Client Satisfaction at the Midcentral Health and Massey University Concussion Clinic

A thesis presented in partial fulfilment of the requirements
for the degree of
Masters of Arts in Psychology
at Massey University

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2003

Abstract

The present study intended to evaluate the quality of the service provided by the Midcentral Health and Massey University Concussion Clinic. In doing so, the study first considered the nature of Mild Traumatic Brain Injury and concussion injury and rehabilitation and investigated different methods of measuring quality and weighed up the pros and cons of each method to chose the most appropriate method for this setting. As a result, the present study surveyed service satisfaction at the Concussion Clinic. A standardised measure (the Service Satisfaction Survey – 30) was chosen to counter previous methodological problems common to other studies of satisfaction. The main objective of this study was to provide feedback to the Concussion Clinic regarding satisfaction with aspects of their services and to simultaneously investigate relationships with satisfaction. On a whole, participants were generally satisfied with the Concussion Clinic service; conversely some aspects of the service that could be improved were identified. However caution has to be taken in analysing the results especially when inferring results to the whole population, due to this low response rate (twenty of the seventy-nine clients surveyed returned the survey). The second objective of the study was to evaluate the use of this method of evaluation, and the measure chosen, with this type of service. The measure chosen (the Service Satisfaction Scale –30) proved inappropriate for this service setting due to the length and irrelevant questions. Moreover the use of client satisfaction as a method to evaluate this service, even though it provided some data on satisfaction with services, also may not be justified for the reason that the clients were generally only seen once and the nature of outcome in this setting was unclear. This study demonstrated the need for more research in the area of service satisfaction in the health arena, in particular this type of setting; suggestions for this research are included in this study.

Acknowledgements

First and Foremost I would like to thank my supervisor, Professor Janet Leathem, who presented me with the idea for which my thesis is based. Janet's fun loving nature and expert guidance paved the road towards thesis completion with humour, encouragement, knowledge, and understanding. Janet, you definitely made the task less daunting!

Thank you to the staff at the Midcentral Health and Massey University Concussion Clinic who gave me the playground to work with and for their assistance along the way.

Thank you to my family, Mom, Dad, Melinda, Eloise, Jocelyn and Paul, whose love, support and encouragement carried me through this.

Last, but certainly not least, a big thanks to the postgraduate psychology class of 2001, who taught me that knowledge comes in many forms and made my Masters a lot more enjoyable. Your friendships mean a great deal to me.

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Overview

The outcomes of Mild Traumatic Brain Injury (MTBI) are variable – one person could recover in days with no after affects while someone else could suffer a diminished capacity to perform tasks which can even remain up to six months later i.e., post concussion syndrome. Often these effects are masked by other injuries occurring simultaneously. The emphasis on more apparent physical injury often means that it is difficult to understand the diminished capacity along with headaches and mood changes. This can be frustrating for the person with MTBI as they and their family fail to recognise what is causing these changes. Reassurance that what they are experiencing is normal, education about MTBI, and assessment of the nature and extent of difficulties is essential.

In 2000, New Zealand's Accident and Compensation Corporation (ACC) became aware of this need and in 2001 circulated specifications and invited applications for the set up of nationwide concussion clinics. Eventually nine concussion clinics were set up throughout New Zealand. People with MTBI could attend these clinics for an initial neurological and neuropsychological assessment screen; sometimes being referred on to other agencies when necessary for more in depth assessment and intervention.

The ACC funded concussion clinics have been in operation for about a year now and to this point there has no service evaluation. Evaluation of outcome is a natural step for all service providers as they are increasingly becoming accountable to stakeholders, such as policy makers, clients and general public, for ensuring that their current services/methods are helpful. Demonstrations/evidence that a treatment service is effective is necessary to justify further resources and funding, and for the renewal of the contract.

The most obvious form of outcome research would be to compare the outcome of the Concussion Clinic population with a population that has been exposed to the same conditions, but has not been to a concussion clinic. This was not possible as it would have been difficult to locate people not referred. . The purpose of this study then was to evaluate the Concussion Clinic service in terms of clients' satisfaction with aspects of the service. The current study's purpose is also to explore and discuss the use of client satisfaction research in a Concussion Clinic setting, with a particular focus on the measure chosen.

In the present study, satisfaction with service provided by the Midcentral Health and Massey University Concussion Clinic will be examined from the perspective of the client. This follows a model long utilised by business organisations, i.e., 'the customer is always right'. Increasingly in health organisations, providers are shifting towards the view that client satisfaction is a measure of success. This shift is due to consumers increasing involvement in advocating for services that are helpful and meet their needs.

Investigating client satisfaction at the Concussion Clinic would allow the providers to see whether their service is working, to understand which aspects of their programme are valued, which need improving and which do not work at all. It would measure the quality and effectiveness of care, and guide change. Data collected would also be beneficial when used comparatively with future client satisfaction investigations. Client satisfaction studies have proven useful in many health settings, however research of this type has never been conducted in a Concussion Clinic setting.

Chapter 1 sets the reader up with a background to brain injury, the types, cause and effect. It starts off with a general overview of what traumatic brain injury (TBI) is and then discusses, more specifically what concussion and mild traumatic brain injury (MTBI) are and the outcomes of these; with an emphasis on post concussion syndrome (PCS). Chapter 2 then goes on to discuss the history of rehabilitation for brain injury and then talks about MTBI rehabilitation and later narrowing down to MTBI rehabilitation specific to New Zealand. A brief outline is provided of the part the Accident and Compensation Corporation (ACC) plays in developing MTBI rehabilitation in New Zealand, in particular their proposal for the set-up of Concussion Clinics, and Chapter 2 ends with a description of the research setting, one of the

Concussion Clinics, and the need for evaluation of the service. Chapter 3 highlights the importance and types of outcome evaluation in the health arena, narrowing down to discuss client satisfaction research, what it is, its dimensions and the reservations and rationale for conducting research of this manner Chapter 4 considers service satisfaction in more depth, looking at the relationships of service satisfaction with client variables, and how these may affect the outcome of the study and continues through to chapter 5 where methodological issues are explored and considered. Chapter 6 highlights the rationale for the thesis, outlining the objectives of the thesis and the hypotheses formulated from these. The method for conducting the study is summarized in Chapter 7, along with a description of the research setting, research, participants, measure chosen, and ways that methodological issues and ethical considerations were dealt with. This then leads on to the results section, Chapter 8, were the results are illustrated according to objectives and hypotheses. Chapter 9 is a discussion of the results pertaining to objectives and hypothesis and outlines some ideas for future research.

Chapter 1

Traumatic Brain Injury (TBI)

Each year, in New Zealand, over 9000 people sustain a TBI (Quinn & Sullivan, 2000). TBI refers to an injury to the brain that is caused by an external force rather than a degenerative or congenital disorder (Gerstenbrand & Stepan, 2001) that can produce impairments of cognitive abilities, physical functioning, and changes in behavioural and emotional functioning. These disorders may be permanent or temporary and can cause total or slight functional disability or psychosocial maladjustment (Gerstenbrand & Stepan, 2001).

TBI is classified according to type, location, and degree. Types of TBI refer to penetrating/open injuries and closed injuries. The penetrating open injury occurs when the skull and brain tissue have been penetrated (Lucas, 1998). The closed injury is often not clearly visible as there may be no external damage; the damage appears on the inside of the skull. TBI's may also be classified according to three locations of the brain. The linear outer TBI, which can be further broken down according to direction of impact into Type 1: occipital, Type II: frontal and Types III and IV: lateral, the linear inner TBI (upper and lower), and rotational brain trauma (Gerstenbrand & Stepan, 2001).

Of all of the classification systems for TBI, the rating of severity is the most used, with differentiation usually made between mild, moderate and severe TBI, although vegetative state is sometimes also included (Cope, 1994). Severity ratings are determined by a combination of: length of loss of consciousness (LOC), posttraumatic

amnesia (PTA) and Glasgow Coma Scale (GCS) rating (Cope, 1994; Lucas, 1998; Ruff & Jurica, 1999).

The GCS developed in 1974 by Teasdale and Jennett, is a sensitive neurological screen that has become the most accepted of the severity rating systems for TBI (Cope, 1994), and has been applied internationally (Ruff & Jurica, 1999). The scale was developed to be a quick index of severity of coma and impaired consciousness following TBI (Mayo, 1994), and is administered as soon as possible after injury. The GCS score is continually monitored within the first 2 to 3 days of injury (Cope, 1994), and measures 3 aspects of neurological functioning – eye opening, best motor capacity and best verbal response (Ruff & Jurica, 1999). Scoring ranges from 3 to 15 points, with a score of between 13 and 15 indicating a mild TBI, 9 and 12 indicating moderate TBI and a score of between 3 and 8 severe TBI (Dash, 2002). Lower scores correlate with a poorer neurological status and higher scores correlate with a higher degree of ultimate neurological recovery (Cope, 1994; Gronwall & Wrightson, 1999).

PTA refers to memory loss of events immediately following brain injury (Lucas, 1998), this and memory loss of events immediately before the accident is referred to as retrograde amnesia. PTA that is less than 1 hour is typically classified as mild TBI, PTA of less than 24 hours is classified as a moderate TBI, more than 24 hours as severe TBI (Lucas, 1998).

Individuals who suffer a TBI, at the moment of impact, usually suffer a LOC, the amount of time it takes for this individual to regain consciousness is often used as an index of severity (Lucas, 1998). LOC can range from a few minutes to days/weeks in a coma, with the more severe TBI associated with longer LOC; LOC of less than 30mins indicates a mild TBI, 30mins – 24 hours moderate TBI and 1 – 7 days a severe TBI and greater than is sometimes indicative of a vegetative state (Kraus, 1999).

Concussion

Concussion is a disruption of brain function that usually occurs following a mild to moderate blow to the head (Raymond & Bennett, 1999). Most commonly concussion is caused by a fall, motor vehicle accident, sporting injury or in a physical fight (Gronwall

& Wrightson, 1999). Concussion may be categorised into 3 grades (Practice Parameter, 1997; Kelly & Rosenberg, 1997) these are as follows:

- Grade 1 is a mild concussion where consciousness is not lost, although the person may seem dazed;
- Grade 2 refers to a slightly more severe concussion associated with a period of confusion and failure to recall the event and no loss of consciousness; and
- Grade 3 is considered classic concussion where consciousness is lost for a brief period and there is no memory of the event.

Apart from memory loss, confusion and loss of consciousness, other symptoms of a concussion include headaches, dizziness, ringing ears, nausea, vision disturbance and difficulty concentrating (Mayo, 1994; Mittenberg, Canyock, Condit, & Patton, 2001).

Mild Traumatic Brain Injury (MTBI)

The terms 'concussion' and 'MTBI' are often used interchangeably. They have both been described in the literature as traumatically induced physiological disruption/impairment of neurological function (Raymond & Bennett, 1999). However concussion is considered to be an immediate and transient disruption of neurological function (Esselman & Uomoto, 1995), whereas MTBI refers to a situation where the damage, impairment and its effects are not necessarily immediate or transient. Mild concussion can be sustained with MTBI. Of the 9000 people, in New Zealand who sustain a TBI each year, at least 80% of these are classified as MTBI (Quinn & Sullivan, 2000). However the true incidence of MTBI is not clear as many people who suffer a MTBI are not hospitalised or do not seek medical treatment are therefore not included in the incidence statistics (Gronwall & Wrightson, 1998).

MTBI over the years has accumulated multiple definition and criteria and as yet there is no uniformly recognised definition (Ruff & Jurica, 1999). In recent years the Mild Traumatic Brain Injury Committee and Psychiatrists have proposed, that for a diagnosis of MTBI, the individual has to have at least one of the following criteria (Gerstenbrand & Stepan, 2001):

- Any loss of consciousness no more than 30mins in duration.
- Any loss of memory of events before and after accident.
- Any alteration of mental state at the time of accident.

- A focal neurological deficit that may or may not be transient.
- PTA that is no greater than 24 hours.
- GCS score of 13 to 15.

The effects of MTBI have been much studied and published. It is a worldwide consensus that MTBI is characterised by a brief loss of consciousness and a subtle change or loss of cognitive, physical, and emotional functioning (Cope, 1994; Quinn & Sullivan, 2000). Cognitive symptoms often include memory deficits, learning deficits, processing deficits; such as change in information processing speed, concentration deficits and communication difficulties (Gronwall & Wrightson, 1999; Gerstenbrand & Stepan, 2001). Physical symptoms include headaches, dizziness, fatigue, nausea, double vision and a change in the sleep cycle (Mayo, 1994; Gronwall & Wrightson, 1999). The effects of changes or loss of emotional function include depression, anxiety, irritability, emotional liability, disinhibition and childish behaviour (Wolpow, 1991; Mayo, 1994). These deficits eventually affect self-management, interpersonal relations, employment and quality of life (Mayo, 1994).

Historically MTBI was referred to as a Post Concussion Syndrome (Zasler, 1994), because it occurred after a concussion. However, the more widely studied it was, in addition to the increasing knowledge in the area of neuropsychology, the more it eventuated into a clinical grouping in its own right.

Post Concussion Syndrome (PCS)

It became evident that some people who suffer a MTBI continue to display symptoms months after injury. The deficits of a MTBI can be so subtle at first that the injury may appear trivial but results in an illness with major consequences (Gronwall & Wrightson, 1999). These symptoms make up a condition that is now referred to as Post Concussion Syndrome (PCS). It has been found that as many as 25% to 30% of individuals who suffer a MTBI will continue to have cognitive and emotional difficulties when re-evaluated 3 to 6 months later (Raymond & Bennett, 1999), of these, 3% to 5% will need specialist care (Gronwall & Wrightson, 1999).

The International Classification of Diseases 10th edition (ICD-10) criteria for PCS, developed by the World Health Organisation, includes the following diagnostic criteria (World Health Organisation, 1992).

1. History of head trauma with loss of consciousness precedes symptom onset by maximum of 4 weeks.
2. Three or more symptom categories
   (a) Headache, dizziness, malaise, fatigue, noise intolerance
   (b) Irritability, depression, anxiety and emotional lability
   (c) Subjective concentration, memory, or intellectual difficulties without neuropsychological evidence of marked impairment
   (d) Insomnia
   (e) Reduced alcohol tolerance
   (f) Preoccupation with above symptoms and fear of brain damage with hypochondriacal concern and adoption of sick role.

These can be loosely grouped into three categories: physical symptoms, cognitive complaints and behavioural and affective symptoms (Bernstein, 1999).

In spite of these diagnostic criteria for PCS, the cause of the symptoms continues to be debated (Mittenberg & Strauman, 2000). Some suggest that those with MTBI and PCS consistently underestimate their premorbid experiences of headache, fatigues, inattention, memory difficulty and dysphoria (Ferguson, Mittenberg, Barone & Schneider, 1999), overlooking the fact that these symptoms occur with regular frequency in the normal population (Gunstadt & Suhr, 2001). Further, their frequency tends to be increased by anxiety and stressful events (Mittenberg et al., 2001), such as a head injury. Kibby and Long (1999) further supported the notion that PCS symptoms are linked to stress; they found that symptoms tend to appear at that point in recovery when an individual is trying to resume social, work and or academic duties, which are all stressful situations. However it is still unclear whether the symptoms are a physiological stress response (Hanna-Pladdy, Berry, Bennett, Philips & Gouvier, 2001) or whether the symptoms cause the stress.

Malingering has often been thought to play a part in the cause of PCS symptoms; this topic has received much attention during the last 30 years (Bernstein, 1999). It has been previously shown that some patients presenting with PCS years after the injury have

been motivated by financial incentives. A meta-analysis of 17 studies showed a modest overall affect size (.47) for the impact of financial incentives on disability, symptoms and objective findings after head injury (Binder & Rohling, 1996). However there is also a growing body of evidence suggesting that cognitive, emotional and behavioural complaint and impairment can exist without financial gain (Jacobson, 1995).

Post concussion symptoms have been shown to be less apparent in individuals who have been educated and reassured about their injury and its consequences (Mittenberg et al., 2001). Gronwall (1986) reported in her study, that patients who went without treatment, (which included reassurance that PCS was common, a printed manual about symptoms of concussion and how to cope with them and a graded return to pre-injury activities to minimise fatigue, irritability and emotional reactions, and stress management and relaxation techniques) were 9 times more likely to complain of post concussion symptoms. This is supporting evidence that rehabilitation programmes can minimise PCS symptoms.

Chapter 2

Rehabilitation

History

Dating from 2500BC, an Egyptian papyrus was found that made reference to cases of trauma to the brain and type of treatment given (Beaumont, 1988; León-Carrión, 1997). Further, in the 16th century it was popular to perform skull trephinations on persons with head injuries to draw out bad humors that might be lodged in the body (León-Carrión, 1997). Though these findings indicate that understanding of TBI has been developing for centuries rehabilitation was not based on scientific data or knowledge of neuroanatomy. Further, the view that predominated the early days of TBI rehabilitation was that once injury occurred little could be done (Christensen & Teasdale, 1998).

Understanding of TBI and its consequences, and treatment has been slow to develop however there has been a rapid development of clinical neuropsychology since the ending of WWII (Smith, 1994). This rapid development is reflective of the growing realisation that the problems involved in the diagnosis and treatment of individuals with TBI extended beyond and overlapped the boundaries of neurology and psychology; the overlapping of these two disciplines lead to the development of the independent field of neuropsychology (Smith, 1994).

The 1970's witnessed a growing optimism with regard to the prospects for psychosocial rehabilitation following brain injury (Christensen & Teasdale, 1998) where medical management of TBI advanced substantially. This was in part due to the emerging evidence that there could be some restoration or neural pathways (Finger, LeVere,

Almli, Stein 1988) and that regeneration can take place in some circumstances (Christensen & Teasdale, 1998). Furthermore, standardised methods of assessing severity of injury and predicting long-term outcome became widely used; one measure in particular which was developed was the Glasgow Coma Scale (GCS) it was developed in 1974 by Teasdale and Jennett. There was a beginning realisation that people with a TBI had potential to be rehabilitated. The following period, the early 80's gave rise to TBI rehabilitation becoming established as a legitimate subspecialty within rehabilitation medicine (Rosenthal, 1996). During the late 80's questions were being raised about the nature of quality of care and about the theoretical and empirical basis of the services being developed, as a result of these questions, standards of care and training programmes were developed (Rosenthal, 1996). This was followed by the development of rehabilitation programmes, particularly those based on neuropsychological principals and those, which addressed the whole picture of the individuals condition and needs, (Christensen & Teasdale, 1998). The early 90's was an era of accountability; due to allegations concerning provider abuse and fraud, and ethical standards not being met, which lead to a great deal of attention being put on outcome measurement, cost-effectiveness and treatment efficacy research (Rosenthal, 1996). The late 90's however, heralded a shift in direction to a more outpatient type of care and mergers between major health organisations (Rosenthal, 1996). Currently and future TBI rehabilitation will see a growing emphasis and consensus on treatment and rehabilitation, better assessment and management, a greater quality of life and advanced community integration.

TBI Rehabilitation in New Zealand

Beyond the hospital system, rehabilitation services for people who have suffered a TBI are not plentiful in New Zealand, however with the increasing number of people experiencing and surviving TBI's in New Zealand and the increasing recognition of the need for ongoing rehabilitation and support, new services are emerging (Fink, no date). In New Zealand, the Brain Injury Association of New Zealand (BIANZ) was formed in 1996, this association aimed at providing education and support to persons with TBI, there are currently 12 branches around New Zealand. This association also continued to develop and set up 7 Stewart Centres around New Zealand. The Stewart Centre's main

emphasis is on socialisation and positive behavioural change for persons with a moderate to severe TBI; the first of these centres was developed in 1991 in Auckland.

There is a number of other organisations also set up to cater for persons with moderate to severe TBI that also provide individualised programmes and residential services. Cavit ABI service provides neuro-rehabilitation and neuroassessment for persons with a moderate to service brain injury, and Ranworth Health Care provide specialist residential assessment and rehabilitation services in a number of main centres. Both agencies were set up in the 1990's. These agencies are both multidisciplinary involving professionals such as, Clinical Psychologists, Neuropsychologists, Occupational Therapists, Neuropsychiatrists, Speech Language Therapists, Physiotherapists, Vocational Therapists and Community Support Workers. Their objective is to rehabilitate a person suffering a moderate to severe injury to their full potential ready for optimised community integration.

MTBI Rehabilitation

In the past there has been no specific standardised rehabilitation guidelines for sufferers of a MTBI (Rosenthal, 1996). Further contributing to this, is a history riddled with a limited understanding of MTBI and PCS symptomology. There is the lack of an organised body of literature pertaining to MTBI rehabilitation partly due to no one professional speciality taking responsibility for MTBI (Zasler, 1994). This has made it difficult for the medical profession to grasp the abundance of issues relevant to the diagnosis and management of MTBI (Zasler, 1994). Further there appears to be no uniformed definition of MTBI or no standardised rehabilitation for it.

Careful management and rehabilitation of MTBI is important because though the injury is classified as mild the symptoms can be severe and ongoing, symptoms are also individualised (Gronwall & Wrightson, 1999). These symptoms can interrupt and destroy people's relationships, education, vocational aspirations and their social lives. It is therefore important to conduct an in depth examination and evaluation of the physical, neuropsychological, and psychosocial consequences as it is essential to determine which treatment methods are most effective (Rosenthal, 1996).

In the literature, it is evident that past MTBI and TBI rehabilitation has been non standardised, inconsistent, and has lacked a continuum of care. A vast problem has been the lack of communication between different agencies/professional bodies involved with any one person, resulting in people 'slipping through the cracks' and going untreated/misdiagnosed. These persons then lack insight in to their injury and symptoms and how to manage them. For example, many amateur sports people will continue to play their sport even after they have suffered a concussion (Ruchinskas, Francis & Barth, 1999).

Recently, MTBI and rehabilitation has become more of a priority and there are now a number of different rehabilitation programmes that include, education, social skills retraining, assessment and reassurance. Lines of communication are now being opened between professional bodies and there are a growing number of professional agencies set up to deal solely with head injured patients. However in New Zealand, most rehabilitation programmes, such as those discussed in the above section, cater only for persons with a moderate to severe TBI and not those have sustained a MTBI.

ACC

As the awareness of the diversity of MTBI and post concussive symptomology has been growing, so has the realisation that a multidisciplinary care continuum approach to MTBI is needed. ACC recognised the need for a medical, neurological and neuropsychological examination and invited organisations around New Zealand to apply for contracts to deliver an assessment and rehabilitation service to persons who have suffered a concussion.

Potential contractors for the ACC contract were expected to provide a multidisciplinary clinical staff; made up of a medical specialist, and a neuropsychologist, and sometimes other professionals, especially Occupational Therapists. The service specifications (Accident Compensation Corporation, 2001) includes an initial assessment that is always jointly made up from a medical assessment and a neuropsychological assessment. The medical assessment involves a clinical history and examination, confirmation of diagnosis, medication, review of premorbid psychological and psychiatric status, and a presence/absence of substance abuse disorders. The neuropsychological assessment includes assessment of premorbid personality, major

psychiatric morbidity (suicide risk assessment), alcohol and drug addiction issues, assessment of relationship, family, workplace, study and recreational issues (pre- and post- injury), assessment of executive cognitive function, memory, concentration and attention, comprehension and verbal ability.

Initial assessment may also include a functional assessment if required. This involves the assessment of fine motor function, occupational and recreational capabilities, for assessment of any other functional disturbance information can also be gathered on pre-injury roles, disabilities and impairments caused by the injury, impact of injury on pre-injury activities and identification of other factors which might impact on return to normal activities. This functional assessment may require a worksite or home visit from an Occupational Therapist.

ACC also requires that the organisation provide interventions of the cognitive and behavioural nature. These interventions are to be structured, systematic, goal directed, individualised and which involve learning, practice and social contact. This is to be written in a single report provided by the organisation for the clients' case manager, GP and referrer (Accident Compensation Corporation, 2001).

According to the ACC service specifications, to be referred to a concussion clinic for an initial assessment, a person has to meet the following criterion, (Accident Compensation Corporation, 2001).

- Overt significant impact on level of functioning including the inability to work or attend school for more than one week
- Second or subsequent MTBI, within 6 months
- Posttraumatic amnesia lasting more than 12 months
- If occupational safety is an important concern (e.g., operating machinery); or
- The claimant is in a high functioning job such as engineers, medical practitioners, or others with tertiary qualifications; or
- The claimant is a tertiary or secondary student; or
- There is a pre existing psychiatric disorder or substance abuse problem

After initial assessment, in order to access treatment and rehabilitation interventions, the claimant must, at a minimum, meet the criteria for MTBI (Table 1.1) or PCS (Table 1.2).

Table 1.1
*Criteria for Mild Traumatic Brain Injury (TBI)**

Mild TBI occurs when a person has had a traumatically induced disruption of brain function manifested by:

A. At least *two* of the following:
- A period of loss of consciousness from a few seconds up to 30 minutes, verified by an external observer wherever possible
- Disturbance of memory for events immediately before and/or after the accident. Memory disturbance should last at least I minute but no longer than 24 hours, verified by an external observer wherever possible
- Focal Neurological deficit(s) that may or may not be transient, including evidence of altered mental state such as confusion or disorientation

AND

B. A Glasgow Coma Score (GCS) of 13 or higher usually present at the time of initial examination, preferably at 1 hour after the injury.

AND

C. Presenting symptoms are not attributable to pre-existing medical condition or pre-existing psychological disorder, or primarily due to drug or alcohol intoxication. The presence of any of these may still mean an injury has occurred.

AND

D. ONE of the following:
- Evidence that medical care has been sought within 7 days of injury (unless it is unavailable)
- There is documentation from a Registered Health Professional consistent with external force to the head having occurred, such as
  - Contusion, abrasion, bruising or other injury to the skin or scalp
  - Skull fracture, with radiological evidence
  - Injury to the scalp, skull, meninges or brain including intracranial haematoma
  - Acceleration-deceleration injury
- In the absence of either of the above, review by a Registered Specialist' indicates, on balance of probabilities, an external force to the head has occurred.

*Criteria as set by the Accident Compensation Corporation (2001)

Table 1. 2
*Criteria for Post-Concussion Syndrome (PCS)**

A. The claimant *must* have a documented history of head trauma that has caused mild (or more severe) TBI, as defined by Table 1. Note that Post-Concussional Syndrome may also arise following a more sever TBI.

AND

B. This classification may be made for the claimant who has been symptomatic *for at least 6 weeks,* but not continuously asymptomatic for the first 4 weeks.

AND

C. The claimant has at *least 3* of the following symptoms for at *least 6 weeks,* and onset of these occurred shortly after head trauma.
(1) Difficulties with concentration, attention, and/or memory
(2) Becoming fatigued easily
(3) Disordered sleep
(4) Headache
(5) Vertigo or dizziness
(6) Irritability or aggression on little or no provocation
(7) Anxiety, depression, or affective liability
(8) Changes in personality (e.g. social or sexual inappropriateness)
(9) Apathy or lack of spontaneity
(10) Distractibility due to light and/or noise

AND

D. There is evidence from neuropsychological testing or quantified cognitive assessment of difficulty in attention (concentrating, shifting focus of attention, performing simultaneous cognitive tasks) or memory (learning or recalling information).

AND

E. The symptoms in C and D had their onset following head trauma or else represent a substantial worsening of pre-existing symptoms.

AND

F. The disturbance causes significant impairment in social or occupational functioning and represents a significant decline from a previous level of functioning.

AND

G. The symptoms are not better accounted form by a psychological disorder

*Criteria as set by the Accident Compensation Corporation (2001)

Concussion Clinic

Midcentral Health and Massey University Psychology Clinic jointly applied for the ACC Concussion Clinic contract and in September 2001 the Concussion Clinic opened. It is set up as an outpatient clinic to assess the extent of MTBI and concussion effects and to plan and implement rehabilitation.

As of January 2003, 105 clients had been referred to the concussion clinic. These clients have been referred from ACC, GP's, and different departments of Midcentral Health e.g. rehabilitation, surgery. The Concussion Clinic administrator at Midcentral Health receives the referrals, and then sends out appointments to clients.

The client then attends a 2-hour appointment at the Concussion Clinic. As specified earlier, this appointment includes a medical assessment, done by a medical specialist, and a neuropsychological screen, conducted by a Clinical Psychologist; who has training in neuropsychology. The medical assessment includes various neurological tests and history taking and generally takes ½ an hour. The neuropsychological screen includes measures to assess premorbid intellectual functioning, attention, memory, visuospatial/constructional abilities, language, information processing speed, executive functioning and a psychological functioning; usually take 1 hour, scoring of these tests takes ½ hour.

The medical specialist and the Clinical Psychologist write separate reports based on their assessments, then view each other's reports discussing findings together before combining the two to make one report; the Clinical Assessment and Rehabilitation Report (CARR). The CARR summarises the client's status and gives recommendations for further testing/rehabilitation/referrals. It provides an overall picture of the individuals functioning and serves as a guide to realistic outcome goals and objectives. This report is fowarded to the client's designated case manager, their GP and the referrer. It then becomes the case manager's responsibility to follow up on recommendations.

To date, no evaluation of outcome has been undertaken at the Midcentral Health and Massey University Concussion Clinic. This Concussion Clinic was interested in

evaluating their service. In health service settings disease and clinical outcome measures and measures of health status have been proven to be important and effective ways of evaluating outcome (Boothroyd, Skinner, Shern & Steinwachs, 1998). However just how useful these measures are for evaluation of a concussion clinic is unclear. It maybe that variations in illnesses (no two MTBI are the same, recovery is influenced by numerous factors) and client interventions make it difficult to compare one client to another. Importance of outcome evaluation and types of outcome evaluation follow.

Chapter 3

Outcome Evaluation

The health sector has seen a recent emphasis on quality issues such as assurance of quality of care (Aharony & Strasser, 1993). Assurance of quality of care can be sought through outcome evaluation. Most services, at some stage, undertake some kind of evaluation of outcome (Ogles, Lambert & Masters, 1996). This approach to health care keeps providers appraised of what does and does not work and informs change to the health delivery systems (Ogles, Lambert & Masters, 1996). Outcome evaluation provides the necessary means to evaluate a service in terms of its efficacy, efficiency and cost effectiveness.

Presently rapid changes are occurring in the public mental health market in response to escalating costs of care (Howard, Clark, Rayens, Hines-Martin, Weaver, & Littrell, 2001) and changes in strategies for reimbursing public mental health services and in the accountability for these services (Ogles, Lambert & Masters, 1996). The absence of outcome information can be particularly troublesome in this context, as increasing pressure is being placed upon providers to meet the needs of those seeking their service and to demonstrate the efficacy of their service. Pressure is also coming from policy makers, as they expect demonstrations of treatment effectiveness if they are to continue to provide funds for service provision.

In the health arena, outcome evaluation includes a broad range of possible measures reflecting the multiple dimensions of health. Beyond clinical and disease outcome measures, measures of health status (physical, mental & social functioning), satisfaction

with care, & satisfaction with health status (high-related quality of life) are central to outcome evaluation (Boothroyd et al., 1998).

Client Satisfaction

Client satisfaction is more and more being highlighted as an important objective of health care, a key determinant of service quality and a useful indicator of outcome (Donabedian, 1992). It is widely recognised that 'care cannot be of high standard unless the patient is satisfied (Mahon, 1996). As early as 1966 Donabedian stated "the effectiveness of care in achieving and producing health satisfaction, as defined for its individuals by a particular society or subculture, is the ultimate validation of the quality of care (Ruggeri, 2001). The inclusion of patient's opinions has only gained prominence over the last three decades; the late 1960's and the early 1970's saw the growing involvement of the consumer in 'all walks of life' (Williams, 1994). This, coupled with the golden rule of customer service, 'the customer is always right' has lead to the interest of clients opinions with health services; in particular client satisfaction. In 1970, the United States National Centre for Health Services Research and Developments identified mortality, morbidity and patient satisfaction rates as criteria for evaluation of overall quality of care (Mahon, 1996). During the last decade, patients have emerged as the central focus of both health care delivery systems and quality assurance (Aharony & Strasser, 1993).

Donabedian (1992) later defined three major roles that the client plays in the quality assurance process; 'consumers', 'targets', and 'reformers'. In their role as 'consumer' they define assurance and provide information that enables others to evaluate the service. Their role as 'targets' of quality assurance means that they are co-producers of care; their behaviour can be changed by increased education or by addressing circumstances that might hinder their ability to act in their own interests. As 'reformers of health care', consumers influence health care systems by being more proactive and direct in the patient practitioner exchange. These roles form the basis for client satisfaction and make it possible to focus on the consumer and to define service effectiveness based on their interpretations.

Client satisfaction with health services is believed to be a dimension of outcome, a necessary component in quality assurance and the goal of any health care delivery system. Commentators generally agree that measurement of client satisfaction fulfils several distinct functions (Sitzia & Wood, 1997).

- Understanding clients' experiences of health care;
- Promoting cooperation with treatment;
- Identifying problems in health care; and
- Evaluation of health care.

Client satisfaction is an important tool for research, administration and planning because it gives information on the providers success at meeting the clients values and expectations, matters on which the client is an expert (Williams, 1994). Services have to ensure the highest level of patient satisfaction to not only maintain a client base but also to expand it (Sitzia & Wood, 1997); clients are becoming more informed and selective regarding health services (Ogles, Lambert & Masters, 1996). Satisfaction work simply describes health care services from the client's point of view (Sitzia & Wood, 1997); from which problem areas of services received can be isolated and ideas towards solutions maybe generated. Results from satisfaction studies can also be used to compare the service with others of a similar nature or be used annually to assess satisfaction and compare findings of previous years (LaSala, 1997).

Dimensions of Client Satisfaction

When researchers began using client satisfaction as a means of evaluating a service it was believed that client satisfaction was a uni-dimensional concept, and the measures used reflected this. However empirical studies have confirmed the theoretical view that client satisfaction is a multidimensional concept (Greenfield & Attkisson, 1989; Ware, Snyder, Wright, & Davies, 1983). There is considerable research (Greenfield & Attkisson, 1989; Sitzia & Wood, 1997) to support the view that clients can distinguish between dimensions of care and judge its quality, this is supporting evidence for the multidimensional nature of client satisfaction.

Since the growing realisation that client satisfaction is multidimensional, researchers have been compiling a list of dimensions. Larsen, Attkisson, Hargreaves & Nguyen

(1979) first identified nine possible dimensions of client satisfaction. These were: physical surroundings, support staff, type of service provided, treatment by staff, quality of service provided, amount of service, general satisfaction and procedures. In 1983, Ware et al. presented taxonomy of nine areas of care which clients responded to, these were: interpersonal manner, technical quality of care, accessibility/convenience, finances, efficacy/outcomes of care, continuity of care, physical environment, and availability.

In 1989, Greenfield & Attkisson conducted a study using factor analysis, to investigate the dimensions of service satisfaction. The dimensions they investigated were based on Ware's taxonomy. The study found two high loading factors that were consistent across both medical and psychological services. These were Practitioner Manner and Skill and Perceived Outcome; each of these factors was made up of several core items. For example, Practitioner Manner and Skill included: practitioner manner, knowledge and competence, general satisfaction, ability to listen and understand, thoroughness, and confidentiality and respect for rights. Two other factors were also found, though they were not as consistent across settings, these were Access and Office Procedures.

Research on satisfaction with health care has been primarily empirical. Its purpose has been to provide information so that administrators, practitioners and consumer groups can draw practical conclusions in order to improve the quality of care and services (Aharony & Strasser, 1993). Early work on client satisfaction was not strongly theory linked, research has mainly focused on attempting to improve psychometric properties of questionnaires, control for threats of validity and defining the satisfaction construct (Greenfield & Attkisson, 1999). To date there have been conflicting results from satisfaction research and satisfaction theories.

Reservations of Using Client Satisfaction Data

Some authors treat client satisfaction studies with suspicion arguing that patients lack expert knowledge and requisite experience to accurately assess the technical competence of medical personnel (Aharony & Strasser, 1993) being instead influenced by 'non medical' factors (Donabedian, 1992), and it is argued that they cannot judge between the programme and different aspects of treatment (Lebow, 1982). Further, it is

believed by some authors, that clients' physical or emotional status can easily impede accurate judgement (Aharony & Strasser, 1993) and their responses represent ill considered, unstable thoughts (Donabedian, 1992). Some authors have pointed to past findings of high levels of client satisfaction as an indication that client ratings are inherently suspect due to clients' difficulty in objectively rating the experience (Larsen et al. 1979). Other criticisms have included patients' reluctance to disclose what they really think about the service, fearing retribution (Aharony & Strasser, 1993) and previous research has shown that there has been a tendency towards halo responses in client satisfaction research (Lebow, 1982). Some authors have also reported in their studies that patients cannot accurately recall aspects of the delivery process (Aharony & Strasser, 1993). Criticism of client satisfaction surveys has focused on both validity and interpretation of client ratings (Fischer & Valley, 2000). The validity issue stems from the lack of use of standardised measures and methods, and a lack of norms for different health care settings (Lebow, 1982). There is also criticism around the extent to which patient satisfaction surveys can fulfil the purpose for which they are intended as there are unstable assumptions surrounding the concept of satisfaction (Williams & Wilkinson, 1995).

Rationale for Conducting a Client Satisfaction Study

Counter Arguments

Counter arguments, for the use of client satisfaction in evaluating services, include the following: Satisfied clients are more likely to comply with their treatment (Aharony & Strasser, 1993). The 'non medical' factors, that they are influenced by, can cause a reduction in use of pain medication, short length of stay and improved compliance and it is believed that this placebo effect may contribute up to one third of the actual healing process (Press, Ganey & Malone, 1991). Research has also shown that clients can in fact discriminate between aspects of treatment (Lebow, 1982; Greenfield & Attkisson, 1989) and data can be used to look at difference between programmes (Lebow, 1982). The lack of validation argument is countered by the fact that this can be corrected for (Lebow, 1982). There are now a number of standardised instruments available for measuring client satisfaction (e.g. the Client Satisfaction Questionnaire-CSQ-31 and the Service Satisfaction Survey-SSS-30) and recent research has focused on the best methods to go about conducting valid study. Also it has been shown that the client's

view is essential in that they have a unique view of the service (Lebow, 1982) and they play a role of defining what values are should be assigned to different outcomes (Aharony & Strasser, 1993). Client satisfaction research can be used in routine monitoring and to demonstrate the value of the service to the community and to funding sources (Lebow, 1982). Fischer and Valley, 2000, summarise these arguments by describing client satisfaction research as scientifically problematic but professionally useful.

Looking at satisfaction with care as an approach to assess the quality of services is quick and readily appealing. It is easily understood by both clients and providers, can be measured via client self report; rather than the more difficult process such as behavioural observation, and is a central feature of most definitions of service effectiveness (McMurty & Hudson, 2000). Client satisfaction studies have been performed in many health settings, such as alcohol rehabilitation programmes and psychology clinics. However a client satisfaction study has never been undertaken at a Concussion Clinic. In the present evaluation of the Concussion Clinic, the study is adapting the best client satisfaction methods; methodological issues are outlined in Chapters 5 and 7. Beyond reporting satisfaction with services, the present study examines the suitability of client satisfaction studies in a Concussion Clinic setting, and the suitability of the measure chosen. The following chapter considers the concept of client satisfaction and previous research on determinants of service satisfaction.

Chapter 4

Relationship of Client Variables to Service Satisfaction

Not only is it important in client satisfaction research to choose the most appropriate method of evaluation and to use the best method of data collection, it is also important to address characteristics of the clients themselves as these can affect responses. These characteristics, have included socio demographic variables, physical and psychological status, attitudes and expectations, outcomes of care (Cleary & McNeil, 1988) and life satisfaction (Arrindell, Heesink & Fiej, 1999). At present there is no immediate agreement about which of these factors is most strongly related to client satisfaction and results from different studies are not consistent, outcomes appearing to depend on the type of care rendered and the context in which clients satisfaction was studied (Aharony & Strasser, 1993).

Sociodemographic Variables

According to Aharony & Strasser (1993) and Pascoe (1983) the categories that have shown the most consistent and important relationship with service satisfaction are patient age and gender. Other studies have reported to find small relationships between ethnicity, education, income level and occupation (Aharony & Strasser, 1993).

Age

Age has frequently been found to be positively related with overall satisfaction scores (Ruggeri & Greenfield, 1995; Sitzia & Wood, 1997; Breemhaar, Visser & Kleinjnen, 1990). Carr-Hill (1992) summarise this effect by saying that older people maybe more

accepting and satisfied with healthcare services, where as the better educated and more vocal groups may have higher standards and thus be more critical, also Cartwright & Anderson (1981) found that older people expected less information and younger people were less compliant with prescriptions and medical advice. Williams and Wilkinson (1995) also believe that a positive relationship with age is expected if the traditionally passive role predominates among the elderly as opposed to the more consumer-oriented role of the younger generations.

Gender

Increased service satisfaction is also been found to be significantly and positively associated with being female (Aharony & Strasser, 1993), particularly in health care settings (Pascoe, 1983; Tanner, 1981; Greenfield, 1994).

Some studies however, have shown no relationship between age or gender and satisfaction; for example, research by Greenfield and Stoneking (1993) showed that demographics such as gender and age were not strongly associated with satisfaction. These findings demonstrate a need for future research into the effect of sociodemographic variables on client satisfaction.

Physical and Psychological Status

Change in health care status is often seen as an outcome of care, Rubin (1989), for example, has noted that an individual's health status prior to receiving care may cause the individual to be either more or less satisfied. The implications of this could mean that clients have pre-existing satisfaction levels based on their current health and this may cause differences when evaluating outcome and satisfaction (Aharony & Strasser, 1993). The majority of studies have reported positive correlations between health status and satisfaction (Aharony & Strasser, 1993). Cleary, Keroy, Karpanos, & McMullen, (1983), found that perceived health was a strong predictor of overall satisfaction, patients who are less healthy tend to be less satisfied with their medical care than healthier patients (Hall, Milburn, Roter, Daltroy, 1998).

Attitudes and Expectations

Attitudes and expectations are often viewed as important determinants of satisfaction. Many researchers believe that the client satisfaction construct involves the recipient's implicit comparison between expectancies of service and their experience of service (Greenfield & Attkisson, 1999). A few studies have demonstrated that clients with lower expectations tend to be more satisfied than those with unrealistic expectations (Aharony & Strasser, 1993). I t is argued however that there is inconsistent evidence for this variable and outcomes of studies, which have studied its phenomenon, have differed greatly from one another (Aharony & Strasser, 1993).

Outcomes of Care

There are few studies directly examining to what extent outcome of care is associated with client satisfaction (Aharony & Strasser, 1993), though researchers and health care providers use measures of satisfaction as an indicator of outcome and view client satisfaction as a useful indicator of outcome (Donabedian, 1992). The existing body of knowledge demonstrates that client satisfaction is an important correlate of treatment outcome (Fischer & Valley, 2000) and that it is both a dependent variable of quality of care as well as a predictor of subsequent health related behaviour (Mahon, 1996). Mahons (1996) concept analysis on patient satisfaction indicated that consequences of satisfied consumers included better compliance and better outcomes. Further, Howard et al., 2001 reported that consequences of dissatisfied consumers included non-compliance and self-termination of care. Researchers have also concluded that because satisfaction usually influences willingness to participate in treatment (Attkisson & Greenfield, 1996) it can have implications for other clinical outcomes, such as treatment effectiveness, symptomology, and quality of life (Howard et al., 2001).

Life Satisfaction

Life satisfaction is described as one factor in the more general construct of subjective well-being; subjective well-being is thought to have three components, positive affective appraisal, negative affective appraisal and life satisfaction (Diener, Emmons, Larsen & Griffin, 1985). Life satisfaction is distinguished in that it is more cognitively than emotionally driven, it can be assessed specific to a particular domain or globally (Diener et al., 1985). Weiss (1988) supports the rationale for including life satisfaction

in studies of patient satisfaction in the health field, he further comments on the lack of empirical research in this area. In the mental health area, in particular, it has been suggested that attention should focus on life satisfaction, which can be seen as a covarying condition to service satisfaction (Lebow, 1989b). More recently the relationship between clients' satisfaction with services received and their general satisfaction with life has been investigated. Poor health has been shown in one study to be associated with low levels of satisfaction with life in both males and females (Arrindell et al., 1999), and poor health has also been associated with lower levels of satisfaction in general (Hall et al., 1998). Duffy & Ketchand (1998) found that customer well-being, (defined as life satisfaction), significantly affected overall service satisfaction. The life satisfaction/service satisfaction relationship is important because if life satisfaction were independent of how satisfied a client was with services received it would make satisfaction data more meaningful (Watson, 1993).

These factors above have been shown in some studies to be determinants of client satisfaction. In future research on client satisfaction, researchers will have to control for these variables that may act as covariates for satisfaction (Aharony & Strasser, 1993). Due to the growing debate as to whether these are determinants of satisfaction or not and the inconsistencies in the current literature, further investigations ware also needed to explore the relationship between these variables and client satisfaction. The present study examines the relationship between client satisfaction and age, sex, education level, income level, how far travelled and work status. The relationship between life satisfaction and service satisfaction was also assessed along with the relationship between services satisfaction and date of appointment.

Chapter 5

Methodological Considerations

There are numerous methodological issues to consider, when designing client satisfaction studies if not taken into account could make it difficult to validate the client satisfaction data and draw useful conclusions. Watson, 1993, noted that the mode of data collection, the sample chosen, the timing of assessment and the person conducting the study could affect the outcome and viability of the study. Discussion of methods of data collection, methodological issues and on methods for enhancing validity is presented here.

Data Collection

Means of data collection are needed, it is important to derive a method of data collection that best suits the research setting, participants, the design of the study and the resources available. Furthermore the chosen design which will need to maximise the response rate. Different means of collecting client satisfaction data have included questionnaires, structured interviews, focus groups and complaint and statements of approval.

Complaints and Statements of Approval

Complaints and statements of approval are a means of providing satisfaction data. These can be advantageous as they are solicit unstructured comments and are important to respondents (Holloway, 1993). However they are often comments only received by those people with strong views, those who are assertive and may not depict typical attitudes (Lebow, 1982), and are limited as they represent only a small proportion of users' views (Holloway, 1993).

Focus Groups

Focus groups are made up of consumers who meet to determine what they consider to be the important aspects of a good service; this can then be used to generate items for interviews and questionnaires. They have proven useful when used for this purpose (Stallard, 1996).

Structured Interviews

Structured interviews have been criticised of producing higher rates of satisfaction (Greenfield & Attkisson, 1999). This may be because clients feel less able to express negative views about the service when being interviewed directly by the person conducting the interview as they may also feel they need to please the interviewer fearing retribution, and in the future, unfair treatment.

Questionnaires

Questionnaires are seen as the most appropriate tool for collecting satisfaction data from clients receiving a service (Attkisson & Greenfield, 1994). Questionnaires are viewed as an advantage because their purpose is clear and the responses are straightforward (Lebow, 1982). They have overcome the problem of clients not feeling able to say negative things about the service (Watson & Leathem, 1996), in that people are more willing to be truthful because of the anonymous nature of questionnaires (Salkind, 2003), they are also cost efficient, time efficient and relatively easy to disperse (Greenfield & Attkisson, 1999). The problem with questionnaires can emerge when researchers create their own questionnaires instead of using readily available standardised measures. Researchers who create their own questionnaires lack the statistical viability that standardised questionnaires generally have, this is due to the limited reliability and validity data. Furthermore, comparison between agencies is only possible when a standardised measure is used; it is not possible when content of questionnaire vary from one situation to the next (Tanner, 1981).

Method of administration

The most common means for administrating client satisfaction questionnaires are mail out methods and waiting room samples (Attkisson & Greenfield, 1994). Waiting room samples is a means of on-site data collection, and involves the questionnaire been dispersed in the waiting room by the receptionist or a research assistant. This technique

has been shown to have a more successful response rate than that of mail out methods, which are seldom returned, by more than 45% of the sample (Greenfield & Attkisson, 1999). Research findings have indicated that a reminder postcard or telephone call may substantially improve return rates (Vaux, 1996).

Sampling Bias

Sampling bias occurs when there are notable differences between sample and the population it represents (Nguyen, Attkisson & Stegner, 1983). To minimise this, a sampling procedure, which will derive the most appropriate sample, will have to be chosen. This problem readily occurs when non-randomised sampling procedures are adopted (Stallard, 1996). Sampling bias can also occur when there is evidence of non-response bias. Non-response bias refers to errors occurring due to non-respondents differing in significant ways to the respondents meaning that the sample then becomes unrepresentative of the population. This occurs when a large proportion of participants fail to complete and return the questionnaire (Bordons & Abbott, 2002), which is compounded by the reported levels of high satisfaction (Sitzia & Wood, 1997), i.e., it has been suggested that there is a tendency for non-response by those less satisfied (Attkisson & Greenfield, 1994). This is supported by a study which shows that respondents are more likely to have had mutual terminations, longer treatments, and treatments to be judged successful by therapists, all of these things suggest that respondents are likely to be more satisfied than that of the whole sample (Lebow, 1982).

Response Bias

Response bias occurs when inaccurate responses are given to the questions of the study. It can be described as a systematic tendency, on the part of the participant, to base their response to items on something other than the specific item content (Robinson, Shaver & Wrightsman, 1991). This can occur, for example, if the questionnaire used has a low readability score; which means that people participating in the study are unable to answer the questions or the instructions are not clear or the questions are worded in a skewed manner; for example, open-ended questions produce greater criticism than structured (Sitzia & Wood, 1997). Response bias can also occur when a participant gives a socially desirable response rather than describe what they actually think, believe or do. Marlowe & Crowne (1964) describe social desirability as a need for social

approval or acceptance and the belief that this can be achieved through culturally acceptable and appropriate behaviours. Previous research has shown that studies concerned with self reports of peoples beliefs and attitudes tend to yield socially desirable responses as persons have an inclination to respond based on potential for public disclosure (Ganster, Hennessey & Luthans, 1983). In the health field if respondents feel that there responses may be disclosed to their health care providers they may feel that they may experience harsh consequences for negative responses.

Timing of Study

Time is also an important correlate of client satisfaction research, in particular the timing of data collection. Positive bias may occur when data is collected a long time after the client entry point (Aharony & Strasser, 1993) as the views of past users may vary as outcomes become more certain (Fitzpatrick, 1991), and clients forgetting issues, about the service, which were important to them (Carr-Hill, 1992). At the same time if data are collected close to entry point then clients may have not experienced the complete package (Aharony & Strasser, 1993) and may have not benefited from the program as yet, however there is also evidence to suggest that if clients are surveyed close to entry point a halo effect may be observed (Watson & Leathem, 1996).

These methodological issues, which are common to client satisfaction studies, have been outlined and discussed, and careful consideration has been given to minimise them in the present study. These methods used to minimise methodological concerns are discussed in the method section of the present study (Chapter 7).

Chapter 6

The Present Study

The present study evaluates a hospital based, outpatient service catering for persons who have sustained a concussion and or MTBI. Previous chapters have highlighted the necessity of regularity evaluating the services. Furthermore evaluation in the mental and somatic health fields has been proven to be essential to the assurance of quality of care, and has been shown to be of great interest to funders, policy makers, consumers and the general public.

The Midcentral Health and Massey University Concussion Clinic has been in service for a year and a half now and to date there has been no evaluation of the service. In view of the difficult nature to MTBI and concussion, and the requirement to develop the necessary means to evaluate a service in terms of its efficacy, efficiency and cost effectiveness, the present study adopts a consumer evaluation model to evaluate this service.

Objectives and Hypotheses

This study has three main objectives. The first objective was to provide feedback to the Concussion Clinic specific to their service and to evaluate the use of client satisfaction measures in evaluating this kind of service. This identified need supplied the initial proposal for the study. The second objective was to consider the relationship between client variables, life satisfaction, time, and distance travelled and total satisfaction in this type of service; from this objective, two hypotheses were created. The third objective was to investigate differences between respondents and non-respondents.

Objective 1. Evaluating the Service Provided by the Concussion Clinic

This first objective was to provide feedback to the Concussion Clinic on their service, feedback in the form of clients' views. Specific to this objective was the close investigation of satisfaction with five areas of service provision, these were: Practitioner Manner and Skill, Perceived Outcome, Office Procedures, Access and Waiting. The specific questions, which provided the initial proposal for this study, were:

Satisfaction With Services

- **What areas of the service were the clients' satisfied and dissatisfied with?**
- **Were the clients satisfied or dissatisfied with the service as a whole?**
- **What would the clients change about the service?**

To answer these questions a standardised client satisfaction scale, proven to be useful in mental and somatic health arenas, was used. This scale evaluates service provision relating to four areas: Practitioner Manner and Skill, Perceived Outcome, Office Procedures and Access. Individual items are scored as well as the grouped items to answer these questions raised.

The study also had a wide aim of evaluating client satisfaction research in this kind of service. To do this the study considered the outcome of the results, the appropriateness of the questionnaire and methodological issues. The findings of this are discussed in the discussion section of this study (chapter 8).

Objective 2. Investigation of Relationships with Satisfaction

The second objective is to consider the relationship between variables and Client Satisfaction scores; the study considers these as they may skew results. The present study examines the relationship between client satisfaction and client variables age, sex, ethnicity, education level, work status, dates of appointments, distance travelled and life satisfaction. In considering these client variables, the relevant research shows that some relationships have been found, though they are often inconsistent from study to

study and it is apparent that more research is needed to determine what these relationships are. Taking into account the present reading and research the study has generated the following hypotheses:

Hypothesis 1.

Satisfaction with the services received at the concussion clinic will be, in some way, related to the demographic variables:

i. **Age**
ii. **Sex**
iii. **Ethnicity**
iv. **Education Level**
v. **Work Status**
vi. **Dates of Appointments**
vii. **Distance Travelled**

Hypothesis 2.

Clients who express a high level of life satisfaction, in general, will be more satisfied with services received at the concussion clinic than those clients who express a low level of life satisfaction.

To test this hypothesis the composite service satisfaction score will be used. The results will look at the relationship between the composite service satisfaction score and client variables; it will examine the probability of these variables to determine total satisfaction with service received. The results will also investigate the relationship between the composite service satisfaction score and the satisfaction with life scale score.

Objective 3: Investigating Possible Bias: Differences Between Respondents and Non- Respondents

The third objective of this study was to examine the differences between respondents and non-respondents. This could help with determining future research methods. In the present study, clients of the Concussion Clinic over a 17-month period, were included in

the study, this is due to the fact that the Concussion Clinic does not boast a high intake of clientele. Generally, as clients are only seen at the Concussion Clinic once, differences in stage of assessment/treatment will not be an issue, however time differences may become apparent in that the clients may be at different levels of rehabilitation, i.e., outcomes may be more clear or clients may have forgotten there visit. To examine whether there is a relationship, the study observed the effect of time seen on the return rate of questionnaires. There is no recent research on whether sociodemographic variables such as age and sex of clients have an affect on whether they participate in the study. The present study aimed to determine whether such a relationship existed. The following question and hypothesis were generated:

- **Is there a relationship between the age, gender and dates of appointments of respondents and non-respondents?**

To test these hypotheses the study will investigate return rates, in the form of contingency tables showing, dates of appointment, age and sex of respondents and compare these to those of non-respondents.

Chapter 7

Method

Research Setting

This study was conducted at the Midcentral Health and Massey University Concussion Clinic. The Concussion Clinic is situated on the Palmerston North Hospital campus. The clinic is open one day a week (Wednesday) although contact can be made at other times to the receptionist at Services for Treatment, Assessment and Rehabilitation (S.T.A.R) Ward 3, Palmerston North Hospital. On clinic day, the receptionist, clinical psychologist and medical specialist are at the clinic.

The Researcher

To limit socially desirable responses, based on fear of disclosure, an independent evaluator/researcher was used. The researcher is a Massey University student completing a MA thesis in Psychology; working independently from the Concussion Clinic, Massey University Psychology clinic and Midcentral Health. . The researcher was not known to any of the clients. Grahame Scoullar, another Massey University student completing a MA thesis in Psychology, added questions to the present studies' measure to assist his project, which also involves the Concussion Clinic (Scoullar, 2003)

The Participants

Participants were made up of the clients who attended the Concussion Clinic between September 2001 and January 2003. During September 2001 and January 2003, 105 people were referred the concussion clinic, there were 20 participants (Figure 7.1).

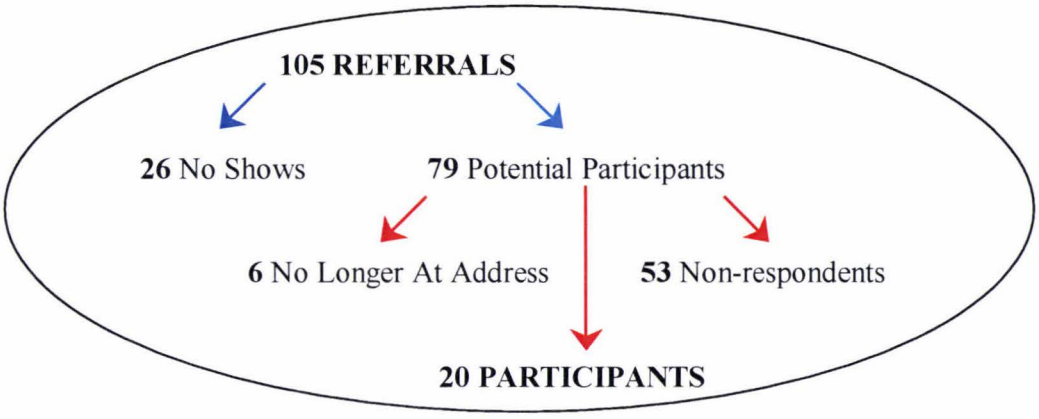

Figure 7.1 Flow Chart Demonstrating Allocations of Referrals.

Inclusion criteria were that they were appropriate candidates for the concussion clinic, whose specifications provided by ACC (Accident Compensation Corporation, 2001). Participation was voluntary. Table 7.1 illustrates characteristics of the sample.

Measures

Service Satisfaction Scale – 30 (SSS-30)

The Service Satisfaction Scale (SSS-30) (Greenfield & Attkisson, 1989) (Appendix A) is a multidimensional measure that assesses many empirical facets of satisfaction, with one or more services or service components. The SSS-30 is a second-generation satisfaction survey, the authors of this measure critically analysed previous first generation measures to produce a measure that made up for their shortcomings (Attkisson & Greenfield, 1996). The SSS-30 was designed to use in health, mental health, or addiction related services.

The SSS-30 contains 30 close-ended questions with an optional group item, a section on demographics, and 3 open-ended questions were added to solicit additional comments. The SSS subscales were derived using the common factor analysis model. Two factor-based scales were developed using this model, they are: Practitioner Manner and Skill (9 items) and Perceived Outcome (8 items). Two smaller scales were developed to supplement these; these are Office Procedures (5 items) and Accessibility (4 items). Likert-type scales were used, a five-point delighted-terrible scale; this was derived from

life satisfaction research of Andrews & Witney (1976) - see Atkkisson & Greenfield (1994). Table 7.2 shows the dimensions and item numbers.

Table 7.1
Characteristics of the Sample

Gender	
Male	11
Female	9
Age	
0-14 years	1
15-24 years	3
25-34 years	3
35-44 years	6
45-54 years	4
55-64 years	2
65-74 years	1
75 and over	0
Ethnic Origin	
NZ/Pakeha	11
Maori	2
European	5
Education	
Some high School	2
Completed fifth form	7
Completed sixth form	3
Completed seventh form	0
Attended tertiary institute	6
Reason for Attending the Clinic	
Vehicle accident	8
Fall	6
Sports related injury	3
Other	3
Referral Source	
ACC or Case Manager	6
G.P.	5
Hospital	8

Table 7.2
Dimensions and Example Questions from the SSS-30

Dimension of satisfaction	Item number	Example of an item **What is your overall feeling about...**
Practitioner Manner/Skill	1, 2, 6, 9, 10, 16, 20, 24, 30	Kinds of Services Offered
Perceived Outcome	3, 15, 17, 18, 19, 21, 25, 29	Amount of help you have received
Office Procedures	4, 5, 25, 26, 28	Handling & accuracy of your records
Accessibility	7, 13, 22, 23	Location and accessibility of services
Waiting	11, 12	Waiting time: referral to appointment
Individual items	8, 14, 27	Cost of services to me

Some items on the SSS-30 were changed to be more Concussion Clinic and New Zealand specific. For example on the original survey the instructions at the start of the survey (Appendix A) told the participants that... *'We are interested in your overall experience based on all the visits you have had during the last year'.* With the Concussion Clinic population the clients were generally only seen once so this statement was changed to instead say... *'We are interested in your overall experience based on all visits or contacts you have had with the Midcentral Health/Massey University Concussion Clinic'* (Appendix B). The author of the survey, Dr Tom Greenfield, was contacted and approved the changes made.

The SSS-30 is typically administered as a self-report, paper and pencil measure, though interviewer-administered responses have been collected in the past from severely mentally ill patients. The most common means of administration has been to administer a survey to waiting room samples, as this has shown to be the best way to maximum participation (Attkisson & Greenfield, 1996). When this has not been possible, surveys have been mailed, but this results in a lower response rate of around 45%, this can be increased with follow up of those who have not returned them (Attkisson & Greenfield, 1996).

Scoring the 30 items of the SSS-30 involves unweighted summation of the items' direction-corrected response values, 1-5 for the total score and subscales. Scores, in some studies, can then be compared with established norms; normative groups have

included primary health care, mental health outpatients and recipients of substance abuse services.

The use of the more extreme "Delighted" and "Terrible" anchors reduced the ceiling effect and negative skew typical of other scales (Greenfield & Attkisson, 1999). Ruggeri (1994) states that many client satisfaction surveys in the health setting have reported high levels of satisfaction partly because they have insensitive measures. For example, they may use questionnaires, which only have two response items; such items invite a satisfied response, even from those who are neutral or mildly dissatisfied (World Health Organisation, 2000). However if satisfaction is rated on a 5-point scale the proportions of clients who are very satisfied, satisfied, neutral, mildly dissatisfied or very dissatisfied can be better discriminated (World Health Organisation, 2000). Greenfield and Attkisson (1999) report that the SSS-30 scale has 5 points, compared to the four of the Client Satisfaction Questionnaire (CSQ-31), and also a large number of items for the major subscales, making it a more sensitive measure. The factors on which the subscales are based have a high degree of replicability, which means that the subscales have validity and interpretability across settings. The SSS-30 total score can serve as a composite satisfaction measure with high internal consistency – Cronbachs α values have ranged from .93 to .96 (Attkisson & Greenfield, 1994). The two main subscales have good internal reliability; Cronbachs α ranged from .83 to .93 for Practitioner Manner and .80 to .90 for Perceived Outcome and the two smaller subscales had lower internal reliability with Offices procedures ranging from .69 to .83 and Accessibility ranging from .6 to .75 (Attkisson & Greenfield, 1994). The SSS-30 total raw score correlated .7 with the CSQ 8 total raw score; this provides empirical support for construct validity (Attkisson & Greenfield, 1994).

The SSS-30 is an already widely used scale, due to its sound psychometric properties, proven usage in health settings and available normative data.

Additional questions

Six additional questions relevant to information received by the clients from the concussion clinic in particular were added to the SSS-30. The adding of extra questions had been previously been proposed by the author of a similar questionnaire, and it was mentioned that they would not alter the psychometric properties of the questionnaire,

especially if they are put at the end of the questionnaire (Larsen et al., 1979). The questions added concerning information received or not received were added to assist in the research of a fellow Masters student, Grahame Scoullar (2003). They were added to the questionnaire so two separate questionnaires would not have to be sent to the potential participants. The questions added (Q.31-36) concerned information received by the clients from the Concussion Clinic. As noted above; approval of added questions was sought and gained by the author of the SSS0-30, Dr Tom Greenfield.

Demographic data

Eleven questions concerning demographic information were added to the questionnaire. Suggested questions on demographic information were part of the SSS-30 format (Appendix A), however to make it more specific to the New Zealand population and the concussion clinic the researcher compiled a series of different questions (Appendix B). For example, Q. 32 in the original survey asked the participants how many miles from the facility did they live? To make it more specific to a New Zealand population the survey used in the current study Q. 46 asked the participants how far they had to drive to the Concussion Clinic, in kilometres. Another example was for the demographic question on ethnicity, the original survey ethnic categories such as Caucasian/White, Native American/Indian, Hispanic/Latino and African American/Black, these were not relevant to a New Zealand population so the survey used in the present study instead used ethnic categories such as; Pakeha, Maori and European. The demographic questions added were questions 37 - 47.

Satisfaction With Life Scale (SWLS)

Diener et al. developed the SWLS, a global measure of life satisfaction, in 1985. The SWLS consists of 5-items that are completed by the individual, in a pencil and paper response. Administration is brief and rarely lasts more than a couple of minutes. The SWLS survey is part of the TBI Model Systems Database, and is used to capture life satisfaction of the individual with brain injury so normative data is available for this population.

The items of the SWLS were developed using classical test construction approaches to both select an initial item pool and subsequently narrow the instrument to 5 items that inquire about the respondents' overall assessment of their lives. The initial item pool

contained 48 items all having face validity. Initial factor analysis revealed a three-factor structure, with ten items loading greater than .60 on a factor reflecting cognitive judgemental evaluative approaches. Five of these items were considered redundant in working or word choice, thus leading to the current five items (Diener et al., 1985)

Initial and subsequent studies have examined the internal consistency of the SWLS and alpha coefficients have repeatedly exceeded .80 (Pavot & Diener, 1993). Item total score correlations have ranged from .57 to .66. SWLS has shown consistent differences between populations that would be expected to have different qualities of life; this gives evidence for construct validity. The SWLS has also been found to change in the expected directions in response to major life events (Vitaliano, Russo, Young, Becker, Maiuro, 1991; Pavot & Diener, 1993).

Procedure

Data Collection

In the present study, because of the structure of the research setting, small intake of clientele and the timing constraints of the study, a mail out method was decided upon. Two questionnaires were sent to each client of the concussion clinic; one for the client and one for the person who accompanied them on their visit. An information sheet (Appendix C) that repeated the instructions and explained who the researchers were and their contact details also accompanied the questionnaire. A cover letter (Appendix D) from the Concussion Clinic was also sent, this cover letter acted as an ice breaker in that it introduced the researchers to the client and emphasized that the researchers are independent evaluators therefore do not have access to any concussion clinic records. A self-addressed, postage-paid envelope was also sent with the questionnaire to assist participants with returning the questionnaire.

Coding

The clients of the concussion clinic had not previously given consent for independent evaluators to have access to their records. To ensure that the researchers did not know the identity of the clients or any of their personal details, assistance was sought from the Concussion Clinic staff and coding was used. Questionnaires were labelled with a

ascending numbers beginning with 001, which corresponded with the date the client was seen at the Concussion Clinic i.e., the first person the concussion clinic saw was given the code 001. Questionnaires were sent out with codes attached to them enabling the researchers to keep track of who had or had not returned questionnaires. The Concussion Clinic staff kept a list of the codes with the corresponding names and addresses; that the researcher did not have access to.

The follow-up questionnaire

In the present study a reminder telephone call was not used, as the researchers did not want to break anonymity. Instead a reminder letter (Appendix E) was sent to potential participants along with another questionnaire, (in case the previous questionnaire had been misplaced). The Massey University Human Ethics Committees advice to the researchers was that only one follow-up questionnaire should be sent so as not to badger the client. Following this advice only one follow-up questionnaire was sent to those who had not returned their completed questionnaire within two weeks of posting. To do this the researcher recorded the codes of those potential participants who had not sent back their questionnaires and took these codes along with questionnaires to the concussion clinic. The staff at the concussion clinic then matched up the codes and addressed and sent the envelopes

The returned questionnaires

Data from each returned questionnaire was entered onto a SPSS data file. SPSS 11.0 was used to analyse data.

Ethical Issues

This study was designed in accordance with the ethical guidelines of the New Zealand Psychological Society and has been approved by Manawatu Wanganui Ethics Committee, Protocol 29/02 (Appendix F) and the Massey University Human Ethics Committee, WGTN, Protocol 02/119 (Appendix G). The main ethical issues to be considered in this study were anonymity/confidentiality and concerning answers in the questionnaire.

Anonymity/confidentiality

As outlined in the procedure, questionnaires were labelled with a code so the clients of the concussion clinic remained anonymous to the researchers. Also the concussion clinic staff did not have access to the raw data so they were unable to identify which of the clients were participants or their individual answers. This was described to the potential participants in the information sheet.

Concerning answers

As anonymity was guaranteed to those clients who took part in the study a problem was foreseen when the answers to the questionnaire resulted in a concern which needed following up. One situation in which this could happen would be if the participant reported a complaint about the service, serious enough for the lead investigator to feel that the participant should be re-contacted and the complaint investigated. Another situation may occur if the client indicated on their questionnaire the need for further treatment/evaluation, even though they have stopped coming to the clinic. If either of these situations occurred it would be necessary to re-contact the participant. In doing so this would threaten their anonymity. The lead investigator would contact the participant, as the independent evaluator, and outline that there is a complaints procedure. This would be to invite the participant to discuss the problem with the Head of the Midcentral Health and Massey University Concussion Clinic. It would be explained to the participant that in order to take the matter further that anonymity would have to be waived. So the decision to take the matter further would rest with the participant.

Chapter 8

Results

This study arose from the need for evaluation of the Midcentral Health and Massey University Concussion Clinic, and its main objective was to provide feedback specific to that service. Further the study also aimed to investigate the nature of satisfaction, in particular, the relationship between satisfaction and variables including: client socio-demographic variables, life satisfaction, time, and distance travelled. The study also hoped to determine if there were any differences among respondents and non-respondents.

Objective 1: Evaluating the Service Provided by the Concussion Clinic

The first objective of this study was to provided feedback to the concussion clinic about how the clients viewed the service. Specific questions put forward by the concussion clinic guided this part of the study, these were:

Satisfaction With Services

- **What areas of the service were the clients' satisfied and dissatisfied with?**
- **Were the clients satisfied or dissatisfied with the service as a whole?**
- **What would the clients change about the service?**

This study followed guidelines on coding and data input to SPSS format, provided by the author of the questionnaire, Dr Tom Greenfield. There were no guidelines for further statistical analysis of data and previous researchers of similar studies have generally presented results as means and standard deviations in their studies, occasionally presenting reliability information as well. Watson (1993) stated that

although means and standard deviations provide some insight to participants' responses they do not tell the service providers which areas need improving. In light of this and the unavailability of guidelines to further analyse data the researcher has adopted various methods of analysis intending to answer the concussion clinics questions in the most appropriate way.

Examination of the alpha coefficients for each dimension of satisfaction measured by the SSS-30 revealed moderate to high levels of internal consistency for all dimensions (see table 8.1). The total score also showed high internal consistency (.95), supporting its use as a composite satisfaction measure. These findings are consistent with previous alpha coefficient findings described in chapter 7 and the published alpha coefficients for normative groups (Table 8.1).

Table 8.1

Alpha Coefficients of the Five Dimensions of Satisfaction Measured by theSSS-30

	Reliability Cronbach's α Coefficient	
Dimension	Concussion Clinic	Published Norm Groups*
MANNER AND SKILL	.85	.89
PERCEIVED OUTCOME	.90	.83
ACCESSIBILITY	.77	.67
OFFICE PROCEDURES	.69	.74
WAITING	.79	-
TOTAL SCORE	.95	-

*Based on 3 normative groups – four Health Clinics, a Mental Health Service, and an Employee Assistance Programme – see Attkisson & Greenfield (1994).

To determine what the clients liked about the Concussion Clinic it is important to consider each item of the questionnaire and to separate the satisfied responses from the dissatisfied responses. Previous studies have grouped together scale items to discriminate satisfied responses for dissatisfied responses (Watson, 1993), however, as discussed in Chapter 7, the SSS-30 is a more sensitive measure because it measures satisfaction on a 5-point scale; consequently results shown on Table 8.2 are reported as proportions of participants for each point on the scale (delighted, satisfied, mixed,

dissatisfied and terrible) also reported is the Mean and Standard Deviation for each item.

Table 8.2
Results of the Service Satisfaction Scale, For Each Item, N=20

VARIABLE/ITEM	*M*	*SD*	Percentage %				
			Delighted	Satisfied	Mixed	Dissatisfied	Terrible
MANNER AND SKILL							
1. Kind of services offered	4.25	.44	25.0	75.0	-	-	-
2. Opportunity to choose practitioner	3.59	.79	5.9	58.8	23.5	11.8	-
6. Professional knowledge and competence	4.30	.73	40.0	55.0	-	5.0	-
9. Listen and understand	4.35	.81	50.0	40.0	5.0	5.0	-
10. Personal manner of practitioner	4.65	.59	70.0	25.0	5.0	-	-
16. Confidentiality and respect	4.55	.60	60.0	35.0	5.0	-	-
20. Explanations of procedures	4.22	.73	42.1	42.1	15.8	-	-
24. Thoroughness of main practitioner	4.05	1.05	35.0	50.0	5.0	5.0	5.0
30. General service satisfaction	4.30	.57	35.0	60.0	5.0	-	-
PERCEIVED OUTCOME							
3. Help with problems	4.10	.72	30.0	50.0	20.0	-	-
15. Wellbeing and prevention	3.95	.78	21.1	57.8	15.8	5.3	-
17. Amount of help	3.95	.95	35.0	30.0	30.0	5.0	-
18. Info on how to get most out of services	3.75	.97	30.0	20.0	45.0	5.0	-
19. Prescription (or non-p) of meds	4.25	.62	33.3	58.4	8.3	-	-
21. Effect – symptom relief	3.85	.88	25.0	40.0	30.0	5.0	-
25. Referrals when needed	4.25	.68	37.5	50.0	12.5	-	-
29. Contribution to life goals	3.83	.79	22.2	38.9	38.9	-	-
ACCESSIBILITY							
7. Location and accessibility	4.15	.75	35.0	45.0	20.0	-	-
13. Appointment times that fit	4.30	.66	40.0	50.0	10.0	-	-
22. Urgent care during hours	4.08	.99	41.7	33.3	16.7	8.3	-
23. Urgent care after hours	3.08	1.08	2 7.3	45.4	9.1	18.2	-
OFFICE PROCEDURES							
4. Office personnel – tel or pers	4.21	.79	36.8	52.6	5.3	5.3	-
5. Office procedures	3.90	.79	20.0	55.0	20.0	5.0	-
25. Referrals when needed	4.25	.68	37.5	50.0	12.5	-	-

Table 8.2 cont.

VARIABLE/ITEM	*M*	*SD*	Percentage %				
			Delighted	Satisfied	Mixed	Dissatisfied	Terrible
OFFICE PROCEDURES cont.							
26. Collaboration – other providers	4.00	1.13	20.0	33.3	20.0	-	6.7
28. Handling of records	4.10	.72	25.0	65.0	5.0	5.0	-
WAITING							
11. Wait – to get appointment	3.90	1.02	30.0	40.0	25.0	-	5.0
12. Wait – at appointment time	4.20	1.06	55.0	20.0	15.0	10.0	-
MISCELLANEOUS							
8. Appearance and layout	3.65	.67	5.0	60.0	30.0	5.0	-
14. Cost of service – after coverage	4.56	.78	66.7	27.7	-	5.6	-
27. Publicity or info about services	3.61	.69	11.1	38.9	50.0	-	-

Satisfaction

Item

Insight into what the participants liked about the Concussion Clinic can be gained by comparing the proportion of participants who were satisfied for each item with those who were not. For example, Table 8.2 shows that 55% of clients were delighted and 20% of participants were satisfied with the wait at the concussion clinic, 15% were 'mixed' and 10% were dissatisfied (item 12). Highest satisfaction ratings were for, person manner of practitioner (item 10), confidentiality and respect (item16) and, cost of services to me (item 14). These items had delighted ratings of 60% or more. Percent of satisfied clients ranged from 20% - 75%. Furthermore, when delighted responses and satisfied responses are added together, the majority of participants (≥ 50%), were satisfied/delighted with each item on the SSS-30

Dimension

Results in Table 8.2 were collapsed to determine what percentages of clients were satisfied and dissatisfied with each of the five dimensions measured by the SSS-30:

Professional Manner and Skill, Perceived Outcome, Accessibility, Office Procedures and Waiting. Table 8.3 lists the Mean, Standard Deviation and the proportion of delighted, satisfied, mixed, dissatisfied and terrible responses for each dimension. The *Waiting* dimension had the highest proportion of *delighted* participants at 45% and *Office Procedures* had the highest proportion of *satisfied* participants at 70%. The proportion of satisfied participants with each dimension was high ranging from 40% - 70%. When delighted and satisfied responses are collapsed together the results demonstrate a high level of delighted and satisfied responses on all five of the dimensions; ranging from 85% - 95%. The results of the composite satisfaction measure show that 30% of participants were delighted with the service, 60% of clients were satisfied with the service, and 10% mixed in their response.

Table 8.3
Results of Service Satisfaction Scale, For Each Dimension

DIMENSION	*M* (variable)	*SD*	*M* (item)	Percentage %				
				Delighted	Satisfied	Mixed	Dissatisfied	Terrible
MANNER AND SKILL	37.55	.49	4.27	30.0	65.0	5.0	-	-
PERCEIVED OUTCOME	28.80	.65	3.95	30.0	55.0	15.0	-	-
ACCESSIBILITY	13.00	.61	4.12	40.0	50.0	10.0	-	-
OFFICE PROCEDURES	18.40	.52	4.08	20.0	70.0	10.0	-	-
WAITING	8.10	.95	4.05	45.0	40.0	10.0	5.0	-
TOTAL	113.45	.51	4.10	30.0	60.0	10.0	-	-

Dissatisfaction

Previous client satisfaction studies have generally reported high levels of satisfaction with services, it is also important, however to discuss dissatisfaction with services. In the present study, responses of terrible or dissatisfaction were few. Table 8.2 shows that 10% of the participants were dissatisfied with the wait they had for an appointment (item 12), whereas 5% thought their wait to get the appointment (item 11), thoroughness of main practitioner (item 24) and collaboration with other providers (item 26) was terrible. Other items (see Table 8.2), where some dissatisfaction is expressed were items (2, 5, 6, 8, 9, 14, 15, 17, 18, 21, 22, 23, 24, 28).

Participants were also asked, in an open-ended format on the SSS-30, what they liked the most and what they liked the least about their experience with the concussion clinic, and also if there was one thing they would change what would it be. Of the 20 clients who participated in the study, 10 (50%) made some comment.

What the Clients Liked Best About the Concussion Clinic

Responses received, for the question 'the thing I liked best about my experience here is:' included statements by three clients saying, that the Concussion Clinic staff were 'nice and friendly', 'really listened' and the information they gave was 'good'. Two clients also mentioned that they the thing they liked most about the service was the 'amount of help they received', 'getting referred to the right people' and finally 'knowing that what they had experienced was normal'.

What the Clients Liked Least About the Concussion Clinic

Of the 10 responses received, for the question 'the thing I liked least was:' 3 participants specifically stating that waiting times for being seen should be shorter, 2 others wanted the clinic to be closer to home, 1 wanted fewer forms to fill out, and another shorter sessions with the Clinical Psychologist furthermore one thought that there needed to be more advertising of the Concussion Clinic.

What the Clients Would Change About the Concussion Clinic

The question 'if I could change one thing about the service, it would be:' elicited a variety responses that were related to 'what the clients liked least' about the Concussion Clinic, i.e., they would prefer it to be 'closer to where they live' and that 'waiting times for referrals were shorter'. Other responses elicited were 'there needs to be more advertising of the concussion clinic', 'less forms to fill out' and 'shorter sessions'.

OBJECTIVE 2. Investigation of Relationships with Satisfaction

The second objective of this current study was to consider the relationship between variables and total clients satisfaction scores. In particular, the study examined the relationship of the client variables age, sex, ethnicity, education level, income level,

distance travelled and work status to total service satisfaction. The study also considered the relationship between life satisfaction and total service satisfaction. .

Hypothesis 1.

Satisfaction with services received at the concussion clinic will be, in some way, related to the demographic variables:

i. **Age**
ii. **Sex**
iii. **Ethnicity**
iv. **Education Level**
v. **Work Status**
vi. **Distance Travelled**
vii. **Dates of Appointments**

To determine whether there is a relationship between these demographic variables and the level of service satisfaction, the composite service satisfaction score was analysed in comparison to the variables. The data met the assumptions underlying the use of tests, except that the sample size was small compromising the assumption of power (Palant, 2001). In the case of the sample size being too small a non-significant result can arise due to insufficient power (Type 2 error). To compensate for this in the current study, the traditional alpha level of .05 was adjusted to .10, (to detect smaller differences in the sample) as suggested by Stevens (1996). All data was tested for homogeneity of variances with the Levene statistic in SPSS 11.0.

i. Age

To examine the relationship between age and the composite service satisfaction score a one-way analysis of variance (ANOVA) was conducted. No significance differences were found between composite service satisfaction scores on the SSS-30 for the '<14' (M = 4.00), '15-24' (M = 3.88), '25-34' (M = 3.97), '35-44' (M = 4.07), '45-54' (M = 4.01), '55-64' (M = 4.65) and '65-74 (M = 4.65)' age groups, F (6,13) = .66, p >.10. Further when age was collapsed into two groups for further testing ('<34' & '>34') the mean service satisfaction scores of the younger participants (M = 3.96, SD = .25) though lower than that of than that of the older participants (M = 4.18, SD = .59, was still not statistically, significantly lower t (17) = 1.29, two tailed p >.10.

ii. Gender

No significant difference was found between male (M = 4.06, SD = .31) and female (M = 4.14, SD = .70) service satisfaction scores on the SSS-30, t (11)= .29, two tailed p >.10.

iii. Ethnicity

Ethnicity was divided into five categories, NZ/Pakeha, Maori, Polynesian, European and other. As the participants only fell into three of these categories, NZ/Pakeha, Maori and European, the other two categories were dropped for the analysis. NZ/Pakeha and European were grouped together to make the category European. No significant differences were found between composite service satisfaction scores on the SSS-30 between European (M = 4.00, SD = .52) and Maori (M = 4.49, SD = .18) ethnic groups, t (16) = 1.28, two tailed p >.10.

iv. Education Level

Of the sample, a third had attended a tertiary institute and the remainder had 'some high school' to 'completed sixth form'. Therefore the education variable was collapsed into two groups, those who 'attended a tertiary institute' and those who did not complete 'more than sixth form at high school'. No significant difference was found t (16) = -.58, two tailed p >.10 between the composite service satisfaction scores of those who attended a tertiary institute (M = 3.95, SD = .74) and those who did not complete more than sixth form at high school (M = 4.10, SD = .38).

v. Work Status

Work status was comprised of five categories; Full-time employed (M = 4.07, SD = .44), Part-time employed (M = 4.24, SD = .30), Unemployed (M = 4.04, SD = .89), Full-time student (M =4.07, SD = .68) and Part-time student (M = 4.16, SD = .09). One-way ANOVA revealed that there was no significance difference F (2,15) = .07, p >.10 between the means of these groups on the composite service satisfaction measure.

viii. Distance Travelled

Distance travelled was merged into four category values. Group one consisted of those who travelled '$\leq$ 10kms' (M = 4.22, SD = 0.44), these participants were grouped together because this distance is considered to still be in town, the next three categories

are considered out of town yet they are broken down into different distances; ranging from not so far to far. The three other categories were: '11-30kms' (M = 3.87, SD = .86), '31-70kms' (M = 4.08, SD = 0.32) and '> 70kms' (M = 4.13, SD = 0.53). A one-way ANOVA showed that there was no significant difference F (3,16) = 0.36, p >.10 in composite service satisfaction scores between these for groups.

vii. Dates of Appointments

Participants appointment dates ranged from 18th September 2001 to 16 months later, 14th January 2003. Accordingly 'dates of appointments' were broken into two groups; an earlier group (seen in the first 8 months September 2001 – May 2002) and a later group (June 2002 – January 2003). No significant difference was found t (18) = -.30, two tailed p >.10 between the early group (M = 4.05, SD = 0.49) and the later group (M = 4.12, SD = 0.55). The composite satisfaction scores for each participant, in relation to the 'dates of appointments', are illustrated in Figure 8.2.

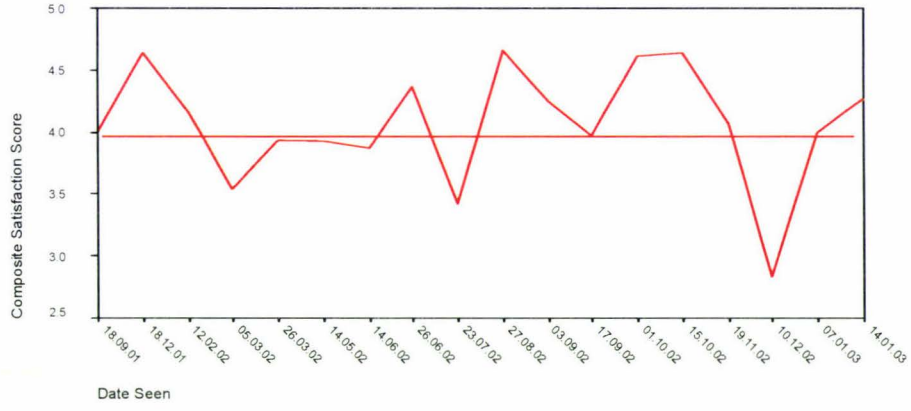

Figure 8.1 Line Graph showing Composite Satisfaction Scores and Dates Seen for Each Participant in Relation to the Mean Composite Satisfaction Score.

In conclusion, age, gender, ethnicity, education level, income level, work status, date seen and distance travelled were not related to the composite service satisfaction score.

Life Satisfaction

The 7-point scale of the SWLS was merged into three categories. Points 1-3(strongly disagree, disagree & slightly disagree) became the 'disagree' category, point 4was the 'neither' category and points 5-7(slightly agree, agree & strongly agree) became the

'agree' category. The means and standard deviations and percentages for the three new categories are shown in Table 8.4.

Table 8.4

Results of the Satisfaction With Life Scale, n=18

QUESTION	*M*	*SD*	% Agree	% Neither	% Disagree
1. In most ways my life is close to ideal	3.89	1.78	38.9	22.2	38.9
2. Conditions of my life are excellent	3.89	1.81	44.5	11.1	44.4
3. I am satisfied with my life	4.22	1.87	50.0	11.1	38.9
4. I Have gotten important things I want in life	4.28	1.60	50.0	22.2	27.8
5. If I could do life over, I wouldn't change a thing	3.94	2.01	38.9	22.2	38.9

As shown in Table 8.2 the mean score for SWLS items ranged from 3.89 to 4.28; (on the 7 point scale) with considerable variation amongst participants.

Hypothesis 4.

Life satisfaction will be positively correlated with service satisfaction.

Comparison of the mean SWLS scores for each participant with the composite service satisfaction score using Pearson's Product Moment Correlation 'r' revealed no positive relationship (r = 0.03, df = 16, p >.10) between service satisfaction (M = 4.10, SD = 0.51) and life satisfaction (M = 20.2, SD =8.05). The following scatterplot graph (Figure 8.3) presents the composite service satisfaction scores in relation to the composite life satisfaction scores.

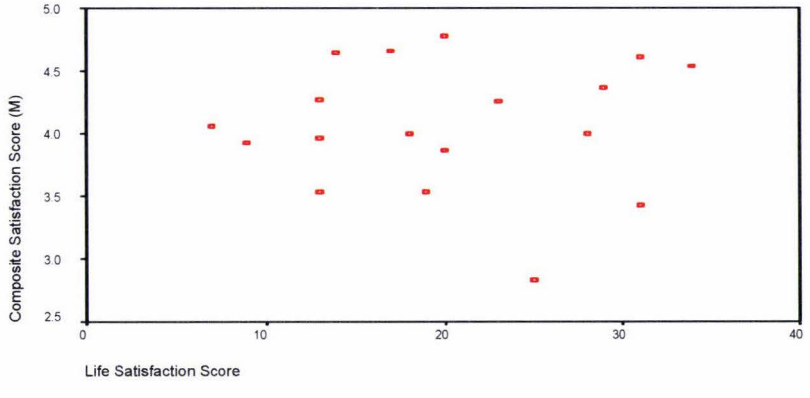

Figure 8.2 Scatterplot Displaying Composite Service Satisfaction Scores in Relation to Composite Life Satisfaction Scores.

OBJECTIVE 3: Investigating Possible Bias: Differences Between Respondents and Non-respondents.

The third objective of the study was to investigate whether there were any differences between respondents and non-respondents that might suggest some response bias. Information was collected during the study on the age and gender of all potential participants along with their appointment dates. The following question was generated: Is there a difference between respondents and non-respondents in terms of the variables of age, gender and date of appointments

Of the 79 potential participants, 20 (25.3%) responded to the questionnaire, 6 were no longer at that address and 53 chose not to respond. Table 8.5 shows the percentages of respondents and non-respondents for age, gender and dates of appointments, the whole sample.

Table 8.5

Gender, Age and Date Seen of Respondents and Non-respondents and of the Total

	RESPONDED					
	YES			NO		
VARIABLE	*n*	% of group	% of total	*n*	% of group	% of total
GENDER						
Female	8	26.6	10.1	22	73.3	27.8
Male	12	24.5	15.2	37	75.5	46.9
AGE GROUP						
0-14	1	33.3	1.3	2	66.7	2.5
15-24	3	13.0	3.8	20	87.0	25.3
25-34	3	17.6	3.8	14	82.4	17.7
35-44	5	27.8	6.3	13	72.2	16.4
45-54	5	45.5	6.3	6	54.5	7.6
55-64	2	33.3	2.5	4	66.7	5.1
65-74	1	100.0	1.3	0	0.0	0.0
DATE SEEN						
Early	7	16.3	8.9	36	83.7	45.6
Late	13	36.1	16.4	23	63.9	29.1

Relationship of gender with responding and not responding

Non-respondents were made up of 37.3 % of females and 62.7% of males, however respondents were made up of 40% of females and 60% of males, taking into account this data it is evident that though the majority of non-respondents were males, the majority of respondents were males also. Furthermore, Table 8.5, illustrates respondents and non-respondents as a percentage of gender and the population as a whole. 37.9% of potential participants were female and 62.1% were male. The data in this table shows that there is no difference within the gender groups, between responding and not responding; 73.3% of females did not respond to the questionnaire and 75.5% of males did not respond to the questionnaire. From this data it can be concluded that gender did not play a part in whether a potential participant responded to the questionnaire or not.

Relationship of age with responding and non-responding

The group '75 and over' for the variable age, were omitted from results as no potential participants fell into this category. Table 8.5 shows respondents and non-respondents as a percentage of each age group and the whole population. When considering the mean age of respondents (M=4.00) and non-respondents (M= 3.22) demonstrated is that this difference in means between respondents and non-respondents is significant t (77) = 2.20, two tailed p=.03 (<.10). The following line graph (Figure 8.3) shows the number of respondents and non-respondents accordingly to age group.

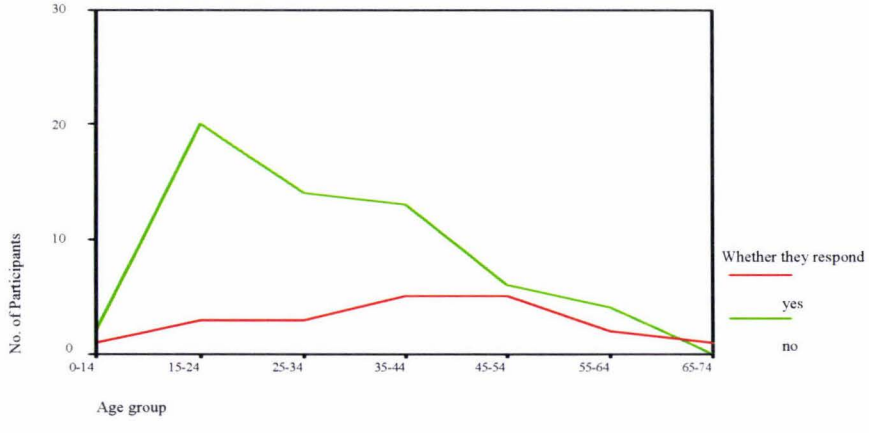

Figure 8.3 Line Graph Showing Number of Respondents and Non-respondents for Each Age Group

Relationship of dates of appointments with responding and non-responding

Potential participants were split into two groups accordingly to their dates of appointments. Table 8.5 also shows the percentage of respondents and non-respondents in the early group September 2001 to May 2002 (54.8% of total) and later group June 2002 and January 2003 (45.2% of total) as well as for the whole group, it also presents this as a percentage of the total.

A CHI-square test was performed to analyse whether or not there were any difference in dates of appointments existed between respondents and non-respondents. As the expected frequency for any cell in the 2×2 table was less than 10, the output for the *continuity correction* is analysed instead of Pearson's CHI-square. This shows that the number of respondents and non-respondents were not similarly distributed $\chi^2 = 3.09$, $df = 1$, $p=.08$ ($<.10$) across the two groups of dates of appointments. Table 8.5 shows that 83.7% of people in the early group did not respond to the questionnaire, compared to 63.9% of people who were in the later group. From this it can be concluded that those who attended the Concussion Clinic between June 2002 and January 2003 were more likely to respond to the questionnaire than those who attended earlier; between September 2001 and May 2002.

In summary, no relationship was found between gender of potential participants and whether or not they chose to participate in the current study. However a relationship was found between older clients and more recent dates of appointments with higher rates of responding.

Chapter 9

Discussion

The present study used a service satisfaction survey to evaluate clients' satisfaction with services received from a concussion clinic, jointly run by Midcentral Health and the Massey University Psychology Clinic. Results would provide feedback to the Concussion Clinic about satisfaction with their service specific to which areas of their service which were satisfactory and which areas were not, they would be useful as a measure of quality. Furthermore the present study investigated relationships between client and other variables and client satisfaction and also to examine differences between respondents and non-respondents. The study aimed to investigate the suitability of this method of evaluation chosen for a Concussion Clinic setting and in addition to investigate the suitability of the measure chosen.

However careful consideration of the results should be taken as only 27.8% of the potential population participated in the study, therefore there might not be enough power to detect significant differences. To account for this the present study to account for this the present study adopted a higher alpha level, α-.10 instead of the traditional α-.05, this is to detect smaller differences in the sample. Accordingly caution must be taken when inferring results to the whole population.

This chapter presents the findings of the study and ideas for future research in four sections. Section 1 considers the findings associated with the first objective: *evaluating the service provided by the concussion clinic*, with an emphasis on providing feedback to the concussion clinic, Section 2 the findings associated with the second objective: *investigation of relationships with service satisfaction,* Section 3 *investigating*

differences between respondents and non-respondents and Section 4 discusses the suitability of client satisfaction as a method of evaluation for a Concussion Clinic setting and the suitability of the measure chosen in general. Each of these sections ends with ideas for future research.

Section 1: Feedback to the Concussion Clinic

The main objective of this study is to provide feedback to the concussion clinic, based on an evaluation of quality and outcome. As discussed in chapter 3, the best method to do this was to focus on client views, and in particular aim to answer the questions generated by the clinic on service satisfaction. A widely used, statistically proven service satisfaction survey was used to obtain this data.

The data, collected from individual items of the SSS-30 indicated that the majority (70%) of participants were satisfied with the service they received from the Concussion Clinic. Participants were very satisfied with *kind* of services offered and the practitioner, in particular the professional knowledge, competence, personal manner of the main practitioner and their ability to listen and understand. This was reinforced by the responses made on the open-ended questions which stated that staff were 'nice and friendly', they 'really listened' and ' the 'information they gave was good'. Further, 95% of participants indicated general service satisfaction and 90% of participants composite satisfaction scores showed satisfied and delighted responses.

Individual items of the SSS-30 were grouped together to form five dimensions of satisfaction: practitioner manner and skill, perceived outcome, accessibility, office procedures and waiting. Analysis of alpha coefficients in the present study supported the previous findings (Attkisson & Greenfield, 1994) of high internal reliability between items for each dimension of satisfaction on the survey. Results showed that participants were very satisfied with the *manner* and *skill* of their practitioner. All other dimensions scored high ratings of satisfaction, however the rating for the dimensions Perceived Outcome was slightly less. When considering the individual items that make up the outcome dimension; the majority (80%) of clients were satisfied with the effect of services in helping them deal with their problems, but they were not so satisfied (65%)

the effect of services in helping relieve symptoms or reduce problems. This is understandable as the present study deals with a population whose lives are affected by their injury and rehabilitation/recovery to normal functioning can be slow and unpredictable. Perhaps unlike other health services where the SSS-30 might be used where the service would be expected to improve matters; the Concussion Clinic is more of an assessment service.

Responses that reflect mixed feelings also need to be taken into account in the current study. Six items on the SSS-30 received a mixed response of 30% or more, these were: publicity or information about services, appearance and layout, contribution to life goals, effect – symptom relief and information on how to get the most out of services. This means that the participant, though not dissatisfied, was not satisfied with this area of the service. The implications of these responses for the Concussion Clinic are that they need to continually evaluate these areas, which have been highlighted as possible areas of improvement.

Dissatisfaction with services was reported in 18 of the 30 SSS-30 items, although the level of dissatisfaction was low, ranging from 5% to 18.2%. This is typical of satisfaction surveys as dissatisfaction is rarely expressed (Watson, 1993) making it important to take, even slight dissatisfaction, into account as it may gives leads to areas for future changes. Two of the items with dissatisfaction of 10% or higher ("urgent care provided after hours" and the "clients opportunity to choose the practitioner"), in retrospect were not relevant to the Concussion Clinic, because no urgent after hours service was offered and clients had no choice in practitioner. Respondents, who indicated that they were delighted with these services, may have been either referring to services received/available outside the Concussion Clinic or responding with a positive bias. One item, which could be considered an area of improvement, is the thoroughness of main practitioner seen, this had a dissatisfaction rating of 10%, however these results should be viewed on light of the fact that 85% of these participants were satisfied with and 5% mixed with this item. Another area with 10% of participants also expressing dissatisfaction was with time waiting *once at* appointment, this means that it may be worthwhile for the Concussion Clinic to consider ways of improving the waiting time at the Concussion Clinic.

Open ended questions asking what participants would change about the service included 3 participants specifically stating that waiting times for being seen should be shorter, 2 others wanted the clinic to be closer to home, 1 wanted fewer forms to fill out, and another shorter sessions with the Clinical Psychologist furthermore one thought that there needed to be more advertising of the Concussion Clinic. These are identified areas of improvement, for the Concussion Clinic, and further gives evidence for the Concussion Clinic to improve on *waiting* times. However, the comment, which mentioned 'more advertising of the Concussion Clinic', is difficult to understand as it could be taken in a number of ways, i.e., is the client referring to advertising the Concussion Clinic and its service in the public or are they referring to advertising at the clinic of there services. If it refers to public advertising of the Concussion Clinic this is not relevant to the Concussion clinic because their clients are sent to the Concussion clinic via referrals from health professionals, people cannot refer themselves.

In summary, the results portrayed a high level of satisfaction for the services received from the concussion clinic, dissatisfaction was rarely attributed to an item, and if so, only a small percent of individuals were dissatisfied. However this is why it is important to consider any areas of dissatisfaction for improvement. In the current study areas identified for improvement were waiting times once at appointment, the thoroughness of main practitioner, amount of forms to fill out, and shorter sessions with the Clinical Psychologist.

Suggestions for Future Research

The present study was successful in determining which areas of the concussion clinic service the participants were satisfied/dissatisfied with and identified areas for possible improvements/change. Service evaluation however is an ongoing process and services need to be continually evaluated in order to maintain quality and ensure changes are effective. The following is a list of suggestions for future satisfaction research at the concussion clinic.

- Investigation of client satisfaction could be made part of an annual evaluation of the concussion clinic, evaluating quality, outcome and adequacy of resources. This could be considered alongside other outcome measures e.g., whether clients had returned to work or normal functioning.

- To increase the return rate of questionnaires and therefore making the evaluation more comprehensive and give the clinic and its stakeholders a more solid idea of outcome, future researchers could implement the following: distribute the surveys in waiting rooms, the receptionist could explain the survey process to the client when they leave their appointment and make available a self-addressed envelope (to maintain anonymity) for the return of the questionnaire. A box for suggestions in the clinic waiting room might result in extra information, particularly from those who might not complete a questionnaire. Also not waiting so long before requesting feedback would improve the response rate, as shown by the results.

- If a survey of service satisfaction was implemented annually at the concussion clinic, you could use the results gained from this study as a baseline for which future comparisons could be made by. This would be particularly useful in determining whether changes made as a results were effective or not. If using the same measure it possible this concussion clinic to be compared with other services or service sites of a similar nature, i.e., compare with the other Concussion Clinics implemented around New Zealand.

- The Concussion Clinic is referred clients from diverse ethnic backgrounds. It would be worthwhile considering in future satisfaction surveys at the Concussion Clinic whether the current service/survey is appropriate for those from different ethnic backgrounds.

Section 2: Investigation of Relationships with Service Satisfaction

Chapter four discussed previous research that examined the affect age, sex, ethnicity, education level, income level, work status, time and life satisfaction have on satisfaction ratings. However results to date have been mixed and are inconsistent from study to study. It was apparent that more examination was needed between these variables and satisfaction ratings.

The present study hypothesised that there would be a relationship found between service satisfaction and the client variables, of age, gender, ethnicity, education level, income

status, work status, dates of appointments and distance travelled. The present study also hypothesised that clients who expressed a high level of life satisfaction would be, in general, more satisfied with services received at the Concussion Clinic.

Statistical analyses using ANOVA and t-tests revealed no statistically significant relationships between the variables: age, gender, ethnicity, education level, income level, work status, dates of appointments and distance travelled, and service satisfaction in this study. However, as previously discussed, the sample size may have been too small to detect these differences.

Life satisfaction has in previous studies been shown to be related to outcome, and in turn service satisfaction. In the current study, if the client has returned back to work and normal functioning they maybe more satisfied with aspects of their life and as a result more satisfied with the service. The implication of this for this population is low dissatisfaction ratings due to the slow nature of rehabilitation for MTBI and concussion. However, results of this study showed that there was no significant correlation between service satisfaction ratings and life satisfaction ratings; therefore participants' satisfaction responses were not determined by their satisfaction with life.

Suggestions for Future Research

The present study was unsuccessful in shedding some light on the current debate about determinants of service satisfaction. No relationship was found between the aforementioned variables and service satisfaction although the small sample size may have contributed to this. The study has however highlighted the need for more research to be undertaken in the area.

- To reliably test for differences in means and relationships between variables, future studies need to have larger sample sizes, and then multiple regression analysis could be used to determine the effect of variables on service satisfaction.

- Collecting data on determinants of service satisfaction would be useful in further understanding the satisfaction. Future researchers could then to take into account determinants and their effect, producing more accurate results.

- In future, studies of client satisfaction could also include a measure of perceived health status and investigate the relationship of these results with client satisfaction data to see if perceived health status is a determinant of service satisfaction. If perceived health status is found to be related to service satisfaction with health services then this would provide extra support for service satisfaction surveys acting as measures of outocme.

Section 3: Respondents and Non-respondents

Studies of service satisfaction are typically associated with low response rates, with the current study being no exception. Obtaining data on both respondents and non-respondents allows the researcher to compare these two groups to ascertain whether or not there is a pattern to the responding, i.e., males more likely to respond than females, or younger people more like to respond than older people and to determine the extent to which the group of respondents represents the population under study.

Due to ethical considerations in the present study, the researchers were not allowed access to client records so were restricted in the demographic information they could gather from the whole population to age and gender of respondents and the dates of their appointments.

Results showed that gender did not have an effect on whether a person responded or not; in fact, results showed that both the majority of respondents and non-respondents were male. If males had been shown to be less like to respond, as shown in some previous research on service satisfaction in the health arena (Pascoe, 1983, Tanner, 1981, Greenfield, 1994), then this would effect studies undertaken with this population, as a majority of the potential participants are male. This gender imbalance is representative of the MTBI population at large.

On the other hand, it appeared that on the whole respondents were older than non-respondents. It would be expected that the majority of the MTBI/concussion group attending this type of setting would be younger in age, furthermore the results reflected that a majority of clients were younger. Accordingly the implications of this for the

current study are that the views of the respondents are not necessarily representative of the MTBI population.

The Concussion Clinic was surveyed between September 2001 and January 2003. From the results it was evident that those participants which were seen at the concussion clinic closer to the point of evaluation were more likely to respond to the questionnaire than those who were seen further away. This is not surprising as some of the potential participants in the first group were surveyed a year after they attended the Concussion Clinic. It is likely that they may have forgotten their visit or believed that their contribution was worthless as it was too long ago. Results showed that there was not a significant difference in satisfactions scores between those clients who attended the earlier group and those who did not, however due to the small sample size this may not be true results. If there had been a difference this could pose a threat to validity of data in the current study due to likelihood of responding for each group.

Suggestions for Future Research

This analysis of the effect of age, gender and dates of appointments on patterns of responding is important because it allows the service to see who is more likely to respond to the questionnaire. The results showed that age and timing were related to tendency to respond, this has highlighted areas for future research.

- In future studies more data could be collected from non-respondents, in the current study we did not have the resources to do this. This data could assist the service in the developing a profile of the potential likelihood of responding. The implications of this would then be to develop data collection methods that reflected these findings i.e., develop a survey that appeals more to the younger population

- Also future studies of this nature with this type of service may consider sampling only the more recent clients to the service, to maximise potential response rates.

- In future studies it may also be helpful to find out why potential participants did not respond. In the present study, the researcher was limited by ethics and could not contact the potential participants to enquire about this. However some past

studies (Watson, 1993) have made contact via phone call, and in doing so in some cases have received some extra information on the service and gained some insight into why potential participants have not responded. This data could be valuable when planning future studies of a similar nature.

Section 4: Nature of the Study

Client Satisfaction Evaluations

Studies of client satisfaction, although often criticised for being sometimes scientifically unsound, they still provide valuable insight on the service they received (Fischer and Valley, 2000). Further, studies of client satisfaction appeal to services and service stakeholders, as they are economical, easy to implement and provide readily accessible data to be used.

Client satisfaction studies have been implemented for decades in all types of services and more recently in the health arena. In the health arena client satisfaction studies have been proven to be useful as quality indicators, studies have been undertaken in mental health services, addiction services employee assistance programmes and somatic health services (Greenfield, 1994). Previous research (Watson, 1993) has shown that clients can differentiate between different aspects of the service; this potentially aids the service to get more in depth information about aspects instead of just an evaluation of the service as a whole.

Because clients generally attended the Concussion Clinic only once (for assessment) evaluation of the service in terms of outcome, i.e., whether or not the service was directly involved in the clients' recovery is probably no strictly valid. Furthermore the nature of MTBI and concussion recovery is determined on many factors and recovery differs from one client to another. Therefore it would be difficult to compare outcomes of clients. Therefore a study of client satisfaction was chosen, it was thought to be useful in this situation, as it would provide information on aspects of the service, which the service providers could use to evaluate the quality of their service.

A client satisfaction study had never been undertaken in this type of setting before; therefore it is crucial to also discuss, in relation to the findings, the appropriateness of this type of evaluation for the Concussion Clinic. Numerous factors were taken into account when considering the current study.

Outcome is an important factor when considering client satisfaction with a concussion clinic. If outcome is a determinant of satisfaction, as a number of previous research findings have suggested, then client satisfaction research in this setting may be misleading, because as stated earlier, clients at the Concussion Clinic are usually seen only once, this may not be considered long enough to evaluate the serviee in terms of its quality. Other studies of satisfaction have been based on services where there is numerous contacts with the clients, and at the end of the contact, the clients then are asked to evaluate the service. Previous research only suggests that clients be surveyed after they have completed all contact not how many contacts a client needs to evaluate the service effectively. When a client visits only once, they are as a results evaluating the Clinic on one incident... so if anything goes not as planned, for example, the Clinical Psychologist is late, or if the client had to wait a long time to get an appointment, they maybe biased in their evaluations and one visit may not be enough time to turn that around. This could be problematic in that evaluations may not be constant especially when considering small samples. Finally outcomes (usually physical) can vary considerably from individual to individual.

However, findings of the present study showed that there was a high internal reliability between items for each dimension of satisfaction on the survey; this means that participants were consistent in the ratings of client satisfaction between different aspects of the service. Further these reliability ratings were similar to ones found in previous studies.

Suggestions for Future Research

Service Evaluation in the form of client satisfaction research at the Concussion Clinic, has in this instance, provided the Clinic with some data on participants satisfaction with the service received. However in light of this discussion it appears that a client satisfaction study may not be the most appropriate way of evaluating the Concussion Clinic service. Some ideas for how to enhance this method are as follows.

- To study the nature of outcome in this population, determining how the clients measure outcome and whether this is related to their satisfaction rating, and when measure of outcome is determined investigate whether or not there is a relationship between the service provided/received and outcome. In studying the nature of outcome in this population, more superior methods for evaluating the service may become apparent or be developed.

- Further research is needed to determine whether or not clients can effectively and fairly evaluate a service, in terms of their satisfaction, after only one visit. If it is determined that clients cannot evaluate the service after just one visit, then future research could consider using client satisfaction data in conjunction with other measures to enhance its validity and reliability.

Service Satisfaction Measure

In the present study it was decided that data should be gathered using a statistically proven and widely used measure of client satisfaction. Numerous measures were considered, however the SSS-30 was eventually selected as appropriate to the type of service and in light of the latest research in the area.

The SSS-30, which is a second-generation measure, has a multi-dimensional format with a proven usage in mental health, addiction, somatic health and employee assistance programmes. It has a high readability score, which is important for a brain injured population and seemed a likely choice for use by similar services i.e., another Concussion Clinic in New Zealand, allowing for across centres comparisons.

Some aspects of the questionnaire were changed to make it more Concussion Clinic and New Zealand specific, after advice and approval was sought and gained from the author of the SSS-30, Dr Tom Greenfield. These minor changes have been previously discussed in the method section of this study. However, some pitfalls of using the SSS-30 in this setting still exist.

One pitfall of using the SSS-30 was that some questions were not relevant to the Concussion Clinic population. These questions were concerning after hours care, urgent or otherwise and prescription or non-prescription of medications. Approval to remove these items from the questionnaire was sought but it was not gained due to the fact that it would change the strueture of the SSS-30 and in turn jeopardise the statistical validity and reliability measure. As a result, these questions were left in the questionnaire.

On a whole, participants generally did not answer these irrelevant questions, however their inclusion may have lead to confusion about how to answer questions on the questionnaire. Even though instructions were given to the participant to fill out the questionnaire in regard to the services received at the Concussion Clinic at the start of the questionnaire and these instructions were also repeated in the information sheet, the participant may then have been confused as to why there were irrelevant questions included. Some evidence for confusion was apparent when one participant commented, in the open-ended section of the questionnaire, that the way they were treated at the intensive care unit (ICU) was terrible. The service at ICU was not part of the Concussion Clinic service. If other participants were also taking into account the whole service received i.e., from their treatment after the concussion or MTBI until the end of their dealings with the Concussion Clinic then results maybe misleading and not a true evaluation of the service received at the Concussion Clinic.

Another pitfall of the SSS-30 is its length. Even though the questionnaire, should only take 15 minutes to complete some potential participants could have been put off by the fact that it was 6 pages long and accompanied by an information sheet and a cover letter. This could be a potential problem, especially with a brain-injured population who are likely to suffer concentration problems and may be also a factor in the low response rate. In addition, some participants mentioned in the open-ended part of the questionnaire that they thought the psychometric testing at the Concussion Clinic was too long, this could be confirmation that time is a concern to this population.

Another potential problem with the questionnaire is not the questionnaire design itself but one of the demographic questions compiled by the researcher. In the demographic section of the questionnaire a question was asked as to how far the client travelled to the Concussion Clinic, it was not specified however if this was one-way or the total. This

could have caused confusion for the participant and potentially affected any results pertaining to it.

Suggestions for Future Research

- A future study of Client Satisfaction at the Concussion Clinic could make the SSS-30 more specific to the setting by obtaining permission to remove the irrelevant items and then testing the questionnaire for reliability and validity. The reason for the current researcher not gaining permission was as stated earlier, the concern that the changes would upset the format of the questionnaire and in turn upset the reliability and validity of the measure.

- A future study of Client Satisfaction at the Concussion Clinic could make the SSS-30 more specific to this setting by getting permission to remove the irrelevant items and then testing the questionnaire for reliability and validity. The reason for the current researcher not gaining permission was the concern that the changes would upset the format of the questionnaire and in turn upset the reliability and validity of the measure.

- Otherwise a future researcher could develop a new measure that is more suitable for the Concussion Clinic. This would involve compiling a list of questions and then using factor analysis to derive final items.

Summary

This study began with a description of brain injury, specifically concussion and MTBI, and rehabilitation pertaining to the past and the present this lead on to a discussion of the Concussion Clinics which have been set up around New Zealand. The study impressed the importance of service evaluation and how it was timely at one of the Concussion Clinics, the Manawatu one which is jointly run by Midcentral Health and Massey University.

In the health arena, studies of client satisfaction have become a leading way to evaluate a service in terms of quality. It is a cost effective way of evaluating a service that can be undertaken with relative ease. Service have become more accountable to

stakeholders to provide evidence of the efficacy of their service, investigation of client satisfaction is attractive as it provides this data, which can be understood by layman and is readily accessible. The merits and reservations of using client satisfaction as a measure of quality have been discussed in this study and to summarise it has been viewed as scientifically problematic, due to methodological issues, however it is also viewed as professionally useful, for the reasons above. Methodological issues have been considered in this study and action has been taken to try and overcome them.

This study arose out of the need for some evaluation of the Concussion Clinic; a study of client satisfaction was chosen to fulfil this need. The main objectives of this study were to provide feedback to the Concussion Clinic about their service, specifically, aspects clients were satisfied with or dissatisfied with and things they would change about the service. Other objectives of the study were to investigate whether there was a relationship between client variables and service satisfaction, as this could affect the outcome of the study and to also investigate whether there is a relationship between client variables and respondents and non-respondents. This was done to investigate whether there were any patterns of responding, which may in turn assist towards developing an enhanced method. Finally the current research hoped to evaluate the use of a client satisfaction study with this particular health setting and to further evaluate the measure chosen with this population.

The study provided the Concussion Clinic with some basic data concerning satisfaction with their services due to the small amount of participants this data could only be taken at face value and not inferred to the whole population. In evaluating the use of the measure and the use of client satisfaction research with this population the following was concluded. The questionnaire used, the SSS-30, was not appropriate for this service due to the length and irrelevant questions, moreover a study of client satisfaction with this particular service also may not be justified as the clients were generally only seen once and the nature of outcome in this setting was unclear. This showed that more research is needed and suggestions for this research are discussed in the previous section.

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Appendices

Appendix A

Service Satisfaction Survey SSS-30: Original Version

SERVICES EVALUATION

CONFIDENTIAL

Please read the following statements carefully. Indicate the answer that best describes your feeling about each aspect of the services you have received. We are interested in your *overall experience* based on all visits or contacts that you have had *during the last year*. By "practitioner" we mean the one or more doctors, psychologists, counselors, clinicians etc. who have worked with you.

What is your overall feeling about the...

1. Kinds of services offered

☐	☐	☐	☐	☐
DELIGHTED	*MOSTLY SATISFIED*	*MIXED*	*MOSTLY DISSATISFIED*	*TERRIBLE*

2. Opportunity to choose which practitioner you see

☐	☐	☐	☐	☐
TERRIBLE	*MOSTLY DISSATISFIED*	*MIXED*	*MOSTLY SATISFIED*	*DELIGHTED*

3. Effect of services in helping you deal with your problems

☐	☐	☐	☐	☐
DELIGHTED	*MOSTLY SATISFIED*	*MIXED*	*MOSTLY DISSATISFIED*	*TERRIBLE*

4. Office personnel (receptionist, clerks) on the telephone or in person

☐	☐	☐	☐	☐
TERRIBLE	*MOSTLY DISSATISFIED*	*MIXED*	*MOSTLY SATISFIED*	*DELIGHTED*

5. Office procedures (scheduling, forms, tests, etc.)

☐	☐	☐	☐	☐
DELIGHTED	*MOSTLY SATISFIED*	*MIXED*	*MOSTLY DISSATISFIED*	*TERRIBLE*

What is your overall feeling about the...

6. Professional knowledge and competence of the main practitioner(s)

☐	☐	☐	☐	☐
TERRIBLE	*MOSTLY DISSATISFIED*	*MIXED*	*MOSTLY SATISFIED*	*DELIGHTED*

7. Location and accessibility of the services (distance, parking, etc.)

☐	☐	☐	☐	☐
DELIGHTED	*MOSTLY SATISFIED*	*MIXED*	*MOSTLY DISSATISFIED*	*TERRIBLE*

8. Appearance and physical layout of the facility (e.g. waiting area)

☐	☐	☐	☐	☐
TERRIBLE	*MOSTLY DISSATISFIED*	*MIXED*	*MOSTLY SATISFIED*	*DELIGHTED*

9. Ability of your practitioner(s) to listen to and understand your problems

☐	☐	☐	☐	☐
DELIGHTED	*MOSTLY SATISFIED*	*MIXED*	*MOSTLY DISSATISFIED*	*TERRIBLE*

10. Personal manner of the main practitioner(s) seen

TERRIBLE	MOSTLY DISSATISFIED	MIXED	MOSTLY SATISFIED	DELIGHTED

11. Waiting time between asking to be seen and the appointment (date and time) given

DELIGHTED	MOSTLY SATISFIED	MIXED	MOSTLY DISSATISFIED	TERRIBLE

12. Waiting time when you come to be seen or keep an appointment made

TERRIBLE	MOSTLY DISSATISFIED	MIXED	MOSTLY SATISFIED	DELIGHTED

What is your overall feeling about the...

13. Availability of appointment times that fit your schedule

DELIGHTED	MOSTLY SATISFIED	MIXED	MOSTLY DISSATISFIED	TERRIBLE

14. Cost of services to me

TERRIBLE	MOSTLY DISSATISFIED	MIXED	MOSTLY SATISFIED	DELIGHTED

15. Effect of services in maintaining well-being and preventing relapse

DELIGHTED	MOSTLY SATISFIED	MIXED	MOSTLY DISSATISFIED	TERRIBLE

16. Confidentiality and respect for your rights as an individual

TERRIBLE	MOSTLY DISSATISFIED	MIXED	MOSTLY SATISFIED	DELIGHTED

17. Amount of help you have received

DELIGHTED	MOSTLY SATISFIED	MIXED	MOSTLY DISSATISFIED	TERRIBLE

18. Availability of information on how to get the most out of services

TERRIBLE	MOSTLY DISSATISFIED	MIXED	MOSTLY SATISFIED	DELIGHTED

19. Prescription (or non-prescription) of medications

DELIGHTED	MOSTLY SATISFIED	MIXED	MOSTLY DISSATISFIED	TERRIBLE

20. Explanations of specific procedures and approaches used

TERRIBLE	MOSTLY DISSATISFIED	MIXED	MOSTLY SATISFIED	DELIGHTED

What is your overall feeling about the...

21. Effect of services in helping relieve symptoms or reduce problems

☐	☐	☐	☐	☐
DELIGHTED	*MOSTLY SATISFIED*	*MIXED*	*MOSTLY DISSATISFIED*	*TERRIBLE*

22. Response to crises or urgent needs during office hours

☐	☐	☐	☐	☐
TERRIBLE	*MOSTLY DISSATISFIED*	*MIXED*	*MOSTLY SATISFIED*	*DELIGHTED*

23. Arrangements made for after hours emergencies or urgent help

☐	☐	☐	☐	☐
DELIGHTED	*MOSTLY SATISFIED*	*MIXED*	*MOSTLY DISSATISFIED*	*TERRIBLE*

24. Thoroughness of the main practitioner(s) you have seen

☐	☐	☐	☐	☐
TERRIBLE	*MOSTLY DISSATISFIED*	*MIXED*	*MOSTLY SATISFIED*	*DELIGHTED*

25. Appropriate use of referrals to other practitioners or services when needed

☐	☐	☐	☐	☐
DELIGHTED	*MOSTLY SATISFIED*	*MIXED*	*MOSTLY DISSATISFIED*	*TERRIBLE*

26. Collaboration between service providers (if more than one)

☐	☐	☐	☐	☐
TERRIBLE	*MOSTLY DISSATISFIED*	*MIXED*	*MOSTLY SATISFIED*	*DELIGHTED*

What is your overall feeling about the...

27. Publicity or information about programs and services offered

☐	☐	☐	☐	☐
DELIGHTED	*MOSTLY SATISFIED*	*MIXED*	*MOSTLY DISSATISFIED*	*TERRIBLE*

28. Handling and accuracy of your records (as best as you can tell)

☐	☐	☐	☐	☐
TERRIBLE	*MOSTLY DISSATISFIED*	*MIXED*	*MOSTLY SATISFIED*	*DELIGHTED*

29. Contribution of services to achievement of your life goals

☐	☐	☐	☐	☐
DELIGHTED	*MOSTLY SATISFIED*	*MIXED*	*MOSTLY DISSATISFIED*	*TERRIBLE*

30. In an overall general sense, how satisfied are you with the service you have received

☐	☐	☐	☐	☐
TERRIBLE	*MOSTLY DISSATISFIED*	*MIXED*	*MOSTLY SATISFIED*	*DELIGHTED*

31. (If Applicable) Support of the group as a whole, helpfulness and caring of its members

☐	☐	☐	☐	☐
DELIGHTED	*MOSTLY SATISFIED*	*MIXED*	*MOSTLY DISSATISFIED*	*TERRIBLE*

It is important to know something about the participants, so we request this extra information. Only grouped data will be used, and you will never be identified. However if you prefer not to answer any or all of the questions, you may freely do so.

32. About how many miles (one way) from the facility do you live?

5 or less 6-10 11-15 16-20 20-25 26 or more

33. Approximately how many *weeks* have you been involved with this program?

Less than 1 1-2 3-4 5-6 7-12 more than 12

34. Including todays, approximately how many sessions have you had in this program?

5 or less 6-10 11-15 16-20 20-25 26 or more

35. Your Sex: MALE FEMALE

36. Your Age:

UNDER 20 21-25 26-35 36-45 46-55 56-65 66-75 76-85 86+

37. Yearly Family Income:

Under $10,000	$10,000 - $20,000
$20,001 - $40,000	$40,001 - $60,000
$60,001 - $80,000	$80,000 - $100,000
	$100,000 or more

38. Your Education:

Grade 8 or less	Some high school
High school grad.	Some college
College grad.	Some post grad.
Masters	Ph.D., M.D., etc.

39. Ethnic Background:

Caucasian/White	Asian/Pacific American
Native American/Indian	Hispanic/Latino
African American/Black	Other (Specify)
Prefer not to answer	_____

40. In general these days, how do you feel about your life as a whole?

TERRIBLE UNHAPPY MOSTLY MIXED MOSTLY PLEASED DELIGHTED

41. In general these days, how do you feel about your health?

TERRIBLE UNHAPPY MOSTLY MIXED MOSTLY PLEASED DELIGHTED

THANK YOU VERY MUCH FOR YOUR HELP WITH THIS SURVEY, WE WOULD APPRECIATE ANY ADDITIONAL COMMENTS ABOUT THIS SERVICE YOU WOULD CARE TO ADD. YOU MAY WRITE THEM BELOW.

The thing I have liked best about my experience here is:

What I liked least was:

If I could change one thing about this service it would be:

Appendix B
Service Satisfaction Survey SSS-30: Adapted Version

SERVICES EVALUATION

CONFIDENTIAL

Please read the following statements carefully. Indicate the answer that best describes your feeling about each aspect of the services you have received. We are interested in your overall experience based on all visits or contacts that you have had with the Midcentral Health/Massey University Concussion Clinic. By 'practitioner' we mean the one or more doctors, psychologists, etc. who have worked with you.

What is your overall feeling about the...

1. Kinds of services offered

☐	☐	☐	☐	☐
DELIGHTED	*MOSTLY SATISFIED*	*MIXED*	*MOSTLY DISSATISFIED*	*TERRIBLE*

2. Opportunity to choose which practitioner you see

☐	☐	☐	☐	☐
TERRIBLE	*MOSTLY DISSATISFIED*	*MIXED*	*MOSTLY SATISFIED*	*DELIGHTED*

3. Effect of services in helping you deal with your problems

☐	☐	☐	☐	☐
DELIGHTED	*MOSTLY SATISFIED*	*MIXED*	*MOSTLY DISSATISFIED*	*TERRIBLE*

4. Office personnel (receptionist) on the telephone or in person

☐	☐	☐	☐	☐
TERRIBLE	*MOSTLY DISSATISFIED*	*MIXED*	*MOSTLY SATISFIED*	*DELIGHTED*

5. Office procedures (scheduling, forms, tests, etc.)

☐	☐	☐	☐	☐
DELIGHTED	*MOSTLY SATISFIED*	*MIXED*	*MOSTLY DISSATISFIED*	*TERRIBLE*

What is your overall feeling about the...

6. Professional knowledge and competence of the main practitioner(s)

☐	☐	☐	☐	☐
TERRIBLE	*MOSTLY DISSATISFIED*	*MIXED*	*MOSTLY SATISFIED*	*DELIGHTED*

7. Location and accessibility of the Concussion Clinic (distance, parking, etc.)

☐	☐	☐	☐	☐
DELIGHTED	*MOSTLY SATISFIED*	*MIXED*	*MOSTLY DISSATISFIED*	*TERRIBLE*

8. Appearance and physical layout of the Concussion Clinic (e.g. waiting area)

☐	☐	☐	☐	☐
TERRIBLE	*MOSTLY DISSATISFIED*	*MIXED*	*MOSTLY SATISFIED*	*DELIGHTED*

9. Ability of your practitioner(s) to listen to and understand your problems

☐	☐	☐	☐	☐
DELIGHTED	*MOSTLY SATISFIED*	*MIXED*	*MOSTLY DISSATISFIED*	*TERRIBLE*

10. Personal manner of the main practitioner(s) seen

☐	☐	☐	☐	☐
TERRIBLE	*MOSTLY DISSATISFIED*	*MIXED*	*MOSTLY SATISFIED*	*DELIGHTED*

11. Waiting time between referral to the Concussion Clinic and the appointment (date and time) given

☐	☐	☐	☐	☐
DELIGHTED	*MOSTLY SATISFIED*	*MIXED*	*MOSTLY DISSATISFIED*	*TERRIBLE*

12. Waiting time when you come to be seen or keep an appointment made

☐	☐	☐	☐	☐
TERRIBLE	*MOSTLY DISSATISFIED*	*MIXED*	*MOSTLY SATISFIED*	*DELIGHTED*

What is your overall feeling about the...

13. Availability of appointment times that fit your schedule

☐	☐	☐	☐	☐
DELIGHTED	*MOSTLY SATISFIED*	*MIXED*	*MOSTLY DISSATISFIED*	*TERRIBLE*

14. Cost of services to me

☐	☐	☐	☐	☐
TERRIBLE	*MOSTLY DISSATISFIED*	*MIXED*	*MOSTLY SATISFIED*	*DELIGHTED*

15. Effect of services in maintaining well-being and preventing relapse

☐	☐	☐	☐	☐
DELIGHTED	*MOSTLY SATISFIED*	*MIXED*	*MOSTLY DISSATISFIED*	*TERRIBLE*

16. Confidentiality and respect for your rights as an individual

☐	☐	☐	☐	☐
TERRIBLE	*MOSTLY DISSATISFIED*	*MIXED*	*MOSTLY SATISFIED*	*DELIGHTED*

17. Amount of help you have received

☐	☐	☐	☐	☐
DELIGHTED	*MOSTLY SATISFIED*	*MIXED*	*MOSTLY DISSATISFIED*	*TERRIBLE*

18. Availability of information on how to get the most out of services

☐	☐	☐	☐	☐
TERRIBLE	*MOSTLY DISSATISFIED*	*MIXED*	*MOSTLY SATISFIED*	*DELIGHTED*

19. Prescription (or non-prescription) of medications

☐	☐	☐	☐	☐
DELIGHTED	*MOSTLY SATISFIED*	*MIXED*	*MOSTLY DISSATISFIED*	*TERRIBLE*

20. Explanations of specific procedures and approaches used

☐	☐	☐	☐	☐
TERRIBLE	*MOSTLY DISSATISFIED*	*MIXED*	*MOSTLY SATISFIED*	*DELIGHTED*

What is your overall feeling about the...

21. Effect of services in helping relieve symptoms or reduce problems

☐	☐	☐	☐	☐
DELIGHTED	*MOSTLY SATISFIED*	*MIXED*	*MOSTLY DISSATISFIED*	*TERRIBLE*

22. Response to crises or urgent needs during office hours

☐	☐	☐	☐	☐
TERRIBLE	*MOSTLY DISSATISFIED*	*MIXED*	*MOSTLY SATISFIED*	*DELIGHTED*

23. Arrangements made for after hours emergencies or urgent help

☐	☐	☐	☐	☐
DELIGHTED	*MOSTLY SATISFIED*	*MIXED*	*MOSTLY DISSATISFIED*	*TERRIBLE*

24. Thoroughness of the main practitioner(s) you have seen

☐	☐	☐	☐	☐
TERRIBLE	*MOSTLY DISSATISFIED*	*MIXED*	*MOSTLY SATISFIED*	*DELIGHTED*

25. Appropriate use of referrals to other practitioners or services when needed

☐	☐	☐	☐	☐
DELIGHTED	*MOSTLY SATISFIED*	*MIXED*	*MOSTLY DISSATISFIED*	*TERRIBLE*

26. Collaboration between service providers (if more than one)

☐	☐	☐	☐	☐
TERRIBLE	*MOSTLY DISSATISFIED*	*MIXED*	*MOSTLY SATISFIED*	*DELIGHTED*

What is your overall feeling about the...

27. Publicity or information about programs and services offered

☐	☐	☐	☐	☐
DELIGHTED	*MOSTLY SATISFIED*	*MIXED*	*MOSTLY DISSATISFIED*	*TERRIBLE*

28. Handling and accuracy of your records (as best as you can tell)

☐	☐	☐	☐	☐
TERRIBLE	*MOSTLY DISSATISFIED*	*MIXED*	*MOSTLY SATISFIED*	*DELIGHTED*

29. Contribution of services to achievement of your life goals

☐	☐	☐	☐	☐
DELIGHTED	*MOSTLY SATISFIED*	*MIXED*	*MOSTLY DISSATISFIED*	*TERRIBLE*

30. In an overall general sense, how satisfied are you with the services you have received

☐	☐	☐	☐	☐
TERRIBLE	*MOSTLY DISSATISFIED*	*MIXED*	*MOSTLY SATISFIED*	*DELIGHTED*

31. Information you were given about concussion

☐	☐	☐	☐	☐
DELIGHTED	*MOSTLY SATISFIED*	*MIXED*	*MOSTLY DISSATISFIED*	*TERRIBLE*

The next questions are also about information you were given on concussion...

32. The *amount* of information I was given about concussion was

FAR TOO MUCH *TOO MUCH* *ABOUT RIGHT* *TOO LITTLE* *FAR TOO LITTLE*

33. How well did the information given to you help you to understand concussion and its effects

NOT AT ALL *A LITTLE* *SOMEWHAT* *QUITE A BIT* *A GREAT DEAL*

34. How would you prefer to get information to take home

VIDEOTAPE & BROCHURE *BROCHURE* *VIDEOTAPE* *OTHER* _____

35. Did you get the yellow brochure called "about Concussion" *YES* *NO*

If yes, how many times have you read it

NONE *1* *2* *3 OR MORE*

36. Did you get the videotape called "about Concussion" *YES* *NO*

If yes, how many times have you watched it

NONE *1* *2* *3 OR MORE*

It is important to know something about the participants, so we request this extra information. Only grouped data will be used, and you will never be identified. However if you prefer not to answer any or all of the questions, you may freely do so.

37. Are you the: **Client** ☐ **Family/friend** ☐

38. Gender: Female Male

39. Age (years):

0 – 14		15 – 24	
25 – 34		35 – 44	
45 – 54		55 – 64	
65 – 74		75 & over	

40. Yearly Family Income:

Under $10,000		$10,000 - $20,000	
$20,001 - $40,000		$40,001 - $60,000	
$60,001 - $80,000		Over $80,000	

41. Current Employment:

Employed full time		Employed part-time	
Unemployed		Full-time student	
Part-time student		Retired	

Other (Please specify)_____

42. Occupation (Please specify)

_____

43. Education

Some high school	☐	Completed 5th form	☐
Completed 6th form	☐	Completed 7th form	☐
Attended tertiary institution	☐		

44. What is your ethnic origin

NZ/Pakeha	☐	Maori	☐
Polynesian	☐	European	☐
Other (please specify) _____			

45. Reason for being referred to Concussion Clinic

Car Accident	☐	Fall	☐
Sports related injury	☐	Assault	☐
Other (please specify) _____			

46. What distance did you have to travel to get to the Concussion Clinic (Km's)

_____

47. Referral to the Concussion Clinic was through

ACC	☐	My G.P.	☐
Case manager	☐	A neurologist	☐
Other (please specify) _____			

Below are five statements with which you may agree or disagree. Using the 1-7 scale below, indicate your agreement with each item by placing the appropriate number on the line preceding that item. Please be open and honest in your responding. The 7-point scale is as follows:

1 = strongly disagree

2 = disagree

3 = slightly disagree

4 = neither agree nor disagree

5 = slightly agree

6 = agree

7 = strongly agree

__ 1. In most ways my life is close to my ideal.

__ 2. The conditions of my life are excellent.

__ 3. I am satisfied with my life.

__ 4. So far I have gotten the important things I want in life.

__ 5. If I could live my life over, I would change almost nothing.

CONFIDENTIAL

THANK YOU VERY MUCH FOR YOUR HELP WITH THIS SURVEY, WE WOULD APPRECIATE ANY ADDITIONAL COMMENTS ABOUT THIS SERVICE YOU WOULD CARE TO ADD. YOU MAY WRITE THEM BELOW.

The thing I have liked best about my experience here is:

What I liked least was:

If I could change one thing about this service it would be:

Would you like the Concussion Clinic to send you a summary of the results

Yes ☐ No ☐

Appendix C

Information Sheet

MasseyUniversity

Wellington Campus
Private Box 756,
Wellington,
New Zealand
Telephone 64 4 801 2794
Facsimile 64 4 801 2692

Information Sheet

Client satisfaction at the Midcentral Health/Massey University Concussion Clinic

Hi, our names are Roxanne Leach and Grahame Scoullar. We are graduate students at Massey University studying client satisfaction at the Midcentral Health/Massey University Concussion Clinic. As a previous client of the clinic you are invited to take part in this research. If a family member or friend went with you to the clinic they are also invited to take part. The aim of this study is to find out what clients and others think about the service provided by the clinic.

Roxanne's study will look at the overall service at the clinic and Grahame's study will look at the information provided by the clinic. You will be asked to answer some questions about how satisfied or dissatisfied you were with the services provided by the Concussion Clinic. Answering the questions should take about 15 minutes. Your responses can be sent back to us in the self-addressed envelope provided. You may get a reminder about the questionnaire after two weeks.

It is voluntary to take part in the research and you can choose not to answer any questions. If you complete the questionnaire and send it back then it will be assumed that you are consenting to take part. All the information that you give will be confidential and will only be used for our studies. The questionnaire will be labelled with a code number instead of your name. There will be no information that could identify you in any reports about the studies. At the end of the studies all questionnaires will be destroyed. Your answers will not affect the past or any future contact you may have with the clinic.

If you would like to receive a summary of the results, please tick the feedback item at the end of the questionnaire. Your participation would be greatly appreciated. The supervisor for this research is Professor Janet Leathem.

If you would like any further information or have any questions about the studies please do not hesitate to contact Roxanne Leach, Grahame Scoullar or Professor Janet Leathem on the following number: 06 3505799 extn 6864.

This project has been reviewed and approved by the Massey University Human Ethics Committee, WGTN Protocol 02/119 and the Manawatu Whanganui Ethics Committee, Protocol 29/02. If you have any concerns about the conduct of this research, please contact Dr Pushpa Wood, Chair, Massey University Regional Human Ethics Committee: Wellington, telephone 04 801 2794 ext 6723, email P.Wood@massey.ac.nz

Appendix D

Cover Letter

MIDCENTRAL HEALTH

MidCentral Health
Phone (06) 355 0998
Fax (06) 355 0616
PO Box 2056
Hereteunga
Palmerston North
New Zealand

CONCUSSION CLINIC

Palmerston North Hospital
Phone: 06 350 8570
Fax: 06 350 8579

Dear surveyed participant

The Midcentral Health Concussion Clinic is working with two reserachers form Massey University who are
studying the service provided by the clinic. The researchers are independent from the clinic. They have not been allowed to see your files and do not know your name or contact details. The studies will examine our service and help us to improve it. We have included the information sheet and questionnaire for the studies in this envelope. If you decide to take part, please send replies to the resaerchers in the envelope provided.

Thank you.

Appendix E

Reminder Letter

Hello,

My name is Roxanne Leach and in October I sent you a questionnaire asking you about your satisfaction with the services you received when you attended the Midcentral Health Concussion Clinic. Unfortunately, very few questionnaires have been returned. Before any changes are made to the services offered by the clinic, it is important to obtain the views of as many people as possible. For this reason we are sending out the questionnaire again. If you have already sent yours back please ignore this letter, but if you haven't, we would really appreciate it if you could find the time to complete and return the questionnaire. Thank you for your time!

Roxanne Leach
Researcher, Massey University

Appendix F

Manawatu Whanganui Ethics Committee Approval Letter

Manawatu Whanganui Ethics Committee
C/- Palmerston North Hospital
PO Box 5203
Palmerston North
Phone/Fax (06) 356 7773
Email: mwethics@xtra.co.nz

12 August 2002

Ms Roxanne Leach
[redacted]

Dear Roxanne,

AN INVESTIGATION OF CLIENT SATISFACTION ASSOCIATED WITH THE MIDCENTRAL HEALTH/MASSEY UNIVERSITY CONCUSSION CLINIC.
ETHICS REGISTER: 29/02

We acknowledge receipt of the above study which was reviewed before our Committee in June 2002 and we thank you for the amendments which were requested and completed satisfactorily.

I am pleased to advise that the study has been approved by the Manawatu-Whanganui Ethics Committee.

Certification

The Committee certifies that it is satisfied this study is not conducted primarily for the benefit of the manufacturer or distributor of any medicine or item in respect of which the study is carried out. This certification is for the purposes of the Accident Insurance Act 1998, Section 35(5).

Accreditation

The Manawatu-Whanganui Ethics Committee is accredited by the Health Research Council and is constituted and operates in accordance with the National Standards for Ethics Committees July 1996.

Progress Reports

It is a condition of Ethics Committee approval that you provide a study report at the completion of the study in approximately 10 months time and a copy of any

report/publication for the Committee's records. Please notify the Committee if the study is abandoned or changed in any way.

General

All correspondence, protocol amendments, SAE reports and progress reports should be forwarded to the Manawatu-Whanganui Ethics Committee. Sufficient copies for circulation would be appreciated. Please quote the above ethics committee reference number in all correspondence.

It should be noted that Ethics Committee approval does not imply any resource commitment or administrative facilitation by any healthcare provider within whose facility the research is to be carried out. Where applicable, authority for this must be obtained separately from the appropriate manager within the organization.

The Committee wishes you well with your research.

Yours sincerely,

Dr. Ashraf Choudhary
Chairperson

Appendix G

Massey University Human Ethics Committee Approval Letter

Massey University

Human Ethics Committee: Wellington

Wellington Campus
Private Box 756,
Wellington,
New Zealand
Telephone: 64 4 801 2794
Facsimile: 64 4 801 2692

2 October 2002

Roxanne Leach
[redacted]

Dear Roxanne

Re: MUHEC: WGTN Protocol - 02/119
An Investigation of Client Satisfaction Associated with the Midcentral Health/ Massey University Concussion Clinic

Thank you for forwarding the amended documents incorporating the changes recommended by the Massey University Wellington Human Ethics Committee.

The amendments you have made now meet the requirements of the Massey University Human Ethics Committee and the ethics of your protocol are approved.

Any departure from the approved protocol will require the researcher to return this project to the Massey University Human Ethics Committee for further consideration and approval.

A reminder to include the following statement on all public documents. "This project has been reviewed and approved by the Massey University Human Ethics Committee, WGTN Protocol 02/119. If you have any concerns about the conduct of this research, please contact Dr Pushpa Wood, Chair, Massey University Wellington Human Ethics Committee, telephone 801 2794 ext 6723, email P.Wood@massey.ac.nz."

Would you please forward a complete copy of the revised protocol for our records.

Yours sincerely

pp
Dr Pushpa Wood (Chair)
Massey University Human Ethics Committee: Wellington

Cc: Professor Janet Leathem