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**Outcome Evaluation of the Massey University Concussion
Clinic: A Pilot Study**

A thesis presented in partial fulfilment of the requirements for the
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Abstract

The primary aim of the present study was to evaluate the effectiveness of the intervention provided by Massey University Concussion Clinic for individuals following Mild Traumatic Brain Injury (MTBI). Concussion Clinics were set up across New Zealand to provide early intervention and assessment for individuals with MTBI to prevent long term complaints. Treatment outcomes at these clinics have not been empirically examined before. The current study compared the levels of post concussion symptoms, anxiety, depression, and psychosocial functioning between an intervention and a control group using a quasi-experimental design. In addition, reasons for non-attendance to the clinic, and participants' perceptions of their recovery were also explored. The main outcome measures used were the Rivermead Postconcussion Symptoms Questionnaire, the Hospital Anxiety and Depression Scale, and the Sydney Psychosocial Reintegration Scale-2. Outcomes were initially assessed soon after injury or referral to the clinic and then three months later. Participants were recruited from the Palmerston North Hospital Emergency Department and the Massey University Concussion Clinic. With 20 participants in the intervention group and 15 in the control group, the main results showed that the Concussion Clinic intervention significantly decreased the level of anxiety and depression reported by participants in the intervention group over the control group. Greater improvements in post concussion symptoms and psychosocial functioning were also indicated in the intervention group. Additional findings suggest difficulty with transportation as a reason for non-attendance, which could be a potential barrier to recovery. Furthermore, participants highlighted the benefits of attending the service and its role in their recovery. Important issues relating to the referral processes were also identified. Findings of the current

study suggest that the Concussion Clinic intervention is effective in improving recovery for those accessing the service. Nevertheless, these results must be interpreted with caution due to the small sample size. Further research is warranted to examine the effectiveness of the Concussion Clinics with larger samples, and the current study may serve as a valuable pilot for these future investigations.

Dedication

خود و دست و پا و سر و تن

(To my beloved Mum and Dad)

Mamma and Bappa, you have sacrificed so much to give your children the opportunities that you did not have. You have taught me the meaning of hard work and commitment. You inspire me to strive for the best in all I do. I am eternally grateful for your unconditional love and support in pursuing all my dreams.

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Overview

Mild Traumatic Brain Injury (MTBI) is a common injury which can cause significant functional difficulties and ongoing problems. Although the majority of individuals sustaining a MTBI recover within a few days of the injury, some individuals go on to experience the difficulties weeks or even months after the injury. These can be tremendously frustrating and devastating for the individuals and their family. Investigation and management of these problems can help these individuals recover from the symptoms and return to pre-injury activities.

Many approaches exist to manage difficulties endured by individuals after a MTBI. In New Zealand, the Accident Compensation Corporation (ACC) has set up and provides funding for several Concussion Clinics throughout the country, to carry out assessments and interventions for individuals sustaining a MTBI. Receiving referrals from Emergency Departments, General Practitioners (GPs) and the ACC, the Concussion Clinics play an important part in helping affected individuals in their recovery. The current study is based at one such clinic, the Massey University Concussion Clinic.

An important aspect of any treatment service is its' evaluation- assessing if the treatment it provides benefit those who access it. Of note, there has been some evaluation studies conducted at the Massey University Concussion Clinic. However, these have focused more on the service delivery and client satisfaction as a measure of success, rather than head injury recovery related outcomes for the clients. No study to date has looked at the overall effectiveness of any of these Concussion Clinics in

reducing the impact of MTBI in individuals. Hence, the present research is proposed as a pilot study on evaluating the impact of these clinics on specific outcomes for individuals with MTBI.

Chapter 1 presents an introduction to the present thesis by providing relevant background literature, to arrive at the objectives of the current study. Chapter 2 details the methodology undertaken, while Chapter 3 presents the results of the current research. Lastly, Chapter 4 discusses the main findings of the investigation, along with methodological and measurement issues pertaining to the current study. Limitations of the research, implications, and suggestions for future research are also discussed.