Evidence-Based Practice by Psychologists Treating Secondary Psychological Injuries Within State Insurance Regulatory Authority Governed Frameworks

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Candidate Certification

I certify that the work in this thesis, entitled 'Evidence-based practice used by psychologists treating secondary psychological injuries within the State Insurance Regulatory Authority governed frameworks', has not previously been submitted for a degree nor has it been submitted as part of the requirements for a degree to any other university or institution other than University of New England.

I also certify that the thesis is an original piece of research and it has been written by me. Any help and assistance that I have received in my research work and in the preparation of the thesis itself has been appropriately acknowledged.

In addition, I certify that all information sources and literature used are indicated in this thesis.

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Contents

List of Tables

List of Figures

List of Abbreviations

AHRR	Allied Health Recovery Request
APS	Australian Psychological Society
CBT	Cognitive behavioural therapy
CPD	Continuing professional development
CTP	Compulsory third party
DASS	Depression Anxiety Stress Scale
EBP	Evidence-based practice
F2F	Face-to-face
GP	General practitioners
ICF	International Classification of Functioning, Disability and Health
NBN	National Broadband Network
NSW	New South Wales
ÖMPSQ	Örebro Musculoskeletal Pain Screening Questionnaire
PTSD	Post-Traumatic Stress Disorder
SD	Standard Deviations
SIRA	State Insurance Regulatory Authority
SMART	Specific, Measurable, Achievable, Relevant and Timed
SPI	Secondary Psychological Injury
WC	Workers Compensation
WISE	Work Injury Screening and Early intervention

Abstract

While psychopathology arising from musculoskeletal injury (i.e., secondary psychological injury) is predictive of poor recovery by injured people claiming compensation, the application of evidence-based practice (EBP) treatment guidelines is associated with improved outcomes. In 2010, the State Insurance Regulatory Authority (SIRA) in New South Wales (NSW), Australia—a body that governs the regulatory functions of Workers Compensation (WC) and motor vehicle Compulsory Third Party (CTP) insurance schemes—implemented EBP treatment guidelines. These guidelines are contained in the document titled: *Clinical framework for the delivery of health services* (Transport Commission & WorkSafe Victoria, 2012). At the time of conducting this research, the SIRA EBP treatment guidelines had been in effect for over five years; however, their effect on psychologists' practice and injured persons' outcomes was unknown. Therefore, the aims of the thesis were to: 1) to examine the effect of the introduction of the EBP treatment guidelines on claims cost and injured person outcomes within the SIRA insurance schemes and assess the use of EBP by psychologists treating musculoskeletal injuries with secondary psychological injury in this context, 2) to identify barriers to psychologists' use of EBP from the perspective of psychologists and 3) from the perspective of key stakeholders and 4) to elicit and test the feasibility of recommendations made by expert psychologists to improve psychologists' practice.

Study 1 investigated whether the implementation of EBP treatment guidelines had reduced claims costs, improved injured person outcomes and resulted in psychologists using EBP. From a time range sample of n = 238 administrative records of people with a musculoskeletal injury and secondary psychological injury, the results revealed that the implementation of EBP had acted as a buffer against broader negative trends in claims cost and return to work timeframes (i.e.,

compared to the population of injured people *n* = 26,254 who had suffered a musculoskeletal injury and not consulted a psychologist during the same time period). The second phase of the study included a qualitative case-level analysis of *n* = 12 WC files and *n* = 9 CTP showed that within both WC and CTP positive injured person outcomes occurred when psychologists' adherence with EBP guidelines was high. However, the findings also showed that psychologists' application of EBP treatment guidelines was suboptimal.

Study 2 explored the barriers in psychologists' adherence with the SIRA EBP guidelines. Psychologists (*n* =20) practicing within rural, regional and metropolitan in NSW participated in focus groups. The results revealed three key issues functioned as barriers: 1) a lack of trust in the validity of the recommended EBP guidelines, 2) a lack of knowledge of the psychologist's role in this context and insufficient skills to fully apply the guidelines, protocols and procedures and 3) a poor fit between EBP guidelines, client presentations and circumstances and the SIRA compensation schemes. The findings showed that both individual practitioner variables and contextual barriers influenced adherence to EBP.

Study 3 explored the contextual barriers that were identified in Study 2 as affecting practice. These included perceived barriers created by general practitioners (GPs), insurers and injured patients' actions. A sample of *n* = 27 participants was involved. The results showed that GPs were reticent to access psychological services due to a poor fit between their practice and treatment guidelines. Insurers lacked trust in the validity of 'secondary psychological injury' claims and this was exacerbated by psychologists' non-adherence to insurers' protocols and deficits in insurers' knowledge. Injured peoples' willingness to engage with treatment was impaired by a poor fit between the treatment guidelines and their experience of insurers' and psychologists' practices.

Study 4 elicited recommendations to overcome the barriers in psychologists' adherence to EBP guidelines that were identified in Study 2 and examined the feasibility of their implementation. The recommendations proposed by field experts (n = 8) included: 1) mandatory training and continuing professional development in the area of practice, 2) using independent consultants for expert advice, 3) completion of outcome measures prior to the first session, 4) completion of a treatment plan in-session with the injured person and 5) completion of outcome measures in the eighth and final session. These recommendations were considered feasible by most of the participating psychologists (n =150).

Taken together, the findings of this project highlight the important role of psychologists in the treatment of musculoskeletal injuries with secondary psychological injury and reinforced the need to integrate the best available research evidence with clinician's expertise and patient expectations and values to deliver beneficial outcomes to people. In addition, the findings illustrate that while psychologists have skills in the treatment of mental disorders they may not be competent in EBP approaches for managing and addressing pain and functional disability arising from secondary psychological injury within the compensation frameworks. The findings also highlight that to increase the application of EBP guidelines, a broad-based commitment from all stakeholders within the SIRA compensation schemes is required. This includes education programs that support all stakeholders to understand that the management of secondary psychological injuries requires a functional restoration perspective within a biopsychosocial paradigm. Lastly, empirical data from the research can be used to encourage stakeholders to change their practices and for policymakers, administrators and professional associations to provide support to facilitate psychologists' adherence with EBP in ordinary clinical settings.

Chapter 1. Introduction

The famous psychologist Albert Ellis stated: 'It is not events themselves that upset people but rather it's people's perception of events that is upsetting' (Ellis, 2004, p.74). This statement can be used to understand the role of psychological factors in the maintenance of pain and the development of chronicity and disability following a musculoskeletal injury. Musculoskeletal injuries are those that affect bones, joints, nerves, tendons, ligaments and supporting blood vessels. They can arise from repetitive strain movements, falls, fractures, sprains, heavy lifting and trauma such as that experienced in a motor vehicle accident (Bernard, 1997; Gatchel & Schultz, 2014). While biological factors play a key part in the initiation of pain following an injury, the longer the pain persists the more likely it will be due to psychosocial variables (i.e., attitudes and beliefs, fear avoidance, emotional responses, social support) at an individual level thereby significantly impacting recovery and coping in musculoskeletainjuries. This places psychologists along with other health practitioners in a position to play a significant role in the treatment, recovery and functional rehabilitation of people with a musculoskeletal injury. Further, as musculoskeletal injuries are the most commonly occurring work and motor vehicle related injuries in Australia—posing a significant economic burden in the form of health care expenditure and lost salaries and productivity—understanding and improving psychologists' practice within this therapeutic setting becomes critically important. Thus, it is the focus of this thesis.

1.1. Australian Compensation Schemes

Australia has a cause-based compensation system that requires injured people to prove causation following a work or motor vehicle injury to receive entitlements (i.e., income support payments and medical and rehabilitation intervention). Consequently, this cause-based system relies heavily on medical and health professionals to determine ongoing treatment, diagnosis and

liability (Loisel & Anema, 2013). This requirement can heighten an injured person's psychological distress around the compensation process and slow down access to support services (Lippel & Lotters, 2013). The two main compensation schemes in Australia are workers' compensation (WC) (i.e., insurance coverage provided for work-related injuries) and Compulsory Third Party (CTP) insurance (i.e., insurance coverage provided for motor vehicle accident-related injuries). In the Australian state of New South Wales (NSW), the WC scheme was previously managed by WorkCover NSW; however, following structural reforms in September 2015, the State Insurance Regulatory Authority (SIRA) became responsible for the regulatory functions of WC and CTP insurance.

1.1.1. WC scheme

Australian WC is based on a legislative premise similar to that of Canada and United States, that is, the illness or injury must be caused by work for it to be compensated (Loisel & Anema, 2013). Musculoskeletal disorders are amongst the most heavily compensated injuries in the North American and Australian jurisdications (Loisel & Anema, 2013). This is different to some other Organisation for Economic Co-operation and Development countries such as The Netherlands in which sickness and disability insurance also provides compensation for work-related injuries (Lippel & Lotters, 2013). In Australia, employers in every state have a legislative requirement to provide WC insurance coverage for their employees (Safe Work Australia, 2017). Employers in the workers compensation schemes across the different jurisdications have a central role to play which includes an obligation to maintain the workers employment, facilitate the return to work process, as well as have a right to contest the workers claim (Loisel & Anema, 2013). The eight states and territories in Australia each have their own WC schemes, in addition to three Commonwealth schemes (i.e., that provide insurance coverage for Australian government employees, Defence Force employees and certain seafarers) (Safe Work Australia,

2016b). However, in all Australian jurisdictions' WC is a no-fault scheme meaning that the injured person is not required to prove negligence on the part of the employer (Safe Work Australia, 2014).

1.1.2. CTP scheme

The CTP schemes across most Australian states are predominately no-fault compensation schemes meaning that an injured party is entitled to compensation without having to prove any party was at fault in an accident. A no-fault compensation for injury sustained in a motor vehicle accident also exists in some jurisdications of Canada and United States of America (Loisel & Anema, 2013). The motor vehicle compensation schemes in these countries is different from the workers compensation scheme as the employer is not involved in the compensation process that is, either denial or acceptance of the claim nor the return to work (RTW) process (Loisel & Anema, 2013). In the Australian states which include Victoria and Tasmania have predominantly a no-fault compensation scheme whereas, Western Australia commenced a no-fault scheme on 1 July 2016. In addition, NSW recently introduced reforms (i.e., 1 December 2017) to create a hybrid no-fault scheme in which there are defined benefits for low severity injuries and access to lump sum payments for the seriously injured (NSW Government, 2016). Traditionally, the NSW scheme allowed for some incurred medical expenses to be paid immediately; however, payments for future medical and rehabilitation needs and lost income were paid as a lump sum upon finalisation of the claim (NSW Government, 2014). Due to the complexity of managing and negotiating disputes in this system, 83% of CTP claims in NSW have legal representation. Further, access to lump sum payments has created secondary gain incentives to exaggerate claims to maximise payments (NSW Government, 2014).

1.2. Secondary Psychological injuries Within the NSW Compensation Schemes

Within both the NSW SIRA insurance schemes psychopathology which develops as a consequence of a physical injury and meets the Diagnostic and Statistical Manual of Mental Disorders, 5th Edition (DSM-5) diagnostic criteria for a mental disorder (i.e., anxiety, depression or post-traumatic stress) is known as a 'secondary psychological injury' (SPI) and is deemed legislatively compensable. In Section 65A of the *Workers Compensation Act 1987* and Section 3 of the *Motor Accidents Act 1999* the definition of injury is not only limited to personal or physical injury but is also inclusive of psychological or psychiatric injury (Australian Government, 2006, p. 56; Pincus, Burton, Vogel & Field, 2002). Empirical research also supports psychological response to an injury from a motor vehicle accident as being a significant predictor in an injured person's recovery. Similarly, psychological distress associated with a WC injury is known to play a significant role in increasing the duration of disability and health care costs (Crook, Milner, Schultz, & Stringer, 2002; Gun et al., 2005).

Under workers compensation, the *Workplace Injury Management and Workers Compensation Act 1998* allocates specific responsibilities to insurers, employers, insurers, medical and treatment practitioners to facilitate a timely and sustainable return to work for the injured patient (SIRA, 2016, p. 5). Treatment management for secondary psychological injuries is undertaken by medical and allied health practitioners which includes psychologists and is focused on recovery and helping facilitate upgrades in the injured patient's capacity and return to pre-injury work. Return to work is coordinated, planned and supported by everyone in the team; whereas claims management is solely managed by the insurer and includes determining liability, coordinating provision of services and assisting the employer to meet their obligations of providing suitable duties to the injured worker (SIRA, 2016).

Under the NSW CTP insurance scheme management of minor injuries (i.e., Acute Stress Disorder and Adjustment Disorder) arising because of a physical injury of not at fault injured people includes treatment, care and weekly benefits (i.e., for loss of earnings) up to six months; and for major injuries (i.e., Post Traumatic Strss Disorder, Major Depressive Disorder) up to 5 years from the date of the accident. However, if the injured person is at fault regardless of the severity of their injury they are entitled to two intervention sessions with a psychologist by obtaining prior approval from the insurer and further access to services is at the insurer's discretion.

1.3. Burden of Musculoskeletal Injuries

Injuries lodged under WC cost the NSW economy an estimated $2.8 billion annually, of which 90% of all serious injuries are musculoskeletal in nature, the predominant workplace injury being a sprain or strain of the low back (i.e., 39.3% of all injuries) (Brijnath et al., 2016; Safe Work Australia, 2014, 2016a; SIRA, 2017). In parallel, the cost to the NSW Government for motor vehicle injuries paid under CTP is $1.4 billion a year, of which 46% of the claims lodged are whiplash (i.e., neck pain) injuries (Boyd, 2016; SIRA, 2016). Consequently, musculoskeletal injuries produce medical and rehabilitation costs that pose a substantial financial and health burden on the Australian economy. While most injured people fully recover from a musculoskeletal injury, a small minority (about 10%) will develop persistent pain and chronic disability (Boersma, Carstens-Soderstrand, & Linton, 2014; Sterling, 2014).

Both WC and CTP in NSW introduced clinical principles for psychologists in 2010 based on the biopsychosocial paradigm to improve treatment outcomes for injured workers with musculoskeletal injuries (WorkCover, 2010). These treatment principles were based on the *Clinical Framework for the Delivery of Health Services* developed by the Transport Accident Commission (TAC) and WorkSafe Victoria and later adopted and adapted in other states of

Australlia. After SIRA became responsible for the regulatory functions of WC and CTP insurance schemes in 2015 the *Clinical Framework for the Delivery of Health Services* became the evidence-based guide designed to support psychologists delivering services to injured people within these compensaton schemes. The clinical framework has been endorsed by all peak health associations however, it is not known the extent to which these evidence-based principles are being integrated into the clinical practice by psychologists practicing under the SIRA insurance schemes.

1.4. Literature Review

The literature review aims to explore the role of psychopathology impacting recovery of injured patients with musculoskeletal injuries; the use of psychological interventions and evidence-based treatment guidelines in the management of musculoskeletal injuries. The main theoretical conceptualisation of the determinants of pain and disability and empirical findings will be reviewed.

Search Strategy

The literature was searched systematically through the University of New England databases (ProQuest, PsycInfo, Embase, Medline, PubMed, Scopus, PsycArticles, SAGE Journals, Science Direct, Taylor & Francis, Wiley Online & Google Scholar). A retrospective search was adopted when looking at journal articles. The key terms used in the searches were "work disability" "biopsychosocial", "clinical compliance for muscuskeletal injuries", "clinical guidelines for muscuskeletal" "psychological factors and muscuskeletal injuries". The articles were selected based on their relevance to the literature review

1.4.1. Psychosocial factors explaining musculoskeletal pain and disability

The traditional biomedical model described disability and pain to be the result of damaged tissue and viewed the clinician as providing the role of curing pathophysiology

(Bruns, Mueller & Warren, 2010). The biopsychosocial model emerged as a reaction to the biomedical viewpoint model and described the experience of pain and disability as an interactive combination of somatic input (i.e. nociception), psychological processes (i.e. beliefs, perception, appraisal) and environmental contingencies (i.e. expectation and responses from others) (Turk & Okifuji, 2005; Engel, 1981; Burns et al., 2010). Additionally, the biopsychosocial nature of disability has been recognised by the World Health Organisation (WHO), *International Classification of Functioning, Disability and Health* (ICF) and International Association for the Study of Pain as being critical in the conceptualisation and management of pain related disability (WHO, 2001; Kuijer, et al., 2006; Bruns & Disorbio, 2014). Studies have confirmed that psychological distress is critical in perpetuating physical limitations, particularly in relation to muscuskeletal injuries (Chou & Shekelle, 2010; Purdie, Kellet, & Bickerstaffe, 2012; Tourangeau & Yan, 2007; Scascighini, Dober-Spielmann, & Sprott). From the perspective of disability, the biopsychosocial paradigm is a more holistic theoretical framework as it accommodates the variability experienced by injured patients in the extent and severity of muscuskeletal injuries particularly when their physical injury pathology features appear similar (von Korff & Miglioretti, 2005). These differences have been theorised to be the result of psychological and social factors (Dunstan & Covic, 2006). The biopsychosocial framework in work disability and muscuskeletal pain research has been represented by 'flags' and is summarised in Table 1 (Kendall, 1999; WorkCover SA, 2010).

Table 1.1

Summary of Different Types of Flags and Overlap with the Biopsychosocial Model

Flag	Nature	Biopsychosocial Model
Red	Signs of serious pathology	Biological factors
Orange	Psychiatric symptoms	Psychological factors
Yellow	Beliefs, appraisals and judgements	Psychological factors
	Emotional responses	Psychological factors

	Pain behaviour (including pain coping strategies)	Psychological factors
Blue	Perceptions about the relationship between work and health	Social factors
Black	System or contextual obstacles	Social factors

Note. Adapted from "Early identification and management of psychological risk factors (yellow flags) in patients with low back pain: a reappraisal" by M. K. Nicholas, S. J. Linton, P. J. Watson & C. J. Main, 2011. *Physical therapy*, 91, p. 739.

Notably, research evidence exists with regards to other prognostic risk factors such as duration of sick leave, older age, female sex, social dysfunction and being in receipt of higher compensation as being additional determinants of long-term work disability in injured patients with muscuskeletal injuries (Steenstra, Verbeek, Heymans, & Bongers, 2005). Needless to say, assessment of yellow flags in muscuskeletal injuries is paramount for making timely referral for psychological interventions. However, an integrated approach to treating muscuskeletal injuries requires psychological factors to be understood in the context of other prognostic risk factors (Nicholas et al., 2011). Purdie, Kellet and Bickerstaffe (2012) study is noteworthy as it found yellow flags (i.e., psychological aspects) of the biopsychosocial formulation as being the most important predictors with regards to indicating long term work disability in muscuskeletal injuries. However, the findings of the aforementioned study need to be interpreted with caution as the data was mostly self report in nature and cross-sectional and the regression analysis used did not imply causation (Purdie, Kellet and Bickerstaffe 2012; Tourangeau & Yan, 2007). A systematic review undertaken by Chou and Shekelle (2010) and Scascighini, Dober-Spielmann and Sprott (2008) also found consistent support for the presence of psychological factors in predicting persistent disabling muscuskeletal pain. However, the studies investigated by Scascighini, et al. (2008) lacked robustness in their methodological quality due to their small sample size and deficiency in reporting the method of randomisation. Nonetheless, the studies collectively confirmed that the development of disability resulting from muscuskeletal pain had a

strong behavioural component (fear avoidance, passive coping strategies) and was the result of maladaptive beliefs (catastrophizing, depression, distress) (Scascighini, et al. 2008; Chou and Shekelle, 2010). Nicholas, Linton, Watson and Main (2011) examined whether identification and management of psychological variables improved treatment outcomes for muscuskeletal pain and their investigation of published interventions showed mixed results. Interestingly, they found that those interventions for muscuskeletal pain that did not demonstrate a benefit for addressing psychological risk factors had used a physical therapist for administering psychological treatment instead of a psychologist (Nicholas et al., 2011).

Thus, both theory and research show that pain arising from musculoskeletal injuries can become chronic and disabling, due to psychosocial factors (i.e., attitudes and beliefs, fear avoidance, emotional responses and social support) which affect recovery and coping and decrease the individual's motivation to return to work (Laisné, Lecomte, & Corbière, 2012; Gatchel & Dougall, 2014). Similarly, the prevalence of psychological variables such as trauma symptomology, pain catastrophising, negative expectations of recovery, fear of movement and depression, predict poor recovery from a whiplash injury (Buitenhuis, de Jong, Jaspers, & Groothoff, 2006; Carroll, Liu, Holm, Cassidy, & Côté, 2011; Gatchel & Schultz, 2014; Holm, Carroll, Cassidy, Skillgate, & Ahlbom, 2008; Pedler & Sterling, 2011; Sterling et al., 2012; Walton, Pretty, MacDermid, & Teasell, 2009). In both contexts, some individuals will appraise pain arising from a musculoskeletal injury as a serious threat to their wellbeing leading to a cascade of negative consequences. For instance, catastrophic thinking in relation to pain can lead to fear, hypervigilance and behavioural avoidance that, in turn, can have negative effects on physiological processes leading to mood disturbances such as frustration and depression (Boersma et al., 2014).

Developmental stages of pain and disability have been described post-injury as: acute (three to four weeks), subacute (four to 12 weeks) and chronic (more than 12 weeks) (Dunstan & Covic, 2006). Guidelines for the treatment of back pain and whiplash indicate that if recovery is not apparent within three to four weeks post-injury, then referral for specialised psychological treatment should be established (SIRA, 2014). A series of studies have found that psychological intervention for subacute pain following musculoskeletal injury decreases chronicity and reduces mental health problems and associated costs (Gatchel, Stowell, Wildenstein, Riggs & Ellis, 2006; Rogerson, Gatchel, & Bierner, 2010; Whitfill et al., 2010).

In addition, empirical research has also found prevalence of secondary psychological conditions (i.e., depression) in Canadian workers compensation claimants (a country which has a similar legislative jurisdiction as Australia) to be associated with problematic return to work outcomes in the first year following a musculoskeletal injury (Carnide at al., 2016). Both quantitative and qualitative studies of people with musculoskeletal injuries under the NSW CTP scheme have found that elevated psychological distress has an adverse impact on claims costs and patient outcomes (Guest et al., 2017; Murgatroyd, Cameron & Harris, 2010). Additionally, social and system factors have also been found to impact psychological health in people making workers compensation claims for physical conditions. Existing research has found poor recovery for individuals seeking financial compensation (Murgatroyd, Casey, Cameron, & Harris, 2015). However, this in turn may result due to the stress associated with the claim process and the traits and situation of the individuals making the claim (Murgatroyd, Harris, Tran, & Cameron, 2016). Thus, identification and treatment of psychological risk factors during the subacute and the acute stage of musculoskeletal pain becomes critically important in achieving positive injured person outcomes (Nicholas, 2016).

1.5. Role of Psychological Interventions in the Management of Musculoskeletal Pain

The three-stage diathesis-stress model proposed by Gatchel (1991, 1996, 2004, 2005) theorises that predisposing factors interact with trauma (caused by an injury) and give rise to a range of cognitive and behavioural processes (i.e., anxiety, catastrophising ideation, fear-avoidance beliefs and anticipation of pain) that are central to the maintenance of physical disability in the chronic stages of pain (Turk, 2002). Research supports psychological intervention, especially cognitive behavioural therapy (CBT), as particularly efficacious in treating injured people with musculoskeletal pain within the compensation arena (Lambeek et al., 2010; Schweikert et al., 2006; Lamb et al., 2010; Norton, McDonough, Cabral, Shwartz, & Burgess, 2015). CBT is considered the gold standard in treating individuals with a range of pain problems. It has been found to have long-term beneficial effects in reducing pain and disability and improving the quality of life in comparison with physical treatments (e.g., exercise, manual therapy and acupuncture) and in reducing claims cost and time loss from work (Jena, Mishra, Pradhan, Jena, & Mishra, 2015; Lin, Haas, Maher, Machado, & van Tulder, 2011; Lovelock, Matthews, & Murphy, 2011; Richmond et al., 2015). The cognitive behavioural framework suggests that emotions and behaviours are primarily affected by the way in which an individual interprets events and are not solely reliant on the objective characteristics of an event (Gatchel & Schultz, 2014). Therefore, the cognitive behavioural perspective focuses on the reciprocal associations prevalent among the cognitive, emotional, physical and behavioural factors (Gatchel & Schultz, 2014). In addition, an injured person's behaviour can evoke responses from significant others that can strengthen both adaptive and maladaptive ways of thinking and feeling (Gatchel & Schultz, 2014). Figure 1.1 provides a visual representation of the CBT model and the interrelationships between thoughts, emotions and behaviour in understanding pain.

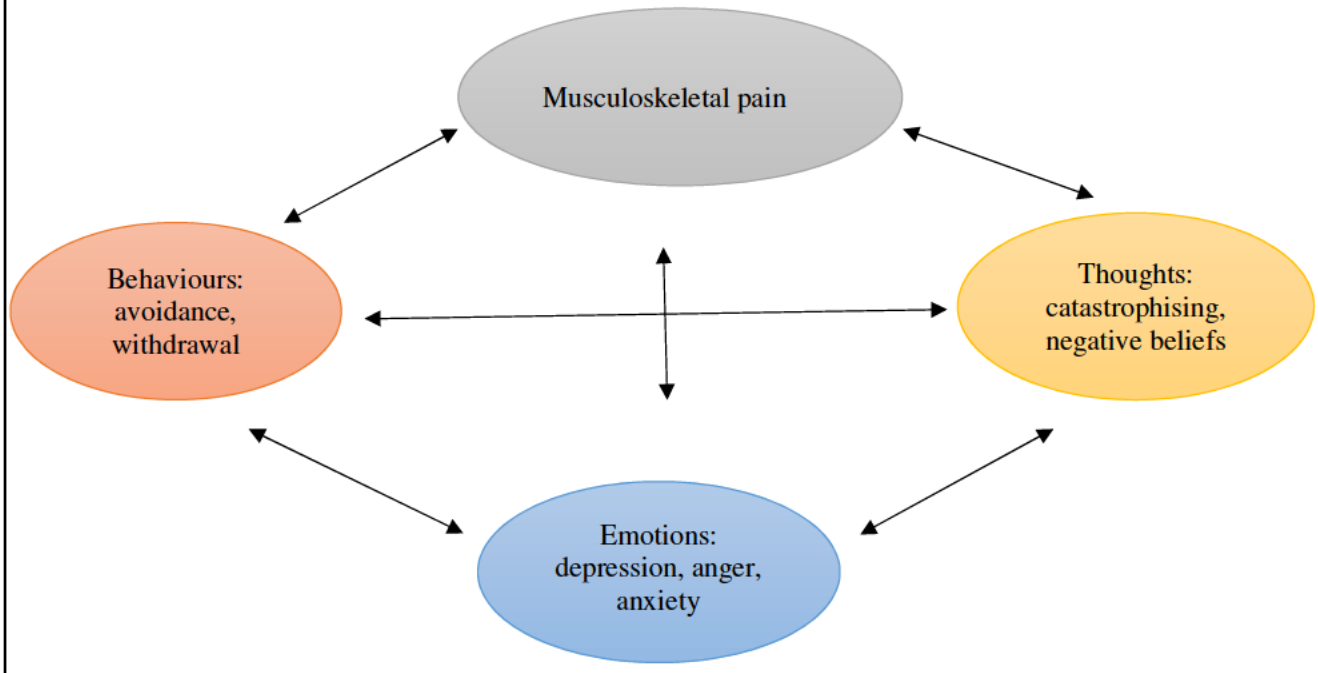

Figure 1.1. Cognitive behavioural therapy model for long-term musculoskeletal pain.

Note: Adapted from Murphy et al. (2014, p. 25).

A study by Dunn, Kennedy and Sterling (2012) found that trauma-focused CBT that specifically addressed the injured person's memories of the traumatic event and the personal meaning and consequences the individual attached to the event reduced pain-related disability following from a whiplash injury. Further, a review conducted by Hoffman, Papas, Chatkoff, and Kerns (2007) found CBT to be particularly efficacious in the treatment of back pain. Psychological interventions such as CBT influence the pain and disability outcomes of injured people by targeting fear-based avoidance behaviours and catastrophic thought patterns that, in turn, stimulate neuroplasticity to 'rewire the brain' and 'calm down' the nervous system (Hanscom, Brox, & Bunnage, 2015). As an outcome of this body of research, CBT is considered the key evidence-based psychological intervention in the compensable injury context.

1.6. Evidence-Based Practice

Evidence-based practice (EBP) forms an integral part of clinical standards and is characterised as the integration of best available research evidence, psychologist expertise and client values (Forsner, Hansson, Brommels, Wistedt, & Forsell, 2010; Pagoto et al., 2007, p. 696). This EBP paradigm has gathered momentum, due to the availability of various treatments for long-term pain resulting from musculoskeletal injuries and a lack of consistency in the outcomes of clinical trials (Turk & Swanson, 2007). EBP is associated with the involvement of treating psychologists and evaluation by policymakers in promoting standards of care that are directed at improving injured person outcomes (Davidson & Spring, 2006; Gatchel & Schultz, 2014). EBP includes 'distinct decision-making principles' and scientifically developed statements known as 'treatment guidelines' that frame treatment recommendations in a nomothetic manner and are aimed at improving the professional practice of clinicians (Francke, Smit, de Veer, & Mistiaen, 2008, p. 611; Spring, 2007; Woolf, Grol, Hutchinson, Eccles, & Grimshaw, 1999). EBP treatment guidelines in psychological practice provide both a framework for clinical decision-making and standards for evaluating treatments that is advantageous for patients, as it can prevent harmful practices, help to identify gaps in care and provide clinicians with tools to support their work (Goodheart, 2011).

Research in the field of disability arising from injury has found adherence to EBP treatment guidelines by can lead to a reduction in the duration of time lost from work and in claims costs (Wiesel, Boden, & Fewer, 1994). Conversely, non-adherence has been associated with the increased burden of costs and poor clinical outcomes (Feuerstein, Hartzell, Rogers, & Marcus, 2006; Fritz, Cleland, & Brennan, 2007). Existing research suggest that Australian practitioners show poor adherence with EBP treatment guidelines in the management of some musculoskeletal

injuries (i.e., back injury) (Hush, 2008). Studies have further shown that challenges exist with integrating EBP into routine clinical practice (Hunsley, 2007; McCabe, 2004; Messer, 2004).

The adoption of EBP has been found to be influenced by the psychologist, client and practice setting variables (Addis, 2002; Beidas & Kendall, 2010; Grol & Grimshaw, 2003; Waddell & Godderis, 2005). A qualitative study conducted by Stewart, Stirman, and Chambless (2012) found that individual therapist factors such as concern over the rigidity of manualised treatments, a strict adherence with a specific theoretical orientation and discomfort in dealing with insurance companies can affect their professional practice. The results of the aforementioned study showed that the simple designation of treatment guidelines as 'EBP' was not enough to motivate some therapists to use empirically supported treatments (Stewart, Stirman, & Chambless, 2012). Client variables were also found to affect psychologist' adoption of EBP (Turner & Sanders, 2006). These include beliefs that the utility of EBP is limited for some specific client presentations because research samples used in randomised controlled trials are 'not fully representative of community samples with comorbid presentations' (Beidas & Kendall, 2010, p. 3; Westen, Novotny, & Thompson-Brenner, 2004). The successful implementation of EBP is also affected by contextual issues including the system within which the therapist works and a lack of involvement and support from key stakeholders (Frueh, Ford, Elhai, & Grubaugh, 2012; Grol & Grimshaw, 2003). The context in which the NSW WC (i.e., no-fault) scheme and CTP (i.e., traditionally fault-based) have operated are fundamentally different. This has potentially influenced injured people's motivation to recover and has had implications for psychologists' capacity to effectively treat people injured under these schemes. Overall, practitioners' use of EBP treatment guidelines is both efficacious and cost-effective in treating individuals suffering from musculoskeletal pain (Gatchel & Okifuji, 2006). However,

understanding and overcoming individual clinician, client and contextual issues is required for implementation of guidelines to translate into adoption by the health practitioner.

Under NSW workers compensation the role of psychologist's is to support and facilitate the injured patient's recovery and return to work. This is achieved through using evidence-based clinical intervention and management. The role of a psychologist as indicated in the manual "*A Workers Compensation Guide for Allied Health Practitioners*" (State Insurance Regulatory Authority, 2016, p.8), and under the NSW CTP insurance scheme includes communication and collaboration with key parties, conducting assessments, undertaking goal setting with the injured patient, monitoring progress towards goals and providing treatment focused on helping the injured person resume participation in pre-injury activities and duties which have been restricted by injuries. SIRA's expectation of psychologists and allied health practitioners working under the NSW workers compensation and CTP insurance schmes is that the provision of treatment is evidence-based. Additionally, SIRA uses customer feedback within NSW workers compensation scheme to improve and better outcomes for injured patients and may also monitor individual practitioners performing below industry average, review their performance by analysing billing practices and provision of service (State Insurance Regulatory Authority, 2016).

1.6.1. EBP treatment guidelines for psychologists working within SIRA insurance schemes

In 2010, SIRA implemented the *Clinical framework for the delivery of health services (Clinical framework)* for psychologists treating musculoskeletal injuries (Transport Accident Commission & WorkSafe Victoria, 2012; WorkCover NSW, 2010). These treatment guidelines were based on 'five treatment principles' including: using standardised psychometric measures, utilising a biopsychosocial approach, focusing on self-management, implementing goals and promoting an evidence-based approach in treatment delivery (in the context of musculoskeletal injuries this is CBT) (Transport Accident Commission & WorkSafe Victoria, 2012). The

biopsychosocial approach is a key feature of these guidelines and proposes early intervention, functional restoration and a coordinated approach by all stakeholders to help injured people manage pain arising from musculoskeletal injuries (Transport Accident Commission & WorkSafe Victoria, 2012). As psychological variables play a critical role in musculoskeletal pain, the aim of the guidelines was to stem rising claims costs and improve injured person outcomes in both the WC and CTP schemes. The research indicates that training is required for psychologists to competently use EBP (McHugh & Barlow, 2010). For psychologists practicing within the SIRA WC scheme, completion of three online training modules is mandatory; however, within the CTP scheme there is no compulsory training requirement. It has been widely recommended that any implementation of EBP be followed by an evaluation to ascertain the levels of fidelity and effectiveness in relation to clinical outcomes (Gotham, 2006).

1.7. Current Research

This chapter has presented the findings of studies suggesting that the presence of psychopathology (termed 'secondary psychological injury' when it follows compensable musculoskeletal injury) impedes the recovery of injured people. However, the application of EBP treatment guidelines can lead to improved outcomes for this population (Chou & Shekelle, 2010; Feuerstein et al., 2006).

1.7.1. Aims of the research

At the time of conducting this research, the EBP treatment guidelines implemented by the NSW SIRA had been in effect for over five years; however, their effect on psychologists' practice and injured persons' outcomes was unknown. Therefore, in light of the significant personal and economic burden arising from musculoskeletal injuries complicated by secondary psychological injury, the primary aim of this thesis is to achieve the following objectives.

1. To evaluate psychologists' adherence with EBP treatment guidelines (i.e., as contained in the *Clinical framework*) in treating musculoskeletal injuries with secondary psychological injuries within the SIRA insurance schemes (i.e., WC and CTP).
2. To explore the relationship between psychologists' adherence of EBP treatment guidelines and the outcomes for injured people.
3. To identify what psychologists, consider the barriers are to their adherence with EBP treatment guidelines.
4. To investigate the effect of actions by three key stakeholders within the WC and CTP schemes (i.e., general practitioners [GPs], insurers and injured people) that may influence psychologists' adherence with EBP treatment guidelines
5. To elicit recommendations from expert psychologists for improving psychologists' adherence with EBP treatment guidelines.
6. To establish the feasibility of implementing the experts' recommendations.

1.7.2. Study design

The research project utilised a multiphase mixed method design that incorporated both explanatory and exploratory, stepwise, sequential approaches (Creswell, 2014). As indicated in Figure 1.2, each study provided a context for the subsequent study. The combination of quantitative and qualitative data served several purposes including: 'triangulation' (i.e., to confirm or corroborate the results from different methods studying the similar phenomenon), 'complementarity' (i.e., to clarify and enhances the results from one method with results from another method, 'development' (i.e., using the results from one method to help inform the results from another method; and 'expansion' (i.e. to extend the breadth of enquiry) (Johnson, Onwuegbuzie, & Turner, 2007).

Chapter 1 describes the context (i.e., the effect and use of EBP treatment guidelines by psychologists within the SIRA insurance schemes) and identifies gaps in the current research. Chapter 2 (Study 1) evaluates psychologists' adherence with EBP treatment guidelines and assesses whether adherence with EBP reduces claims costs and improves treatment outcomes for injured people within the SIRA insurance schemes. This study has two phases: the quantitative (Phase 1) and the qualitative (Phase 2) from which the findings are used to build and plan Study 2. Chapter 3 (Study 2) aims to identify the barriers perceived by psychologists as affecting their adherence with the EBP treatment guidelines. Chapter 4 (Study 3) is based on the findings of Study 2 and aims to qualitatively explore the actions of general practitioners (GPs), insurers and injured patients' that were reported by psychologists as affecting their practice. Chapter 5 (Study 4) aims to generate recommendations (from field experts) to overcome psychologists' barriers to adherence with EBP and determine their feasibility within the wider community of psychologists practicing within the SIRA insurance schemes. Study 4 uses an exploratory sequential design. Qualitative data is collected in Phase 1 and is followed by a quantitative feasibility study (Phase 2) to ascertain the generalisability of the expert's proposed recommendations within the population of psychologists providing services to the SIRA (Creswell, 2014). Chapter 6 summarises the key findings, acknowledges research limitations and discusses practical implications and opportunities for future research.

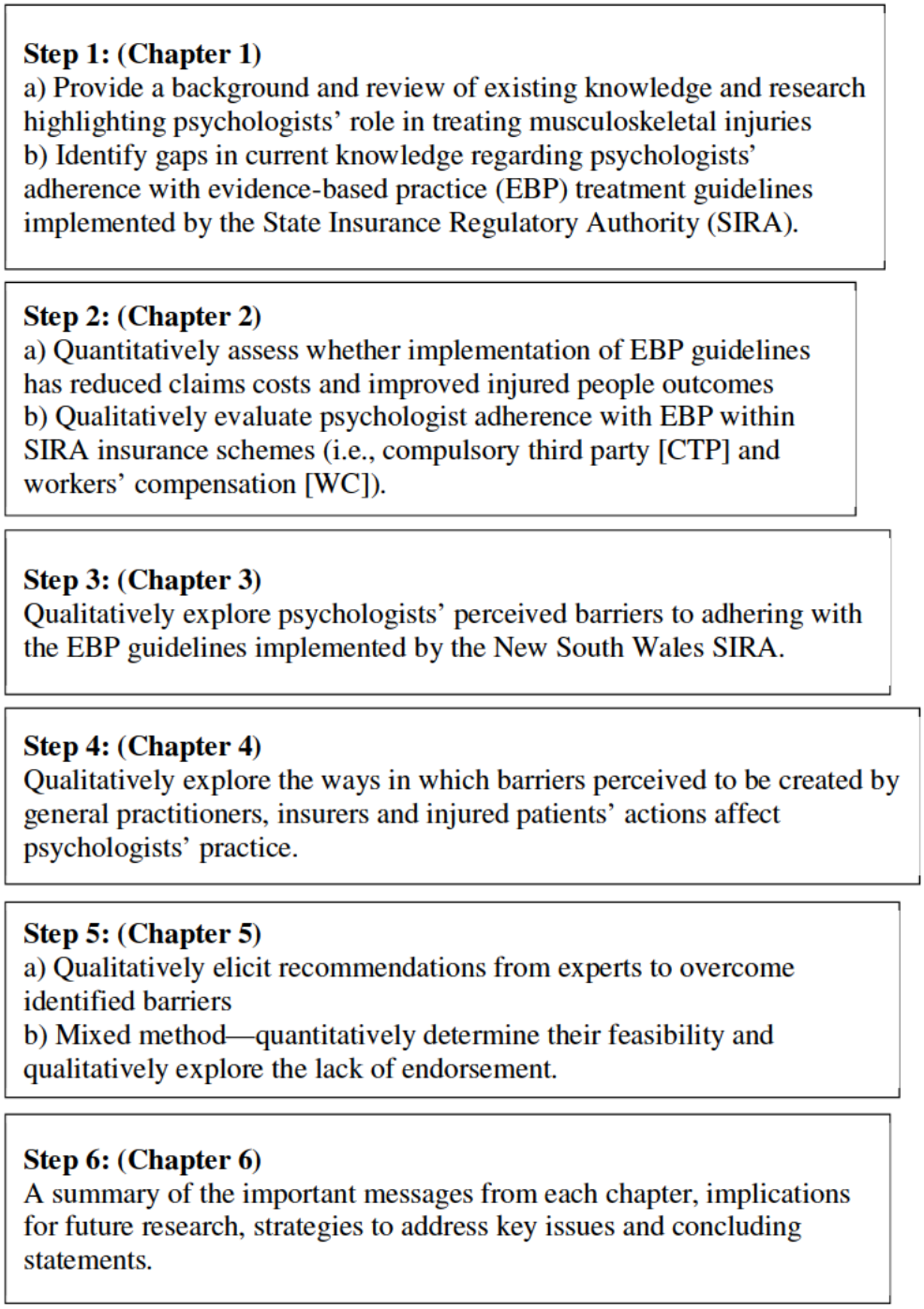

Figure 1.2. A stepwise approach.

Note: Adapted from Richards and Hallberg (2015, p. 270).

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Chapter 2. Psychologists' Application of Clinical Framework and Recommended Protocols and Procedures Within SIRA Frameworks: Outcomes for Injured Patients With Musculoskeletal Injuries

2.1. Abstract

Objectives: SIRA, which governs the regulatory functions of WC insurance and CTP within NSW implemented clinical framework to improve psychologists' practice. The aims of this study were to determine: 1) whether this initiative has reduced claims costs and improved injured patient outcomes and 2) whether it has resulted in psychologists using EBP.

Methods: The first phase involved quantitatively determining a time range sample of WC administrative records of patients with a musculoskeletal injury (n = 26,254) and musculoskeletal injury with a secondary psychological injury (n = 238). The second and third phases involved a qualitative content analysis of case-level files belonging to individuals who had suffered a musculoskeletal injury with a secondary psychological injury under WC (Phase 2) (n = 12) and CTP (Phase 3) (n = 9).

Results: The quantitative component revealed that the total claims costs and return to work timeframes for injured patients suffering from musculoskeletal injury with a secondary psychological injury remained unchanged following the implementation of the clinical framework. However, this contrasted with a significant increase of these measures for injured workers with only a musculoskeletal injury. The qualitative content analysis in phases 2 and 3 of the study showed that psychologists' application of treatment guidelines was suboptimal.

Conclusion: The findings show that greater adherence by psychologists, and strategies to improve the adoption of these guidelines are warranted.

Keywords: EBP, EBP clinical guidelines\, secondary psychological injuries, NSW compensation schemes, NSW insurance frameworks, musculoskeletal injuries.

2.2. What is known on this topic

1. Psychological interventions implemented in the NSW WC context and at the acute stage of a musculoskeletal injury can reduce claims costs and time lost from work.
2. Chronic musculoskeletal injuries that develop a secondary psychological component have higher total claims costs than musculoskeletal injuries without accompanying psychological risk factors.
3. The application of evidence-based treatment guidelines can reduce claims costs made by injured patients musculoskeletal injuries and reduce their time lost from work.
4. Australian clinicians show poor compliance with treatment guidelines for musculoskeletal injuries.

2.3. What this paper adds

1. The introduction by the SIRA of evidence-based treatment guidelines for psychologists providing services within WC insurance and CTP insurance frameworks have acted as a buffer against broader negative trends in total claims costs and time lost from work for injured patients with a musculoskeletal injury.
2. Psychologists show variable use of protocols, procedures and treatment guidelines specified by the SIRA.
3. Lower claims costs and positive return to work outcomes are associated with psychologists' high adherence to evidence-based treatment guidelines.
4. Higher claims costs and negative return to work outcomes are associated with psychologists' low adherence to evidence-based treatment guidelines.

2.4. Psychologists' Application of Evidence-Based Clinical Framework

In NSW, 50% of claims lodged under WC insurance (i.e., compensation for work-related injuries) and 46% of all claims paid under CTP (i.e., compensation for motor vehicle related injuries) are musculoskeletal injuries (NSW Government, 2014a; SIRA, 2016a). Systematic reviews and meta-analyses of prospective studies have found psychological, social and environmental determinants to be important predictors of delay in recovery and disability because of pain associated with musculoskeletal injuries (Mallen, Peat, Thomas, Dunn, & Croft, 2007). Musculoskeletal pain—which includes chronic pain arising from back and neck injuries—combined with maladaptive psychological responses creates medical and rehabilitation costs that place a substantial financial and health burden on the Australian economy (Crook, Milner, Schultz, & Stringer, 2002). Psychopathology that develops following a physical (i.e., musculoskeletal) injury is known as a 'SPI' and is deemed legislatively compensable under both the WC and CTP insurance frameworks.

Research has shown that secondary psychological injuries that develop in response to the stress of coping with pain and disability arising from a primary musculoskeletal injury play a critical role in the maintenance of pain behaviours (Carroll, Liu, Holm, Cassidy, & Côté, 2011). In 2010, with the aim of stemming the rising costs of claims and improving injured patients' outcomes WC and CTP within NSW implemented a clinical framework for improving psychologists' practice. The treatment principles contained within the framework were based on the *Clinical Framework for the Delivery of Health Services*. The premise of these treatment principles is that a biopsychosocial conceptualisation of pain and disability should inform psychologists' treatment of injured patients with musculoskeletal pain.

The practice of psychologists in the management of musculoskeletal injuries with secondary psychological injuries has been found to be critical in improving patient outcomes and

reducing claims costs (Nicholas, 2016). The preliminary results of a recently completed Work Injury Screening and Early intervention (WISE) study found that within the NSW WC environment, early engagement by psychologists (i.e., two to three weeks after the injury) followed by a strict evidence-based treatment protocol resulted in a reduction in claims costs and time lost from work for injured patients with musculoskeletal injuries (Nicholas, 2016). Theoretically, the findings are supported by the 'diathesis-stress model', according to which musculoskeletal injuries can become chronic and disabling if targeted psychological interventions are not used during the acute stage (Gatchel & Schultz, 2014). Therefore, the role of psychologists and their use of EBP becomes critically important in the treatment of musculoskeletal pain.

EBP integrates individual clinical expertise and the best available clinical research to inform patient-centred decisions and can be summarised in clinical guidelines (Sackett, Rosenberg, Gray, Haynes, & Richardson, 1996, p. 71). The guiding principles developed by SIRA and included in the *Clinical Framework* are based on five treatment principles (WorkCover NSW, 2010; Transport Accident Commission & WorkSafe Victoria, 2012).

The first principle involves the ongoing measurement of treatment effectiveness using standardised psychometric tests (e.g., the Depression Anxiety Stress Scale [DASS] and Symptom Checklist) and is supported by research evidence that has found that monitoring injured patient progress is associated with improved patient outcomes (WorkCover NSW, 2010; Transport Accident Commission & WorkSafe Victoria, 2012). The principle promotes measurements of key variables at the initial assessment, the regular review periods and at treatmentconclusion (Azocar et al., 2007; WorkCover NSW, 2010; Transport Accident Commission & WorkSafe Victoria, 2012). Empirical evidence has established that using psychometric measures not only enables the clinician to be able plan, monitor and evaluate treatment but also provides clients an

understanding of their symptomology and problems (Kubiszyn et al., 2000; Moffett, Steinberg & Rohde, 1996).

The second principle advocates for the adoption of the biopsychosocial approach in treating musculoskeletal pain and is supported by existing literature that shows multidisciplinary biopsychosocial pain management interventions are more effective than physical treatments (Kamper et al., 2015; WorkCover NSW, 2010; Transport Accident Commission & WorkSafe Victoria, 2012). This includes using screening tool such as the Örebro Musculoskeletal Pain Questionnaire (ÖMPQ) to screen for psychosocial risk factors and identify barriers to functioning in treatment planning. The meta-analytic review undertaken by Flor, Fydrich & Turk (1992) found that multidisciplinary treatments for chronic musculoskeletal pain resulted in an improvement in the return to work results for patients. Taking the contrary view, Guzman (2001) found some multidisciplinary interventions for musculoskeletal pain were neither indicative of change in the level of pain nor improved functionality. However, a recent systematic and meta-analytic review established multidisciplinary biopsychosocial approach as the gold standard for treating musculoskeletal pain as it was found to decrease both level of pain and disability (Kamper et al. 2015).

Principle three calls for the empowering of the injured patient to self-manage their injury (WorkCover NSW, 2010; Transport Accident Commission & WorkSafe Victoria, 2012). Recommended strategies include education, self-management strategies and addressing beliefs that adversely influence recovery. Patient empowerment through self-management has been found to play a central role in the rehabilitation of individuals with long-term disabilities (Samoocha et al., 2011). Studies have found consistent positive outcomes as a result of self-management which have led to improvements in self-efficacy, symptom reduction, improved

outcomes particularly for chronic conditions and reduction in costs; (Bodenheimer, Lorig, Holman, & Grumbach, 2002; Foster, Taylor, Eldridge, Ramsay, & Griffiths, 2007).

Principle four encourages the implementation of goals focused on optimising function, including participation in everyday activities and return to work. It is based on research that shows that progressive goal setting and goal-directed activity can improve function and prevent long-term pain-related disability (Sullivan, Adams, Rhodenizer, & Stanish, 2006; WorkCover NSW, 2010; Transport Accident Commission & WorkSafe Victoria, 2012). This principle is applied using strategies such as formulating specific, measurable, achievable, relevant and timed (SMART) goals and assessing progress towards these goals. Studies have found that interventions for injured claimant are more likely to be effective in improving function and preventing long term pain disability when they involve progressive goal setting and goal-directed activity (Åsenlöf, Denison, & Lindberg, 2009; Sullivan, Adams, Rhodenizer, & Stanish, 2006)

Principle five reinforces that psychological interventions should be based on the best available research evidence (WorkCover NSW, 2010; Transport Accident Commission & WorkSafe Victoria, 2012). The current evidence is that CBT has the strongest evidence of efficacy in the management of musculoskeletal injury with a secondary psychological injury conditions (Richmond et al., 2015; Schweikert et al., 2006). Other studies have shown that EBP in general is critical in achieving positive claimant outcomes (Weisz, Jensen-Doss, & Hawley, 2006). Although equivocal results have been found for the application of clinical guidelines in outpatient settings, research generally confirms that EBP summarised in treatment guidelines is the most cost-effective and efficacious treatment for individuals suffering from musculoskeletal pain (Gatchel & Okifuji, 2006). Overall, it can be concluded that the treatment guidelines implemented by the SIRA are evidence-based and efficacious; however, prior to this study, the extent of their adoption by psychologists and their effect on patient outcomes was unknown.

Existing literature indicates that the implementation of clinical guidelines only improves clinical practice when it is followed by 'rigorous evaluation' (Grimshaw & Russell, 1993; Loisel & Anema, 2013, p. 442). Studies have shown that challenges exist with the integration of guidelines for EBP into routine clinical practice and this is complicated by individual clinicians (i.e., negative attitude towards guidelines), clients (i.e., resilience level and symptom severity) and organisational variables (i.e., level of support provided to increase end-user engagement) (Beidas & Kendall, 2010). Various factors may influence the adoption of EBP guidelines into routine clinical setting*s*; therefore, implementation followed by evaluation is instrumental in assessing clinician guideline adherence (Gotham, 2006).

Adherence by health practitioners with clinical guidelines for the management of musculoskeletal injuries has been found to reduce the duration of time lost from work by 40% and claims costs by 60% (Feuerstein, Hartzell, Rogers, & Marcus, 2006). Nevertheless, Australian health care practitioners including physiotherapists, chiropractors and osteopaths managing musculoskeletal injuries have been found to be noncompliant with clinical guidelines during baseline assessment (Rebbeck, Macedo, & Maher, 2013). Whether there was compliance with the guidelines in other phases of the treatment of musculoskeletal pain within the Australian compensation frameworks was unknown prior to this study.

In NSW, the legal framework and the associated entitlements underlying the WC (a no-fault scheme) and CTP (traditionally a fault-based scheme) are fundamentally different. To receive compensation under WC, workers only have to demonstrate that their injuries are work-related and there is no need to prove negligence or fault on the part of the employer (Safe Work Australia, 2014). WC payments, which include income replacement, hospital and medical expenses, start almost immediately after a claim is made although the scheme provides limited access to lump sum payments. Conversely, CTP (traditionally a common law fault-based

scheme) typically allows for once-only lump sum payments. As a fault-based scheme, the injured party is required to establish negligence against an owner or driver of a motor vehicle and keep proving disability until their claim is paid. Under the NSW CTP scheme, some incurred medical expenses were paid immediately; however, payment of future medical, rehabilitation and lost income expenses were paid as a lump sum upon finalisation of the claim (NSW Government, 2014). The NSW Government recently introduced reforms (commencing in December 2017) to curtail the ballooning claims costs within the current CTP scheme by changing it to a hybrid no-fault scheme with defined benefits for low severity injuries and access to lump sum payments for the seriously injured (NSW Government, 2014b, 2016). Nonetheless, it can be postulated that the different contexts in which the traditional CTP and WC schemes have operated have potentially influenced injured patient recovery and outcomes.

Both schemes rely heavily on health professionals to determine the need for ongoing treatment, whereas psychological assessment of disability is usually performed by non-treating experts (i.e., independent practitioners who can meet the test of expert witness) although the treating psychologist may also be asked to provide an opinion on disability. Another difference between the schemes is that psychologists practicing under WC are required to complete mandatory training and are issued with a SIRA approved provider status, whereas training is not mandatory under CTP and approval to provide services is not required. Overall, the psychologist's role in both the WC and CTP compensation schemes is critical, as it includes not only treatment to address psychological and pain issues but also to assist injured people to improve function and return to work on usual activities (SIRA, 2016b).

Based on existing research, we anticipated that psychologists' adherence to the SIRA clinical framework could reduce claims costs and disability in patients with a musculoskeletal injury with a secondary psychological injury; however, the outcomes might be different across its

insurance frameworks (Amorin-Woods, Beck, Parkin-Smith, Lougheed, & Bremner, 2014).

Therefore, this study had the following aims

- To examine claims costs and return to work or pre-injury activities for injured patients suffering from a musculoskeletal injury with a secondary psychological injury, before (pre-2010) and after (post-2010) the introduction of the SIRA clinical framework.
- To explore how psychologists have applied the clinical framework within each SIRA-governed framework (i.e., WC and CTP) and to report on the outcomes for injured patients (i.e., return to work or return to pre-injury activities) in each context.

2.5. Method

2.5.1. Study design

A retrospective cohort multiphase mixed methods study was conducted (between November 2015 and February 2017) with the approval of the University of New England Human Resources Ethics Committee (Approval Number: HE15-043). Phase 1 of the analysis involved quantitatively evaluating a time range sample provided by SIRA of WC administrative records of injured patients with a musculoskeletal injury (see Figure 2.1). Phases 2 and 3 involved a qualitative case-level analysis of a sample of injured patients with a musculoskeletal injury and a secondary psychological injury under a) WC (i.e., second phase) and b) CTP (i.e., third phase).

2.5.1.1. *Phase 1: Quantitative component*

Procedure: In the first phase of the study, the musculoskeletal injury claims (i.e., back injury claims) that were selected were lodged in NSW from 1 January 2008 to 31 January 2012. Administrative records initially provided by SIRA contained a total of n = 63,625 claims for claimants aged 15–65. Of these, n = 2, 283 had received a psychological service (i.e., were coded as having received psychological treatment).Open claims and those that had a final payment date after 31st January 2012 were excluded. In addition, to create discrete comparison groups, records

with payments carrying over from pre-2010 to post-2010 were also removed. After application of the exclusion criteria, n = 26,492 records were analysed of which n = 26,254 were musculoskeletal injuries claims and n = 238 were musculoskeletal injuries with secondary psychological injuries. The data included return to work status (i.e., full pre-injury hours) which was provided by WorkCover and claims cost (i.e., gross incurred) for each record at the time of claim closure. Time lost from work was measured from the date of the claim lodgement to the last weekly payment date.

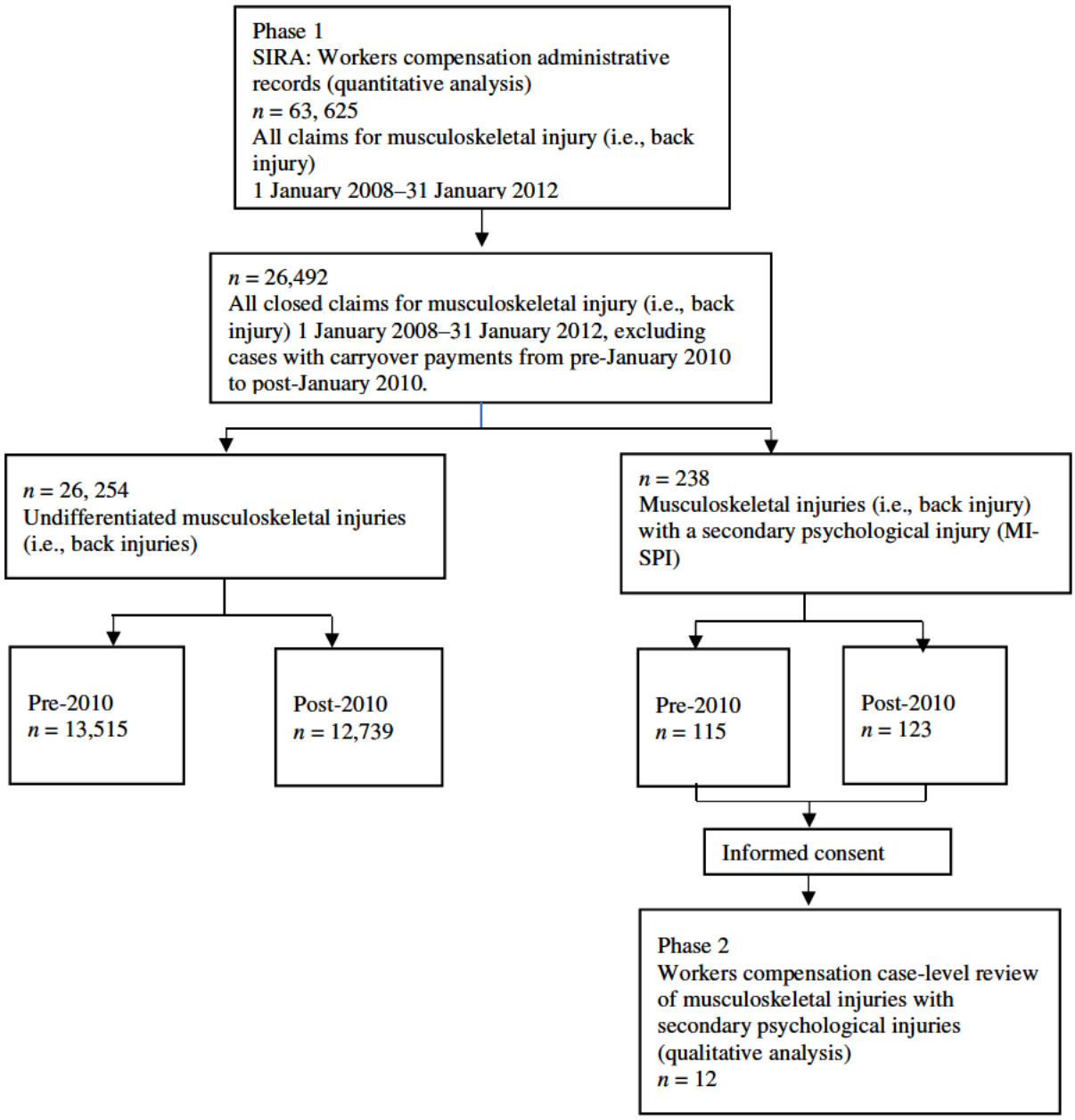

Figure 2.1. Flow diagram of the multiphase mixed method design and sample breakdown.

Data Analysis: Descriptive analysis was performed on two demographic variables (i.e., gender and age) of the sample, and independent sample *t*-tests were used to examine differences in claims costs and time lost from work pre-2010 and post-2010 of injured patients who suffered

a musculoskeletal injury with a secondary psychological injury and a musculoskeletal injury only. SPSS Statistics for Windows, Version 24.0, was used to perform these analyses.

2.5.1.2. *Phases 2 and 3: Qualitative component*

Participants: The participants all lived in the state of NSW and met the following inclusion criteria for Phases 2 and 3 of the study.

1. Adults aged 18–65 years with a secondary psychological injury, who had consulted a psychologist post-2010, and had an accepted and finalised WC claim for a back injury (Phase 2) or a motor accident CTP claim for a musculoskeletal injury (limited to the spinal region—neck or back injury) (Phase 3).
2. Their Maximum Abbreviated Injury Score (an indicator of overall injury severity) was 1 or 2 (i.e., indicating mild to moderate soft tissue injuries and simple fractures—conditions from which recovery is expected within six to 12 weeks), to maintain the equivalence of the severity of injury across the SIRA frameworks for motor accident CTP claims.
3. Only claim files of consenting participants were used (i.e., participants who had provided written consent).
4. Psychological injury secondary to a physical injury was identified both within WC and CTP as being flagged by the GP (i.e., indicated on the medical certificate) and coded by the insurer as a secondary psychological injury in their system. Only claims which had a psychological treatment plan were included in the analysis.
5. Before commencement of psychological treatment all participants were unfit for work.

Exclusion criteria: For both Phases 2 and 3, cases involving children, life threatening and traumatic injuries (i.e., severe traumatic brain injury and spinal cord injury) were excluded.

The features of the WC case-level files included in Phase 2 are shown in Table 2.1. The mean age of the sample was 45 years and included eight males (67%) and four females (33%).

Table 2.1

Demographic and Claim Features of WC Participants in the Case-Level File Analyses

Case	Age	Gender	Occupation	Physical Injury	Psychological Disorder
1	34	Male	Assembly worker	Low back strain	Adjustment disorder
2	42	Male	Labourer	Low back injury	Not indicated
3	54	Male	Construction Supervisor	Low back injury	Adjustment disorder
4	54	Female	Assistant Nurse	Back strain	Not provided
5	46	Male	Crew Leader	Back strain	Anxiety and depression
6	59	Female	Not provided	Low back strain	Pain Syndrome
7	43	Male	Field Officer	Lower back injury	Depression
8	45	Female	Labourer	Lateral sacroiliitis irritation	Adjustment disorder
9	56	Male	Store man	Back strain	Adjustment disorder
10	30	Male	Labourer	Lumbar back strain	Depression
11	53	Male	Bricklayer	Back injury	Adjustment disorder
12	23	Female	Not provided	Back injury	Pain disorder

The features of the CTP case-level files included in Phase 3 of the study are shown in Table 2.2. The mean age of the sample was 47 years and included three males (33%) and six females (67%). Before commencement of psychological treatment all participants were unfit for work apart from cases 3, 5 and 7.

Table 2.2

Demographic and Claim Features of CTP Participants in the Case-Level File Analyses

Case	Age	Gender	Occupation	Physical Injury	Psychological Disorder
1	59	Female	Homemaker	Multiple soft tissue injuries from impact-/inner right and left thigh/left thigh/neck/left thumb/left shoulder/abdomen	Depression and anxiety
2	57	Female	School Boarding Mistress	Neck pain/back pain secondary to soft tissue injury (muscle ligament) whiplash injury	Adjustment disorder with depression
3	61	Male	Self-Employed GP	Whiplash injury to neck	Post-traumatic stress disorder (PTSD)
4	20	Female	FT University Student	Whiplash injury	Adjustment disorder with anxiety
5	29	Female	Web Designer	Fractured tibia/fibular/metatarsal right foot/painful right hip unknown cause/torn posterior cruciate ligament right knee/ pain in neck	Adjustment disorder with depressed and anxious mood, PTSD
6	57	Female	Executive Assistant	Crush fracture L1, multiple soft tissue damage/pain in neck	Adjustment disorder with anxiety
7	45	Male	Call Centre Operator	Soft tissue damage to left and right and neck	Anxiety and depression
8	57	Male	Retired Engineer	Whiplash	Adjustment disorder with mix disturbance of emotions and conduct
9	42	Female	Personal Assistant	Fractured metacarpal of right middle finger, multiple grazes, abrasions left wrist, both knees, both forearms, bruising on chest, pain in neck	Adjustment disorder with anxiety

Procedure: In Phase 2, purposeful sampling was used and a total of 612 invitations to participate were sent by insurers (i.e., CGU, EML and QBE) to potential participants; however, only 26 closed case post-2010 claimants provided written consent (i.e., opted-in) (response rate = 4.2%). The files were then de-identified by insurance agents before data were collected on site.

Of the 26 participants, 14 were excluded from the study as not meeting the selection criteria (i.e., psychological issues had been flagged at one point but a consultation with a psychologist was not indicative on the file). A total of n = 12 participants were considered to have met the inclusion criteria.

In Phase 3, of the 567 invitations sent to potential participants by the insurance agent (i.e., Suncorp), 16 provided written consent (response rate =2.8%), 24 invitation letters were sent back as 'return to sender' and 527 did not respond. The de-identified case-level data were prepared for data collection on site. Of the 16 case-level files, seven could not be included (one had a concurrent WC claim and had not undergone psychological treatment under CTP, one was a declined claim and five had not undergone any psychological treatment). A total of n = 9 were deemed suitable for the study.

Data Analysis: Qualitative content analysis was used to undertake document analysis by systematically structuring and reducing the data in Phases 2 and 3 of the study (Schreier, 2012). Directed content analysis was conducted using deductive category application. A coding template was developed by the research team and independently reviewed and refined by the project leader. The coding template was formulated before data collection and it a) included a checklist of SIRA protocols and procedures for psychologists and b) used the five treatment principles drawn from the *Clinical framework.* Main categories and subcategories were used to categorise the 'five treatment principles' and 'key protocol and procedures. Each subcategory was assessed and rated as showing 'Full Adherence' (evidence of full application) (scored = 2), 'Partial Adherence' (some evidence of application) (scored = 1) or Non-Adherence' (no evidence of application) (scored = 0) (see Appendix A). Psychological management plans and psychological reports contained within the case-level files were reviewed for the use of the key protocols and procedures and the five treatment principles (inclusive of subcategories) (Hsieh &

Shannon, 2005). Other factors that may have influenced outcomes such as time from injury to referral were recorded as narrative data. The scores and factors within each case file were then cross-case analysed in Phase 2 with constant comparison in Phase 3 of the study. The descriptive analysis and graphs of the content analysis were generated using Qualtrics Survey Software.

To improve the trustworthiness of the findings, specific quality procedures were used as described in Table 2.3.

Table 2.3

Establishing Trustworthiness of Qualitative Data

Criteria*	Technique
Stability	To increase credibility, the categories were selected from the *Clinical framework for the delivery of health services* developed by State Insurance Regulatory Authority (SIRA) for psychologists. It has sound theoretical and research support for the management of musculoskeletal injuries.**
Reproducibility	To enable transferability, a coding template was developed with well-defined categories and decision rules for inclusion and exclusion of data.
Accuracy	To improve dependability, the data was independently analysed by the project leader and co-researcher. Discrepancies between some themes were identified. After rigorous discussion between the two researchers, consensus was reached, and decisions made to change a few primary themes. Additionally, in some instances, secondary themes were merged with primary themes to accurately reflect psychologists' adherence within both Workers Compensation (WC) and Compulsory Third-Party frameworks.
Data Triangulation	Confirmability was enhanced, as the results from a) the SIRA WC insurance administrative records (Phase 1) were used to verify b) the results from the case-level file analysis (Phases 2 and 3) and to reduce researcher bias.

Note: *Guthrie, Petty, Yongvanich, and Ricceri (2004). ** Transport Accident Commission & WorkSafe Victoria, 2012.

2.6.1. Phase 1: Quantitative component

Sample: The age groups with the highest percentage of claimants were 35–39 years (12.4%) and 45–49 years (12.2%). There were 17,940 males (67.7%) and 8,552 females (32.3%). Of these, 26,407 (99.7%) of claimants had returned to work and 85 (0.3%) had not returned to work.

We conducted two chi-squared tests to examine the differences among the percentage of injured patients with a musculoskeletal injury and a secondary psychological injury pre-2010 to post-2010 by gender and age. The minimum cell size was met for all categories. The results revealed no significant differences among the percentage of injured patients pre-2010 to post-2010 by gender, $\chi 2$ (1, N = 238) = 2.36, p = .125, or age grouping, $\chi 2$ (10, N = 238) = 9.23, p = .510. The demographic details of the percentage of participants with the highest frequency in each category are included in Table 2.4.

Table 2.4

Demographic Details of Participants With a Musculoskeletal Injury and a Secondary Psychological Injury

	Pre-2010 Highest Frequency (%)	Post-2010 Highest Frequency (%)
Age grouping (years)	45–49 (61.8%)	35–39 (66.7%)
Gender	Males (63.5%)	Females (53.7%)

We conducted two additional chi-squared analyses to determine the significant differences in the percentage of injured patients who returned to work with a musculoskeletal injury and a musculoskeletal injury with a secondary psychological injury in the pre-2010 and post-2010 groups. The results showed that the percentage of injured patients with musculoskeletal injury with a secondary psychological injury, $\chi 2$ (1, N= 238) = 1.126, p = .289, who returned to work did not differ between pre-2010 and post-2010. Conversely, the percentage of injured patients with a musculoskeletal injury only, $\chi 2$ (1, N = 26,254) = 7.60, p = .05, who returned to work was significantly greater in pre-2010 than post-2010. Table 2.5 lists the percentages of the injured patients who returned to work pre-2010 to post-2010.

Table 2.5

Summary of Participants With a Musculoskeletal Injury Without a Psychological Component and Musculoskeletal Injury With a Secondary Psychological Injury Who Returned to Work

	Musculoskeletal Injury			Musculoskeletal Injury with a Secondary Psychological Injury		
	Pre-2010 (*n* = 13,515)	Post-2010 (*n* = 12,739)	Total (*n* = 26,254)	Pre-2010 (*n* = 115)	Post-2010 (*n* = 123)	Total (*n* = 238)
Returned to work %	13,487 (99.8%)	12,689 (99.6%)	26,176 (99.7%)	113 (98.3%)	118 (95.9%)	231 (97.1%)

Next, we conducted four independent samples *t*-tests to examine the significant differences in total claims costs and time lost from work (in weeks) between the pre-2010 and post-2010 groups of injured patients with musculoskeletal injury and secondary psychological injury and musculoskeletal injury, respectively.

For the musculoskeletal injury with a secondary psychological injury pre-2010 and post-2010 groups, Levene's tests of equality of error variance indicated that the homogeneity of variances assumption was met for both total claim costs and time lost from work (in weeks). However, Levene's tests for equality of variances were found to be violated for both total claims costs and time lost from work (in weeks) in the musculoskeletal injury pre-2010 and post-2010 groups. Due to this violated assumption, the *t*-tests did not assume equal variances were reported in this instance. The results, summarised in Table 2.6, showed no significant differences in total claims costs and return to work time frames for injured patients with a musculoskeletal injury and a secondary psychological injury in the pre-2010 and post-2010 groups. However, the total claims cost and time lost from work significantly increased in injured patients with musculoskeletal injury from pre-2010 to post-2010. Failure to detect significant differences in total claims costs and time lost from work for the musculoskeletal injury with a secondary psychological injury pre-2010 and post-2010 groups could be due to insufficient power (i.e., a Type II error). We conducted a power analysis that suggested a minimum sample size of 3,142 for an effect size (Cohen's *d*) of .01, with an alpha = .05 and a power = .80 needed to detect a significant effect.

Table 2.6

Gross Incurred Costs and Time Lost from Work for Musculoskeletal Injury With Secondary Psychological Injury and Musculoskeletal Injury With No Psychological Injury

Variable	Injury Group	Pre-2010			Post-2010				Independent Samples *t*-test		Effect Size
		n	Mean	*SD*	*n*	Mean	*SD*	95% *CI*	*t*(df)	*p*	*d*
Claims costs	MI-SPI	115	$55,053.42	$107,974.60	123	$45,712.14	$79,336.22	[–14747.11, 33690.67]	.76 (236)	.446	0.10
	MI	13,515	$6,050.14	$16,489.90	12,739	$6,911.34	$19,993.73	[–1306.01, –416.40]	–3.80 (24727.28)	<.001	0.05
Time lost from work (weeks)	MI-SPI	115	30.65	24.37	123	29.15	23.95	[–4.66, .68]	.48 (236)	.631	0.01
	MI	13,515	6.99	12.68	12,739	7.75	13.46	[–1.08, –45]	–4.73 (25887.27)	<.001	0.06

2.6.2. Phase 2: Qualitative component

Table 2.7 shows the total count of psychologists' adherence to the treatment principles and SIRA protocols and procedures across the 12 WC cases. It also shows the relationship between the adherence count, early referral, number of psychology sessions, cost of psychological services, total claims cost and return to work outcomes.

Table 2.7

Cross-Case Analysis of Total Claims Cost, Cost of Psychological Services, Injured Patient Outcomes, Referral Timeframes and Count of Psychologists' Adherence to the Treatment Principles for a Musculoskeletal Injury With a Secondary Psychological Injury Within Workers Compensation

Case	Adherence to Protocols and Procedures (count)	Adherence to Treatment Principles (count)	Time from Injury to Referral to a Psychologist (weeks)	Number of Psychology Sessions	Cost of Psychological Services (AUD)	Total Cost of Claim (AUD)	Return to Work (Y/ N)
1	4	12	77	9	$1,380.00	$247,587.75	N
2	0	0	36	4	$620.00	$56,772.23	Y
3	3	15	92	6	$863.70	$223,184.65	N
4	0	0	162	16	$2,620.35	$605,139.95	N
5	5	22	4	8	$1,609.08	$34,607.48	Y
6	0	0	65	5	$765.00	$80,429.30	N
7	0	0	88	4	S540.00	$961,011.05	N
8	4	19	4	2	$330.00	$21,209.00	Y
9	2	17	8	1	$150.00	$86,312.00	Y
10	3	2	12	9	$1,496.70	$60,705.00	Y
11	5	12	156	15	$2,325.00	$287,501.00	N
12	5	15	not provided	7	$1,476.76	$140,736.67	Y

Table 2.8 shows the number of psychologists who adhered with the subcategories of the five treatment principles and protocols and procedures. Full adherence by the psychologists treating the 12 cases is not observed in any subcategory of the treatment principles. Based on the content analysis, three themes emerged from the data.

Table 2.8

Psychologists' Adherence Across Categories and Subcategories of the State Insurance Regulatory Authority Regulatory Framework for the Treatment of Musculoskeletal Injury With a Secondary Psychological Injury (Within Workers Compensation)

Category	Subcategory	Full Adherence	Partial Adherence	Non-Adherence
Principle 1	Baseline measurement of functional status undertaken	5	0	7
	Reassessment undertaken every four to six weeks	1	2	9
	Standardised outcome measures are used	6	0	6
Principle 2	Screening for psychosocial risk factors for long-term disability (i.e., Örebro Musculoskeletal Pain Questionnaire)	3	1	8
	Barriers to functioning and return to work are identified	2	5	5
	Treatment planning includes environmental (personal and workplace) factors	0	7	5
Principle 3	Education is provided on the nature of the problem	1	1	10
	Self-management strategies are utilised (e.g., activity scheduling and problem solving)	2	2	8
	Emotional state/influencing beliefs are assessed/addressed	2	3	7
Principle 4	Functional Specific, Measurable, Achievable, Relevant and Timed goals formulated	3	3	6
	Progress towards goals assessed and recorded	1	2	9
	Capacity to return to usual activities (incl. failure to progress noted/addressed)	2	5	5
Principle 5	Comprehensive cognitive behavioural therapy (CBT) approach	4	4	4
	Some CBT component used: ax, education, treatment planning, self-management strategies, reassessment, relapse prevention	0	8	4
	An appropriate number of sessions is provided (i.e., six to 12)	4	3	5

Protocols and Procedures	Case conferencing with treating doctors	1	3	8
	Approval sought/received for more than six sessions	4	2	6
	Psychological management plan(s) submitted	8	0	4

Theme 1: Positive injured patient outcomes were observed when psychologist adherence to all treatment principles was high, whereas poor injured patient outcomes were observed when psychologist adherence to the treatment principles was low. The two cases showing psychologists' highest level of adherence to the treatment principles had the lowest total claims costs and achieved a return to work outcome. Case 8 had the second highest frequency of psychologist adherence with the treatment principles and the lowest claims cost (i.e., $21,209.00), in comparison with other cases and a return to work outcome was achieved. Case 5 had the highest frequency of psychologist adherence with the treatment principles and the second lowest claims costs (i.e., $34,607.48) in comparison with the other cases and a return to work outcome was achieved.

The two cases showing nil adherence to the treatment principles had the highest total claims costs and the injured workers did not return to work. Case 7 showed nil adherence with the treatment principles and the highest claim costs in comparison with the other cases ($961,011.05) and the claimant did not achieve a return to work outcome. Case 4 also showed nil adherence with the treatment principles and the second highest claim costs in comparison with the other cases ($605,139.95) and the claimant did not achieve a return to work outcome.

Theme 2: Early referral for psychological therapy is associated with recovery. Cases 8 and 5 were the only cases referred for psychological intervention by the nominated treating doctor or GP within the recommended period of four to six weeks post-injury. Cases 7 and 4 were referred for psychological intervention at 88 weeks post-injury and 162 weeks post-injury. This finding

suggests that delayed referral contributes to chronicity and early referral is associated with recovery and return to work.

2.6.3. Phase 3: Qualitative component

Table 2.9 shows the total count of psychologist adherence to the treatment principles and SIRA protocols and procedures across the 9 CTP cases. It also shows the relationship between the adherence count, early referral, number of psychology sessions, cost of psychological services, total claims cost and return to work or pre-injury capacity outcomes.

Table 2.9

Cross-Case Analysis of Total Claims Cost, Cost of Psychological Services, Injured Patient Outcomes, Referral Timeframes and Count of Psychologist Adherence to the Treatment Principles for the Treatment of Musculoskeletal Injury With a Secondary Psychological Injury

Case	Adherence to Protocols and Procedures (count)	Adherence to Treatment Principles (count)	Time from Injury to Referral to a Psychologist (weeks)	Number of Psychology Sessions	Cost of Psychological Services	Total Cost of Claim	Return to work/Pre-Injury Capacity (Y/N)
1	4	22	2	12	$2,560.00	$109,665.21	Y
2	5	13	3	42	$9,156.00	$425,927.02	N
3	4	18	1	6	$959.80	$358,218.85	Y
4	5	13	5	6	$1,031.00	$176,465.94	N
5	5	17	1.5	28	$3,092.00	$598,695.22	N
6	6	18	1	12	$2,011.43	$480,052.05	Y
7	5	7	1.5	8	$3,487.09	$322,697.56	Y
8	4	17	2	6	$2,035.00	$421,920.24	N
9	3	11	1	1	$166.30	$62,575.85	N

Table 2.10 shows the number of psychologists who adhered with the subcategories of the five treatment principles and protocols and procedures. Full adherence by the psychologists

treating the nine cases is observed in the subcategory 'psychological management plan submitted' only. Based on the content analysis, two themes emerged from the data.

Table 2.10

Psychologists' Adherence Across Categories and Subcategories of the State Insurance Regulatory Authority Regulatory Framework for the Treatment of Musculoskeletal Injury With a Secondary Psychological Injury (Within Compulsory Third Party)

Category	Subcategory	Full Adherence	Partial Adherence	Non-Adherence
Principle 1	Baseline measurement of functional status undertaken	1	0	8
	Reassessment undertaken every four to six weeks	2	1	6
	Standardised outcome measures are used	3	0	6
Principle 2	Screening for psychosocial risk factors for long-term disability (i.e., Örebro Musculoskeletal Pain Questionnaire)	1	0	8
	Barriers to functioning and return to work are identified	3	5	1
	Treatment planning includes environmental (personal and workplace) factors	5	3	1
Principle 3	Education is provided on the nature of the problem	2	2	5
	Self-management strategies are utilised (e.g., activity scheduling and problem solving)	6	2	1
	Emotional state/influencing beliefs are assessed/addressed	3	4	2
Principle 4	Functional Specific, Measurable, Achievable, Relevant and Timed goals formulated	0	6	3
	Progress towards goals assessed and recorded	5	4	0
	Capacity to return to usual activities (including failure to progress noted or addressed)	5	3	1
Principle 5	Comprehensive cognitive behavioural therapy (CBT) approach	6	3	0
	Some CBT component used: ax, education, treatment planning, self-management strategies, reassessment, relapse prevention	1	8	0
	An appropriate number of sessions are provided (i.e., six to 12)	5	1	3
Protocols and Procedures	Case conferencing with treating doctors	1	5	3
	Approval sought or received for more than six sessions	8	0	1
	Psychological management plan(s) submitted	9	0	0

Theme 1: Positive injured patient outcomes were observed when psychologist adherence to all treatment principles was high. The three cases with the highest level of adherence had returned to work and resumed pre-injury capacity at the completion of psychological treatment and claim finalisation. Case 1 had the highest frequency of adherence with treatment principles, had returned to work and resumed pre-injury capacity. Case 7 and Case 3 had the second highest frequency of psychologist adherence with treatment principles, had returned to work and resumed pre-injury capacity.

Theme 2: The nature and context of CTP claims produces responses and outcomes that are reflective of the traumatic mechanism of the musculoskeletal injury. For example:

- Early referral—in all nine cases, the GP had referred the inured patient to a psychologist in under five weeks. It seemed that the concurrent presentation of independent physical and psychological injuries and a recognition of the need for psychological first aid had prompted timely referral in this context
- Injury-context interaction—despite early referral, poor patient outcomes and moderate adherence to treatment principles by the psychologists occurred in this context of needing to prove ongoing disability to receive a compensation payment.

2.7. Discussion

This study assessed the effect of EBP treatment guidelines for psychologists on claims costs and return to work or pre-injury activities for injured patients suffering from a musculoskeletal injury with a secondary psychological injury within the SIRA insurance frameworks. The study included a quantitative analysis of administrative data from WC (Phase 1) and a qualitative analysis of injured patients' case files from both WC and CTP (Phases 2 and

3). The results suggest that there is room for increased adherence by psychologists to the recommended principles, protocols and procedures.

The quantitative analysis revealed that the total claims costs and return to work time frames for injured patients suffering from musculoskeletal injury with a secondary psychological injury in the WC context did not change following implementation of the EBP treatment guidelines (i.e., pre-2010 to post-2010). However, in comparison, the costs and return to work timeframes for injured patients suffering from musculoskeletal injuries without a secondary psychological injury significantly increased during this period. Given that the demographic features of claimants with a musculoskeletal injury and a secondary psychological injury were consistent with the total population of injured patients with a musculoskeletal injury only and were unchanged from pre-2010 to post-2010, this finding suggests that the introduction of EBP treatment guidelines for psychologists within the SIRA WC framework may have acted as a buffer against broader negative trends. Similar administrative data for CTP musculoskeletal injury claims was not available. Nevertheless, according to the SIRA 2017 annual report, 13,649 claims were reported under CTP and 46% of the claims lodged were whiplash. Based on the figures, it can be assumed that 6,278.54 claims lodged under CTP were musculoskeletal injuries (i.e., whiplash injuries). However, we cannot stipulate how many of the 6,278.54 had a secondary psychological injury and underwent psychological treatment.

The qualitative content analysis in Phases 2 and 3 of the study revealed that although each sample was small, both had demographic features similar to those of the total population of injured patients who had sustained either a back injury (in WC) or a neck injury (in CTP) post-2010. Thus, the samples were representative of their total populations. A comparison of the findings from each group revealed common and unique findings. The common findings were that

psychologists' application of the clinical treatment guidelines was variable; however, when psychologists adhered to the guidelines, this was associated with positive injured patient outcomes. These findings are discussed below.

Psychologists' variable application of the SIRA treatment guidelines is consistent with the findings of other studies showing considerable variability in practitioners' use of EBP in mental health settings (Nelson & Steele, 2007). This is despite practitioners' self-reported perception that they adhere to EBP approximately 82% of the time (Elbers et al., 2017). Combined, these findings suggest a mismatch between psychologists' beliefs about their practice and their actions. This phenomena of 'drifting away' from the key tasks that are necessary for implementing EBP is due to the therapist's own 'cognitive distortions, emotional reactions and safety behaviours' (Waller, 2009, p. 119). In addition, this lack of translation from beliefs to practice may suggest that a balance between didactic (i.e., methods used for information transfer) and competence (i.e., skills required to use EBP) training is required to successfully enable clinicians to adopt EBP guidelines in routine clinical settings (McHugh & Barlow, 2010).

The second common finding in both subsamples was that positive injured patient outcomes were associated with psychologists' greater adherence to the treatment guidelines and procedures. Again, this is consistent with the findings of other studies. Stephens and Gross (2007) found that EBP protocol adherence improved return to work outcomes for injured patients with musculoskeletal injuries and resulted in a savings of approximately CAD$21.5 million for the Workers Compensation Board of Alberta (Canada). Conversely, guideline adherence by Dutch physiotherapists did not improve patient outcomes or reduce costs (Bekkering et al., 2005). Another study argued that the guideline adherence must be at least 75% for positive health-related outcomes and may explain why the anticipated outcomes in Bekkering et al.

(2005) did not emerge (Fritz, Cleland, & Brennan, 2007). The findings in Phase 2 (analysis of the WC cases) revealed that the highest claims costs and poorest injured patient outcomes occurred when there was no adherence to the treatment guidelines. Again, this is consistent with the findings of previous studies that have shown non-adherence to be associated with a lack of improvement in clinical outcomes and an absence of reduction in treatment costs. For instance, Feuerstein et al. (2006) found that provider non-compliance with low back pain treatment guidelines resulted in a lack of functional outcomes and no reduction in treatment costs.

Some findings that may be unique to the WC or CTP context also emerged. Within the WC insurance framework, the findings showed that if injured patients are not referred by their treating GPs within the 'golden hour' (i.e., within the subacute phase of injury), psychologists may have difficulty applying the clinical framework due to the injured patient's responses (Schultz & Gatchel, 2006). Research has found that if psychological treatment is not considered within the subacute stage for musculoskeletal injuries, the relationship between pain and disability becomes increasingly complex and difficult to manage (Laisné, Lecomte, & Corbière, 2012). Therefore, for psychologists to apply EBP the referring GPs also need to adhere to treatment guidelines for the management of musculoskeletal injuries (Hush, 2008). In addition, delay in treatment approval by the insurer as a result of concerns about the legitimacy of the claim may also impede timely psychological interventions from being delivered (Kilgour, Kosny, McKenzie, & Collie, 2015). Some findings appeared to be a function of the different contexts and legislative requirements of the WC and CTP insurance frameworks such as GPs recognising psychological distress that required psychological intervention when it was followed by trauma in the CTP context, but failed to establish an early psychosocial response to non-traumatic musculoskeletal injuries in the WC context. As a result, overall adherence by

psychologists to treatment principles are higher in CTP than in WC. However, the findings also suggest that early referral of CTP cases did not necessarily lead to favourable patient outcomes and this may have resulted from secondary gain motivations created by CTP lump sum payments. Current research supports that the complexity of the claims process and the requirements of legal representation in the CTP compensation setting contribute to poor injury and mental health recovery that, in turn, may pose additional challenges for psychologists (Murgatroyd, Lockwood, Garth, & Cameron, 2015). However, with the new CTP scheme commencing in December 2017 and reforms including lump sum payments being limited to serious injuries, psychologists' capacity to implement EBP should be increased.

In addition, within the CTP context, while a musculoskeletal injury with a secondary psychological injury can occur, a concurrent primary psychological injury (e.g., PTSD) associated with the traumatic mechanism of the injury may also occur. As co-occurring mental disorders require integration of psychological interventions to accommodate both disorders, psychologists may lack training in the treatment of dual diagnosis and this may complicate the application of treatment guidelines for working within the CTP space (Drake et al., 2001; Hall, Lynskey, & Teesson, 2001).Thus, implications for psychologists include: 1) recognising and treating primary trauma-related psychological injuries and co-morbid secondary psychological injuries arising from musculoskeletal pain as distinct and 2) using the *Clinical framework* to guide treatment delivery and planning (Duckworth & Iezzi, 2005).

In conclusion, the findings of this study reveal that the financial and health burdens of musculoskeletal injury with a secondary psychological injury remain high. The results of the study showed that positive injured patient outcomes appear to have been facilitated by psychological intervention, but greater adherence by psychologists to the recommended

protocols and EBP treatment guidelines is required. The findings also showed that psychologists have performed base-level clinical and therapeutic activities relevant to the injured patient population. However, the more-nuanced features of musculoskeletal pain management, particularly when presented in the CTP context, remain largely absent from their practice. Thus, strategies to improve the adoption of evidence-based treatment guidelines are warranted.

2.7.1. Strengths and limitations of this study

The small samples in Phase 2 (n = 12) and Phase 3 (n = 9) that were available for case-level analyses limit the strength and generalisability of the conclusions that can be drawn about psychologists' practice. Further, the response rate was < 4% and could be reflective of selection bias. For future studies, to overcome current limitations participants could be potentially contacted by telephone and those interested requested to return the signed consent form (Cohen, Nicholas, & Blanch, 2000). Furthermore, the percentage of claimants receiving a psychological service was less than 1 % within the quantitative sample. This is in sharp contrast with existing literature which has found that around 27% of injured patients suffering from a musculoskeletal injury develop depressive symptoms 6 months post-injury (Franche et al., 2009). As the quantitative was official WC data it could only be divided into two groups - muscusloskeletal injuries and musculoskeletal injuries with a secondary psychological injury. The 'musculoskeletal injury' subsample may likely have included cases of secondary psychological injury that did not receive a psychological service or were referred to a counsellor instead of a psychologist. If a 'pure' sample of 'musculoskeletal injury'' cases were available, the contrasts between the comparative group findings may have been sharper.

A further limitation of this study relates to the limited availability of CTP administrative (quantitative) data that would have helped in building, planning and explaining the qualitative

CTP case-level data. Nevertheless, the study is the first to evaluate psychologists' compliance with EBP treatment guidelines within the SIRA insurance frameworks and the implications for claims costs and patient outcomes.Additionally, the diversity of findings gathered from these cases has been sufficient to illustrate a range of applications of the regulatory framework and treatment guidelines among psychologists By combining quantitative and qualitative data, we have achieved triangulation, development and expansion of the results from one method to inform the other.

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Study 1: Statement of Originality

We, the PhD candidate and the candidate's Principal Supervisor, certify that the following text, figures and diagrams are the candidate's original work.

Type of Work	Page Number
All aspects, except for the assistance described in the Statement of Authors Contribution (below)	N/A

Candidate: Tahira Haider

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_____ 24 June 2018

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Principal Supervisor Date

Study 1: Statement of Authors' Contribution

We, the PhD candidate and the candidate's Principal Supervisor, certify that all co-authors have consented to their work being included in the thesis and they have accepted the candidate's contribution as indicated in the *Statement of Originality*.

	Author's Name	**% of Contribution**
Candidate	Tahira Haider	70%
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Research Progression to Study 2

In Study 1, it was found that psychologists use of EBP treatment guidelines (i.e., contained within the *Clinical framework*) in treating secondary psychological injuries within the SIRA insurance schemes was suboptimal. The finding suggested that when psychologists' adherence with treatment guidelines was high, positive outcomes for injured people were observed and claims costs were low. In addition, it was found that the implementation of EBP treatment guidelines within the WC space acted as a buffer against broader negative trends in total cost and time lost from work for injured patients with a musculoskeletal injury without a secondary psychological injury (i.e., they did not consult a psychologist). It was also particularly observed within the WC space that when psychologists' adherence with EBP treatment guidelines was low, high claims and negative return to work outcomes were observed. Therefore, the results of Study 1 indicated that implementation of EBP treatment guidelines alone are a poor remedy for resolving health care issues. Instead, efforts should be directed in identifying barriers in their uptake (Woolf, Grol, Hutchinson, Eccles, & Grimshaw, 1999). Barriers are factors that can pose as an impediment in the EBP of psychologists working within the SIRA frameworks (Richards & Hallberg, 2015).

Taking this into consideration, Study 2 investigated psychologists' perceived barriers that affected their adherence with EBP treatment guidelines implemented by SIRA in treating musculoskeletal injuries.

Chapter 3. Barriers to Psychologists' Adherence to EBP Guidelines for Treating Musculoskeletal Injuries Within SIRA Compensation Schemes

3.1. Abstract

Objectives: The use of EBP guidelines by psychologists working within the SIRA compensation schemes for treating musculoskeletal injuries has been found to vary. The aim of this study was to qualitatively explore psychologists' perceived barriers to adhering with EBP guidelines implemented by the NSW SIRA.

Methods: Registered psychologists (n = 20) working within the NSW SIRA compensation schemes participated in four focus groups that were conducted face-to-face and online. Participants' responses were audiotaped, transcribed verbatim and entered into QSR NVivo 11 software. Text data were analysed to identify recurrent themes within and across groups (i.e., metropolitan, regional and rural).

Results: Thematic analysis revealed three key issues: 1) a lack of trust in the validity of the recommended EBP guidelines, 2) a lack of knowledge of the psychologist's role in this context and insufficient skills to fully apply the guidelines, protocols and procedures and 3) a poor fit between EBP guidelines, client presentations and circumstances and the SIRA compensation schemes.

Conclusion: The findings showed that both individual practitioner variables and contextual barriers influenced adherence to EBP. Practical implications for future research include generating recommendations to overcome the identified barriers using a collaborative approach between policymakers, researchers and practitioners.

Keywords: disability management intervention, musculoskeletal injuries, EBP guidelines.

3.2. Introduction

In the current climate of managed care, the scope of psychologists' practice has significantly increased. The role now encompasses the treatment not only of mental health disorders, but also of physical health conditions. Generalist psychologists are expected to address presentations including maladaptive behavioural patterns that influence the development and maintenance of chronic diseases and functional limitations resulting from physical illness (Davidson & Spring, 2006). In tandem with this increased role has come greater accountability for the quality of care with the requisites of third-party providers being manifest in EBP and treatment guidelines (Goodheart, 2011).

EBP is defined as 'the integration of best available research with clinical expertise in the context of patient characteristics, culture, and preferences' (Force, 2006, p. 273). EBP is supported by systems such as guidelines that 'nomothetically propose treatment recommendations' to encapsulate the best research evidence for a condition or disorder (Spring, 2007, p. 612). Theorists propose that EBP guidelines and standards have the potential to provide greater consistency in care and higher patient and health care practitioner satisfaction (Swinkels, Albarran, Means, Mitchell, & Stewart, 2002). In NSW), 50% of injuries covered by WC and 46% of those paid under CTP motor vehicle accident insurance are musculoskeletal in nature (NSW Government, 2014; SIRA, 2016). Epidemiological studies of chronic pain in the community reveal that majority of the patients also have an associated disability and a large proportion report depressive symptoms (Gopinath et al., 2015). Consequently, SIRA has EBP treatment guidelines for psychologists based on the *Clinical framework* (Transport Accident Commission & WorkSafe Victoria, 2012). These treatment guidelines were developed in collaboration with the Australian Psychological Society (APS) and are supported by multiple professional associations

(e.g., Australian Physiotherapy Association and Occupational Therapy Australia). In summary, the treatment guidelines contain a set of five guiding principles that are performance requirement initiatives aimed at improving psychologists' practice when treating musculoskeletal injuries and improving patient outcomes (Transport Accident Commission & WorkSafe Victoria, 2012).

As described in Chapter 2, the *principle one* includes measuring and demonstrating treatment effectiveness by using standardised outcome measures (e.g., DASS and Symptom Checklist); *principle two* involves adopting a biopsychosocial approach in treating musculoskeletal injuries through collaboration and communication with key stakeholders and by identifying barriers to functioning (i.e., by using screening tools such as the ÖMPSQ); *principle three* advocates empowering the injured person through education to manage their injury, incorporating self-management strategies in the management plan and addressing beliefs that are counterproductive to recovery; *principle four* calls for implementing goals that are SMART and focused on optimising function, participation and return to work; and *principle five* comprises basing treatment on the best available research evidence and current research indicates that CBT is effective in treating musculoskeletal injuries with secondary psychological pathology (Richmond et al., 2015; Schweikert et al., 2006). Overall, the five guiding principles have sound research support for their therapeutic efficacy in treating pain and improving function for patients suffering from musculoskeletal injuries.

Empirical research indicates that adherence to EBP guidelines within the mental health profession is associated with improved provider practice and enhanced patient outcomes (Bauer, 2002; Fortney, Rost, Zhang, & Pyne, 2001; Grimshaw & Russell, 1993; Melfi et al., 1998). EBP sceptics cite research by Bauer (2002) that found adherence to EBP guidelines was associated with improved patient outcomes in only 46% of cases. However, as this review did not report

adherence rates the findings should be interpreted with caution. Patients need to receive a sufficient 'dose' of treatment for it to be effective, and some propose that this 'dose' be equated to adherence of at least 75% (Bauer, 2002; Fritz, Cleland, & Brennan, 2007; Rutten et al., 2016). Supporting EPB, researchers have found that 13% of the total variance in patient outcomes is explained by the strength of the therapist and patient alliance and the use of techniques, guidelines or models (Ahn & Wampold, 2001; Wampold, 2001). However, to achieve this outcome, the therapist has to apply 'deep domain-specific knowledge' and elicit systematic and ongoing feedback from the client to inform progressive treatment plans (Force, 2006; Miller, Hubble, Chow, & Seidel, 2013). The principles included within the *Clinical framework* espouse these concepts and are expected to guide and maximise outcomes for patients (Parry, Cape, & Pilling, 2003).

The review conducted by Bauer (2002), found that clinicians' adherence with practice guidelines was low in the field of mental health (Parry et al., 2003). Barriers to adherence with guidelines have been found to include the 'health care professional's individual characteristics' (Fabrissin, Garay, Keegan, Sarudiansky, & Korman, 2014, p. 2; Forsner, Wistedt, Brommels, & Forsell, 2008) and individualised decision-making (Godin, Bélanger-Gravel, Eccles, & Grimshaw, 2008); awareness, knowledge, familiarity, self-efficacy, outcome expectancy and inertia (Loisel et al., 2005, p. 512) and external factors perceived to be beyond the control of the individual (Cabana et al., 1999; Grol & Wensing, 2004). However, clinicians' 'attitude' towards EBP in clinical and health psychology settings has been identified as the top barrier (Pagoto et al., 2007). Specifically, it has been found that therapists who possessed negative attitudes towards the role of research in clinical practice were more likely to rely on intuition to guide their decision-making (Gaudiano, Brown, & Miller, 2011). Thus, as resistance by practitioners to

using EBP treatment guidelines within the mental health arena can result from various attitudes and beliefs, successful adoption will require not just publication of guidelines (i.e., didactic training) but identification and lowering of barriers to improve competence (i.e., competence training) and foster effective usage (McHugh & Barlow, 2010, p. 74).

It is generally recommended that barriers to EBP be identified not just at the practitioner level, but in the wider environment (Grol, 1997; Grol & Grimshaw, 2003). Within the SIRA context, this environment would include stakeholders such as injured patients, insurers and GPs. However, understanding the barriers operating at the individual practitioner level is the first step in the process of understanding the challenges to psychologists' adherence with treatment guidelines (Byham-Gray, Gilbride, Dixon, & Stage, 2005; Dysart & Tomlin, 2002; Grol, 1997; Iles & Davidson, 2006; Transport Accident Commission & WorkSafe Victoria, 2012). Hence, the present study aimed to explore psychologists' perceived barriers to the use of the *Clinical framework* in treating functional impairment secondary to musculoskeletal injury within the SIRA compensation schemes.

3.3. Method

To obtain rich detailed data, a qualitative design was utilised. A face-to-face (F2F) focus group design was selected, as the interaction process facilitates raising viewpoints otherwise absent in an individual interview (Efstathiou, Papastavrou, Raftopoulos, & Merkouris, 2011; Harmsen et al., 2013; Kroll, Barbour, & Harris, 2007; Krueger & Casey, 2015; Nyamathi & Shuler, 1990). The study also employed online focus groups through ZOOM video conferencing groups to help overcome constraints associated with timing, location and travel (Reid & Reid, 2005). Ethics approval was obtained from the University of New England Human Research Ethics Committee (Approval number: HE16-095).

3.3.1. Participants

Between September 2016 and April 2017, four semi-structured F2F and online focus groups were conducted with 20 psychologists. Table 3.1 provides the characteristics of the study participants. The 20 focus group participants consisted of 15 females and five males. Most (*n* =10) were regional practitioners in private practice. Participants' years of experience in practice ranged from less than six months to more than 40 years, with the modal range being 11–15 years. The selection criteria were developed a priori and were based on general and clinical psychologists' (i.e., working in private practice) experience in treating injured patients with musculoskeletal injuries under SIRA compensation schemes (i.e., WC and CTP).

3.3.2. Procedure

The participants for the study were searched and identified through a search engine (i.e., Google) and the NSW SIRA database. An invitation to participate was emailed to 95 potential participants and those who did not have their email address listed were contacted via telephone. Drop-out was due to conflict in dates and constraints in relation to time commitment. The first two focus groups were conducted F2F (i.e., at the University of New England premises in Parramatta and at the Coffs Harbour Education Campus in Coffs Harbour). The third and fourth focus group interviews were conducted online. The fourth focus group did not provide any new information in comparison with the previous three groups; therefore, additional interviews were not deemed necessary (Efstathiou et al., 2011). The F2F and online focus group question protocol consisted of a semi-structured format with open-ended questions and each meeting lasted between 90 and 120 minutes (Harmsen et al., 2013). All participants were paid $180, with the amount being reflective of the psychologists' minimum hourly rate paid under SIRA

compensation schemes. Food and beverages were also served to the psychologists participating in the F2F focus group.

Table 3.1

Characteristics of Participants According to Geographical Location, Years of Experience and Place of Practice

Focus GroupParticipants	Male	Female	Rural	Regional	Metropolitan	Private Practice	Hospital Setting	Years of Experience
Participant A	√		√			√		1–5 years
Participant B	√		√			√		Under 6 months
Participant C	√			√		√		35–40 years
Participant D	√				√	√		16–20 years
Participant E		√		√		√	√	6–10 years
Participant F		√		√		√		11–15 years
Participant G			√			√		1–5 years
Participant H		√		√		√		11–15 years
Participant I		√		√		√		11–15 years
Participant J		√		√		√		6–10 years
Participant K		√		√		√		11–15 years
Participant L	√			√		√		11–15 years
Participant M		√		√		√		6–10 years
Participant N		√		√		√		11–15 years
Participant O		√			√	√	√	6–10 years
Participant P		√			√	√		6–10 years
Participant Q		√			√	√		11–15 years
Participant R		√			√	√		6–10 years
Participant S		√			√	√		16–20 years
Participant T		√			√	√		1–5 years

3.3.3. Development of interview questions

The questions were drafted by the first author and reviewed by the second author. The focus group questions for psychologists were divided into (i) focus on the treatment of musculoskeletal injuries, (ii) psychologist knowledge of the *Clinical framework*, (iii) barriers to compliance and (iv) the effect of the application of the *Clinical framework* on patient outcomes.

3.3.4. Data analysis

The conceptual framework of the study was based on the *Clinical framework*. The focus groups were digitally recorded, and the recordings were transcribed verbatim using a professional transcription service (Pettigrew, Donovan, Pescud, Boldy, & Newton, 2010). The transcripts were analysed using a deductive and theoretical approach to thematic analysis (Braun & Clarke, 2006). To manage data systematically, the interview transcripts were imported into QSR NVivo 11 (a qualitative data analysis software) for coding and analysis. The analysis of the transcripts was guided by predetermined codes (i.e., categories) that were entered as nodes. The text was coded by matching the codes with sections of text selected as representative of the code, with segments from the transcript ranging from a line to several paragraphs and in some cases the same text segment was allocated to more than one code (Fereday & Muir-Cochrane, 2006; Reichstadt, Depp, Palinkas, & Jeste, 2007). Recurrent patterns across the dataset were classified as themes. Once a theme was formed, it was reviewed and revised by the researchers independently to ensure that it accurately reflected the dataset (Braun & Clarke, 2006). The final themes were established by consensus among the researchers.

3.4. Results

A thematic analysis of participant responses regarding barriers to using EBP guidelines within the SIRA compensation schemes identified three main themes.

3.4.1. Theme 1: Lack of trust in the validity of EBP guidelines

A lack of trust in the validity of the recommended treatment guidelines emerged in all focus groups and applied to all principles. For instance, the standardised assessment measures (Principle 1) were criticised for not providing a holistic representation of the factors that might influence an injured patient's recovery. As noted by a psychologist:

> We know that overall, I mean, this is where our observation is more important than a clinical tool. While a clinical tool might pick up that they are lower, there are so many factors involved. This is also what you'd see with some of the personality problems, but you would also see it with someone with lots of variables like a chronic injury. I've got a guy that's had back surgery for the third time. He's 27 and he's had a spinal fusion and there's lots of factors affecting his recovery.

Screening for psychosocial risk factors (Principle 2) was considered to serve the interests of the insurers rather than the patient. For instance: 'If there are historical pre-injury factors that are complicating recovery for the client, I find if that's reported in the treatment plan, it puts the client at risk of having their sessions fixed'.

Concerns were raised about the implementation of self-management strategies such as activity scheduling (Principle 3) and potential negative consequences for injured patients if insurers are carrying out surveillance. As noted by one psychologist:

> That's another big barrier, you try and get people to go and take a walk or whatever and they're scared that someone's going to be watching them doing this stuff. And I've got one right now and she regressed in terms of her treatment.

Some participants reported that formulating SMART goals (Principle 4) was a hindrance to adopting a client-centred therapeutic approach, because it can make therapy 'too goal-directed' and instil in the client 'a sense of failure and anxiety about achieving those goals'. As noted by one psychologist:

> I never go straight for them [goals] and I find them, in truth, more of a hindrance. I sometimes just feel what it does is, if I start to work in that way, what respect would the client have for me? Because it would feel so mechanical and not correct. The other unwritten assumption about SMART goals is that recovery comes as a linear progression over time, that is, you add more treatment, you get more recovery. But recovery fluctuates, individuals have bad days and good days and they need to be given the opportunity to recover at their own pace under their doctor's direction.

Most participants reported a lack of trust in the validity of the guidelines and the likelihood that adherence would *not* lead to optimal care. There was also considerable scepticism about who the guidelines were intended to benefit. As noted by one psychologist:

> A focus on use of [EBP] is clearly aimed at limiting client access to treatment. Recommendations for six to 12 sessions for treatment of trauma, for example, within the treatment guidelines are based … on treatment of people who have experienced a simple or minor car accident without a physical injury.

3.4.2. Theme 2: Lack of knowledge and skills

A limited awareness of the guidelines included in the *Clinical Framework for the Delivery of Health Services,* lack of knowledge of the psychologist's role in this context and insufficient knowledge and skills to fully apply the treatment principles, protocols and procedures, composed the second theme that emerged in all focus groups.

Discussions revealed that psychologists tended to focus on reducing psychological distress through supportive counselling, rather than viewing their role as identifying and assessing psychosocial barriers to the patient's return to usual functioning and measuring, monitoring and supporting activities to enable that outcome. There were scant indicators that psychologists take a biopsychosocial approach to treatment or place any emphasis on behavioural activation or functional restoration. Participants declared they had little knowledge about the importance and use of goal setting or of taking a theoretical and structured approach to treatment. A common view was that client presentations are often 'too complex [to] concrete, specific goals which can be broken down into behavioural descriptions'. As one psychologist explained:

> If I've put that the problem is anxiety I wouldn't normally put the goal is to decrease the anxiety … I don't tend to think about it in those sorts of terms, I probably do in my mind somewhere, but it's just not the way I would write it. So sometimes I find it's like 'What's a SMART goal?', but in principle I have no problem with it.

In contrast, there were frequent statements about supporting and 'validating' clients: 'I think the hardest thing is you do have to validate them first, because maybe they haven't been validated and then after two years they want someone to say, "I understand you've had a hard time".

Other participants described their clients as being in a state of 'hypervigilance', 'hyperarousal' or 'freeze' when they seek therapy. Therefore, their focus revolves around making the client feel safe and their primary concern is to establish a therapeutic relationship. As one noted:

> I often find that a lot of my sessions are just dealing with practical sorts of things. So, Maslow's hierarchy of needs. You're not exactly going to be able to look at those higher needs [re-engagement in functional activities] when they literally are trying to survive.

Some psychologists indicated that they struggle to operate in expected ways such as prioritising communication with the treating doctor or other relevant parties. One stated: 'It can be very hard for a psychologist to ring a GP, as they are always very busy'. Another asked: 'How do we get on the phone when we've got people in front of us all the time?'. Some reported challenges associated with 'inconsistency' in insurer expectations about how the Allied Health Recovery Request (AHRR) should be completed, while others acknowledged that there can be negative ripple effects from their own inadequate reporting or failure to liaise with others:

> Insurers are second guessing a lot of what we're trying to say and because we're sometimes seen as obstructive, I think. It could be because we're not picking up the phone and talking to that insurer and just educating them a little bit about what we're doing and what we're seeing.

Many psychologists cited a lack of out-of-session remunerated time and a lack of knowledge of 'what insurers want' as barriers to complying with protocols and procedures. Again, this theme suggested a lack of knowledge of how to operate within the SIRA compensation schemes. For example, some participants claimed that their failure to submit a treatment plan was because they receive only '$25 for completing the first treatment plan and

then nothing for subsequent plans'. With a focus on a counselling approach, these psychologists seemed unaware of the importance and collaborative value of completing the plan in-session and regularly reviewing it with the injured patient. For instance:

> To expect the treatment plan to be filled out in the initial session as well as building rapport as well as just understanding the story … it's not realistic, there's not enough time. To get the wording which can be accepted by the case manager is challenging [but] if you get the story … that would make much more sense, [however] the plan doesn't allow for the story at all.

3.4.3. Theme 3: Poor fit between EBP guidelines, clients and SIRA compensation schemes

The third theme that emerged in all psychologist groups was the poor fit between the treatment guidelines, injured patient presentations and circumstances, and SIRA compensation schemes. Psychologists reported that the guidelines imply that working with patients within the SIRA compensation schemes should be simple and straightforward, but their experience is that this is not the case.

Most psychologists reported that the clients they treat under the compensation schemes are complicated with 'complex histories' and are often referred only after all other medical treatments have failed. Then, the expectation of 'a magic fix in six sessions is very challenging'. As noted by a psychologist: 'I often find that the problems are more complex than just the specific secondary psychological injury. [For example,] the late referral, complicating factors in their lives and problems that have developed in response to the injury'.

A few psychologists noted that delays in insurer approval impaired their ability to deliver treatment in a timely manner or in accordance with the EBP treatment guidelines. In addition,

providing an appropriate number of sessions was outside their control in some instances. As noted by one psychologist:

> I've got some clients, this has happened with two, where they had a physical injury which became psychological as well, and you know how the insurance company like to exclude the secondary injury. They only like to look at the original. But in any case, they eventually declined the psychological injury. So, they had the six sessions with me, then it was declined.

Participants also reported that the lack of provision of opportunities for injured patients to return to usual functioning, which included absence of retraining as an option, and fewer work options available in rural areas was another barrier that was a poor fit with the treatment principles. As noted by a psychologist:

> There are, in fact, fewer employers in rural areas, so fewer work options with fewer variability factors. If you try and retrain them for jobs, well, there's nothing in Bowral and there's nothing in Goulburn to retrain these people. Often, they've lost their house, their car, whatever, so how are they going to do that? And then what are they going to train in? There's a dearth of jobs. There just aren't jobs. You can retrain to do what?

Some psychologists also reported that the actions by some insurers seemed to run counter to the rehabilitation process and created circumstances that distracted from or derailed the application of the treatment principles. As noted by a psychologist, 'the compensation system itself is causing harm and giving rise to secondary symptoms'.

3.5. Discussion

The aim of the current study was to explore the barriers perceived by psychologists as affecting their adherence to EBP guidelines for treatment of functional disability following

musculoskeletal injury. Three major issues in the application of the *Clinical framework* were identified: a lack of trust in the validity of the recommended EBP guidelines; a lack of knowledge of psychologist's role in this context and insufficient skills to fully apply the guidelines and comply with SIRA protocols and procedures and; lastly, a poor fit between the EBP guidelines, client presentations and circumstances and SIRA compensation schemes.

Lack of trust in the validity of the guidelines stemmed from a concern that the guidelines promote the insurers' agenda rather than the welfare of the injured person. This view is consistent with the findings of other research in the mental health arena that has shown that the limited uptake of EBP can be due to a belief that it supports the interests of administrators rather than patients (Corrigan, McCracken, & Blaser, 2003; Milne, Gorenski, Westerman, Leek, & Keegan, 2000). In the current study, psychologists indicated negative attitudes and beliefs towards not only the overall approach, but also components of EBP such as the use of goal setting and outcome measurement. This finding is consistent with the behaviour observed in other studies in which psychologists were found to only use outcome measures approximately 37% of the time and even less frequently if they were in private practice (i.e., 29% of the time) (Hatfield & Ogles, 2004). These findings are in contrast to the large body of empirical research that indicates that evaluating and reviewing the effectiveness of treatment is necessary for achieving positive therapeutic outcomes (Barkham et al., 2001; Kordy, Hannöver, & Richard, 2001; Lambert et al., 2001; Lambert et al., 2002; Lueger et al., 2001; Whipple et al., 2003).

The comments made by the psychologists in this study provided further and deeper insights into why psychologists might resist a structured EBP approach to intervention. Like clinicians in other studies, our participants expressed a fear that adherence with EBP guidelines could impede or rupture the therapeutic alliance (Addis, 2002; Frueh, Cusack, Grubaugh, Sauvageot, & Wells,

2006). However, once again, these cognitive and attitudinal barriers to EBP (Gaudiano & Miller, 2013) are not supported by the scientific literature. For instance, a 2011 study of the effect of the components of the therapeutic alliance has shown that therapist–patient agreement on 'goals' and 'tasks' are more effective in achieving treatment gains than the 'bond', which was found to be 'more of a consequence than a cause' of these gains (Webb et al., 2011, p. 279). Further, our findings suggest that the concerns about therapeutic alliance may be related to the psychologists' confidence in their capacity to deliver non-directive, client-focused counselling and a lack of knowledge and skills in an EBP approach to disability management.

We found that psychologists' adherence to EBP guidelines was influenced by a lack of awareness of their role within the SIRA context (i.e., to facilitate restoration of pre-injury functioning rather than to provide personal counselling) and insufficient knowledge and skills to use the principles contained in the *Clinical framework*. With reference to their role, psychologists' lack of knowledge of the critical importance of administrative tasks and a lack of skills to execute these in a timely manner (e.g., completing treatment plans or telephoning stakeholders in-session) led to reports of 'lack of time' and 'lack of remuneration' as barriers to adherence with EBP guidelines, protocols and procedures. The latter finding is consistent with previous research that showed that financial disincentives are an impediment in the uptake of EBP by health practitioners (Addis, 2002; Frueh, Grubaugh, Cusack, & Elhai, 2009; Ganju, 2003; Schoenwald & Hoagwood, 2001; Torrey et al., 2001). However, it was concerning to find the lack of knowledge of how to apply the biopsychosocial approach to injury management as proposed in the guidelines—an approach known to decrease pain, improve functionality and reduce claims costs following musculoskeletal injury (Flor, Fydrich, & Turk, 1992; Kamper et al., 2015; Scascighini, Toma, Dober-Spielmann, & Sprott, 2008; Transport Accident

Commission & WorkSafe Victoria, 2012). Psychologists presented with what Pagoto et al. (2007) have described as 'naïve realism' or an overconfidence in 'clinical experience' at the expense of theory, critical thinking and the application of an empirical base for effective treatment (Lilienfeld, Ritschel, Lynn, Cautin, & Latzman, 2013, p. 888). The implications of these findings are that training for psychologists working within the SIRA compensation schemes should involve not only the dissemination of treatment guidelines, but also competence training in balance with didactic education (Hasson, Andersson, & Bejerholm, 2011; McHugh & Barlow, 2010).

The final finding of this study was that there is a poor fit between the EBP guidelines, some client presentations and the frameworks of the SIRA compensation schemes. Psychologists reported that the perceived 'one size fits all' approach of the guidelines fails to cater to the complex needs of the individuals being treated under the compensation schemes (Lilienfeld et al., 2013). In particular, they noted that application of the *Clinical Framework* was at times impossible due to a lack of timely referral by the GPs, delays in insurers' approval to provide treatment and the complexity of the compensation schemes that adversely affected injured patients' participation and engagement. Given that psychological intervention to address the risk factors for long-term disability following musculoskeletal injury should be delivered four to 12 weeks post-injury (Gatchel & Schultz, 2014; Schultz & Gatchel, 2006), hold-ups in this process make adherence with EBP guidelines challenging for psychologists and flag a poor fit between what psychologists are (Kilgour, Kosny, McKenzie, & Collie, 2015a) to do and what factors within the system will *allow* them to do (Gatchel et al., 2003; Littleton et al., 2011; Murgatroyd, Casey, Cameron, & Harris, 2015; Rogerson, Gatchel, & Bierner, 2010; Whitfill et al., 2010). This finding is consistent with existing research that has found health care providers'

professional recommendations can be ignored or contested by insurers whose focus is on determining liability and managing claims cost (Kilgour et al., 2015a). This can result in ineffective treatment by clinicians and impaired recovery and outcomes for injured patients (Kilgour et al., 2015a). The qualitative study conducted by Cromie, Roberston & Best (2003) showed physical therapists experience of work-related musculoskeletal injuries and workers compensation system in Victoria as being intimidating and unpleasant for their patients because of negative insurer interactions. The 'pathogenic relationships' that can occur between insurers and injured patients create conflicts in injured patient motivation to engage in therapy making it difficult for psychologists to implement treatment guidelines based on a biopsychosocial premise (Kilgour, Kosny, McKenzie, & Collie, 2015b, p. 176). Within a broader context the findings of a qualitative study involving Canadian healthcare providers was consistent with the study findings and showed that health care providers had limited understanding of the compensation system requirements and showed confusion about decision-making which compounded injured patients frustration and mental health problems (Kosny, macEachen, Ferrier, & Chambers, 2011). Overall, these findings suggest that to increase psychologists' adherence to EBP guidelines within various compensation schemes, barriers created by the actions of key stakeholders that include a lack of timely referral by GPs, delay in treatment approval by insurers and injured patients' unwillingness to engage with treatment, need to be understood and addressed.

3.5.1. Strengths and limitation of this study

The study is the first to investigate barriers to psychologists' compliance with EBP guidelines for the treatment of musculoskeletal injuries within the personal injury compensation schemes in Australia. Although, limitations include a small sample size and the low response rate could be reflective of selection bias, the study was representative of the population of

psychologists in Australia and achieved the aim of identifying barriers to the application of the *Clinical framework* in this context. Another limitation of the study is that the findings may be restricted to a cause-based compensation system.

3.6. Conclusion and Future Directions

This study has shown that both individual practitioner variables and stakeholder actions (i.e., contextual factors) pose barriers that negatively affect psychologists' adherence with treatment guidelines. Barriers create personal and economic costs for injured patients, as positive patient outcomes require high adherence with EBP treatment guidelines (Feuerstein, Hartzell, Rogers, & Marcus, 2006). Therefore, identification and understanding of the barriers to the uptake of EBP guidelines is a significant first step in bridging the gap between implementation and adoption (Pagoto et al., 2007). Efforts are needed to improve psychologists' attitudes and beliefs about the value of the guidelines, so that the guidelines are applied despite the presenting constraints. This can be undertaken by involving psychologists in the development of strategies to overcome identified barriers, thereby facilitating ownership (National Health and Medical Research Council, 1999). By viewing psychologists as active users and not merely passive recipients required to comply and by providing in-depth active knowledge and skills training and engagement, adherence to EBP can be potentially increased (Tasca, 2015).

The recent introduction by the APS of 'Masterclass Workshops' for psychologists working within SIRA insurance frameworks is a step in the right direction. However, studies indicate that workshops alone are not enough and follow-up coaching (e.g., by telephone or through the internet) is required to enable clinicians to modify behaviour and integrate EBP into routine clinical settings (Miller, Yahne, Moyers, Martinez, & Pirritano, 2004; Sholomskas et al., 2005). Implementation can also be improved by providing clinicians with personalised data that shows

the effect of adherence on patient outcomes. Another recent initiative undertaken by SIRA is the incorporation of the EBP guidelines into a computer-based interactive treatment plan to remind busy clinicians about best practice principles when treating patients. The effects of these initiatives will require evaluation.

Future research should explore recommendations to support a collaborative partnership between policymakers, researchers and practitioners and the barriers emanating from a 'poor fit' between the EBP guidelines and the wider system in which they operate (Davidson & Spring, 2006). Lastly, to reduce the dissemination and implementation gap of EBP within the Australian compensation schemes, strategies that promote an alignment between insurers, GPs and psychologists in the treatment of musculoskeletal injuries should be considered.

3.6.1.1. *Conflict of interest*

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Study 2: Statement of Originality

We, the PhD candidate and the candidate's Principal Supervisor, certify that the following text, figures and diagrams are the candidate's original work.

Type of Work	Page Number
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Study 2: Statement of Authors' Contribution

We, the PhD candidate and the candidate's Principal Supervisor, certify that all co-authors have consented to their work being included in the thesis and they have accepted the candidate's contribution as indicated in the *Statement of Originality*.

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Research Progression to Study 3

Study 2 found that three key barriers affected psychologists' use of EBP treatment guidelines within the SIRA insurance schemes. The findings suggested that psychologists lacked trust in the validity of the treatment guidelines and the knowledge and skills to fully apply the treatment principles within the SIRA insurance schemes. However, the study findings also showed that psychologists' use of biopsychosocial treatment intervention guidelines within the WC and CTP compensation schemes was affected by the actions of key stakeholders (i.e., GPs, insurers and injured people). The barriers identified by psychologists included a lack of timely referrals by GPs, delay in treatment approval by insurers and poor engagement with treatment by some injured people. The findings were consistent with previous research. The study found that adoption of EBP by individual clinicians is influenced by the setting in which they operate (Beidas & Kendall, 2010). Therefore, the findings highlighted the need for understanding and addressing the contextual factors in which psychologists operate including the barriers created by key stakeholders to bridge the gap between implementation and adoption of EBP treatment guidelines. Taking this into consideration and to improve psychologists' application of the biopsychosocial intervention treatment guidelines, in Study 3 we explored barriers from the standpoint of the three key stakeholders: GPs, insurers and injured workers.

Chapter 4. Understanding the Barriers Affecting Psychologists' Adherence to Evidence-Based Treatment Guidelines from a Stakeholder Standpoint

4.1. Abstract

Objectives: Psychologists' adherence with evidence-based guidelines based on the biopsychosocial premise in the management of musculoskeletal injuries is influenced by the actions of three stakeholders. The aim of this study was to explore the ways in which barriers created by GPs, insurers and injured patients' actions affect psychologists' practices.

Methods: Focus groups and semi-structured individual interviews were conducted with GPs (n = 6), insurers (n = 6), and injured people (n = 15). Recruitment was from a variety of geographical locations, insurance companies and drawn from the two personal injury compensation schemes in NSW.

Results: Six themes emerged. GPs were reticent to access psychological services that represented a poor fit between their practice and treatment guidelines. Insurers lacked trust in the validity of 'secondary psychological injury' claims' and this was exacerbated by their perception of psychologists' non-adherence to insurers' protocols and deficits in insurers' knowledge. Injured peoples' willingness to engage with treatment was impaired by a poor fit between the treatment guidelines and their experience of insurers' and psychologists' practices.

Conclusions: To improve psychologists' use of EBP guidelines, an education program is warranted with a focus on understanding and reconciling the different theoretical models under which various stakeholders operate.

Keywords: disability intervention, musculoskeletal injuries, secondary psychological injuries, personal injury compensation systems, disability management.

4.2. Introduction

In NSW, SIRA has published EBP guidelines for clinicians who provide services within the schemes. The use of EBP has been defined as 'the conscientious, explicit and judicious use of current best evidence in making decisions about the care of the individual patient' (Sackett, Rosenberg, Gray, Haynes, & Richardson, 1996, p. 71). Treatment guidelines are tools used to facilitate the adoption of EBP into routine clinical settings (Loisel & Anema, 2013). The *Clinical framework* implemented by SIRA is based on a set of EBP treatment guidelines that include: 'i) measuring and demonstrating treatment effectiveness, ii) adopting a biopsychosocial approach, iii) empowering the injured person to manage their injury, iv) implementing goals focused on optimising function, participation and return to work and, v) basing treatment on best available research evidence' (Transport Accident Commission & WorkSafe Victoria, 2012). These guidelines have a particular focus on the management of functional disability following musculoskeletal injury (e.g., low back strain or whiplash). Overall, the guidelines are based on the biopsychosocial paradigm of pain (i.e., disability results from an interaction of physical, social and psychological elements). Adherence with its five principles requires a coordinated approach by all stakeholders working within the compensation frameworks (WorkCover NSW, 2010; Transport Accident Commission & WorkSafe Victoria, 2012).

The biopsychosocial model has been recognised by the International Classification of Functioning, Disability and Health (ICF) as being essential in the conceptualisation and management of pain-related disability (Bruns & Disorbio, 2014; Kuijer et al., 2006; Organization, 2001). Interventions within this framework are not just limited to symptom removal, but are focused on full functional restoration within familial, household and occupational roles (Schultz, Crook, Fraser, & Joy, 2000). The biopsychosocial model emphasises early intervention and identification of injured people at risk of developing prolonged disability

and flows from the belief that protracted pain and disability makes treatment and recovery complicated (Schultz et al., 2000). Within the biopsychosocial framework treatment is outcome focused and the injured person is required to play an active role in the rehabilitation process. However, when relief of pain is not likely rehabilitation is focused on helping clients to develop coping strategies and skills to deal with pain (Schultz et al., 2000).

The role of psychologists within this intervention framework is significant, as the central focus is on the injured person experiencing the pain and includes appraisal of cognitive and behavioural factors leading to the maintenance and exacerbation of pain (Turk, 2014). In addition, a recently completed qualitative study of case-level files found that when psychologists' adherence with the *Clinical Framework* was high in the treatment of musculoskeletal injuries (with a secondary psychological injury), lower claims costs and greater positive functional outcomes for injured people were observed (Haider, Dunstan, & Bhullar, in press). However, this study also found that psychologists' use of these biopsychosocial intervention guidelines was suboptimal. Another qualitative study attempted to explore barriers affecting psychologists' adherence by interviewing 20 psychologists working within CTP and WC frameworks and found that the actions of some key stakeholders (i.e., GPs, insurers and injured people) created difficulties in the psychologists' application of the guidelines (Haider & Dunstan, 2018; Haider et al., in press). The findings showed that implementing a biopsychosocial approach became difficult, with psychologists identifying untimely referrals by GPs, delays in approval for treatment by insurers and poor engagement by injured people as affecting their practice (Haider & Dunstan, 2018). The findings are consistent with existing literature particularly in reference to GP involvement in workers compensation cases. Research has found that GP's in the state of Victoria (Australia) are reluctant to treat compensable injuries because of time constraints, financial burden and the clinical complexities involved in the injury

management of compensable injuries (Brinjnath et al., 2016). Research has also found that GPs are unlikely to issue a medical certificate with alternate duties to injured patients with a mealth health conditions and are less likely to follow clinical practice guidelines developed in the management of these patients (Ruseckaite et al., 2016; Collie, Ruseckaite, Brijnath, Kosny, & Mazza, 2013; Mazza & Russell, 2001). Thus the research findings alongside existing research indicate that some of the clinical limitations of the biopsychosocial approach influence the scope of its applicability within the compensation settings, namely that it is both labour intensive and time-consuming and requires a structure that can facilitate a team-based approach (Schultz et al., 2000, p. 285). As the biopsychological model is a time-based intervention, the need to deliver targeted psychological treatment within the subacute stage (i.e., four to 12 weeks) of the musculoskeletal injury is required to prevent chronicity (Turk, 2014). This can become time-consuming, as within the NSW compensation schemes diagnostic validity must be established to be compensable and psychopathology that follows a physical injury known as a 'secondary psychological injury' is required to meet the DSM-5 diagnostic criteria for a mental disorder (i.e., anxiety, depression or post-traumatic stress). Therefore, insurers' focus on determining liability can take precedence over treatment and health outcomes within a functional restoration perspective (Kilgour, Kosny, McKenzie, & Collie, 2015a).

Thus, within the NSW SIRA compensation schemes, an understanding and removal of the barriers created by stakeholders that impair psychologists' adoption of biopsychosocial treatment guidelines has implications for lowering claims costs, improving patient outcomes and bridging the gap between implementation and adoption (Beidas & Kendall, 2010; Eakin, 2010; Loisel & Anema, 2013). This qualitative study aimed to explore these barriers including the delayed referral and approval of psychological treatment for musculoskeletal injuries from the standpoint of GPs and insurers and poor engagement in treatment from the standpoint of injured people.

4.3. Method

The NSW Workers Compensation scheme is a 'no-fault' system (i.e., compensation benefits start after a claim is lodged and the injury is established as being work-related). The CTP scheme was traditionally a 'fault-based' scheme (i.e., the injured party is required to establish negligence against the owner or driver of a vehicle); however, the NSW Government changed CTP to a hybrid, no-fault scheme in December 2017. Therefore, to obtain detailed data, a qualitative design was deemed appropriate due to the lack of availability of prior research in the area. Data were collected through focus groups and individual interviews conducted by the first author using the same interview guide to ensure stability of the findings over time (see Appendix).

The questions were drafted by the first author and reviewed by the second author. They were informed by the Haider and Dunstan (2018) study of barriers affecting psychologists' use of biopsychosocial treatment guidelines. The main purpose of the individual interviews was to enable participants to report their personal experiences and intentions that drove their behaviour. Focus groups were utilised to facilitate the emergence of viewpoints from individuals (i.e., agreements and disagreements) that would otherwise be absent in an individual interview (Brijnath et al., 2014; Kroll, Barbour, & Harris, 2007). Combining individual interviews and focus group data allowed a rich and diverse dataset to be generated. Ethics approval was obtained from the University of New England prior to conducting the study (HE16-095).

4.3.1. Participants

Data were collected between September 2016 and May 2017. Semi-structured individual interviews were conducted with 15 participants and two focus groups were conducted with 12 participants. Individual interviews were conducted with GPs and participants included four males and two females with an average of nine years' experience and practices across rural, regional

and metropolitan NSW. Two focus groups were conducted with WC and CTP insurers with six participants in each group. Participants in the WC group included six females with an average of six years of experience. The CTP insurer group included four females and two males with an average of three years of experience. In addition, three individual interviews were conducted with CTP insurers whose schedule did not allow for focus group participation and included two females and one male with an average of four years of experience. Six injured people participated in individual interviews and a summary of their demographic details is presented in Table 4.1,4.2 and 4.3.

All participants were required to sign an informed consent form prior to taking part in the interviews. The consent form assured participants anonymity through the allocation of pseudonyms during transcription and removal of any recognisable information (Douglas, Windsor, & Wollin, 2008). F2F focus groups ran for between 90 and 120 minutes and were conducted with insurers either on site or at a central city location. Sixty-minute individual interviews were held by telephone with GPs and injured people.

A purposive sampling strategy was used for all three stakeholder groups and the selection criteria were developed a priori. All participants had to be > 18 years, injured people were required to have an accepted claim for a musculoskeletal injury and a secondary psychological injury under WC or CTP, the insurers had to be SIRA scheme agents (for both WC and CTP) with experience in managing musculoskeletal injuries with secondary psychological injuries and the GPs were required to have experience in treating injured people suffering from musculoskeletal injuries with secondary psychological injuries under WC and CTP.

Table 4.1

Demographic Features of Insurer According to Compensation Scheme and Years of Experience

Group 2 (a) Workers Compensation Insurance			Group 2 (b) CTP Insurance			
Categories	Focus Group Participants	Years of Experience	Categories	Focus Group Participants	Individual Interviewees	Years of Experience
Gender (n)			Gender (n)			
Females	6		Females	4	2	
Males	0		Males	2	1	
Employer (n)			Employer (n)			
EML	3		QBE		2	
CGU	2		GIO-Suncorp	6		
Suncorp	1		IAG		1	
Job Title			Job Title			
CM	Participant A	5 years	Personal Injury Consultant		Participant G	5 years
CM	Participant B	3 years	IMA		Participant H	1 year
CM	Participant C	5 years	IMA		Participant I	6 years
CM	Participant D	8 years	IMA	Participant J		2 years
Technical Advisor	Participant E	12 years	IMA	Participant K		6 years
Senior CM	Participant F	4 years	IMA	Participant L		3 years
			IMA	Participant M		1 year
			IMA	Participant N		2 years
			Rehab Manager	Participant O		2 years

Table 4.2

Demographic Features of GP According to Geographical Location and Years of Experience

Individual Interview Participants	Male	Female	Rural	Regional	Metropolitan	Private Practice	Years of Experience
Participant A	√		√			√	15-20 years
Participant B	√		√			√	11-14 years
Participant C	√			√		√	11-14 years
Participant D	√				√	√	15-20 years
Participant E		√			√	√	1-4 years
Participant F		√		√		√	1-4 years

Table 4.3

Demographic Features of Injured Patient Participants According to Geographical Location and Injury Suffered Under Insurance Frameworks

Insurer Group	Workers' Compensation					CTP
Participants	A	B	C	D	E	F
Geographical region	Regional	Metropolitan	Regional	Regional	Metropolitan	Rural
Gender (M/ F)	M	F	M	F	M	M
Occupation	Chef	Support Worker	Motor Mechanic	Disability Worker	Traffic Controller	Retired
Type of physical injury	Shoulder injury/ shoulder pain	Back injury	Dislocated elbow/ pain in wrist	Back injury	Crush injury/back pain	Shattered wrist/rib fractures/nerve pain in legs/soft tissue damage
Psychological disorder	Depression/ anxiety	Depression	Depression/ anxiety	Depression	PTSD	Chronic pain/depression/ anxiety/Post-

						Traumatic Stress Disorder
Time from injury to referral (weeks)	2 years	6 weeks	2 years	2 years	7 months	months

4.3.2. Procedure

GPs were contacted via the NSW Primary Health Network newsletter that is distributed to all geographical regions of NSW (Department of Health, 2015). GPs who wanted to participate contacted the first author and those who met the inclusion criteria were interviewed (Brijnath et al., 2014). The individual semi-structured interviews were conducted over the phone and during consultation hours and GPs were reimbursed $250 for their time. A heterogeneous group was formulated by taking geographical location, gender and experience into consideration (Creswell & Creswell, 2017).

Insurers were recruited via existing professional relationships with the research team. Snowball techniques were used to identify additional insurers working within the WC and CTP insurance arena. Participants were paid $50 at the end of the focus groups and F2F individual interviews. Insurers were purposively sampled by work experience, insurance company, SIRA compensation scheme (i.e., WC and CTP) and role in handling claims. The insurers included ranged from claim handlers (i.e., six case managers) to mid-level managers (i.e., a technical advisor and rehabilitation manager and seven injury management advisors).

Injured people were identified by the research teams' existing professional relationships with psychologists and GPs. Participants were selected to ensure heterogeneity: injured people with musculoskeletal injuries and secondary psychological injuries under WC and CTP living in diverse geographical regions of NSW. Participants were paid $50 at the end of the individual telephone interviews.

4.3.3. Data analysis

Both the focus group and individual interviews were digitally recorded, transcribed by a professional transcription service and initially reviewed by the first author for accuracy (Creswell & Creswell, 2017). Transcripts were analysed using a deductive approach to thematic analysis (Braun & Clarke, 2006). To manage data systematically, the interview transcripts were imported into QSR NVivo 11 (a qualitative data analysis software) for coding and analysis (Bazeley & Jackson, 2013). Analysis started after the first focus group and was carried out simultaneously as the data collection progressed (Tourangeau, Cummings, Cranley, Ferron, & Harvey, 2010). The data collection followed an iterative process until data saturation was reached (Creswell, 2014).

Coding used a prior template of predetermined codes (i.e., categories) derived from the interview questions and the findings of an earlier study that had qualitatively explored psychologists' compliance with EBP within SIRA insurance frameworks (Haider & Dunstan, 2018). The categories included were: 1) barriers to timely referral by GPs of people with a musculoskeletal injury with secondary psychological injury, 2) barriers to insurers'' understanding and timely approval for the provision of psychological treatment and 3) barriers to injured peoples' engagement and participation in psychological interventions. The predetermined codes were entered as nodes in QSR NVivo 11 and the text was coded manually by matching the codes with sections of text selected as representative of the code. Segments from the transcript ranged from a line to several paragraphs and, in some cases, the same text segment was allocated to more than one code (Braun & Clarke, 2006). All interview responses were analysed for barriers affecting accessing and engaging with psychological services from the standpoint of GPs, insurers and injured people. The final themes were established by consensus among the authors. Reflexivity was recognised by the authors—the first author and second author both were psychologists who used their personal and professional experience of working within SIRA

compensation schemes to review and analyse the data (Jootun, McGhee, & Marland, 2009). To improve the trustworthiness of the qualitative data collected, specific quality procedures were used. Table 4.4 provides a short summary of how rigour in data collection, analysis and interpretation was established by using the criteria. The analysis of data was undertaken by using a systematic protocol to avoid making mistakes and overlooking critical factors (Krueger & Casey, 2015). As a result, reporting of each group (i.e., GP's, insurers and injured patient) used a sequential process so that the analysis strategy was clearly understood and documented by each member of the research team (Krueger & Casey, 2015).

Table 4.4

Establishing Trustworthiness of Qualitative Data

Criteria*	Technique
Credibility	Multiple focus groups and individual interviews were conducted to compare participant perspectives across diverse geographical locations (i.e., within regional, rural and metropolitan New South Wales), insurance framework (i.e., Compulsory Third Party and Workers Compensation) and compensation agents.
Truth Value	A detailed interview guide was used.
Confidence in the truth of the data	Participants were encouraged to share their viewpoints and advised that consensus was not the goal.
Reflective of multiple realities	Data was triangulated in the analysis and interpreted (i.e., through the use of both face-to-face focus groups and individual and telephone interviews across various geographical regions with the three stakeholders). The results were also compared with earlier studies (Haider & Dunstan, 2018; Haider et al., in press).
Dependability	Data was analysed by the first author, followed by the second author. Discrepancies between some themes were identified and, after rigorous discussion between the two researchers, consensus was reached, and decisions made regarding primary themes.

Stability of findings over time	The same interview guide was used with focus groups and individual interview participants within each stakeholder group (i.e., the same interview script for focus groups and individual interviews conducted with various compensation agents, individual interviews conducted with GPs in different geographical regions and interviews carried out with patients injured under CTP and WC).
Transferability	Direct quotes were used when presenting findings.
Fittingness	The sample and setting was described for 'potential appliers' to make 'transferability' decisions (Lincoln & Guba, 1985).
Conformability	A detailed audit trail of what was done was recorded through NVivo Pro 11.
Neutrality of the researcher	Memos in NVivo Pro 11 were recorded and notes kept by researcher on processes and procedures undertaken.

Note: *Lincoln and Guba (1985). Source: Adapted from Morrison-Beedy, Côté-Arsenault, and Feinstein (2001, p. 51)

4.4.1. Stakeholder 1: GPs

The two main themes that emerged as reasons for the reported untimely referral by GPs were reticence to refer to a psychologist and a poor fit between the GPs' practice and general clinical guidelines for the management of musculoskeletal injuries (Motor Accidents Authority, 2001; WorkCover SA, 2010).

4.4.1.1. *Reticence to access psychological services*

Some GPs reported being reticent to refer their patients to a psychologist because of the need to equate psychosocial disability with a 'mental health disorder' and the stigma that might follow. As noted by one GP: 'Harm can arise from the labelling and referral process' such that 'the risks can outweigh the benefits'. GPs said they often prefer to address these presentations themselves. For example, GP 1 said: 'I might work on elements of the mental health side without the patient never needing to accept that they've got a mental health label'.

GP 3 noted:

> Most of the guys who are getting work injuries are usually male, 40–50 years of age. If I tell them you need to see a psychologist they'll baulk at that and they're not keen on seeing someone like that, they usually bottle up all their emotions and take it out at home. He might just say 'Oh, give me a medicine, give me an antidepressant'.

Rural GPs noted that a dearth of male psychologists in regional areas can also contribute to actual or delayed referral of injured people who want 'to see a male psychologist'.

4.4.1.2. *Poor fit between GPs' practice and treatment guidelines for the management of musculoskeletal injuries*

Most GPs stated that they do not use 'questionnaires' to screen for 'yellow flags' (i.e., psychosocial risk factors for long-term disability) and were unfamiliar with the Örebro Musculoskeletal Pain Questionnaire (ÖMPQ), that is recommended in treatment guidelines for medical practitioners (Motor Accidents Authority, 2001; WorkCover SA, 2010) as an appropriate screening tool (Nicholas, Linton, Watson, Main, & Decade of the Flags Working Group, 2011). While conscious of the effect that psychosocial factors can have on injured peoples' outcomes, GPs seemed unaware that these risk factors can and should be detected early, at approximately 4-6 weeks post-injury. They reported that they typically consider psychosocial issues much later such as when an injury is taking 'double the time frame' to resolve. If referral is made to a psychologist, it is based on 'intuition' or a 'clear indication' that the 'patient's ways of thinking' are limiting their return to usual functioning (e.g., a lack of motivation to return to work).

GPs also reported that involvement by a psychologist can lengthen the duration of a claim and ultimately an injured person's return to work or functioning. Further, there can be delays in insurer approval for psychology services, which 'can take many weeks or months' and in the case of CTP patients, sometimes may not be approved at all. A few GPs stated that the main

barrier to obtaining approval from insurers for psychological treatment of secondary psychological injuries is 'getting the insurer to say it was related to the first injury'.

4.4.2. Stakeholder 2: Insurers

The WC and CTP insurer data revealed three main themes as reasons behind the delay in the timely approval of treatment for secondary psychological injuries. These themes included lack of trust in the validity of a secondary psychological injury claims and concerns about the implications of acceptance; a poor fit between psychologists' practice and the expectations of the SIRA regulatory framework and lack of knowledge or skills to manage secondary psychological injury claims.

4.4.2.1. *Lack of trust in the validity of a secondary psychological injury claim and concerns about the effect of acceptance*

WC insurers noted that their primary focus is on the 'physical side of the injury' and that it is: 'Second nature for case managers to look at secondary psych as a separate thing and try and ignore it' (Insurer 4).

Their reticence to approve treatment is based on their belief that engagement in psychological treatment is likely to hold up, rather than expedite, the return to work. Insurer 12 noted: 'In our mind, it's like, oh, psychological treatments, or incapacity is going to delay return to work'.

Hence, insurers are reluctant to accept a claim for secondary psychological injury believing it will complicate the claims management process and increase costs.

CTP insurers acknowledged a historical reluctance and 'significant stigma' associated with the acceptance of liability for psychological injury. Insurer 15 noted: 'Insurers want to avoid kind of opening a can of worms around psych, so you look to do what you can to kind of play it down'.

Both WC and CTP insurers stated that they do not 'intentionally delay' referral to a psychologist, they but need to be convinced that psychological intervention is required. Therefore, they need to receive 'convincing information' to 'understand the truthfulness relating to the claim'. Insurers seemed to intuitively recognise that there would be a psychological effect from injury but were uncomfortable calling it a 'secondary psychological injury'. Unlike a physical injury, the absence of injury visibility made acceptance of secondary psychological injuries complex.

> As we first said, first response, freak out about liability … almost every physical claim is going to have an element of secondary … small, or not, there will be a component of it. And that's something that I think, we, as insurers, or scheme managers, you don't like that, you don't want to hear that. (Insurer 4).

Both CTP and WC insurers reported that their hesitation in accepting claims for secondary psychological injuries is often validated by the actions of some GPs who also appear reluctant to refer injured people to a psychologist:

> Early identification through the GP is a key component' in order 'to get the referral started [but] I have had some GPs discourage the worker from going down the insurance path with secondary psych and try and get them assistance on the side outside the claim. (Insurer 1).

Lastly, CTP insurers reported that they believed when a solicitor became involved the injured patient's motivation regarding recovery and health outcomes became 'driven by purely financial' reasons that further contributes to be an additional source of scepticism for them regarding the validity of claims that have a secondary psychological component.

4.4.2.2. *A poor fit between psychologists' practice and the expectations of the NSW SIRA regulatory framework*

CTP insurers reported difficulties in approving some psychologists' requests for treatment due to the psychologists' lack of compliance with NSW SIRA treatment planning and reporting requirements. Specifically, psychologists' failure to explain the evidence-based nature of the treatment they would be providing or a lack of understanding that, in making a CTP claim, the injured person has provided written consent to the exchange of information between the insurer and health service providers.

> So, when after 20 sessions or so there's no real progress, that's when we would say well I haven't really been able to determine how this is helping. We're trying to make decisions based on objective and evidence-based information. The easiest way for us to do that is for the provider to give us that information [but psychologists are] more reluctant than other disciplines to do so (Insurer 8).

WC insurers reported a poor fit between the information they receive, their guidelines for approving treatment and their capacity to approve referrals. WC insurers said that determining liability for a secondary psychological injury is challenging because they are required to 'assess liability based on the diagnosis' and the diagnosis made by some GPs is sometimes 'generic' and 'not a specific DSM-5 diagnosis'. They explained that this issue increases the amount of clarification required by the GP and may require additional medico legal investigation that can create delays (extending over weeks) in the commencement of psychological treatment for the injured person. Some WC insurer case managers noted that even if they do support a referral to a psychologist, a timely referral can be hindered by a lack of access to psychologists, particularly in rural areas where there can be a 'six-month waiting list'.

4.4.2.3. *Lack of knowledge or skills to manage secondary psychological injury claims*

> Insurers reported that they lack knowledge and understanding of the management of secondary psychological injuries and, in the absence of information guidelines, they can struggle to formulate an effective response. One WC insurer (Insurer 3) stated: 'There's no real guidelines from iCare or SIRA regarding how to deal with secondary injuries. The most that I ever remember doing, anything to do with secondary psych, is different to our perspective'.

CTP insurers stated that managing secondary psychological injuries is challenging for them due to the uncertainty around predicting treatment duration and recovery timeframes. Insurer 9, a CTP insurer, reported: 'Psychological injuries are a bit of a scary territory for most claims analysts because they don't understand the injuries for the most part or they understand it at kind of Google knowledge'.

4.4.3. Stakeholder 3: Injured people

Injured people who had received psychological treatment under WC and CTP reported it to be 'invaluable' to their recovery and wished it had commenced much earlier. Issues affecting their engagement and participation in psychological intervention for secondary psychological injuries included a poor fit between the SIRA treatment guidelines for psychologists and their experiences with the insurers' and some psychologists' practice.

4.4.3.1. *Poor fit between the treatment guidelines and injured people's experience of insurers' and psychologists' practice*

Injured people perceived the role of the insurer as adversarial and a barrier to recovery. For instance, most encountered significant delays in gaining approval for psychological intervention. Some worried that engagement in functional restoration activities would be subject to surveillance, while others feared that disclosures to the psychologist would be 'reported back' to

the insurer with unknown negative consequences such as denial of claim liability and subsequent discontinuation of treatment or wages. Consequently, these fears prevented some injured people from engaging in the activities required to achieve positive therapeutic outcomes.

I love gardening, it's something that I've always loved doing. I had a friend of mine come up and set up a little garden at the back of my place and it's done me the world of good but I'm so worried and I've told my psychologist this, that … I'm worried that I'm [under surveillance] by the insurer and if I, you know, show that I'm doing something with my right arm, they're going to cancel my [claim] and it's another pressure that … you know, there's no need for it. (Injured Person 2)

One injured person described a delay in the approval process as follows:

> Oh, mentally it just destroyed me. The wait, the unknowing. Knowing that it should be happening and [I] can't figure out why it's not happening. Stress levels were horrible. My lack of confidence in the whole system was non-existent. And it is very, very heartbreaking. (Injured Person 1)

The response of one injured person reflected a poor fit between a psychologist's application of the SIRA procedures and the injured person's expectations of treatment.

> If they could say two hours to see the psychologist and we spent one hour doing the paperwork and then the next hour I could get something good out of it. (Injured Person 3)

> With the psychology side of it I think I'm very happy with what I've received, I am just sorry it never happened way earlier. I'm sure it would have lifted my confidence and helped me through a lot earlier. That's the only drawback that I can see with the whole procedure. (Injured Person 1)

4.5. Discussion

The aim of the current study was to explore barriers that included delayed referral and approval of psychological treatment for musculoskeletal injuries from the standpoint of GPs and insurers and poor engagement in treatment from the standpoint of injured people. The findings revealed that difficulties largely arise due to differences in how stakeholders conceptualise and manage illness and disability within the NSW compensation system.

Two key models are used to understand the presentation of human illness: the biomedical model and the biopsychosocial model (Dunstan & Covic, 2006). The biomedical model purports that illness is caused by a specific recognisable physical pathology (Bernard & Krupat, 1994) and that symptoms such as pain, disability and psychological distress should be proportional to that pathology and remit when it is remedied (Waddell, 1992). In contrast, the biopsychosocial model (Engel, 1977) assumes that illness, pain and disability are the products of the interaction between psychological and physical elements that together sit against a background of social and environmental influences (Bernard & Krupat, 1994). The treatment guidelines contained in the *Clinical Framework* are based on the biopsychosocial model (Transport Accident Commission & WorkSafe Victoria, 2012). The biopsychosocial model conceptualises functional disability not as a 'health problem', but as 'impairment, activity limitation, or participation restriction' shaped by interactions between health conditions and contextual factors (World Health Organization, 2017). When GPs and insurers are required to identify discrete diagnoses and the fulfilment of a diagnostic criteria, the biomedical model is being applied and this does not fit with a biopsychosocial approach. We discuss the impactions of this situation with reference to the findings of this study.

The issue of untimely referral by GPs was consistent with reports in the existing literature. For instance, a Victorian study investigating the management of claims for primary

psychological injury found the process to be fraught with uncertainty around assessment, diagnosis and referral (Brijnath et al., 2014; Kilgour, Kosny, McKenzie, & Collie, 2015b). Similarly, within the NSW compensation schemes GPs have been shown to lack decisive judgement and decision-making in the management of secondary psychological injuries such as the need to screen for yellow flags (i.e., psychosocial risk factors) at four to six weeks post-injury to capture 'the golden hour' for effective psychosocial intervention (i.e., the subacute phase 4-12 weeks post-injury) (Heitz et al., 2009; Laisné, Lecomte, & Corbière, 2012). The study findings also showed that GPs' delay in referral for psychological treatment was due to a lack of systematic screening for psychopathology and a lack of familiarity in using appropriate psychometric tools for assessing yellow flags. Combined, these findings reveal that GPs are caught in a bind when they identify psychosocial factors that affect injured patients' recovery (as understood in a biopsychosocial conceptualisation), but (for good reason) do not consider it appropriate to 'label' their patient as having a 'mental disorder' (as required by the medical model familiar to them and applied by insurers).

Delays in timely approval of treatment by insurers was also found to stem from insurers viewing secondary psychological injuries through the lens of the biomedical model that formed the basis of their administration. This situation was found to be further complicated by deficits in insurers' skills and knowledge of the management of secondary psychological injury and psychologists' lack of compliance with treatment planning and reporting requirements. The insurers justified their actions by citing GPs' behaviour as the driver of their own behaviour that, as mentioned above, was based on a desire to do 'no harm' and was perceived as a potential outcome of applying the biomedical model. These findings are consistent with previous research that shows that insurers typically have insufficient education and skills to effectively address mental health claims and psychologists may have insufficient knowledge and skills to fully

comply with recommended protocols and procedures (Brijnath et al., 2014; Haider & Dunstan, 2018; Haider et al., in press). In addition, insurers also viewed the management of musculoskeletal injuries, particularly those resulting from motor vehicle injuries, from the standpoint of the 'insurance model' (i.e., the presence of secondary gains explains disability) with the knock-on effect of their inaction making it difficult for psychologists to adopt a biopsychosocial intervention framework (Schultz & Gatchel, 2006). Existing research has found some validity for this belief, as poor recovery for individuals seeking financial compensation is indicated (Murgatroyd, Casey, Cameron, & Harris, 2015). However, this in turn may result due to the stress associated with the claim process and the traits and situation of the individuals making the claim (Murgatroyd, Harris, Tran, & Cameron, 2016). Overall, the findings showed that delayed referral was due to insurers requiring valid diagnostic support to be convinced that psychological treatment was required; and, the failure by GPs to effectively screen for yellow flags. As a result, when referral is delayed, it can be difficult for psychologists to achieve optimal outcomes with treatment-resistant client presentations, who may then require management not covered by the treatment guidelines. In addition, the role of both the workplace and the employer which was not investigated in the study can also significantly impact injury management within both the compensable and non-compensable contexts. Studies have found that successful implementation of guideline-based intervention is impacted by unforeseen organizational obstacles (i.e., policies, procedures and individual approaches) (McCluskey, Burton, & Main, 2006). Nonetheless, the findings showed that insurers required valid diagnostic support to be convinced that psychological treatment was required and GPs' failure in effectively screening for yellow flags delayed referral. As a result of the delay in accessing psychological services, it can become difficult for psychologists to achieve optimal outcomes with treatment-resistant client presentations who may require management not covered by the treatment guidelines.

The findings of this study also highlighted how the claims management standpoint of insurers, driven by a biomedical model that requires psychological distress to be equated with a mental disorder, can be perceived as adversarial. Questioning of the legitimacy of the injured person's psychosomatic symptoms can become a barrier to them accessing early intervention and active rehabilitation. These findings are consistent with other studies showing that interactions between insurers and injured people can create a sense of fear, anger and insecurity; particularly when covert surveillance is used to monitor the person's participation in activities outside of their functional capacity (Kilgour et al., 2015a). The result is that some injured people withdraw from activities that could facilitate their recovery due to concerns about losing access to financial and treatment entitlements (Kilgour et al., 2015b). When injured people adopt this standpoint, psychologists' use of biopsychosocial intervention guidelines becomes challenging. Furthermore, the coordinated approach among all stakeholders required by the biopsychosocial guidelines can be difficult to achieve in the context of "pathogenic" interactions between injured people and insurers (Kilgour et al., 2015b; Schultz & Gatchel, 2006, p. 455). Once again, the basis of this problem appears to lie in the 'poor fit' between the expectations and behaviours of stakeholders created by the different theoretical models used in the compensation systems to understand illness and disability.

Strengths and limitations of this study

This study is the first study to investigate the barriers that affect key stakeholders accessing psychological services for musculoskeletal injuries within the NSW compensation schemes. The state of NSW was selected as previous research findings had indicated psychologists' compliance with EBP guidelines was variable and barriers to compliance were found to be influenced by stakeholders' actions within this state's compensation schemes (Haider & Dunstan, 2018; Haider et al., in press). It is not known if similar findings would emerge in other

jurisdictions since this is a qualitative study and results cannot be generalised. Additional limitations include the small size and the risk of selection bias. Nevertheless, because of the qualitative nature of the study a better understanding of the barriers impacting psychologist practice from the GP's, insurers and injured patient perspective was obtained. The findings can be used to generate hypotheses to further improve the adherence of EBP treatment guidelines and management of musculoskeletal injuries within the SIRA compensation schemes.

4.6. Conclusion

The treatment principles included in the *Clinical Framework for the Delivery of Health Services* promote a biopsychosocial approach to injury management that proposes early intervention and collaboration amongst all stakeholders. The findings of this study have revealed that the concurrent use of two different models of the conceptualisation of illness and disability, within the compensation schemes of NSW, reduces psychologists' capacity to effectively treat injured people and leads to poor outcomes. Specifically, delays in referral and approval for treatment, which impair the timely application of a biopsychosocial approach, are driven by the application of the biomedical model and its need to establish a 'diagnosis' for disability caused by psychosocial distress. A shared understanding of the standpoints of the NSW compensation systems' stakeholders has emerged as a critical first step in grasping the effect each has on psychologists' practice. An education programme on the management of persisting disability following musculoskeletal injury within the NSW compensation scheme– one that focuses on functional restoration through early psychological intervention - is urgently warranted for insurers and GPs. Future research should explore ways in which employers, policy makers, key stakeholders and researchers can collaborate to promote successful adoption of EBP treatment guidelines by psychologists, health practitioners and administrators working within both the NSW WC and CTP compensation schemes.

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4.6.1.1. *Declaration of interest*

The authors have no conflicts of interest to declare.

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Study 3: Statement of Originality

We, the PhD candidate and the candidate's Principal Supervisor, certify that the following text, figures and diagrams are the candidate's original work.

Type of Work	Page Number
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13 June 2018

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Study 3: Statement of Authors' Contribution

We, the PhD candidate and the candidate's Principal Supervisor, certify that all co-authors have consented to their work being included in the thesis and they have accepted the candidate's contribution as indicated in the *Statement of Originality*.

	Author's Name	**% of Contribution**
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Research Progression to Study 4

In Study 1, we found that psychologists' application of EBP treatment guidelines within the SIRA insurance schemes was suboptimal. Study 2 and 3 identified the barriers to psychologists' adherence with treatment guidelines. In particular, Study 2's findings suggested that key barriers affecting psychologists' adherence with EBP included lack of trust in the validity of the guidelines and a knowledge and skills deficit. Consequently, identifying barriers in isolation is not adequate to encourage EBP by psychologists working within SIRA—implementing strategies that can remove barriers and facilitate the use of EBP by psychologists is additionally required (Sadeghi-Bazargani, Tabrizi, & Azami-Aghdash, 2014). The successful adoption of EBP requires effectively using strategies that facilitate promotion of change in practice patterns within specific settings (Richards & Hallberg, 2015). Therefore, identification of strategies that can facilitate compliance with EBP by psychologists for psychologists will have the potential of improving health outcomes of claimants and reduce the burden of claims costs for the Australian economy (National Health and Medical Research Council, 1999; Pagoto et al., 2007). Taking this into consideration, to overcome identified barriers and improve psychologist practice Study 4 elicited recommendations from field experts and examined their feasibility by psychologists working in the industry.

Chapter 5. Improving Psychologists' Adherence to EBP Guidelines for Treating Musculoskeletal Injuries: Feasibility Evaluation

5.1. Abstract

Objectives: Australian personal injury compensation schemes have produced EBP treatment guidelines for the management of functional disability following musculoskeletal injury. Psychologists' adherence with these guidelines is limited because of a lack of trust in the validity of the guidelines and a lack of knowledge, as well as skill deficits. The aim of this study was to elicit recommendations from field experts to overcome these barriers to adherence and to determine the feasibility of their application by psychologists.

Methods: A mixed methods design was used, consisting of a focus group and individual interviews (n = 8) of field experts, followed by an online survey of psychologists (n = 150). The qualitative data were imported into QSR NVivo software and analysed using thematic analysis. The quantitative survey data were analysed using descriptive statistics in SPSS and the narrative survey data were subjected to content analysis.

Results: The recommendations included: 1) mandatory training and continuing professional development in EBP for the management of functional disability following musculoskeletal injury, 2) use of independent consultants for expert advice, 3) completion of outcome measures prior to the first session, 4) completion of a treatment plan in-session with the injured person and 5) completion of outcome measures in the eighth and final session.

Conclusion: Psychologists' use of EBP in the personal injury arena may be improved through targeted training to increase knowledge and skills, through situation-based learning with references to experts and by practical strategies to reduce time and cost burdens and to enhance patient engagement.

Keywords: EBP, EBP treatment guidelines, NSW compensation schemes, musculoskeletal injuries, outcome measures, continuing professional development.

5.2. What is Known on This Topic

1. The use of EBP treatment guidelines in health care settings has been found to reduce morbidity of chronic conditions, decrease health care costs and improve the functional status of patients.
2. Positive patient outcomes have been observed within the NSW personal injury compensation schemes when psychologists' adherence with EBP treatment guidelines is high.
3. Individual practitioner variables can pose as barriers and negatively affect psychologists' adherence with EBP treatment guidelines when providing services under the NSW personal injury compensation schemes.

5.3. What This Paper Adds

1. The study is the first to propose and explore the feasibility of recommendations for overcoming barriers to psychologists' adherence with EBP treatment guidelines for the management of functional disability following compensable musculoskeletal injury within the NSW personal injury compensation schemes.
2. The findings showed that psychologists' use of EBP in the personal injury arena may be improved through targeted training to increase knowledge and skills and the use of practical strategies to reduce time and cost burden and enhance patient engagement.
3. This study's results provide support for the proposal by the Psychology Board of Australia that training for general registration should be increased to include a postgraduate year that focuses on competencies for practice.

5.4. Introduction

In Australia, the predominant type of injuries lodged under the personal injury insurance schemes (i.e., WC insurance and CTP motor vehicle accident insurance) are musculoskeletal in nature (NSW Government, 2014; SIRA, 2016). While pain arising from musculoskeletal injuries is common, some injured people develop chronic pain and long-term disability (Gatchel & Schultz, 2014). Empirical research indicates that early assessment of psychosocial risk factors for persisting problems, followed by targeted psychological interventions, are critical to reducing the burden of disability arising from musculoskeletal conditions (Laisné, Lecomte, & Corbière, 2012; Schultz & Gatchel, 2006). Consequently, the role of a psychologist in the clinical management of musculoskeletal injuries is in high demand by administrators and payers within the personal injury insurance schemes and is accompanied by a requirement for 'rigorous practice standards and professional accountability' (Frueh, Ford, Elhai, & Grubaugh, 2012, p. 3).

EBP forms an integral part of clinical standards and is characterised as the integration of best available research evidence, practitioner expertise and client values (Forsner, Hansson, Brommels, Wistedt, & Forsell, 2010; Pagoto et al., 2007, p. 696). Treatment guidelines are used as tools to promote EBP and are defined as 'systematically developed statements aimed at assisting practitioners in making appropriate health care decisions about their patients' (Forsner et al., 2010, p. 147). The use of EBP treatment guidelines in health care settings has been found to reduce morbidity from chronic conditions, decrease health care costs and improve the functional status of patients (Feuerstein, Hartzell, Rogers, & Marcus, 2006). Additionally, the role of workplace-based RTW interventions have also been found to reduce work disability duration and associated costs making the role of employers alongside healthcare providers also influential in the injury management of people with musculoskeletal injuries within the compensable context (Franche et al., 2005). NSW SIRA that manages the regulatory functions

of both WC and CTP insurance has provided EBP treatment guidelines for health care providers who work within these insurance schemes. These guidelines are outlined in the *Clinical Framework for the Delivery of Health Services* (Transport Accident Commission & WorkSafe Victoria, 2012). The implementation of the EBP treatment guidelines by SIRA was an initiative aimed at improving psychologists' practise in treating musculoskeletal injuries, reducing claims costs and improving the outcomes of injured people (Transport Accident Commission & WorkSafe Victoria, 2012).

The findings of a recent study showed that when psychologists' adherence with the treatment principles contained in the *Clinical Framework* was high, improved injured person outcomes and reduced claim costs was observed for musculoskeletal injuries (Haider, Dunstan & Bhullar, 2018). This study also found that poor injured person outcomes were observed when psychologist's adherence to the treatment principles was low (Haider, Dunstan & Bhullar, 2018). Overall, the study found that psychologists' adherence with the treatment principles contained in the *Clinical Framework* was suboptimal (Haider, Dunstan & Bhullar, 2018). The finding is consistent with research in the mental health field which has found that clinicians lack of trust in EBP stems from their belief that clinical guidelines support the interests of administrators and not patients (Corrigan, McCracken, & Blaser, 2003; Milne, Gorenski, Westerman, Leek, & Keegan, 2000).

Moreover, for psychologists to successfully implement EBP treatment guidelines they need competency which refers to both knowledge combined with skills used across different domains (i.e., assessment, diagnosis and intervention) for effective performance (McHugh & Barlow, 2010; Stevens, Hyde, Knight, Shires, & Alexander, 2017). The three-dimensional competency model proposed by Rodolfa et al. (2005) includes a conceptual framework for psychologists and regulators. The model advocates that development of foundational competencies includes 1)

reflective practice/self-assessment, 2) scientific knowledge/methods, 3) relationships, 4) ethical-legal standards/policy 5) individual and 6) interdisciplinary systems; whereas functional competencies include 1) assessment -diagnosis/case-conceptualisatiob, 2) intervention, 3) consultation, 4) research/evaluation, 5) supervision and 6) administration/management. With reference to the *Clinical Framework* the competency model for psychologists is a means of assessing their own domains of competency with the treatment principles contained within the framework (Stevens, Hyde, Knight, Shires, & Alexander, 2017, p.175). Given the potential positive effect on the outcomes for injured people, recommendations to facilitate adoption of the guidelines and increase psychologist's competency with the *Clinical Framework* are warranted (Sadeghi-Bazargani, Tabrizi, & Azami-Aghdash, 2014).

An understanding and exploration of the factors that facilitate the use of EBP guidelines is a first step; however, for recommendations to be effective in bridging the gap between implementation and adoption their feasibility in routine clinical settings must be determined (Pagoto et al., 2007; van Oostrom, van Mechelen, Terluin, de Vet, & Anema, 2009). Hence, an examination of the feasibility of recommendations by the wider community of psychologists working within SIRA will help to increase both their participation and their engagement in the change process (McHugh & Barlow, 2010; National Health and Medical Research Council, 1999).

Feasibility has been described as having three dimensions: applicability, acceptability and practicality (Stedman, Yellowlees, Mellsop, Clarke, & Drake, 1997). Within the NSW compensation schemes, applicability refers to a recommendation to address issues that are important to an injured person and their psychologist. Acceptability implies that a recommendation is suitable and a 'good fit' for use by psychologists, while practicality refers to a recommendation having a low time and cost burden (Stedman et al., 1997; Trauer, 2010). Thus,

the identification of recommendations by experts in the field and an exploration of their feasibility could enable the adoption of strategies that improve health outcomes for injured people and reduce the burden of claims costs on the Australian economy (National Health and Medical Research Council, 1999; Pagoto et al., 2007; Slade, Thornicroft, & Glover, 1999). Therefore, this study aimed to:

1. elicit recommendations for overcoming identified barriers to psychologists' adherence with EBP treatment guidelines from expert psychologists
2. determine the feasibility (i.e., applicability, acceptability and practicality) of the proposed recommendations for psychologists treating injured people with musculoskeletal injuries within SIRA compensation schemes.

5.5. Method

5.5.1. Design

A mixed methods design was used, consisting of a focus group and individual interviews with psychologists with expertise in the field (Phase 1). This was followed by an online survey of psychologists working within the SIRA compensation schemes (Phase 2). The study was conducted from May 2017 to November of 2017 with the approval of the University of New England Human Resources Ethics Committee (Approval Number: HE16-095 and HE17-191).

5.5.2. Phase 1

5.5.2.1. *Participants and sampling*

The participants included eight psychologists (i.e., five females and three males) with an average of 14 years of experience working in private practice across rural, regional and metropolitan NSW. The participants were recruited through existing professional relationships of the research team and via snowball techniques. An invitation to participate was emailed to 15 potential participants and those who consented and met the following selection criteria were

included in Phase 1: (1) general or clinical psychologists working in private practice and practicing within rural, regional and metropolitan NSW and (2) psychologists with ≥ 5 years of experience in treating injured people with musculoskeletal injuries under SIRA compensation schemes.

5.5.2.2. *Procedure*

The data were collected from an online focus group comprised of six participants set up through ZOOM video conferencing, one individual F2F and one telephone interview. The online focus group and telephone interview enabled the recruitment of participants from regional and rural NSW and helped in overcoming constraints associated with cost, timing, location and travel (Campbell et al., 2001; Reid & Reid, 2005). The participants were required to provide written informed consent and were paid $180, an amount reflective of a psychologists' minimum hourly rate paid under SIRA compensation schemes. Open-ended discussion questions were drafted by the first author and reviewed by the project leader and co-investigator (Krueger & Casey, 2014). These questions were presented to participants in a semi-structured format (See Appendix C).

5.5.2.3. *Data analysis*

The focus group and the individual interviews were digitally recorded and transcribed verbatim using a professional transcription service (Pettigrew, Donovan, Pescud, Boldy, & Newton, 2010). The transcripts were analysed using a deductive approach to thematic analysis and imported into QSR NVivo 11 (a qualitative data analysis software for coding and analysis) (Braun & Clarke, 2006).

The coding used a prior template and predetermined categories from the findings of an earlier study that found barriers to psychologists' adherence with the five EBP principles contained in the *Clinical framework* (Haider & Dunstan, 2017). The categories included recommendations aimed at increasing adherence with: 1) measuring and demonstrating the

effectiveness of treatment, 2) adopting a biopsychosocial approach, 3) empowering the injured person to manage their injury, 4) implementing goals focused on optimising function, participation and return to work and 5) basing treatment on the best available research evidence (Transport Accident Commission & WorkSafe Victoria, 2012). The predetermined codes were entered as nodes into QSR NVivo 11 and the text in the transcripts was coded by matching the codes with sections of text selected as representative of the code (Fereday & Muir-Cochrane, 2006; Reichstadt, Depp, Palinkas, & Jeste, 2007). The interview responses were analysed for recommendations aimed at increasing psychologists' adherence with each EBP treatment principle.

Rigour in the data collection, analysis and interpretation was established by adhering to Lincoln and Guba's (1985) criteria involving 'credibility' (i.e., focus groups and individual interviews were conducted across diverse geographical locations), 'dependability' (i.e., data analysis was exhaustively discussed between the first and second authors to obtain consensus on themes), 'transferability' (i.e., direct quotes were used) and 'conformability' (i.e., audit trail recorded in NVivo Pro 11) (Morrison-Beedy, Côté-Arsenault, & Feinstein, 2001; Slade, Molloy, & Keating, 2009).

5.5.3. Phase 2

5.5.3.1. *Participants and sampling*

An invitation and an accompanying survey for Phase 2 of the present study were distributed to registered psychologists listed on the SIRA website through a personal email sent via Qualtrics (an online survey tool). A total of 1,633 invitations were sent, of which 182 participants began the survey and 150 participants completed all the survey items (9.1% completion rate). Of the 150 respondents, 43.56% practised in metropolitan NSW, 30.67% in

rural NSW and 25.80% in regional NSW. The proportion of psychologists who completed the narrative-style comments for each recommendation is shown in Table 5.1.

5.5.3.2. *Procedure*

Phase 2 involved the use of an online survey to gather agreement or disagreement, with five recommendations proposed by the expert psychologist participants in Phase 1. The survey participants were asked to rate their level of agreement or disagreement with the feasibility (i.e., applicability, acceptability and practicality) of each recommendation on a Likert-style scale (1 = strongly disagree to 5 = strongly agree). For recommendation 3, a Likert-style scale was expanded (1 = strongly disagree to 7 = strongly agree) to provide participants with a more extensive range of options because of the underlying ethical component (i.e., outcome measures being sent prior to having obtained informed consent). The participants were sent two reminders to increase the response rates. Each participant was also requested to provide the geographical location (i.e., rural, regional and metropolitan) of their place of practice. To enhance credibility, the survey was not distributed to participants involved in Phase 1 of the study. An additional 'comments' section was included in the survey and consisted of narrative-style open-ended prompts for each proposed recommendation (i.e., to identify reasons underlying psychologists lack of endorsement of the proposed recommendation).

5.5.3.3. *Data analysis*

To determine the percentage of psychologists endorsing the recommendations on each dimension of feasibility (i.e., applicability, acceptability and practicality), the quantitative survey data were imported from Qualtrics and analysed using descriptive statistics in SPSS Statistics for Windows Version 24.0. The narrative data were imported and coded using NVivo 11 and subjected to content analysis (i.e., using deductive category application) to understand psychologists' low feasibility rating by identifying themes and patterns. A coding template was

developed, and the main categories included the five proposed recommendations. Subcategories included disagreement with dimensions of feasibility (i.e., low applicability, low acceptability and low practicality). The frequency of references showing lack of endorsement with the feasibility of each recommendation were coded and counted (West, Buettner, Stewart, Foster, & Usher, 2012). The emergent themes were discussed between members of the research team and final themes were established after agreement was reached. Rigour was enhanced by using a mixed methods research design and to inform and strengthen understanding of the study findings (Creswell, 2014).

5.6. Results

5.6.1. Phase 1. Qualitative component

Thematic analysis of participants' responses produced five recommendations that were aimed at: increasing psychologist adherence with the five treatment guidelines contained in the *Clinical Framework*; increasing trust in the validity of the treatment guidelines and improving psychologists' knowledge and skills deficits in applying the treatment guidelines.

5.6.2. Recommendation 1: Mandatory training and annual continuing professional development

Expert psychologists proposed that 'clinical experience, qualification, frequent training and maintaining CPD [continuing professional development]' would assist in addressing clinicians' knowledge and skills gaps, in promoting the understanding of the application of EBP in this context and in keeping abreast of current protocols and changes within the SIRA compensation schemes. This outcome would also provide a platform for discussion and improved management of complex cases and be a means of meeting psychologists' active learning and CPD requirements. A few expert psychologists suggested that they would recommend workshop training, because of its focus on enquiry and situation-based learning and acquisition of

competency. As noted by one psychologist: 'Psychologists should undertake initial mandatory training plus annual active CPD in injury management to acquire and maintain accreditation for practice within SIRA compensation schemes'.

5.6.3. Recommendation 2: SIRA independent consultants should be used as a 'touch point' for expert advice

The expert psychologists noted that an independent consultant can be a useful information resource and a means of meeting a psychologist's CPD supervision requirements. A few experts recommended that an independent consultant should be available as a 'touch point' in assisting other colleagues in addressing knowledge and skills gaps and support improved management of complex cases. As noted by one psychologist:

> Well, I've had it occur twice and I've found it valuable. Therefore, just probably because at the point of having an independent consultant I, myself, was getting frustrated with not making much progress. It was nice to have, sort of, supervision or a second opinion on some other ideas or to hear myself think through my strategy.

5.6.4. Recommendation 3: Outcome measures should be completed prior to the first session

Expert psychologists explained that the completion of the outcome measurement tools before the first session provides a time-efficient means of capturing baseline measures of functional status and levels of psychosocial risk factors for long-term disability. In addition, this procedure allows for early completion of the required treatment plan and effective utilisation of time with the injured person in the first session. As noted by one expert psychologist participant:

'The DASS-21[1] and the ÖMPSQ[2] (10-item short version) should be sent to the client prior to the first session via mail or electronically through a mobile phone app so that scores are available in the first session'.

5.6.5. Recommendation 4: The treatment plan should be completed with the injured person in-session

The expert psychologists recommended that the insurer-required treatment plan (i.e., the AHRR form) should be completed with the injured person in-session. Case conferencing with relevant stakeholders should also occur at this time. These strategies allow the psychologist to receive the maximum payment for developing and completing the treatment and support engagement and empowerment of the injured person. As noted by one expert psychologist with reference to their practice: 'Treatment plans are always completed with the client there, so, in a sense, I actually do get paid to do it and obviously I finish it afterwards but mostly I do it with the client there'. Another expert psychologist indicated that collaboratively completing the AHRR in-session with the injured person has multiple benefits: 'It supports SIRA's injury management expectations, demonstrates a biopsychosocial approach and empowers self-management. The strategy will also ensure that the AHRR is ready for submission after the third session'.

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[1] The Depression, Anxiety, Stress Scale -21 (DASS-21) is a 21-item self-report questionnaire designed to measure symptoms of depression, anxiety and stress.

[2] The Orebro Musculoskeletal Pain Screening Questionnaire (ÖMPSQ) is a screening tool with items covering social, psychological and biological variables impacting the recovery from musculoskeletal conditions.

5.6.6. Recommendation 5: Outcome measures should be completed in the eighth and final session

Expert psychologists recommended that follow-up usage of outcome measurement tools should occur at the eighth or final session of treatment (i.e., SIRA approves treatment in blocks of eight sessions). Psychologists indicated that by measuring outcomes every eight sessions, the data are available on functional status (i.e., return to work or usual activities) and these data can assist in the completion of a progress or final report. As noted by one psychologist: 'Readminister the DASS-21 and the ÖMPQ the 10-item short version in the eighth and final sessions using a pencil and paper or electronically'.

5.6.7. Phase 2. Mixed methods component

Descriptive statistics: Table 5.1 shows the means and standard deviations of the participant responses to the five proposed recommendations. On a scale of 1 to 5, 3 was the midpoint for recommendations 1, 2, 4 and 5. For Recommendation 3, the scale was 1 to 7, and 4 was the midpoint. For Recommendation 1, on average, psychologists reported being above the midpoint for applicability, just above the midpoint for acceptability and below the midpoint for practicality. For Recommendation 2, on average, psychologists reported being above the midpoint for applicability and acceptability and just above the midpoint for practicality. For Recommendation 3, on average, psychologists reported being above the midpoint for applicability, acceptability and practicality. For Recommendation 4, on average, psychologists reported being just above the midpoint for applicability, acceptability and practicality. For Recommendation 5, on average, psychologists reported being above the midpoint for applicability, acceptability and practicality.

Table 5.1

Means and Standard Deviations of Participant Responses on the Dimensions of Feasibility and Response Rates

Feasibility	Applicable		Acceptable		Practical		Response Rate
	Mean	SD	Mean	SD	Mean	SD	Narrative-Style Comments
Recommendation 1 (1–5)	4.04	1.10	3.84	1.12	2.92	1.17	65.0%
Recommendation 2 (1–5)	4.24	.87	4.17	0.91	3.72	.98	56.0%
Recommendation 3 (1–7)	4.87	2.18	5.00	2.10	5.26	2.03	69.0%
Recommendation 4 (1–5)	3.99	1.20	3.76	1.15	3.34	1.18	58.0%
Recommendation 5 (1–5)	4.24	.89	4.29	.84	4.00	.99	56.7%

Table 5.2 presents the percentage of psychologists endorsing the recommendation, that is, those who 'strongly agreed' or 'agreed' on each dimension of feasibility (i.e., applicability, acceptability and practicality) for all the recommendations.

Table 5.2

Means and Standard Deviations of Participant Responses on the Dimensions of Feasibility

	Applicable %	Acceptable %	Practical %
Recommendation 1	65.9%	58.3%	27.4%
Recommendation 2	70.3%	68.1%	53.3%
Recommendation 3	53.2%	53.8%	55.4%
Recommendation 4	64.3%	58.8%	40.7%
Recommendation 5	67.6%	72.0%	59.3%

Table 5.3 shows the frequency of references (i.e., psychologists' narrative comments) that reflected the lack of endorsement for the recommendations on the three dimensions of feasibility.

Table 5.3

Frequency of Psychologists' Lack of Endorsement of the Applicability, Acceptability and Practicality of the Five Recommendations

Category	Subcategory	Theme	Frequency(count)
Recommendation 1	Low practicality	Burden of cost	20
		Burden of time	19
		Training inaccessible	13
		Total	**52**
Recommendation 2	Low practicality	Burden of time and cost for independent consultants	14
		Total	**14**
Recommendation 3	Low applicability	Perceived low efficacy for clinical practice	17
	Low acceptability	Perceived low efficacy for clinical practice	11
	Low practicality	Burden of cost	8
		Total	**36**
Recommendation 4	Low applicability	Perceived low efficacy for clinical practice	14
	Low acceptability	Perceived low efficacy for clinical practice	17
	Low practicality	Burden of time	9
		Total	**40**
Recommendation 5	Low applicability	Perceived low efficacy for clinical practice	13
	Low acceptability	Perceived low efficacy for clinical practice	10
	Low practicality	Burden of time	5
		Total	**28**

The analysis of the narrative comments provided by psychologists revealed two key reasons for not endorsing some recommendations: time and cost burdens and perceived low efficacy for clinical practice. The findings are discussed below.

5.6.8. Theme 1: Time and cost burden

Psychologists who did not endorse Recommendation 1 noted that annual training to maintain accreditation would be costly and the return on investment would be low for those who

only see one or two WC or CTP motor vehicle accident clients a year, because overall 'remuneration for this work is low' (note: payments include initial consultation $224.30 and standard consultation $189.20). A few psychologists indicated that training would pose an additional time and cost pressure for those working in private practice, since they 'lose income as well as have to pay for the costs of training'. Psychologists who did not endorse the recommendation indicated that training is 'metro-based' and; therefore, difficult for rural practitioners: 'The problem that arises is access for rural practitioners to appropriate PD [professional development], unless it is through linking in via video conference, however, then most do not have the NBN [National Broadband Network] or optical fibre connections'.

Psychologists who did not endorse Recommendation 2 noted that the reason for the low practicality was, 'there are only four independent consultants who run their own practices and are often not available at short notice'. A few other psychologists also noted that the recommendation would only be practical, 'if independent consultants are adequately compensated for this or this is allowed for in their job description'. Some psychologists also indicated: 'Time could be an issue, as it is always an issue trying to coordinate available times between two parties when working in private practice'.

For Recommendation 3, a few psychologists proposed the cost of postage as a reason for the lack of endorsement of this recommendation. Psychologists who did not endorse Recommendation 4 noted that completing the treatment plan (i.e., the AHRR) in-session with an injured person had low practicality, as it would take up most of the session time. In addition, they would need more training on how to complete the plan in this context. Psychologists also noted that: '[The] office space is not always conducive to completing AHRR via a computer' and that 'consultation with the employer and other treating professionals in-session requires a great deal of coordination which may eat into the client's therapy time'.

5.6.9. Theme 2: Perceived low efficacy for clinical practice

Psychologists who did not endorse Recommendation 3 noted that assessments should be administered in a 'controlled environment' and in the 'presence of a clinician' to ensure the validity and reliability of the results. Psychologists noted that sending outcome measures for pre-session completion put the client at risk of 'misinterpreting them' or 'having someone else complete them for the client'. The psychologists also noted that some injured people they see under the SIRA compensation schemes have low levels of literacy. Therefore, 'being present when the test is administered' provides the latter with support 'if issues arise'. Some psychologists indicated that outcome measures 'cannot replace a comprehensive case formulation'. Other psychologists who did not endorse the recommendation noted that sending out outcome measures 'did not allow for informed consent' nor provided a guarantee that the injured person would complete them. Psychologists also noted that the use of 'the DASS-21 is limiting' and they 'prefer more robust and specific assessments'. Some psychologists also noted that sending outcome measures for pre-session completion would 'sabotage' rapport, as most injured people they treated had 'trust issues' related to the compensation system.

Psychologists who did not endorse Recommendation 4 indicated that 'completing the AHRR form in-session would make it difficult to build rapport, because clients do not like spending their session time completing paperwork'. Other psychologists noted that the 'third session' (i.e., when they are required to submit the AHRR) 'is slightly too soon to ensure that all aspects of the injured person's life and work-related barriers' have been fully investigated. A few psychologists indicated that consulting with the employer during the completion of the AHRR plan 'would, in all probability, aggravate' their client's injury.

Psychologists who did not endorse Recommendation 5 cited lack of trust in the validity of DASS-21 results:

DASS-21, in my opinion, is not a good tool for measuring functional capacity for work; best practice is that people who are clinically depressed are much better off being at work in some capacity than not, so symptoms of depression, anxiety and stress are only a small part of the clinical picture and work capacity.

5.7. Discussion

The aim of the present study was to identify and explore the feasibility of recommendations for overcoming barriers to psychologists' adherence with EBP treatment guidelines for the management of functional disability following compensable musculoskeletal injury. Overall, the recommendations proposed by field experts were endorsed by the wider community of psychologists working within the SIRA compensation schemes. The recommendations included: 1) mandatory training and CPD in this area of practice, 2) using independent consultants for expert advice, 3) completing outcome measures prior to the first session, 4) completing the treatment plan in-session with the injured person and 5) completing the outcome measures in the eighth and final session. The recommendations though simplistic differ from the *Clinical Framework* as they provide clear expectations to psychologists on how to effectively implement the treatment principles within the clinical settings.

The findings revealed that the majority of the psychologists responding to the online survey supported the applicability and acceptability of undertaking mandatory training and CPD. However, most of the respondents (72.6%) did not consider this recommendation to be practical. Time, cost and accessibility of training were considered major impediments to the psychologists' willingness to participate in further training. These findings are significant, as they indicate that unless these barriers are addressed simply making training available will not promote adoption of this best practice. Practical options could include trialling interactive online training platforms to overcome the time and cost burdens.

Traditionally, independent consultants within the Australian personal injury compensation systems have assessed the progress of treatment and and have been viewed as reinforcing the adversarial nature of the compensation systems (Cromie, Robertson, & Best, 2003). However, in this study, the majority of psychologists endorsed voluntary consultation with an independent consultant as a way of helping to apply EBP behaviours and foster collaboration between the two parties. This finding also highlighted psychologists' desire to focus on situation-based competence training including some form of supervision or coaching, rather than teaching via 'didactics' (McHugh & Barlow, 2010, p. 74). These findings underpin psychologists' belief that for EBP to be translated into ordinary clinical settings, a balance between didactics and competence training is required (McHugh & Barlow, 2010).

In addition, the findings showed that despite the recommendation of field experts to send outcome measures to clients for pre-session completion, a strategy to improve psychologists' adherence with objective baseline assessment, the attitudinal and philosophical stance of 50% of responding psychologists reflected a belief that outcome assessment and measurement had low efficacy for their practice in general. This finding is concerning but consistent with previous research which has shown some psychologists reluctance in using outcome measures because of their belief that they do not find them helpful (Hatfield & Ogles, 2004). In contrast, other research has shown psychologists consider that feedback from outcome measures increases both treatment effectiveness and efficiency and contributes to strengthening the therapeutic alliance (Gondek, Edbrooke-Childs, Fink, Deighton, & Wolpert, 2016). In this study, while majority of the psychologists agreed that using outcome measures can demonstrate progress towards functional goals, some indicated a lack of trust in the validity of recommended measures, particularly the DASS-21 and the ÖMPQ. The finding flags the need for further education and training, perhaps included at the initial tertiary education level, on the clinical importance and

usefulness of baseline and outcome assessment in routine clinical settings. Additional research demonstrating that specific measures can be considered a gold standard within the SIRA compensation schemes might support a change in perception.

The AHRR treatment plan is a communication platform used between psychologists and insurers through which information is recorded about diagnosis, results from outcome measures, demonstration of liaison with other stakeholders, assessment of functional capacity and formulation of SMART goals. Psychologists treating injured people under WC are required to submit the AHRR after the third session if treatment starts three months after the date of injury. However, if treatment starts within three months of the date of injury, the AHRR can be submitted after eight sessions (NSW Government, 2016). In contrast, psychologists treating injured people under CTP are required to submit the AHRR after the first session. The findings of this study showed that while most psychologists endorsed the applicability and acceptability of completing the AHRR collaboratively with the injured person, only 40% considered this recommendation to be practical. Psychologists who did not consider it practical to complete 'paperwork' in-session referred to the potential for this to compromise the *therapeutic relationship*. This finding is consistent with existing literature that suggests psychologists' resistance to EBP behaviours arises from their perception that these 'force psychology' to become a 'hard science' by reducing the humanity aspect that is seen as fundamental to the profession (Pagoto et al., 2007, p. 700). Treatment guidelines can also be perceived as minimising the merit of clinical judgement, diminishing empathy and warmth and disregarding patient values (Pagoto et al., 2007). However, these perceptions exist in opposition to research that has shown that EBP goes hand-in-hand with clinical skills and patient values used in 'clinical decision-making' (Fortney, Rost, Zhang, & Pyne, 2001; Pagoto et al., 2007, p. 702).

Our findings suggest that the adoption of treatment guidelines by some psychologists will only occur when the processes behind EBP are fully comprehended (Pagoto et al., 2007). For this comprehension to be achieved, feedback and education are required. Feedback systems that provide clinicians with information about client outcomes have been found to influence behaviour, even when there is no financial incentive (Hysong, Best, & Pugh, 2006; Schectman et al., 2004). Accordingly, by giving psychologists performance information such as personalised data that demonstrates the effect of adherence with EBP guidelines on patient outcomes, current misconceptions and behaviour might be improved (National Health and Medical Research Council, 1999; Pagoto et al., 2007). The need for improved education shines a spotlight on current training and it is possible that shortcomings exist in the training program for generalist psychologists in Australia. This study's results provide support for the proposal by the Psychology Board of Australia that training should be increased to include a postgraduate year that focuses on competencies for practice (Psychology Board of Australia, 2018).

5.8. Conclusion and Future Directions

The current study adopted a partnership approach with field experts and psychologists to generate recommendations to overcome previously identified barriers to adherence with EBP treatment guidelines within the SIRA compensation schemes (Haider & Dunstan, 2017; Tasca, 2015). Active involvement of psychologists in proposing and examining the feasibility of the recommendations was aimed at improving EBP and increasing engagement to facilitate adoption of the guidelines in ordinary clinical settings (Baker et al., 2010; Francke, Smit, de Veer, & Mistiaen, 2008). The practical implications of this study's findings include identifying ways to help psychologists make difficult treatment decisions through the use of EBP treatment guidelines and; thus, improving outcomes for injured people (Davidson & Spring, 2006). Implications for future research include evaluation of fidelity of the *Clinical framework* every

three years to ensure that the knowledge and competence required by psychologists to adhere with the guidelines is maintained (McHugh & Barlow, 2010).

5.8.1. Strengths and limitations of this study

This study is the first to explore and investigate the feasibility of recommendations to increase psychologists' adherence with EBP guidelines in the treatment of functional disability following musculoskeletal injury within NSW/SIRA compensation schemes. However, the study has some limitations. Field experts were recruited via existing professional relationships of the research team and via snowball techniques and may not be representative of all experts in the treatment of musculoskeletal injuries. Furthermore, small sample of the qualitative study size includes the risk of selection bias. In addition, the very low completion rate of the online survey, 9.1% of those invited to participate in the study, may not have generated a representative sample of psychologists who treat compensable patients. Nevertheless, by integrating quantitative and qualitative data, triangulation of the research findings was achieved which strengthens the credibility of our research results

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Study 4: Statement of Originality

We, the PhD candidate and the candidate's Principal Supervisor, certify that the following text, figures and diagrams are the candidate's original work.

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Study 4: Statement of Authors' Contribution

We, the PhD candidate and the candidate's Principal Supervisor, certify that all co-authors have consented to their work being included in the thesis and they have accepted the candidate's contribution as indicated in the *Statement of Originality*.

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Chapter 6. Discussion

6.1. Aims of the Research

The goal of this thesis was to explore the use of EBP treatment guidelines by psychologists treating people with secondary psychological injuries within the SIRA insurance schemes. The aims and outcomes of this body of work are summarised and discussed below.

1. To evaluate NSW psychologists' adherence with EBP treatment guidelines (i.e., the principles contained in the *Clinical framework*) for treating musculoskeletal injuries with a secondary psychological component within the SIRA insurance schemes (i.e., WC and CTP).
2. To evaluate the relationship between psychologists 'adherence of EBP treatment guidelines and the effect on injured persons' outcomes.
3. To investigate psychologists' perceived barriers to their adherence with EBP treatment guidelines.
4. To investigate barriers created by the three main stakeholders within the WC and CTP schemes (i.e., GPs, insurers and injured people) that may affect psychologists' adherence with EBP treatment guidelines.
5. To elicit expert recommendations for improving psychologists' adherence with EBP treatment guidelines.
6. To establish the feasibility of implementing experts' recommendations to improve psychologists' use of EBP treatment guidelines.

6.2. Brief Review of the Study Outcomes

Study 1 examined aims 1 and 2. The findings indicated that claims cost and time lost from work increased during the review period for musculoskeletal injuries that did not have a

secondary psychological injury. Conversely, this was not the case for musculoskeletal injuries with a secondary psychological injury. It was concluded that implementation of the EBP treatment guidelines for psychologists within WC had acted as a buffer against the broader negative trends. However, psychologists' adherence with EBP treatment guidelines within both WC and CTP was suboptimal. These findings were consistent with previous studies that showed a gap between the implementation of EBP and its adoption by mental health practitioners in ordinary clinical settings (Stewart, Stirman, & Chambless, 2012). There were some similarities between WC and CTP subsamples, that is, positive outcomes for injured persons were noted within both insurance frameworks when psychologists' adherence with EBP treatment guidelines was high. These findings supported existing research that indicates that adherence by practitioners to guidelines must be at least 75% for beneficial outcomes to emerge for patients (Fritz, Cleland, & Brennan, 2007; Rutten et al., 2016; Stephens & Gross, 2007). However, some findings emerged that were unique within the WC context.

It was observed that when psychologists' adherence with EBP treatment guidelines was low, high claims cost and negative injured person outcomes arose. In addition, within the WC framework psychologists' application of the EBP treatment guidelines was low when injured patients were not referred within the subacute stage of the injury (i.e., three to four weeks post-injury). These findings are consistent with existing research that suggests that when the treatment of psychopathology for musculoskeletal injuries does not occur within the subacute stage, pain and disability are resistant to change (Laisné, Lecomte, & Corbière, 2012). However, within the CTP context, early referral by GPs did not lead to favourable outcomes. This may have been the result of secondary gain motivations created by the traditional CTP legislative framework, (i.e., the need to prove ongoing disability to receive compensation) or it could have been due to the complexity of a musculoskeletal injury presenting with or without out a secondary psychological

injury and a concurrent primary mental disorder (i.e., PTSD). These factors may have complicated the application of EBP treatment guidelines by psychologists who were unable to integrate psychological interventions to accommodate dual diagnoses. For the referring GPs, the findings showed that they were able to recognise the early need to address psychological distress within the CTP context, but they failed to respond in a timely manner within the WC context. Additionally, adherence by psychologists was variable and an understanding of the barriers to improve adoption within the clinical setting was warranted.

Study 2 was designed to address aim 3. The results found three major barriers to psychologist's adherence with EBP treatment guidelines for treating musculoskeletal injuries within the SIRA compensation schemes. These were: 1) a lack of trust in the validity of the guidelines, 2) a lack of knowledge of the psychologist's role in this context and insufficient skills to fully apply the guidelines and comply with SIRA protocols and procedures and 3) a poor fit between the EBP treatment guidelines, client presentations and SIRA compensation schemes.

Psychologists lacked trust in the validity of the guidelines, due to an underlying belief that the guidelines served the insurers' rather than the injured person's interest. In addition, psychologists indicated a negative attitude towards the components of EBP, particularly goal setting and outcome measurement. Cognitive and attitudinal barriers were also identified that included fear of adhering with EBP guidelines and rupturing therapeutic alliance with the client.

Psychologists' lack of adherence with the guidelines was also influenced by a limited awareness of the guidelines, a lack of awareness or understanding of their role within the SIRA context (i.e., to aid restoration of the injured person to pre-injury functioning rather than provide supportive counselling) and insufficient knowledge and skills to use the EBP treatment guidelines contained in the *Clinical framework*. Psychologists also referred to their lack of knowledge in executing administrative tasks such as completion of the treatment plan (i.e.,

AHRR), liaising with stakeholders by telephone in a timely manner and reported lack of remuneration and time as a barrier. Psychologists showed a preference for tapping into their clinical experience, rather than using empirical evidence, for delivery of effective treatment. This was, perhaps, reflective of a lack of balance between competence training and didactic education.

The findings suggested that the EBP guidelines were a poor fit between some client presentations and the SIRA compensation schemes. Psychologists reported that the guidelines failed to effectively service the complex needs of individuals under the compensation schemes. In addition, individual practitioner and contextual factors including actions of key stakeholders (i.e., GPs, insurers and injured patients) influenced their use of the guidelines. Psychologists noted that the lack of timely referrals by the GPs and delays in insurers' approval to provide treatment negatively affected injured people's participation and engagement, making it difficult for the psychologists to apply the guidelines. These findings support existing research that suggest that when targeted psychological interventions for psychosocial risk factors for long-term disability are not delivered within the subacute stage, pain and disability arising from musculoskeletal injuries becomes increasingly chronic. The findings indicated that a lack of trust and knowledge deficits, along with various hold-ups, made it difficult for psychologists to apply EBP guidelines within a biopsychosocial paradigm. The results further highlighted the discrepancy between what psychologists are supported to do and what the contextual factors within the compensation schemes will allow them to do. This is consistent with existing research that has shown that health care practitioners working within the personal injury compensation schemes are faced with the challenge of having their recommendations contested by insurers; with the latter being focused on determining liability and managing claims cost that, in turn, can result in the delivery of ineffective treatment and impair outcomes (Kilgour, Kosny, McKenzie, & Collie, 2015a). Thus, the results of the second study found that individual psychologist

variables and the actions of key stakeholders (i.e., GPs, insurers and injured people) pose as barriers and negatively affect psychologists' adherence with EBP guidelines.

Study 3 examined objective 4 and explored the barriers created by the actions of GPs, insurers and injured people to impair psychologists' practice. The findings showed two main reasons for GPs' untimely referral of WC claimants. First, there seemed to be a poor fit between the GPs' practice and the clinical guidelines for the management of musculoskeletal injuries that require screening for psychosocial risk factors during the subacute stage. Generally, GPs were unaware of this requirement. Second, GPs were reticent to refer their WC patients to a psychologist because of a fear that 'labelling' the person as having a mental health disorder could do more harm than good. (This was not the case in the CTP context in which distress following a motor vehicle accident is considered a normal response). The result was that for WC cases it was difficult for psychologists to apply EBP treatment guidelines when confronted with treatment-resistant presentations.

Insurer delays in approving treatment was due to a lack of trust in the validity of the secondary psychological injury claims and concerns regarding the implication of their acceptance. Insurers viewed management of musculoskeletal injuries from the standpoint of the insurance model (i.e., the presence of secondary gains explains disability). This resulted in exhaustive scrutiny that delayed treatment approval and made it difficult for psychologists to comply with the guidelines (i.e., implement treatment goals aimed at optimising function and self-management). This was further complicated by psychologists' lack of compliance with the insurers' treatment and reporting requirements and insurers' lack of knowledge and skills in managing secondary psychological injuries. The study found that the issues that affected injured persons' engagement and participation in psychological intervention included the insurers' management of claims. This was perceived as adversarial and motivated by a biomedical

standpoint that required establishing diagnostic validity and assessing the legitimacy of injured persons' psychosomatic symptoms. As SIRA treatment guidelines require a coordinated and collaborative approach among all stakeholders, the 'pathogenic' nature of the relationship present between insurers and injured people made it difficult for psychologists to implement EBP guidelines based on the premise of collaboration (Kilgour, Kosny, McKenzie, & Collie, 2015b).

The study also highlighted the difficulty in adopting the EBP guidelines due to a mismatch between the medical model under which the SIRA compensation schemes operate and the premise of the EBP treatment guidelines. The 'medical model' encapsulates clarifying pathology to establish causality. Thus, it includes determining diagnosis and liability through the use of independent assessments and questioning of treating practitioners. Conversely, the EBP treatment guidelines propose a biopsychosocial approach that requires collaboration, engagement and involvement of all stakeholders to promote recovery and functional restoration. Application of the medical model inhibits the application of the guidelines through delays in treatment approval and further aggravates injured patient psychological distress. This leads to disfranchisement from the process of their recovery and rehabilitation.

Objectives 5 and 6 were examined in Study 4 and the findings provided the following recommendations by field experts: 1) mandatory training and CPD for psychologists working in this context, 2) using independent consultants for expert advice, 3) completion of outcome measures prior to the first session and in the eighth and final session and 4) completion of the treatment plan in-session with the injured person. These recommendations were endorsed by the wider community of psychologists working within the SIRA compensation schemes.

A qualitative content analysis of the feasibility of the above recommendations (i.e., acceptability, applicability and practicality) showed that time, accessibility and money were

major barriers in 72.6% of psychologist's readiness to acquire training and CPD. Most psychologists supported using field experts as a 'touch point' for advice, indicating that the focus needs to be on competence training. Implementing this recommendation means that consultation with independent consultants could be viewed as professional supervision, particularly for psychologists who are new to working within the SIRA insurance schemes. In addition, as reflection and supervision form an integral part of psychologists' clinical practice, consultation with an expert when dealing with a complex client presentation is a measure that even experienced clinicians can use to gain independent feedback on the efficacy of their treatments. The feasibility results also showed that although most psychologists endorsed completing outcome measures prior to the first session (and in the eighth session) however, some were reluctant to use outcome measures. The resistance stemmed from attitudinal beliefs including that outcome assessment is not helpful in clinical settings. This finding flags the need for education and training to better inform psychologists in using outcome measures. The results also showed that most psychologists endorsed completing the treatment plan in-session by collaborating with other stakeholders. However, only 40% of psychologists considered the recommendation practical. Some psychologists noted that using session time to complete paperwork would compromise their therapeutic relationship. This highlighted the commonly occurring misconception that applying EBP treatment guidelines limits a focus on the injured person's needs. Psychologists seemed unaware that EBP goes in hand-in-hand with clinical skills and patient values to inform clinical decision-making. The study's findings suggested that the adoption of treatment guidelines will only occur when psychologists are fully aware of the components of the EBP paradigm and how its application can increase treatment efficacy and positive patient outcomes.

6.3. Theoretical Implications

Consistent with existing literature, the findings of this thesis highlight the implications and challenges of applying the biopsychosocial framework in understanding and treating musculoskeletal injuries, particularly the critical role played by psychosocial variables in determining disability and chronicity. The findings of studies 1, 2 and 3 are consistent with the proposition of the diathesis-stress model—namely that a disorder is the result of an interaction between predispositional vulnerability and stress caused by life experiences. Specifically, it was found that when referral for psychological intervention was not made during the subacute stage, the complexity of the injured person's psychosocial characteristics made the application of EBP treatment guidelines difficult for psychologists and resulted in poor outcomes for the injured person. The findings add further support for the biopsychosocial model which emphasises early intervention and identification of injured people will prevent prolonged pain and disability from developing and flows from the belief that protracted pain and disability makes treatment and recovery complicated (Schultz et al., 2000).

The findings of this research also supported the central premise of the EBP paradigm, that is, guidelines provide clinicians a framework to prevent harmful practices, facilitate best practice and promote positive patient outcomes (Goodheart, 2011). While the results of Study 1 provided evidence for this construct, the results of Study 2 found that the implementation of EBP alone was not enough to motivate adoption, due to the gap between didactic and competence training. The findings supported the conceptual framework proposed by Rodolfa et al. (2005) which includes the three-dimensional competency cube model for psychologists and regulators. The model propagates development of foundational competencies such as 1) reflective practice/self-assessment, 2) scientific knowledge/methods, 3) relationships, 4) ethical-legal standards/policy 5) individual and 6) interdisciplinary systems; and functional competencies which include 1)

assessment -diagnosis/case-conceptualisation, 2) intervention, 3) consultation, 4) research/evaluation, 5) supervision and 6) administration/management. The findings have implications with reference to the *Clinical Framework* and the competency model for psychologists as a means of assessing their own domains of competency against the treatment principles contained within the framework and seeking further training to increase their ability to provide effective treatment within the compensation schemes (Stevens, Hyde, Knight, Shires, & Alexander, 2017, p.175). For regulators implications of the study findings include evaluating competency of psychologists seeking to be accrediated as SIRA psychologists in order to bridge the gap between didactic and competence training.

In addition, Study 3 showed that systemic variables (i.e., the actions of key stakeholders and the system) affected psychologists' practice. The findings showed that psychological factors (i.e., yellow flags) in combination with system or contextual factors (i.e., black flags) influenced psychologists use of the biopsychosocial treatment principles. The findings are consistent with existing literature particularly in reference to GP's reluctance in treating compensable injuries because of the time constraints and financial burden and the clinical complexities involved in compensable schemes (Brinjnath et al., 2016). Additionally, the study findings were consistent with current theoretical approaches to guideline implementation that propagate adopting a system approach. When organisations, individuals and different stakeholders within the organisations work together to support patients' outcomes, the implementation of EBP is more likely to occur (Grol, 1997; Grol & Grimshaw, 2003; National Health and Medical Research Council, 1999). Therefore, the findings collectively provide support for EBP and the biopsychosocial framework in the management of musculoskeletal injuries within the NSW compensation schemes in Australia.

6.4. Practical Implications and Recommendations

The combined findings of the studies of this thesis have the following implications and associated recommendations:

1. They underscore the critical role of a psychologist in the management of musculoskeletal injuries to reduce claims costs and improve the outcomes for injured people. However, for the psychologist's intervention to be effective, there needs to be early identification of psychosocial risk factors for long-term disability and early referral. Thus, mandatory screening within the SIRA insurance frameworks during the subacute phase (four to six weeks post-injury) is required. This action should parallel the outcome of the WISE study (Nicholas, 2016) that resulted in NSW Health implementing a screening protocol as a standard practice for all public hospitals across the state.
2. The results have shown that knowledge and skills deficits within the psychology profession limit the full application of EBP treatment guidelines within the SIRA compensation schemes in particular, within the CTP context. The findings of the thesis showed that co-occurring mental disorders within the CTP context require integration of psychological interventions to accommodate a concurrent primary psychological injury (e.g., PTSD) associated with the traumatic mechanism and a secondary psychological injury arising from a musculoskeletal injury. Practical implications include training of psychologists in the treatment of dual diagnosis and application of treatment guidelines for working within the CTP by 1) recognising and treating primary trauma-related psychological injuries and co-morbid secondary psychological injuries arising from musculoskeletal pain as distinct; and 2) using the *Clinical Framework* to guide treatment delivery and planning (Duckworth & Iezzi, 2005). Therefore, the introduction of mandatory training for psychologists is warranted before acquiring treatment provider status.

3. The findings also suggest that the current training program used by the SIRA for the accreditation of psychologists delivering treatment under WC has been insufficient to produce a strong uptake of the EBP treatment guidelines. It is acknowledged that the training delivered by the regulator is focused on compliance issues and that responsibility for training in practice correctly belongs to education providers and the profession. Accordingly, the recent introduction of the interactive masterclass 'Providing effective and outcome driven psychological treatment within the NSW Workers Compensation' that was arranged as a CPD event by APS is a step in the right direction. Similar initiatives need to be introduced with specific reference to the CTP scheme. Additionally, studies indicate that workshops alone are not enough and follow-up coaching (e.g., by telephone or through the internet) is required to enable clinicians to modify behaviour and integrate EBP into routine clinical settings (Miller, Yahne, Moyers, Martinez, & Pirritano, 2004; Sholomskas et al., 2005). Moreover, the effects of these initiatives will require evaluation.
4. The findings have also highlighted the need for improved adherence by GPs to the treatment guidelines for the management of musculoskeletal injuries. A recent publication by the SIRA in collaboration with Monash University, titled 'Clinical practice guidelines for the diagnosis and management of work-related mental health conditions in general practice' is now open for public discussion (Monash University, 2018). This initiative is another step in the right direction. However, given the significant implications for psychologists' practice, existing guidelines need reinforcement for the management of secondary psychological injuries by GPs.
5. Additionally, the findings have also shown that the key stakeholders within the WC and CTP contexts are in urgent need of an education program on the management of secondary psychological injuries. Stakeholders must understand that 'secondary psychological injury'

encompasses functional impairment due to biopsychosocial factors and is not a mental disorder that needs to fit within a DSM-5 diagnostic category.

6. Practical implications for the future include using feedback systems whereby psychologists are provided with personalised data about their compliance with EBP and the effect on patient outcomes. Through self-evaluation and reflection, this strategy should influence and modify practitioners' behaviour.
7. Future research could investigate other allied health practitioners' (i.e., physiotherapists, occupational therapists, counsellors and osteopaths) level of adherence with the *Clinical Framework* and their effect on claims cost and patient outcomes.
8. The findings showed that surveillance of secondary psychological injuries identified as a system level barrier by psychologists was reported as adversely impacting the treatment and recovery of injured patients. Practical implications from this finding include establishing a criterion limiting surveillance and if deemed necessary by the insurer should involve prior consultation with treatment providers.
9. The findings also flag the need for further education and training, perhaps included at the initial tertiary education level, on the clinical importance and usefulness of baseline and outcome assessment in routine clinical settings. Additional research demonstrating that specific measures can be considered a gold standard within the SIRA compensation schemes might support a change in perception.
10. Implications for future research include evaluation of fidelity of the *Clinical Framework* every three years to ensure that the knowledge and competence required by psychologists to adhere with the guidelines is maintained (McHugh & Barlow, 2010).

6.4.1. Strengths and limitations of this study

This thesis had several limitations including the absence of CTP administrative (quantitative) data that prevented a comparison between claims cost and time lost from work for musculoskeletal injuries with and without a secondary psychological injury in this context. The availability of such data would have enabled an evaluation of determining whether the treatment guidelines contained within *Clinical Framework* have acted as a buffer against broader negative trends within the CTP insurance scheme and enabled comparisons with the WC scheme. The small sample size of the WC and CTP case-level files in Study 1 limited generalisability of the findings and the strength of the conclusions that could be drawn. Although the qualitative data enabled us to describe trends, inferences could not be made about causality and directionality of the relationship between psychologists' lack of adherence with treatment guidelines and claims costs and time lost from work.

In addition, the sample included in studies 1, 2, 3 and 4 for the qualitative and quantitative analysis involved psychologists, insurers, GPs and injured people who were based in NSW only. This means that the findings should not be generalised to other jurisdictions within Australia. However, the accredited training for the clinicians involved is standardised across Australia and there is no evidence of differential practice on a state by state basis. The above limitations aside, a mixed methods approach assisted in minimising the limitations of both the quantitative and qualitative data (Creswell, 2014). The studies undertaken in the thesis are the first to explore several issues: 1) Australian psychologists' adherence with EBP treatment guidelines for the management of compensable injuries, 2) identification of the barriers to their compliance from the perspective of multiple stakeholders and 3) an examination of the feasibility of recommendations proposed by experts to promote and improve the application of EBP practice. In addition, the findings from the qualitative and quantitative studies provide a better

understanding of how to engage psychologists to prevent musculoskeletal disability. Thus, the findings can be used generate hypotheses for future studies to improve psychologist practice in treating musculoskeletal injuries. Consequently, the findings from the thesis have implications for not just the different Australian states but may also extend to countries such as Canada and United States (which are based on a similar legislative premise as Australia).

Conclusion

Psychology has positioned itself to be a science and the findings of this thesis affirm that integrating the best available research evidence with clinicians' expertise and patient expectations and values leads to beneficial patient outcomes (Wallen et al., 2010). The findings confirm the critical role of psychologists in helping to reduce the personal and financial burden caused by musculoskeletal injuries with secondary psychological injuries within the SIRA compensation schemes. However, the findings have also shown that psychologists have largely adopted a support role for the patients they treat within the compensation schemes. Consequently, they have moved away from the premise of providing interventions based on efficacy and evidence. The reason why this gap is more obvious within the SIRA insurance schemes is because of the complexity of the cause-based compensation frameworks that are based on the medical model and view psychological distress symptoms from the lens of diagnosable mental disorder. This conceptualisation of illness produces fear, mistrust, disempowerment and perpetuation of the sick role in injured people. It leads to psychologists adopting a supportive counsellor stance, rather than the biopsychosocial approach of the EBP guidelines that promotes collaboration and functional restoration.

The findings illustrate that while Australian psychologists have skills in the treatment of mental disorders they may not be competent in EBP approaches for managing and addressing pain and functional disability arising from secondary psychological injuries within the

compensation frameworks. Psychologists in NSW are required to be accredited under WC, but not CTP and do so by completing online training. However, the results of this research indicate that the current training has not helped in transferring knowledge content into a clinical setting. The suboptimal use of treatment guidelines by psychologists reflects that implementation of the *Clinical framework* alone is inadequate in promoting practitioner confidence and competence in guideline application. Strategies elicited by experts in the field deemed largely feasible by psychologists working in the industry included mandatory training and continuing education with reduced burden of time and cost in undertaking training. Improving knowledge and skills should improve trust by dispelling inaccurate practitioner beliefs. Ongoing supervision provided by independent SIRA consultants should, in turn, give practitioners guidance and an opportunity for role modelling (Frueh, Ford, Elhai, & Grubaugh, 2012). In addition, monitoring clinicians' adherence with the treatment guidelines and evaluating the clinical outcomes could be a strategy to facilitate accountability and ensure that deviations are less likely to occur (Frueh et al., 2012; National Health and Medical Research Council, 1999).

The findings of this thesis also highlight that to increase the application of EBP guidelines a broad-based commitment from all stakeholders within the SIRA compensation schemes is required (Frueh et al., 2012). This includes administrators, clinicians and key stakeholders being convinced about the efficacy of the *Clinical framework* for improving patient outcomes in a cost-effective manner. Further, a broad education program is urgently warranted that supports all stakeholders in understanding the management of secondary psychological injuries from the functional restoration perspective and the biopsychosocial paradigm. Lastly, the use of empirical data from this research can be used to encourage stakeholders to change their current practices.

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Appendices

Appendix A

Treatment Principle	Evidence	Case: 1	Case: 2	Case: 3	Case: 4	Case: 5	Case: 6	Case: 7	Case: 8	Case: 9	Case: 10	Case: 11	Case: 12
1. Measurable and demonstrated treatment effectiveness	Baseline measurement of functional status undertaken	0	0	2	0	2	0	0	2	2	0	0	2
	Reassessment undertaken every 4-6 weeks	1	0	0	0	1	0	0	1	2	0	0	1
	Standardised outcome measures are used	2	0	2	0	2	0	0	2	2	0	0	2

Study 1: Phase 2-Coding Framework

2. Use of a biopsychosocial approach	Screening for psychosocial risk factors for long-term disability (ÖMPQ)	0	0	2	0	2	0	0	2	0	0	0	1
	Barriers to functioning and return to work are identified ('Flags')	2	0	1	0	1	0	0	1	1	0	2	1
	Treatment planning includes environmental (personal and workplace) factors	0	0	1	0	1	0	0	1	1	1	1	1
3. Focus on self-management by the injured person	Education is provided on the nature of the problem	0	0	0	0	2	0	0	1	0	0	0	0
	Self-management strategies are utilised (e.g., activity scheduling, problem solving)	2	0	1	0	2	0	0	0	1	0	0	0
	Emotional state/influencing beliefs are assessed/addressed	0	0	1	0	2	0	0	1	1	0	2	0

5. Evidenced-based treatment is used – a CBT approach	Comprehensive CBT approach is used.	1	0	1	0	2	0	0	1	2	0	2	2
	Some CBT component used: Assessment Education Treatment planning Self-management strategies Reassessment Relapse prevention	1	0	1	0	1	0	0	1	1	0	1	1
	An appropriate number of sessions is provided (i.e., 6-12)	2	0	1	0	2	0	0	2	0	0	2	1
4. Goals focus on function, participation and return to work	Functional, 'SMART' goals formulated	0	0	1	0	1	0	0	2	1	0	2	2
	Progress towards goals assessed and recorded	1	0	0	0	0	0	0	1	2	0	0	0
	Capacity to return to usual activities (incl. failure to progress) noted/addressed	0	0	1	0	1	0	0	1	1	1	0	1
Adherence with Principle Total		12/30	0	15/30	0	22/30	0	0	19/30	17/30	2/30	12/30	15/30
Compliance with regulatory framework general procedures	Case conferencing with treating doctor/employer/other treatment providers	0	0	1	0	1	0	0	0	0	0	2	1
	Approval sought/received for more than 6 sessions	2	0	0	0	2	0	0	2	0	1	1	2
	Psychological management plan(s) submitted	2	0	2	0	2	0	0	2	2	2	2	2
Adherence with Protocols and Procedure Total		4/6	0	3/6	0	5/6	0	0	4/6	2/6	3/6	5/6	5/6

Psychologist Adherence Score	Psychologist Adherence Score	Psychologist Adherence Score
0 = Non-Adherence	1 = Partial Adherence	2 = Full Adherence

Study 1: Phase 3-Coding Framework

Treatment Principle	Evidence	Case: 1	Case: 2	Case: 3	Case: 4	Case: 5	Case: 6	Case: 7	Case: 8	Case: 9
1. Measurable and demonstrated treatment effectiveness	Baseline measurement of functional status undertaken	0	2	0	0	0	0	0	0	0
	Reassessment undertaken every 4-6 weeks	2	1	0	0	2	0	0	0	0
	Standardised outcome measures are used	Study 2	2	0	0	2	0	0	0	0
2. Use of a biopsychosocial approach	Screening for psychosocial risk factors for long-term disability (ÖMPQ)	2	0	0	0	0	0	0	0	0
	Barriers to functioning and return to work are identified ('Flags')	1	1	2	2	1	1	0	2	1
	Treatment planning includes environmental (personal and workplace) factors	2	1	2	2	1	2	0	1	2
3. Focus on self-management by the injured person	Education is provided on the nature of the problem	0	0	1	0	0	2	1	2	0
	Self-management strategies are utilised (e.g., activity scheduling, problem solving)	1	2	1	0	2	2	2	2	2
	Emotional state/influencing beliefs are assessed/addressed	2	0	1	1	1	2	0	1	2
4. Goals focus on function, participation and return to work	Functional, 'SMART' goals formulated	1	1	0	0	1	1	0	1	1
	Progress towards goals assessed and recorded	2	2	2	1	2	1	1	2	1
	Capacity to return to usual activities (incl. failure to progress) noted/addressed	2	1	1	2	2	2	0	1	2
	Comprehensive CBT approach is used.	2	1	1	2	2	2	1	2	2

5. Evidenced-based treatment is used – a CBT approach	Some CBT component used: Assessment Education Treatment planning Self-management strategies Reassessment Relapse prevention	2	1	2	1	1	1	1	1	1
	An appropriate number of sessions is provided (i.e., 6-12)	2	2	2	2	2	2	1	2	0
Adherence with Principle Total		22/30	13/30	18/30	13/30	17/30	18/30	7/30	17/30	11/30
Compliance with regulatory framework general procedures	Case conferencing with treating doctor/employer/other treatment providers	0	1	0	1	2	2	1	0	1
	Approval sought/received for more than 6 sessions	2	2	2	2	2	2	2	2	0
	Psychological management plan(s) submitted	2	2	2	2	2	2	1	2	2
Adherence with Protocols and Procedure Total		4/6	5/6	4/6	5/6	5/6	6/6	5/6	4/6	3/6

Psychologist Adherence Score	Psychologist Adherence Score	Psychologist Adherence Score
0 = Non-Adherence	1 = Partial Adherence	2 = Full Adherence

Appendix B

Questions used in Qualitative Studies

Study 2

Barriers Impacting Psychologists' Use of EBP Treatment Guidelines When Treating Secondary Psychological Injuries (Questions Used by Facilitator)

	Questions	**Determinants**
1) Opening	'Let's get started. Let's find out more about each other by going around the table one at a time and telling us how long you have been treating injured workers/claimants with musculoskeletal injuries with a psychological component?	Psychological Treatment
2) Introduction	Tell us, your experiences/challenges of treating injured patients/claimants with musculoskeletal injuries?	Psychological Treatment
3) Transition	What are your thoughts on the five clinical guidelines/principles, that is, *Clinical Framework for the Delivery of Health Services* with regards to treating injured workers/patients?	Psychologist Knowledge
4) Key	What barriers do you think are prevalent in our professional practice which prevents adherence or partial adherence with these clinical guidelines?	Barriers
5)	Of all the barriers discussed which one in your opinion has the most impact on our professional practice?	Barriers
6)	Thoughts on whether adherence with clinical guidelines are useful in obtaining treatment outcomes for injured workers/patients?	Treatment Guidelines
7)	Your opinion on the current training provided by State Insurance Regulatory Authority to psychologists practicing within the Workers Compensation and Motor Accidents (CTP) regarding the five treatment principles that is, 'Clinical Framework for the Delivery of Health Services'?	Psychologist Knowledge

8)	Any last-minute thoughts about difficulties which exist in using clinical guidelines by psychologists when treating Workers Compensation and Motor Accident (CTP) Insurance claimants?	Barriers
9) Ending	Provide summary at the end, and check with participants: Is this an adequate summary? How well does that capture what was said here?	

Study 3

Barriers Impacting Insurer Approval of Treatment for Secondary Psychological Injuries

(Questions Used by Facilitator)

	Questions
1) Opening	Opening Question 'Let's get started. Let's find out more about each other by going around the table one at a time and telling us how long you have been managing musculoskeletal with secondary psychological injuries?
2) Introduction	What is the first thing which comes to mind (i.e. action taken) when a physical injury becomes a secondary psychological claim?
3) Transition	When do you know instigating/approving referral for psychological treatment becomes necessary?
4) Key	What are barriers in early identification and screening of physical injuries with 'yellow flags' (i.e. psychological pathology)?
5)	What are barriers in early referral for psychological treatment of physical injuries with 'yellow flags' (i.e. psychological pathology) for psychological treatment?
6)	What is your experience of dealing with Psychologists?
7)	Which aspects would you consider as the most important barriers in management of secondary psychological injuries which may impact claimant outcomes?

8) Ending	Is this an adequate summary? How well does that capture what was said here?

Barriers Impacting Injured Patient Engagement With Psychological Treatment (Questions Used by Facilitator).

	Questions
1) Opening	Opening Question Let's get started. Tell me a bit about yourself and how long after your original injury were you first diagnosed with a psychological condition?
2) Introduction	Think back to when your claim was open, tell us about your experience when the referral was first made for you to see a psychologist?
3) Transition	How did you find undergoing psychological treatment?
4)	Which aspects of seeing a psychologist for psychological treatment did you find ineffective in relation to your recovery and return to work?
5)	What is your overall experience of your Psychologist who treated you within a claim related environment?
6)	If there was anything you would change whilst undergoing treatment with your Psychologist what would that be?
7)	What factors from your understanding, that is, both individual and claim related impacted your recovery when undergoing psychological treatment?
8) Ending	Is this an adequate summary? How well does that capture what was said here?

Barriers Impacting General Practitioner Timely Referral of Secondary Psychological Injuries to a Psychologist (Questions Used by Facilitator).

	Questions
1) Opening	Opening Question Let's get started. Tell me a bit about yourself and how long you have been treating claimants with secondary psychological injuries?
2) Introduction	When do you decide, an injured patient suffering from a musculoskeletal injury needs psychological treatment?
3) Transition	In your practice, how effective do you find standardised tests in determining 'yellow flags'?
4) Key	In your opinion, what barriers exist when referring injured patients with musculoskeletal pain and secondary psychological injuries to see a psychologist?
5)a	Do you experience any differences between the systems – workers compensation and CTP?
6)	In your opinion, what do you think is the most significant barrier of timely referral of claimants with secondary psychological injuries to see a psychologist?
7)	In your opinion, what aspects of seeing a psychologist for psychological treatment are ineffective for injured patient with secondary psychological injuries?
8) Ending	Is this an adequate summary? How well does that capture what was said here?

Appendix C

Study 4- Focus Group

	Questions
1) **Opening**	Between 2015 and 2017, we undertook a review of the files of SIRA claimants (Work Cover and CTP) who had sustained a musculoskeletal injury followed by a secondary psychological injury, and had received treatment by a psychologist. We found a low level of compliance by psychologists with the evidence-based practice (EBP) outlined in the SIRA's *"Clinical Framework for the Delivery of Health Services*. The five treatment principles are: *Principle 1: Measure and demonstrate the effectiveness of treatment* *Principle 2: Adopt a biopsychosocial approach* *Principle 3: Empower the injured person to manage their injury* *Principle 4: Implement goals focused on optimising function, participation and return to work* *Principle 5: Base Treatment on best available research evidence*
2) **Transition**	"Let's get started. Let's find out more about each other by going around the table one at a time and telling us how long you have been treating injured workers/claimants with muscuskeletal injuries?
3) **Key**	What recommendations in your opinion will increase psychologist's adherence with measuring and demonstrating effectiveness of treatment (Principle 1) when treating injured patients with muscuskeletal injuries under SIRA insurance schemes?
4)	What recommendations in your opinion will increase psychologist's adherence with adopting a biopsychosocial approach (Principle 2) when treating injured patients with muscuskeletal injuries under SIRA insurance schemes?
5)	What recommendations in your opinion will increase psychologist's adherence in empowering the injured person to manage their injury

(Principle 3) when treating injured patients with muscuskeletal injuries under SIRA insurance schemes?

6) What recommendations in your opinion will increase psychologist's adherence with implementing goals focused on optimising function, participation and return to work (Principle 4) when treating injured patients with muscuskeletal injuries under SIRA insurance schemes?

7) What recommendations in your opinion will increase psychologist's adherence to increase adherence with basing treatment on the best available research evidence (Principle 5) when treating injured patients with muscuskeletal injuries under SIRA insurance schemes?

8) Any last-minute thoughts you would like to share pertaining to recommendations which will increase using clinical guidelines by psychologists when treating injured patients with muscuskeletal injuries under SIRA insurance schemes?

9) Is this an adequate summary?

How well does that capture what was said here?

Feasibility Survey for Study 4

Q1 Practice based in

1. Rural NSW
2. Metropolitan NSW
3. Regional NSW

Thank you for your interest in this study.

Background: Between 2015 and 2017, we undertook a review of the files of SIRA claimants (Work Cover and CTP) who had sustained a musculoskeletal injury followed by a secondary psychological

injury and had received treatment by a psychologist. We found a low level of compliance by psychologists with the evidence-based practice (EBP) outlined in the SIRA's *'Clinical Framework for the Delivery of Health Services'* and the associated protocols and procedures.

This framework proposes five treatment principles and is to be used with the Allied Health Recovery Request (AHRR) form, which is the primary communication tool regarding the claimant's recovery and provision of services.

The five treatment principles are: ·

Principle 1: Measure and demonstrate the effectiveness of treatment ·

Principle 2: Adopt a biopsychosocial approach ·

Principle 3: Empower the injured person to manage their injury ·

Principle 4: Implement goals focused on optimising function, participation and return to work
Principle 5: Base Treatment on best available research evidence

In a follow-up study involving a series of focus groups with psychologists, we identified a number of barriers to psychologists' compliance with the SIRA's recommendations and procedures, including, a lack of knowledge of the requirements and role of the psychologist in this context; a lack of confidence in the validity of the recommended evidence-based practice principles; insufficient skills to fully apply the principles; and, inadequate communication with e=relevant stakeholders. Based on a further focus group and interviews with experts in the field, a series of recommendations to overcome these barriers have been formulated.

Aim of this study: The aim of this study is to assess psychologists' perception of the feasibility of the expert recommendations to improve psychologists' compliance with the SIRA's recommended protocols, procedures and practices. '

Feasibility' is determined by three criteria described below: ·

- Applicability: it addresses the issues that are important to the client and the psychologist
- Acceptability: it is suitable and a good fit for psychologists
- Practicality: the burden of time and costs is low

What is required? You are invited to rate the following five recommendations according to the above criteria. *Reminder*: these recommendations apply to claimants who have developed a psychological condition following a musculoskeletal injury (e.g., back strain, whiplash and the like).

Q2 (a) **Recommendation 1:**

Psychologists should undertake initial mandatory training (i.e., the current requirement) plus

annual active continuing professional development (CPD) in injury management (e.g., participation in workshops) to acquire and maintain accreditation for practice within SIRA insurance frameworks (i.e., Work Cover & CTP).

This will assist psychologists to: address knowledge and skills gaps; better understand the application of EBP in this context; and, keep abreast of current protocols and changes within SIRA. It will also provide a platform for discussion and improved management of complex cases, and be a means of meeting psychologists' active learning and? CPD requirements.

	Strongly agree (1)	Somewhat agree (2)	Neither agree nor disagree (3)	Somewhat disagree (4)	Strongly disagree (5)
To what extent do you think Recommendation 1 is applicable (addresses important issues) (1)	4.	5.	6.	7.	8.
To what extent do you think Recommendation 1 is acceptable (2)	9.	10.	11.	12.	13.
To what extent do you think Recommendation 1 is practical (low time and cost burden) (3)	14.	15.	16.	17.	18.

Q2 (b) Any comments regarding recommendation 1

_____

Q3 (a) **Recommendation 2:**

SIRA Independent Consultants should be available as a touch point (i.e., an information resource) to assist psychologists to enhance their skills in facilitating return to work and functional outcomes for complex cases.

This will assist psychologists to address knowledge and skills gaps; better understand the

application of EBP in this context; support improved management of complex cases; and, provide a means to meeting psychologists' supervision CPD requirements.

	Strongly agree (1)	Somewhat agree (2)	Neither agree nor disagree (3)	Somewhat disagree (4)	Strongly disagree (5)
To what extent do you think Recommendation 2 is applicable (addresses important issues) (1)	19.	20.	21.	22.	23.
To what extent do you think Recommendation 2 is acceptable (2)	24.	25.	26.	27.	28.
To what extent do you think Recommendation 2 is practical (low time and cost burden) (3)	29.	30.	31.	32.	33.

Q3 (b) Any comments regarding recommendation 2

_____

Q4 (a) **Recommendation 3:**

The DASS-21 and the ÖMPQ (10-item short version) should be sent to the client prior to the

first session (via mail or electronically through a mobile phone app) so that scores are available in the first session.

Timely completion of these scales will provide a baseline measure of functional status, including psychosocial risk factors for long-term disability, and, allow for early completion of the AHRR.

	Strongly agree (1)	Agree (2)	Somewhat agree (3)	Neither agree nor disagree (4)	Somewhat disagree (5)	Disagree (6)	Strongly disagree (7)
To what extent do you think Recommendation 3 is applicable (addresses important issues) (1)	34.	35.	36.	37.	38.	39.	40.
To what extent do you think Recommendation 3 is acceptable (2)	41.	42.	43.	44.	45.	46.	47.
To what extent do you think Recommendation 3 is practical (low time and cost burden) (3)	48.	49.	50.	51.	52.	53.	54.

Q4 (b) Any comments regarding recommendation 3

_____

Copy of the ÖMPQ-10 Questionnaire

Örebro musculoskeletal pain questionnaire

Örebro Musculoskeletal Pain Screening Questionnaire

1. How long have you had your current pain problem? Tick (√) one.

0-1 weeks [1]

1-2 weeks [2]

3-4 weeks [3]

4-5 weeks [4]

6-8 weeks [5]

9-11 weeks [6]

3-6 months [7]

6-9 months [8]

9-12 months [9]

over 1 year [10].

2. How would you rate the pain that you have had during the past week? Circle one.

0 1 2 3 4 5 6 7 8 9 10 [ ]

No pain Pain as bad as it could be

For items 3 and 4, please circle the one number that best describes your current ability to participate in each of these activities.

I can do light work (or home duties) for an hour.

0 1 2 3 4 5 6 7 8 9 10 (10-)[ ]

Not at all Without any difficulty

4. I can sleep at night.

0 1 2 3 4 5 6 7 8 9 10 (10-)[ ]

Not at all Without any difficulty

5. How tense or anxious have you felt in the past week? Circle one.

0 1 2 3 4 5 6 7 8 9 10 [ ]

Absolutely calm and relaxed As tense and anxious as I've ever felt

6. How much have you been bothered by feeling depressed in the past week? Circle one.

0 1 2 3 4 5 6 7 8 9 10 [ ]

Not at all Extremely

7. In your view, how large is the risk that your current pain may become persistent?

0 1 2 3 4 5 6 7 8 9 10 [ ]

No risk Very large risk

8. In your estimation, what are the chances you will be working your normal duties (at home or work) in 3 months 0 1 2 3 4 5 6 7 8 9 10 (10-)[ ]

No chance Very Large Chance

9. An increase in pain is an indication that I should stop what I'm doing until the pain decreases. 0 1 2 3 4 5 6 7 8 9 10 [ ]

Completely disagree Completely agree

10. I should not do my normal work (at work or home duties) with my present pain.

0 1 2 3 4 5 6 7 8 9 10 [ ]

Completely disagree Completely agree

DASS21	***Date:***

Please read each statement and circle a number 0, 1, 2 or 3 which indicates how much the statement applied to you *over the past week*. There are no right or wrong answers. Do not spend too much time on any statement.

The rating scale is as follows:

0 Did not apply to me at all

1 Applied to me to some degree, or some of the time

2 Applied to me to a considerable degree, or a good part of time

3 Applied to me very much, or most of the time

I found it hard to wind down	0 1 2 3
I was aware of dryness of my mouth	0 1 2 3
I couldn't seem to experience any positive feeling at all	0 1 2 3
I experienced breathing difficulty (eg, excessively rapid breathing, breathlessness in the absence of physical exertion)	0 1 2 3
I found it difficult to work up the initiative to do things	0 1 2 3
I tended to over-react to situations	0 1 2 3
I experienced trembling (eg, in the hands)	0 1 2 3
I felt that I was using a lot of nervous energy	0 1 2 3
I was worried about situations in which I might panic and make a fool of myself	0 1 2 3
I felt that I had nothing to look forward to	0 1 2 3
I found myself getting agitated	0 1 2 3

I found it difficult to relax	0 1 2 3
I felt down-hearted and blue	0 1 2 3
I was intolerant of anything that kept me from getting on with what I was doing	0 1 2 3
I felt I was close to panic	0 1 2 3
I was unable to become enthusiastic about anything	0 1 2 3
I felt I wasn't worth much as a person	0 1 2 3
I felt that I was rather touchy	0 1 2 3
I was aware of the action of my heart in the absence of physical exertion (eg, sense of heart rate increase, heart missing a beat)	0 1 2 3
I felt scared without any good reason	0 1 2 3
I felt that life was meaningless	0 1 2 3