

**Effectiveness of Cognitive Behaviour Therapy and Telecounselling for the Treatment
of Psychological Problems Following Spinal Cord Injury**

Diana Dorstyn

B.A (Hons), M Psych (Clin)

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Abstract

The immediate and permanent neurological changes associated with a spinal cord injury (SCI) have a profound impact on an individual's lifestyle. Faced with these changes and without the appropriate intervention, an injured person is at risk of developing psychological problems, particularly depression and anxiety. Moreover, there is evidence to suggest that some individuals require long-term psychological monitoring to prevent the development of further morbidity.

However, there remains a gap between current psychological practices in SCI rehabilitation and the evidence-base that informs these practices with adult clients. Specifically, evaluations of the efficacy of cognitive behavioural¹ therapy (CBT) and its contribution to improving emotional outcomes are limited. Additionally, research on the role of outreach mental health services for this population, particularly telephone-based counselling (telecounselling), is largely descriptive in nature. In order to ensure evidence-based psychological practice in a rehabilitation setting, it is therefore important to critically evaluate available interventions, such as CBT and telecounselling. The research presented in this thesis attempts to address some of these gaps in our knowledge base via four independent studies.

Before doing so, Chapters 1 and 2 provide a context to this research by reviewing the literature on psychological adjustment to disability. An approach to rehabilitation that acknowledges the psychosocial implications of SCI is outlined. Studies of the discipline-specific contribution of psychology to rehabilitation outcomes are then introduced,

¹ Australian/UK English spelling is used throughout.

focussing on CBT and telecounselling as options for treating the psychological problems that are experienced by a sub-group of individuals with a SCI.

The impact of CBT on the psychological adjustment of adults with SCI is then examined in Chapter 3, which comprises a meta-analytic review of the available research (Study 1). Ten independent studies evaluating individual ($N_{\text{studies}} = 1$) or group-based CBT ($N_{\text{studies}} = 9$) among inpatient or outpatient samples ($N = 424$ participants), were identified from a comprehensive search of six electronic databases relevant to rehabilitation psychology. The combined findings of this meta-analysis indicated that CBT has immediate benefits, contributing to improved quality of life post-SCI. However, there is a need for further objectively derived data on individual-based CBT for this population, with research on this therapy format currently being very limited.

The application of individualised CBT in SCI rehabilitation is further explored in Chapter 4 (Study 2). This clinical research study used an independent-groups design with 25 participants. Eleven participants with high baseline levels of depression, anxiety or stress (based on the 21-item Depression, Anxiety and Stress Scales, DASS-21), were allocated to a CBT Treatment group. Their responses were compared to 13 participants who reported no psychopathology and received standard medical care and psychological monitoring. CBT participants demonstrated clinical improvements, with treatment, on the DASS-21 subscales. They also reported a significant increase in levels of depression once therapy was discontinued. Standard care participants reported no significant changes in mood during the study. However these results were not conclusive, given the study's small sample size and, consequently, its limited power to detect statistically significant treatment effects. Furthermore the study was not randomised, making it difficult to

generalise the findings to the larger population of adults with SCI in this inpatient setting.

The results of Studies 1 and 2 are consistent with current SCI research, which emphasises the continued mental health needs for a sub-group of individuals who experience prolonged psychological distress following their primary rehabilitation. Within this context, telecounselling offers both an accessible and affordable home-based treatment option for this client population. However the effectiveness of telecounselling, including the magnitude of treatment change, has not been objectively evaluated in the rehabilitation literature.

This issue is addressed in Study 3 (Chapter 5), which used meta-analytic techniques to quantitatively analyse the evidence on telecounselling for adults with an acquired physical disability. A range of diagnostic groups, including SCI, stroke, multiple sclerosis, amputation and severe burn injuries were examined as the research in this area is extremely limited. The literature search, in addition to email correspondence with colleagues from the American Psychological Association and Australian Psychological Society, identified eight eligible studies involving 658 participants. The combined results of these studies supported telecounselling as a service delivery approach, with individuals receiving this treatment reporting statistically significant improvements in specific psychosocial outcomes including coping skills, aspects of community integration, and depression. However, there were limited available data ($N_{\text{studies}} = 4$) on the longer-term effectiveness of telecounselling. Furthermore, the clinical feasibility of telecounselling could not be determined as cost analyses for the identified telecounselling programs were lacking.

The fourth and final study provides this cost-benefit detail in an examination of

telecounselling for adults residing in the community with SCI (Chapter 6). This study involved a total sample of 40 participants randomly allocated to telecounselling Treatment ($N = 20$) or standard care Control ($N = 20$) groups. Results showed a trend towards improvement across multiple outcome domains for telecounselling participants, including self-report measures of mood and coping. However, the ability to draw statistical conclusions was limited due to the sample size that could be recruited.

The clinical implications of the combined findings are summarised in Chapter 7. Importantly, the findings contribute to an improved understanding of psychological interventions that are appropriate to the practice of rehabilitation psychology. Specifically, there is a need to assess and manage individuals' levels of depression, anxiety and stress, using CBT, in the primary stages of SCI rehabilitation (Studies 1 and 2). There is also potential for telecounselling to broaden the SCI population's access to psychotherapy following discharge from inpatient rehabilitation (Studies 3 and 4). Moreover, telecounselling offers clinicians an opportunity to monitor the longer-term adjustment of individuals living with SCI in both an efficient and cost-effective manner. Further research examining the role of these psychological treatments in adult SCI rehabilitation is planned, to extend and validate these findings.

Declaration

I, Diana Dorstyn, certify that this work contains no material which has been accepted for the award of any other degree or diploma in any university or other tertiary institution and, to the best of my knowledge and belief, contains no material previously published or written by another person, except where due reference has been made in the text.

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List of Publications

Publications are listed in order of appearance in this dissertation

Dorstyn, D.S., Mathias, J.L., & Denson, L.A. (2011a). Efficacy of cognitive behaviour therapy for the management of psychological outcomes following spinal cord injury: A meta-analysis. *Journal of Health Psychology, 16*, 374-391. doi: 10.1177/1359105379063.

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Dorstyn, D.S., Mathias, J.L., & Denson, L.A. (2011b). Psychosocial outcomes of telephone-based counselling for adults with an acquired physical disability: A meta-analysis. *Rehabilitation Psychology, 56*, 1-14. doi: 10.1037/a0022249.

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Statements of the Contributions on Jointly Authored Papers

Chapter 3

Title: Efficacy of cognitive behaviour therapy for the management of psychological outcomes following spinal cord injury: A meta-analysis

Co-Authors: J.L., Mathias, L.A., Denson

Contributions: J.L. Mathias and I were responsible for the study inception. I was solely responsible for the study design, methodology (which included literature searches, data extraction, statistical analyses, data interpretation), and manuscript preparation. Both co-authors acted in a supervisory capacity during all stages of this research and manuscript preparation.

Chapter 4

Title: Psychological intervention during spinal rehabilitation: A preliminary study.

Co-Authors: J.L., Mathias, L.A., Denson

Contributions: Professor Tonge and Dr. Taleporos, Monash University, contributed to the study's inception. I was responsible for the final study design, participant recruitment, data collection, statistical analyses, data interpretation and manuscript preparation. Both co-authors acted in a supervisory capacity during all stages of this research and manuscript preparation.

Chapter 5

Title: Psychosocial outcomes of telephone-based counselling for adults with an acquired physical disability: A meta-analysis

Co-Authors: J.L., Mathias, L.A., Denson

Contributions: J.L. Mathias and I were responsible for the study inception. I was solely responsible for the study design, methodology (which included literature searches, data extraction, statistical analyses, data interpretation), and manuscript preparation. Both co-authors acted in a supervisory capacity during all stages of this research and manuscript preparation.

Chapter 6

Title: Effectiveness of telephone counselling in managing psychological outcomes after spinal cord injury: A preliminary study

Co-Authors: J.L., Mathias, L.A., Denson, M.T., Robertson

Contributions: I was responsible for the study inception and design, participant recruitment, data entry, statistical analyses, data interpretation and manuscript preparation. M.T. Robertson carried out all clinical assessments (i.e. undertaken at baseline, week 12 post-intervention and 3 month follow-up). J.L. Mathias and L. Denson acted in a supervisory capacity during all stages of this research and manuscript preparation.

The undersigned agree that the statements made regarding author contributions are accurate and true:

J.L. Mathias: Date: 17/7/2012

L.A. Denson: Date: 17/7/2012

M.T. Robertson: Date: 17/7/2012

Permission for the use of Published Papers

Chapter 3

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Dorstyn, D.S., Mathias, J.L., & Denson, L.A. (2011a). Efficacy of cognitive behaviour therapy for the management of psychological outcomes following spinal cord injury: A meta-analysis. *Journal of Health Psychology, 16*, 374-391. doi: 10.1177/ 1359105379063

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