% within Child's current age	55.6%	44.4%	100.0%
		% within Adherence	45.5%	28.6%	36.0%
		% of Total	20.0%	16.0%	36.0%
		Std. Residual	.5	-.5	
	11 to 13	Count	3	1	4
		Expected Count	1.8	2.2	4.0
		% within Child's current age	75.0%	25.0%	100.0%

		% within Adherence	27.3%	7.1%	16.0%
		% of Total	12.0%	4.0%	16.0%
		Std. Residual	.9	-.8	
	14 to 17	Count	2	6	8

Crosstab

			Adherence		Total
			No Adherence	Adherence	
Child's current age	14 to 17	Expected Count	3.5	4.5	8.0
		% within Child's current age	25.0%	75.0%	100.0%
		% within Adherence	18.2%	42.9%	32.0%
		% of Total	8.0%	24.0%	32.0%
		Std. Residual	-.8	.7	
		Count	11	14	25
		Expected Count	11.0	14.0	25.0
Total		% within Child's current age	44.0%	56.0%	100.0%
		% within Adherence	100.0%	100.0%	100.0%
		% of Total	44.0%	56.0%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	Point Probability
Pearson Chi-Square	3.806[a]	3	.283	.321		
Likelihood Ratio	3.936	3	.268	.321		
Fisher's Exact Test	3.596			.347		
Linear-by-Linear Association	.142[b]	1	.707	.724	.423	.133
N of Valid Cases	25					

a. 7 cells (87.5%) have expected count less than 5. The minimum expected count is 1.76.
b. The standardized statistic is .376.

Symmetric Measures

		Value	Approx. Sig.	Exact Sig.
Nominal by Nominal	Phi	.390	.283	.321
	Cramer's V	.390	.283	.321
N of Valid Cases		25		

a. Not assuming the null hypothesis.
b. Using the asymptotic standard error assuming the null hypothesis.

1.1. Parent age * Adherence

Crosstab

			Adherence		Total
			No Adherence	Adherence	
Parent age age	Younger than 30	Count	2	2	4
		Expected Count	1.7	2.3	4.0
		% within Parent age	50.0%	50.0%	100.0%
		% within Adherence	15.4%	11.8%	13.3%
		% of Total	6.7%	6.7%	13.3%
		Std. Residual	.2	-.2	
	30 to 39	Count	9	6	15
		Expected Count	6.5	8.5	15.0
		% within Parent age	60.0%	40.0%	100.0%
		% within Adherence	69.2%	35.3%	50.0%
		% of Total	30.0%	20.0%	50.0%
		Std. Residual	1.0	-.9	
	40 and older	Count	2	9	11

Crosstab

			Adherence		Total
			No Adherence	Adherence	
Parent age	40 and older	Expected Count	4.8	6.2	11.0
		% within Parent age	18.2%	81.8%	100.0%
		% within Adherence	15.4%	52.9%	36.7%
		% of Total	6.7%	30.0%	36.7%
		Std. Residual	-1.3	1.1	
Total		Count	13	17	30
		Expected Count	13.0	17.0	30.0

	% within Parent age	43.3%	56.7%	100.0%
	% within Adherence	100.0%	100.0%	100.0%
	% of Total	43.3%	56.7%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	Point Probability
Pearson Chi-Square	4.603[a]	2	.100	.117		
Likelihood Ratio	4.887	2	.087	.166		
Fisher's Exact Test	4.609			.117		
Linear-by-Linear Association	2.710[b]	1	.100	.111	.084	.058
N of Valid Cases	30					

a. 3 cells (50.0%) have expected count less than 5. The minimum expected count is 1.73.
b. The standardized statistic is 1.646.

Symmetric Measures

		Value	Approx. Sig.	Exact Sig.
Nominal by Nominal	Phi	.392	.100	.117
	Cramer's V	.392	.100	.117
N of Valid Cases		30		

a. Not assuming the null hypothesis.
b. Using the asymptotic standard error assuming the null hypothesis.

1.4. Caregiver * Adherence

Crosstab

			Adherence		Total
			No Adherence	Adherence	
Caregiver	Mother of child	Count	10	13	23
		Expected Count	10.0	13.0	23.0
		% within Caregiver	43.5%	56.5%	100.0%
		% within Adherence	76.9%	76.5%	76.7%
		% of Total	33.3%	43.3%	76.7%
		Std. Residual	.0	.0	
	Other	Count	3	4	7
		Expected Count	3.0	4.0	7.0
		% within Caregiver	42.9%	57.1%	100.0%
		% within Adherence	23.1%	23.5%	23.3%
		% of Total	10.0%	13.3%	23.3%
		Std. Residual	.0	.0	
Total		Count	13	17	30
		Expected Count	13.0	17.0	30.0
		% within Caregiver	43.3%	56.7%	100.0%
		% within Adherence	100.0%	100.0%	100.0%
		% of Total	43.3%	56.7%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	Point Probability
Pearson Chi-Square	.001[a]	1	.977	1.000	.660	
Continuity Correction[b]	.000	1	1.000			
Likelihood Ratio	.001	1	.977	1.000	.660	
Fisher's Exact Test				1.000	.660	
Linear-by-Linear Association	.001[c]	1	.977	1.000	.660	.334
N of Valid Cases	30					

a. 2 cells (50.0%) have expected count less than 5. The minimum expected count is 3.03.
b. Computed only for a 2x2 table
c. The standardized statistic is .029.

Symmetric Measures

		Value	Approx. Sig.	Exact Sig.
Nominal by Nominal	Phi	.005	.977	1.000
	Cramer's V	.005	.977	1.000
N of Valid Cases		30		

a. Not assuming the null hypothesis.
b. Using the asymptotic standard error assuming the null hypothesis.

1.7. Employment Status * Adherence

Crosstab

			Adherence		Total
			No Adherence	Adherence	
Employment Status	Employed	Count	8	8	16
		Expected Count	6.9	9.1	16.0
		% within Employment Status	50.0%	50.0%	100.0%
		% within Adherence	61.5%	47.1%	53.3%
		% of Total	26.7%	26.7%	53.3%
		Std. Residual	.4	-.4	
	Not/part employed	Count	5	9	14
		Expected Count	6.1	7.9	14.0
		% within Employment Status	35.7%	64.3%	100.0%
		% within Adherence	38.5%	52.9%	46.7%
		% of Total	16.7%	30.0%	46.7%
		Std. Residual	-.4	.4	
Total		Count	13	17	30
		Expected Count	13.0	17.0	30.0
		% within Employment Status	43.3%	56.7%	100.0%
		% within Adherence	100.0%	100.0%	100.0%
		% of Total	43.3%	56.7%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	Point Probability
Pearson Chi-Square	.621[a]	1	.431	.484	.339	
Continuity Correction[b]	.175	1	.676			
Likelihood Ratio	.624	1	.430	.484	.339	
Fisher's Exact Test				.484	.339	
Linear-by-Linear Association	.600[c]	1	.439	.484	.339	.215
N of Valid Cases	30					

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 6.07.
b. Computed only for a 2x2 table
c. The standardized statistic is .775.

Symmetric Measures

		Value	Approx. Sig.	Exact Sig.
Nominal by Nominal	Phi	.144	.431	.484
	Cramer's V	.144	.431	.484
N of Valid Cases		30		

a. Not assuming the null hypothesis.
b. Using the asymptotic standard error assuming the null hypothesis.

1.9. Daytime caretaker * Adherence

Crosstab

			Adherence		Total
			No Adherence	Adherence	
Daytime caretaker	Mother of child	Count	6	9	15
		Expected Count	6.5	8.5	15.0
		% within Daytime caretaker	40.0%	60.0%	100.0%
		% within Adherence	46.2%	52.9%	50.0%
		% of Total	20.0%	30.0%	50.0%
		Std. Residual	-.2	.2	
	Others	Count	7	8	15
		Expected Count	6.5	8.5	15.0
		% within Daytime caretaker	46.7%	53.3%	100.0%
		% within Adherence	53.8%	47.1%	50.0%
		% of Total	23.3%	26.7%	50.0%
		Std. Residual	.2	-.2	
Total		Count	13	17	30

	Expected Count	13.0	17.0	30.0
	% within Daytime caretaker	43.3%	56.7%	100.0%
	% within Adherence	100.0%	100.0%	100.0%
	% of Total	43.3%	56.7%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	Point Probability
Pearson Chi-Square	.136[a]	1	.713	1.000	.500	
Continuity Correction[b]	.000	1	1.000			
Likelihood Ratio	.136	1	.712	1.000	.500	
Fisher's Exact Test				1.000	.500	
Linear-by-Linear Association	.131[c]	1	.717	1.000	.500	.269
N of Valid Cases	30					

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 6.50.
b. Computed only for a 2x2 table
c. The standardized statistic is -.362.

Symmetric Measures

		Value	Approx. Sig.	Exact Sig.
Nominal by Nominal	Phi	-.067	.713	1.000
	Cramer's V	.067	.713	1.000
N of Valid Cases		30		

a. Not assuming the null hypothesis.
b. Using the asymptotic standard error assuming the null hypothesis.

3.2. Hospital * Employment Status Crosstabulation

			Employment Status		Total
			Employed	Not/part employed	
3.2. Hospital	Chris Hani Baragwanath Hospital (CHBH)	Count	3	12	15
		Expected Count	8.0	7.0	15.0
		% within 3.2. Hospital	20.0%	80.0%	100.0%
		% of Total	10.0%	40.0%	50.0%
		Std. Residual	-1.8	1.9	
	Tara H.Moross Hospital	Count	13	2	15
		Expected Count	8.0	7.0	15.0
		% within 3.2. Hospital	86.7%	13.3%	100.0%
		% of Total	43.3%	6.7%	50.0%
		Std. Residual	1.8	-1.9	
Total		Count	16	14	30
		Expected Count	16.0	14.0	30.0
		% within 3.2. Hospital	53.3%	46.7%	100.0%
		% of Total	53.3%	46.7%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	13.393[a]	1	.000		
Continuity Correction[b]	10.848	1	.001		
Likelihood Ratio	14.663	1	.000		
Fisher's Exact Test				.001	.000
Linear-by-Linear Association	12.946	1	.000		
N of Valid Cases	30				

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 7.00.

b. Computed only for a 2x2 table

References

Ackerman, S.J., Hilsenroth, M.J., Baity, M.R. & Blagys, M.D. (2000).Interaction of therapeutic alliance during psychological assessment.*Journal of Personality Assessment*, *75* (1), 82–109.

Anastasi, A. & Urbina, S. (1997). *Psychological Testing*. New Jersey: Prentice Hall.

Andra, M.L. & Thomas, A.M. (1998). The influence of parenting stress and socioeconomic disadvantage on therapy attendance among parents and their behaviour disordered preschool children. *Education and treatment of children, 21*, 195-208.

Bailey, K.D. (1994). *Methods of social research* (4thed.). USA: Macmillan.

Barber, J.P., Triffleman, E., & Marmar, C. (2007). Considerations in treatment integrity: implications and recommendations for PTSD research. *Journal of Traumatic Stress, 20* (5)*,* 793–805.

Bergman, M.M. (2008). Introduction: whither mixed methods? In M.M. Bergman (Ed.), *Advances in mixed methods research* (pp. 44-56). London: Sage.

Berk, L., Hallam, K.T., Colom, F., Vieta, E., Hasty, M., Macneil, C., & Berk, M. (2010).Enhancing medication adherence in patients with bipolar disorder.*Human psychopharmacology clinical experience, 25,* 1-16.

Beutler, L.E., Wakefield, P.W. & Williams, R.E. (1994). Use of psychological tests/instruments for treatment planning. In M.E. Maruish (Ed.), *The use of psychological testing for treatment planning and outcome assessment* (pp. 55-74). USA: Lawrence Erlbaum Associates.

Bird, H. (1996). Epidemiology of childhood disorders in a crosscultural context. *Journal of Child Psychology and Psychiatry and Allied Disciplines, 37,* 35-49.

Boyatzis, R.E. (1998). *Transforming qualitative information: thematic analysis and code development.* USA: Sage.

Braun, V. & Clarke, V. (2006).Using thematic analysis in psychology.*Qualitative research in psychology, 3,* 77-101.

Broadbent, E., Donkin, L. & Stroh, J.C. (2011). Illness and treatment perceptions are associated with adherence to medications, diet, and exercise in diabetic patients. *Diabetes Care, 34* (2), 338-340.

Brown, R., Border K. & Cingerman S. (1998). Adherence to Methylphenidate Therapy in a Pediatric Population: A Preliminary Investigation. In A. Johnson (2009).*The use of psychological assessments in a southern Illinois diversion program: An outcome study of recommendation adherence in juvenile offenders.* Southern Illinois University: USA.

Bruce, J.M., Hancock, L.M., Arnett, P. & Lynch, S. (2010). Treatment adherence in multiple sclerosis: association with emotional status, personality, and cognition. *Journal of Behavioral Medicine, 33* (3), 219-27.

Buckley, P.F., Wirshing, D.A., Bhushan, P., Pierre, J.M., Resnick S.A., & Wirshing, W.C. (2007).Lack of Insight in Schizophrenia: Impact on Treatment Adherence. *CNS Drugs, 21* (2), 129-141.

Butz, A. (2006). Evidence-Based Practice: What Is the Evidence for Medication Adherence in Children? *Journal of Pediatric Health Care, 20* (5), 338-341.

Cadman, D., Shurvell, B., Davies, P. & Bradfield, S. (1984). Compliance in the community with consultants' recommendations for developmentally handicapped children.In S.J. Pratt, (1997).*Parental compliance of psychological recommendations following an outpatient child assessment.*Unpublished doctoral dissertation. Utah State University, USA.

Canino, G., Bird, H. R., Rubio-Stipec, M. & Bravo, M. (1995). Child psychiatric epidemiology: what we have learned and what we need to learn. *International Journal of Methods in Psychiatric Research, 5,* 79-92.

Carter, A. S., Briggs-Gowan, M. J., & Davis, N. O. (2004). Assessment of young children's social– emotional development and psychopathology: Recent advances and recommendations for practice. *Journal of Clinical Child Psychology and Psychiatry, 45,* 109–134.

Chaiyachati, K., Hirschhorn, L.R., Tanser, F., Newell, M.L. &Bärnighausen, T. (2011).Validating five questions of antiretroviral nonadherence in a public-sector treatment program in rural South Africa.*AIDS Patient Care & STDs, 25 (*3), 163-170.

Cohen, P., Provet, A. G. & Jones, M. (1996).Prevalence of emotional and behavioral disorders during childhood and adolescence.In B.L. Levin & J. Petrila (Eds.), *Mental Health Services.A Public Health Perspective*, (pp. 193-209). NY: Oxford University.

Colom, F., Vieta, E., Martinez-Aran, A., Reinares, M., Benabarre, A. & Gasto, C. (2000).*Clinical factors associated with treatment noncompliance in euthymic bipolar patients.*In L. Osterberg & T. Blaschke. (2005). Drug therapy: adherence to medication. *The New England Journal of Medicine, 353,* 487-97.

Cramer, J.A. & Rosenheck, R. (1998).*Compliance with medication regimens for mental and physical disorders.*In L. Osterberg & T. Blaschke. (2005). Drug therapy: adherence to medication. *The New England Journal of Medicine, 353,* 487-97.

Creswell, J.W. & Plano Clark, V.L. (2007). *Designing and conducting mixed methods research.* USA: Sage.

De Civita, M. & Dobkin, P.L. (2005). Pediatric adherence: conceptual and methodological considerations. *Children's Health Care, 34*(1), 19–34

Dierker, L., Nargiso, J, Wiseman, R, & Hoff, D. (2001), Factors Predicting Attrition
Within a Community Initiated System of Care. In A. Johnson, (2009).*The use of psychological assessments in a southern Illinois diversion program: An outcome study of recommendation adherence in juvenile offenders.* Southern Illinois University: USA.

Dreyer, A.S., O'Laughlin, L., Moore, J. & Milam, Z. (2010).Parental adherence to clinical recommendations in an ADHD evaluation clinic.*Journal of clinical psychology, 66* (10), 1101—1120.

Dunst, C.J., Leet, H.E. & Trivette, C.M. (1998). Family resources, personal well-being, and early intervention.*Journal of special education, 22*, 109-116.

Field, A. (2005). *Discovering statistics using SPSS* (2nd ed.). London: Sage.

Finn, S. E., & Tonsager, M. E. (1997). Information-gathering and therapeutic models of assessment: Complementary Paradigms. *Psychological Assessment, 9,* 374–385.

Flanagan, D.P. & Harrison, P.L. (2005).*Contemporary intellectual assessment: theories, tests and issues.* NY: Guilford.

Flisher, A.J., Kramer, R.A., Grosser, R.C., Alegria, M., Bird, H.R., Bourdon, K.H., Goodman, S.H., Greenwald, S., Horwitz, S.M., Moore, R.E., Narrow, W.E. & Hoven, C.W. (1997). Correlates of unmet needs for mental health services by children and adolescents.*Psychological Medicine, 27,* 1145 – 1154.

Foxcroft, C. & Roodt, G. (Eds.). (2003). *An introduction to psychological assessment in the South African context.* South Africa: Oxford University.

Friedman, R. M. (1996). Mental health policy for children.In B.L. Levin & J. Petrila (Eds.), *Mental Health Services.A Public Health Perspective*, (pp. 193-209). NY: Oxford University.

Fung, K.M.T., Tsang, H.W.H. (2008). Self-Stigma of People with Schizophrenia as Predictor of Their Adherence to Psychosocial Treatment. *Psychiatric Rehabilitation Journal, 32* (2), 95-104.

Gabel, S., Oster, G.D. & Butnik, S.M. (1986).*Understanding psychological testing in children: A guide for health professionals.* USA: Plenum Publishing.

Gearing, R.E. & Charach, A. (2009).Medication adherence for children and adolescents with first-episode psychosis following hospitalization.*European Child Adolescent Psychiatry, 18,* 587–595.

Geffken, G.R., Keeley, M.L., Kellison, I., Storch, E.A. & Rodrigue, J.R. (2006). Parental Adherence to Child Psychologists' Recommendations From Psychological Testing. *Professional psychology: research and practice, 37* (5), 499–505.

Gray, R., Bressington, D., Lathlean, J. & Mills, A. (2008).Relationship between adherence, symptoms, treatment attitudes, satisfaction, and side effects in prisoners taking antipsychotic medication.*The Journal of Forensic Psychiatry and Psychology,* 19 (3), 335-351.

Haynes, R. (1979). Introduction.In A. Johnson. (2009). *The use of psychological assessments in a southern Illinois diversion program: An outcome study of recommendation adherence in juvenile offenders.*Unpublished doctoral dissertation.Southern Illinois University, USA.

Henderson, K.C., Hindman, J., Johnson, S.C., Valuck, R.J., & Kiser, J.J. (2011). Assessing the effectiveness of pharmacy-based adherence interventions on antiretroviral adherence in persons with HIV.*AIDS Patient Care & STDs, 25* (4), 221-228. DOI: 10.1089/apc.2010.0324

Hilsenroth, M.J., Peters, E.J. & Ackerman, S.J. (2004). The Development of therapeutic alliance during psychological assessment: Patient and therapist perspectives across treatment. *Journal of Personality Assessment, 83* (3), 332–344.

Hinckley, C.D. (2005). *Exploring the use of television for guidance to expectant fathers.*Unpublished MA dissertation. University of Pretoria, South Africa.

Hoberman, H. M. (1992). Ethnic minority status and adolescent mental health services utilization.*Journal of Mental Health Administration, 19,* 246-267.

Hornblow, A. R., Bushnell, J. A., Wells, J. E., Joyce, P. R. & Oakley-Brown, M. A. (1990). Christchurch epidemiology study: use of mental health services. *New Zealand Medical Journal, 103,* 415-417.

Hurt, S.W., Reznikoff, M. & Clarkin, J.F. (1991). *Psychological assessment, psychiatric diagnosis & treatment planning.*USA: Psychology.

Jensen, P. S., Bloedau, L. & Davis, H. (1990). Children at risk : II. Risk factors and clinic utilization.*Journal of the American Academy of Child and Adolescent Psychiatry, 29,* 804-812.

Johnson, A. (2009). *The use of psychological assessments in a southern Illinois diversion program: An outcome study of recommendation adherence in juvenile offenders.*Unpublished doctoral dissertation.Southern Illinois University, USA.

Johnson, B. & Turner, L.A. (2002).Data collection strategies in mixed methods research. In A. Tashakkori & C. Teddlie (Eds.), *Handbook of mixed methods in social and behavioural research* (pp. 189-208). CA: Sage.

Joost, J. C., Chessare, J. B., Schaeufele, J., Link, D. & Weaver, M. T. (1989).Compliance with a prescription for psychotherapeutic counselling in childhood. *Journal of Developmental Behavioral Pediatrics, 10,* 98–102.

Kagee, A. (2004). Treatment adherence in South African primary healthcare.*South African Family Practice, 46,* 27–30.

Kalichman, S.C., Kalichman, M.O., Cherry, C., Swetzes, C., Amaral, C.M., White, D., Jones, M., Grebler, T. & Eaton, L. (2011). Brief behavioural self-regulation counselling for HIV treatment adherence delivered by cell phone: an initial test of concept trial. *AIDS Patient Care And Stds, 25* (5), 303-10.

Kaplan, R.M. & Saccuzzo, D.P. (2009).*Psychological testing: Principles, applications and issues* (7th ed.). USA: Wadsworth.

Kazdin, A.E. (1991). Effectiveness of psychotherapy with children and adolescents.*Journal of Consulting and Clinical Psychology*, *59*, 785–798.

Kazdin, A.E., & Mazurik J.L. (1994).Dropping out of child psychotherapy: Distinguishing early and late dropouts over the course of treatment.*Journal of consulting and clinical psychology, 62,* 1069-1074.

King, C. A., Hovey, J., Brand, E., Wilson, R., & Ghaziuddin, N. (1997). Suicidal adolescents after hospitalization: Parent and family impacts on treatment and follow-through. *Journal of the American Academy of Child and Adolescent Psychiatry, 36,* 85-93.

Knoetze, J. & Vermoter, C.L. (2007).Communication of psycho-educational assessment results: remedial teachers' reading of assessment reports. *South African Journal of Education, 27* (1), 1–18.

Kolko, D.J., Parrish, J.M., & Wilson, F.E. (1985).Obstacles to appointment keeping in a child behaviour management clinic. *Child and family behaviour therapy, 7,* 9-15.

Lacro, J.P., Dunn, L.B., Dolder, C.R., Leckband, S.G. & Jeste, D.V. (2002).*Prevalence of and risk factors for medication nonadherence in patients with schizophrenia: a*

comprehensive review of recent literature. In L. Osterberg & T. Blaschke. (2005). Drug therapy: adherence to medication. *The New England Journal of Medicine, 353,* 487-97.

Leatt, A. (2006). Income poverty in South Africa. *South African Child Guage.* Taken from http://www.ci.org.za/depts/ci/pubs/pdf/general/gauge2006/gauge2006_incomepoverty.pdf on 7 December 2011.

Limson, J. (2002). The mental health information centre. Retrieved December 21, 2011 from the World Wide Web:
http://www.scienceinafrica.co.za/2002/march/mhic.htm

Lopez-Jaramillo, C., Lopera-Vasquez.J., Gallo, A., Ospina-Duque, J., Bell, V., Torrent, C., Martinez-Aran, A. & Vieta, E. (2010). Effects of recurrence on the cognitive performance of patients with bipolar I disorder: implications for relapse prevention and treatment adherence. *Bipolar Disorders, 12*, 557-567.

Lyon, A.R. & Budd, K.S. (2010).A community mental health implementation of parent-child interaction therapy (PCIT).*Journal of child and family studies, 19,* 654-668.

MacNaughton, K.L. & Rodrigue, J.R. (2001).Predicting adherence to recommendations by parents of clinic-referred children. *Journal of consulting and clinical psychology, 69* (2), 262-270.

Maruish, M.E. (2000). *Handbook of psychological assessment in primary care settings.* USA: Lawrence Erlbaum.

Mateyoke-Scrivner, A., Webster, J., Staton, M., & Leukefeld, C., (2004). Treatment Retention Predictors of Drug Court Participants in a Rural State.In A. Johnson. (2009). *The use of psychological assessments in a southern Illinois diversion program: An outcome study of recommendation adherence in juvenile offenders.* Unpublished doctoral dissertation. Southern Illinois University, USA.

Mazibuko, R., Mckenzie, A., & Schneider, H. (1989).Rural experiences. In A. Kagee, & M. Van der Merwe, (2006).Predicting treatment adherence among patients attending primary health care clinics: The utility of the Theory of Planned Behaviour. *South African Journal of Psychology, 36*(4), 699–714.

McIntyre, D. (1998). Input paper on health for the poverty and inequality report. In A. Kagee, & M. Van der Merwe, (2006). Predicting treatment adherence among patients attending primary health care clinics: The utility of the Theory of Planned Behaviour. *South African Journal of Psychology, 36*(4), 699–714.

Meichenbaum, D., & Turk, D.C. (Eds.). (1987*). Facilitating treatment adherence: A practitioner's guidebook.* New York: Plenum Press.

Mertens, D.M. & McLaughlin, J.A. (2004). *Research and evaluation methods in special education*. USA: Corwin Press.

Mitchell, M. & Jolley, J. (2001).*Research design explained* (4th ed.). USA: Harcourt.

Mitchell, A.J. (2006). Depressed patients and treatment adherence. *www.thelancet.com, 367,* 2041-2043.

Moore, T.R. & Symons, F.J. (2009).Adherence to behavioural and medical treatment recommendations by parents of children with autism spectrum disorders. *Journal of Autism & Developmental Disorders, 39* (8), 1173-1184.

Moore, T.R. & Symons, F.J. (2011). Adherence to treatment in a behavioral intervention curriculum for parents of children with autism spectrum disorder. *Behavior Modification, 35* (6), 570– 594.

Morse, J. (2002). Principles of mixed- and multi-method research design. In A. Tashakkori & C. Teddlie (Eds.), *Handbook of mixed methods in social and behavioural research* (pp. 189-208). CA: Sage.

Murphy, K.R. & Davidshofer, C.O. (1991).*Psychological testing: Principles and Applications* (2nd ed.). USA: Prentice-Hall.

Nordby, K., Kjonsberg, K. & Hummelvoll, J.K. (2009). Relatives of persons with recently discovered serious mental illness: in need of support to become resource persons in treatment and recovery.*Journal of Psychiatric and Mental Health Nursing.* Retrieved January 4, 2010 from the World Wide Web: http://www3.interscience.wiley.com/journal/123228692/abstract?CRETRY=1&SRETRY=0

Olfson, M., Marcus, S.C., Tedeschi, M. & Wan, G.J. (2006). Continuity of antidepressant treatment for adults with depression in the United States. *American Journal of Psychiatry, 163,*101–08.

Onwuegbuzie, A.J. & Teddlie, C. (2003).A framework for analysing data in mixed methods research. In A. Tashakkori & C. Teddlie (Eds.), *Handbook of mixed methods in social and behavioural research* (pp. 189-208). CA: Sage.

Orlando, M., Chan, K., & Morral, A. (2003). Retention Of Court-referred Youths. In Residential Treatment Programs: Client Characteristics And Treatment Process Effects. In A. Johnson. (2009). *The use of psychological assessments in a southern Illinois diversion program: An outcome study of recommendation adherence in juvenile offenders.* Unpublished doctoral dissertation. Southern Illinois University, USA.

Osterberg, L., & Blaschke, T. (2005).Drug therapy, Adherence to Medication.*The New England Journal of Medicine, 353,* 487-97.

Pavuluri, N. N., Luk, S.L. & McGee, R. (1996). Help-seeking for behavior problems by parents of preschool children: a community study. *Journal of the American Academy of Child and Adolescent Psychiatry, 35,* 215-222.

Pearsall, D.F. (1997). Psychotherapy outcome research in child psychiatric disorders. *Canadian Journal of Psychiatry*, *42*, 595–601.

Perkins, D.O. (2002). *Predictors of noncompliance in patients with schizophrenia.*In L. Osterberg & T. Blaschke. (2005). Drug therapy: adherence to medication. *The New England Journal of Medicine, 353,* 487-97.

Pinto, A. (2002). *Effect of treatment recommendation format on parental satisfaction and compliance.*USA: ProQuest Dissertations and Theses.

Pratt, S.J. (1997). *Parental compliance of psychological recommendations following an outpatient child assessment.*USA: ProQuest Dissertations and Theses.

Rapoff, M. A. (1999). *Adherence to pediatric medical regimens.* Netherlands: Kluwer Academic.

Ritchie, J. & Lewis, J. (2003).*Qualitative research practice: a guide for social science students and researchers.* London: Sage.

Sajatovic, M., Chen, P., Dines, P. & Shirley, E.R. (2007). Psychoeducational approaches to medication adherence in patients with bipolar disorder. *Dis Manage Health Outcomes, 15* (3)*,* 181-192. doi: 1173-8790/07/0003-0181/s44.95/0

Sandborgh, M., Åsenlöf, P., Lindberg, P. & Denison, E. (2010). Implementing behavioural medicine in physiotherapy treatment. *Advances in Physiotherapy, 12* (1), 13-23.

Sattler, J.M. (1992). The assessment process. In A. Pinto, (2002). *Effect of treatment recommendation format on parental satisfaction and compliance.* USA: ProQuest Dissertations and Theses.

Shaughnessy, J.J. & Zechmeister, E.B. (1997).*Research methods in psychology* (4th ed.). USA: McGraw-Hill.

Simoni, J. M., Fick, P. A., Lockhart, D. & Liebovitz, D. (2002).*Mediators of social support and antiretroviral adherence among an indigent population in New York City.* In A. Kagee, & M. Van der Merwe, (2006).Predicting treatment adherence among patients attending primary health care clinics: The utility of the Theory of Planned Behaviour. *South African Journal of Psychology, 36*(4), 699–714.

Smith, S.R., Wiggins, C.M. & Gorske, T.T. (2007). A Survey of Psychological Assessment Feedback Practices. *Assessment, 14* (3), 310-319.

Springer, C. (2004). *Treatment adherence in an early intervention program for children with attention deficit hyperactivity disorder*. Unpublished master's thesis. Fairleigh Dickinson University, USA.

Sternlight, M. & Martinez, L. (1985).*Psychological testing and assessment of the mentally retarded: a handbook.* NY: Garland.

Stubbs, B.A., Micek, M.A., Pfeiffer, J.T., Montoya, P., Gloyd, S. & Stubbs, B. (2009).Treatment partners and adherence to HAART in Central Mozambique. *AIDS Care, 21* (11), 1412-19.

Sullivan L.A. (1997). *Parental understandings of and compliance with psychoeducational assessment findings with non-public school students.* Unpublished doctoral dissertation. Temple University: USA.

Sweet, S.C. (2008). *Utility of neuropsychological evaluations in school settings.* Unpublished doctoral dissertation. DePaul University: USA.

Teddlie, C. & Yu, F. (2007).Mixed methods sampling: a typology with examples. *Journal of mixed methods research, 1* (1), 77-100.

Terre Blanche, M. & Durrheim, K. (1999).*Research in practice: applied methods for the social sciences.* South Africa: University of Cape Town.

Tharinger, D., Finn, S.E., Austin, C.A., Gentry, L.B., Bailey, K.E., Parton, V.T. & Fisher, M.E. (2008). Family Sessions as Part of Child Psychological Assessment: Goals, Techniques, Clinical Utility, and Therapeutic Value. *Journal of Personality Assessment, 90* (6), 547-558.

Thibodeau, A.S. (2006). *Parental compliance to recommendations in an ADHD clinic.* Unpublished doctoral dissertation. Indiana State University: USA.

Tidwell, R., & Wetter, J. (1978). Parental evaluation of psychological reports: A case study. In A. Pinto, (2002).*Effect of treatment recommendation format on parental satisfaction and compliance.*USA: ProQuest Dissertations and Theses.

Vogt, W.P. (1993). *Dictionary of statistics and methodology.* In M. Terre Blanche & K Durrheim, (1999).*Research in practice: applied methods for the social sciences.* South Africa: University of Cape Town.

Wagner, W.G. (2003). *Counseling, psychology and children: A multidimensional approach to intervention.* USA: Pearson Education.

Wagner, S.M. (2008). *Motivation to Change Parenting in Mothers of Children with and without ADHD: Associations with Demographic and Psychological Characteristics.* Unpublished MA dissertation. West Virginia University, USA.

Ward, R.M. (2008). Assessee and assessor experiences of significant events in P psychological assessment feedback. *Journal of Personality Assessment, 90* (4), 307-322.

Williams, S. (2003). *Parent satisfaction with psychological assessment services and recommendations for children with learning disabilities.* Unpublished MA dissertation. Mount Saint Vincent University, Canada.

Wise, P. S. (1989). *The Use of Assessment Techniques by Applied Psychologists*. In J. Knoetze & C.L. Vermolen, Communication of psycho-educational assessment results: remedial teachers' reading of assessment reports. *South African Journal of Education, 27* (1), 1–18.

Wodrich, D.L. & Kush, S.A. (1990). *Children's psychological testing: A guide for nonpsychologists* (2nd ed.). USA: St. Mary's.

Wodrich, D.L. & Schmitt, A.J. (2006).*Patterns of learning disorders: working systematically from assessment to intervention.* NY: Guilford.

Yang, K. (2010). *Making sense of statistical methods in social research.* London: Sage.

Yerdonek, K. (2010). *Factors underlying recommendation adherence after child psychoeducational assessment.* Unpublished doctoral dissertation. Roosevelt University, USA.

Youngmee, K. & Evangelista, L.S.(2010). Relationship between illness perceptions, treatment adherence, and clinical outcomes in patients on maintenance hemodialysis. *Nephrology Nursing Journal, 37* (3), 271-280.

Zgibor, J. C., Rao, H., Wesche-Thobaben, J., Gallagher, N., McWilliams, J., & Korykowski, M. T. (2004).Improving the quality of diabetes care in primary care practice. *Journal of Healthcare Quality, 26,* 14–21.

Zygmunt, A., Olfson, M., Boyer, C.A. & Mechanic, D. (2002).*Interventions to improve medication adherence in schizophrenia.* In L. Osterberg & T. Blaschke. (2005). Drug therapy: adherence to medication. *The New England Journal of Medicine, 353,* 487-97.