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AUSTRALIA

Client-centred goal setting in the rehabilitation of community dwelling clients with acquired brain  
injury

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## **Abstract**

Goal setting is a crucial rehabilitation process, used by therapists to motivate clients to participate in rehabilitation and to guide intervention. Currently, there is increasing recognition of the need to use a client-centred approach to goal setting in practice. This approach assumes that clients have the ability to participate in goal setting, by articulating their personally meaningful occupations and contributing to decisions about the direction of their rehabilitation. However, after an acquired brain injury (ABI) some of the skills required for clients to participate in goal setting may be impaired including self-awareness of abilities and limitations. Participation may also be influenced by the client's stage of recovery and the context in which goal setting occurs. The minimal existing research evidence to guide client-centred goal setting in the rehabilitation of clients with ABI mostly focuses on inpatient and stroke populations. This thesis therefore aimed to examine the nature and process of client-centred goal setting in the rehabilitation of community dwelling clients with ABI.

Six studies were completed in this thesis. The initial study was a scoping review of the literature which aimed to identify goal setting approaches used with clients with ABI in research studies and to understand the principles that underpin goal setting practice. To date, research has largely focused on the use of formal goal setting approaches, despite informal approaches being more common in practice. A strong theme in the literature is that client-centredness and collaboration are necessary components of effective goal setting. This highlighted the need to understand the use of informal goal setting approaches with community dwelling clients with ABI in routine practice. The need for a standardised measure of the client-centredness of goal setting was also apparent.

A multiple methods methodology was then used for the remaining five studies of the thesis. Data were collected from 44 participants with ABI using a prospective cohort design, which resulted in the collection of 223 goal statements and 65 audio-recorded goal setting sessions. The

first study examined the internal reliability and test–retest reliability of the Client-Centredness of Goal Setting (C–COGS) scale, a new measure of the client’s self-perceived level of participation in goal setting and the importance, meaningfulness and relevance of rehabilitation goals. This study established the internal consistency (10 items,  $\alpha=0.94$ ) and test-retest reliability (average percent exact agreement = 67%) of the C-COGS, to support the existing psychometric properties of the scale.

The second study examined the relationships between the client-centredness of individual goals and their characteristics, content, recall and goal outcomes. The results indicated that there were no significant differences in the level of client-centredness according to the characteristics, content and recall of goals, with the exception of the characteristic of goal specificity. Less specific goals were perceived as more client-centred by clients ( $\beta=-0.71$ ,  $p<0.01$ ). The level of client-centredness was significantly and positively correlated with goal outcomes ( $r=0.34$ ,  $p<0.05$ ).

The aim of the third study was to compare engagement in goal setting and goal outcomes of clients with different levels of self-awareness after an ABI. Participants were classified as having impaired self-awareness, accurate awareness or hyperawareness (i.e., exaggerated perception of limitations) based on Awareness Questionnaire scores. There were no significant differences in client engagement or outcomes between groups. The results suggest that changes in self-awareness may not be a barrier to successful engagement in goal setting and achievement of clinically significant goal outcomes.

The fourth study aimed to explore clinicians’ experiences of implementing goal setting with community dwelling clients with ABI, by interviewing 22 therapists from multiple disciplines. A grounded theory methodology was employed to develop the Client-Centred Goal Setting Practice Framework. This framework explains how therapists actively engage clients with brain injury in goal setting discussions, so that interventions can be tailored to meet client-identified needs. According to the framework, client-centred goals are developed and achieved during three phases: a

needs identification, a goal operationalisation and an intervention phase. The framework also specifies the strategies which may be used to support client participation in goal setting, including clients with impaired self-awareness and emotional distress.

The final study aimed to explore the application of the Client-Centred Goal Setting Practice Framework in routine practice through analysis of the 65 audio-recorded goal setting sessions. This study confirmed that the framework explains the processes and strategies used in practice to engage clients with ABI in client-centred goal setting. Establishing trust emerged as a central process, used by therapists during goal setting.

Overall, this thesis establishes the value of client-centred goal setting in ABI rehabilitation and provides insight into how a client-centred goal setting process can be implemented in practice. The essence of this process is understanding the important and meaningful activities of clients through establishing trust. Further research is needed to explore client-centred goal setting from the perspectives of clients and significant others.

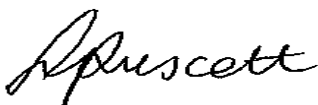
## **Declaration by author**

This thesis is composed of my original work, and contains no material previously published or written by another person except where due reference has been made in the text. I have clearly stated the contribution by others to jointly-authored works that I have included in my thesis.

I have clearly stated the contribution of others to my thesis as a whole, including statistical assistance, survey design, data analysis, significant technical procedures, professional editorial advice, financial support and any other original research work used or reported in my thesis. The content of my thesis is the result of work I have carried out since the commencement of my higher degree by research candidature and does not include a substantial part of work that has been submitted to qualify for the award of any other degree or diploma in any university or other tertiary institution. I have clearly stated which parts of my thesis, if any, have been submitted to qualify for another award.

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## **Publications during candidature**

### **Peer-reviewed papers**

Prescott, S., Fleming, J., & Doig, E. (2017). Rehabilitation goal setting with community dwelling adults with acquired brain injury: a theoretical framework derived from clinicians reflections on clinical practice. *Disability and Rehabilitation*. doi: 10.1080/09638288.2017.1336644

Prescott, S., Fleming, J. & Doig, E. (2015). Goal setting approaches and principles used in rehabilitation for people with acquired brain injury: a systematic scoping review. *Brain Injury*, 29 (13-14), 1515-1529. doi: 10.3109/02699052.2015.1075152

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Doig, E., Prescott, S., Fleming, J., Cornwell, P., & Kuipers, P. (2015). Development and construct validation of the Client-Centredness of Goal Setting (C-COGs) scale. *Scandinavian Journal of Occupational Therapy*, 22(4), 302-310. doi: 10.3109/11038128.2015.1017530

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This thesis contains three jointly authored works. The percentage of contribution by each author to prepare individual publications includes:

Prescott, S., Fleming, J. & Doig, E. (2015). Goal setting approaches and principles used in rehabilitation for people with acquired brain injury: a systematic scoping review. *Brain Injury*, 29 (13-14), 1515-1529. doi: 10.3109/02699052.2015.1075152 (incorporated as Chapter 2).

Contributor	Statement of contribution
S. Prescott (Candidate)	Scoping review design (33.3%) Data collection (100%) Data analysis (70%) Wrote and edited paper (70%)
Professor J. Fleming	Scoping Review Design (33.3%) Data analysis (15 %) Wrote and edited paper (15%)
Dr E. Doig	Scoping review design (33.3%) Data analysis (15%) Wrote and edited paper (15%)

Doig, E., Prescott, S., Fleming, J., Cornwell, P., & Kuipers, P. (2016). Reliability of the Client-Centredness of Goal Setting (C-COGs) scale in acquired brain injury rehabilitation. *American Journal of Occupational Therapy*.70, 7004290010. <http://dx.doi.org/10.5014/ajot.2016.017046> (incorporated as Chapter 4).

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Professor J. Fleming	Research design (50%) Wrote and edited paper (5%)
Dr E. Doig	Research design (50%)

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Professor J. Fleming	Research design (33.3%) Data analysis (10%) Wrote and edited paper (15%)
Dr E. Doig	Research design (33.3%) Data analysis (20%) Wrote and edited paper (15%)



## **Contributions by others to the thesis**

The PhD candidate was responsible for obtaining ethical amendments; design of interviews; data collection, analysis and interpretation; and manuscript preparation. However, the following people have also made significant contributions to the entire thesis:

Professor Jenny Fleming had substantial input into the concept and design of each study and critically revising written manuscripts.

Dr Emmah Doig had substantial input into the concept and design of each study and critically revising written manuscripts. Dr Doig was also responsible for obtaining the original ethical clearance.

Anonymous reviewers also contributed to the development of the published chapters through critical review of the submitted manuscripts.

## **Statement of parts of the thesis submitted to qualify for the award of another degree**

None.

## **Research Involving Human or Animal Subjects**

An application for ethical clearance was submitted and approval granted from the Metro South Human Research Ethics Committee (HREC/13/QPAH/496) (26/09/2013). Site Specific Authorisation to collect data at the Princess Alexandra Hospital (PAH) was also obtained (02/10/13).

In addition to this, ethical clearance was sought and approval granted from The University of Queensland Human Research Ethics Committee (Project number 2013000221) (19/3/13). Several amendments have been made since the original approval was obtained including an extension of the ethical clearance period until September 2018 to enable continued data analysis in alignment with the PAH ethical clearance requirements.

Agreement between the University of Queensland and Metro South Hospital and Health Service was also obtained (2/10/13). Refer to Appendix A for a copy of these documents.

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## **Keywords**

Acquired brain injury, client-centredness, goal setting, community dwelling clients, rehabilitation

## **Australian and New Zealand Standard Research Classifications**

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110321 Rehabilitation and Therapy 50%, 920201 Allied Health Therapies 50%

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## List of Abbreviations

ABI	Acquired Brain Injury
ABIOS	Acquired Brain Injury Outreach Service Day Hospital
AIHW	Australian Institute of Health and Welfare
APA	American Psychological Association
AQ	Awareness Questionnaire
BIRS	Brain Injury Rehabilitation Service Day Hospital
C-COGS	Client-Centredness of Goal Setting Scale
COGS	Contractually Organised Goal Setting
COPM	Canadian Occupational Performance Measure
GAS	Goal attainment Scaling
GEE	Generalised Estimating Equations
GCS	Glasgow Coma Scale
GOTL	Goals for Occupational Therapy List
GSR	Goal Satisfaction Rating
HAQ-II	Helping Alliance Questionnaire
ICF	International Classification of Functioning, Disability and Health
IOG	Identity Orientated Goal Training
MOT-Q	Motivation for Traumatic Brain Injury Questionnaire
OCEBM	Oxford Centre for Evidence-Based Medicine
POPS	Participation Objective Participation Subjective
PTA	Post Traumatic Amnesia
QES	Quality Evaluation Scale
SMART	Specific, Measurable, Achievable, Relevant, Time Limited
TBI	Traumatic Brain Injury

UK	United Kingdom
USA	United States of America
WAI	Working Alliance Inventory

# **Chapter 1 Introduction to the thesis**

“Without goals, and plans to reach them, you are like a ship that has set sail with no destination.” — Fitzhugh Dodson (Finest Quotes, n.d.)

This thesis is concerned with client-centred goal setting in the rehabilitation of community dwelling clients with acquired brain injury (ABI). The above quote highlights the importance of having goals to navigate the journey of life, just as rehabilitation goals provide direction for rehabilitation after brain injury. However, goal setting in ABI rehabilitation is a poorly understood process which lacks empirical evidence to guide clinical practice. Chapter 1 consists of an introduction to the thesis, providing general background information on the implementation of goal setting in the context of community-based brain injury rehabilitation and the rationale for the thesis. This introduction identifies the factors that influence goal setting implementation for clients with ABI and establishes gaps in the literature to highlight areas where further research is required. Finally, this chapter provides an overview of the aims of the study and broadly outlines the content of the chapters and describes the style and structure of the thesis.

## **1.1 Background**

### **1.1.1 Definition of ABI**

In Australia, an ABI is defined as any brain damage that occurs after birth, regardless of cause (Australian Institute of Health and Welfare [AIHW], 2007). The damage may be caused by traumatic brain injury (TBI), stroke, hypoxia or degenerative neurological disease (AIHW, 2007).

An ABI is therefore categorised broadly into two main types: traumatic and non-traumatic.

Traumatic brain injury is damage to the brain resulting from a traumatic event, such as a traffic accident or a blow to the head (AIHW, 2007). Non-traumatic brain injuries are caused by an illness or disease of the brain, which impact on internal brain structures (Elbaum & Benson, 2007).

Examples of non-traumatic brain injuries include cerebro-vascular accident (stroke), infections such as meningitis, and brain tumors (Brain Injury Australia, 2017).

Examination of international definitions of ABI indicate that there is variability between countries. In the USA an ABI is defined as “an injury to the brain, which is not hereditary, congenital, or induced by birth trauma” (Brain Injury Association of America, 2017, para. 1). Whereas in the UK, an ABI is defined as an “inclusive category that embraces acute (rapid onset) injury of any cause, including trauma, stroke, cerebral anoxia, other toxic or metabolic insult (e.g., hypoglycaemia), infection (e.g., encephalitis) or other inflammation (e.g., vasculitis)” (British Society of Rehabilitation Medicine & Royal College of Physicians of London, 2003, p. 7). Notable in these international definitions is the exclusion of progressive or degenerative neurological conditions, such as multiple sclerosis or Parkinson’s disease, as a cause of ABI.

While a variety of definitions of ABI have been suggested, this thesis will align with the international definitions of ABI. Throughout this thesis, an ABI will refer to brain damage that occurs after birth which is caused by a traumatic or non-traumatic injury, but excludes progressive neurological conditions.

### **1.1.2 Epidemiology of ABI**

The Australian Institute of Health and Welfare (AIHW) indicates that ABI is common, affecting 438,300 Australians in 2003. Of these, 432,700 (or 2.2 % of the population) reported activity limitations or participation restrictions (AIHW, 2007). Almost three quarters of those with activity limitations or participation restrictions were aged under 65 years, and TBI was reported as the cause

of the ABI in 55% of this group. In terms of gender prevalence rates, males were more likely to have an ABI than females at all ages (AIHW, 2007). Examination of state-based prevalence rates indicate that in the under 65 years age group, ABI was significantly more common in Queensland (2.5%) compared to New South Wales (1.4%), taking into account differences due to age and sex (AIHW, 2007). Furthermore, there were significantly more individuals with ABI living outside major cities (2.2 %) than those in major cities (1.6%) (AIHW, 2007).

The comparison of Australian prevalence rates with international rates is difficult due to the variability in the definition of ABI. However, the demographics of individuals with ABI is similar in Canada, New Zealand, the UK and the USA where TBI is more common in the under 65 years age group (Brain Injury Association of Durham Region, 2017; Feigin et al., 2013; The Health and Social Care Information Centre, 2005-2012). The international rate of TBI is estimated at 200 per 100 000 people per year, but it is likely that this is an underestimate (Bryan-Hancock & Harrison, 2010). There are also problems with comparing Australia to developing countries, where there are limited systems available to collect data about health conditions (Kamalakannan, Gudlavalleti, Gudlavalleti, Goenka, & Kuper, 2015). Despite this, in countries such as India, both TBI and stroke are regarded as significant health problems (Kamalakannan et al., 2015) and in South Africa the prevalence rates are 1.5 to 3.5 times higher than the international rate (Bryan-Hancock & Harrison, 2010). Therefore, this indicates that ABI is a health condition with significant prevalence nationally and internationally.

### **1.1.3 The impact of ABI**

Multiple brain structures may be affected after an ABI, depending on the nature and location of the brain injury (Turner-Stokes, Pick, Nair, Disler, & Wade, 2015). Consequently, an individual with ABI may experience a heterogenous range of impairments. These impairments can be broadly classified into physical, cognitive, psychological and communication impairments (Entwistle &

Newby, 2013). Physical impairments include reduced muscle power, abnormal muscle tone, and impaired balance which can make moving difficult (Mathers, McGlashan, Vick, & Gravell, 2002). Additional physical impairments can be related to sensory changes, including impaired vision. There may be somatic changes such as disturbed sleep, headache, dizziness, fatigue and chronic pain (Centers for Disease Control and Prevention, 2015). As well as physical impairments, individuals with ABI may experience a unique blend of cognitive, psychological and communication changes. Cognitive changes include impaired attention, memory, executive function and self-awareness (Winson, Wilson & Bateman, 2017). Psychological changes include low mood, anxiety, adjustment problems, behavioural and personality changes (King & Tyerman, 2008). Communication and language may also be affected including expressive and receptive language, as well as speech production (Entwistle & Newby, 2013).

Cognitive and psychological impairments can significantly impact on community re-integration and psychosocial adjustment (Cattelani, Zettin, & Zoccoltti, 2010). For this reason, an ABI is often referred to as a “hidden disability” (Entwistle & Newby, 2013). Living with cognitive and psychological impairments often causes disruption to relationships and social isolation, and is associated with increased family stress (McDonald et al., 2012). These problems result from a breakdown in the complex interaction between cognitive skills, self-monitoring of social skills, awareness of social rules and boundaries, and behavioural or emotional control (Cattelani et al., 2010). For example, difficulty controlling behaviour may result in angry outbursts that may not have been characteristic of the person prior to the injury.

However, any type of impairment after an ABI can affect a person for the rest of their life and have a profound impact on his or her ability to participate in activities of daily living and meaningful occupations. Higher levels of disability and more health conditions are reported by individuals with ABI than all other disability groups in Australia (AIHW, 2007). For example, individuals with ABI have significantly poorer independent living skills after discharge, including reduced self-care skills and lower levels of community and social participation (Malec, Buffington,

Moessner, & Degiorgio, 2000). Furthermore, studies have shown that people with ABI find it difficult to gain employment and this trend continues over their life span (Kelley et al., 2014; Ownsworth & Clare, 2006). Individuals with ABI are therefore likely to present to rehabilitation services with a complex constellation of impairments and rehabilitation needs, which differ for each client (Turner-Stokes, Pick, et al., 2015).

#### **1.1.4 The ABI rehabilitation continuum**

After an ABI, clients need both medical and rehabilitation management, which is provided by an inter-disciplinary or multi-disciplinary team. Access to inter-disciplinary intervention is a standard recommendation of clinical guidelines internationally. For example, the Australian Clinical Guidelines for Stroke Management (2017) specify that “All stroke patients should be admitted to hospital and be treated in a stroke unit with an inter-disciplinary team”(National Stroke Foundation, 2017, p. 21). The rehabilitation team typically consists of clinical psychologists, neuropsychologists, nurses, occupational therapists, physiotherapists, rehabilitation doctors, social workers and speech pathologists (Elbaum & Benson, 2007). Rehabilitation provided by team members is delivered across several distinct rehabilitation phases in the inpatient (acute and sub-acute), outpatient and community settings.

Following the initial injury, clients with ABI are typically admitted to an acute hospital, which may include a stay in intensive-care (Turner-Stokes, Pick, et al., 2015). At this time, appropriate surgical or medical intervention is provided to minimise the effects of the brain injury (Dimancescu, 2007). In some hospitals, rehabilitation commences on the acute ward as soon as a client is medically stable. When no further active medical intervention is required, some clients with ABI are transferred to a rehabilitation ward (i.e., a sub-acute facility) where they undergo a period of intensive inpatient rehabilitation (Turner-Stokes, Pick, et al., 2015). Intervention during the acute and sub-acute rehabilitation phases is focused on increasing functional independence and preparing the client for discharge home (Turner-Stokes, Pick, et al., 2015).

The next distinct phase in the ABI rehabilitation continuum is the transition from hospital to home (Turner, Fleming, Ownsworth, & Cornwell, 2010). During this phase, the clients with ABI must adapt to living at home with the effects of their brain injury (Turner, Fleming, Ownsworth, & Cornwell, 2011) and are at risk of developing emotional distress. Transitional rehabilitation teams based in the community provide extra support to assist with the transition from hospital to home. Specifically, these teams focus on the provision of comprehensive discharge preparation, access to early community rehabilitation, targeted information for families and clients, and coordination of the main services and stakeholders involved in the transition (Turner et al., 2010).

During this time, the focus of rehabilitation shifts to community re-integration. In the community re-integration phase, community-based rehabilitation programs support clients to increase their community participation (Turner-Stokes, Pick, et al., 2015). To achieve this, rehabilitation activities focus on increasing participation in personally relevant occupations, which for some clients may mean return to work (McColl et al., 1998). Rehabilitation continues to focus on independence in activities of daily living as well as providing opportunities for independent decision making (McColl et al., 1998). Another objective of rehabilitation during community re-integration is to support psychosocial adjustment, by ensuring that clients maintain or build social relationships (Winkler, Unsworth, & Sloan, 2006). For example, the provision of social skills training has been identified as an important rehabilitation strategy at this time (Mahar & Fraser, 2012). Rehabilitation services during the community re-integration phase may be based in hospital outpatient departments or in community settings.

Finally, the need for continued periods of rehabilitation across different stages of the life span is recognised, given the long-term challenges presented by ABI. Factors that contribute to the need for ongoing rehabilitation include persistent cognitive and psychological difficulties, as well as social isolation (Benson & Elbaum, 2007). Additionally, as a client with ABI ages, occupational roles change and psychosocial function may deteriorate. Furthermore, it has been identified that the caregivers of clients with ABI may require access to support services due to the high levels of



stress associated with caring over the long-term (Benson & Elbaum, 2007). Given the life-long rehabilitation needs of clients with ABI, studies have demonstrated that even years after injury, clients continue to benefit from rehabilitation when needed (Powell, Heslin, & Greenwood, 2002). Therefore, clients with ABI are likely to need rehabilitation services at multiple time points over the course of lives due to psychosocial factors in conjunction with developmental and age-related changes.

In Australia, ABI rehabilitation is therefore increasingly being delivered in community settings and this trend is replicated internationally (Doig & Kuipers, 2008; Martelli, Zasler, & Tiernan, 2012). There is increasing recognition of the need for support services during the transition and community re-integration phases and in the long-term. In addition, there is growing evidence that clients learn better and have more significant gains in independence and productivity in naturalistic settings, especially where there is positive social support (Martelli et al., 2012). In some countries government legislation has influenced the trend toward the delivery of rehabilitation in community settings. For example, the TBI Act in the USA resulted in the implementation of a federal program to improve access to community-based rehabilitation (Martelli et al., 2012). Despite this trend, there is limited research in community-based rehabilitation for clients with ABI. This is evidenced by best practice guidelines which typically focus on the acute and post-acute rehabilitation phases (e.g., Scottish Intercollegiate Guidelines Network, 2013), or those that generally apply recommendations to inpatient and community rehabilitation settings, with limited consideration of the different rehabilitation needs of community dwelling clients (e.g., British Society of Rehabilitation Medicine & Royal College of Physicians of London, 2003).

### **1.1.5 Goal setting in rehabilitation**

Goal setting is a fundamental process in rehabilitation, as it provides the direction for multi-disciplinary intervention (Playford, Siegert, Levack, & Freeman, 2009; Wade, 2009). The use of goal setting in rehabilitation is explained by psychological theories of behaviour, whereby goals

motivate people to change their behaviour (Bandura, 1997; Deci & Ryan, 1985; Locke & Latham, 2013). Therapists use goal setting to motivate clients to engage in rehabilitation activities, so that optimal rehabilitation outcomes can be achieved. A recent Australian survey of ABI rehabilitation practice has identified that around 90 percent of therapists use goal setting as part of their everyday practice (Pagan et al., 2015). Despite this there is limited empirical evidence available to guide goal setting implementation in ABI rehabilitation, with a recent Cochrane review concluding that there is only low quality evidence to support the use of goal setting for people with acquired disabilities (Levack, Weatherall, et al., 2015). Examination of goal setting practice in ABI rehabilitation is required, given its pivotal role in the rehabilitation process.

Goal setting is the process that therapists use to establish or negotiate a rehabilitation goal and may be directed by a diverse range of approaches (Levack & Siegert, 2015). Approaches to setting rehabilitation goals range from those that focus heavily on the inclusion of the client (Law et al., 1998; Melville, Baltic, Bettcher, & Nelson, 2002) to those that advocate a therapist-driven approach to promote goal directed behaviour in the client (Gauggel & Hoop, 2004), whereas others aim to facilitate improved teamwork (McGrath & Adams, 1999; McMillan & Sparkes, 1999). Overall, there are many approaches that a therapist may choose from to guide the goal setting process, with few approaches developed exclusively for use in ABI rehabilitation. Examples of ABI rehabilitation goal setting approaches include the Wolfsen Neurorehabilitation Approach (McMillan & Sparkes, 1999) and the Contractually Orientated Goal System (COGS) (Powell, 1999).

Regardless of the approach used, rehabilitation goal setting typically results in the documentation of a rehabilitation goal. A rehabilitation goal is defined as “a desired future state to be achieved by a person with a disability as a result of rehabilitation activities” (Levack & Siegert, 2015, p. 11). Similar to the diverse range of goal setting approaches available, there are also many recommendations regarding the best way to document a rehabilitation goal. The most widely used approach to document a rehabilitation goal is the ‘SMART’ approach, which specifies that

rehabilitation goals should be Specific, Measurable, Achievable, Realistic and Time-bound (Barnes & Ward, 2000). The use of ‘SMART’ goal documentation enables goals to be objectively rated (Barnes & Ward, 2000). Other considerations of goal documentation include the use of language that the client can understand, and the incorporation of the client’s name in the goal statement (NSW Agency for Clinical Innovation, 2014; Schut & Stam, 1994). Some authors have also suggested that the content of goals should be ordered using frameworks such as the World Health Organisation’s International Classification of Functioning, Disability and Health (ICF) (Wade, 2009).

*A client-centred approach* to goal setting has received increasing recognition and is recommended in best practice guidelines (for example, National Stroke Foundation, 2017). This approach encompasses a philosophy which respects the uniqueness of an individual, by exploring the client as a whole person and their life issues (Cott, 2004; Leplege et al., 2007). It involves supporting the client to participate in decision making about the direction of intervention and enables the client to feel that they have shared control in this process (Cott, 2004; Leplege et al., 2007). Use of this approach means that the client is actively involved in the negotiation and goal selection process (Levack, Dean, McPherson & Siegert, 2015). Active client involvement in the goal setting process is considered necessary to establish client-centred goals, that is goals that the client perceives are important (Cott, 2004). With increased involvement in goal setting, clients report increased motivation and goal ownership (Doig, Fleming, Cornwell, & Kuipers, 2009; Holliday, Ballinger, & Playford, 2007; Van De Weyer, Ballinger, & Playford, 2010). One study investigated the effect of high and low involvement in goal setting using a pre and post-test group design, with the high involvement group receiving additional metacognitive strategies to enhance engagement in goal setting (Webb & Glueckauf, 1994). The high involvement group demonstrated better outcomes than the low involvement group, however this study had a limited sample size and loss of participants at the follow-up time point (Levack, Dean, et al., 2015). Overall, most studies on client-centred goal setting have focused on an evaluation of the use of goals on outcomes rather

than investigating the process that therapists use to engage clients with ABI in client-centred goal setting.

An explanation for the limited research about client-centred goal setting is the lack of psychometrically sound measures of client-centredness from the client's perspective. One questionnaire that has recently been developed is the Client-Centredness of Goal Setting Scale (C-COGS) (Doig, Prescott, Fleming, Cornwell, & Kuipers, 2015). The C-COGS measures the client-perceived level of involvement in the goal setting process, as well as the importance, meaningfulness and relevance of the documented rehabilitation goals (Doig et al., 2015). The construct validity of this measure has been established, however other psychometric properties of this measure are unknown (Doig et al., 2015). In order to progress research about the use of client-centred goal setting in ABI rehabilitation, additional psychometric properties of this measure need to be established.

Without standardised measures of client-centredness, there has been no way of specifically demonstrating that more client-centred goals lead to better rehabilitation outcomes. In one study the relationship between client engagement in goal setting and goal outcomes demonstrated that better goal outcomes were achieved with higher levels of client engagement (Turner-Stokes, Rose, Ashford, & Singer, 2015). However, the levels of client involvement in goal setting were measured from the therapist's perspective. There is a need to understand rehabilitation processes from the client perspective, particularly when the construct being investigated is client-centredness. Therefore, investigation of the relationship between client-perceived levels of client-centredness of goal setting and goal outcome is required.

Given the increasing recognition of the value of a client-centred goal setting approach in clinical practice, all rehabilitation professions have embraced the use of this approach. Client-centred goal setting is a core requirement of most allied health disciplines, as evidenced in discipline-specific practice guidelines (e.g., Health & Care Professions Council, 2013; World Confederation for Physical Therapy, 2011). In the profession of occupational therapy, there is

particular focus on client-centredness (Sumsion, 2000). Client-centred occupational therapy has been defined as:

a partnership between the client and the therapist that empowers the client to engage in functional performance and fulfil his or her occupational roles in a variety of environments. The client participates actively in negotiating goals which are given priority and are at the centre of assessment, intervention and evaluation. Throughout the process the therapist listens to and respects the client's values, adapts the interventions to meet the client's needs and enables the client to make informed decisions. (Sumsion, 2000, p. 308)

During this process, occupational therapists recognise that every client engages in unique occupations (Turpin & Iwama, 2011). Consequently, interventions are developed to meet the individual needs of the client.

In terms of other allied health professions, client-centred goal setting is also espoused in training and practice. Client-centred goal setting is a core requirement in physiotherapy practice (Mudge, Stretton, & Kayes, 2014) and studies have shown that with experience, physiotherapists focus on client empowerment (Lloyd, Roberts, & Freeman, 2014). Speech Pathologists have also been encouraged to adopt collaborative therapy practices (Duchan & Black, 2001) with use of client-centred goal setting to empower clients (Hersh, Worrall, Howe, Sherratt, & Davidson, 2012). Additionally, in neuropsychology rehabilitation there has been a shift towards developing partnerships with clients and families to set meaningful therapy goals (Wilson, 2008). Finally, the provision of services which target the achievement of client-centred goals and increase the self-determination of clients has been advocated in social work (Gambrill, 2003).

However, a client-centred approach is not necessarily practised by occupational therapists and other rehabilitation professionals and there have been numerous challenges to its implementation demonstrated in previous studies (Leach, Cornwell, Fleming, & Haines, 2010; Levack, Dean, Siegert, & McPherson, 2011). These studies have largely focussed on the inpatient setting (for example, Holliday et al., 2007; Leach et al., 2010; Levack et al., 2009; McPherson et al.,

2009; Parry, 2004; Van De Weyer et al., 2010; Ylvisaker et al., 2008). By contrast, there has been limited investigation of client-centred goal setting with community dwelling clients with ABI. Goal setting processes are likely to differ between inpatients and clients who live in the community who generally take on a more active role in goal setting and have different rehabilitation needs (Siegert & Taylor, 2004). Typically in the community, clients' needs and the resultant rehabilitation goals are focused on the resumption of occupational roles, or enhancing community and social participation (Siegert & Taylor, 2004), with intervention delivered over longer time frames (Playford et al., 2000). Given the differences between goal setting practice across settings, as well as the limited investigation of goal setting in the community-based sector, further exploration of goal setting in the community context is required.

Additionally, the rehabilitation needs of community dwelling clients with ABI in the working age range need to be considered separately to older age groups (Turner-Stokes, Nair, Sedki, Disler, & Wade, 2005). Compared with the older age group, working age clients are more likely to have been living independently in the community and performing important social roles such as primary caregiver or financial provider prior to their brain injury (Lefebvre, Clouthier, & Josee Levert, 2008). Consideration of the working age group is also indicated given that TBI predominantly affects younger adults with high rates of incidence in the 15 to 30 year old age group (The Health and Social Care Information Centre, 2005-2012). Previous frameworks to guide goal setting practice with clients with ABI have been developed with the older stroke population (e.g., the Goal setting and action planning (G-AP) framework; Scobbie, Dixon & Wyke, 2011) or with generic rehabilitation populations (e.g., the Canadian Occupational Performance Measure (COPM); Law et al., 1990). Given the differing goal setting needs for working age clients with ABI, there is a need to specifically investigate the implementation of goal setting with clients with ABI in the working age range.

### **1.1.6 Factors influencing goal setting with clients with ABI**

The implementation of client-centred goal setting involves an active collaboration between the client and therapist, including joint decision making about the focus of intervention (Playford, 2015). Therefore, the strength of the relationship between the client and therapist, or the level of therapeutic alliance, has the potential to influence the effectiveness of the goal setting process.

Therapeutic alliance has been identified as a factor which may influence the success of brain injury rehabilitation (Schonberger, Hulme, & Teasdale, 2006a) and in psychiatric populations, studies have shown that the strength of therapeutic alliance is significantly correlated with outcomes (Luborsky, McLellan, Woody, O'Brien, & Auerbach, 1985). The level of therapeutic alliance is therefore a factor which has the potential to either enhance or inhibit the client-centred goal setting process and overall goal outcomes, however this factor requires further investigation in relation to goal setting with clients with ABI.

Client-centred goal setting with clients with ABI has the potential to be challenging, when compared to setting goals with clients from other diagnostic groups. In particular clients who present with cognitive and communication impairments may find it harder to actively participate in goal setting (Bouwens, Van Heugten, & Verhey, 2009; Doig et al., 2009; Hale, 2010; Van De Weyer et al., 2010; Ylvisaker, McPherson, Kayes, & Pellet, 2008). Cognitive impairment is typically caused by damage to the frontal lobes of the brain and include impaired memory, self-awareness and executive function (Winson et al., 2017). Clients with impaired self-awareness find it difficult to identify the need for treatment and set realistic goals, due to overestimation of their abilities (Fischer, Gauggel, & Trexler, 2004). Challenges therefore arise when there is disparity between what the therapist and client thinks is an achievable goal (Barnard, Cruice, & Playford, 2010; Parry, 2004). For clients with communication impairment, challenges can be experienced due to difficulties with expressing rehabilitation needs, discussing their ABI experiences and understanding therapy processes (Hersh, 2004, 2009; Worrall et al., 2011). Despite this, there has

been limited investigation of the strategies that therapists use in practice to overcome barriers associated with ABI impairment during goal setting.

An ABI may result in reduced motivation due to cognitive and psychological factors (Oddy, Cattren, & Wood, 2008). Cognitive factors which may affect motivation levels include impaired self-awareness and executive dysfunction (Fleming & Strong, 1995; Gardner, 2012). Psychologically, low mood, reduced self-esteem and anxiety may also result in reduced motivation (Oddy et al., 2008). Therefore, the level of motivation for rehabilitation has the potential to influence goal setting effectiveness with clients with ABI, however, this has not yet been investigated.

The individual's social environment may influence participation in rehabilitation and overall rehabilitation outcome (Sander, Maestas, Sherer, Malec, & Nakase-Richardson, 2012). For example, clients with ABI have better psychosocial outcomes when families provide positive social support (Sander, High, Becker, Neese, Scheibel 2002). Levack, Siegert, Dean and McPherson (2009) examined therapists' perceptions of family involvement in the goal setting process, in the context of inpatient stroke rehabilitation. Therapists in this study reported that the family influenced the goal setting process positively by supporting clients with ABI to engage in goal setting, especially when an individual's ability to participate in the process was impaired. However, therapists reported that families could also be a barrier to implementation of client-centred goal setting, particularly when the family's ideas about goal areas did not align with those of the client with ABI (Levack et al., 2009). Despite the importance of considering social-environmental factors, no studies have considered how these factors may impede or enhance the goal setting process in community-based ABI rehabilitation.

Other environmental factors that affect client participation in client-centred goal setting are not unique to ABI rehabilitation, but when considered in conjunction with ABI impairments, environmental barriers may make the setting of client-centred goals more challenging.

Environmental factors include organisational barriers and therapist factors. Organisational barriers



to goal setting are related to the setting in which goal setting is conducted. For example, in inpatient rehabilitation, client-centred goal setting may be constrained due to the focus on preparing the client for discharge, as well as problems associated with making goals relevant to the occupational roles of clients within a hospital setting (D'Cruz et al., 2016; Levack et al., 2011). Levack et al. (2006) identified barriers to client-centredness related to the purpose for goal setting, such as when goals are required to comply with contractual obligations rather than meeting the client's needs (Levack, Dean, McPherson, et al., 2006). The level of therapist experience has also been cited as a factor which may impede or enhance client-centred goal setting in ABI rehabilitation, with the assumption that more experience is related to greater client-centredness (Lloyd et al, 2014; Marsland & Bowman, 2010; Parry, 2004).

Overall, the research on how these factors influence client-centred goal setting has been conducted in inpatient settings, with no studies in the community-based rehabilitation context. A better understanding of the role of these factors would assist therapists to improve client-centred goal setting practice, and thus improve rehabilitation outcomes for clients with ABI living in the community.

## **1.2 Thesis aims**

The overall purpose of this thesis was to examine the nature and process of client-centred goal setting in the rehabilitation of community dwelling clients with ABI. This thesis has seven main aims, some of which have several sub-aims:

1. To understand the goal setting approaches used in research with clients with ABI, and to understand the principles that underpin goal setting practice as described in the literature.

2. To contribute to the development of a standardised measure of client-centred goal setting by determining the reliability of the C-COGS.
  
3. To examine current goal setting practices employed with clients with ABI in community-based rehabilitation settings by:
  - a. Describing client's perceived level of engagement in goal setting and meaningfulness and importance of goals;
  - b. Documenting the content, characteristics and client's recall of their goals; and
  - c. Summarising the level of goal achievement.
  
4. To investigate the relationship between client-centred goal setting and goal achievement.
  
5. To investigate the influence of identified barriers and facilitators on client-centred goal setting by:
  - a. Examining the relationship between perceived client-centredness of goals and level of self-awareness, motivation and therapeutic alliance; and
  - b. Exploring therapists' perceptions of how self-awareness, motivation and the therapeutic alliance impact on client-centred goal setting.
  
6. To examine the strategies and processes used by therapists to implement client-centred goal setting in community-based ABI rehabilitation by:
  - a. Exploring therapist's experiences and opinions about the implementation of goal setting in clinical practice; and

- b. Examining the strategies used to facilitate the inclusion of clients with ABI in goal setting in routine clinical practice.

7. To investigate therapists' perceptions regarding the implementation of client-centred goal setting across the different contexts of outpatient hospital, community, private and public sectors.

## **1.3 Context of the Thesis**

### **1.3.1 ABI rehabilitation services in Brisbane, Queensland Australia**

This study was conducted in Brisbane, Queensland, Australia. Queensland is the second largest and third most populous state in Australia. In 2017, approximately 4.9 million individuals resided in Queensland (Australian Bureau of Statistics, 2017). The largest city in Queensland, and the third largest in Australia, is Brisbane. Brisbane is located in the south-east region of Queensland, with approximately 2.4 million people living in greater Brisbane (Australian Bureau of Statistics, 2017). In south-east Queensland, at the time this study was conducted, the following services provided specialist ABI rehabilitation to community dwelling clients with ABI:

- The Brain Injury Rehabilitation Service Day Hospital (BIRS);
- The Acquired Brain Injury Outreach Service (ABIOS);
- Community-based private practices;

The Princess Alexandra Hospital is the primary brain injury rehabilitation hospital in Queensland. It has one 26 bed public hospital ward dedicated to providing specialist brain injury rehabilitation for clients of working age (i.e., 18 to 65 years). The BIRS Day Hospital is the associated outpatient service and is the only outpatient service in the state dedicated to providing specialised ABI rehabilitation. Funding for BIRS is provided by the Queensland Government. Services are

provided by a multi-disciplinary team consisting of medical staff, neuropsychologists, nurses, occupational therapists, physiotherapists, social workers and speech therapists. All team members complete discipline-specific goal setting, except for medical and nursing staff. The main aim of the service is to assist clients who reside in the south-east region of Queensland to achieve community-based rehabilitation goals. The day hospital accepts referrals for clients with ABI who have recently been discharged, but also accepts referrals for clients who are in the community re-integration or long-term ABI rehabilitation phases.

ABIOS is funded by the Queensland Government to provide community-based rehabilitation services and case management to clients with ABI and their families. The aim of ABIOS is to enhance and sustain the long-term rehabilitation outcomes of clients with ABI, by focusing on the establishment of community support systems (Queensland Government, 2017). It is a state-wide service, however direct rehabilitation is only provided to clients living within a 150km radius of Brisbane. For those clients with ABI who live outside of this radius, ABIOS provides consultation and education to local generic community-based rehabilitation services (Queensland Government, 2017). Staff at ABIOS include neuropsychologists, occupational therapists, physiotherapists, psychologists, social workers and speech pathologists. Goal setting is completed within a case management model, where an individualised approach to goal setting is used rather than the setting of discipline-specific goals.

Specialised ABI rehabilitation is also provided in south-east Queensland by privately funded community-based therapists. These private practices provide fee-for-service discipline-specific rehabilitation or case management services for clients with ABI. In Queensland, the majority of private practice rehabilitation is funded by either the third-party motor-vehicle insurance scheme or the state-wide work-related accident scheme. In response to the requirements of these funding schemes, private practices use either a discipline-specific goal setting approach to guide discipline-specific intervention, or individualised goal setting where case management is provided.

### **1.3.2 Background of the Study**

This study was initially funded by a Community Rehabilitation Workforce Project Grant (\$30,866) from the Division of Rehabilitation at Princess Alexandra Hospital awarded to Nicole Weir, Dr Emmah Doig, Professor Jenny Fleming and Associate Professor Petrea Cornwell in May 2013. A PhD student was recruited to contribute to the project, leading to the completion of this thesis.

### **1.3.3 Background of the Doctoral Candidate**

Several of the thesis aims required the adoption of a qualitative methodology. Therefore consideration of the background of the researcher is important, particularly the way that this has influenced the data analysis process and interpretation of the findings.

Mrs. Sarah Prescott is an experienced occupational therapist who has worked across the continuum of care with clients with brain injuries in both the public and private sector, in Australia and the United Kingdom. After graduating, Mrs. Prescott worked at the Royal Brisbane and Women's Hospital in a two-year graduate occupational therapist position. The Royal Brisbane and Women's Hospital is an acute tertiary teaching hospital located in Brisbane Queensland, Australia. During this time she worked in various caseloads, including an acute neuro-surgery ward and a multi-disciplinary stroke unit. She also worked in a post-acute rehabilitation ward, with a general rehabilitation caseload.

After this, she worked for four years at Kings College Hospital, London, UK, in a neurological occupational therapist rotational position. The role included the management of clients with complex neurological diagnoses and clients with stroke in a specialised stroke unit. In the last year of her work at Kings College Hospital, she worked as the senior occupational therapist of a 22 bed inpatient ABI rehabilitation ward, involving the rehabilitation of clients with complex ABI diagnoses.

In 2008, Mrs. Prescott returned to Brisbane and established her own private practice, to provide community-based ABI rehabilitation. The majority of referrals were for clients with TBI as a result of motor vehicle accidents, whose rehabilitation was funded by third-party compensation insurance. Other referrals were for the rehabilitation of clients with a diagnosis of stroke, brain tumor and multiple sclerosis. During this time, she provided rehabilitation for clients during the transitional-care, community re-integration and long-term rehabilitation phases of ABI rehabilitation. Her private practice was discontinued in 2014 when Mrs. Prescott commenced her doctoral studies.

Due to her clinical background as an occupational therapist, Mrs. Prescott's approach to rehabilitation has been underpinned by the use of a client-centred philosophy. This has meant that in her practice, clients with ABI have been valued as experts in knowing their individual rehabilitation needs. Furthermore, her work has been driven by a process which identifies the unique occupational performance problems of individual clients, by understanding the meaningful and important occupations of all of her clients rather than focusing on impairments. She has therefore employed a client-centred goal setting approach in her practice across the continuum from acute and sub-acute care to community rehabilitation. Mrs. Prescott also values the importance of transitional research, including the involvement of clinicians from data collection sites in all aspects of the research process.

As a result of her clinical work, Mrs. Prescott has gained valuable clinical skills in working with clients with ABI. This has influenced her belief that specialised clinical skills and experience are required to effectively work with clients with ABI. Furthermore, Mrs. Prescott has worked in services that provide optimal intervention as well as services where the provision of care could be considered less effective, because of funding available as well as historical approaches to service delivery. She has experienced challenges to the implementation of effective rehabilitation due to time pressure constraints. During her time at Kings College Hospital, she also attended a training program which provided education about the use of the Goal Attainment Scale, a formal goal

setting tool. Mrs. Prescott has therefore experienced many of the barriers and facilitators described in the research in relation to the implementation of goal setting in ABI rehabilitation.

An awareness of how the researcher's background, experience and beliefs influenced the analysis of the qualitative data was maintained at all times. The strategies used to maintain awareness of how her perspective influenced the data analysis process are discussed in Chapters 7 and 8. Additionally, Mrs. Prescott reflected on her own clinical experience to discuss the clinical implications of the findings of the quantitative and qualitative studies involved in this thesis.

## **1.4 Structure of thesis**

A hybrid style thesis-by-publication format was used to prepare this thesis. It includes both published and submitted manuscripts and traditional thesis chapters. The traditional thesis chapters include the introduction (Chapter 1), methods (Chapter 3) and discussion (Chapter 9). These chapters were included so that detailed information relevant to the thesis, which was not required for publication, could be outlined. The published or submitted chapters represent the most recent or final version submitted to the journal before copyediting. To ensure consistency across the thesis, all of the chapters containing published or submitted material have been reformatted, for example to ensure consistency with referencing. In some instances there are inconsistencies in the terminology that has been used across the published chapters. For example, the terms therapist and clinician have been used interchangeably. These inconsistencies exist to comply with the publication guidelines of the journal in which the chapter has been published. Each chapter contains an unpublished introductory paragraph which describes the contents of the chapter and links it to other chapters, to ensure that the thesis remains cohesive.

## **1.5 Overview of thesis chapters**

### **Chapter 2**

The next chapter adopts a scoping review method to broadly review the literature in relation to goal setting approaches that have been used to date in research studies. Additionally, an appraisal of the methodological quality of studies where goal setting approaches have been evaluated is provided.

Finally, a set of key goal setting practice principles are drawn from these studies.

Recommendations for future research are presented, including examination of informal goal setting in the community-based rehabilitation sector, as well as the need to evaluate the effectiveness of client-centred goal setting approaches. The chapter addresses aim 1 of the thesis and comprises a manuscript published in *Brain Injury*.

### **Chapter 3**

The methods and methodology of the main study of the thesis are detailed in this chapter. The rationale for the adoption of a multiple methods research paradigm to investigate the aims of the study is discussed. The method of the overarching study from which the component studies in Chapters 4 to 8 is outlined. Ethical considerations as well as strategies implemented to enable the translation of study findings into clinical practice are presented. This chapter is a traditional thesis style chapter, and is not published.

### **Chapter 4**

Chapter 4 describes the further development of the C-COGS, a measure developed to evaluate goal setting processes and goals from the client's perspective. This chapter describes a study examining the internal reliability and test-retest reliability of the C-COGS, leading to the revision of the scale and recommendations regarding administration of the scale in practice. The C-COGS was then



used as a measure in subsequent studies in this thesis. Chapter 2 addresses aim 2 of the thesis and is a manuscript published in the *American Journal of Occupational Therapy*.

## **Chapter 5**

This chapter examines the characteristics, content and recall of client-centred goals in brain injury rehabilitation, and the extent to which client-centredness relates to the goal characteristics and goal outcomes. The results of a prospective cohort study are presented. Data for this study were collected from a hospital-based outpatient service and community-based private practices. By drawing on the main findings of the study, the clinical implications of the study are presented. This chapter addresses aims 3 and 4 of the thesis, and is a revised manuscript under review in *Brain Impairment*.

## **Chapter 6**

Chapter 6 presents a prospective cohort study which investigated the effect of changes in self-awareness on goal engagement and goal outcomes. The findings of the investigation are presented, as well as key recommendations for occupational therapy practice. Thus, the findings address aims 4 and 5 of the thesis. The chapter comprises a manuscript that has been submitted for publication.

## **Chapter 7**

This chapter is comprised of a qualitative exploration of clinicians' experiences of implementing goal setting with community dwelling clients with ABI. The aim of this study was to develop a goal setting practice framework that explains how therapists engage clients in goal setting in routine clinical practice. The grounded theory methodology used to develop the framework is described, as well as the framework which resulted from the data analysis (i.e., the Client-Centred Goal Setting Practice Framework). The chapter also examines the contextual factors of client-centred goal

setting, as described by therapist participants in the study. This chapter addresses aims 6 and 7 of the thesis and is a manuscript published in *Disability and Rehabilitation*.

## **Chapter 8**

Chapter 8 contains a qualitative study which examined the application of the Client-Centred Goal Setting Practice Framework (i.e., the framework developed in Chapter 7) in routine clinical practice. The deductive framework analysis approach used to analyse the data is described. The results present the strategies that therapists use to engage clients with brain injury in goal setting, therefore addressing aim 6 of the thesis. This chapter comprises a revised manuscript under review in the *Australian Occupational Therapy Journal*.

## **Chapter 9**

The final chapter synthesises the main findings of previous chapters and integrates the results from the multiple methods of enquiry used in the thesis. Findings are summarised in relation to the proposed thesis aims and questions. Based on these findings, clinical recommendations which facilitate the enhanced involvement of clients in goal setting in community-based brain injury rehabilitation settings are proposed. The strengths and limitations of the thesis are discussed and future research directions are outlined. This chapter is a traditional thesis chapter and provides an overall conclusion to the thesis.

## **Chapter 2 Goal setting approaches and principles used in rehabilitation for people with acquired brain injury: a systematic scoping review**

Prescott, S., Fleming, J. & Doig, E. (2015). Goal setting approaches and principles used in rehabilitation for people with acquired brain injury: a systematic scoping review. *Brain Injury*, 29 (13-14), 1515-1529. doi: 10.3109/02699052.2015.1075152

The previous chapter provided a summary of background information to provide a rationale for this thesis, and the thesis aims. It also presented an overview of the thesis chapters and associated methods used to address the aims.

Chapter 2 presents the findings of a scoping review, which addresses the first thesis aim. It examines the goal setting approaches used in research with adults in the working age range by adopting a scoping review method. It also outlines the practice principles drawn from studies where a goal setting approach was evaluated.

This chapter consist of a manuscript entitled ‘Goal setting approaches and principles used in rehabilitation for people with acquired brain injury: a systematic scoping review’ published in *Brian Injury*. The manuscript has been inserted as published except the reference style has been changed to adhere to the American Psychological Association (APA) sixth edition guidelines, as well as formatting changes to headings, tables and figures to maintain consistency throughout the thesis.

## 2.1 Abstract

**Primary Objective:** To identify goal setting approaches used with people with ABI in the working age range.

**Methods:** Database searches were conducted in Medline (via Ovid) (1960 - May 2014), CINAHL (1982- May 2014), Cochrane Library (1996 – May 2014), and PsycINFO (1840-May 2014).

Systematic scoping review of databases identified studies that described or evaluated goal setting approaches, which were classified as informal or formal. Methodological quality appraisal was completed with all studies that evaluated a goal setting approach. Key practice principles were extracted from evaluation studies using a content analytic approach to identify key themes.

**Results:** Of the full text articles included ( $n=86$ ), 62 described a goal setting approach and 24 evaluated a goal setting approach. Formal goal setting approaches were used in 77 % of studies.

The most common practice principles extracted describe goal setting in ABI rehabilitation as being client-centred, collaborative, measurable and realistic, and as incorporating proximal goals, or providing a link to therapy.

**Conclusion:** Use of formal goal setting approaches appears more prevalent in research studies compared with routine clinical practice. There is a strong theme in the literature that client-centredness and collaboration are necessary components of effective goal setting.

**Key words:** acquired brain injury, client-centredness, collaboration, goal setting, neurology

## 2.2 Introduction

Rehabilitation for people with an ABI, especially for those in the moderate to severe injury range, is considered necessary to facilitate return to valued life roles and participation in meaningful occupations (Turner-Stokes et al., 2005). An ABI refers to an acute single-insult neurological condition which may be caused by TBI, diffuse axonal brain injury, cerebrovascular accident (stroke) or other causes such as meningitis (Turner-Stokes et al., 2005). In Australia three-quarters of the population with an ABI (432,000 people or 2.2% of the population) are under 65 years of age (AIHW, 2007). This demographic is reflected in other developed countries, where there is a peak in TBI in the 15-30 year old age group (The Health and Social Care Information Centre, 2005-2012). The rehabilitation needs of this population differ from older age groups in that pre-morbidly the majority of people were actively working, living independently in the community, and often carrying out social roles such as a primary care-giver or financial provider (Lefebvre, Clouthier, & Josee Levert, 2008). As ABI causes long term disability, younger people with ABI may have ongoing and changing needs extending across the different phases of the life span (Fraas, Balz, & Degrauw, 2007; Lannoo, Brusselmans, van Eynde, van Laere, & Stevens, 2004; Murphy & Carmine, 2012; Ponsford et al., 2014). Given these differing pre-morbid roles and the longer-term rehabilitation needs, rehabilitation delivery to people of working age needs to be considered separately to other age-groups.

Goal setting (or goal planning) is a central process that guides interventions delivered in rehabilitation settings (Playford et al., 2009; Wade, 2009). Goal setting is defined as the 'establishment or negotiation of rehabilitation goals' (Levack et al., 2012, p. 3), and the negotiation normally occurs between the client and rehabilitation team (Evans, 2012). The need for an up-to-date Cochrane review of goal setting approaches for clients with acquired disability has recently been highlighted by Levack et al. (2012). These authors noted that there are many approaches to goal setting and a wide variation in the use of specific approaches, including differing

implementation procedures for Goal Attainment Scaling (GAS) and interpretations of ‘SMART’ goal setting (Levack et al., 2012). Additionally, many factors may impact on how effective goal setting is, for example the level of involvement of the client in the goal setting process (Levack et al., 2012). The Cochrane review will focus on goal setting literature published in relation to the general health condition category of acquired disability (Levack et al., 2012). Given the heterogeneity and complexity of impairments typically found in the ABI population (Turner-Stokes et al., 2005), there is a need to examine goal setting in brain injury rehabilitation as a distinct group, separate from those with other acquired disabilities.

Holliday et al. (2005) investigated goal setting approaches used in routine clinical practice in the UK in relation to the level of client-centredness and the use of formalised methods of goal setting such as GAS (Kiresuk & Sherman, 1968), the Canadian Occupational Performance Measure (COPM) (Law et al., 1990) and Contractually Organised Goal Setting (COGS) (Powell, 1999). Holliday et al. (2005) surveyed 336 rehabilitation specialists about the goal setting methods they used, and found that 50 % of respondents used a client-centred approach and only 14 % of respondents used a formalised goal setting approach. Recent systematic reviews of goal setting interventions with people with stroke have also documented various approaches used by rehabilitation teams to guide the goal setting process (Rosewilliam, Roskell, & Pandyan, 2011; Sugavanam, Mead, Bulley, Donaghy, & van Wijck, 2013). These reviews concluded that there were various barriers to the goal setting process and that client-centred approaches have been minimally adopted in practice with people after stroke.

Goal setting approaches may differ for other populations where the majority of clients are younger and working pre-morbidly, as is typical of TBI populations. Furthermore, there may be age-related differences regarding understanding of the concept of goals and pre-morbid use of goal setting in everyday life. This highlights the need to investigate goal setting approaches used for clients with ABI who fall into the working age category. In particular, it would be useful for

rehabilitation practitioners to find out what goal setting approaches are being used in rehabilitation research with this group and which processes have demonstrated evidence of effectiveness.

Given that the majority of the systematic reviews about goal setting practices in rehabilitation to date have focussed on the older stroke population, the current scoping review sought to identify goal setting approaches used for people with ABI in the working age range, summarise the effectiveness of goal setting approaches that have been evaluated with this population, and to understand the principles that underpin goal setting practice with this group. Due to the wide variation in approaches (Levack et al., 2012; Rosewilliam et al., 2011; Sugavanam et al., 2013), and the primary use of informal approaches in clinical practice (Holliday et al., 2005), a framework comprised of goal setting practice principles would be valuable to guide the application of goal setting across settings.

## **2.3 Method**

### **2.3.1 Design**

The design chosen was a scoping review with systematic search strategies (Arksey & O'Malley, 2005; Levac, Colquhoun, & O'Brien, 2010; McKinstry, Brown, & Gustafsson, 2013). The use of a systematic review was discounted given that a main aim of the study was to broadly understand the types of goal setting approaches that are used in practice. Similarly, a meta-synthesis of the results of qualitative studies on goal setting was not considered appropriate given that a main aim was to integrate findings from both qualitative and quantitative studies into key practice principles. A scoping review was considered to be the most appropriate method to enable a broad understanding of the variety of approaches used. Although not considered a necessary step in a scoping review, assessment of the methodological quality of studies which evaluated the effectiveness of goal setting approaches using qualitative or quantitative methods was completed. This allowed the methodological quality of studies to be considered when drawing conclusions about the

effectiveness of goal setting approaches and practice principles across studies. Following published guidelines, the steps involved in the scoping review process included: 1) Identifying relevant studies, 2) Study selection, 3) Charting the data, and 4) Collating, summarising and reporting results (Arksey & O'Malley, 2005; Levac et al., 2010; Mckinstry et al., 2013).

### **2.3.2 Study Identification**

Database searches of citation titles, abstracts and keywords were carried out in Medline (via Ovid) (1960-May 2014), CINAHL (1982-May 2014), Cochrane Library (1996-May 2014), and PsycINFO (1840-May 2014) using the search terms 'goal' and 'rehabilitation' and 'brain injury OR acquired brain injury OR stroke OR encephalitis OR hypoxic brain injury OR cerebrovascular accident OR subarachnoid haemorrhage OR meningitis'. Subsequently, COPM, Participation Objective Participation Subjective (POPS), Activity Card Sort and Occupational Gaps were substituted for the word 'goal' in a secondary data-base search as they are recognised goal setting tools identified by the authors. Duplicate studies were removed when identified. In addition to the database search, a manual search of key journals and reference lists of identified articles was conducted, and any relevant articles identified from this search and from the researchers' collection were also considered for inclusion.

### **2.3.3 Study Selection**

The inclusion criteria for study selection were: 1) full text articles in English, 2) studies where the majority of participants had a diagnosis of ABI, 3) studies with a mean or median participant age of between 16-65 or a majority who were working pre-morbidly, 4) participants undergoing inpatient or outpatient rehabilitation, and 5) studies that describe or evaluate the use of goal setting in ABI rehabilitation. As the focus of the review was on the goal setting process, studies were excluded if they were describing or evaluating the use of goals as an intervention technique. For example, goal



management training studies where intervention targets the acquisition of goal directed behaviours and problem solving skills to remediate executive function impairment (Bertens, Fasotti, Boelen, & Kessels, 2013). One corresponding author was emailed when more information was required to determine whether a study should be included in the review. All articles identified during the search were screened by the first author (SP) by review of the title, keywords and abstract, and discounted if they were not eligible for inclusion in the full text review. Where there was uncertainty regarding the inclusion of an article, consensus was reached via discussion with the other authors following review of the full text.

#### **2.3.4 Charting the Data**

Where studies described a goal setting approach, the approach used was documented and classified as belonging to either: 1) a standardised or formal goal setting approach, or 2) an informal goal setting approach, using the classification system proposed by Holliday et al. (2005). A formal goal setting approach was defined, for the purposes of the review, as an approach that is able to be replicated in practice due to the availability of written standardised guidelines regarding the procedure of administration (e.g., COPM, GAS, COGS). For those studies that evaluated an approach, information was recorded regarding the study design, setting, approach used and conclusions reached. The approaches used in the evaluation studies were also classified as either formal or informal to enable approaches in all studies to be analysed broadly.

#### **2.3.5 Collating, summarising and reporting results**

Frequencies of formal versus informal goal setting approaches in the literature were compared. An assessment of the methodological quality of all studies which evaluated the effectiveness of a goal setting approach was completed. Quantitative studies were evaluated by assigning a level of evidence in accordance with the Oxford Centre for Evidence-Based Medicine (OCEBM) 2011

Levels of Evidence classification (OCEBM Levels of Evidence Working Group, 2011). When using the OCEBM guidelines, studies are ranked along a continuum ranging from Level 1 (e.g., systematic reviews) which are classified as the highest level evidence, through Level 2 studies (e.g., randomised trials), Level 3 studies (e.g., non-randomised controlled cohort) and Level 4 studies (e.g., case series) to Level 5 (e.g., clinical opinion) which are considered to be the lowest level of evidence. Where further criteria to distinguish cohort studies from a case series were required, the definition provided by Dekkers and colleagues was used (Dekkers, Egger, Altman, & Vandembroucke, 2012). The qualitative studies were assessed using an adapted version of the Quality Evaluation Scale (QES) (Turner, Fleming, & Ownsworth, 2008), which was based on a qualitative rating tool developed by Spencer and colleagues (Spencer, Ritchie, Lewis, & Dillion, 2003). The QES evaluates studies based on whether they clearly outlined information about (a) research design (i.e., phenomenology); (b) study design (prospective and longitudinal); (c) participant recruitment and sampling techniques; (d) the characteristics of the sample; (e) data collection procedures; (f) data analysis procedures; and (g) methods for enhancing rigour. The QES requires the assessor to rate each of the seven criteria as being met (score=1) or not met (score=0). A total score out of seven is calculated, with 7/7 representing studies which meet all criteria and are therefore considered to be the highest level of methodological quality. All studies were evaluated according to the criteria by the first author, and a second independent evaluation was carried out by another author (ED) for qualitative and (JF) for quantitative studies. Where discrepancies existed, agreement was reached through discussion with all three authors.

Key practice principles were extracted from all studies which evaluated a goal setting approach by thematic analysis using a content analytic approach (Patton, 2002). The method and results sections were read several times, sections were highlighted that referred directly to goal setting practices, processes or principles, and key features of the approach and results of the study were summarised and documented on a template. The documented summaries were coded on the hard copy template such that labels/codes were developed to represent the practice, process or principle

and commonly emerging practice principles were defined using summaries of coded content. Definitions were refined through re-review of articles. This process was completed for all articles by the first author (SP) and thereafter, a sub-set of five studies were randomly selected and independently reviewed by a second researcher (ED). The second researcher was given a list of the developed principles and definitions, and applied the framework to each article. There was exact agreement between raters about the principles identified for 23/29 (79.4%) of the principles extracted across the five articles reviewed. This led to further discussion and refinement of principle definitions which were re-applied to all articles by the first author. The number of studies which used each principle was recorded. The full list of principles was then reduced to those that appeared in level 2 quantitative studies and qualitative studies with a QES > 5 where the approach was supported by qualitative findings. This ensured that the principles were drawn from the highest level evidence.

## **2.4 Results**

The process adopted to identify relevant studies is illustrated in Figure 2.1. The database search identified 858 articles and 14 additional studies were identified with secondary searches. Of these, 168 full-text articles were selected for analysis. From the full-text review, 62 studies were found to describe a goal setting approach, 24 studies evaluated goal setting approaches and 82 articles were excluded as per the reasons shown in Figure 2.1. Lack of description or evaluation of a goal setting approach in a study was the main reason for study exclusion.

### **2.4.1 Approaches to goal setting used in research studies**

Table 2.1 lists the formal and informal goal setting approaches adopted in the studies that described or evaluated goal setting approaches. When considering all studies, a formal approach was adopted in 77 % of studies. In studies where an approach was described, the bulk of studies used the GAS

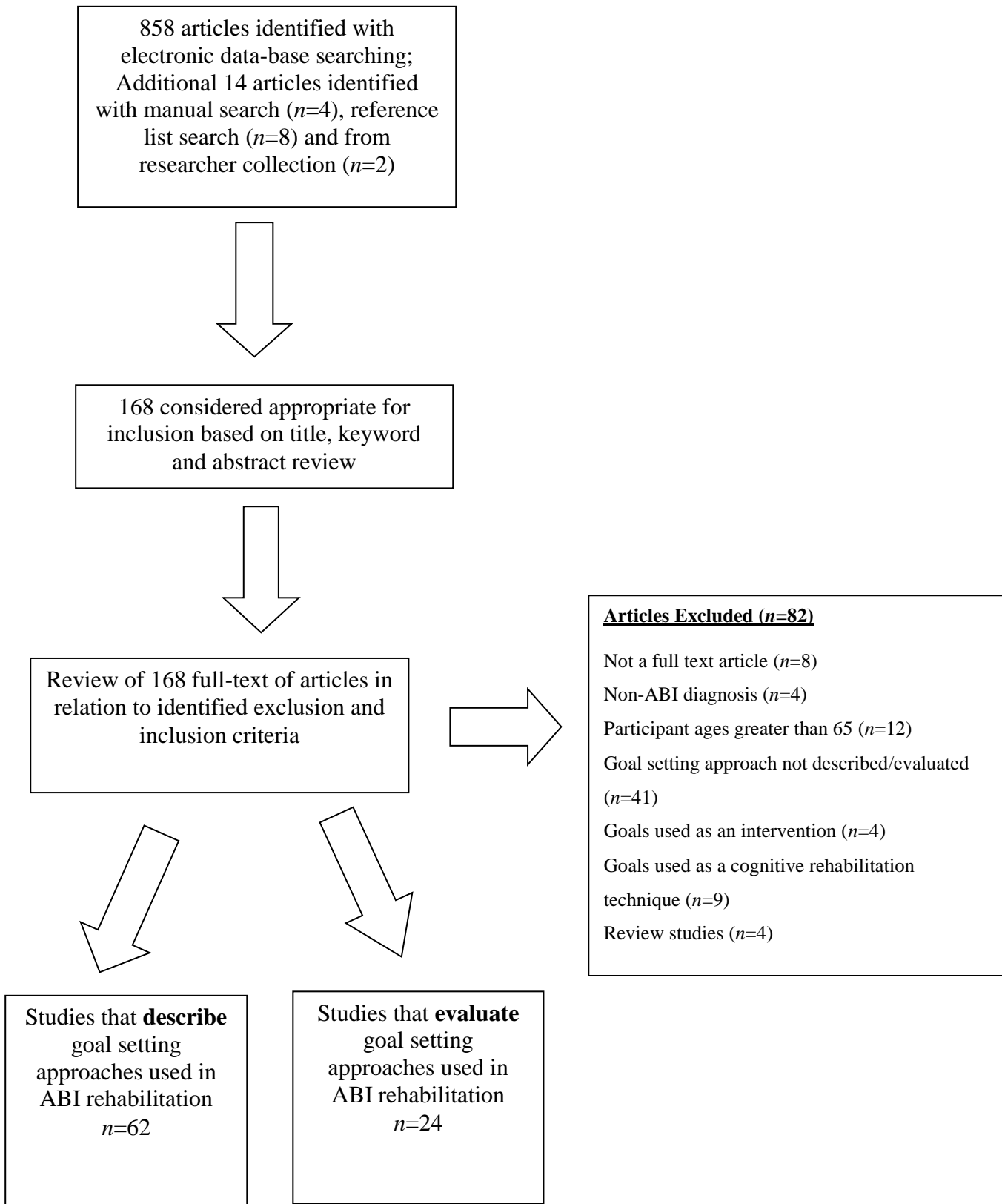


Figure 2.1. Summary of process to identify relevant studies

Table 2.1. Summary of goal setting approaches used in published studies

Formal Goal Setting Approaches <i>n</i> =73 (77%)	Studies where approach is described	Studies where approach is evaluated
<p><b>GAS (<i>n</i>= 31)</b>            A framework for documenting individualised goals in quantifiable manner. It is a five-point scale where the expected outcome is projected and levels of goal attainment are stated objectively (Malec, 1999)</p>	<p>Smigielski, Malec, Thompson, &amp; DePompolo, 1992; Larsson, Nyström, Vikström, Walfridsson, &amp; Söderback, 1995; Malec, 1999; Malec &amp; Moessner, 2000; Malec, 2001; Dahlberg et al., 2007; Mastos, Miller, Eliasson, &amp; Imms, 2007; Turner-Stokes &amp; Ashford, 2007; Bovend' Eerd, Botell, &amp; Wade, 2009; Fietzek et al., 2009; Turner-Stokes, Williams, &amp; Johnson, 2009; Bovend'Eerd, Dawes, Sackley, Izadi, &amp; Wade, 2010; Braden et al., 2010; Rasquin et al., 2010; Turner-Stokes &amp; Williams, 2010; Borg et al., 2011; Ertzgaard, Ward, Wissel, &amp; Borg, 2011; Graven et al., 2011; de Kloet, Berger, Verhoeven, Van Stein Callenfels, &amp; Vliet Vlieland, 2012; Grant, Ponsford, &amp; Bennett, 2012; De Joode, Van Heugten, Verhey, &amp; Van Boxtel, 2013; Brands, Bouwens, Gregório, Stapert, &amp; van Heugten, 2013; Sunnerhagen &amp; Francisco, 2013; Bender, Bauch, &amp; Grill, 2014 (<i>n</i>=24)</p>	<p>Zweber &amp; Malec, 1990; Malec et al., 1991; Joyce et al., 1994; Bouwens et al., 2009; McPherson et al., 2009; Hale, 2010; Bergquist et al., 2012  <i>(n= 7)</i></p>
<p><b>COPM (<i>n</i>= 21)</b>            A semi-structured interview whereby clients are asked to self-identify occupational performance problems and rate each area in terms of their performance and satisfaction. The identified problem areas then form the basis on which goals are set (Law et al., 1990)</p>	<p>Jansa, Sicherl, Angleitner, &amp; Law, 2004; Jenkinson, Ownsworth, &amp; Shum, 2007; Gentry, Wallace, Kvarfordt, &amp; Lynch, 2008; Hill-Hermann et al., 2008 ; Dawson et al., 2009; McEwen, Polatajko, Huijbregts, &amp; Ryan, 2009; Combs, Kelly, Barton, Ivaska, &amp; Nowak, 2010; Hermann et al., 2010; Mann, Taylor, &amp; Lane, 2011; Schuck, Whetstone, Hill, Levine, &amp; Page, 2011; Skidmore et al., 2011; Wu, Radel, &amp; Hanna-Pladdy, 2011; Nilsen, Gillen, DiRusso, &amp; Gordon, 2012; Polatajko, McEwen, Ryan, &amp; Baum, 2012; Dawson, Binns, Hunt, Lemsky, &amp; Polatajko, 2013; Bertilsson et al., 2014 (<i>n</i>=16)</p>	<p>Mew &amp; Fossey, 1996; Phipps &amp; Richardson, 2007; Ownsworth et al., 2008; Taylor et al., 2012; Leach et al., 2010 (<i>n</i>=5)</p>
<p><b>GAS and COPM (<i>n</i>=7) in combination</b>            Use of both measures to enable quantification of self-reported performance ratings (Doig, Fleming, Kuipers, &amp; Cornwell, 2010)</p>	<p>Trombly, Radomski, &amp; Davis, 1998; Trombly, Radomski, Tixel, &amp; Burnett-Smith, 2002; Doig et al., 2010; Doig, Fleming, Kuipers, Cornwell, &amp; Khan, 2011; Doig, Fleming, Cornwell, &amp; Kuipers, 2011; Rotenberg-Shpigelman, Erez, Nahaloni, &amp; Maeir, 2012)  <i>(n=6)</i></p>	<p>Doig et al., 2009 (<i>n</i>=1)</p>

Table 2.1. Summary of goal setting approaches used in published studies (continued)

<b>Formal Goal Setting Approaches (continued)</b>	<b>Studies where approach is described</b>	<b>Studies where approach is evaluated</b>
<b>Identity Orientated Goal Training (n=2)</b> Use of an image of an admired individual to identify specific goal areas (McPherson et al., 2009)		Ylvisaker, McPherson, Kayes, & Pellett, 2008; McPherson et al., 2009 (n=2)
<b>Other Formal Approaches (n=12)</b>		
Goal setting approach for clients with impaired self-awareness	Bergquist & Jacket, 1993	
Smarter Framework for Goal Setting	Hersh et al, 2012	
Goal Setting and Action Planning Framework	Scobbie, Dixon, & Wyke, 2011	
Treatment Goal Attainment	Spikman, Boelen, Lamberts, Brouwer, & Fasotti, 2010	
Rivermead Rehabilitation Approach	Nair & Wade, 2003	
Contractually Orientated Goal System (COGS)	Powell, 1999	
Talking Mats	Bornman & Murphy, 2006 (n=7)	
SMART Goal Setting		Black, Brock, Kenendy, & Mackenzie, 2010
Goals for Occupational Therapy List (GOTL) and Goal Satisfaction Rating		Custer, Huebner, Freudenberger, & Nichols, 2012
Wolfsen Neuro Rehabilitation Approach		McMillan & Sparkes, 1999
Goal Management Training		McPherson et al., 2009
Carlson Goal Assessment Technique		Webb & Glueckauf, 1994 (n=5)
<b>Informal Goal Setting Approaches n=22 (23%)</b>		
<b>Client-centred/Collaborative goal setting (n =15)</b> Use of a goal setting approach unique to an individual service and includes the client in the goal setting process	Gutman, 2001; Wilson, Evans, & Keohane, 2002; Liu, McNeil, & Greenwood, 2004; van den Broek, 2005 ; Walker, Onus, Doyle, Clare, & McCarthy, 2005; Gracey, Oldham, & Kritzinger, 2007; Doig, Fleming, & Kuipers, 2008; Wheeler, 2010 (n=8)	Parry, 2004; Holliday, Ballinger, et al., 2007; Holliday, Cano, et al., 2007; Levack et al., 2009; Van De Weyer et al., 2010; Leach et al., 2010; Dalton et al., 2012 (n=7)
<b>Therapist-driven Goal Setting (n=7)</b> Therapy goals determined by the therapist without the inclusion of client	Prigatano & Wong, 1999; Parry, 2004 (n=2)	Holliday, Ballinger, et al., 2007; Holliday, Cano, et al., 2007; Leach et al., 2010; Van De Weyer et al., 2010; Dalton et al., 2012 (n=5)

Note. some studies investigated more than one approach

( $n=31$ ) and COPM ( $n=21$ ) independently, or in combination ( $n=7$ ). Where informal goal setting approaches were described or evaluated, the majority of studies used a client-centred/collaborative goal setting approach. Twenty-four studies evaluated the effectiveness of goal setting, including either the evaluation of an individual approach or a comparison of two or more approaches. Across the 24 evaluation studies, 32 approaches were evaluated with some studies comparing different approaches. Informal client-centred collaborative goal setting ( $n=7$ ) (Dalton et al., 2012; Holliday, Ballinger, et al., 2007; Holliday, Cano, Freeman, & Playford, 2007; Leach, Cornwell, Fleming, & Haines, 2010; Levack et al., 2009; Parry, 2004; Van De Weyer, et al., 2010) and GAS were evaluated most commonly ( $n=7$ ) (Bergquist et al., 2012; Bouwens, et al., 2009; Hale, 2010; Joyce, Rockwood, & Mate-Kole, 1994; Malec, Smigielski, & DePompolo, 1991; McPherson, Kayes, & Weatherall, 2009; Zweber & Malec, 1990), followed by informal therapist driven goal setting ( $n=5$ ) (Dalton et al., 2012; Holliday, Ballinger, et al., 2007; Holliday, Cano, et al., 2007; Leach et al., 2010; Van De Weyer et al., 2010), the use of the COPM ( $n=5$ ) (Leach et al., 2010; Mew & Fossey, 1996; Ownsworth, Fleming, Shum, Kuipers, & Strong, 2008; Phipps & Richardson, 2007; Taylor et al., 2012), Identity Oriented Goal Training (IOG) ( $n=2$ ) (McPherson et al., 2009; Ylvisaker et al., 2008), various other formal goal setting approaches ( $n=5$ ) (Black et al., 2010; Custer et al., 2012; McMillan & Sparkes, 1999; McPherson et al., 2009; Webb & Glueckauf, 1994), and finally, evaluation of the GAS and COPM used in combination ( $n=1$ ) (Doig et al., 2009). Studies that investigated more than one approach typically compared an informal therapist-driven approach with an informal approach that enabled increased client-centeredness and collaboration (Dalton et al., 2012; Holliday, Ballinger, et al., 2007; Holliday, Cano, et al., 2007; Leach et al., 2010; Van De Weyer et al., 2010). More than 60% of evaluation studies used formal goal setting approaches with formal approaches more commonly described and evaluated compared to informal approaches.

The quantitative and qualitative studies that evaluated goal setting approaches are shown in Tables 2.2 and 2.3 respectively, with both tables listing studies in order of level of evidence. Of the 24 included studies, 14 were quantitative and 10 were qualitative. A formal approach

Table 2.2. Goal setting approaches evaluated in quantitative studies

Study	Study Design and setting	Approach Used [Formal (F) vs Informal (I)]	Main Findings/Conclusion	OCEBM Rating/ Key Principles
Owensworth et al., 2008	Comparison of three intervention approaches to enhance goal attainment; ABI outpatient and community setting	(F) Goal setting for all groups with COPM; Group: focus on metacognitive skill development; Individual: COPM to guide individual function-focussed intervention; Combined: shorter duration of both	Individualised goal specific intervention had greatest influence on goal attainment	Level 2 Client-Centred Collaborative Measurable
Taylor et al., 2012	RCT of structured goal setting; inpatient stroke rehabilitation	(F & I) Use of COPM vs usual care (i.e. discipline-specific goal setting)	Limited variation in quality-of-life with use of COPM compared with usual care	Level 2 Client-Centred (COPM) Collaborative (COPM) Proximal goals (COPM) Link to Therapy (COPM)
Webb & Glueckauf, 1994	Pre- and post-control group design; Inpatients and day hospital	(F) GAS to measure goal attainment for both conditions; Two groups:-High Involvement (HI) vs Low Involvement (LI); HI= Carlson Goal Assessment Technique, education re process, metacognitive strategies	Both groups made significant gains pre to post-test; HI group made significant gains at 2 month follow-up	Level 2 Motivational (HI) Collaborative (HI & LI) Metacognitive (HI) Education(HI) Client-Centred (HI & LI) Measurable (HI & LI)
Bergquist et al., 2012	Retrospective cohort study; Examining relationship between goal attainment and functional outcome; ABI outpatient setting	(F) Dichotomous use of GAS: goals met or unmet; Time bound: short term and graduation goals; Domain specific goals: orientation, cognitive, social awareness, communication; collaboratively generated	Goal attainment significantly correlated with independent living and vocational functioning	Level 3 Measurable Proximal goals Realistic Collaborative Client Centred Domain Specific



Table 2.2. Goal setting approaches evaluated in quantitative studies (continued)

Study	Study Design and Setting	Approach Used [Formal (F) vs Informal (I)]	Main Findings/Conclusion	OCEBM Rating/ Key Principles
Black et al., 2010	Prospective observational cohort study; Inpatient neurological rehabilitation	(F) SMART goal setting; Problem-based goals set in multiple domains; Goal achievement scored as exceeded, achieved or not achieved; short-term and discharge goals	Short-term goal setting is an effective way of monitoring progress and therefore early review of overall discharge plan can be identified	Level 3 Measurable Domain specific Proximal goals Therapist-driven
Bouwens et al., 2009	Prospective observational cohort study; ABI Outpatient- cognitive rehabilitation	(F) GAS; Collaborative goal setting, Time bound: discharge goal; Domains: cognition, emotion, behaviour, other	GAS able to be used within standard time frames, enables collaboration, setting realistic goals; process complicated with presence of self-awareness and mood impairments	Level 3 Feasible Measurable Client-Centred Collaborative Domain Specific
Custer et al., 2012	Prospective cohort study; Outpatient setting	(F) Combined use of Goals for occupational therapy list (GOTL) and Goal Satisfaction Rating (GSR); Goals set within occupation/activity-based domains; Pairing of measures to elicit goals and measure outcome	Pairing of measures time efficient however some evidence of unrealistic goal setting	Level 3 Measurable Feasible Client- Centred Collaborative Domain Specific
Holliday, Cano, et al., 2007	Balanced block design; Inpatient setting	(I) Usual participation (UP) vs increased participation (IP) (increased education and collaborative goal setting)	Goal relevance and patient satisfaction significantly higher with collaborative goal setting; no differences between groups in functional outcomes	Level 3 Therapist-driven (UP) Education (IP) Measurable (IP) Collaborative (IP & UP) Client-Centred (IP) Realistic (IP) Domain Specific (IP) Proximal goals (IP)

Table 2.2. Goal setting approaches evaluated in quantitative studies (continued)

Study	Study Design and Setting	Approach Used [Formal (F) vs Informal (I)]	Main Findings/Conclusion	OCEBM Rating/ Key Principles
Malec et al., 1991	Retrospective cohort study; Outpatient brain injury setting	(F) Collaborative goal setting with use of GAS	High correlation between goal achievement and work and functional outcome	Level 3 Measurable Proximal goals Collaborative Client-Centred
McMillan & Sparkes, 1999	Retrospective cohort study; inpatient setting	(F) Wolfesen Neuro-rehabilitation approach- Activity/participation, client-centred goal setting	Achievement of long-term goals associated with higher levels of functional mobility and Barthel Index Scores	Level 3 Measurable Collaborative Proximal goals Client-centred Realistic Family Involvement
Phipps & Richardson, 2007	Retrospective review; outpatient rehabilitation	(F) COPM prior to intervention and at discharge	Significant difference with both performance and satisfaction scores pre and post treatment	Level 3 Measurable Client- centred Collaborative Linked to therapy
Dalton et al., 2012	Retrospective analysis of case notes; inpatient rehabilitation	(I) Usual care (UC) vs Collaborative goal setting (CGP); goals set within activity-based domains; Short term and discharge goals set	Collaborative goal setting focuses goals on client priority areas. Negligible change in outcome with increased participation in goal setting	Level 4 Therapist-driven (UC) Collaborative (CGP) Client-centred (CGP) Family Involvement (CGP) Domain Specific (CGP)

Table 2.2. Goal setting approaches evaluated in quantitative studies (continued)

Study	Study Design and Setting	Approach Used [Formal (F) vs Informal (I)]	Main Findings/Conclusion	OCEBM Rating/ Key Principles
Joyce et al., 1994	Case series analysis; inpatient rehabilitation	(F) GAS	Positive support of : usefulness, comprehensibility, comparability of GAS, time appropriate	Level 4 Measurable Feasible
Zweber & Malec, 1990	Single case study; outpatient setting	(F) Exploration of use of GAS	Effective method for monitoring and documenting participant progress, program evaluation; facilitates development of insight	Level 5 Measurable Collaborative Realistic Client-centred

Note. ABI= Acquired Brain Injury; COPM= Canadian Occupational Performance Measure;; GAS= Goal Attainment Scale; OCEBM=Oxford Centre for Evidence-Based Medicine 2011 Levels of Evidence;

Table 2.3. Goal setting approaches evaluated in qualitative studies

Study	Study Design and Setting	Approach Used [Formal (F) vs Informal (I)]	Main Findings/Conclusion	QES Rating/ Key Principles
Levack et al., 2009	Exploration of family involvement in goal setting process; clinician perspective n= 9 (SP, OT, PT, RN, CP); Inpatient stroke setting	(I) Informal client-centred goal setting with family involvement	Goal setting patient-centred rather than family-centred; Family involvement can provide feedback re realistic outcomes and educate re rehab process; Family involvement can act as a barrier	7/7 Experiential learning Flexible Client-centred Family involvement Collaborative Realistic Proximal goals
Ylvisaker et al., 2008	Inpatient and community TBI rehab setting; Exploration of Identity Orientated Goal Setting (IOG) as an approach from therapist n = 4 (PT, OT, SW) and client perspective n =5	(F) IOG: use of identity mapping to set realistic goals and associated action plan	IOG feasible for use; enabled development of client-centred goals, provided feedback; Barriers: clients with cognitive impairment, mind shift for therapists	6/7 Client-centred Collaborative Motivational Realistic Feasible
Leach et al., 2010	Exploration re goal setting approaches used in inpatient stroke setting; Therapist perspective n =8 (SP, OT and PT)	(I & F) Three approaches identified: Therapist controlled (TC) vs Therapist led (TL) vs Patient-centred (PC) with the use of COPM	Barriers to goal setting: intervention setting, assessment procedures; Education important to overcome barriers	5/7 Therapist-driven (TC) Realistic (TL) Client -centred (TL & PC) Motivational(PC) Collaborative (TL & PC) Education (TL) Family Involvement (TL)

Table 2.3. Goal setting approaches evaluated in qualitative studies (continued)

Study	Study Design and Setting	Approach Used [Formal (F) vs Informal (I)]	Main Findings/Conclusion	QES Rating/ Key Principles
Doig et al., 2009	Qualitative analysis of client inclusion in GP process; TBI community setting; Therapist n=3 (OT), client n=12 and significant other n= 10 perspective	(F) Client-centred approach- goal setting using COPM and GAS to direct content of therapy	Client-centred goal setting provides motivation and holistic approach to rehab; barriers to client-centred goal setting; value in significant other inclusion	4/7 Measurable Client-centred Collaborative Family involvement Flexible Linked to Therapy Motivational
Hale, 2010	Exploration of use of GAS in community stroke setting; PT perspective n=4	(F) GAS	Useful as a client-centred tool, however time consuming and difficult to implement with client's with cognitive impairment	4/7 Client-centred Collaborative Measurable Motivational #Feasible Family Involvement
Holliday, Ballinger, et al., 2007	Exploration of the experience of two different goal setting approaches; inpatient neurological unit; client perspective (n= 28)	(I) Usual participation (UP) vs Increased participation (IP) (increased education and collaborative goal setting)	Increased client involvement in goal setting enables goal ownership; Education re process important; Overall goal setting important to provide feedback/guidance	4/7 Therapist-driven (UP) Education (IP) Linked to Therapy (IP) Client-centred (IP) Measurable (IP) Collaborative (IP & UP) Realistic (IP) Proximal goals (IP)

Table 2.3. Goal setting approaches evaluated in qualitative studies (continued)

Study	Study Description	Approach Used (Formal (F) vs Informal (I))	Main Findings/Conclusion	QES Rating/ Key Principles
McPherson et al., 2009	Qualitative exploration of three approaches; inpatient and community setting (TBI); client n = 34 and therapist perspective n=11 (PT, OT, SP, CP)	(F) Goal management training (GMT) vs Identify orientated goal setting (IOG) vs GAS	IOG and GMT acceptable to be used but some barriers exist, GAS an intervention in its own right	4/7 Motivational (IOG) Metacognitive (GMT & IOG) Client-centred (IOG,GMT) Collaborative (IOG,GMT,GAS) Measurable (GAS) Feasible (GMT,IOG,GAS)
Mew & Fossey, 1996	Single case study (diagnosis- stroke); Exploration of a goal setting session using the COPM and qualitative feedback from OT	(F) COPM	Enables collaborative client-centred goal setting	4/7 Collaborative Client-centred Realistic Linked to therapy
Parry, 2004	Analysis of the conversation between a therapist and client when setting goals; Inpatient stroke	(I) Informal client-centred approach	Limited use of client-centred goal setting in practice; challenging when completed	4/7 Collaborative Client-centred Realistic Measurable

Table 2.3. Goal setting approaches evaluated in qualitative studies (continued)

Study	Study Description	Approach Used (Formal (F) vs Informal (I))	Main Findings/Conclusion	QES Rating/ Key Principles
Van De Weyer et al., 2010	Exploration of goal setting approaches from therapist perspective n =15 (SP, OT, PT, RN, doctor, OT Student); inpatient neurological rehabilitation	(I) Usual participation (UP) vs Increased participation (IP) (increased education and collaborative goal setting)	IP enabled development of more relevant goals providing increased motivation/goal ownership; increased resources required with IP and barriers with presence of cognitive impairment	4/7 Therapist-driven (UP) Education (IP) Collaborative (IP & UP) Client- Centred (IP) Motivational (IP) Realistic (IP) #Feasible

Note. COPM= Canadian Occupational Performance Measure; CP=clinical psychologist; GAS= Goal Attainment Scale; OT=occupational therapist; PT=physiotherapist; QES= Qualitative evaluation scale used for qualitative articles; RN: registered nurse; SW=social worker; TBI=Traumatic Brain Injury; #Principle identified as important but results indicated approach was not feasible

was evaluated in all quantitative studies, except one study that compared an informal client-centred/collaborative approach with an informal therapist-driven approach. Informal goal setting approaches were evaluated in the majority of qualitative studies ( $n=6$ ) (Dalton et al., 2012; Holliday, Ballinger, et al., 2007; Leach et al., 2010; Levack et al., 2009; Parry, 2004; Van De Weyer et al., 2010). When considering the methodological quality of quantitative studies according to the OCEBM Level of Evidence, the three Level 2 studies (Ownsworth et al., 2008; Taylor et al., 2012; Webb & Glueckauf, 1994) were classified as high level evidence, eight Level 3 studies as moderate level (Bergquist et al., 2012; Black et al., 2010; Bouwens et al., 2009; Custer et al., 2012; Holliday, Cano, et al., 2007; Malec et al., 1991; McMillan & Sparkes, 1999; Phipps & Richardson, 2007), and the Level 4 (Dalton et al., 2012; Joyce et al., 1994) and Level 5 studies (Zweber & Malec, 1990) as low level. Of the qualitative studies, the three studies that received a rating of 5 or greater out of 7 (Leach et al., 2010; Levack et al., 2009; Ylvisaker et al., 2008) were considered moderate to high levels of evidence and the remaining seven studies a moderate level of evidence with a score of 4/7 (Doig et al., 2009; Hale, 2010; Holliday, Ballinger, et al., 2007; McPherson et al., 2009; Mew & Fossey, 1996; Parry, 2004; Van De Weyer et al., 2010). In terms of the setting for the quantitative studies, there was a fairly even mix of inpatient and outpatient/community settings. Qualitative exploration largely focused on inpatient settings (Holliday, Ballinger, et al., 2007; Leach et al., 2010; Levack et al., 2009; McPherson et al., 2009; Parry, 2004; Van De Weyer et al., 2010; Ylvisaker et al., 2008). Additionally, the majority of qualitative studies explored goal setting from the therapist perspective (Hale, 2010; Leach et al., 2010; Levack et al., 2009; Mew & Fossey, 1996; Van De Weyer et al., 2010), one study considered the client perspective (Holliday, Ballinger, et al., 2007), two studies considered both the therapist and client perspective (McPherson et al., 2009; Ylvisaker et al., 2008), and in one study the therapist, client and significant other perspectives were considered together (Doig et al., 2009). One of the qualitative studies was an in-depth conversational analysis of an informal client-centred goal setting session (Parry, 2004).



## **2.4.2 Goal Setting Principles**

Table 2.4 presents the final set ( $n=15$ ) of goal setting principles that were extracted from the evaluation studies (and their definitions). The principles of ‘client-centred’ and ‘collaborative’ appeared in all but two of the studies that evaluated goal setting approaches. Principles extracted from individual studies are listed in Table 2.2 and 2.3.

When considering the studies with the highest methodological quality (QES score 5-7 or OCEBM rating of 2) (Leach et al., 2010; Levack et al., 2009; Ownsworth et al., 2008; Taylor et al., 2012; Webb & Glueckauf, 1994; Ylvisaker et al., 2008), approaches described as being collaborative and client-centred continued to appear with the highest frequency. The principle of ‘domain specific’ was not present and the principle of ‘measurable’ was less frequently present in these high quality studies. Additionally, when comparing their relative frequency, the principles of education, family involvement, therapist-driven, experiential learning, flexibility and incorporating a motivational and metacognitive component were more common in the high quality studies, and the principles of feasibility and ability to be linked to therapy were less common.

## **2.5 Discussion**

This review examined goal setting approaches described and evaluated in the rehabilitation literature specific to people of working age with ABI. Previous systematic reviews on this topic have explored the use of goal setting with people with stroke, and have found that reliable conclusions could not be drawn due to the heterogeneity of studies and low quality of evidence examined (Rosewilliam et al., 2011; Sugavanam et al., 2013). In contrast, this scoping review has found relatively consistent findings about goal setting across studies with a higher level of methodological quality. This review broadly examined goal setting approaches and included studies examining not only the stroke population, but also included TBI and other forms of ABI,

specifically limiting the age criteria to those who were likely to be working pre-morbidly. We found a relatively large number of studies ( $n=86$ ) employing quantitative and qualitative methods

Table 2.4. Definition and frequency of goal setting principles

<b>Principle</b>	<b>Definition</b>	<b>Frequency (%) in evaluation studies (<math>n=24</math>)</b>	<b>Frequency (%) in high quality studies<sup>#</sup>(<math>n=6</math>)</b>
<b>Collaborative</b>	Discussion of goals with client	22 (91.6%)	6 (100%)
<b>Client-centred</b>	Focus on goals relevant and important to the client to promote ownership	22 (91.6%)	6 (100%)
<b>Measurable</b>	Describes behaviour when goal is reached at end of therapy from the therapist or client perspective	17 (70.08%)	2 (33.3%)
<b>Realistic</b>	Use of therapist expertise to set achievable goals taking into consideration individual client strengths and limitations	11 (45.8%)	3 (50%)
<b>Proximal Goals</b>	Goals broken down into defined sub-goals (for example fortnightly short term goals)	8 (33.3%)	2 (33.3%)
<b>Feasible</b>	Able to be implemented in clinical practice (for example able to be completed within appropriate time frames)	7 (29.2%)	1 (16.6%)
<b>Motivational</b>	Focus on increasing motivation and self-efficacy based on factors such as saliency of goals	7 (29.2%)	3 (50%)
<b>Therapist-Driven</b>	Goals developed based on therapist assessment of the client without the client being involved in the goal setting process	6 (25%)	2 (33.3%)
<b>Family involvement</b>	Family members consulted in setting client goals	6 (25%)	2 (33.3%)
<b>Domain Specific</b>	Goals set within defined impairment or functional areas relevant to the service	6 (25%)	0 (0%)
<b>Linked to therapy</b>	Establishment of a clear link between therapeutic intervention and goals set	5 (20.8%)	1 (16.6%)
<b>Education</b>	Education about goal setting provided (for example detailed written information regarding the purpose and process of goal setting)	5 (20.8%)	2 (33.3%)
<b>Metacognitive</b>	Use of intervention techniques to enable the client to independently set goals and monitor progress in relation to goals	2 (8.3%)	1 (16.6%)
<b>Flexible</b>	The ability to modify goals with changing client priorities/needs	2 (8.3%)	1 (16.6%)
<b>Experiential learning</b>	Client involvement in the goal setting process enables the client to learn about the rehabilitation process	1 (4.1%)	1 (16.6%)

<sup>#</sup>Studies were considered high quality where they had a significant treatment effect in OCEBM Level 2 studies or the goal setting approach was supported in qualitative studies with a QES score > 5

that described and evaluated goal setting approaches, of which the most common were formal, structured goal setting approaches (i.e., GAS and COPM). The quantitative and qualitative findings related to goal setting practice were compiled and a goal setting principles framework developed based on the frequency of the approach in evaluation studies, weighted according to evidence quality.

Formal goal setting approaches were more frequently used compared to informal approaches in included studies. This finding is important as it highlights the discrepancy between goal setting approaches used for working aged clients with an ABI in the context of research studies versus approaches used in the context of routine clinical practice. Previous studies which have surveyed and interviewed clinicians about goal setting practice (Holliday et al., 2005; Leach et al., 2010) have identified that formal approaches were used less than 14 % of the time in clinical practice compared with the finding that formal goal setting approaches were used in 77 % of included studies in the current review. This finding indicates that there may be a lack of translation of goal setting principles based on research evidence into everyday practice. This may be due to limited clinical utility of formal goal setting methods used in research (e.g., time, training) in different contexts or may indicate a lack of research in clinical practice settings which investigate methods used in everyday practice. Furthermore, the more common use of informal goal setting approaches in everyday practice may be because a ‘one size fits all’ approach to goal setting may not be feasible due to the complexity of goal setting across clients and settings, highlighting the need for practice principles which guide the application of goal setting practice across settings and clients. To the authors’ knowledge there are also several other approaches that can be considered formal goal setting approaches including the POPS, Activity Card Sort and Occupational Gaps (Baum & Edwards, 2001; Brown et al., 2004; Eriksson, Tham, & Borg, 2006). However, this scoping review did not identify these approaches as being specifically described or evaluated in the context of goal setting in ABI rehabilitation for people of working age.

The majority of studies reviewed were considered evidence of moderate quality, and compared with evidence published relating specifically to the stroke population, this review was able to identify additional studies with moderately high levels of evidence. When considering the highest quality evidence, three quantitative studies were randomised controlled trials. Ownsworth et al. (2008) demonstrated that the use of the COPM to formally plan goals and implement individualised occupation focused intervention resulted in higher levels of goal attainment. Webb and Glueckauf (1994) also found significantly higher levels of goal attainment for the group with higher involvement in goal setting. The third high quality quantitative study was insufficiently powered to draw conclusions to inform clinical practice (Taylor et al., 2012). As well as considering the results of quantitative studies to inform goal setting practices, the results of qualitative studies exploring goal setting in practice enable an understanding of the specific components that can enhance or inhibit the goal setting process.

Examination of the goal setting process from both the therapist and client perspective is considered vital, as demonstrated by a previous review which found that discrepancies exist between the therapist and client perceptions in relation to the level of client-centredness and collaboration in goal setting (Sugavanam et al., 2013). Two high quality qualitative studies examined goal setting in rehabilitation from multiple perspectives in relation to stakeholders' experiences of family involvement in the goal setting process (Levack et al., 2009) and their experiences of IOG (Ylvisaker et al., 2008). The third high quality qualitative study provided insight into the use of goal setting in clinical practice by examining goal setting approaches used in the stroke inpatient setting and describing goal setting as therapist controlled, therapist led or patient-centred (Leach et al., 2010).

Client-centredness and collaboration featured as the most frequent principles that underpin goal setting approaches and this trend continued when considering only the high level evidence. Although collaboration appears to be synonymous with client-centred goal setting approaches, it

should be noted that goal setting approaches can be collaborative, but the resultant goals may not be client-centred, that is, not relevant to or important to the client. Approaches considered to be therapist-driven appeared in seven studies (Dalton et al., 2012; Holliday, Ballinger, et al., 2007; Holliday, Cano, et al., 2007; Leach et al., 2010; Parry, 2004; Prigatano & Wong, 1999; Van De Weyer et al., 2010), however almost all of these approaches were implemented in the context of studies comparing two approaches. The therapist-driven approaches were traditional treatment conditions classified as ‘usual care’ and were compared with approaches that focussed on higher levels of client-centeredness. These findings demonstrate a strong theme in the literature emphasizing client-centredness and collaboration as necessary components of effective goal setting practice. However, when examining studies that specifically compared client-centred, collaborative goal setting with traditional goal setting approaches, results are inconclusive in terms of effectiveness. Furthermore, the link between client-centred goal setting and improved functional outcomes has not been clearly demonstrated (Dalton et al., 2012; Holliday, Cano, et al., 2007). This may be due to the use of generic functional outcome measures which are unable to capture the small increments of progress in brain injury rehabilitation, given the long recovery period and complexity of underlying neurological impairments and their impact on a person’s ability to participate in everyday life (Zweber & Malec, 1990).

Effective client-centred goal setting may also be enhanced by the adoption of approaches which target increased motivation to achieve goals and the development of independent goal directed behaviour. The principles ‘motivational’, ‘metacognitive’, ‘education’, and ‘experiential learning’ were more common in the high quality studies. Client motivation may be the by-product of participation in a client-centred goal setting approach (Doig et al., 2009; Hale, 2010; Leach et al., 2010; Van De Weyer et al., 2010; Webb & Glueckauf, 1994; Zweber & Malec, 1990) or may be enhanced by the use of specific strategies to elicit client-centred goals. For example, during IOG, clients are guided to identify a heroic figure and develop therapy goals based on what the client feels it would be like to emulate behaviours of the identified hero (McPherson et al., 2009;

Ylvisaker et al., 2008). Additionally, the inclusion of a metacognitive component in the goal setting process may facilitate the carry-over of independent goal directed behaviours several months post discharge. Webb and Glueckauf (1994) found that clients who received client-centred goal setting, combined with education to enable independent goal rating and monitoring of progress, were found to have significantly higher levels of goal attainment in the two month follow-up period when compared with an approach that did not include a metacognitive component or education. The metacognitive principle was closely aligned with goal setting approaches defined as being linked to therapy, providing education, proximal goals and enabling experiential learning. Education provides an opportunity for the client to understand the rationale of the intervention and establish a clear link between therapy activities and goals. By breaking goals down into proximal goals, clients are able to see the steps and develop an action plan for attaining goals, and monitor and understand progress made in goals. Client involvement in the goal setting process enables the client to develop an awareness of the goal setting process. These goal setting processes are metacognitive treatment techniques (Cicerone & Maestas, 2014) designed to facilitate self-monitoring and self-management.

The ability of an approach to be measurable, either from an objective therapist perspective or from the subjective perspective of the client, was another common principle in studies that evaluated an approach. This was not as common in the high quality studies given that half of these studies were qualitative and focused on individual perceptions of the process rather than outcomes. As with the implementation of any intervention technique or approach in clinical practice, the differences between quantitative and qualitative findings highlight the trade-offs that occur when employing individual principles or combinations of principles in clinical practice. For example, client-centredness may come at the expense of being measurable, feasible or domain specific, and family involvement at the expense of being client-centred. Furthermore, given the trade-offs that can occur between the adoption of various principles, therapist expertise is required to determine which particular principles are relevant for each individual client and are able to be implemented in the context of the particular service. For example in the acute care context, goal setting may be

likely to be therapist-driven, especially with clients with severe cognitive impairment. In the community setting, approaches may be more likely to be client-centred and collaborative with a metacognitive focus. The use of therapist expertise in this way reflects the principle of goal setting approaches being realistic. Realistic goals rely on a sophisticated level of therapist expertise regarding neurological impairment and recovery and the effect of discipline-specific rehabilitation techniques. Without the inclusion of the therapist in setting goals, unrealistic goal setting has been demonstrated (Custer et al., 2012).

Families are often consulted to enhance the goal setting process, to gain an understanding of client values when significant cognitive and communication impairments are present, to enable the client to feel supported, and to facilitate the delivery of education regarding the rehabilitation process (Doig et al., 2009; Hale, 2010; Leach et al., 2010; Levack et al., 2009). Interestingly, only six evaluation studies included in this review (Dalton et al., 2012; Doig et al., 2009; Hale, 2010; Leach et al., 2010; Levack et al., 2009; McMillan & Sparkes, 1999), consulted family members in setting goals, despite there being many positive benefits cited in qualitative studies about family involvement in goal setting (Doig et al., 2009; Hale, 2010; Leach et al., 2010; Levack et al., 2009). Conversely, family involvement, from the perspective of clinicians, can inhibit goal setting if family members impose their personally motivated goals rather than those of the client (Levack et al., 2009). A therapist must therefore employ clinical judgement to determine whether family involvement will either facilitate or inhibit the goal setting process for the individual client.

Similar to previous reviews, this review found that therapists report that client-centred goal setting can be difficult to implement especially when cognitive and communication impairments are present, such as impaired self-awareness and impaired memory (Bouwens et al., 2009; Doig et al., 2009; Hale, 2010; Van De Weyer et al., 2010; Ylvisaker et al., 2008). Another barrier related to the feasibility of a client-centred approach is the amount of time taken to plan goals (Van De Weyer et al., 2010). These findings further highlight that the effectiveness of a goal setting approach can be

influenced by individual client characteristics and factors unique to the service context.

Consideration of these factors may determine the principles adopted when employing specific goal setting approaches. Implementation of a client-centred approach in the clinical setting may involve philosophical shifts, increased time in terms of training, and organisational change to move from traditional treatment approaches towards approaches that enable increased client involvement.

Despite the specific parameters of this scoping review, a main limitation was the broad nature of the topic. Analysis and synthesis of the findings was difficult given the dissimilarity of formal approaches, even when they were classified as the same standardised approach, as previously established (Levack, Dean, et al., 2015; Levack et al., 2012; Sugavanam et al., 2013). However, a systematic approach was developed to extract common goal setting principles, evaluating evidence quality and prioritising higher quality evidence, and the framework and definitions were developed with rigour which involved two researchers independently reviewing article content as well as ongoing discussion and collaboration between the research team. In doing so, the principle extraction process was limited to the descriptions in the article such that in some cases not all of the underlying principles of the goal setting approaches implemented may have been evident from what was documented. This is shown in the three studies that reported on the same treatment process, where the quantitative study described in more detail the method employed to implement the approach (but additional points were highlighted in the qualitative studies) (Holliday, Ballinger, et al., 2007; Holliday, Cano, et al., 2007; Van De Weyer et al., 2010).

Overall, this review has highlighted the need for future research to examine the use of informal goal setting approaches, which are reported as more commonly used in routine clinical practice (Holliday et al., 2005), but less commonly examined in the literature. Further research on the effectiveness of informal approaches will enable clinically relevant goal setting practice recommendations to be established. This review has also identified the importance of client-centred goal setting approaches and the need to evaluate their effectiveness including establishing the



contribution of client-centred goal setting to outcomes. None of the included evaluation studies that used client-centred goal setting methods set out to determine the extent to which the approach was client-centred. In order to evaluate client-centred goal setting, tools which allow us to measure the client-centredness of goals are needed, not only to enable evaluation of practice but to establish its efficacy. Furthermore, given the reported challenges (i.e., cognitive impairment, impaired self-awareness, and communication impairment) for implementing client-centred goal setting with people with ABI in clinical practice, further studies are required to explore the strategies or techniques which facilitate client-centred goal setting in this population. As much of the current research is from inpatient settings further research is especially needed in community-based settings. One method that has been previously implemented in ABI studies is to examine conversational discourse using exchange structure analysis (Sim, Power, & Togher, 2013). Future research describing and evaluating conversational exchange and interactions during goal setting would provide insights into the process, and importantly, ways therapists can facilitate client participation in goal setting. Such approaches would also lend insight into barriers to goal setting, which have been reported, but have not been quantified and evaluated prospectively in terms of their impact on client-centredness and outcome.

## **Chapter 3 Methodology**

The previous chapter was a scoping review which investigated the goal setting approaches used in research with adults with ABI of working age. The findings indicated that there appears to be a disparity between goal setting approaches used in research compared to those used in practice, where informal approaches are largely used. This disparity indicates the need for further investigation of informal goal setting approaches, used in the context of clinical practice.

This chapter presents the methodology and methods used in the thesis. An overview of the research design is presented as well as the specific research paradigm adopted. Participants involved in the study and data collection procedures are described. Finally the strategies implemented to maximise translation of the study findings into clinical practice are presented.

The methods will also be presented in the separate studies in Chapters 4-8, which are in publication format, but this method chapter provides a more detailed account of methods used.

### **3.1 Research Design**

An anticipated outcome of the thesis was the development of goal setting practice recommendations which could facilitate enhanced goal setting practice in ABI rehabilitation. A pragmatic worldview was therefore the foundation of inquiry chosen to guide this thesis because of the importance placed on the consequences of the research (Creswell & Plano Clark, 2011). Multiple methods of enquiry were adopted given that quantitative and qualitative investigation of current goal setting practice was required to develop clinical practice recommendations. Multiple methods research has been defined as an approach which combines multiple data collection methods, including quantitative and qualitative data (Seawright, 2016). Use of both quantitative and qualitative data provides more accurate inferences to be drawn as qualitative data can be used to generate theory and quantitative data can be used to confirm the theory that is generated (Teddlie & Tashakkori, 2003).

When considering each aim of the thesis separately, the need for both quantitative and qualitative approaches was identified. As the literature suggests that specific client factors may influence the goal setting process, there was a need to examine the effect of these factors. A further line of enquiry was to investigate whether the degree of client-centredness impacts on outcome. Creswell and Plano Clark (2007) suggested that in cases where the research problem seeks to identify what factors influence outcome, a quantitative correlational method should be employed to study the problem. However, an in-depth examination of the client-centred goal setting process was also required, indicating the need for the addition of a qualitative component, specifically to examine the process of how therapists, in their everyday practice, are able to set goals with clients with ABI. This examination sought to incorporate a thorough investigation of the way context influences goal setting service delivery. Therefore, the need to generate a theory about how goal setting processes are delivered in different community-based contexts lent itself to the inclusion of a qualitative component (Creswell & Plano Clark, 2007) with equal weighting to the quantitative component.

The use of multiple methods of enquiry also ensures that study findings can be translated to clinical practice settings (Fulbrook, 2003). Fulbrook (2003) argued that in making clinical decisions, therapists require multiple domains of knowledge to deliver an intervention. He stated that knowledge that drives clinical practice should therefore be drawn from multiple data sources and when making evidenced based recommendations all sources of knowledge should be considered equal. Therefore, the approach to the weighting of the data in this thesis and the sequence in which the data were collected followed the same principles as the convergent parallel mixed methods design (Creswell & Plano Clark, 2011). In this design both quantitative and qualitative data have equal weighting, are collected at the same time, but analysed independently, then mixed to inform the overall findings of the study. The adoption of this approach supports Fullbrook's (2003) recommendation to place equal weighting on all data sources to enable the development of practice recommendations.

In summary, given that the broad purpose of this study was to develop clinical practice recommendations, a multiple methods approach was adopted. Furthermore, by using data gathered from both quantitative and qualitative sources, findings could be cross validated to strengthen the results. The use of this design was considered a pragmatic choice to enable the generation of clinical practice recommendations relevant to routine practice. The specific quantitative and qualitative paradigms adopted are presented below.

### **3.1.1 Quantitative Paradigm**

A cohort design was employed with collection of prospective data in order to maximise the rigour of the study. In particular, a cohort design enabled the assessment of outcomes based on the presence of specific characteristics (Dekkers et al., 2012). ABI-related impairments and therapeutic alliance were identified as potential mediators of the client-centred goal setting process. This thesis aimed to investigate how these factors influence the client-centred goal setting process (aim 5). Measurements of levels of client-centredness of goal setting, self-awareness, client motivation and

therapeutic alliance were therefore required in order to identify the components that contributed to effective goal setting. These quantitative data were collected via self-report questionnaire.

Memory impairment and communication impairment were also identified as variables that required measurement, due to their impact on client's participation in goal setting. However due to ethical reasons (i.e., the time required to collect these data and the impact that the increased assessment time may have on participants with ABI), it was determined that information on memory function should be collected from secondary data sources (i.e., the medical record) rather than directly from the participant.

Goal setting process variables were also measured quantitatively to describe and determine how components of the goal setting process contributed to rehabilitation outcome. Specifically, the perceived level of client-centredness of goal setting and the self-perceived importance of individual client goals were measured by standardised self-report questionnaires. Outcome measurement included therapist, client and significant other ratings related to goal specific performance change. A cohort study design incorporating these variables enabled investigation of how they are related in the goal setting process, and whether there is a relationship between client-centred goal setting and outcome.

### **3.1.2 Qualitative Paradigm**

A grounded theory approach was adopted for the initial qualitative component of the thesis as it enables the study of processes and actions in the social context in which they occur (McCann & Clark, 2003). Grounded theory was identified as the most applicable approach to study the delivery of goal setting in community-based ABI rehabilitation for two main reasons. First, one of the main aims was to investigate the process of delivering client-centred goal setting. Process is defined in grounded theory as “adaptive changes in the flow of action-interaction taken in response to changes in conditions, the changes deemed necessary to achieve desired outcomes or reach a

goal” (Corbin & Strauss, 2015, p. 283). Grounded theory allows for the exploration of processes as individuals interact with others, such as the interaction between a therapist and client in the goal setting process. Second, grounded theory warrants an understanding of the way this interaction is influenced by the context in which it is delivered (Corbin & Strauss, 2015). Context in grounded theory is defined by Corbin and Strauss (2015) as “a complicated notion. It locates and explains action-interaction within a background of conditions and anticipated consequences. In doing so, it links concepts and enhances a theory’s ability to explain” (Corbin & Strauss, 2015, p. 153). Goal setting in the community-based sector is delivered in multiple settings and given that an aim of the study was to explore potential barriers from a rehabilitation service context perspective, the use of a grounded theory approach to investigate the influence of context was deemed the most appropriate methodology. Other qualitative theories were considered, for example phenomenology and ethnography. Phenomenology attempts to understand a particular phenomenon through the subjective experience of the individual (Karlsson, 1993), whereas ethnography explores cultural patterns of living (Patton, 2002). These theories were discounted as they do not involve the examination of qualitative data from a process or context perspective, which are central components of enquiry in this thesis.

Qualitative data for this study were drawn from two main sources, therapist interviews and observation of goal setting sessions. Semi-structured interviews were completed with consenting therapist participants in order to explore how goal setting processes were implemented within different practice settings. These interviews enabled examination of how goal setting is undertaken in community-based rehabilitation settings, as well as therapist’s perceptions regarding the mediating influences of identified barriers and facilitators. They were also designed to elicit further insight into how the context in which the goal setting session was implemented influenced goal setting practice. Observation of the implementation of the goal setting process in the context of real-world settings was employed to examine usual goal setting practice. This involved collecting

audio recordings of goal setting sessions between therapists and their clients with ABI, and where relevant, client's significant others.

### **3.2 Participants**

Ethical clearance was obtained from the Princess Alexandra Hospital Human Research Ethics Committee and the University of Queensland Ethics Committee prior to the commencement of the study (see Appendix A). Participants in the study included therapists providing rehabilitation to community-based clients with ABI; clients receiving ABI rehabilitation; and significant others of client participants. Client participants were community dwelling adults with ABI attending outpatient rehabilitation services at the Princess Alexandra Hospital BIRS Day Hospital or at private practice community settings based in Brisbane, Queensland, Australia. Inclusion criteria were: (a) aged between 18-65 years (b) diagnosis of ABI (c) living in the community (d) able to communicate in English (e) have a significant other available to participate in the study and (f) about to either plan or review their rehabilitation goals with their therapist. Client participants needed to be assessed by a therapist as having adequate cognitive and communication skills to provide informed consent and complete the questionnaires required for the study. Consent to participate was also required from the client's treating therapist.

Participants were drawn primarily from two contexts, BIRS Day Hospital and private rehabilitation practices in Brisbane, Australia. Clients typically attend Day Hospital once per week with access to multi-disciplinary rehabilitation, with goals set within each individual discipline. Clients with private or compensable funding may also access private discipline-specific therapy services. The intensity of rehabilitation input in private-therapy services varies based on client need. Five private community-based services providing specialist brain injury rehabilitation participated in the study. These comprised one speech pathology service, one physiotherapy service and three services which offered case management and occupational therapy services. All private

practice services conducted discipline-specific goal setting. Therapists from ABIOS were also included in the interviews. ABIOS is a state-wide publicly-funded service that provides community-based case management. The goal setting approach employed in the BIRS Day Hospital, private practice and ABIOS settings was predominately an informal approach.

All treating therapists within the BIRS Day Hospital were informed about the study during team meetings by the researchers. Therapists based in the private practice settings were contacted via email or phone and were provided information about the study. Therapists who were interested in participating in the research project were given a copy of the Therapist Participant Information Sheet and Consent Form (see Appendix B) and encouraged to ask any questions. Therapists were informed that participation in the study was voluntary and that choosing to not participate would not impact on their relationship with the researchers or other therapists who were members of the research team. All therapist participants completed a brief survey (see Appendix C) to collect data relating to therapist characteristics (e.g., years of clinical experience, professional background and beliefs about goal setting) after therapist consent was obtained. Additional contextual information was gathered (e.g., time taken for goal setting, resources available) from therapists when individual goal setting sessions were completed. All consenting therapists were asked by the research team to screen potential client participants for eligibility to be included in the study.

Initially, consecutive admissions to Day Hospital were screened for eligibility ( $n=51$ ) by their treating therapist according to the inclusion criteria. When it was established that there were sufficient client participants related to particular therapy disciplines (in this case occupational therapy and speech pathology), other therapy disciplines (i.e., physiotherapy) were asked to refer clients directly to the study. Client participants drawn from the private practice settings were obtained on a referral basis ( $n=4$ ). Eligible client participants were approached and provided with information about the study by their treating BIRS Day Hospital therapist or private practice therapist (who had consented to participate as a therapist participant in the study) or by their BIRS inpatient therapist (when they were referred for outpatient rehabilitation prior to discharge from



hospital). If the eligible client participant provided verbal consent to the referring therapist, his or her contact details were forwarded to the research team. A researcher arranged to provide further information about the study to the interested client participant and a significant other. At this meeting a verbal description of the study was given. The client and significant other were given a copy of the Participant Information Sheet and Consent Form (see Appendix B). They were informed that participation was voluntary and would not impact on their current or future healthcare or their relationship with their treating therapist. Written consent was obtained from client participants before their first rehabilitation session, as goals were commonly planned in this first session. Significant others of client participants were invited if available. Consent was obtained from significant others at the same time as obtaining client consent, or by contacting the significant other after the initial goal setting session.

Client and significant other participants were recruited between October 2013 and November 2014. The number of eligible client participants, and those who declined or were excluded, and the reasons for exclusion are outlined in Figure 3. 1. A total of 44 people with ABI consented to participate in the study, attending either the outpatient day hospital ( $n=40$ ) or community-based private rehabilitation services ( $n=4$ ). In total, 29 significant others agreed to participate (10 spouses, 8 parents, 6 partners, 2 siblings, 2 children and 1 friend). Of the significant other participants, 21 were female and 8 were male who were on average aged 42.67 years (SD 14.8). Table 3.1 contains demographic and diagnostic information about client participants including severity of injury measured by PTA and GCS and severity of disability measured by the Mayo Portland Adaptability Index (MPAI-4; Malec, 2005). The MPAI-4 is a 35-item scale, which can be completed by clients, therapists, or significant others. The scale was administered to significant other participants immediately after goals were set or to the treating therapist if a significant other was not available. The MPAI- 4 comprises three core subscales: ability, adjustment and participation (Malec, 2005), with severity of disability classified from 'none' to 'severe'. A score of 'none' denotes relatively good outcomes and 'mild' suggests mild limitations. The 'mild

to moderate' and 'moderate to severe' classifications are considered typical of people with ABI receiving rehabilitation in outpatient or community-based settings, whereas the 'severe' category indicates severe limitations compared to other people with ABI (Malec, 2005).

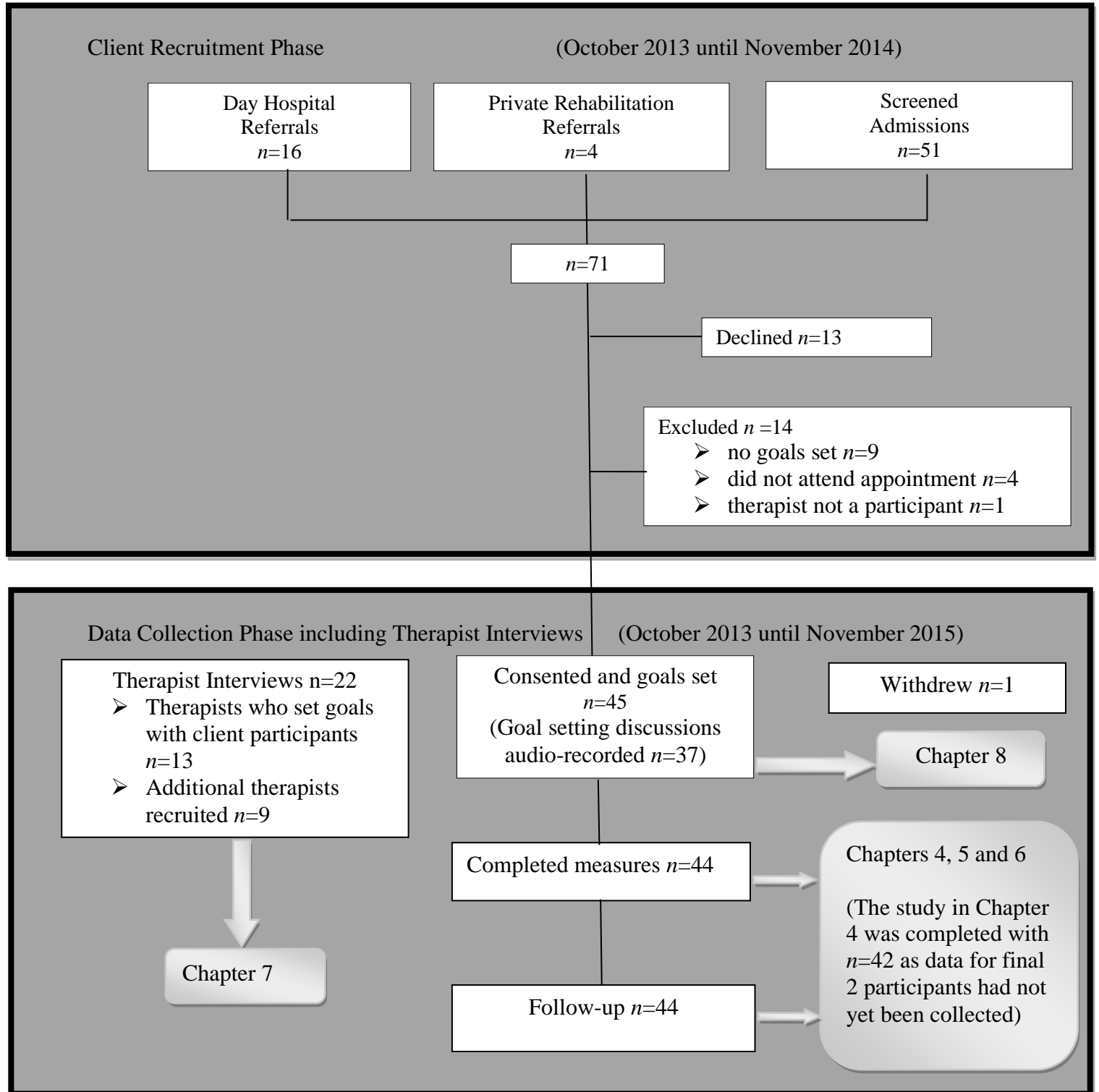


Figure 3.1. Flow diagram of recruitment, data collection and related studies

Table 3.1. Participant Characteristics (n=44)

Characteristic	<i>n</i> (%)	M (SD)
Gender		
Male	28 (64)	
Female	16 (36)	
Setting		
BIRS Day Hospital	40 (91)	
Community-based private practices	4 (9)	
Age, in years		37.5 (12.6)
Education, years (n=43)		13 (2.4)
Ethnicity (ASCCEG; n=43)	37 (86)	
Oceanian	2 (4.6)	
North West European	2 (4.6)	
Southern and Eastern European	2 (4.6)	
Sub-Saharan African		
Primary preinjury occupation (ANZSCO)	10 (22.7)	
Manager or professional	10 (22.7)	
Technical/trade	4 (9.1)	
Community/personal service	8 (18.2)	
Clerical/administrative	2 (4.5)	
Sales or labourer	7 (16)	
Student	3 (6.8)	
Unemployed or retired		
Diagnosis	25 (56.8)	
TBI	6 (13.6)	
Stroke	5 (11.4)	
SAH or SDH	5 (11.4)	
Hypoxia or tumor	3 (6.8)	
Other		
Time since injury (days)	395.8 (746.3)	
Inpatient rehabilitation		
Yes	27 (61)	
Length of stay, days M (SD)		59.6 (56.6)
No	17 (39)	
Initial GCS score for participants with TBI (n= 19)		7.6 (4.4)
TBI Severity		
Mild (PTA 0-1 days or GCS 13-15)		4 (16)
Moderate (PTA> 1-7 days or GCS 9-12)		2 (8)
Severe (PTA> 7 days or GCS 3-8)		17 (68)
PTA length or GCS unavailable		2 (8)
MPAI-4 Severity of Disability		
None	1 (2.3)	
Mild	4 (9.1)	
Mild to Moderate	19 (43.2)	
Moderate to Severe	14 (31.8)	
Severe	6 (13.6)	
MPAI-4 Ability		
None	0 (0)	
Mild	8 (18.2)	
Mild to Moderate	17 (38.6)	

Moderate to Severe	13 (29.5)
Severe	6 (13.6)
MPAI- 4 Adjustment	
None	2 (4.5)
Mild	2 (4.5)
Mild to Moderate	24 (54.5)
Moderate to Severe	12 (27.3)
Severe	4 (9.1)
MPAI- 4 Participation	
None	0 (0)
Mild	11 (25)
Mild to Moderate	20 (45.5)
Moderate to Severe	10 (22.7)
Severe	3 (6.8)

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Note. ASCCEG= Australian Standard Classification of Cultural and Ethnic Groups; ANZSCO= Australian and New Zealand Standard Classification of Occupations; MPAI-4=Mayo Portland Adaptability Index (Version 4); SAH= subarachnoid haemorrhage; SD= standard deviation; SDH= subdural haemorrhage; TBI= traumatic brain injury

Therapists who were invited to participate in the interviews were approached on the basis of their experience level, specific therapy discipline and service where they planned goals to ensure that therapists represented a broad range of experience levels, disciplines and settings. All therapists were advised at the time of the email and just prior to the commencement of the interview that participation was voluntary and that they were free to withdraw at any time. Recruitment took place between December 2014 and November 2015. A total of 22 therapists agreed to participate in the interviews (8 occupational therapists, 5 physiotherapists, 4 speech pathologists, 3 social workers, 1 neuropsychologist, 1 clinical psychologist). Table 3.2 depicts the years of experience, professional background and service context of therapists who were involved in the interviews.

Table 3.2. Discipline and number of therapist participants involved in semi-structured interviews

TOTAL Years of Experience	BIRS Day Hospital (n=13)	Private Practice (n=6)	ABIOS (n=3)
Low Experience (<5 years)	OTx2; SP x1	SP x 1	
Moderate Experience (5-10 years)	NSx1 OTx1		
High Experience (> 10 years)	OTx2; SP x2; SWx1; PTx3	OTx3; SWx1; PTx1	CP x 1; SWx1; PTx1

Note. ABIOS= Acquired Brain Injury Outreach Service; BIRS= Brain Injury Rehab Service; CP= clinical psychologist; NS= neuropsychologist; OT= occupational therapist; PT= physiotherapist; SP= speech pathologist, SW= social worker

### 3.3 Data Collection

#### 3.3.1 Quantitative Component

Data collection included the following standardised self-report measures:

*Client-centredness of Goal Setting Scale (C-COGS; Doig et al., 2015):* The C-COGS is a self-report measure that measures a client's perceived level of involvement in the goal setting process. An updated version of C-COGS was used in this study. The original four-item version (Doig, Fleming, Kuipers, et al., 2011) was expanded based on client and family feedback regarding the original version as well as review of the goal setting literature and definitions regarding client-centred practice (Doig et al., 2015). The expanded version includes an additional nine items and measures client's perceived participation in goal setting and the perceived meaningfulness, importance and relevance of goals. It is comprised of 13 items organised into three subscales: Alignment, Participation and Goals. Participants are asked to rate their level of agreement using a 5-point Likert scale (ranging from 1= strongly disagree to 5= strongly agree). Preliminary construct validity of the C-COGS was supported by administering the C-COGS to a sample of 42 ABI clients after multidisciplinary goal setting and correlating C-COGS scores with COPM importance scores, and measures of therapeutic alliance, motivation and global functioning (Doig et al., 2015). The C-

COGS scale was most positively associated with COPM goal importance ratings and the Helping Alliance Questionnaire (HAQ-II; Luborsky et al., 1996) total score and item 2, 5 and 6 scores showed moderate and significant correlations to  $p=0.001$ . The C-COGS scale was associated to a lesser degree with the Motivation for Traumatic Brain Injury Questionnaire (MOT-Q; Chervinsky et al., 1998) total score, however most correlations were still moderate and significant. Appendix D contains the C-COGS. Prior to administering the C-COGS, clients were asked to recall their set rehabilitation goals as goal recall was also a variable of interest. Goals were classified as accurately recalled by clients if the client was able to recall the general theme of the goal without prompting. The C-COGS was used in this study to measure the client participants' involvement in goal setting as well as the importance, meaning and relevance of their rehabilitation goals to them.

*Awareness Questionnaire (AQ; Sherer, Bergloff, Boake, High, & Levin, 1998):* The AQ is a measure of self-awareness designed for use in TBI research. Three versions of the AQ are available including therapist, client and significant other versions. Each version of the questionnaire contains 17 items comparing pre-morbid and post-injury abilities. Respondents are asked to rate each item using a 5-point Likert scale ranging from 1 (much worse) to 5 (much better). Scores range from 17-85, with a score of 51 denoting that the person is approximately the same as they were before the injury. The AQ provides ordinal data. The level of self-awareness is determined by calculating the discrepancy between participant self-ratings and significant other or therapist ratings (i.e., self-ratings minus informant ratings). Discrepancy scores range from -68 to 68, with a higher positive discrepancy score indicating that participants overestimate their abilities compared to significant other or therapist ratings of the participants' ability. The AQ has good internal consistency (Sherer, Bergloff, Boake, et al., 1998) and established convergent validity (Winkens, Van Heugten, Visser-Meily, & Boosman, 2014; Wise, Ownsworth, & Fleming, 2005). Both participants with ABI and their nominated significant other completed the AQ so that responses could be compared to determine the participants' level of self-awareness. In the event

that a significant other was not available to complete the AQ, the participant's therapist was asked to complete the therapist version of the AQ. The AQ was used in this study to measure the level of self-awareness of the client participants.

*Helping Alliance Questionnaire (HAQ-II; Luborsky et al., 1996):* The HAQ-II is a 19-item self-report measure of perceived therapeutic alliance, for which there are client and therapist versions available. Items are scored using a 6-point Likert scale (ranging from 1 = strongly disagree to 6 = strongly agree) designed to measure the respondent's level of agreement with statements about the therapeutic relationship. It is an ordinal scale with total scores ranging from 19 to 114. The total score is derived from summing the item scores, with reverse scoring of negatively worded items. The HAQ-II has been found to be highly correlated with the Working Alliance Inventory (WAI) in a physiotherapy rehabilitation setting (Besley, Kayes, and McPherson, 2011). The HAQ-II has demonstrated good test-retest reliability over a re-test period ranging from 3 to 7 days (kappa 0.26-0.73) (Luborsky et al., 1996). The HAQ-II was used to measure the client's perceived alliance with their therapist immediately after goals were set.

*Canadian Occupational Performance Measure (COPM; Law et al., 1998):* The COPM is based on the Canadian Model of Occupational Performance and is designed to identify problems with occupational performance. The client is asked to rate each identified occupational performance problem on a 10-point visual analogue scale from 1 (not important and all) to 10 (extremely important). This rating scale is also used to measure a client's perceived performance and satisfaction with the identified occupational performance area. The COPM has been widely used in child and adult populations and its psychometric properties have been extensively evaluated (Carswell et al., 2004). The reliability, validity (Cup, Scholte op Reimer, Thijssen & van Kuyk-Minis, 2003), responsiveness (Chen, Rodger & Polatajko, 2002) and sensitivity (Bodiam, 1999; Doig et al., 2010; Jenkinson, Ownsworth & Shum, 2007; Trombly et al., 2002) of the COPM as an

outcome measure have been established for people with ABI. The COPM importance rating was used as a second measure of the clients' perceived importance of their rehabilitation goals and to measure self-perceived change in goal performance and satisfaction as well as therapists' ratings of change in goal performance.

*Motivation for Traumatic Brain Injury Questionnaire (MOT-Q; Chervinsky et al., 1998):*

The MOT-Q is a 31-item questionnaire that measures motivation for post-acute TBI rehabilitation from the perspective of people with TBI and provides ordinal data. The MOT-Q total score ranges from -62 to +62 with higher scores representing higher motivation for TBI rehabilitation (Chervinsky et al., 1998). The MOT-Q comprises four factor-derived subscales: lack of denial (LD; score range -16 to +16), interest in rehabilitation (IR; score range -14 to +14), lack of anger (LA; score range -20 to +20), and reliance on professional help (RH; score range -12 to +12) (Chervinsky et al., 1998). Internal reliability has been demonstrated for the whole 31 item scale (Cronbach's alpha = 0.91) and for each subscale (LD=0.86, IR=0.86, LA=0.83 and RH=0.73) (Chervinsky et al., 1998). The MOT-Q was used to measure the client's motivation for rehabilitation.

The measures were administered at two time points: first, within one week after therapy goals were set, and second, at a 12-week follow up (or after therapy had finished in the cases where participants were discharged prior to 12 weeks). After an amendment to ethical approval was obtained (see Appendix E), the C-COGS was readministered on a second occasion to a subsample of 12 participants to enable examination of test-retest reliability. This sample size was chosen based on the number of participants who were willing and available to complete the C-COGS at the re-test time point. The goals set by treating therapists were recorded by the researcher prior to administering the battery of measures to client participants. A summary of the measures for the quantitative data collection is shown in Table 3.3.



Table 3.3. Timing and sources of quantitative data

Participant Group	Week 1 (Initial)	Week 12 (Follow up)
Clients with ABI	Demographic/ injury information C-COGS COPM (performance, importance and satisfaction ratings) AQ (client version) HAQ-II MOT-Q	COPM (performance and satisfaction rating)
Significant Others of clients with ABI	AQ (significant other version) MPAI-4 (significant other version)	
Therapists	Therapist survey COPM performance rating AQ (therapist version) <sup>1</sup> Semi-structured interview	COPM (performance rating)

Note. AQ= Awareness Questionnaire; C-COGS = Client-centredness of Goal Setting Scale; COPM= Canadian Occupational Performance Measure; HAQ-II= Helping Alliance Questionnaire; MOT-Q= Motivation for Traumatic Brain Injury Questionnaire;

<sup>1</sup>Completed if significant other participant was not recruited

For the initial assessment, a researcher would either see the client on the same day as goals were set or make a time as soon as possible after goals were set. In the cases where clients could not be seen on the goal-setting day, clients were followed up by phone to obtain the client's goal recall. The C-COGS, HAQ-II, AQ and MOT-Q were completed at the initial assessment. Regular contact was then maintained with treating therapists to monitor whether the planned intervention was likely to finish. The follow-up assessment was at the end of therapy intervention or when a client had participated in rehabilitation for a period of 12 weeks.

Information was also collected from the participant's written record and/or from treating therapists regarding demographic and injury related information, as well as formal assessments of progress in functioning and standardised cognitive and communication assessments. Significant others who consented were asked to provide basic demographic information (i.e., relationship to participant, age, sex). Therapists were asked to record in writing the specific goals they had set with their clients.

### 3.3.2 Qualitative Component

The first qualitative component of the project involved interviewing consenting therapists from the BIRS Day Hospital, ABIOS and private practice settings regarding their perceptions of goal setting with ABI clients and the processes that they used to implement goal setting in their everyday practice. The interviews were completed after quantitative data were collected and goal setting sessions were audio-recorded. The BIRS Day Hospital and private practice therapists who had already provided their consent for the study were sent an email outlining the study aims and inviting them to participate in the interviews. These interviews were completed either face-to-face or over the telephone, depending on therapist availability. The interviews were audio-taped and the recordings were transcribed verbatim by the researcher.

The adoption of a grounded theory approach guided the procedure for collection of interview data. The purpose of using a grounded theory theoretical sampling approach is to ensure that data are collected from places, people and events that will maximise opportunities to develop identified concepts (Corbin & Strauss, 2015). Use of this approach recommends that analysis should begin after the first data are collected so that concepts can be tested in subsequent interviews. This was not possible in this study as interviews needed to be completed quickly due to the high likelihood that therapist participation in interviews would be compromised by staff rotation and turn-over, especially with therapists drawn from the BIRS Day Hospital. Therefore data analysis was commenced after the first round of interviews were completed, to extract core categories that could be tested in a subsequent round of interviews. During the completion of the first round of interviews, it was apparent that there was a gap in the data regarding the implementation of goal setting in the community-based government sector. Ethical clearance was therefore obtained to interview therapists in the community-based ABI government funded sector (i.e., ABIOS) to maximise the opportunity to explore concepts related to the contextual influence of this setting. After the ethical amendment was approved, therapists in this additional service were

approached via their team manager to participate in the interview. A second round of interviews was therefore completed drawing on participants from this additional setting as well as other participants from private practice. During the second round of interviews, transcription and analysis were completed after each interview so that concepts could be tested in subsequent interviews.

Initially interviews were semi-structured and followed the interview guide developed by the research team based on the literature and aims of the project (see Appendix F). After the initial round of interviews were analysed, questions were directed by concepts elicited in previous interviews, using the constant comparative method of grounded theory (Corbin and Strauss, 2015).

The second component of qualitative data were the audio-recordings of goal setting sessions. Therapists were provided with audio-recorders and invited to audio-record goal setting sessions in which goals were established and any subsequent goal review session. The initial goal setting session usually occurred in the first or second rehabilitation session, depending on the therapist's discipline. Goal review occurred at any time after the goals were set and the twelve week follow-up time point. Audio-recorders were collected by a member of the research team after goal setting was finalised and goal setting sessions were transcribed verbatim by the researcher.

### **3.4 Ethical Considerations**

All participants were informed of potential ethical issues related to study participation prior to consent being obtained. They were advised that participation was voluntary and they were free to withdraw at any time.

From a therapist participant perspective, these ethical issues included the inconvenience of the additional time required to complete questionnaires and participate in the interviews. Therapists were advised that they may feel like their individual goal setting abilities were being evaluated when the goal setting sessions were being recorded, but this was not the aim of the study. They

were also advised that audio-recording their goal setting sessions with clients who were participants in the study required the consent of all parties and that they were under no obligation to audio-record. Those participants who declined to consent to audio-recording, could still provide consent for collection of questionnaire data if they wished. It was identified that specific questions during the therapist interviews may have the potential to cause stress, although unlikely. Prior to consent being obtained therapists were advised that they were free to withdraw at any time and that counselling or appropriate support would be arranged if necessary. They were also advised that all data would remain confidential and be de-identified whilst data were analysed to ensure that no links could be made between data and individual therapists.

Potential client participant ethical issues were identified in relation to impairments acquired as a result of their brain injury. For example, the person with the brain injury may have a decreased frustration tolerance or may have adjustment issues in relation to their injury which may be exacerbated by participation. Additionally it was determined that it may be time consuming for clients to complete questionnaires, especially if they were experiencing difficulties associated with cognitive and communication impairment. Given that these issues were established, client participants had the option to complete the questionnaires over a few sessions or to stop and have a break. Furthermore, given that client participants may feel uncomfortable being audio-recorded, it was reiterated to all participants that they had the option to complete the questionnaires only and could opt-out of having goal setting sessions audio-recorded. Client participants were also advised that counselling and support would be provided if they became distressed from participating in the research.

Similar to client participants, it was identified that significant other participants may have their own adjustment issues in relation to their corresponding family member's experience of ABI. For this reason potential ethical issues were also pinpointed in relation to their participation in the study. As a result, significant other participants were advised that counselling and support from a

health professional would be provided if they were to experience any emotional distress from participation in the study.

All participants were advised that information would remain confidential, be de-identified and stored securely. No adverse events were reported during this study.

## **3.5 Data Analysis**

### **3.5.1 Quantitative Component**

To describe the sample characteristics and the participants perceived engagement in goal setting, descriptive analysis of the participant characteristics, the C-COGS and other self-report measure data was carried out. To describe the characteristics and content of rehabilitation goals, each goal, as documented by the participants therapists, was categorised by two independent raters as to whether the goal met or did not meet pre-determined criteria. The criteria included whether the goal was: 1) specific, 2) measurable, 3) written to include a time frame, 4) non-jargonistic, 5) written to include the client's name, 6) accurately recalled by participants, and 7) included the participation domain of the ICF. These criteria were rated dichotomously (i.e., yes/no). Goals were classified as accurately recalled by clients if the client was able to recall the general theme of the goal without prompting. The 'achievable' and 'relevant' components of SMART goal documentation were not rated, as raters only had access to goal statements and additional clinical information would have been required to make a judgement about these components. In cases where there was disagreement between the two independent raters, a third rater was consulted to make an independent and final decision about whether or not the goal statement met the specified criteria.

Data were analysed using IBM SPSS statistics (IBM Corp, 2016). The characteristics, content and recall of goal statements were summarised descriptively using frequencies and

percentages. Generalised Estimating Equations (GEE) were used to compare COPM goal importance ratings and C-COGS Goals sub-scale ratings for individual goals that met and did not meet the seven criteria. The GEE analysis was indicated given that multiple goals were collected from the same participant (i.e., the goal statements could not be treated as independent cases for individual participants) and this analysis enabled correction of correlated response data (Hanley, Negassa, Edwardes, & Forrester, 2003).

The relationship between the level of client-centredness (total and sub-scale C-COGS and mean COPM importance scores) and goal outcome (mean COPM patient and clinician rated performance change scores and mean COPM patient rated satisfaction change scores) was examined using Spearman's rho correlations. For each set of rehabilitation goals (i.e., goals set by a client with each treating clinician), C-COGS total and sub-scale scores, mean COPM importance and mean COPM performance and satisfaction change scores were calculated. In one case, there were missing data for COPM client performance and satisfaction follow-up ratings and this was handled by including baseline data for this case in the aggregated data analysis.

To investigate the reliability of the C-COGS, internal consistency of the 13 test items was evaluated using Cronbach's co-efficient alpha. A conservative approach was undertaken to evaluate test-retest reliability due to the small number of participants who completed the C-COGS on a second occasion ( $n=12$ ). Percent exact agreement and percent close agreement were calculated between time 1 and time 2 for each item across participants and compared.

To examine the effect of changes in self-awareness on goal engagement and goal outcomes, participants were initially classified into three self-awareness groups based on their AQ discrepancy score. Participants with a score of 5 or more were categorised as having impaired self-awareness, those scoring -5 to 5 as having accurate self-awareness, and those with a score as -5 or lower were classified as hyper-aware. The characteristics of the three self-awareness groups were analysed descriptively, as well as the rate of attendance at rehabilitation sessions, total goal setting time and the percentage of words spoken by the client. To statistically compare MOT-Q, C-COGS total and

sub-scale, COPM goal importance, mean COPM performance change and HAQ-II scores, as well as total goal setting time and the percentage of words spoken by clients across the three self-awareness groups, Kruskal Wallis tests were performed.

### **3.5.2 Qualitative Component**

#### **Therapist Interviews**

Therapist interview transcripts were analysed using procedures espoused by Corbin and Strauss (2015) to develop grounded theory. All transcripts were open coded manually by SP and labels were applied to key concepts that emerged. Transcripts were then electronically uploaded to NVivo, to organise the data (QSR International Pty Ltd, 2012). Labels applied to concepts were constantly compared for similarities and differences, to confirm that codes were consistently applied to the same concept. Categories elicited from individual disciplines were constantly checked to examine whether discipline-specific concepts emerged. Categories were populated in terms of their specific properties and dimensions. In the cases where categories required further development, additional interviews were completed and coded using the same procedure. After the final three interviews, the research team agreed that theoretical saturation had been achieved with constant analysis of the data. Categories were then linked to explain the process used by therapists to set goals with clients with ABI (i.e., the theoretical framework). The final step of the analysis involved validation of this theory against the raw data to ensure that the theory complemented therapist descriptions of goal setting processes. As a result, all transcripts were re-read to confirm that the raw data fitted with the theory. The raw data supported the framework, apart from two cases. Memos and diagrams were used to document the analysis.

Additional strategies were employed to enhance rigour. Five transcripts of therapists representing different disciplines were independently coded by another researcher (ED). Coding was compared to ensure that the concepts extracted represented the meaning of the interviews. This

process confirmed that the concepts identified were highly consistent between the researchers. Further credibility was achieved through fortnightly meetings between all three researchers to ensure consensus with regard to concepts, associated properties and dimensions, direction regarding further theoretical sampling and overall agreement about the clinical application of the theory that was generated. Results were validated with clinicians in a number of ways. First, during the interviews clinician responses were verbally summarised and clinicians were asked to provide feedback about whether the verbal summaries adequately captured what had been said. In addition, a summary of the categories emerging from the data was presented at a rehabilitation network meeting. The clinicians at this meeting ( $n=26$ ) represented the majority of services involved in the study and included six clinicians interviewed in the study. The clinicians agreed as a group that the theory resonated with their experience of goal setting in clinical practice. The final version of the goal setting practice framework was presented at a later rehabilitation network meeting. The clinicians were asked to comment about whether the framework adequately captured the goal setting process. Clinician feedback confirmed that the framework was representative of goal setting in routine practice.

Field notes were documented after each interview, recording reflections about how the researcher's knowledge and experience may have impacted on the interview. This increased the researcher's awareness of how the researcher's background influenced the interview process. Furthermore, during analysis of each interview, in addition to the field notes already recorded, memos were written to reflect upon the way that the researcher's beliefs may cause greater value to be placed on goal setting practices consistent with occupational therapy or on categories derived from more experienced clinicians' interviews.

### **Audio-recorded goal setting sessions**

The audio-recorded data were analysed using framework analysis procedures to explore the application of the goal setting practice framework in routine clinical practice and to refine the



framework. Framework analysis employs thematic content analysis to systematically reduce and summarise the data (Gale, Heath, Cameron, Rashid, & Redwood, 2013). The steps of the framework analysis approach include: (1) Transcription, (2) Familiarisation with the interview, (3) Coding, (4) Developing a working analytical framework, (5) Applying the analytical framework, (6) Charting the data into the framework matrix, and (7) Interpreting the data (Gale et al., 2013).

Initially, entire transcripts were read to form a general impression regarding the applicability of the framework to individual goal setting sessions. Then the data were uploaded electronically into the software package NVivo to manage data coding (QSR International Pty Ltd, 2012). Next, labels were applied to sections of the transcripts using the pre-defined codes of the goal setting practice framework. If the data did not appear to fit with the framework, open coding was completed to ensure that important aspects of the data were not missed. Finally, a framework matrix was generated to chart the data, including the frequency of processes and strategies in each phase of goal setting.

Rigour was enhanced by addressing Lincoln and Guba's (1985) four criteria for trustworthiness (credibility, transferability, dependability and confirmability). Credibility was enhanced by adopting the framework analysis approach, holding fortnightly research team meetings to gain consensus regarding the codes applied to the data and to interpret the meaning of the data, examining previous research to contextualise the findings, as well as description of research team backgrounds and peer scrutiny. Seven transcripts representing goal setting with an even spread of disciplines were independently coded by another researcher (ED) to ensure consistency. The rate of agreement between coders was 89.43%, indicating good agreement. The analysis process was recorded through documentation of code notes. The code notes and fortnightly meetings were strategies used to maintain awareness of how the perspectives of all three authors influenced the analysis process. Transferability, dependability and confirmability were achieved through in-depth methodological description and further confirmability through documentation of the research team beliefs and assumptions.

The audio-recordings were also used to calculate ‘total goal setting time’ and the ‘percentage of words spoken by clients’. Both ‘total goal setting time’ and ‘percentage of words spoken by clients’ were chosen as additional proxy measures of client-centredness to objectively quantify how much time was spent to set goals for each client as well as the level of contribution of the client to goal setting discussions.

### **3.6 Clinical Consultation and Knowledge Translation**

Knowledge translation has been defined as “the science of developing and implementing specific strategies to effectively translate research evidence into clinical practice to reduce the gap between what we know and what we do” (Bayley et al., 2014, p. 269). Gaps have been identified in the rehabilitation literature in terms of clinical recommendations or presentation of findings that can be used in everyday practice (MacDonald & Wiseman-Hakes, 2010). A fundamental consideration for this study was the implementation of key study findings into everyday clinical practice. Several strategies were used throughout the course of the study to enable direct translation of findings to services where data were collected. Knowledge translation frameworks highlight the need for the active involvement of clinicians to ensure that research findings may be implemented in practice (Graham et al., 2006). Therefore senior therapists from BIRS Day Hospital were consulted during all stages of the project and were listed as primary investigators of the study. Senior therapists were chosen to be actively involved in the knowledge translation component of this thesis as they were the team leaders for individual disciplines and were seen as the therapists who were able to understand the local service context and had the ability to monitor the application of knowledge (Graham et al., 2006).

Knowledge translation also involves “a group or individual identifying that there is a problem or issue that deserves attention” (Graham et al., 2006, p. 20). Therefore a clinical consultation log was developed to document consultation between members of the research team and senior therapists regarding the need for results that would translate into more effective goal

setting practice. This strategy was therefore adopted to provide a sense of ownership by therapists involved in the study. In order to further engender this sense of ownership, senior therapists were also included in data analysis and have been involved in presenting some study findings to peers at the Princess Alexandra Hospital and at conferences.

Finally, the 'Client-Centred Goal Setting in Practice Questionnaire' was developed to enable direct translation of key thesis findings into practice and for presentation at information sessions to be organised by the researcher. The employment of an action research process in these sessions will enable clinical practice change to be initiated by therapist participants in response to key study findings.

## **Summary**

Chapter 3 has described the adoption of a pragmatic world view and the resultant need to employ a multiple method design. The quantitative and qualitative components of the study, details related to selection of participants and the data collection and analysis procedures for implementing this series of studies were outlined. The next chapter presents a paper submitted for publication to address aim 2 of the thesis.

## **Chapter 4 Reliability of the Client-Centredness of Goal Setting (C-COGS) Scale in Acquired Brain Injury Rehabilitation**

Doig, E., Prescott, S., Fleming, J., Cornwell, P., & Kuipers, P. (2016). Reliability of the Client-Centredness of Goal Setting (C-COGs) scale in acquired brain injury rehabilitation. *American Journal of Occupational Therapy*.70, 7004290010. <http://dx.doi.org/10.5014/ajot.2016.017046>

The scoping review presented in Chapter 2 identified the need for a measure which could evaluate the client-centredness of goal setting. One standardised questionnaire recently developed is the C-COGS. The C-COGS measures the client's perceived level of involvement in goal setting and the importance, meaningfulness and relevance of the resultant goal statements. It is a 13 item questionnaire which includes three sub-scales: Participation, Goals and Alignment. The C-COGS was developed based on client feedback about an earlier version designed for a research study, as well as examining the literature about client-centredness. At the time of this study, the only established psychometric property of this questionnaire was construct validity. This chapter addresses aim 2 of the thesis which was to contribute to the development of a standardised measure of client-centred goal setting by determining the reliability of the C-COGS.

The manuscript inserted in Chapter 4 has been published in the *American Journal of Occupational Therapy*. It is inserted as published except for changes to style and formatting changes to headings, tables and figures to maintain consistency throughout the thesis.

## 4.1 Abstract

**Objective:** To examine the internal reliability and test–retest reliability of the C–COGS scale.

**Method:** The C–COGS scale was administered to 42 participants with ABI after completion of multi-disciplinary goal setting. Internal reliability of scale items was examined using item-partial total correlations and Cronbach’s  $\alpha$  coefficient. The scale was readministered within a 1-month period to a sub-sample of 12 participants to examine test–retest reliability by calculating exact and close percentage agreement for each item.

**Results:** After examination of item-partial total correlations, test items were revised. The revised items demonstrated stronger internal consistency than the original items. Preliminary evaluation of test–retest reliability was fair, with an average exact percent agreement across all test items of 67%.

**Conclusion:** Findings support the preliminary reliability of the C–COGS scale as a tool to evaluate and promote client-centred goal setting in brain injury rehabilitation.

### MeSH TERMS:

- brain injuries
- goals
- person-centred therapy
- rehabilitation
- reproducibility of results

## 4.2 Introduction

Goal setting has been described as the essence of rehabilitation (Barnes & Ward, 2000), and client-centredness is evident in theories of goal setting. A client-centred, goal setting approach entails responding to individual client needs, involving the client in decision making, using active listening, and understanding and respecting the client and his or her knowledge and ability to make autonomous decisions (Bright, Boland, Rutherford, Kayes, & McPherson, 2012; Cott, 2004; Hammell, 2013; Law, Baptiste, & Mills, 1995; Mew & Fossey, 1996). In addition, the central concepts of client-centredness are the theoretical underpinnings of occupational therapy practice (Kielhofner, 2008; Law, 1998) and the core components of occupational therapy practice models. For example, the Person–Environment–Occupational Performance Model (Christiansen, Baum, & Bass, 2011) requires active client involvement in determining intervention goals. Occupational therapy neurorehabilitation intervention models, such as the Dynamic Interactional Model of Cognition in Cognitive Rehabilitation (Toglia, 2011), recognizes the importance of personal context, including a person’s values, expectations, and motivation in planning rehabilitation. The neurofunctional approach to rehabilitation after brain injury requires rehabilitation targets to be determined by the client’s functional goals (Giles, 2011).

According to goal setting theories, motivation is moderated by goal importance and client commitment (Locke & Latham, 2002). In addition, Deci and Ryan’s (1985) model of self-determination shows that extrinsic objectives (i.e., those imposed externally by others) are less motivating than intrinsically generated goals. Moreover, clients’ direct involvement in goal setting results in better maintenance of treatment gains (Webb & Glueckauf, 1994), greater perception that goals are relevant, more participation level goals, and increased satisfaction with rehabilitation (Holliday, Cano, et al., 2007). Thus, evaluating goal setting processes and goals from the client’s perspective to enhance client participation in goal setting has the potential to inform rehabilitation practice and outcomes.

The purpose of this study was to examine the reliability of the C-COGS (Doig, et al., 2015) by investigating homogeneity and internal consistency of test items, test–retest reliability, and homogeneity of the Participation and Goals sub-scale items. We hypothesized that the C–COGS scale total score would be significantly, positively associated with all scale items except Item 2 (“The goals are what my friend/relative wants me to work on”) and Item 3 (“The goals are what my therapist wants me to work on”) because we did not expect the views of significant others or therapists to be consistently aligned with client views on goals. Moreover, we hypothesized that Participation and Goals sub-scale items would most strongly correlate with their corresponding sub-scale total.

#### **4.2.1 C–COGS Scale**

The C–COGS scale was developed to promote and enhance client-centred goal setting through greater understanding of the client’s perspective on planning processes and the resultant goals. The C–COGS scale is intended to be administered as soon as possible after goal setting is complete and rehabilitation goals are documented.

The initial version of the C–COGS scale was brief, comprising 4 items (Doig & Fleming, 2015), and was developed to evaluate the perspectives of 14 clients with ABI involved in a goal-directed intervention (Doig, Fleming, Kuipers, et al., 2011). Later, taking into consideration the literature on client-centredness and consumer feedback (Doig et al., 2009), the C–COGS scale was expanded to 13 items. The scale’s *dimensionality* (i.e., the number of factors, or dimensions, measured by an instrument) was determined theoretically; however, Meyer (2010) recommended further empirical testing to determine dimensionality. Moreover, Velozo, Seel, Magasi, Heinemann, and Romero (2012) recommend that, in addition to qualitative methods such as literature reviews and interviews, statistical methods should be used to confirm dimensionality. The

theoretical basis and development of the C-COGS scale is further outlined elsewhere (Doig, et al., 2015).

The 13 C-COGS scale items (Figure 4.1) are grouped into three sub-scales (Alignment, Participation, and Goals) on the basis of the theoretical construct of client-centredness outlined in the literature and qualitative interviews (Meyers, 2010; Velozo et al., 2012). This grouping enhances practice evaluation by promoting reflection on three aspects of goal setting practice: (1) alignment of client, practitioner, and significant other perceptions on goals and its impact on client decision making about goals, (2) client participation in goal setting, and (3) meaningfulness and importance of the resultant rehabilitation goals to the client. Each C-COGS scale item is rated on a 5-point scale (1 = *strongly disagree*, 2 = *disagree*, 3 = *unsure*, 4 = *agree*, 5 = *strongly agree*) by the client to indicate his or her extent of agreement or disagreement with the item.

The Alignment sub-scale (Items 1–3) evaluates the extent to which the client, his or her significant others, and the practitioner perceive the goals discussed during goal setting as desirable or important. Because this sub-scale is descriptive, a sub-scale score is not calculated. However, the score for Item 1 (“The goals are what I want to work on”) is included in calculating the total score because it relates to client-centredness, in this case, the client’s desire to work on goals.

The Participation sub-scale (Items 1 and 4–9) evaluates the client’s perceived participation in goal setting and decision making about goals during their goal setting sessions. Item 1 is included in this sub-scale because it relates to client participation in goal setting. Scores may range from 7 to 35, with higher scores indicating greater perceived client-centredness of goal setting. The Goals sub-scale (Items 10–13) evaluates the meaningfulness, relevance, and ownership of the client’s goals and the client’s motivation to work on the goals. This sub-scale is administered after client goals have been finalized, and each goal is rated on each item. A score, ranging from 4 to 20, is calculated for each goal. Then the average total sub-scale score is calculated by adding the scores for each goal and dividing the total by the number of goals. Higher scores indicate greater perceived client-centredness of goals.



1. The goals are what I want to work on.
2. The goals are what my friend/relative wants me to work on.
3. The goals are what my therapist wants me to work on.
4. Significant people in my life (i.e., family, friends) were involved in planning the goals as much as I wanted them to be.
5. The therapist encouraged me to participate in setting the goals.
6. I was an active participant in the goal-setting session.
7. My views and opinions about the goals were listened to.
8. I felt like a partner in the goal-setting process (along with other people involved in my goal-setting sessions).
9. I made the final decision about which goals were set.
10. The goal is meaningful and important to me as it relates to who I am and my future.
11. The goal is relevant to my everyday life as it relates to what I want to do at home, work, or in the community.
12. The goal is what I am motivated to work on.
13. The goal is my own goal.

Figure 4.1. Client-Centredness of Goal Setting scale items

The C-COGS scale can be used by occupational therapy practitioners to enhance client goal setting through reflection on client responses and the reasons for their responses. Alignment sub-scale responses are intended to promote practitioner's reflection on how their involvement may influence clients' decision making and choices about goals and to promote discussion and education to enhance goal setting. Several qualitative studies of goal setting in stroke rehabilitation settings have found that therapists may direct the process and that goal setting can be influenced by contextual factors, such as therapists' perceived discharge priorities (Leach, et al., 2010; Levack, et al., 2009). Participation sub-scale responses promote practitioner reflection about whether practitioner-client communication and client participation in discussions about goals could be improved. Goals sub-scale responses indicate whether the client perceives goals as meaningful and important to them.

Note that even when Participation sub-scale ratings are high, Goals sub-scale ratings may be low. For example, a client may report that he or she felt listened to and participated in goal setting; however, the client's documented goals may not reflect his or her desires. Therefore, practitioners can reflect on client responses and potentially enhance the client's satisfaction with his or her goals by determining the reasons for this gap. Some reasons may include poor goal documentation (e.g., the goal is not understood by the client) or service system factors that restrict working toward the client's desired goals (e.g., limited rehabilitation time frames or availability of equipment or resources).

## **4.3 Method**

### **4.3.1 Study Design**

This study used a prospective cross-sectional cohort design, with data collected from participants after goal setting and longitudinal data collected for a sub-set of participants.

### **4.3.2 Participants**

Participants were eligible for inclusion if they were aged 18–65 years, had a diagnosis of ABI, and were setting or reviewing their goals with their therapist. In addition, their treating therapist must have deemed them to have adequate cognitive and communication skills to provide informed consent and complete study questionnaires, and their treating therapist had to have also consented to be a study participant.

Participants were recruited between October 2013 and September 2014 while attending specialized outpatient ABI rehabilitation in a major metropolitan public hospital or private community-based therapy in Queensland, Australia. Sixty-nine potential participants were identified: Fourteen were referred from day hospitals, 4 were referred from private rehabilitation, and 51 were screened admissions. Of these potential participants, 13 declined and 14 were excluded (9 set no goals, 4 did not arrive for appointments, and 1 had a therapist who was not a participant). Thus, 42 participants consented to participate.

### **4.3.3 Procedure**

Ethical clearance was obtained from relevant university and hospital research ethics committees. Each participant's goals were communicated to a researcher by the participant's treating therapist soon after goal setting. A researcher, who was not involved with goal setting or delivering the rehabilitation program, completed the C-COGS scale with participants either in person or by telephone within 24 hours of the goals being established. During C-COGS scale administration, participants were prompted to reflect on their goal setting sessions when responding to Items 1–9. Participants gave responses to Items 10–13 about each of their goals. The C-COGS scale was readministered to a sub-sample of 12 participants on average 6.7 days (standard deviation [*SD*] = 10.5 days) after initial administration.

#### 4.3.4 Data Analysis

All statistical analyses were performed using IBM SPSS Statistics (Version 20; IBM Corporation, Armonk, NY). Internal consistency of the 13 test items was evaluated using Cronbach's  $\alpha$  coefficient. Coefficients approaching .90 indicate strong internal consistency, indicative of a reliable scale (Portney & Watkins, 2009). Item-partial total correlations using Pearson product-moment correlations, whereby each item was correlated with the C-COGS scale total while omitting that item, were calculated to examine homogeneity (Streiner, Norman, & Cairney, 2014). Recommendations outlined by Streiner and colleagues (2014) were followed whereby items with  $r$  values less than .30 were eliminated and then internal consistency of retained items was reexamined. Scale items should be moderately correlated with the total score, ideally with  $r$  no greater than .70 because greater correlations are likely an indication that items are too specific or narrow (Streiner et al., 2014). Item-partial total correlations using Pearson product-moment correlations were calculated to examine the homogeneity of retained items in the Participation and Goals sub-scales. Each sub-scale item was correlated with the corresponding sub-scale total while omitting that item and with the total of the other sub-scale (Streiner et al., 2014). Each item should ideally be moderately correlated ( $r \leq .70$ ) with its corresponding sub-scale total, and these correlations should exceed the item's correlations with scales in which it is not included (Streiner et al., 2014).

Because the C-COGS scale was readministered to only a small number of participants ( $n = 12$ ), a conservative approach was taken to evaluate test-retest reliability by calculating percent exact agreement (i.e., the same rating for both time points) and percent close agreement (i.e., either the same rating for or a 1-point difference between both time points) between Time 1 and Time 2 for each item across participants. For Items 10–13, agreement was calculated by comparing responses between the two time points for each goal.

## 4.4 Results

### 4.4.1 Participant Characteristics

Participant characteristics, including demographic data, injury severity and mechanism of injury, are outlined in Table 4.1. Participants with traumatic brain injury were classified as having either a mild, moderate, or severe injury on the basis of their length of posttraumatic amnesia (PTA) or Glasgow Coma Scale (GCS; Teasdale & Jennett, 1974) score when PTA was not available.

Table 4.1. Participant Demographics ( $N = 42$ )

Characteristic	<i>n</i> or <i>M</i> ( <i>SD</i> )
Age, yr	37.8 (12.8)
Gender	
Female	14
Male	28
Education, yr ( $n = 41$ )	13.1 (2.5)
Ethnicity (ASCCEG; $n = 41$ )	
Oceanian	35
North West European	2
Southern and Eastern European	2
Sub-Saharan African	2
Primary preinjury occupation (ANZSCO)	
Manager or professional	10
Technical/trade	10
Community/personal service	3
Clerical/administrative	7
Sales or laborer	2
Student	7
Unemployed or retired	3
Diagnosis	
TBI	24
Stroke	6
SAH or SDH	5
Hypoxia or tumor	4
Other	3
Initial GCS score for participants with TBI ( $n = 19$ )	7.6 (4.4)
TBI severity	
Mild (PTA 0–1 days or GCS 13–15)	4
Moderate (PTA >1–7 days or GCS 9–12)	2
Severe (PTA >7 days or GCS 3–8)	16
PTA length or GCS score unavailable	2
Inpatient rehabilitation	
Yes	27

Length of stay, days	59.6 (56.6)
No	15
Time since injury, days	299.2 (392.1)

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*Note.* ASCCEG = Australian Standard Classification of Cultural and Ethnic Groups; ANZSCO = Australian and New Zealand Standard Classification of Occupations; GCS = Glasgow Coma Scale; *M* = mean; PTA = posttraumatic amnesia, SAH = subarachnoid hemorrhage; *SD* = standard deviation; SDH = subdural hemorrhage; TBI = traumatic brain injury.

Duration of PTA has been shown to be more predictive of outcome than the GCS (Cattelani, Tanzi, Lombardi, & Mazzucchi, 2002; Willemse-van Son, Ribbers, Verhagen, & Stam, 2007), but PTA was not always formally assessed in our participant group. Therapist participants included four private therapy providers (1 speech therapist and 3 occupational therapists) and 15 day hospital therapists (4 physiotherapists, 5 occupational therapists, 4 speech therapists, 1 social worker, and 1 neuropsychologist). Therapists had been qualified in their profession on average for 13.9 years (*SD* = 10.4 years) and had worked in ABI rehabilitation on average for 8.9 years (*SD* = 6.9).

A total of 64 sets of goals were planned with participants: in occupational therapy, 36; in speech therapy, 17; in physiotherapy, 7; during social work, 3; and during neuropsychology, 1. Several participants attended multiple therapies, and the number of goals per participant ranged from 1 ( $n = 2$ ) to 6 ( $n = 3$ ), with 3 or 4 goals being the most common ( $n = 47$ ).

#### **4.4.2 Internal Consistency Reliability**

Cronbach's  $\alpha$  coefficient for the 13 items was .82 ( $x = 55.19$ ,  $SD = 5.7$ ), approaching strong internal consistency. Examination indicated poor item-partial total correlations ( $r < .30$ ) for Items 2 and 3, as hypothesized, and for Item 4 (Table 4. 2). Thus, these items were excluded from the scoring of the scale. The 10 retained items comprised the Participation (Items 1 and 5–9) and Goals (Items 10–13) sub-scales (see Figure 4.1). Item-partial total correlations were mostly moderately correlated with  $r$  values ranging from .49 to .79, and all item-partial total correlations were significant at  $p < .01$ . Internal consistency of the revised 10-item scale was strong, with a Cronbach's  $\alpha$  coefficient of .94 ( $x = 44.7$ ,  $SD = 4.7$ ).

The retained Participation sub-scale items were all significantly ( $p < .01$ ) and moderately ( $r = .61$ – $0.80$ ) correlated, demonstrating higher correlations with the Participation sub-scale total compared with the Goals sub-scale total for Items 5 and 7–9. Items 1 and 6 showed slightly higher correlations with the Goals sub-scale. The Goals sub-scale items were significantly and moderately to highly correlated with the Goals sub-scale total ( $p < .01$ ,  $r = .79$ – $.86$ ), demonstrating higher correlations with the Goals sub-scale total compared with the Participation sub-scale total for Items 10–12; Item 13 was equally correlated with both sub-scales.

#### **4.4.3 Test–Retest Reliability**

Percent agreement between Time 1 and Time 2 ratings for each of the 13 items across 12 participants is reported in Table 4. 2. Percent exact agreement ranged from 17% to 87%. Item 2 demonstrated low percent exact agreement, with only two participants rating this item the same both times. However, from Time 1 to Time 2, 11 out of 12 participants rated this item the same or with a 1-point difference. Average percent exact agreement across all items was 67%. Percent close agreement ranged from 75% to 100%, indicating that the majority of item ratings were either exactly the same or 1-point different on retesting.

#### **4.5 Discussion**

This study explored internal consistency and test–retest reliability of the C–COGS scale by using a relatively large group of people with ABI in an outpatient rehabilitation setting. The C–COGS scale was designed to promote clinical reflection about and evaluation of client-centred goal setting. The findings confirm inclusion of most items in the scoring of the scale, with Items 2–4 recommended to be retained only as descriptive items for clinical evaluation. Therefore, occupational therapy practitioners should explore these items with their clients only in an interview format because

further psychometric evaluation of the reliability of these items needs to be undertaken before they can be considered for inclusion as scale items.

Preliminary test–retest reliability findings indicated that most test items were rated consistently at scale readministration, which was on average 1 week after initial administration. Test–retest reliability (exact agreement) for Items 2–4 was significantly lower compared with the majority of other items, which lends further support for separating these items from the scoring of the scale.

Table 4. 2. Item Partial Total Correlations and Test–Retest Reliability

Item	<i>M (SD)</i>	Item-Partial Total Correlation ( <i>r</i> )			Test–Retest Reliability (%)	
		C-COGS Scale ( <i>n</i> = 64)	Participation Sub-scale ( <i>n</i> = 64)	Goals Sub-scale ( <i>n</i> = 64)	Exact Agreement ( <i>n</i> = 12)	Close Agreement ( <i>n</i> = 12)
1. The goals are what I want to work on.”	4.56 (0.5)	.58**	.61**	.64**	83	100
2. “The goals are what my friend/relative wants me to work on.”	3.04 (1.3)	.16	—	—	17	92
3. “The goals are what my therapist wants me to work on.”	3.64 (1.2)	.17	—	—	58	92
4. “Significant people in my life (i.e., family, friends) were involved in planning the goals as much as I wanted them to be.”	3.78 (1.1)	.29*	—	—	42	75
5. “The therapist encouraged me to participate in setting the goals.”	4.39 (0.6)	.61**	.74**	.60**	75	100
6. “I was an active participant in the goal-setting session.”	4.51 (0.6)	.69**	.75**	.83**	75	100
7. “My views and opinions about the goals were listened to.”	4.44 (0.6)	.49**	.61**	.60**	75	100
8. “I felt like a partner in the goal setting	4.45 (0.6)	.66**	.71**	.67**	75	100



process (along with other people involved in my goal setting session/s)."						
9. "I made the final decision about which goals were set."	4.47 (0.6)	.58**	.65**	.60**	58	100
10. "The goal is meaningful and important to me as it relates to who I am and my future."	4.51 (0.5)	.79**	.73**	.86**	87	100
11. "The goal is relevant to my everyday life as it relates to what I want to do at home, work or in the community."	4.45 (0.6)	.76**	.71**	.84**	68	97
12. "The goals is what I am motivated to work on."	4.45 (0.6)	.74**	.80**	.85**	71	95
13. "The goal is my own goal."	4.48 (0.5)	.75**	.79**	.79**	71	97

*Note.* Correlations for Items 10–13 were calculated using the average response across all goals for each participant. Percent agreement for test–retest reliability for Items 10–13 was calculated for each goal (total goals = 38). *Close agreement* is defined as a follow-up rating that is the same as the initial rating or that has a 1-point difference with the initial rating. — = excluded from scoring; C–COGS = Client-Centredness of Goal Setting; *M* = mean; *SD* = standard deviation.

\* $p < .05$ . \*\* $p < .01$ .

As expected, the item-partial total correlations for Items 2 and 3 were weak and not significant. These items were not designed to measure the client-centredness of goal setting but rather explore the client’s perceptions about practitioner and family views. The item-partial total correlation for C–COGS scale Item 4 was also weak, with scores for this item typically rated lower ( $x = 3.78$ ) compared with other items. Responses for this item, which rates family involvement in goal setting, varied across participants, with many reporting a desire for more family involvement in goal setting. Participants reported various reasons for non-participation of families in goal setting, including family time constraints and work commitments. Some participants also reported that they were not aware that family members could be involved in goal setting.

Previous qualitative findings exploring family perspectives of ABI rehabilitation in day hospital settings indicated that a barrier to family participation may be that members feel like intruders in the clinical setting (Doig et al., 2009). Although scores for Items 2–4 were not consistent with the other retained items in the scale, they are important for service evaluation purposes because they relate to family and service provider involvement in goal setting.

Families are often consulted during goal setting in ABI rehabilitation settings to enhance understanding of clients who have cognitive or communication impairments, support the client, and facilitate education (Doig et al., 2009; Hale, 2010; Leach et al., 2010; Levack, et al., 2009). However, family involvement can be either positive or negative. An example of a negative consequence of family involvement is that the goal setting process may be inhibited if family members impose their goals (Levack et al., 2009). Client responses to Items 2–4 may enable practitioners to pinpoint family-related barriers to client-centred goal setting and promote discussion about positive family involvement. Moreover, practitioners should also document clients' qualitative responses to these items and ask open-ended questions to enhance clinical reflection and understanding of clients' perspectives, such as, “Are the goals what you truly want to work on?” and “Was your goal choice influenced by what you feel others want you to work on?”

This study provides preliminary data on test–retest reliability that indicates that most items were rated consistently by most participants between two time points. However, the test–retest interval was lengthy for some participants (range, 1–35 days; mean = 6.75 days); therefore, test–retest reliability could be underestimated, particularly for items requiring recall of discussions with therapists during goal setting sessions. In addition, views about goals also may have changed over this time period. Moreover, establishing reliability can be challenging for a scale with few test items and difficult to do in a population with ABI because cognitive deficits may affect responses given at different time points. Therefore, in examining test–retest reliability, we calculated close agreement, showing positive preliminary findings.

Future research should include administering this scale to larger samples and implementing shorter retest time intervals to more thoroughly examine test–retest reliability. Because this study also examined internal reliability of the sub-scale items, future research should examine factor structure to determine whether the same sub-scales are supported using a larger sample. Further research is also recommended to examine strategies that facilitate client-centred goal setting. Use of the C–COGS scale in such research may enable empirical measurement of the client-centredness of goal setting approaches. Strategies and measures to support greater goal ownership, motivation, and choice of goals that are most important and meaningful to clients are an important step. In addition, where client, service provider, and contextual factors pose challenges to the client-centredness of goals, enhanced measures will be particularly useful.

#### **4.5.1 Implications for Occupational Therapy Practice**

The results of this study have the following implications for occupational therapy practice:

- The C-COGS scale provides brain injury rehabilitation practitioners an opportunity to reflect upon goal setting practices to promote and enhance client participation in goal setting as well as the importance and meaningfulness of rehabilitation goals to clients
- The C-COGS scale demonstrates preliminary reliability and may be used to empirically evaluate client participation in goal setting and goal importance and meaningfulness.

#### **4.6 Conclusion**

The C–COGS scale can be used to evaluate goal setting from the client’s perspective and is intended for use by clinicians to enhance multi-disciplinary goal setting and as a research measure exploring factors that contribute to successful rehabilitation. The scale was developed for use by all professionals working with people in rehabilitation settings and can be used by occupational

therapy practitioners to evaluate and enhance client-centred goal setting practice. In addition, the study findings provide preliminary evidence to support reliability of the C-COGS scale.

## **Chapter 5 Goal statements in brain injury rehabilitation: A cohort study of client-centredness and relationship with goal outcome**

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Chapter 4 contributed to the development of the C-COGS by establishing additional psychometric properties of the questionnaire, including internal consistency and test-retest reliability. The identification of these psychometric properties helps establish the C-COGS as a reliable measure of the client-centredness of goals, which is a key construct measured in Chapter 5. This chapter examines the characteristics, content and recall of client-centred goals in brain injury rehabilitation, and the extent to which level of client-centredness (as measured by the C-COGS) relates to the characteristics and goal outcomes. This chapter addresses aims 3 and 4 of the thesis which were to examine current goal setting practices employed with clients with ABI in community-based rehabilitation settings and to investigate the relationship between client-centred goal setting and goal achievement.

The manuscript inserted as Chapter 5 was submitted for publication to *Brain Impairment* in December 2017. Revisions were resubmitted in April 2018. Minor formatting changes have been applied to the manuscript to ensure consistency within the thesis.

## 5.1 Abstract

**BACKGROUND:** Rehabilitation goal documentation has been traditionally shaped by SMART goal criteria, but it is becoming increasingly important that goal setting is also client-centred. An understanding of the characteristics of client-centred goals, and the extent to which client-centeredness influences goal outcomes, is required.

**OBJECTIVE:** To examine the relationships between the client-centredness of goals and their characteristics, content, recall and outcomes of client-centred goals in brain injury rehabilitation.

**METHODS:** A prospective cohort design study was employed. Participants were 45 clients with brain injury receiving outpatient rehabilitation, who completed measures of client-centredness after goal setting. Each goal was classified according to whether it was specific, measurable, non-jargonistic, and participation-focussed, included a timeframe and was recalled by participants.

**RESULTS:** Participants set 223 goals with 20 clinicians from multiple disciplines. Levels of client-centredness did not differ according to the characteristics, content and recall of goals, with the exception of goal specificity ( $p < 0.01$ ). Client-centredness was significantly and positively correlated with goal outcomes ( $p < 0.05$ ).

**CONCLUSIONS:** The use of client-centred goals is recommended for improved rehabilitation outcomes. Applying goal documentation criteria does not necessarily mean that goals will be client-centred, and highly specific goal statements may not reflect what is important and meaningful to clients.

**Key words:** goal setting, brain injury, client-centredness, community dwelling clients

## 5.2 Introduction

Most clinicians working in brain injury rehabilitation use goal setting as part of their routine practice to provide direction for rehabilitation activities (Barnes & Ward, 2000; Pagan et al., 2015; Scobbie, Duncan, Brady, & Wyke, 2015; Wade, 2009). At the outset of rehabilitation, clinicians may identify goal areas by collaborating with clients and their families about activities that are important and meaningful to them (Randall & McEwen, 2000; Schut & Stam, 1994; Wade, 2009). After this, goals may be operationalised to focus rehabilitation activities toward their achievement (Wade, 2009). This includes documentation of goals to enable provision of feedback to clients about their progress and to demonstrate intervention effectiveness (Wade, 2009). Increasingly, it is argued that rehabilitation in general, and goal setting in particular, is more effective if it is client-centred (Prescott et al., 2015; Turner-Stokes, Rose, et al., 2015). A client-centred approach implies that clients are engaged in the goal setting process and in collaboration with significant others where applicable, goals are identified that are perceived to be important, meaningful and relevant to the client (Bright et al., 2012; Cott, 2004; Doig, et al., 2015; Doig, Prescott, Fleming, Cornwell, & Kuipers, 2016; Prescott et al., 2015; Sumsion, 2004). This study examines the characteristics, content and client recall of client-centred goals in brain injury rehabilitation, and the extent to which client-centredness relates to goal outcomes.

Levack and Siegert (2015) recommended that both the characteristics and content of goals should be considered for effective goal setting. Characteristics of high quality goals typically relate to whether goals can be objectively rated. Commonly, this is achieved through SMART goal documentation, or a variation thereof (Barnes & Ward, 2000; Bovend' Eerd et al., 2009; Hassett et al., 2015; Marsland & Bowman, 2010; Schut & Stam, 1994). SMART goals were originally developed in the organisational psychology field to enhance business performance (Doran, 1981). The acronym SMART refers to goals that are Specific, Measurable, Achievable, Relevant and Time limited (Barnes & Ward, 2000). Arguably, these goal characteristics are useful for the purpose of

measuring outcomes from the service provider's perspective. However, it is not clear to what extent these goal characteristics are important to clients or lead to better goal outcomes. When considering the characteristics that are important from a client's perspective, other factors such as the use of non-jargonistic language, have been suggested (Bergquist & Jacket, 1993; Schut & Stam, 1994).

In terms of the content of goals, Levack and Siegert (2015) noted that there is dissonance about whether goal content should be restricted or not. Some authors have suggested that goals may be conceptually ordered using established frameworks, such as the ICF (Wade, 2009). Participation level goals are suggested as the preferred focus of rehabilitation goal setting, especially for clients who are living in the community (Siegert & Taylor, 2004). Inclusion of the client's name in goal statements may also enhance goal ownership (NSW Agency for Clinical Innovation, 2014). Although studies have documented the characteristics and content of goals that are important from a service or clinician perspective (Randall & McEwen, 2000; Schut & Stam, 1994; Wade, 2009), no studies have considered whether these features influence the perceived importance of rehabilitation goals to clients.

Another essential consideration when formulating goals is the extent to which goals are recalled by clients, given that changes in cognitive impairment after ABI have been identified as a barrier to participation in goal setting in rehabilitation (Bouwens et al., 2009; Doig et al., 2009; Van De Weyer et al., 2010; Ylvisaker et al., 2008). Accurate goal recall may reinforce the generalisation of strategies outside of therapy sessions, therefore maximising opportunities for behaviour directed at achieving rehabilitation goals (Culley & Evans, 2010). As goal recall may impact on client participation in interventions, there is a need to examine goal recall and whether goals perceived as highly client-centred are more memorable to clients.

Rehabilitation may be more effective when elicited goals are more highly client-centred. It has been demonstrated that a rehabilitation program which targeted the achievement of client-centred goals, resulted in significant improvements in client engagement between admission and



discharge, and client engagement in goal setting was strongly correlated with goal achievement and functional gain (Turner-Stokes, Rose, et al., 2015). Client engagement in goal setting was measured using the Goal Engagement Scale. This scale includes rehabilitation team ratings of engagement using a six point visual analogue scale, ranging from unable to engage to excellent engagement (Turner-Stokes, Rose, et al., 2015). Other studies have also established that client-centred goals are associated with goal attainment (Ownsworth et al., 2008; Webb & Glueckauf, 1994), and that these gains are maintained in the longer term (Webb & Glueckauf, 1994). Clearly, there are benefits of implementing client-centred goals in brain injury rehabilitation but previous studies have measured client engagement in goal setting rated by clinician observation (Turner-Stokes, Rose, et al., 2015). It is not known the extent to which goal outcomes are influenced by levels of client-centredness as perceived by clients. This investigation may provide rehabilitation practitioners with increased knowledge of how to make goal setting truly client-centred.

Therefore this study aimed to; (1) describe the characteristics, content and client recall of goals in a sample of clients with ABI; (2) compare levels of client-centredness of goals that are specific, measurable, non-jargonistic, participation focused, include the client's name and are recalled by the client to those that are not; and (3) investigate the relationship between client-centredness and goal outcome. Three hypotheses were generated: (1) goals containing the client's name, written in the client's language and targeted at the participation level of the ICF would be associated with higher levels of client-centredness; (2) higher goal recall would be associated with higher client-centredness; and (3) higher levels of client-centredness of goals would be associated with better goal outcomes. It was not expected that there would be a relationship between client-centeredness and goals characterised as being specific, measurable or including a time frame as these factors are more important for services to measure outcome.

## **5.3 Method**

### **5.3.1 Design**

A prospective cohort design was used with data collected at two time points. Goal statements were recorded and questionnaires relating to the client-centredness of goals were completed by clients immediately after goal setting in brain injury rehabilitation services. Follow-up data were collected 12 weeks after goals were set, or at discharge if this occurred prior, to determine goal outcomes.

### **5.3.2 Participants**

Participants were community dwelling clients with ABI receiving rehabilitation at a metropolitan hospital outpatient service or private community-based services in Queensland, Australia. These services use a multi-disciplinary rehabilitation model, meaning that goals were set within individual disciplines. Goals are set using an informal un-structured process consistent with routine practice in community-based rehabilitation settings resulting in individualised rehabilitation goals. Inclusion criteria were: (a) aged between 18-65 years, (b) diagnosis of ABI, (c) living in the community, (d) able to communicate in English, and (e) about to either plan or review their rehabilitation goals with a clinician (occupational therapist, physiotherapist, speech pathologist, social worker or neuropsychologist). Client participants were excluded if assessed by a clinician as not having adequate cognitive and communication skills to provide informed consent and complete the questionnaires required for the study.

Participants were recruited between October 2013 and November 2014. Initially, all consecutive admissions to the outpatient service were screened and eligible clients identified for the study ( $n=51$ ). Later, in an attempt to obtain a more even spread across the different therapies, under-represented disciplines were targeted and asked to refer eligible clients directly to the researchers. Participants from the private community-based services were also obtained by referral

from the clinicians at the services. Clients who met the eligibility criteria were approached by a researcher and invited to participate in the study after they had given verbal consent to be contacted. It was a requirement of the study that the clinician conducting the goal setting also consented to participate in the study. Recruitment ceased when the project funding ended, at which point 45 participants with ABI had been recruited. The number of eligible client participants, and those who declined or were excluded, and the reasons for exclusion are outlined in Figure 5.1.

### **5.3.3 Measures**

*Client-centredness of Goal Setting Scale (C-COGS)* (Doig et al., 2015; Doig et al., 2016): The C-COGS is a newly developed self-report questionnaire. It measures a client's perceived level of involvement in the goal setting process, and ownership, importance, meaning and relevance of the resultant rehabilitation goals. It includes thirteen statements which are rated on a 5-point Likert scale (1= strongly disagree to 5= strongly agree). Two sub-scale scores, a Goals sub-scale and a Participation sub-scale, can be generated. The Goals sub-scale measures the perceived ownership of, importance, meaning and relevance of each individual goal. These are averaged across all goals to calculate an overall goal-subscale score (out of 20). The Participation sub-scale measures the client's perceived level of participation in the goal setting process (out of 30). A total score may be generated by summing the sub-scale scores (out of 50). The preliminary psychometric properties of this measure have been supported including construct validity (Doig et al., 2015) and reliability (Doig et al., 2016). Prior to administering the C-COGS, clients were asked to recall their rehabilitation goals, enabling the C-COGS to be used to also measure the recall of individual goals (yes/no).

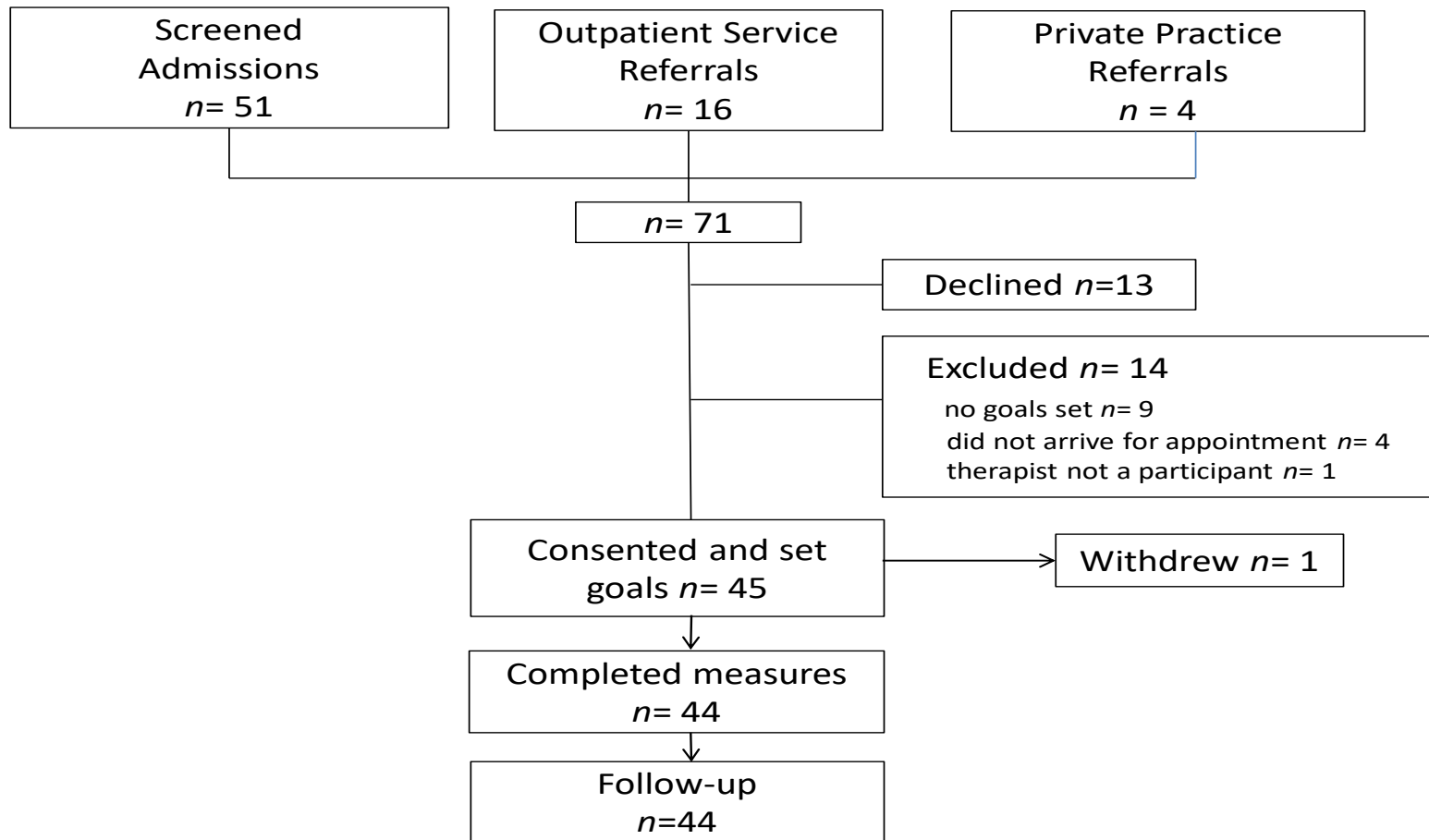


Figure 5.1. Flow diagram of participant referral, screening, consent and follow-up

*Canadian Occupational Performance Measure (COPM; Law et al., 1998)*: The COPM is designed to identify problems with occupational performance for the purpose of establishing treatment goals (Phipps & Richardson, 2007). Participants rate the importance of each identified occupational performance problem on a 10-point visual analogue scale (1= not important at all and 10= extremely important). It also measures a client's perceived performance (1= not able to perform and 10= able to perform it extremely well) and satisfaction (1= not satisfied at all and 10= extremely satisfied) with the identified occupational performance areas. The COPM can be used as an outcome measure to evaluate change in response to treatment, by calculating change in performance and satisfaction ratings for each goal or average change across all goals by dividing the total change scores by the total number of goals (Law et al., 1998). A change of two or more points represents a clinically significant change (Law et al., 1998). The COPM's psychometric properties have been extensively evaluated (Carswell et al., 2004) including its sensitivity in ABI populations (Doig et al., 2010; Jenkinson et al., 2007). The COPM importance ratings were used as a second measure of client-centredness of goals and change in COPM performance and satisfaction ratings were used as a measure of goal outcome.

#### **5.3.4 Procedure**

Ethical clearance was obtained from relevant hospital and university ethics committees. Informed consent was obtained from all participants. After setting goals with clients, goal statements were documented by clinicians according to local service requirements with no goal writing restrictions or guidelines provided by the researchers. The clinicians provided copies of the goal statements to the research team. The C-COGS was administered to the participants by a researcher as soon as possible after goals were set, in a quiet room in the outpatient service, or in client's homes for those participants recruited from private practices. At this time, the COPM was also administered by asking the client to rate the importance, performance and satisfaction scales for each of their

rehabilitation goals. The participant's clinician also rated the participant's performance on the COPM performance scale. Twelve weeks later, or at discharge in the cases where clients had shorter rehabilitation programs, the COPM performance and satisfaction scales were readministered to participants and the performance scale was completed by the clinicians to obtain goal outcome data. COPM performance and satisfaction change scores were calculated by subtracting initial performance and satisfaction scores from follow-up scores for each goal. Change scores were then averaged across all goals to calculate mean performance and satisfaction change scores.

To describe the characteristics and content of rehabilitation goals, each goal, as documented by the participant's clinician, was categorised by two independent raters after goals were set as to whether it met or did not meet pre-determined criteria. The criteria included whether the goal was: 1) specific, 2) measurable, 3) written to include a time frame, 4) non-jargonistic, 5) written to include the client's name, 6) accurately recalled by participants, and 7) included the participation domain of the ICF. These criteria were rated dichotomously (i.e., yes/no). Goals were classified as accurately recalled by clients if the client was able to recall the general theme of the goal without prompting. Consistent with other studies (Hassett et al., 2015), the 'achievable' and 'relevant' components of SMART goal documentation were not rated, as raters only had access to goal statements and additional clinical information would have been required to make a judgement about these components. In cases where there was disagreement between the two independent raters, a third rater was consulted to make an independent and final decision about whether or not the goal statement met the specified criteria.

### **5.3.5 Data Analysis**

Data were analysed using IBM SPSS statistics (Version 24). To address Aim 1, the characteristics, content and recall of goal statements were summarised descriptively using frequencies. To address Aim 2, GEE were used to compare COPM goal importance ratings and C-COGS Goals sub-scale

ratings for individual goals that met and did not meet the screen criteria. The GEE analysis was indicated given that multiple goals were collected from the same participant (i.e., the goal statements could not be treated as independent cases for individual participants) and this analysis enables correction of correlated response data (Hanley et al., 2003).

To address Aim 3, the relationship between the level of client-centredness (total and sub-scale C-COGS and mean COPM importance scores) and goal outcome (mean COPM patient and clinician rated performance change scores and mean COPM patient rated satisfaction change scores) was examined using Spearman's correlations. Prior to the analysis, QQ plots and histograms were visually inspected and skewness and kurtosis were calculated. This indicated that none of the variables approximated a normal distribution. Therefore non-parametric statistical methods were used to address this aim. For each set of rehabilitation goals (i.e., goals set by a client with each treating clinician;  $n=66$ ), C-COGS total and sub-scale scores, mean COPM importance and mean COPM performance and satisfaction change scores were calculated. In one case, there was missing data for COPM client performance and satisfaction follow-up ratings and this was handled by including baseline data in the aggregated data analysis. Post-hoc power analyses for Spearman's correlations were conducted.

## **5.4 Results**

### **5.4.1 Participant characteristics**

The demographic and diagnostic characteristics of the 44 participants who completed the study are shown in Table 5.1. The majority of participants were male and had sustained a severe traumatic brain injury, and were 1 to 2 years post-injury.

In total, 45 participants completed goal setting with 20 clinicians (eight occupational therapists, five speech pathologists, five physiotherapists, one neuropsychologist, one social

worker). On average, clinicians were qualified in their profession for 14.5 years (SD=10.47) and had worked 9.65 years (SD=7.54) in brain injury rehabilitation. Some participants set goals within

Table 5.1: Participant Demographics (N=44)

Characteristic	<i>n</i> or M (SD)
Gender	
Male	28
Female	16
Age, yr	37.5 (12.6)
Education, yr (n=43)	13 (2.4)
Ethnicity (ASCCEG; n=43)	
Oceanian	37
North West European	2
Southern and Eastern European	2
Sub-Saharan African	2
Primary preinjury occupation (according to ANZSCO category)	
Manager or professional	10
Technical/trade	10
Community/personal service	4
Clerical/administrative	8
Sales or labourer	2
Student	7
Unemployed or retired	3
Diagnosis	
TBI	25
Stroke	6
SAH or SDH	5
Hypoxia or tumor	5
Other	3
Initial GCS score for participants with TBI (n= 19)	7.6 (4.4)
TBI Severity	
Mild (PTA 0-1 days or GCS 13-15)	4
Moderate (PTA> 1-7 days or GCS 9-12)	2
Severe (PTA> 7 days or GCS 3-8)	17
PTA length or GCS unavailable	2
Inpatient rehabilitation	
Yes	27
Length of stay, days	59.6 (56.6)
No	17
Time since injury, days	395.8 (746.3)

Note. ASCCEG= Australian Standard Classification of Cultural and Ethnic Groups; ANZSCO= Australian and New Zealand Standard Classification of Occupations; GCS= Glasgow Coma Scale; M= mean; PTA = posttraumatic amnesia; SAH= subarachnoid haemorrhage; SD= standard deviation; SDH= subdural haemorrhage; TBI= traumatic brain injury



only one therapy discipline ( $n=27$ ), and others within two disciplines ( $n=15$ ), three disciplines ( $n=2$ ) or four disciplines ( $n=1$ ), with a varying number of goals set on each occasion. Goal setting was completed in occupational therapy ( $n=36$ ), speech pathology ( $n=17$ ), physiotherapy ( $n=10$ ), social work ( $n=3$ ), and neuropsychology ( $n=1$ ). This resulted in 67 sets of goals and a total of 223 goals being set. Three goals was the most common number set in a therapy session ( $n=54$ ). Of the 223 rehabilitation goals, four of the goals were not analysed as the participant who set these goals did not attend rehabilitation and subsequent data collection appointments.

Examples of goal statements that met or did not meet the criteria are illustrated in Table 5.2. Inter-rater agreement was 100% for the classification of goals according to the time-frame, client-name and goal-recall criteria. For the remaining criteria, rater agreement varied depending on the criteria: measurable (71%), participation (65%), non-jargonistic (58%) and specific (53%) and were decided by the third rater.

#### **5.4.2 The characteristics, content and recall of goals**

Table 5.3 shows the number of goal statements that met each criteria. Generally less than half of the goal statements met the criteria, except for goal recall where 61% of goals were accurately recalled. In terms of the SMART goal criteria, 48% were specific, 35% were measurable and 5% included a time frame. The client's name was contained in 2% of goal statements. Mean COPM importance and C-COGS Goals sub-scale ratings indicate that individual goals were considered to be highly client-centred.

Table 5.3 also displays comparisons between COPM importance scores and C-COGS Goals sub-scale scores when goals met or did not meet the criteria. When goals were written without using the 'specific' criteria, they were rated significantly higher on the COPM importance scale ( $p=0.005$ ) and the C-COGS Goals sub-scale ( $p=0.03$ ). There was no significant differences in C-COGS Goals sub-scale or COPM importance scores according to presence or absence of other

Table 5.2. Examples of goal statements that met and did not meet the criteria

Criteria	Example
Specific	M: To sit to stand from dining chair without use of arms or momentum in <2 seconds DNM: Improve overall muscle tone, general strength and fitness
Measurable	M: To get back to work by January 2014, existing role, current employer DNM: Monitor and provide strategies to ensure efficient performance of work roles
Written to include a time frame	M: To learn to juggle using both upper limbs with three balls in three months DNM: Return to work (either previous job or different capacity)
Non-jargonistic	M: Improve recall of names e.g. touch footy team mates DNM: To consistently use internal and external memory strategies to independently aid recall of phone messages in daily tasks
Included the participation domain of the ICF	M: Independent community access – use of public transport DNM: Improve problem solving and reasoning skills

Note. M=Met Criteria; DNM= Did not meet criteria

Table 5.3. Comparison of client-centredness of goals according to their characteristics, content and recall

Variable	N (%)	COPM Importance rating (/10)			C-COGS Goals sub-scale rating <sup>a</sup> (/20)		
		Mean (SD)	B (95% CI)	p-value	Mean (SD)	B (95% CI)	p-value
<b>Specific</b>							
Yes	106 (48)	8.55 (1.66)	-0.71	0.005	17.66 (2.4)	-0.54	0.03
No	113 (52)	9.17(1.27)	(-1.21;-0.21)		18.35 (2.14)	(-1.02;-0.05)	
<b>Measurable</b>							
Yes	77 (35)	8.86 (1.61)	0.11	0.683	18.09 (2.13)	0.04	0.87
No	142 (65)	8.87 (1.44)	(-0.42;0.64)		17.98 (2.39)	(-0.47;0.55)	
<b>Time Frame</b>							
Yes	12 (5)	8.75(1.66)	-0.03	0.955	17.33 (2.67)	-0.58	0.33
No	207 (95)	8.88 (1.49)	(-1.23;1.16)		18.06 ( 2.27)	(-1.75;0.59)	
<b>Jargon</b>							
Yes	61 (28)	8.77 (1.59)	-0.12	0.665	17.74 (2.67)	-0.23	0.411
No	158 (72)	8.91 (1.47)	(-0.68;0.44)		18.13 (2.13)	(-0.77;0.32)	
<b>Name</b>							
Yes	4 (2)	8.5 (1.29)	-0.68	0.348	17.75 (1.7)	-0.32	0.626
No	215 (98)	8.88 (1.5)	(-2.09;0.74)		18.02 (2.3)	(-1.6;0.96)	
<b>Recalled</b>							
Yes	133 (61)	8.9 (1.35)	-0.096	0.716	17.95 (2.08)	-0.36	0.175
No	86 (39)	8.82 (1.72)	(-0.61;0.42)		18.12 (2.61)	(-0.87;0.16)	
<b>ICF Participation</b>							
Yes	57 (26)	9.13 (1.26)	0.38	0.189	18.21 (2.15)	-0.22	0.443
No	162 (74)	8.78 (1.57)	(-0.19;0.94)		17.95 (2.34)	(-0.34;0.77)	

Note. C-COGS = Client-centredness of goal setting scale; COPM= Canadian Occupational Performance Measure; ICF= International Classification of Functioning, Disability and Health; <sup>a</sup> Goals sub-scale ratings relate to individual goals set

criteria (i.e., whether they were measurable, included the client’s name, a time-frame or jargon or were accurately recalled).

### 5.4.3 Client-centredness and goal outcome

A summary of COPM and C-COGS scale scores for the sample is presented in Table 5.4. The high mean total and subscale C-COGS scores and COPM importance score show that the sample perceived the goal setting as highly client-centred. The mean COPM clinician and client performance change scores and satisfaction change score are greater than 2 points indicating that on average the sample achieved a clinically meaningful change on all goal outcome variables.

Table 5.4. Mean C-COGS and COPM scores (*n*=66 sets of goals)

	Pre Mean (SD)	Post Mean (SD)	Change Mean (SD)
C-COGS			
Total	44.95 (4.64)		
Goals sub-scale <sup>b</sup>	17.98 (2.02)		
Participation sub-scale	26.97 (2.81)		
COPM (mean scores)			
Importance	8.85 (1.22)		
Performance: clinician	3.93 (2.00)	7.03 (1.91)	3.10 (2.03)
Performance: client	4.72 (1.8)	6.75 (1.87)	2.03 (2.08)
Client Satisfaction	4.3 (2.29)	6.67 (2.12)	2.37 (2.78)

Note. C-COGS=Client-centredness of goal setting scale; COPM= Canadian Occupational Performance Measure; <sup>b</sup>C-COGS Goals sub-scale scores averaged across all goals

Table 5.5 displays correlations between COPM importance scores and C-COGS scores and the goal outcome variables (COPM change scores). All correlations were significant and positive, with the strength in the fair range (Portney & Watkins, 2009), except for a weak, non-significant correlation between COPM importance score and COPM client performance change score. Power (i.e., the chance of Type II error) ranged from 0.28 to 0.47.

Table 5.5. Spearman's correlations between COPM Importance and C-COGS scores and mean COPM change scores across all client goals ( $n=66$  sets of goals)

	Mean COPM Change Scores		
	Performance (Clinician)	Performance (Client)	Client Satisfaction
Mean COPM importance	.337**	.219	.267*
Total C-COGS	.288*	.272*	.296*
C-COGS Participation sub-scale	.266*	.254*	.281*
C-COGS Goals sub-scale	.313*	.257*	.279*

Note. C-COGS = Client-centredness of goal setting scale; COPM= Canadian Occupational Performance Measure

\* $p < 0.05$ ; \*\*  $p < 0.01$  (2-tailed)

## 5.5 Discussion

Goal setting documentation has traditionally and necessarily been shaped by SMART criteria to facilitate outcome measurement. Goal setting implementation in clinical practice may be enhanced by understanding how documentation of goals relate to client-centredness, which encompasses the meaning and importance of rehabilitation goals to the client. Therefore, this study aimed to examine levels of client-centredness in relation to the characteristics, content and client recall of goals. Furthermore, the relationship between client-centredness and goal outcome was examined to provide insight into whether client-centred goals enhance rehabilitation outcomes, something which has been scarcely investigated. The findings indicate that goals set within the ABI rehabilitation services in this study were generally perceived to be highly client-centred, and there were no differences in the degree of goal importance to clients when goals statements were written according to standard criteria. However, higher levels of client-centredness in goal setting was related to significantly greater improvements in performance and client satisfaction with performance.

The first hypothesis, that goals that included the client's name, were written without jargon and addressed the participation domain of the ICF, would be perceived by clients to be more client-centred was not supported. Furthermore, as anticipated there was no difference in the level of perceived client-centeredness for goals characterised as being measurable or including a time frame. However, 'specific' goals were perceived to be significantly less client-centred which is an important finding contrary to our hypothesis. This finding may be attributed to the fact that although SMART goals are widely used in rehabilitation they were originally developed in the organisational psychology field to motivate healthy adults and may not be applicable to clients with brain injury who have complex cognitive and psychosocial impairments. Therapists have reported that the application of SMART goal criteria when setting goals reflects organisational priorities and that use of the specific criteria is driven by the need to measure change (Hersh et al., 2012). Overall

the findings related to the use of the ‘specific’ criteria may mean that clients do not need goals to be written according to standard criteria to ensure that goals are client-centred. Furthermore, when goals are broken down to be very specific, clients may perceive that they do not reflect what is important and meaningful to them, suggesting that goals may need to be documented more broadly. Collectively the findings suggest that documentation of goals according to criteria is more for the purpose of objective measurement by the service and, with the exception of writing goals specifically, these criteria do not enhance or detract from the importance and meaning of goals to clients.

The hypothesis that goals that were recalled would be more client-centred was not supported. In total, 40% of rehabilitation goals were not recalled. When considering that the prevalence of memory impairment in populations with brain injury is around 70% (Ponsford et al., 2014), this recall rate for goals is reasonably high. However, as there were goals that were unable to be recalled in this highly client-centred sample of goals, these results provide further justification in practice for use of additional strategies to support goal recall when a memory impairment is identified (Culley & Evans, 2010). Although the clinicians did not use any additional strategies in this study, text messaging has been identified as an effective strategy to enhance goal recall (Culley & Evans 2010). Culley and Evans (2010) found that sending text messages three times per day for 14 days after goals were set significantly improved recall compared to the no text condition. The text messages detailed the content of the client-centred goals (Culley & Evans, 2010).

The third hypothesis that highly client-centred goals would be associated with better goal outcomes was supported. High levels of client-centredness on the C-COGS were associated with significantly higher scores on nearly all of the goal outcome variables. The relatively weak relationship between mean COPM importance scores and client-rated performance change may reflect that COPM importance ratings are a single measure of goal importance whereas C-COGS scores comprehensively capture client participation in goal setting. The C-COGS uses a range of questions to evaluate the ownership, importance, meaning and relevance of each goal set as well as

client's perceived participation in goal setting (Doig et al., 2015; Doig et al., 2016). Comprehensive measures of client-centredness may therefore help clinicians better understand client-perceived participation in goal setting.

Goal setting is undertaken for multiple reasons in clinical practice (Levack, Dean, Siegert, et al., 2006; Levack, Dean, McPherson, et al., 2006). Reasons include to practise client-centred care, to enhance client motivation, and to evaluate outcomes and measure progress, with the overall aim of enhancing rehabilitation outcome (Levack, Dean, Siegert, et al., 2006). These differing purposes of goal setting may conflict, with clinicians adapting their approach to suit the intended audience of the goal (Levack, Dean, McPherson, et al., 2006). For example, clinicians may informally discuss goals with clients, whilst documenting goals differently in clinical notes to meet organisational requirements (Levack, Dean, McPherson, et al., 2006). The findings in this study are therefore understandable given that the purpose of goal setting differs for clinicians and clients. Clients, where able, need to be involved in goal setting to be engaged in and motivated by rehabilitation activities. This means that clients subjectively evaluate their progress (Playford et al., 2009), whereas clinicians must objectively evaluate improvement to demonstrate outcomes to service providers (Levack, Dean, McPherson, et al., 2006; Wade, 2009). Use of standardised criteria when formulating goal statements enables objective measurement, which is especially helpful in services that have a high staff turnover. The use of such criteria in this cohort did not detract from the importance and meaning of the goals to the participants, except for the 'specific' criteria.

Overall, the findings from this study indicate that rehabilitation goals focussed on the essence of what is important and meaningful to the individual are associated with significantly greater improvements in performance and satisfaction, which is consistent with other studies (Ownsworth et al., 2008; Turner-Stokes, Rose, et al., 2015; Webb & Glueckauf, 1994). Interestingly, Turner Stokes et al. (2015) generally found stronger correlations between goal engagement and functional outcomes. This may have been due to their larger sample size or may reflect differences in the way that goal engagement and outcome were measured (i.e., clinician



ratings on the Goal Engagement Scale vs client ratings on the COPM and C-COGS). Concerns have been raised about the reliability of self-rated measures in ABI populations due the influence of cognitive impairment (McColl et al., 2005). Cognitive impairment may also influence clinician perceptions of the achievability of the goals that are set (Barnard et al., 2010), as well as the client's ability to work towards achieving goals (Culley & Evans, 2010). Regardless of the impact of cognitive impairment on goal setting, the findings of the current study support the measurement of clients' perception of their involvement in goal setting and the client-centredness of their goals to enhance rehabilitation practice.

The length of time required to set rehabilitation goals has been identified as a contextual barrier in goal setting for clients with ABI, even though rehabilitation experts agree that time availability impacts on goal setting success (Playford et al., 2009; Van De Weyer et al., 2010). This suggests that spending time with individual clients to elicit and understand what is important and meaningful for them should be prioritised in goal setting. Furthermore, given that time spent writing goals using standard criteria does not appear to benefit clients, it may be beneficial to use indirect therapy time to operationalise and document goals for measurement purposes, as opposed to doing this in the client's presence.

### **5.5.1 Limitations and future directions**

Overall, this study provides preliminary evidence and future studies with larger samples are required to confirm the findings. Given the use of a prospective cohort design, it cannot be concluded that therapists who set goals using a client-centred approach will necessarily achieve better outcomes. For example, it is possible that some clients may have been more likely to engage in the goal setting process to develop more client-centred goals or may have had other characteristics which may have had a positive influence on goal outcomes. Alternatively, some participants may have been more impaired or may have had other comorbidities which could impact

on goal outcomes. Future studies are therefore required to establish causal associations between the client-centredness of goal setting and goal outcomes.

There was limited variability in our sample in terms of client-centredness. Most goals were rated as being highly client-centred, which may reflect ceiling effects on the C-COGS. It is not possible to comment on the ceiling effects of the C-COGS without further research. Additional evaluation of the C-COGS is indicated, or alternatively the development of other measures, to ensure that psychometrically sound measures which incorporate the client's perspective are available to enhance practice. Alternatively the high C-COGS ratings could represent brain injury rehabilitation services which use client-centred goal setting practices to motivate clients to participate in rehabilitation. The use of participant self-ratings of performance to measure outcomes has limitations, but this was supplemented by clinician-rated observations of performance change on the COPM which has established psychometric properties as an outcome measure in ABI populations (Bodiam, 1999; Chen et al., 2002; Cup et al., 2003; Jenkinson et al., 2007; Trombly et al., 2002). Results from this study are limited to clients who live in the community and further investigation is required to determine whether results are applicable in the inpatient setting. Some professions were under-represented in this study, such as social work and neuropsychology. This may indicate that goal setting is less of a focus within these professions, or that clients were not referred to the study due to the sensitive nature of issues being discussed.

Research which provides insight into how to set goals is needed, especially when clients have cognitive or communication impairments. Examination of the effect that cognitive impairment has on engagement in goal setting is recommended. Finally, this study did not explore the amount of direct clinical time required to set goals with clients nor the time used to document rehabilitation goals. Further investigation would enable rehabilitation services to understand the amount of time needed to effectively set client-centred goals, as it would appear that time spent in this area may enhance outcome.

## **5.6 Conclusion**

This study has added to the emerging body of evidence that working on the important and meaningful goals of clients is a factor that is related to the achievement of positive rehabilitation outcomes. In order to improve rehabilitation outcomes, it is recommended that clinicians spend sufficient time with clients to elicit what is important and meaningful to them. Comprehensive measures of client-centredness are recommended to adequately capture client involvement in goal setting. Writing goals according to objective criteria may be necessary to demonstrate intervention effectiveness to service providers, but these factors do not necessarily impact on the client-centredness of goals. It is recommended that clinicians be mindful that clients do not necessarily need to be involved in writing their goal statements, however when documenting goals, more general goal statements that are not highly specific may better represent what is important and meaningful to clients.

## **Chapter 6 Effect of self-awareness on goal engagement and outcomes after brain injury**

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Chapter 5 established the value of using a client-centred goal setting approach to achieve better goal outcomes for clients with ABI. Chapter 6 follows on from these findings by examining how impaired self-awareness, a known barrier of client-centred goal setting, effects participation in goal setting. Another recently identified barrier is hyper-awareness or underestimation of abilities. Chapter 6 therefore examines engagement in goal setting and goal outcomes of clients with ABI according to their level of self-awareness. It addresses aims 4 and 5 of the thesis which were to investigate the relationship between client-centred goal setting and goal achievement and to investigate the influence of identified barriers and facilitators on client-centred goal setting by examining the relationship between perceived client-centredness of goals and level of self-awareness, motivation and therapeutic alliance.

The manuscript was submitted for publication in the *American Journal of Occupational Therapy* in February 2018. Minor formatting changes have been applied to the manuscript to ensure consistency within the thesis.

## 6.1 Abstract

**Objective:** To examine engagement in goal setting and goal outcomes of clients with ABI according to their level of self-awareness.

**Method:** A prospective cohort study design was used. Participants were 44 adults with ABI attending outpatient rehabilitation. Goal setting discussions were audio-recorded and measures of self-awareness, motivation, client-centredness and therapeutic alliance completed immediately afterwards, and goal outcome data collected 12 weeks later. Participants were classified into three self-awareness groups: hyper-awareness, accurate self-awareness and impaired self-awareness.

**Results:** There were high levels of therapeutic alliance in each group and no differences in goal engagement or outcomes between self-awareness groups.

**Conclusion:** Clients with changes in self-awareness can be successfully engaged in rehabilitation goal setting to develop and achieve client-centred goals.

**Key words:** self-awareness, acquired brain injury, client-centred, goal setting, goal outcomes

## 6.2 Introduction

Self-awareness is defined as the ability to acknowledge one's strengths or limitations, particularly the ability to understand the nature of impairment and appreciate its implications (Fleming, Strong, & Ashton, 1996). However, changes in self-awareness are common after ABI (Prigatano, 1991; Sherer, Bergloff, Levin, et al., 1998). Individuals with ABI often over-estimate their cognitive, social and emotional abilities as a result of impaired self-awareness (Garmoe, Newman, & O'Connell, 2005). Another sub-group of clients with ABI, are those who underestimate their abilities (Smeets, Vink, Ponds, Winkens, & Van Heugten, 2017) or are "hyper-aware" of their impairments. To date there has been limited investigation of clients who underestimate their abilities after ABI, but these clients may need to have different approaches to engage them in rehabilitation.

Clinically, the consideration of a client's level of self-awareness after brain injury is important, as changes in self-awareness may impact on engagement in occupational therapy. In particular, clients with impaired self-awareness have difficulties identifying the need for treatment, setting realistic goals, and being motivated to participate in rehabilitation, leading to poorer rehabilitation outcomes (Ownsworth & Clare, 2006). Clients with impaired self-awareness therefore may benefit from self-awareness interventions to improve performance in everyday tasks (Goverover, Johnson, Toglia, & Deluca, 2007). Conversely, clients who underestimate their abilities are more likely to experience mood problems which may also impact on rehabilitation engagement (Smeets et al., 2017). Understanding how level of self-awareness affects rehabilitation engagement and outcomes may assist in the development of interventions that can be tailored to meet the needs of clients with ABI.

As well as being a fundamental component of occupational therapy practice, the use of a client-centred goal setting approach is increasingly recognised as more effective in rehabilitation (Turner-Stokes, Rose, et al., 2015). A client-centred goal setting approach strives to identify goals

that are perceived as personally meaningful, relevant and important to the client to promote their ownership of rehabilitation (Prescott et al., 2015). As this approach relies on active collaboration between the client and therapist, impaired self-awareness is commonly identified as a barrier to identifying client-centred goals (Doig, et al., 2009). However, no studies have investigated how changes in self-awareness influence engagement in goal setting, nor considered the impact on goal outcomes.

Therefore this study aimed to examine engagement in goal setting and goal outcomes of clients with ABI according to their level of self-awareness. We hypothesised that participants with changes in self-awareness would have lower levels of engagement and poorer goal outcomes compared to participants with accurate self-awareness.

## **6.3 Method**

### **6.3.1 Design**

A prospective cohort design was used with data collected at two time points. The goal setting discussions between clients and therapists were audio-recorded on admission to rehabilitation, and self-report questionnaires measuring self-awareness, motivation for rehabilitation, the client-centredness of goals and therapeutic alliance were completed by clients. Goal outcome was measured 12 weeks later, or at discharge.

### **6.3.2 Participants**

Participants were clients with ABI who were receiving rehabilitation, their significant others, and the therapists. Rehabilitation was provided either at a metropolitan hospital outpatient service or community-based private practices in Queensland, Australia. At these services, discipline-specific rehabilitation goals are set and rehabilitation sessions are typically one hour per week per discipline. Goals are set using an informal un-structured process consistent with routine practice in

community-based rehabilitation settings resulting in individualised rehabilitation goals. Eligibility criteria included: (a) diagnosis of ABI, (b) aged between 18-65 years, (c) living in the community, (d) able to communicate in English, and (e) about to either plan or review their rehabilitation goals with a therapist (occupational therapist, physiotherapist, speech pathologist, social worker or neuropsychologist).

Potential participants were consecutive admissions to the outpatient service ( $n=51$ ) or were recruited on a referral basis from private practices ( $n=4$ ). Later, to obtain a more even spread across the different therapies, under-represented disciplines at the outpatient service were targeted and asked to refer eligible clients directly to the researchers ( $n=16$ ). Of the 71 potential participants, 13 declined to participate and 14 did not meet the eligibility criteria. Recruitment occurred between October 2013 and November 2014 and ceased when the project funding ended.

### **6.3.3 Measures**

*Awareness Questionnaire (AQ)*; (Sherer, Bergloff, Boake, et al., 1998): The AQ is a 17 item measure of self-awareness designed for use in brain injury research, with therapist, client and significant other versions available. Respondents are asked to rate each item using a 5-point Likert scale ranging from 1 (much worse) to 5 (much better). Self-awareness is measured by calculating the discrepancy between participant self-ratings and significant other or therapist ratings (i.e., self-ratings minus informant ratings). A higher positive discrepancy score indicates that participants overestimate their abilities compared to significant other or therapist ratings of the participants' ability. The AQ has established internal consistency (Sherer, Bergloff, Boake, et al., 1998) and convergent validity (Wise, Ownsworth, & Fleming, 2005).

*Motivation for Traumatic Brain Injury Questionnaire (MOT-Q)*; (Chervinsky et al., 1998): The MOT-Q is a 31-item questionnaire that measures motivation for rehabilitation after TBI. Total



scores range from -62 to +62 with higher scores representing higher motivation for rehabilitation.

Internal reliability has been demonstrated for the whole scale (Chervinsky et al., 1998).

*Client-centredness of Goal Setting Scale (C-COGS)*; (Doig et al., 2016): The C-COGS evaluates the client-centredness of goal setting from the client's perspective. Participants rate their level of agreement on 13 statements using a 5-point Likert scale (1= strongly disagree to 5= strongly agree). The C-COGS is comprised of two sub-scales. The Participation sub-scale measures the client's perceived level of involvement in goal setting (out of 30). The Goals sub-scale measures the perceived importance, meaning, relevance and ownership of individual rehabilitation goals, where the overall Goals sub-scale score is calculated by averaging scores across all of the rehabilitation goals that are set (out of 20). A total C-COGS score may be generated (out of 50). The psychometric properties of the measure, including preliminary construct validity and reliability have been established (Doig et al., 2016).

*Canadian Occupational Performance Measure (COPM)*; (Law et al., 1998): The COPM is a semi-structured interview developed to identify occupational performance problems so that treatment goals can be established. It measures the perceived importance of the occupational performance problem, as well as changes in performance and satisfaction on a scale from 1 to 10. Clinically significant change is defined as a change score of 2 or more points (Law et al., 1998). The psychometric properties of the COPM have been extensively examined (Carswell et al., 2004). In this study, the COPM was not used to set goals, but the COPM importance ratings were a secondary measure of client-centredness and the pre-post rehabilitation therapist-rated COPM performance change scores were used to measure goal outcomes.

*Helping Alliance Questionnaire (HAQ-II)*; (Luborsky et al., 1996): The HAQ-II is a 19-item measure of perceived therapeutic alliance. A total score is calculated yielding scores ranging from

19 to 114, with higher scores indicating a higher level of alliance. The HAQ-II has demonstrated good test-retest reliability (Luborsky et al., 1996). The HAQ-II was used to measure the client's perceived alliance with their therapist when setting goals (i.e., only client participants completed this measure).

#### **6.3.4 Procedure**

Ethical clearance was obtained from hospital and university ethics committees. Participants provided informed consent. Consenting therapists audio-recorded their goal setting discussions with participants when goals were being established or reviewed. After goals were set, the therapist provided the research team with the recordings and documented goals, and reported the total time taken to set goals. Participants then completed the AQ, MOT-Q, HAQ-II and COPM with the assistance of a researcher. Client and significant others versions of the AQ were administered ( $n=27$ ), or the therapist version was completed by the client's occupational therapist ( $n=17$ ) when significant others were not available. The audio-recordings were transcribed verbatim by the first author. A further proxy measure of client engagement in goal setting was the percentage of words spoken by participants with ABI during goal setting, determined using word counts of the transcripts (i.e., by dividing the number of words spoken by the participant by the total number of words in the transcript, multiplied by 100). The COPM was completed 12 weeks later, or at discharge in the cases where clients had shorter rehabilitation programs. Non-attendance at therapy sessions was also documented by therapists as rehabilitation attendance has been identified as a construct to measure rehabilitation engagement (Kortte, Falk, Castillo, Johnson-Greene, & Wegener, 2007).

### 6.3.5 Data Analysis

The participants were classified into three self-awareness groups based on their AQ discrepancy score. Participants with a discrepancy score of -5 or lower were classified as hyper-aware, those scoring -5 to 5 classified as having accurate self-awareness and those with a discrepancy score of 5 or more were categorised as having impaired self-awareness. Cut-off points were chosen based on a recent study which has shown that a 4-point discrepancy score on the AQ indicates impaired self-awareness (Ownsworth, Fleming, Doig, Shum & Swan, 2018). Data were analysed using IBM SPSS statistics (IBM Corp, 2016). Descriptive analyses were performed to describe the characteristics of the three self-awareness groups, as well as the rate of attendance at rehabilitation sessions. The participant characteristics of the three groups were also compared statistically. Non-parametric tests were employed for statistical analyses as the variables were mostly ordinal (Portney & Watkins, 2009). Kruskal Wallis tests were used to compare MOT-Q, C-COGS total and sub-scale, COPM goal importance, mean COPM performance change, and HAQ-II scores, as well as total goal setting time and the percentage of words spoken by clients across the three self-awareness groups.

### 6.4 Results

In total, 44 participants completed goal setting, with 37 agreeing to the collection of audio-recordings. The characteristics of the three self-awareness groups are summarised in Table 6.1. Significant other participants included 10 spouses, 8 parents, 6 partners, 2 siblings, 2 children and 1 friend. Of the significant other participants, 21 were female and 8 were male who were on average aged 42.67 years (SD 14.8). No significant differences were found across the three self-awareness groups in terms of their characteristics except for age and length of stay in rehabilitation. The accurate awareness group were significantly older than the hyper-aware group,  $F(2, 41) = 4.214$ ,  $p < 0.05$  and the impaired self-awareness group had a significantly longer stay in rehabilitation when

compared with both the accurate awareness and hyper-awareness groups,  $F(2,41) = 11.281$ ,  $p < 0.001$ .

Goal setting sessions were conducted by 20 clinicians, including four community-based private practitioners (3 occupational therapists, 1 speech pathologist) and 16 outpatient therapists (5 occupational therapists, 5 physiotherapists, 4 speech pathologists, 1 neuropsychologist, 1 social worker). The clinicians were on average qualified in their profession for 14.5 years ( $SD=10.47$ ) and had worked in ABI rehabilitation for 9.65 years ( $SD=7.54$ ). Participants set goals with up to four therapy disciplines (one discipline  $n=27$ , two disciplines  $n=15$ , three disciplines  $n=2$  and four disciplines  $n=1$ ). Goal setting was completed in occupational therapy ( $n=36$ ), speech pathology ( $n=17$ ), physiotherapy ( $n=9$ ), social work ( $n=3$ ), and neuropsychology ( $n=1$ ). This resulted in 66 sets of goals and a total of 219 goals being set. A varying number of goals were set by each participant, and ranged from one to six goals across disciplines. Of the 219 participant goals, 148 achieved two-point change or greater, 23 a one-point change, and 16 a zero-or negative change according to the therapist rated pre-post COPM performance change scores. There were 32 goals that did not receive an outcome rating as they were not worked on in therapy.

Table 6.2 displays median scores and comparisons between groups on all measures. The high median total and subscale C-COGS scores and COPM importance scores show that all groups perceived the goal setting as highly client-centred and the goals as important. Median HAQ-II scores were also high for all groups. The median COPM performance change score for the three groups was greater than two points indicating that on average the sample achieved a clinically meaningful improvement in goal outcome. No significant differences were detected on any of the measures across the three self-awareness groups.

Table 6.1. Participant Characteristics

Characteristic	Hyper-aware ( <i>n</i> =12)	Accurate self- awareness ( <i>n</i> =20)	Impaired self- awareness ( <i>n</i> =12)	All N=44 (%)
Gender				
Male	7	10	11	28 (64%)
Female	5	10	1	16 (36%)
Age, in years M (SD)	31.75 (9.5)	43.05 (12.4)	33.91 (12.61)	37.5 (12.6)
Education, years ( <i>n</i> =43) M (SD)	13.25 (1.82)	12.26 (2.16)	14 (3.07)	13 (2.4)
Ethnicity (ASCCEG; <i>n</i> =43)				
Oceanian	11	17 ( <i>n</i> =19)	9	37 (86%)
North West European	0	1	1	2 (4.6%)
Southern and Eastern European	0	1	1	2 (4.6%)
Sub-Saharan African	1	0	1	2 (4.6%)
Primary preinjury occupation (ANZSCO)				
Manager or professional	2	5	3	10 (22.7%)
Technical/trade	2	4	4	10 (22.7%)
Community/personal service	2	2	0	4 (9.1%)
Clerical/administrative	3	5	0	8 (18.2%)
Sales or labourer	1	1	0	2 (4.5%)
Student	2	1	4	7 (16%)
Unemployed or retired	0	2	1	3 (6.8%)
Diagnosis				
TBI	9	6	10	25 (56.8%)
Stroke	0	5	1	6 (13.6%)
SAH or SDH	1	4	0	5 (11.4%)
Hypoxia or tumor	2	2	0	5 (11.4%)
Other	0	2	1	3 (6.8%)
Initial GCS score for participants with TBI ( <i>n</i> = 19) M (SD)	9.17 (4.5)	6.17 (5.15)	8.5 (4.86)	7.6 (4.4)
PTA Duration, Days M (SD)				

TBI Severity				
Mild (PTA 0-1 days or GCS 13-15)	4	0	0	4 (16%)
Moderate (PTA> 1-7 days or GCS 9-12)	0	1	1	2 (8%)
Severe (PTA> 7 days or GCS 3-8)	5	4	8	17 (68%)
PTA length or GCS unavailable	0	1	1	2 (8%)
Inpatient rehabilitation				
Yes	4	12	11	27 (61%)
Length of stay, days M (SD)	33 (22.19)	36.17 (14.9)	94.9 (75.09)	59.6 (56.6)
No	8	8		17 (39%)
Time since injury, days M (SD)	156.5 (183.7)	421.95 (980.3)	565.41 (588.89)	395.8 (746.3)
Audio-recorded goal setting sessions	22	23	21	66

Note. ASCCEG= Australian Standard Classification of Cultural and Ethnic Groups; ANZSCO= Australian and New Zealand Standard Classification of Occupations; GCS= Glasgow Coma Scale; M= mean; PTA = posttraumatic amnesia; SAH= subarachnoid haemorrhage; SD= standard deviation; SDH= subdural haemorrhage; TBI= traumatic brain injury

Table 6.2. Comparison of engagement and goal outcomes across the awareness groups

Variable	Group	Median (IQR)	X <sup>2</sup>	Significance
MOT-Q	1	45.0 (34.3,49.5)	5.193	.075
	2	36.0 (20.3,43.8)		
	3	29.5 (24.5,42.5)		
Total C-COGS	1	47.9 (45.0,49.1)	1.351	.509
	2	46.8 (41.6,48.8)		
	3	44.8 (40.2,48.6)		
Participation sub-scale	1	28.2 (26.6,29.6)	1.043	.594
	2	28.0 (25.2,29.0)		
	3	26.5 (24.25,29)		
Goals sub-scale	1	19.4 (18.1,19.9)	2.885	.236
	2	18.6 (16.2,20.0)		
	3	18.2 (15.7,19.1)		
COPM Importance	1	9.5 (9.0,10.0)	1.675	.433
	2	9.2 (8.5,10.0)		
	3	8.8 (7.9,9.9)		
Mean COPM Performance change Score	1	3.4 (1.7, 4.0)	.020	.990
	2	3.6 (1.3, 4.8)		
	3	3.4 (2.2,4.2)		
HAQ	1	99.3 (93.8,109.8)	.586	.746
	2	96.0 (93.0,107.8)		
	3	97.0 (93.4, 100.8)		
Total goal setting time (minutes)	1	118.8 (87.5,198.8)	2.522	.283
	2	77.5 (60.0, 108.0)		
	3	125 (53,187.5)		
% of words spoken by the client	1	38.6 (31.3, 48.3)	1.216	.544
	2	40.3 (37.9,50.3)		
	3	28.5 (21.7, 52.8)		

Note. COPM= Canadian Occupational Performance Measure; C-COGS= Client-Centredness of Goal Setting Scale; Group (1) Hyperaware (*n*=12); (2) Accurate Self-Awareness (*n*=20); (3) Impaired Self-Awareness (*n*=12); HAQ= Helping Alliance Questionnaire; MOT-Q = Motivation for Traumatic Brain Injury Questionnaire;

Of the 44 participants, three participants missed sessions. One participant was in the hyper-aware group and missed 9% of sessions, whereas the other two were in the impaired self-awareness group (one missed 25% and the other 50% of sessions).

## **6.5 Discussion**

This study compared rehabilitation goal engagement and outcome according to changes in self-awareness after ABI. The findings indicate that clients with impaired self-awareness and hyper-awareness were engaged in goal setting to develop client-centred goals. Furthermore, in this cohort where goal setting was highly client-centred, clinically significant goal outcomes were achieved despite changes in self-awareness.

The hypothesis that participants with changes in self-awareness would have lower levels of engagement in goal setting compared to those with accurate self-awareness was not supported. Furthermore, highly client-centred goals were developed with the impaired self-awareness group which contradicts previous reports of difficulties engaging these clients in goal setting (Doig et al., 2009). Establishing therapeutic alliance has been identified as an important strategy to develop client-centred goals (Bright et al., 2012; Doig et al., 2009). In this study, therapeutic alliance was strong across all self-awareness groups, suggesting that establishing therapeutic alliance may have assisted therapists to develop client-centred goals.

The hypothesis that participants with changes in self-awareness would have poorer goal outcomes compared to participants with accurate self-awareness was not supported as all self-awareness groups achieved clinically significant goal outcomes. Other studies have identified that effective goal setting is underpinned by the use of education and metacognitive strategies to enable clients with ABI to actively participate in goal setting (Prescott et al., 2015; Webb & Glueckauf, 1994). Furthermore, recent studies investigating outcomes for people with impaired self-awareness after ABI have shown that intervention is more effective with use of multiple intervention



techniques, including feedback and metacognitive skills training (Engel, Chui, Goverover, & Dawson, 2017). The content of therapy interventions was not examined in the current study so it is not able to be determined if therapists employed techniques to develop self-awareness with clients.

The development of client-centred goals may also be influenced by other factors. For example, time availability and therapist skill have been identified as key factors which influence the success of goal setting in rehabilitation (Playford et al., 2009). Although there were no statistically significant differences between groups possibly due to the small numbers, clients with impaired self-awareness generally appeared to contribute less to goal setting discussions and required more time to set goals. By contrast, clients who were hyper-aware contributed more to goal setting discussions, but also needed more time. These findings suggest that therapists were able to skilfully adapt their communication during goal setting to support clients according to their needs, whilst employing flexible time frames to set client-centred goals. Furthermore, the hyper-aware group may have needed more opportunities to discuss their experiences, as part of the process of adjusting to their disability to reduce emotional distress.

The importance placed on client engagement in goal setting in ABI rehabilitation has led to the development of measurement tools such as the Goal Engagement Scale (Turner-Stokes, Rose, et al., 2015) and other general rehabilitation engagement scales that are not specifically designed for ABI populations (Kortte et al., 2007). However, these scales typically involve therapist judgements of how much support is required to engage clients, which means clients with changes in self-awareness are naturally rated as having lower levels of engagement. In our study, using more objective means of measuring engagement (percentage of words spoken by the client and time spent goal setting) it was found that highly client-centred goals may be developed despite changes in self-awareness.

This study included a cohort of community dwelling clients with ABI, meaning that the findings may not be applicable to clients at different phases of recovery. The word counts of transcripts may have been influenced by a multitude of factors including pre-morbid conversational

behaviours and off-topic verbosity of participants. The severity of impairment in the impaired self-awareness group was comparatively low, which may have been because the clients were living in the community and exposed to everyday experiential task practice (Engel et al., 2017). Further investigation of the strategies that therapists use to engage clients with changes in self-awareness in goal setting and how therapists adapt their communication to support changes in self-awareness may be beneficial.

### **6.5.1 Implications for Occupational Therapy Practice**

The findings of this study have the following implications for occupational therapy practice:

- Clients with impairments in self-awareness after ABI can be engaged effectively in client-centred goal setting
- Establishing a strong therapeutic alliance may be necessary to engage clients with changes in self-awareness in goal setting
- Services may need to be flexible when allocating time to goal setting activities

## **Chapter 7 Rehabilitation goal setting with community dwelling adults with acquired brain injury: a theoretical framework derived from clinicians' reflections on practice**

Prescott, S., Fleming, J., & Doig, E. (2017). Rehabilitation goal setting with community dwelling adults with acquired brain injury: a theoretical framework derived from clinicians reflections on clinical practice. *Disability and Rehabilitation*. doi: 10.1080/09638288.2017.1336644

Chapter 7 addresses the need to examine routine goal setting practice which was identified in Chapter 2 (i.e., the scoping review). The aim of this chapter was to explore therapists' perceptions about goal setting in brain injury rehabilitation to develop a theoretical framework which could explain the processes and strategies that therapists use to engage clients in routine goal setting practice. This chapter also extends on Chapter 6 by presenting qualitative findings relating to therapist perceptions of how they engage clients with cognitive changes such as impaired self-awareness in goal setting in practice. This chapter addresses aims 6 and 7 of the thesis which were to examine the strategies and processes used by therapists to implement client-centred goal setting in community-based ABI rehabilitation and to investigate therapists' perceptions regarding the implementation of client-centred goal setting across the different contexts of outpatient hospital, community, private and public sectors.

The manuscript inserted in Chapter 7 is published in *Disability and Rehabilitation*. The manuscript has been reformatted according to the APA style used within the thesis.

## 7.1 Abstract

**Purpose:** The aim of this study was to explore clinicians' experiences of implementing goal setting with community dwelling clients with ABI, to develop a goal setting practice framework.

**Method:** Grounded theory methodology was employed. Clinicians, representing six disciplines across seven services, were recruited and interviewed until theoretical saturation was achieved. A total of 22 clinicians were interviewed.

**Results:** A theoretical framework was developed to explain how clinicians support clients to actively engage in goal setting in routine practice. The framework incorporates three phases: a needs phase, a goal operationalisation phase and an intervention phase. Contextual factors, including personal and environmental influences, also affect how clinicians and clients engage in this process. Clinicians use additional strategies to support clients with impaired self-awareness. These include structured communication and metacognitive strategies to operationalise goals. For clients with emotional distress, clinicians provide additional time and intervention directed at new identity development.

**Conclusions:** The goal setting practice framework may guide clinicians understanding of how to engage in client-centred goal setting in brain injury rehabilitation. There is a predilection towards a client-centred goal setting approach in the community setting, however contextual factors can inhibit implementation of this approach.

**Key words:** goal setting practice framework, clinician interview, grounded theory, engagement strategies, contextual factors, community-based practice

## 7.2 Introduction

Goal setting is a vital process in rehabilitation as it provides the focus for multi-disciplinary intervention (Playford et al., 2009; Wade, 2009). The necessity for goal setting in rehabilitation is explained by theories of human behaviour, in which goals are seen as a way of understanding what motivates people to change their behaviour (Bandura, 1997; Deci & Ryan, 1985; Locke & Latham, 1990). Essentially, in rehabilitation this means that clinicians use goal setting to motivate clients to engage in rehabilitation activities and implies that goal setting is not just a discrete process of identifying rehabilitation goals, but is embedded within all phases of rehabilitation. Therefore understanding the implementation of goal setting in rehabilitation is important, as goal setting activities pervade all aspects of rehabilitation.

The importance of rehabilitation goal setting is reflected in the inclusion of goal setting in best practice guidelines internationally (American Occupational Therapy Association, 2005; Health & Care Professions Council, 2013; National Stroke Foundation, 2010; World Confederation for Physical Therapy, 2011). These guidelines specify that clinicians should actively collaborate with clients to set goals. Client involvement in the goal setting process is considered necessary to establish client-centred goals, that is goals that are meaningful, important, relevant and motivating to the individual (Dalton et al., 2012; Doig et al., 2009; Holliday, Ballinger, et al., 2007; Holliday, Cano, et al., 2007). High client engagement in goal setting has been linked to greater client satisfaction with rehabilitation and long-term maintenance of gains (Holliday, Cano, et al., 2007; Turner-Stokes, Rose, et al., 2015; Webb & Glueckauf, 1994). However, including clients with ABI in the goal setting process can be challenging due to the presence of cognitive and communication impairments (Bergquist & Jacket, 1993; Bouwens et al., 2009; Doig et al., 2009; Fischer et al., 2004; Van De Weyer et al., 2010; Ylvisaker et al., 2008). Other barriers relate to the context in which rehabilitation is provided, such as the time available to complete goal setting in busy clinical environments (Van De Weyer et al., 2010). A better understanding of how these barriers can be

overcome in ABI rehabilitation would assist health professionals to improve client-centred goal setting practices.

An ABI refers to an acute single-insult neurological condition which may be caused by TBI, diffuse axonal brain injury, cerebrovascular accident (stroke) or other causes such as meningitis (Turner-Stokes et al., 2005). ABI rehabilitation programs are delivered in inpatient (acute and sub-acute), outpatient and community settings. Previous studies exploring goal setting processes for clients with ABI have largely focussed on the inpatient setting (e.g., D'Cruz et al., 2016; Dalton et al., 2012; Holliday, Ballinger, et al., 2007; Holliday, Cano, et al., 2007; Levack et al., 2011; Levack et al., 2009; McPherson et al., 2009; Parry, 2004; Van De Weyer et al., 2010; Ylvisaker et al., 2008). Studies on inpatient stroke rehabilitation have found that there has been only minimal adoption of client-centred approaches and that the focus of goal setting is on discharge (Leach et al., 2010; Levack et al., 2011; Parry, 2004). By contrast, studies of inpatients with ABI more broadly, have found that the adoption of approaches to enhance client involvement resulted in more relevant goals and greater goal ownership by clients (D'Cruz et al., 2016; Dalton et al., 2012; Holliday, Ballinger, et al., 2007; Holliday, Cano, et al., 2007). However, there are differences in goal setting processes between inpatients and clients who live in the community, arising from the changing needs of individuals at different phases of recovery (Siegert & Taylor, 2004). After discharge, clients commonly take on a more active role in goal setting and focus on goals directed at enhancing community and social participation. Furthermore, a recent UK survey demonstrated that even within community-based stroke rehabilitation services, goal setting processes differed due to variations in intensity and length of intervention and organisational support between individual services (Scobbie et al., 2015).

The few qualitative studies that have investigated goal setting processes for community dwelling clients with ABI have focused on clinician and client perceptions of formal goal setting approaches (Doig et al., 2009; McPherson et al., 2009; Ylvisaker et al., 2008). However, goal setting implementation in clinical practice continues to be largely directed by informal approaches

(Holliday et al., 2005; Leach et al., 2010; Scobbie et al., 2015), or a combination of both formal and informal methods (Scobbie et al., 2015). A recent scoping review on goal setting approaches used in ABI rehabilitation concluded that there is a disparity between the approaches used in clinical practice and those used in research (Prescott et al., 2015) suggesting that strategies used to engage individual clients in goal setting vary due to the heterogeneous and complex presentation of clients with ABI across settings. Others have also highlighted the importance of a contextualised and individualised approach to goal setting in clinical practice (Lloyd et al., 2014; Plant, Tyson, Kirk, & Parsons, 2016). It is important to examine what happens in routine practice, as opposed to goal setting within the context of research projects, because there are likely to be significant contextual, cultural and practical factors that impact on the process. Investigation of goal setting practices within the controlled environment of a research project may neglect to take these factors into consideration, rendering findings that cannot be translated into everyday rehabilitation practice. This indicates the need for further research exploring and evaluating goal setting approaches used in routine clinical practice in ABI rehabilitation, especially in the community context where there has been limited research to date.

A recent qualitative study on the implementation of goal setting by 13 occupational therapists working in both inpatient and community settings in Canada found that client-centred goal setting was constrained by organisational requirements (Hunt, Le Dorze, Trentham, Polatajko, & Dawson, 2015). Levack, Dean, McPherson and Siegert (2006) also explored the use of goal setting in rehabilitation from the perspectives of nine multi-disciplinary clinicians working in stroke and TBI rehabilitation in New Zealand. These studies demonstrated the value of evaluating clinicians' experiences to develop an understanding of how goal setting is implemented in clinical settings. Further investigation with larger multi-disciplinary samples of expert clinicians providing rehabilitation for clients with ABI living in the community is needed to enable broader conclusions to be drawn about routine goal setting practice. Qualitative exploration of goal setting practice across different organisations may also provide insight into the elements of routine goal setting

practice which maximise client participation in goal setting, taking into account contextual and client barriers.

Due to the identified gap between research and practice (Prescott et al., 2015), we determined that a framework of routine goal setting practice for clients with ABI living in the community was required to guide practice. Therefore, the aim of this study was to explore clinicians' experiences of implementing goal setting with community dwelling clients with ABI in order to develop a goal setting practice framework explaining how clinicians engage their clients.

## **7.3 Method**

### **7.3.1 Study Design**

This study employed grounded theory methodology (Corbin & Strauss, 2015). Grounded theory is a qualitative research method originally developed by Glaser and Strauss for the purpose of constructing theory grounded in the data (Glaser & Strauss, 1967). Various versions of grounded theory have been proposed, including classic, Straussian and constructivist approaches (Charmaz, 2006; Corbin & Strauss, 2015; Glaser & Strauss, 1967; Strauss & Corbin, 1990). A Straussian approach was adopted for this study (Corbin & Strauss, 2015). When using Straussian grounded theory, conceptual names are applied to the raw data (concept), and a category represents the major theme that a group of basic level concepts point to. Properties describe the characteristics or qualities of a category. A Straussian approach was chosen as it allowed a theoretical framework to be developed, which would be relevant to clinicians and able to guide goal setting in routine practice (Corbin & Strauss, 2015). This was an important consideration for this study given the identified contextual influences on goal setting practice, and because clinicians commonly use informal methods in practice to respond to the complex and individualised needs of clients (Lloyd



et al., 2014; Plant et al., 2016; Prescott et al., 2015). Data were collected using in-depth semi-structured interviews.

The perspectives of all three researchers influenced all aspects of the study, including design, data collection and analysis. The research team consisted of three experienced occupational therapists, who were familiar with the services involved in the study. As we all had clinical backgrounds, the underlying motivation for this research was driven by the need to develop knowledge which could inform practice. Therefore our choice of Straussian grounded theory was also informed by our prior experience as clinicians. The first author also held a personal belief that in order to engage clients with ABI effectively in goal setting, clinicians require clinical experience. Given this belief, it was acknowledged at the outset that the opinions of more experienced clinicians who used a client-centred approach may be valued more than those of the less experienced clinicians. As the analysis progressed, it became clear that inexperienced clinicians talked about engaging clients in similar ways to clinicians with greater experience. Therefore, the position of the first author shifted during the study to valuing participant opinions equally, regardless of the level of clinician experience. In addition to being experienced clinicians, the second and third authors were also experienced brain injury rehabilitation researchers and had undertaken previous studies about goal setting. The perspectives of the second and third authors were also taken into account during the analysis and influenced the decision to sample clinicians from multiple disciplines, to obtain wider points of view about goal setting.

It was also identified that the professional background of the researchers could influence the analysis, such that concepts derived could be influenced by meanings associated with occupational therapy. Use of a client-centred philosophy and goal setting to guide intervention underpins the research team's training as occupational therapists. Strategies were employed to maintain awareness of how the researcher perspectives could influence data analysis. These strategies are addressed in the Data analysis section.

### **7.3.2 Participants**

A purposive sampling strategy was used (Suri, 2011) so that data were gathered from clinicians from multiple disciplines and varying levels of experience. Clinicians providing rehabilitation for community dwelling clients with ABI were recruited. They were clinicians based at a large metropolitan hospital-based outpatient service and private community-based rehabilitation practices. Both of these services accept referrals for clients aged between 18 and 65 and are based in Queensland, Australia. The outpatient service is the only dedicated brain injury outpatient service in the state. Clients typically attend the hospital-based outpatient service once a week for multi-disciplinary rehabilitation. At this service, allied health clinicians set goals within their individual disciplines, meaning that no team goals are set. It is not usual practice for doctors or nurses to set goals in this service. For clients attending the private practices, rehabilitation intensity and duration vary depending on client needs. The private practices comprised one speech pathology and one physiotherapy service and three services which offered case management and occupational therapy intervention. Goals are set within individual disciplines in the private practices, or case managers set generic rehabilitation goals based on client-identified needs. Initially, one neuro-psychologist and one speech pathologist at the hospital based service were invited via email to participate in the interviews. In Queensland, the majority of private practice rehabilitation is funded by either the third-party motor-vehicle insurance fund or the state-wide work-related accident scheme.

As data collection and analysis progressed, the need for further testing of concepts in a publicly funded community-based setting became apparent. This was required as the hospital-based clinicians identified that goal setting was constrained by the non-naturalistic setting, whereas the private-practice clinicians said that insurers presented barriers to effective goal setting. Therefore, questions needed to be asked about goal setting in the context of a community-based publicly funded setting, where both of these constraints were largely eliminated. Consequently, the manager

of the community-based publicly funded service was approached to invite additional clinicians from this setting to be interviewed. The publicly-funded service provides community-based case management, with a flexible duration and intensity of rehabilitation. It is the only state-wide brain injury service providing a case management model of rehabilitation, whereby clinicians regardless of their discipline act as case managers for people with ABI. This model results in goals being set based on the needs of individual clients, rather than discipline-specific goals. This service also provides rehabilitation to clients aged between 18-65 and is based in Queensland.

In accordance with grounded theory methodology (Corbin & Strauss, 2015), recruitment of interview participants continued until theoretical saturation was achieved. Theoretical saturation is achieved when new concepts no longer emerge, and categories are sufficiently developed in terms of their properties and dimensions (Corbin & Strauss, 2015). After the final three interviews, the research team agreed that saturation had been achieved with constant analysis of the data.

Recruitment took place between December 2014 and November 2015. A total of 22 clinicians from six different clinical backgrounds were recruited, with the majority being occupational therapists ( $n=8$ ). The majority were from the hospital-based outpatient service ( $n=13$ ) and had more than 20 years' experience ( $n= 11$ ). Table 7.1 summarises the years of experience, professional background and service contexts of clinicians who were involved in the interviews. Some of the clinicians were known to the researchers on a professional basis, prior to the study. The interviews were conducted by the first author (SP) who was a PhD student. The interviewer was familiar with the participants but had not worked with the participants. At the beginning of each interview, participants were advised that there were no right or wrong answers, the interviewer was interested in their individual experience and opinions, and that the data would be de-identified when provided to the rest of the research team. This appeared to foster an environment of mutual respect during the interviews, whereby interview participants felt comfortable to talk about their experiences of goal setting with people with ABI.

Table 7.1. Participant characteristics

Characteristic	n=22
Gender	
Male	0
Female	22
Years' Experience	
<5 years	4
5-10 years	3
>10 years	4
>20 years	11
Setting	
Hospital-based outpatient service	13
Community-based private practice	6
Community-based publicly funded service	3
Discipline	
Clinical Psychologist	1
Neuropsychologist	1
Occupational Therapist	8
Physiotherapist	5
Speech Pathologist	4
Social Worker	3

### 7.3.3 Data Collection

Ethical clearance was obtained from relevant hospital and university ethics committees. Initially, clinicians from differing disciplines were recruited, then as interviews progressed clinicians with experience of working in brain injury, regardless of discipline or experience level, were recruited to test the concepts elicited in previous interviews. For this reason, additional ethical clearance was obtained to interview clinicians at the community-based publicly funded outpatient service.

All interviews were completed either face-to-face or over the telephone, depending on convenience for the clinician. The initial interviews conducted were semi-structured and followed an interview guide which was designed to elicit clinicians' experiences and opinions of goal setting processes used in everyday practice to engage clients with ABI (Appendix F). In keeping with grounded theory methodology, subsequent interviews were guided by concepts extracted from previous interviews. Interviews ranged from 20 to 61 minutes. The interviews were audio-taped

and recordings were transcribed verbatim by the first author (SP). Following the interview, each transcript was read and analysed to extract concepts to explain the goal setting process. Concepts identified in the analysis from the interview then formed the basis of questions in the next interview, such that concepts already elicited could be tested and developed in terms of their properties and dimensions, and to examine variations and relationships between concepts (Corbin & Strauss, 2015). At the conclusion of every interview, field notes were documented to record initial impressions of concepts that were discussed.

#### **7.3.4 Data Analysis**

All transcripts were open coded manually by SP and labels were applied to key concepts that emerged using published procedures (Corbin & Strauss, 2015). Transcripts were then electronically uploaded to NVivo to organise the data (QSR International Pty Ltd, 2012). Labels applied to concepts were constantly compared for similarities and differences, to confirm that codes were consistently applied to the same concept. Concepts elicited from individual disciplines were constantly checked to examine whether discipline-specific concepts emerged. Categories were populated in terms of their specific properties and dimensions. In the cases where categories required further development, additional interviews were completed and coded using the same procedure. When theoretical saturation was achieved, categories were linked to explain the process used by clinicians to set goals with clients with ABI (i.e., the theoretical framework). The final step of the analysis involved validation (Corbin & Strauss, 2015) of this theory against raw data to ensure that the theory complemented clinician descriptions of goal setting processes. As a result, all transcripts were re-read to confirm that the raw data fitted with the theory and to look for instances which did not fit with the theory. The raw data supported the framework, apart from two cases. Memos and diagrams were used to document the analysis.

Additional strategies were employed to enhance rigour. Five transcripts of clinicians representing different disciplines were independently coded by another researcher (ED). Coding was compared to ensure that the concepts extracted represented the meaning of the interviews. This process confirmed that the concepts identified were highly consistent between the researchers. Further credibility was achieved through fortnightly meetings between all three researchers to ensure consensus with regard to concepts, associated properties and dimensions, direction regarding further theoretical sampling and overall agreement about the clinical application of the theory that was generated. Results were validated with clinicians in a number of ways. First, during the interviews clinician responses were verbally summarised and clinicians were asked to provide feedback about whether verbal summaries adequately captured what had been said. In addition, a summary of the categories emerging from the data was presented at a rehabilitation network meeting. Clinicians at this meeting ( $n= 26$ ) represented the majority of services involved in the study and included six clinicians interviewed in the study. Clinicians agreed as a group that the theory resonated with their experience of goal setting in clinical practice. The final version of the framework was presented at a later rehabilitation network meeting. Clinicians were asked to comment about whether the framework adequately captured the goal setting process. Clinician feedback confirmed that the framework was representative of goal setting in routine practice.

Field notes were documented after each interview, recording reflections about how the researcher's knowledge and experience may have impacted on the interview. This increased the researcher's awareness of how the researcher's background influenced the interview process. Furthermore, during analysis of each interview, in addition to the field notes already recorded, memos were written to reflect upon the way that the researcher beliefs may cause greater value to be placed on goal setting practices consistent with occupational therapy or on categories derived from more experienced clinicians' interviews.

## 7.4 Results

The overarching phenomenon described by all clinicians to engage clients with ABI in goal setting was ‘enabling the development of achievable client-centred goals’, or tailoring to unique client needs. The framework generated through analysis of the data describes this as a process where clinicians actively engage clients in goal setting discussions, so that interventions can be tailored to meet unique client-identified rehabilitation needs. Contextual factors may also influence how clients and clinicians engage in this process. According to the framework, client-centred goals are developed and achieved during three phases: a needs identification phase, a goal operationalisation phase and an intervention phase. For some people, especially those clients with cognitive and communication impairment, additional time and increased clinician support is required to establish achievable client-centred goals. Cross checking of categories by discipline of the participants did not suggest that there were discipline-specific differences in goal setting and that the framework reflected commonalities in practice across disciplines represented in the study. The framework is illustrated in Figure 7.1.

Within the three phases of the framework, five categories were generated in the analysis. The categories fell into a logical sequence that reflected the steps in the process that clinicians use in goal setting. Two categories were identified to describe the needs identification phase, ‘establishing trust’ and ‘identifying the person’s needs’, and were considered to be synchronous processes within this phase. The category that then emerged from the data to describe the goal operationalisation phase was ‘goal mapping’. The ‘goal mapping’ category supports the person to understand how therapy may address the identified area of need. The ‘allowing time’ category emerged from the data to describe those people who cannot be engaged in the needs identification or goal operationalisation phases, despite additional clinician support.

The last phase of the framework is the intervention phase where clinicians reported that they continued to engage in goal setting activities, as client needs often change. Therefore, a final category ‘active engagement’, emerged from the data to describe this final phase. During this phase, clinicians also discussed strategies to promote goal pursuit to enable the achievement of client-centred goals. Table 7.2 provides quotes to represent the properties associated with each of the categories identified. Each of the categories are described below in more detail in the order listed in the framework, along with representative quotes identified by pseudonyms and the clinician’s years of experience and their workplace (hospital-based outpatient service, community-based publicly funded service or the private practice settings).

#### **7.4.1 Establishing trust**

‘Establishing trust’ or rapport was described as a pre-requisite for identifying a person’s rehabilitation needs. This overarching theme involves developing collaborative partnerships as it enables clients to feel that they can safely share information about their individual experience of brain injury and their identity pre and post injury. This category describes the strategies that clinicians use to build a relationship or alliance with a client:

*If you don’t establish that rapport and you don’t, if you are not seen as someone as an ally or a resource, or helpful, you lose them (Patricia, 34 years’ experience, Community).*

The properties of establishing trust include listening, collaboration/partnership, providing education, being client-centred, and sensitivity to family dynamics. Clinicians perceived that listening is an important strategy to build trust, as it is a powerful way of demonstrating to clients that a clinician wants to work on what they are saying is important to them. Collaboration was used as another strategy to build trust. Clinicians said that they enable clients to feel like equal partners in goal



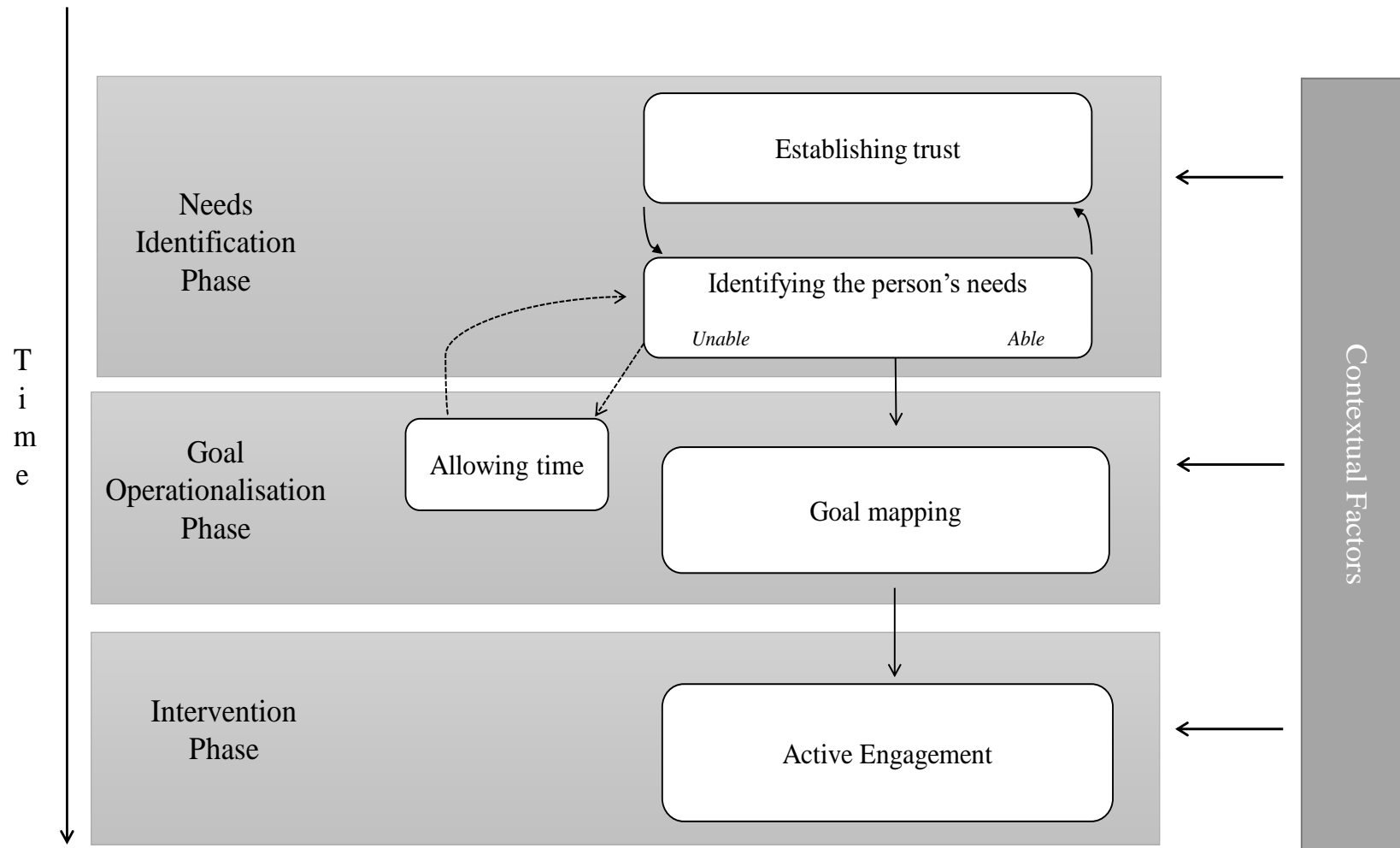


Figure 7. 1. Enabling the development of achievable client-centred goals

Table 7.2. Properties of core categories with representative quotes

<b><i>Establishing Trust</i></b>	
Listening	<i>Um and listen to what they think is the most important or most meaningful thing for them (Isabella, 5 YE, Hospital)</i>
Collaboration/partnership	<i>The client realises that it is a collaborative approach and that it is something, that it's about working together (Michelle, 24 YE, Community)</i>
Providing education	<i>Give a little bit of education about what a goal is and what we are actually going to use the goal for... I think that a lot of people don't really seem to get the concept in some ways (Genevieve, 1YE, Hospital)</i>
Being client-centred	<i>And I kind of give people a choice too ... So always giving them permission that this isn't something that they have to do (Mary, 9 years' experience, Hospital)</i>
Sensitivity to family dynamics	<i>Yeah and so that it is in a way that I can get information and feedback from the significant other, which I think is going to be reliable and helpful, um but not put that person in the position where they go home and the person doesn't talk to them for an hour (Laura, 13 YE, Hospital)</i>
<b><i>Identifying the person's needs</i></b>	
Areas of need	<i>I would ask questions about their background, I would ask about how they feel they are going now and where they are heading (Lara, 30 YE, Hospital)</i>
Structured communication	<i>Whereas a lot of the time I also feel like I structure it for them to give me a response because a lot of the time people don't initiate that type of information (Clare, 23 YE Hospital)</i>
Global goal area valuing	<i>Regardless of what the goals are, they've got to be valued. They can't be judged by any therapist ... because if a client doesn't think that you value the goals of what they want to work on, regardless of what they are, then they are not going to engage (Hayley, 14 YE, Private)</i>

Family involvement	<i>If I'm not sure about the reliability of the clients report or if I'm wanting a second opinion then um I will involve the family (Maureen, 3 YE, Private)</i>
Therapy assessment: formal and informal	<i>We get through asking all of the questions that we have in our assessment forms which runs through all of the ICF assessment domains you know body structures and functions, activity, participation restrictions, all of those sorts of things we've got a reasonable picture of how this person is functioning in their context (Patricia, 34 YE, Community)</i>
Multi-disciplinary team knowledge	<i>Um speaking to other therapists is I think it's just so helpful that we work from that team perspective, other assessments are happening all of the time through other therapist's work. So that's, I've found that really helpful because it really gives me a little bit more of a sense as to how the person [and] where the person's strengths and weakness I guess lie (Isabella, 5 YE, Hospital)</i>
<b><i>Goal mapping</i></b>	
Establishing steps to long-terms goals	<i>This is where you are now, this is where you want to be, there is your long-term goal and these are the steps. Some people respond quite well visually you know looking at that sort of you know looking at what do you need to be able to do to get to that place (Christine, 20 YE, Private)</i>
Strategy choice	<i>And then I say to them alright well in the past people who have sat with me and worked with me and have had similar goals and this is how we've addressed them, what do you think would work best for you or do you have a specific way or an idea about how you'd like to work (Clare, 23 YE, Hospital)</i>
Establishing impairment activity link	<i>That might lead us to something and talk around return to work which might lead us to something specific like being an electrician so therefore that might take us down the alley of being what physical activities that you might need to do (Julie, 14 YE, Hospital)</i>

Providing feedback	<i>If they are having difficulty with a certain sound they might be aware of that, because they might be aware that that is hard to make or we might tape record them, and just play that back. and at first just do how do you think that sounded, was there anything that wasn't as clear um and they might say oh yeah that's not clear I can hear that, so sort of that feedback (Laura, 13 YE, Hospital)</i>
Link to therapy	<i>I think being clear on why you are asking them to do certain things, what it is working on and what you are aiming to achieve (Charlotte, 2 YE, Hospital)</i>
Clinical prioritisation	<i>Um so we'd be looking at the safety, so if anything is there, they would be the highest priority anything that has been flagged by carers, so a problem at home perhaps balance or falls they're obviously going to be a higher priority than the longer term goals perhaps to get back to sport (Julie, 14 YE, Hospital)</i>
Medical boundaries	<i>So get someone higher up to explain ... the limits to what the service can give and that did help with a few cases to have the doctor to be the not the enforcer but the reinforcer, you know just support the goal process (Samantha, 5 YE, Hospital)</i>
<b><i>Allowing time</i></b>	
Sense of engagement	<i>Sometimes it might be trying to link them in with some other service and then just seeing how that is going I guess that could be around maybe some functional OT goals in the community or at home (Jessica, 30 YE, Community)</i>
Specialist psychological support	<i>The psychological issues you know mood um changes the whole sort of adjustment process, so it may be that somebody needs to have other team members involved like a clinical psychologist, like a psychiatrist (Christine, 20 YE, Private)</i>
Supportive contact	<i>So it is just a matter of hanging in there, establishing that rapport over a period of time. Trying not to pressure them, but just maintaining that contact and seeing whether you know something appears (Jessica, 30 YE, Community)</i>

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**Active Engagement**

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Goal Clarity	<i>The people who have had greater success either participating, you know like having maximal participation in an activity or becoming independent are the ones that have a clear idea of what they want to do or what they want to achieve, so if they have that concrete goal of I want to be able to use a diary to remember my appointments (Peta, 16YE, Hospital)</i>
Monitoring	<i>So checking are these still your goals? Is this still what you would like to work on? Are any of these getting better in their own time? Or is there anything else that you are noticing as you come each week that might be different? (Charlotte, 2 YE, Hospital)</i>
Generalisation	<i>If the person actually knows what the rationale is and even agrees with it, might have some insight and they are actually trying to implement strategies, so trying to actually transfer these on to I guess other areas in their life (Isabella, 5YE, Hospital)</i>
Family support	<i>If you do see a relative reminding them gently they've got something to finish could you see if they could finish it (Laura, 13YE, Hospital)</i>
Progress Feedback	<i>You keep them motivated towards working on those elements and you give them an opportunity to see where they have come from and seeing the improvements so far (Hayley, 14 YE, Private)</i>

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Note: Community= community-based publicly funded service, Private = community-based private practice, Hospital= hospital-based outpatient service, YE= Years' Experience,

setting, by asking about the client's opinion and by gaining permission throughout all stages of the goal setting process. They also discussed that providing education about their role and the process of goal setting was an important strategy to support client collaboration in goal setting:

*So I suppose even educating them a little bit about my role as well so that we can work as a team ... and it's not me pushing them. It's actually a joint venture*  
(Elizabeth, 22 years' experience, Hospital).

Clinicians identified that 'being client-centred' also involved use of other strategies to develop rapport including being respectful and non-judgemental, using language that the client understands, being open, honest and transparent and valuing client expertise. Strategies to establish trust continue to be used during the remaining phases of goal setting, but were seen as most important in the initial needs identification phase.

#### **7.4.2 Identifying the person's needs**

The next category is 'identifying the person's needs' which occurs synchronously with 'establishing trust'. Identifying the person's needs is an information gathering stage for clinicians, drawing on narrative information gathered from the client and family about who the client was as a person pre-injury and how this has been affected by the brain injury. Properties of this category are areas of need, structured communication, global goal area valuing, family involvement, therapy assessment and multi-disciplinary team knowledge. In order to identify the goal areas that need to be addressed in therapy, clinicians stated that they elicit information using two different approaches. First, they explore daily experiences with clients, as this enables clients to identify how participation in daily activities has changed after brain injury. Second, they ask clients about what is important to them and what areas of life they value.

Clinicians described that the majority of clients with ABI require additional structure and support to help them to identify their rehabilitation needs and to engage them in goal setting. They identified many factors that impact on the need for additional support including cognitive and communication impairment, severity and complexity of injury, and stage of recovery. Impaired self-awareness was singled out as a major factor which impacts on a client's ability to participate in goal setting. Clinicians identified that when asking clients about their needs, they are able to gauge the level of support and structure that a person requires to participate in goal setting:

*Whereas a lot of the time I also feel like I structure it for them to give me a response because a lot of the time people don't initiate that type of information (Clare, 23 years' experience, Hospital).*

For those clients who need additional support, clinicians said that more time is required to complete goal setting. Clinicians also felt this was different to traditional models of client-centred care:

*I suppose purist client-centred people, purists would say ask the client first and then you do your assessment. With brain injury I think sometimes, I believe that it needs to be the other way around. You ask all of the questions first because when you get to the end, they may need assistance with articulating and setting goals (Patricia, 34 years' experience, Community).*

Clinicians reported that at this stage people often identify less achievable rehabilitation goals, such as return to work and driving. However clinicians stressed the importance of valuing these global goal areas to really know a person, maintain trust and facilitate engagement in therapy:

*I think if it's truly client-centred one of the things that I have learnt is that you just can't shut down hope and you know no-matter what someone says, it is their goal and you can never say well no you can't do that, you'll never do that. (Penny, 20 years' experience, Private Practice).*

Families are often involved at this time when clients need extra support so that clinicians can develop an understanding of who the person was prior to their injury. Clinicians emphasised that family involvement was particularly important for clients with significant cognitive and communication impairment. Objective information is also gathered to get to know the person with ABI, including a range of discipline-specific assessments, as well as information from other team members. Formal goal setting tools, for example the COPM, are used at this stage to identify rehabilitation needs. Some clinicians said that use of formal tools provided more structure and could be used to measure progress. However another clinician commented that the use of a formal tool did not allow an understanding of a client's intrinsic motivators:

*Well I guess something like the COPM can be helpful but I find it can be very superficial as well, um so and that's why it's sort of coming back to knowing, looking at the person as a complex whole. You know people's dreams and motivations and what's important for them (Christine, 20 years' experience, Private Practice).*

### **7.4.3 Goal mapping**

The 'goal mapping' category represented the next phase in which goals are operationalised. This phase comes after the initial rehabilitation needs phase. The following quote illustrates why this additional phase is required:



*People will often have the big picture thing ... but they can't see the small steps towards that*  
(Jessica, 30 years' experience, Community).

The properties of this category comprise establishing steps to long-term goals, strategy choice, establishing an impairment activity link, providing feedback, link to therapy, clinical prioritisation and medical boundaries. Clinicians indicated that they use a variety of techniques to negotiate with clients so that established areas of need are turned into therapy goals. Clinicians talked about breaking longer term goals down into smaller achievable steps that could be the focus of therapy. Some clinicians described how visual tools (e.g., graphs or diagrams) help clients to understand the process involved to achieve identified long-term goals. To target identified rehabilitation needs, clinicians offer clients a range of intervention strategies and help the client to generate strategies to promote ownership.

For those clients who need additional support to engage in goal setting, additional metacognitive strategies are employed. These strategies are required to enable the client to understand how brain injury impairments impact their daily life and how rehabilitation activities relate to identified rehabilitation needs. Clinicians stressed the importance of establishing the link between therapy activities and client-identified goal areas to engender client motivation and understanding. For example, one speech pathologist said that after she had used audio feedback to establish breath support as a problem with a client, she explained to the client how the activities they were completing in therapy were related to the client's goal of being able to talk for longer periods of time. Many clinicians described that they ask clients to think about the specific functional components which underpin an identified rehabilitation need. For example, clinicians talked about facilitating clients to think about the skills required to drive. In order to enhance client understanding of specific impairment areas, clinicians described using a range of feedback techniques, including experiential, observational, audio and video feedback and identified that use of feedback was especially important for clients with impaired self-awareness. They noted that

physical impairments are more salient than other problems, as clients are able to identify these more easily and require less feedback.

Although clinicians emphasised the importance of generating client-centred goals, they also identified the clinical strategies they use to prioritise goals at this stage. They prioritise client-identified goals from their clinical point of view, especially in the cases where there are safety concerns, or direct discussions to goals which could reduce burden of care. Clinicians discussed deferment to medical or specialist knowledge to provide intervention boundaries, especially when driving was identified as an unachievable goal. Clinicians stressed however the importance of enabling the client to participate in the decision making about the final goal area to be targeted in therapy:

*Because I feel if they set the goals and work out how they want to achieve it and we agree on the format that we are going to do and use to achieve it, then they'll have a greater sense of ownership and therefore want to participate more (Clare, 23 years' experience, Hospital).*

#### **7.4.4 Allowing time**

Clinicians talked about clients who cannot be engaged in this process, because they find it difficult to identify their rehabilitation needs due to emotional distress and feeling overwhelmed:

*Clients who have emotional distress post injury, really not coping with their disability find it very hard to set goals because it means admitting that there is something wrong that has to be worked on and fixed. So I have some clients that are just very head in the sand, nothing has happened. But it's not a lack of insight it's actually coping .... it just reminds her too much of the fact of what she has lost (Hayley, 14 years' experience, Private Practice).*

Clinicians felt that these clients need additional time and intervention directed at helping them to develop a new sense of identity post brain injury. Properties that emerged in this category include a sense of engagement, specialist psychological support, and supportive contact. In some cases, clinicians reported that they attempt to involve clients in activities to promote a sense of engagement, for example, referral to an occupational therapist to provide opportunity to experience success through engagement in meaningful activity. In these cases, clinicians rely on information gathered from families to identify rehabilitation needs. Additionally specialist psychological support, such as a neuropsychology, was recommended. While allowing time, clinicians maintained supportive contact.

#### **7.4.5 Active Engagement**

The final intervention phase is represented by the 'active engagement' category. Properties of this category included goal clarity, monitoring, generalisation, family support and progress feedback. When clinicians and clients are clear about goal areas to be worked on in therapy, intervention may commence. Clinicians reported that this clarity created a sense of goal ownership and enhanced motivation for clients.

*It is not you setting and goal setting with them it's almost like an evolution. It's if you get the right relationship with somebody the goals evolve but maybe not in a structured goal setting situation, they sort of evolve over time with treatment and working with them and you all start to figure out, you get to know them better. They start to figure out what the hell I am talking about, we try something and it works and it is like ok oh I want to learn how to walk with that thanks because that felt good, that felt achievable (Cherie, 26 years' experience, Hospital).*

During the active engagement phase, clinicians reinforced the importance of regularly monitoring and checking whether client's goals were still important and meaningful to them, and if they had changed, identifying new goal areas:

*So we decided to work on this and how is that going, is that something that is still important to you. (Laura, 13years' experience, Hospital).*

If their needs had changed, the new need was identified and a new goal operationalised. For example, one therapist reported that a client identified that they wanted to move from working on stride lengths to being faster with walking.

The remaining properties in this category relate to enhancing goal pursuit for a client. Many clinicians talked about the importance of providing strategies to be implemented outside of weekly therapy sessions, given the reduced frequency of sessions in the community setting. One physiotherapist gave the example of a home exercise program and an occupational therapist described that for a client who wanted to improve auditory recall, she provided homework tasks which involved watching a television program with pre-set questions to answer. Clinicians often use family members to support the implementation of strategies outside of therapy. To enable clients to feel that they are making progress towards achieving goals, some clinicians indicated that they use feedback about progress. One clinician described how she asked clients to rate their current performance on identified goal areas to track progress and provide feedback to clients to keep them motivated.

#### **7.4.6 Contextual influences**

Client participation in the goal setting process can also be influenced by contextual factors which includes both environmental and personal influences. Figure 7.2 provides a visual representation of

the contextual influences in which the goal setting process is embedded. Personal factors include pre-morbid goal setting use, having valued roles, personal beliefs and drug and alcohol dependency. Clinicians explained that participation in goal setting was enhanced if goals were used in everyday life pre-injury, when clients had valued pre-morbid roles or if client beliefs complemented intervention targeted at achieving identified goals. For example, people who believed in the importance of exercise found it easy to set goals related to physical activity. Client-centred goal setting can be inhibited in cases where clients have a history of drug and alcohol dependency or where the family have unrealistic expectations of recovery or are experiencing their own adjustment issues in relation to brain injury:

*Other people (the family) you know get extremely pushy about what they want and you have to get um I suppose clear and blunt and say no we are not doing that. Other people um it's a bit more subtle about it and there is one client that I actually withdrew services from because I couldn't in good conscience keep doing the therapy with the client knowing that it wasn't appropriate for the client at all, because it was what the mother was pushing for (Shirley, 20 years' experience, Private Practice).*

Clinicians working in private practice discussed that having a pending compensation claim may inhibit a client's participation in goal setting:

*To establish rapport with a client it is about making sure that the person is listened to, valued and respected and that you have an understanding of what their issues are, and I think that is much easier to do with clients who are not in a CTP (Compulsory Third Party) process, because in a CTP process they are often quite guarded in how far they let you in. And so they may, they are happy to let you know what they were like before the accident but they are very guarded as to letting you know how they are actually going at the time of the*

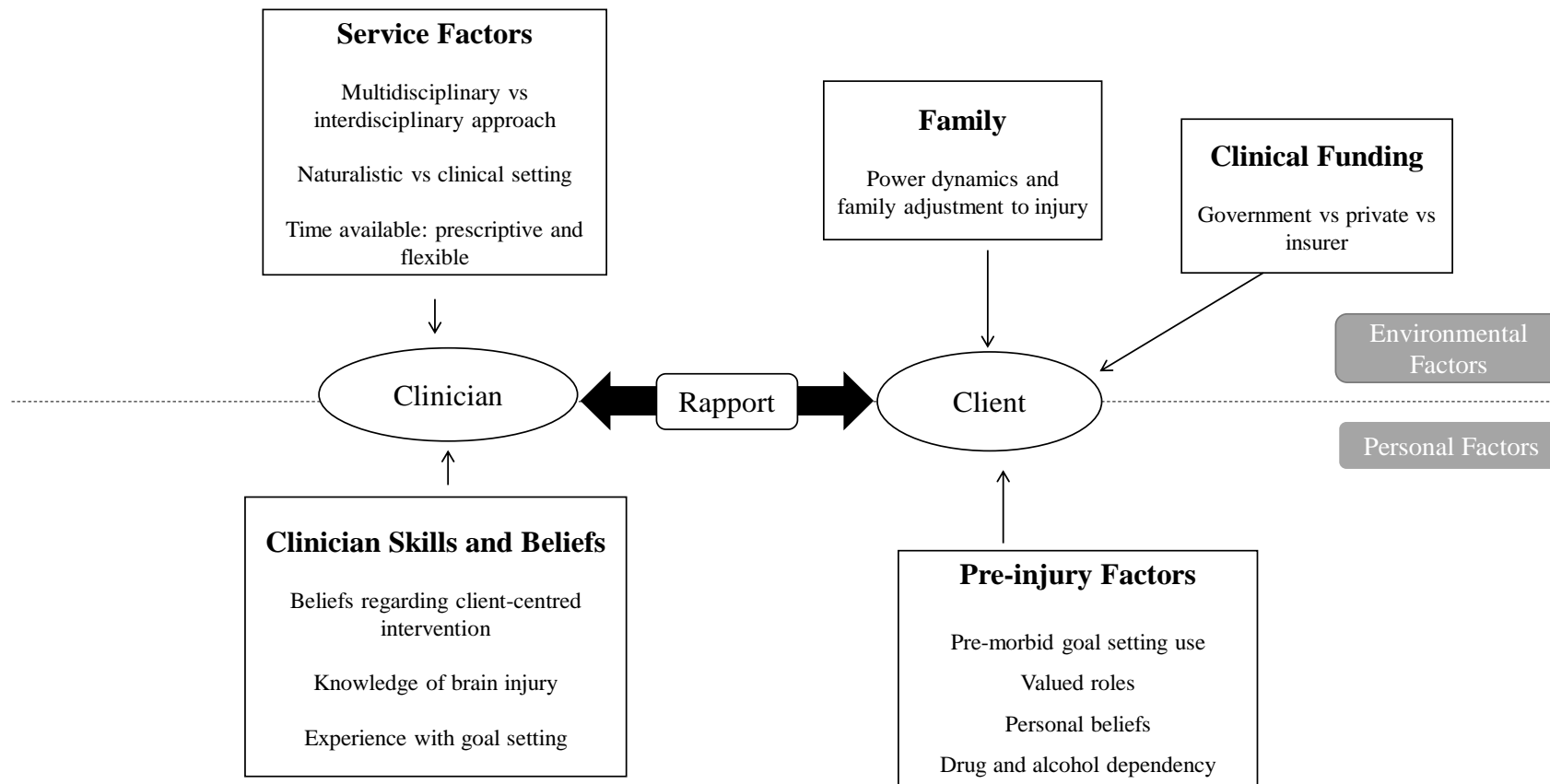


Figure 7.2. Contextual Influences

*assessment because you know that might affect their claim (Annabelle, 25 years' experience, Private Practice).*

Contextual factors related to the clinician included the degree of use of client-centred approaches, knowledge of brain injury and experience with goal setting. Clinicians identified that a high level of skill is required to elicit information from clients needing extra support to participate in goal setting, and knowing when to explore client's statements further:

*Yeah I think that probably my biggest challenge is feeling like I am not sure that I have the right language even after practicing it for a while, but the right language to kind of draw out goals ... it is a bit of a toss-up between really having this really client-centred specific goal and working out what they really really care about, versus something that you usually do and you know you know how to kind of do and it's probably going to help them (Genevieve, 1 year experience, Hospital).*

Some clinicians identified that an inter-disciplinary approach to goal setting could potentially enhance the goal setting process, when compared with a multi-disciplinary approach:

*Um I think what we don't do well as a team is actually um team kind of goals that everyone is working on together that are patient driven. Everyone is in their own little silos and everyone's doing their own goal planning (Mary, 9 years' experience, Hospital).*

Both outpatient and community-based clinicians emphasised that delivery of therapy in the client's own homes was beneficial for the goal setting process. Community-based clinicians reported that this enabled observation of a person's abilities in their own environment as well as

access to family members to confirm or obtain information. The most common inhibitory factor cited from a service perspective was the amount of time available to spend on goal setting.

*You've got to really be able to put aside the time. Um yeah that would be one of the big challenges (Maureen, 3 years' experience, Private Practice).*

Clinicians working in private practice reported that prescriptive time frames and processes required by private insurers did not allow sufficient time to complete goal setting. They also described that they tailored client-centred goals into language that would fit with the funding priorities of insurers (for example, to highlight how therapy would reduce the overall level of care required). The main time challenge reported in the hospital based outpatient service was that therapy was limited to weekly one hour sessions, whereas clinicians at the publicly funded community-based service reported that the service allowed a flexible approach to the implementation of goal setting.

#### **7.4.7 Clients who are unable to identify their own rehabilitation needs**

Two clinicians described examples of clients who could not be engaged in this process, due to the client's limited goal setting abilities, as well as cultural and social influences which precluded client participation in goal setting. For these clients, rehabilitation needs had to be identified in a different way, as depicted in the following quote:

*I would say lots of clients can participate quite well. The only clients that have really significant difficulties are if they are non-verbal or if they are not orientated and remain confused then they can't or if they have really poor insight, then they are typically the clients who can't and in those circumstances what I tend to do is I will hold goal planning*



*meetings with key stake-holders and then it tends to be more of a medical model that is used in goal planning (Annabelle, 25 years' experience, Private Practice).*

## **7.5 Discussion**

In light of the identified gap between research and practice (Prescott et al., 2015) and limited research with community dwelling adults with ABI, this study explored clinician's experiences of goal setting with community dwelling clients with ABI in routine clinical practice. Specifically, goal setting approaches were examined in a large, highly-experienced multi-disciplinary sample of clinicians, across three contrasting ABI rehabilitation services in Australia. Overall, clinicians described goal setting as a process of enabling the development of achievable client-centred goals. A theoretical framework was developed to explain processes used, with the framework depicting goal setting in ABI rehabilitation as a complex, multiphase process. Initially clinicians engage clients in a needs identification phase and then a goal operationalisation phase, before progressing to the intervention phase. Additional strategies are incorporated to engage clients in this process. In particular, clients with cognitive and communication impairment, especially self-awareness impairment, may benefit from structured communication and metacognitive strategies to formulate goals. Whereas clients with emotional distress may need additional time and intervention directed at helping them to develop a new sense of identity. Findings about the need for and provision of additional time contrasts with previous inpatient research about goal setting, where time availability is reported as a barrier to client-centred goal setting (Van de Weyer, 2010).

Establishing trust or building rapport is a core strategy used to elicit and understand a person's rehabilitation needs. This study highlighted a range of strategies that clinicians may use in practice to build rapport. Listening is integral to understanding what is important and meaningful for clients in the goal setting process (Bright et al., 2012; D'Cruz et al., 2016; Hunt, Le Dorze, Polatajko, Bottari, & Dawson, 2015). However, listening needs to be augmented with other

strategies to develop rapport. Furthermore, it is possible to be collaborative in goal setting and not develop client-centred goals (Prescott et al., 2015). In this study, an approach to collaboration was described which involved working with the client to enable them to feel like an equal partner in the goal setting process. This is reinforced with the use of other client-centred strategies such as being respectful and non-judgemental, as well as providing education to enable clients to make decisions during the goal setting process (Cott, 2004). The development of client-centred goals therefore relies on rapport being built through use of multiple techniques and a collaborative approach which focuses on partnership.

Strategies to facilitate client involvement in goal setting are adapted in response to client participation during goal setting discussions. For example, in the cases where self-awareness impairment impacts on participation, communication is structured to identify rehabilitation needs. Metacognitive strategies are also used during the intervention mapping phase to enhance awareness of the impact of impairments in a person's daily life. Using this metacognitive approach means that clients are facilitated to self-identify problems rather than be told of the existence of problems (Hunt, Le Dorze, Polatajko, et al., 2015). In terms of strategies for clients who are unable to articulate their needs due to feeling overwhelmed by their experience of brain injury, clinicians recognise the need for specialist psychological support and employ techniques which attempt to engage clients in rehabilitation activities. These strategies are used during a phase which allows time for new identity development. Other authors have emphasised the need to tailor intervention approaches based on whether underlying self-awareness impairments are attributed to neurocognitive or psychological factors (Ownsworth, Clare, & Morris, 2006). Given the psychological impact of brain injury, clinicians need to be mindful of changes to client self-identity (Levack et al., 2014) as acceptance of a new identity can enable engagement in meaningful occupation (Klinger, 2005).

Contextual factors also influence clinician and client participation when goal setting in routine clinical practice. Clinicians form judgements about whether goals are achievable within

their particular service context and timeframe. This may be because clinician and service-related factors influence what goals can be targeted. For example, therapy provided in the hospital environment may not be able to directly target work-related activities or the level of funding available may limit what can be achieved. However, clinicians identified the importance of acknowledging these additional goals identified by clients to provide hope and convey that the client has been listened to and understood. This strategy is the essence of client-centred philosophy (Cott, 2004), as it enables clients to feel they can participate as equal partners in goal setting (Hunt, Le Dorze, Trentham, et al., 2015) and shows that individual needs are considered without pre-judgement of outcome (Bright et al., 2012). However, clinicians may also judge client's goals as unachievable because the individual displays impaired self-awareness. Acknowledgement of unrealistic goals is a contentious area, as some clinicians find it difficult to support clients to work towards a goal knowing that it is unrealistic (Hunt, Le Dorze, Polatajko, et al., 2015; Parry, 2004; Playford et al., 2009). Clinicians involved in this study described a process that acknowledges client-identified unrealistic goals and uses these areas as the basis for forming achievable goal areas to be worked on in therapy. Other contextual influences were related to the client's family, where families may facilitate or inhibit the client-centred goal setting process (Levack et al., 2009). Clinicians need to be aware of family dynamics and power relationships that exist between the client and family members. Sensitivity to these dynamics is essential during goal setting, especially when building rapport with clients.

The goal setting process in brain injury rehabilitation is complex and the theoretical framework generated also includes activities which enhance goal pursuit in the intervention phase. The goal operationalisation phase is also required to help the person to understand how rehabilitation activities may address identified rehabilitation needs. This is because most people with brain injury find it difficult to generate their own rehabilitation goals and need support to understand how therapy activities relate to their goals. Goals influence human performance and action (Austin & Vancouver, 1996; Wilson, 2008) and rely on convoluted cognitive and emotional

neural processes. For example, the cognitive skills required to self-evaluate progress towards the goal that is being targeted (Locke & Latham, 1990). It is not surprising then that the framework includes additional activities to enhance goal pursuit, because people with brain injury often need additional support to plan the steps to achieve their goals, as well as assess their performance in relation to the goal (Levack, Weatherall et al., 2015).

The framework highlights the importance of not only eliciting client-centred goals but also implementing and monitoring them as a core part of the intervention phase. By contrast, a study on inpatient goal setting found that although client-centred goals were elicited, intervention focussed more on discharge planning (D'Cruz et al., 2016). This suggests that services providing rehabilitation for community dwelling clients with ABI are in a position that supports the implementation of client-centred goals during all phases of rehabilitation and that a client-centred approach is central to all phases of the rehabilitation in the community setting, where there is a shift away from acute-illness and curative philosophies regarding client care, towards models of practice that focus on the individual (Cott, 2004; Simpson, Foster, Kuipers, Kendall, & Hanna, 2005). However, it cannot be assumed that client-centred goal setting will automatically be implemented in community ABI rehabilitation. The framework highlights the effect of organisational priorities on goal content, which is consistent with previous research in community rehabilitation services (Hunt, Le Dorze, Trentham, et al., 2015). These findings suggest that an overall organisational philosophy of client-centred care in both the community and inpatient setting is an important factor in determining whether a client-centred goal setting approach is implemented in practice.

The notion of organisational philosophy is complex and the implementation of client-centred goal setting approaches in practice can be tempered by many factors within an organisation. The overall purpose of goal setting within an organisation may determine whether the approach used is individualised (Levack, Dean, Siegert, et al., 2006). For example, in one instance a clinician reported that intervention targeting client-centred goals was constrained by insurers. By contrast the publicly-funded community service valued client-centredness at an organisational level.

Organisations may structure their goal setting approaches to meet the needs of individuals in many ways. Processes that support goal setting include documentation, training, meetings, client education, time allocated for goal setting and overall goal setting method used (Playford et al., 2009; Scobbie et al., 2015). Sufficient time allocated to complete goal setting was identified as an important structural consideration in this study. Client-centred goal setting approaches may also be influenced by team structures, for example, inter-disciplinary approaches were suggested to enhance client-centredness.

Clinician factors, including discipline-specific philosophies and clinician experience, may also influence the adoption of client-centred goal setting (Hunt, Le Dorze, Trentham, et al., 2015; Lloyd et al., 2014). Interestingly, in the current study goal setting processes did not differ markedly across disciplines. This finding is supported by complementary frameworks generated from a single discipline sample of clinicians (Lloyd et al., 2014) and in other studies where clinicians from the same background had differing approaches to goal setting (Levack, Dean, McPherson, et al., 2006). As with other studies which highlight that training and experience enable enhanced goal setting practice (Lloyd et al., 2014; Marsland & Bowman, 2010), findings from this study suggest that increased clinician experience can enhance the development of client-centred goals, by enabling clinicians to understand how to structure communication to engage clients with cognitive impairment in goal setting. With experience, clinicians also focus on empowerment and value the need to include clients in the goal setting process (Lloyd et al., 2014).

Clinicians in this study typically employed an informal approach to goal setting, which is consistent with previous reviews of goal setting practice (Holliday et al., 2005; Leach et al., 2010; Prescott et al., 2015; Scobbie et al., 2015). The formal goal setting approaches were used by clinicians as adjunctive tools, in the context of a broader process which facilitated the inclusion of clients with varying levels of goal setting ability. The findings from this study suggest that formalised approaches may be used by clinicians to elicit and understand a person's rehabilitation

needs and facilitate objective measurement, which is important to demonstrate intervention effectiveness and provide feedback to clients.

### **7.5.1 Limitations and future directions**

Given that a qualitative methodology was employed, the results are specific to the services involved in this study, however many of the findings in this study are consistent with previous studies (D'Cruz et al., 2016; Hunt, Le Dorze, Trentham, et al., 2015; Levack et al., 2009; Lloyd et al., 2014). The core therapeutic strategies and techniques extracted have the potential to inform other services which provide rehabilitation for community dwelling clients with ABI. Identified strategies may assist clinicians to reflect on their current practice and the clinical utility of the framework in relation to the service in which they work. Overall, this study aimed to describe routine goal setting rather than evaluate optimal practice. Further research is required to determine optimal goal setting practices in brain injury rehabilitation. Additionally, as this study focused on clinicians' perspectives of goal setting, the theoretical framework could be enhanced by considering client perspectives, especially those clients who have experienced goal setting in community-based brain injury rehabilitation settings. Clinicians in this study did not question their ability to determine what is realistic or achievable. Further research examining how clinicians determine what is achievable in goal setting is indicated.

This study was a homogenous sample of highly-experienced allied health professionals, with more representation in specific disciplines such as occupational therapy, physiotherapy and speech pathology. Despite this, the development of the framework based on the reflections of an experienced sample of clinicians offers unique clinical insight into the process of client-centred goal setting. The literature which supports the need for experience and training to enhance goal setting practices (Lloyd et al., 2014; Marsland & Bowman, 2010) and the framework may be a useful tool. Another limitation of this study was that the theoretical framework was developed based entirely on

clinicians' reflections of their practice. Further research is required to investigate the clinical application of the model, for example, using an observational study of routine goal setting practice. This would allow exploration of how identified strategies are applied in clinical practice, for example, the scripts clinicians use to structure communication and acknowledge unrealistic goals. Additionally, investigation of how clinicians adapt their techniques for varying ability levels would provide further insight into processes used to support these clients.

## **7.6 Conclusion**

The theoretical framework in this study explains how client-centred goals may be developed with people with brain injury. To ensure that a client-centred goal setting approach is implemented in clinical practice, philosophies and resultant structure and support must be addressed at the organisational, team and clinician levels of a service. Furthermore, given that clients may require additional time to participate in goal setting, organisations require a flexible approach towards the allocation of time for goal setting.

### **Implications for rehabilitation**

- The theoretical framework describes processes used to develop achievable client-centred goals with people with brain injury.
- Building rapport is a core strategy to engage clients with brain injury in goal setting.
- Clients with self-awareness impairment benefit from additional metacognitive strategies to participate in goal setting.
- Clients with emotional distress may need additional time for new identity development.

## **Chapter 8 Refining a clinical practice framework to engage clients with brain injury in goal setting**

Prescott, S., Fleming, J., & Doig, E. (2017). *Refining a clinical practice framework to engage clients with brain injury in goal setting*. Manuscript submitted for publication.

Chapter 7 presented the results of a grounded theory study which developed the Client-Centred Goal Setting Practice Framework to explain how therapists engage clients with brain injury in goal setting. This chapter follows the previous chapter by examining the application of this framework to practice. It also aims to refine the strategies identified by the framework. Chapter 8 therefore addresses aim 6 of the thesis, which was to examine the strategies and processes used by therapists to implement client-centred goal setting in community-based ABI rehabilitation.

The manuscript inserted as thesis Chapter 8 was submitted for publication to the *Australian Occupational Therapy Journal* in July 2017. Revisions were resubmitted in April 2018. The manuscript is inserted in the form submitted for publication after revisions, with minor formatting changes to ensure consistency within the thesis.



## 8.1 Abstract

**Introduction:** Client-centred goal setting is fundamental to occupational therapy practice and has been increasingly embraced by all rehabilitation practitioners. Goal setting in clinical practice is a highly individualised process and may be more challenging with people with acquired brain injury. However, research examining practice is limited. We developed the Client-Centred Goal Setting Practice Framework to explain how client-centred goals are developed in brain injury rehabilitation. This framework was based on interview data and may reflect practitioner's theoretical knowledge rather than goal setting processes used in routine practice. The aims of this study were to explore the application of the framework to everyday practice, examine the extent to which goal setting was client-centred and refine the framework.

**Methods:** A mixed methods approach was employed. Participants were community dwelling clients with ABI and their practitioners, drawn from a hospital outpatient service and community private practices. The communication exchange between practitioners and clients during routine goal setting was audio-recorded, transcribed verbatim and analysed using framework analysis. Quantitative measures evaluated the client-centredness of goals.

**Results:** A total of 65 goal setting sessions with 36 clients and 17 practitioners ( $n=8$  occupational therapists) were analysed. The three goal setting phases of the framework and associated processes and strategies were represented. The 'Establishing Trust' process was interwoven throughout all phases and an additional strategy, 'social connection' was identified.

**Conclusion:** The framework provides preliminary evidence about the core processes and strategies which uses establishing trust to engage clients with ABI in goal setting, and may be a useful tool to guide client-centred goal setting practice in similar services.

**Key Words:** Client-centred, goal setting, practice framework, engagement strategies

## 8.2 Introduction

Client-centred goal setting is a fundamental component of occupational therapy practice (Law et al., 1998; Sumsion, 2000). A client-centred approach aims to develop goals that are perceived as meaningful, important and relevant by the individual (Law et al., 1998). By being client-centred, occupational therapists empower clients to actively engage in goal setting (Sumsion, 2000). In addition to the philosophical basis of client-centredness, the effectiveness of using this approach in rehabilitation has also been demonstrated. High client engagement in goal setting has been linked to greater client satisfaction with rehabilitation, better outcomes and long-term maintenance of gains (Turner-Stokes, Rose, et al., 2015). As a result, best practice guidelines recommend the use of client-centred goal setting (for example, National Stroke Foundation, 2017), and subsequently, goal setting is not used exclusively by occupational therapists in rehabilitation. Therefore, all rehabilitation practitioners use goal setting and claim to value client-centred or person-centred care (Leplege et al., 2007).

Despite the evidence to support client engagement in goal setting, this process remains challenging in the rehabilitation of people with ABI (Doig et al., 2009; Plant et al., 2016; Van De Weyer et al., 2010). An ABI refers to an acute single-insult neurological condition such as TBI, cerebrovascular accident (stroke) or other infections such as meningitis (Turner-Stokes, Pick, et al., 2015). Clients with ABI may experience complex cognitive and communication impairments, resulting in reduced ability to participate in goal setting (Doig et al., 2009; Worrall et al., 2011). Client involvement in goal setting may also be influenced by service-related barriers such as the lack of time available (Levack et al., 2011; Van De Weyer et al., 2010). The goal setting needs of clients with ABI can also change in relation to their stage of recovery, with clients more actively involved in goal setting after discharge when there is increased focus on community and social participation (Plant et al., 2016).

When considered together, these factors mean that goal setting with people with ABI in clinical practice is a highly individualised process (Lloyd et al., 2014; Scobbie et al., 2015), but research examining goal setting in routine practice is limited (Prescott et al., 2015). Additionally, it has recently been recognised that there is a need to understand occupational therapy practice through inter-professional research (Cusick, 2017). Given the increased use of client-centred goal setting by all rehabilitation practitioners, observation of client-centred goal setting in routine practice across disciplines has the potential to provide insight into the strategies that occupational therapists may use to engage clients with ABI in goal setting.

To address this need, in a previous study we conducted in-depth interviews with 22 experienced practitioners from multiple disciplines about the goal setting practices they used with community dwelling clients with ABI. The Client-Centred Goal Setting Practice Framework was developed to explain how client-centred goals are set by multiple disciplines (Prescott, Fleming, & Doig, 2017). The framework was generated directly from the interview data using grounded theory methodology (Corbin & Strauss, 2015) rather than drawing on the literature about goal setting. The practitioners did not receive education about goal setting or information about research evidence relating to goal setting from the researcher. Findings were validated through member checking and presentation of the framework at two rehabilitation network meetings (Prescott et al., 2017).

Figure 8.1 illustrates the framework and describes a process whereby practitioners actively engage clients in goal setting discussions, so that intervention can be tailored to meet client-identified rehabilitation needs. According to the framework, client-centred goals are developed during three *phases*: a ‘needs identification phase’, a ‘goal operationalisation phase’, and an ‘intervention phase’. The three *phases* are represented by five broad *processes*. The initial needs identification phase incorporates the synchronous *processes* of ‘establishing trust’ and ‘identifying the person’s needs’. Next, the goal operationalisation phase includes the ‘goal mapping’ process or when rehabilitation needs are unable to be identified, clients are engaged in the ‘allowing time’ process. Lastly the intervention phase encompasses the process of ‘active engagement’.

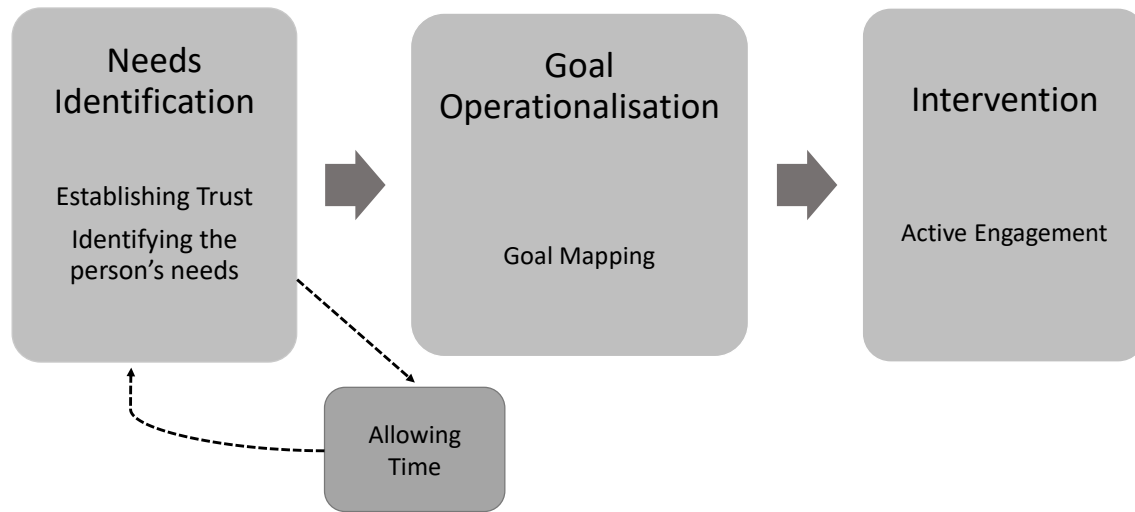


Figure 8.1. The Client-Centred Goal Setting Practice Framework

In addition to the *processes* which occur during each phase, each process is represented by *strategies*. *Strategies* describe the numerous techniques used by practitioners to implement the five broad processes of the framework. For example, when practitioners are implementing the ‘establishing trust’ *process* during the needs identification phase, one of the *strategies* that practitioners use to engage clients is ‘listening’. Overall, the framework was developed based on practitioner reports in interviews, but clinical decision making is generally an intuitive process which can be difficult to articulate (Law, 2002). Therefore, it is also necessary to examine the extent to which the processes and strategies identified by the framework are applicable in practice.

Other qualitative studies have used direct observation of practice to examine the application of goal setting in clinical settings (D’Cruz et al., 2016; Levack et al., 2011). For example, Levack et al. (2011) examined inter-disciplinary team goal setting with nine inpatients with stroke and found that the goal setting process privileged goals of higher clinical priority, which meant at times providing client-centred care was difficult (Levack et al., 2011). In an observational study of practice with 22 inpatients with ABI, D’Cruz and colleagues (D’Cruz et al., 2016) found that in order to engage clients in goal setting, practitioners explored the experience of injury and hospitalisation, built trusting relationships through reflective listening, responded to individual needs, and used a collaborative process to elicit goals. However, in some cases despite setting client-centred goals, discharge priorities were the focus of intervention (D’Cruz et al., 2016).

Conversational analysis has also been used to examine the communication exchange between clients and practitioners during goal setting in everyday practice (Hunt, Le Dorze, Polatajko, et al., 2015). For example, recently Hunt and colleagues (Hunt, Le Dorze, Polatajko, et al., 2015) examined the communication exchange during goal setting between three occupational therapists and six community dwelling clients, with longstanding brain injury. The techniques used to facilitate client engagement included reflective listening, asking open-ended questions about

specific tasks and acknowledgements and affirmations in response to client statements (Hunt, Le Dorze, Polatajko, et al., 2015).

Overall, these studies of observed practice have been of value in identifying some of the strategies used by practitioners to engage clients with ABI in goal setting. However, studies with larger samples that focus on community dwelling clients with ABI and goal setting by multiple disciplines, may further enhance our understanding of the range of strategies used in practice. Our framework has potential to help guide occupational therapists in the processes and strategies needed for client-centred goal setting in ABI rehabilitation, but because it was developed based solely on interview data there is a need to examine the application of the framework to practice. Therefore, the aims of this study were to explore the application of the Client-Centred Goal Setting Practice Framework to everyday practice, examine the extent to which goal setting was client-centred, and to refine the framework.

## **8.3 Method**

### **8.3.1 Study Design**

Ethical clearance was obtained from relevant hospital and university ethics committees. A qualitative observational study of clinical practice was employed as part of a larger cohort study on goal setting practice. A mixed methods approach was used to enable the collection of both quantitative and qualitative data (Creswell & Plano Clark, 2011). Specifically, the quantitative measures evaluated the client-centredness of goals set by practitioners and qualitative data were the audio-recordings of the communication exchanges between practitioners and clients to set goals. Observation of practice was indicated given the need to understand goal setting implementation in routine practice with community dwelling clients with ABI. A deductive approach to framework analysis was chosen to analyse the audio-recordings, to allow analysis to be guided by the existing Client-Centred Goal Setting Practice framework (Gale et al., 2013).

The research team consisted of three occupational therapists experienced in working in ABI rehabilitation. We identified the need to observe what happens in practice, knowing that there may be discrepancies between what practitioners say they do and what they actually do in practice. The second and third authors were also experienced ABI rehabilitation researchers and had undertaken previous studies about goal setting.

### **8.3.2 Participants**

Participants included clients with ABI who were receiving rehabilitation and their significant others, as well as the practitioners providing the rehabilitation. Client participants were consecutive admissions to a hospital-based outpatient service or were drawn on a referral basis from community-based private practices. To be included in the study, client participants needed to be aged between 18 and 65 with a diagnosis of ABI, living in the community, able to communicate in English, and about to plan or review their rehabilitation goals with their practitioner. Significant others were invited to participate if present during goal setting sessions. Clients, significant others and practitioners all gave written, informed consent.

Participants were recruited between October 2013 and November 2014. The rehabilitation services were based in Queensland, Australia. Clients typically attended the hospital-based outpatient service once a week for multi-disciplinary rehabilitation. At this service allied health practitioners set goals within their individual disciplines, and do not use team goals. The private practices comprised two occupational therapy and one speech pathology service and conducted discipline-specific goal setting. For clients attending the private practices, rehabilitation intensity and duration varied depending on client needs.

### **8.3.3 Measures**

*Client-centredness of Goal Setting Scale (C-COGS)*; (Doig et al., 2016): The C-COGS is a self-report questionnaire that evaluates a client's perceived level of involvement in the goal setting process, and the importance, meaning and relevance of the resultant rehabilitation goal. A client's level of agreement to 13 statements is measured using a 5-point Likert scale (1= strongly disagree to 5 strongly agree). A total C-COGS score is generated (out of 50). Preliminary construct validity and reliability of this scale have been established (Doig et al., 2016).

*Canadian Occupational Performance Measure (COPM)*; (Law et al., 1998): The COPM is a semi-structured interview developed to identify occupational performance problems so that treatment goals can be established. In this study only the importance scale was used. Participants were asked to rate the importance of the documented goal statement using the COPM importance rating scale.

### **8.3.4 Data Collection**

After consent was obtained, practitioners were asked to audio-record all goal setting discussions with consenting clients. These discussions could be when goals were first being established or later when they were being reviewed. The goal review sessions, were also collected, as the framework identified that goal setting activities pervade all aspects of the rehabilitation process. Consistent with usual practice, significant others participated in goal setting sessions if available. Practitioner participants were advised to place the audio-recorder at a discrete distance from the client participant and to ignore the presence of the audio-recorder. Goals were typically established in the first or second rehabilitation session. Goal review sessions occurred at any time in the first 12 weeks after admission. Audio-recorders were collected after goal setting, and were transcribed verbatim by the first author. Audio-recordings ranged in length from 2 to 86 minutes. Immediately



after goals were set, goal statements were collected and the C-COGS and COPM importance scale were administered to client participants by a researcher.

### **8.3.5 Data Analysis**

The quantitative data (i.e., the COPM and the C-COGS scores) were analysed descriptively to assess the degree to which clients identified that each goal was important to them as well as the perceived level of client-centredness of the goals and goal setting sessions. Data analysis was conducted using framework analysis procedures outlined by Gale et al. (2013) which employs thematic content analysis as a systematic way of reducing and summarising the data (Gale et al., 2013). The steps involved included: (1) Transcription, (2) Familiarisation with the interview, (3) Coding, (4) Developing a working analytical framework, (5) Applying the analytical framework, (6) Charting the data into the framework matrix, and (7) Interpreting the data (Gale et al., 2013). When using a deductive approach to framework analysis, the codes and themes of previous theories are applied to the data (Gale et al., 2013). In this case a deductive approach was used, based on the codes of the Client-Centred Goal Setting Practice Framework (Prescott et al., 2017). Therefore step four of the framework analysis procedure was not required.

Entire transcripts were read to form a general impression regarding the applicability of the framework to individual goal setting sessions. These data were uploaded electronically into the software package NVivo to manage data coding (QSR International Pty Ltd, 2012). The first author (SP) applied labels to sections of the transcripts using the pre-defined codes of the Client-Centred Goal Setting Practice Framework. In the cases where data did not appear to fit with the framework, open coding was completed to ensure that important aspects of the data were not missed. A framework matrix was then generated to chart the data, including the frequency of processes and strategies in each phase of goal setting.

Lincoln and Guba's (1985) four criteria for trustworthiness (credibility, transferability, dependability and confirmability) were addressed. Credibility was achieved in a number of ways:

adoption of the framework analysis approach; fortnightly meetings between all three researchers to ensure consensus regarding the codes applied to the data and to interpret the meaning of the data; an examination of previous research to contextualise the findings; description of research team backgrounds; and peer scrutiny. Seven transcripts representing goal setting with an even spread of disciplines were independently coded by another researcher (ED) to ensure consistency. To assess agreement between raters, the coding of the two independent raters was compared on a line-by-line basis and highlighted as agreement or disagreement. Then, the rate of agreement was calculated by dividing the number of lines of disagreement by the total number of lines in the transcript, multiplied by 100. The rate of agreement between coders was 89.43%, indicating good agreement. Code notes were written to record the analysis process. The code notes and fortnightly meetings were strategies used to maintain awareness of how the perspectives of all three authors influenced the analysis process. Transferability, dependability and confirmability were achieved through in-depth methodological description and further confirmability through documentation of the research team beliefs and assumptions.

The frequency of occurrence of the framework processes and strategies was counted across the transcripts but not within individual audio-recordings (i.e., if the 'establishing trust' process was noted in an individual audio-recording this was counted as occurring within that specific transcript, but if it occurred again within that same transcript it was not counted in the final frequency total). Therefore, the maximum frequency of the framework processes and strategies was equal to the total number of transcripts (i.e., across disciplines  $n=65$ , in occupational therapy  $n=41$ , speech pathology  $n=15$  and physiotherapy  $n=9$ ).

## 8.4 Results

### 8.4.1 Participant Characteristics

Of the 45 client participants in the larger cohort study, 36 consented to the audio-recording of their goal setting sessions. The demographic data of the three participant groups (clients, significant others, and practitioners) are presented in Table 8.1. The majority of client participants were male and had sustained a severe TBI, 1 to 2 years earlier. Five significant others (3 spouses, 2 parents) participated in the audio-recorded sessions. A total of 17 practitioners from three disciplines participated, including occupational therapists ( $n=8$ ), speech pathologists ( $n=5$ ) and physiotherapists ( $n=4$ ). The majority were from the hospital-based outpatient service ( $n=13$ ) and on average had worked in ABI rehabilitation for 10 years.

A total of 65 goal setting sessions were audio-recorded and included six goal review sessions. The audio-recordings were collected in occupational therapy ( $n=41$ ), speech pathology ( $n=15$ ) and physiotherapy ( $n=9$ ). On average, audio-recordings were 19.24 minutes long ( $SD=15.28$ ), in occupational therapy 20.57 minutes ( $SD=17.55$ ), speech pathology 19.47 minutes ( $SD=10.22$ ) and physiotherapy 12.56 minutes ( $SD=6.33$ ). Goal setting sessions were conducted in the hospital ( $n=59$ ) and private practices ( $n=6$ ). Of the 36 client participants, 24 set goals with one practitioner and 12 clients set goals with two practitioners. For the 12 clients who set goals with two practitioners, ten set goals with a speech pathologist and an occupational therapist, one client with an occupational therapist and a physiotherapist, and the remaining client with a speech pathologist and physiotherapist. Goal setting was typically completed during one session in physiotherapy, but ranged from one to four sessions in occupational therapy and one to two sessions in speech pathology.

In total 163 goals were set, with each discipline setting on average three goals per participant. The mean COPM Importance rating was 8.9 ( $SD=1.2$ ), and the mean Total C-COGS score was 45.2 ( $SD=3.83$ ).

Table 8.1. Participant Characteristics

Clients ( <i>n</i> =36)	<i>n</i> or M (SD)
Gender	
Male	24
Female	12
Age, yr	38.9 (12.8)
Education, yr ( <i>n</i> =35)	12.9 (2.5)
Ethnicity (ASCCEG; <i>n</i> =35)	
Oceanian	30
North West European	2
Southern and Eastern European	2
Sub-Saharan African	1
Primary preinjury occupation (according to ANZSCO category)	
Manager or professional	8
Technical/trade	9
Community/personal service	4
Clerical/administrative	7
Sales or labourer	1
Student	5
Unemployed or retired	2
Diagnosis	
TBI	20
Stroke	6
SAH or SDH	4
Hypoxia or tumor	3
Other	3
Initial GCS score for participants with TBI ( <i>n</i> = 15)	7.3 (4.5)
TBI Severity	
Mild (PTA 0-1 days or GCS 13-15)	4
Moderate (PTA> 1-7 days or GCS 9-12)	1
Severe (PTA> 7 days or GCS 3-8)	14
PTA length or GCS unavailable	2
Inpatient rehabilitation	
Yes	23
Length of stay, days	62.6 (61)
No	13
Time since injury, days	428.6 (808.3)
Significant Others ( <i>n</i> =5)	
Spouse	3
Parent	2
Clinicians ( <i>n</i> = 17)	
Gender	
Male	0
Female	17
Discipline	
Occupational Therapist	8
Physiotherapist	4
Speech Pathologist	5
Years of experience	
Qualified in discipline	14.2(10.8)
Working in ABI rehabilitation	9.5 (7.1)
Setting	
Hospital-based outpatient service	13
Community-based private practices	4

Note. ABI= acquired brain injury; ASCCEG= Australian Standard Classification of Cultural and Ethnic Groups; ANZSCO= Australian and New Zealand Standard Classification of Occupations; GCS= Glasgow Coma Scale; M= mean; PTA = posttraumatic amnesia; SAH= subarachnoid haemorrhage; SD= standard deviation; SDH= subdural haemorrhage; TBI= traumatic brain injury

## 8.4.2 Application of the framework in practice

Table 8.2 presents the phases, processes and strategies of the framework, and shows the frequency of each process and strategy as they occurred in the audio-recorded goal setting sessions. The five processes, which represent the three framework phases, were observed during the audio-recorded goal setting sessions. Furthermore, some of the strategies were common across all disciplines. However, discipline-specific differences were also noted. For example, the most common strategy used by occupational therapists during goal mapping was ‘exploring strategies’, whereas the speech pathologists most commonly used ‘providing feedback’ and the physiotherapists ‘establishing steps to long-term goals’. Table 8.3 illustrates how the strategies were implemented in the audio-recordings.

The direction of movement through each of the goal setting phases was also noted. The audio-recorded sessions initially progressed linearly, whereby the ‘needs identification’ phase preceded the ‘goal operationalisation phase’ which was followed by the ‘intervention’ phase. However, this was an iterative process as typically the interview returned to preceding phases and the ‘establishing trust’ process was interwoven throughout all phases of the sessions. For example, often in ‘goal mapping’, additional questions were asked about the established rehabilitation need to identify which component of the task to target, and to show the client how planned intervention was related to the established rehabilitation need as illustrated in the following interaction (where C is the client, OT is an occupational therapist and SP is a speech pathologist, with use of pseudonyms):

Table 8.2. Frequency of the framework processes and strategies

Phase	Process	Strategy	Frequency (%) in audio-recorded goal setting sessions (N=65)	Frequency (%) across disciplines			
				Occupational Therapy (n=41)	Speech Pathology (n=15)	Physiotherapy (n=9)	
Needs Identification	Establishing Trust	Listening <sup>#b</sup>	<b>65 (100)</b>				
		Listening <sup>#b</sup>	65(100)	41 (100)	15 (100)	9 (100)	
		Collaboration/partnership <sup>#</sup>	59 (91)	38 (93)	13 (87)	8 (88)	
		Being client-centred <sup>#</sup>	43 (65)	29 (71)	7 (46)	7 (77)	
		Social connection <sup>#a</sup>	40 (62)	22 (54)	11 (73)	7 (77)	
		Providing education <sup>#</sup>	33 (51)	22 (54)	4 (27)	7 (77)	
		Sensitivity to family dynamics	3 (4.5)	1 (2)	0 (0)	2 (22)	
		Identifying the person's needs	<b>65 (100)</b>				
		Structured communication <sup>#b</sup>	65(100)	41 (100)	15 (100)	9 (100)	
		(Areas of need) Exploring changes in participation <sup>bc</sup>	53 (82)	33 (80)	11 (73)	9 (100)	
		Therapy assessment	41 (62)	24 (59)	12 (80)	3 (33)	
		Global goal area valuing	10 (15)	8 (20)	2 (13)	0 (0)	
		Family involvement	4 (6)	3 (7)	0 (0)	1 (11)	
		MDT Knowledge	2 (3)	0 (0)	2 (13)	0 (0)	
Goal Operationalisation	Goal Mapping		<b>62 (94)</b>				
		(Strategy choice) Exploring strategies <sup>bc</sup>	48 (73)	34 (83)	9 (60)	5 (55)	
		Establishing impairment activity link	41 (62)	26 (63)	10 (66)	5 (55)	
		Link to therapy	37 (56)	21 (51)	10 (66)	6 (67)	
		Establishing steps to long-term goals	34 (52)	22 (54)	4 (27)	8 (88)	
		(Medical boundaries) Explaining scope of expertise <sup>bc</sup>	31 (47)	21 (51)	6 (40)	4 (44)	
		Providing feedback	27 (41)	13 (32)	11 (73)	3 (33)	
		Clinical Prioritisation	1 (1.5)	1 (2)	0 (0)	0 (0)	
		Allowing time	<b>2 (3)</b>				
		Sense of engagement	1(1.5)	1(2)	0(0)	0(0)	
		Specialist psychological support	1(1.5)	1(2)	0(0)	0(0)	
		Supportive contact	0 (0)	0(0)	0(0)	0(0)	
	Intervention	Active engagement		<b>50(77)</b>			
			Goal clarity	37 (57)	24 (59)	6(40)	7(77)
Progress feedback <sup>b</sup>			23 (45)	22 (54)	1(1.5)	0(0)	
Monitoring			17 (26)	14 (34)	3(20)	0(0)	
Generalisation			12 (24)	9 (22)	3(20)	0(0)	
Family support			2 (3)	2 (4)	0(0)	0(0)	

<sup>#</sup>This strategy also appeared in the goal operationalisation and intervention phases; <sup>a</sup>additional strategy identified; <sup>b</sup>greater understanding with observation in practice; <sup>c</sup>re-labelled strategy; MDT= multi-disciplinary team; The three phases are not linear, as processes can be iterative, cycling back through earlier phases

Table 8.3. How practitioners implement goal setting strategies in practice

<b><i>Establishing Trust</i></b>	<b>What the practitioner's do</b>
Listening	Repeating back the client's words, summarising what the client said to clarify meaning, use of utterances (e.g., hmm) or single words to acknowledge that you are listening
Collaboration/partnership	Making the person feel like an equal partner in the process <i>Alright so are you happy with that being our focus for therapy?</i>
Being client-centred	Valuing the client's expertise and checking they are happy to proceed in a certain way <i>So I feel like this has been a really good time for me to get to know you and to understand a bit more about where you're coming from</i>
Social connection	General chit-chat or laughter demonstrating you have related to what the client has said at a social level <i>You might have to actually teach me how to do that first</i>
Providing education	Education about the role or the purpose or process of goal setting <i>So we need to identify with you what it is that specifically you want to achieve or work on, and that will form the basis for all of our sessions</i>
Sensitivity to family dynamics	Obtaining information from the client which shows you are being sensitive to family relationships <i>Paul (client) is it ok if we try to get you to help tell the story, but Jill (wife) just fills in the gaps?</i>
<b><i>Identifying the person's needs</i></b>	
Structured communication	Scaffolding verbal statements to make statements/questions concrete and understandable to encourage the client to self-reflect <i>And how do you think your headaches will go when you go back to work. So as you said you will be in a hot environment you will be bending and lifting and carrying, so you will be working your brain you know a little bit more intense energy, how do you think you will go</i>

Exploring changes in participation	Exploring daily experiences to identify how the client's participation in daily activities has changed after brain injury <i>What I want you to think about is activities that you, um, that you do. If anything is difficult, um, things that you want to be able to do that you find that you simply can't or that you aren't performing, um, at a level that you would like to</i>
Therapy assessment	Using formal and informal discipline specific assessment <i>Okay. Cooking and cleaning and housework type things, are you able to manage all of those yourself?</i>
Global goal area valuing	Acknowledging long-term or unrealistic goals identified by the client <i>They're good long-term goals, being able to work, being able to exercise</i>
Family involvement	Gathering information from a family member about an area of need <i>I think Steph (client's partner) also mentioned sometimes she needs to write you a to do list</i>
MDT knowledge	Referring to information that needs to be gathered from other team members <i>I will have to speak to Genevieve (OT), but she might be looking at sort of memory for information um that you need</i>
<hr/> <b><i>Allowing time</i></b> <hr/>	
Sense of engagement	Involving the client in activities to foster a sense of engagement <i>And so you also feel that you have a sense of getting things done and achieving things because I think that is important isn't it</i>
Specialist psychological support	Referring to a neuropsychologist, psychologist or psychiatrist <i>And then what you need is support from me and Karen (Psychologist) and Rob (Psychiatrist) and your GP, so that if in the process of trying to achieve the goals, we do discover that it's just something that isn't going to be realistic for you</i>
Supportive contact	Allowing clients to access the service as a later time <sup>#</sup>



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## ***Goal mapping***

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Exploring strategies	Offering strategy choice or encouraging independent strategy generation <i>What do you use to write down to do lists for a job or shopping lists?</i>
Establishing impairment activity link	Asking the client to think about the specific functional components which underpin a goal area <i>And that is useful for your return to study because you're having to do a little bit of that evaluating</i>
Link to therapy	Establishing the link between therapy activities and the client identified goal area <i>The way we're gonna work on that is working on listening to the recordings of your speech so that you can improve your self-rating</i>
Establishing steps to long-term goals	Breaking the long-term goal down into smaller steps, to become the goal to be worked on in therapy <i>So what, knowing how you're walking now, what do you think would be a good goal to work, work on as the next step?</i>
Explaining scope of expertise	Talking and explaining about discipline specific expertise and collaborating with other team members <i>So one thing about that physical issue that we'll speak to the physio about and I've made it as I said earlier that we've made it a priority</i>
Providing feedback	Providing experiential, observational, audio and video feedback <i>I'm thinking it might be more useful to do some recordings of your speech and maybe us listening back ...and you can identify how it sounds</i>
Clinical prioritisation	Prioritising goals due to safety concerns or to reduce burden of care <i>But there may be certain things that you do need help with over a longer period of time, and that's fine, you know, it's not...it's really looking at trying to get that balance of, you know, helping you where you need it and also encouraging and, you know, assisting, supporting you to um, to do what you can</i>

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**Active Engagement**

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Goal Clarity	Summarising the goals that are going to be worked on in therapy <i>You prioritised four things, you said you want to return to driving, return to your apprenticeship, investigate volunteer roles and improve your memory and organisation</i>
Progress Feedback	Providing feedback or asking clients to think about their progress to keep them motivated <i>In terms of on this scale, not able to do it or able to do it well, where would you think that you would be at the moment?</i>
Monitoring	Checking goals are still important, still necessary to work on and identifying new goals if indicated <i>So the first one was improving memory and absorbing information...Is that still a priority for you?</i>
Generalisation	Providing strategies to be implemented outside of weekly therapy sessions <i>So you could use your, yeah, in conjunction, use your phone and the diary to help improve your self-management and things at home.</i>
Family support	Using family or significant others to support the implementation of strategies outside of therapy <sup>#</sup>

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Note. MDT= Multi-disciplinary team; An example of what the practitioner said to implement the strategy during the audio-recordings is shown in italics; #= no supporting quote available

*OT: So going back Ben to those things that we were just talking about  
in terms of the struggles that you're finding and which things are difficult*

*C: Hmm*

*OT: Which ones are the ones in day-to-day life that you would like to address and  
get better at, use some strategies*

*C: Um, well it's, it's my, my focus that I feel is ah, is, is, is lacking. Um, ah,  
longer periods of attention.....decision-making*

[Ben (C) and Charlotte (OT), Hospital].

When multiple goals were set within sessions, this process (i.e., moving from the 'needs identification' phase, then to 'goal operationalisation', and then to 'intervention') would recommence as each new goal was set.

In addition to the 163 goals generated using the processes and strategies identified by the framework, there were four examples of practitioner generated goals in the audio-recordings. Two were in occupational therapy and two in speech pathology. In these instances, it appeared that practitioners added their own goals after they had supported the client to generate client-centred goals following the phases identified by the framework:

*OT: I've talked to you too in the past about goals that you set and  
goals that I set. That's probably, you know, a goal that I would like to set about  
getting back into some exercise ... and trying to help your fatigue. [Lawrence (C)  
and Shirley (OT), Hospital].*

An additional strategy used when implementing the 'establishing trust' process, not identified in the framework, was observed in 40 (62%) of the audio-recorded sessions. This strategy was labelled 'social connection' and appeared as general chit-chat or laughter during goal setting. This demonstrated to clients that the practitioner could relate to what the person was saying at a social level:

C: *My brother in law was a salesmen and you know... I love him ... but he's a great salesmen*

OT: *[Laughs] I know the type*

[Sean (C) and Genevieve (OT), Hospital].

Analysis also revealed new insights about six of the strategies identified in the original framework, which included ‘areas of need’, ‘strategy choice’, ‘medical boundaries’, ‘listening’, ‘progress feedback’ and ‘structured communication’. In the audio-recordings ‘areas of need’ appeared to encompass asking about changes in participation and was relabelled ‘exploring changes in participation’:

T: *Have you noticed any change in your ability to um, prepare the meals. Are you doing it within the same timeframe.*

C: *Yeah, things are slower because of the cutting*

[Max (C) and Peta (OT), Hospital]

With regards to ‘strategy choice’, as well as presenting potential intervention strategies to target an identified rehabilitation need, the strategy was also noted to encompass practitioners asking about current strategy use. This strategy was therefore relabelled ‘exploring strategies’:

OT: *What do you use to write down to do lists for a job or shopping lists*

C: *Um, if I'm writing a shopping list I'm just using a*

OT: *Hmm mmm*

C: *A little lined paper*

OT: *Any other strategies that you're finding are helpful at home*

[Mary (C) and Charlotte (OT), Hospital].

‘Medical boundaries’ was the third strategy which was expanded. This strategy also encompassed practitioners talking about their discipline-specific expertise and collaborating with other team members when their discipline could not address a client’s rehabilitation need.

Therefore, this strategy was relabelled ‘explaining scope of expertise’:

*OT: So one thing about that physical issue that we'll speak to the physio about and I've made it as I said earlier that we've made it a priority*

*C: yeah*

*OT: It might be that you would benefit from a good overhaul, you know your physical assessment, but we'll leave that to the physio*

[Sally (C) and Clare (OT), Hospital].

New light was shed on the strategy of 'listening'. In the audio-recorded sessions listening included reflective listening, when practitioners repeated back, summarised or used questions to clarify what the client had said. Practitioners also demonstrated that they were listening to clients through utterances and single words:

*C: And then everything starts falling apart*

*OT: Mmmhmm*

*C: Because suddenly someone is knocking on the door*

*OT: Mmm*

*C: And I don't know they're coming over*

*OT: Yeah*

*C: And then I will be terrible because I don't, not ready and*

*OT: Okay*

*C: I, yeah, organising me is extremely important*

*OT: Okay, so it's pretty important*

[Michael (C) and Christine (OT), Private].

A greater understanding of the 'progress feedback' process was obtained. In 19 sessions (29%), practitioners initiated 'progress feedback' during the intervention phase by measuring current performance and satisfaction with the identified goal area by using the COPM. This compared with the COPM being used during 6 sessions (9%) during the needs identification phase.

‘Structured communication’ was the final strategy in which the data provided new insight about strategy use. Across all sessions practitioners structured their communication to enable clients to self-reflect and actively participate in goal setting, by scaffolding verbal statements or questions using information about the goal setting process or information they had already gathered about the client. Scaffolding involved the presentation or modification of verbal information, to ensure that the concepts being discussed were concrete rather than abstract. In the following excerpt the practitioner initially uses a direct question to elicit language and cognition goals but when the client is unable to answer, the practitioner re-frames the question to make it concrete for the client:

*SP: You're into your next semester now, have you given any thought to language or cognition goals that relate to you achieving*

*C: Again, I don't know. Again, this is my first injury, so*

*SP: Have you noticed any ongoing difficulties I guess with your thinking or your communication that relate to your, to your uni experience*

*C: Well there is always little things*

*SP: Mmm*

*C: like there is looking for a particular word*

*SP: Hmm mm*

*C: and I won't know it but I can talk around it*

[Tim (C) and Maureen (SP), Private]

## **8.5 Discussion**

Fundamental to occupational therapy practice is the engagement of clients in goal setting to develop goals that are personally meaningful and relevant, but this may be more challenging with clients

with ABI. We investigated the application of a theoretical framework to routine practice by examining goal setting discussions between clients and rehabilitation practitioners from multiple disciplines, who used a highly client-centred goal setting approach. The framework described the processes observed and provided a greater understanding of the goal setting strategies which may be used in practice to support client involvement in goal setting. Overall, this study confirms that goal setting practice may be improved by using the strategies identified in the framework, whilst using the C-COGS and COPM to allow the importance of goals to be assessed and measured.

Goal setting in occupational therapy is necessarily an individualised process to reflect the personally meaningful occupations of clients (Law et al., 1998; Sumsion, 2000). Individualisation of goals also occurs in ABI rehabilitation, to accommodate the complex and heterogeneous rehabilitation needs of clients with ABI (Lloyd et al., 2014; Prescott et al., 2015; Scobbie et al., 2015). Despite tailoring goals to meet individual needs in practice, the findings confirm that inherent goal setting processes exist and that practitioners commonly use similar strategies to engage people with ABI in goal setting. Others have identified the need to specify the core content of goal setting within rehabilitation (Scobbie & Dixon, 2015), and called for the strategies which facilitate client involvement in goal setting to be articulated (Playford et al., 2009). Our framework provides preliminary evidence about the core processes and strategies which may be used to guide goal setting practice with people with ABI.

A client-centred philosophy underpins all aspects of occupational therapy practice and findings support this. The strategies that were commonly used in occupational therapy were strategies with a strong client-centredness. For example, the ‘global goal area valuing’ is about respecting the client’s values (Sumsion, 2000), ‘exploring strategies’ provides ‘a clear determination of who the client is’ (Sumsion, 2000), p. 308) and offers the client choice, and the ‘monitoring’ strategy is the continued implementation of a client-centred philosophy, by recognising that a person’s perspective may change with time. Interestingly, physiotherapists used the ‘being client-centred’ strategy more frequently reflecting that client-centred goal setting is a

core requirement in physiotherapy practice (Mudge, Stretton, & Kayes, 2014) and that with experience, physiotherapists focus on client empowerment (Lloyd et al., 2014). As therapists in the current study were highly experienced, a client-centred orientation may have reflected this. The speech pathologists employed the “collaboration/partnership” strategy to the same extent as other disciplines, adopted the “client-centred” strategy in approximately 50 percent of sessions, but also used the ‘global goal area valuing’ and ‘monitoring’ strategies. These findings provide evidence that all disciplines value client-centred goal setting in their practice but may use different strategies to implement this philosophy in practice.

A key aspect of refining the framework is that the ‘establishing trust’ process was interwoven throughout all phases of goal setting. Practitioners from all disciplines appeared to employ common strategies to establishing trust, including collaboration, listening and providing education. This supports previous findings that collaboration and listening are crucial strategies to enhance client engagement in goal setting (Bright et al., 2012; Hunt, Le Dorze, Polatajko, et al., 2015). The provision of education was highlighted as another important strategy to establish trust. This strategy equips clients with the information required to participate as equal partners in goal setting (Cott, 2004; Prescott et al., 2017), and when incorporated in goal setting has been shown to result in greater client satisfaction with the goal setting process (Holliday, Ballinger, et al., 2007). Interestingly, the only strategy used for ‘establishing trust’ that was not identified in the framework with practitioner interview, and only identified through direct observation of practice, was ‘social connection’. This may mean that this strategy is largely intuitive and not articulated by practitioners (Law, 2002), or perhaps not regarded as a goal setting process by practitioners when reflecting on their practice. However, social connection appears to be a key part of establishing trust. As ‘establishing trust’ appears to be a central process when setting client-centred goals, practitioners working in similar settings may benefit from prioritising efforts to establish trust with clients.



Compared with other goal setting frameworks which have been developed for use with community dwelling clients with stroke (Scobbie, McLean, Dixon, Duncan, & Wyke, 2013), our framework has specified a range of strategies which may be used to engage clients with cognitive and communication impairment in client-centred goal setting. Additional strategies are required to support these clients due to challenges with expressing their rehabilitation needs and negotiating achievable goals (Doig et al., 2009; Van De Weyer et al., 2010; Worrall et al., 2011). The practitioners used multiple strategies including, structured communication throughout all phases of the goal setting process as well as metacognitive strategies in the goal operationalisation phase. The metacognitive strategies included ‘establishing the steps to long-term goals’, ‘establishing impairment activity link’, ‘providing feedback’ and ‘link to therapy’.

The COPM was predominantly used during the intervention phase in occupational therapy to facilitate the ‘progress feedback’ strategy. Theories of human behaviour which explain the use of goal setting in rehabilitation, identify that feedback about performance in relation to goal achievement is an important strategy to motivate clients (Locke & Latham, 2013). Furthermore, appraisal and feedback have been identified as necessary components of goal setting in community-based stroke rehabilitation (Scobbie & Dixon, 2015). The provision of feedback is particularly important in ABI rehabilitation, because clients with ABI often need support to monitor their progress in relation to the goal due to impaired cognitive functioning (Prescott et al., 2017). Therefore, occupational therapists working in ABI rehabilitation may consider implementing ‘progress feedback’ as a standard practice, with use of the COPM or other tools which may facilitate this.

Practitioners are unlikely to work in ideal client-centred environments because of contextual factors which influence the implementation of client-centred goal setting in practice (Plant et al., 2016; Prescott et al., 2017). Previous studies have highlighted that contextual barriers in an acute setting resulted in goals that were focused on discharge priorities (D’Cruz et al., 2016; Levack et al., 2011; Plant et al., 2016), whilst in other community-based studies organisational priorities

precluded the development of client-centred goals (Hunt, Le Dorze, Trentham, et al., 2015). Service settings and funding frameworks can shape how intervention is delivered, such that goal setting processes could be designed around the services and disciplines and not the person with brain injury. Specifically, the rehabilitation team structure may influence client-centred goal setting. For example, inter-disciplinary teams enhance client-centred goal setting as clients are empowered to set goals which are the central focus of rehabilitation (Jessup, 2007). In this study, goals were set within a multi-disciplinary team structure (i.e., discipline-specific goal setting) and the goals were rated as highly important and meaningful by clients. Perhaps, practitioners should adapt goal setting processes and work with their organisations to adapt as many processes as possible to actively support the needs of the clients they are working with.

Finally, several limitations need to be considered. The qualitative findings are applicable only to the clients and practitioners who participated in this study. The client participants were relatively young and highly educated, meaning that clients drawn from older age groups with lower levels of education may need to be engaged in goal setting using different processes and strategies. Practitioners were also highly experienced which may mean that findings cannot be generalised to practitioners with lower levels of experience. However, use of a mixed methods approach to observe routine practice has been a useful way to understand the core processes and strategies used to engage clients with ABI in client-centred goal setting.

The framework is also limited as it has been developed and refined without examining client perceptions of the framework. Only standardised questionnaires were used to measure client perception of their involvement in the goal setting process and the client-centredness of their goals. Additional qualitative exploration of client and significant other perceptions about the processes and strategies identified by the framework would be beneficial. Furthermore, the framework was originally developed with 13 of the therapists from whom the audio-recordings were collected highlighting that further validation of the framework is required in a different sample of therapist participants.

Some of the strategies appeared infrequently in the audio-recordings. For example, ‘sensitivity to family dynamics’, ‘multi-disciplinary team knowledge’, ‘clinical prioritisation’ and ‘family support’ appeared in less than five percent of sessions, as well as the ‘allowing time’ process and associated strategies. The physiotherapy and speech pathology sessions were generally shorter with fewer strategies identified in the audio-recordings making it difficult to interpret the results for individual disciplines. A possible explanation for this is that practitioners may not have audio-recorded all of the goal setting discussions, meaning that the data may only represent a portion of the goal setting process that was implemented.

The low frequency of occurrence of the ‘allowing time’ process may have reflected this, because this process refers to clients who need additional time to develop a new sense of identity due to feeling overwhelmed by their brain injury and practitioners may have been less likely to record these sessions. It may also be due to the small sample size or that their inclusion in the framework was not supported. Alternatively, some of the strategies may not have been verbalised, but rather they form part of the practitioner’s internal thought processes. For example, in one case the ABI was caused by domestic violence. In this case, the practitioner may have been sensitive to family dynamics by avoiding discussions about the family. Despite this, the low frequency of occurrence of some of the strategies and the small sample size highlights the need for further validation of the framework with a larger sample of participants. Future research is required to determine the applicability of the framework across a range of ABI rehabilitation services and settings, particularly those using an inter-disciplinary team model.

As the data were audio-recordings, the contribution that non-verbal communication made to the interaction was not captured. As the practitioners were aware that they were being audio-recorded they might have exhibited their best goal setting behaviour which may have been different to everyday practice. Moreover, the use of a framework analysis approach employed thematic content analysis techniques and therefore did not examine the conversational interaction of the communication exchange during goal setting. Analysis of the data using conversational analysis

techniques would provide further insight into how the conversational interaction may support client engagement in goal setting, for example with the use of exchange structure analysis (Sim et al., 2013). Finally, the relationship between practitioner experience and development of client-centred goals needs further investigation.

In summary, this study has used qualitative observation of clinical practice as well as quantitative methods, to provide preliminary evidence about the core goal setting processes, as well as refine and identify new strategies which may be used to engage clients with ABI in goal setting. Therefore, the framework may be a useful tool to guide client-centred goal setting in ABI rehabilitation.

### **8.5.1 Key Points for Occupational Therapy**

- The framework describes the strategies which may be used to identify the important and meaningful goals of people with ABI
- Feedback on goal setting and progress is important and may be enhanced with use of standardised measures
- Occupational therapists may use the findings from this study and the framework to review their own goal setting practice

## **Chapter 9 Thesis Discussion and Conclusion**

The achievement of a life goal requires an understanding of the final destination, as well as a plan to navigate the journey to the destination. However, the experience of brain injury typically results in an impaired ability to make a plan to reach a destination or to even know what life goals are possible. The use of client-centred goal setting in rehabilitation is a way that therapists may assist clients to re-discover life goals and to make plans to reach them. This thesis contributes an understanding of how this may be implemented in practice by providing practical strategies to enhance client-centred goal setting with clients with ABI.

This final chapter provides a summary of the thesis findings in relation to the thesis aims and presents a synthesis and discussion of the key findings. Given that the clinical implications of individual studies have been highlighted in previous chapters, this chapter presents a summary of the overarching clinical implications. Finally, the limitations to the thesis and future research recommendations are discussed, as well as a conclusion to the thesis.

### **9.1 Summary of Findings in Relation to Thesis Aims**

The aims of this thesis were developed within the current rehabilitation context in Australia which reflects a trend towards the delivery of services within community settings. In the community, rehabilitation professionals place more emphasis on the use of rehabilitation goals that are client-centred compared to the inpatient setting where goals typically focus on discharge priorities. Many factors may make it difficult to ensure that goal setting is client-centred, particularly with people with severe brain injury who may have significant cognitive and communication impairments. The focus of most existing research is on inpatients and there is limited investigation of client-centred goal setting with adults in the working age range. Consequently, there was a need for research to guide goal setting practices for younger adults in the community phase of rehabilitation, a time when arguably it is of paramount importance to set rehabilitation goals which address the real-life

problems being experienced by individuals as they integrate back into community living.

Therefore, the overarching purpose of this thesis was to examine the nature and process of client-centred goal setting in the rehabilitation of community dwelling clients with ABI in the working age range. The thesis consists of a series of studies addressing the following aims:

1. To understand the goal setting approaches used in research with clients with ABI, and to understand the principles that underpin goal setting practice as described in the literature.
  
2. To contribute to the development of a standardised measure of client-centred goal setting by determining the reliability of the C-COGS.
  
3. To examine current goal setting practices employed with clients with ABI in community-based rehabilitation settings by:
  - a. Describing client's perceived level of engagement in goal setting and meaningfulness and importance of goals;
  - b. Documenting the content, characteristics and client's recall of their goals; and
  - c. Summarising the level of goal achievement.
  
4. To investigate the relationship between client-centred goal setting and goal achievement.
  
5. To investigate the influence of identified barriers and facilitators on client-centred goal setting by:

- a. Examining the relationship between perceived client-centredness of goals and level of self-awareness, motivation and therapeutic alliance; and
- b. Exploring therapists' perceptions of how self-awareness, motivation and the therapeutic alliance impact on client-centred goal setting.

6. To examine the strategies and processes used by therapists to implement client-centred goal setting in community-based ABI rehabilitation by:

- a. Exploring therapist's experiences and opinions about the implementation of goal setting in clinical practice; and
- b. Examining the strategies used to facilitate the inclusion of clients with ABI in goal setting in routine clinical practice.

7. To investigate therapists' perceptions regarding the implementation of client-centred goal setting across the different contexts of outpatient hospital, community, private and public sectors.

The first aim of the thesis, to understand the goal setting approaches described in the literature with clients with ABI in the working age range, was addressed using a scoping review. The findings described in Chapter 2 highlighted that studies have largely focused on the investigation of formal goal setting approaches, with the GAS and the COPM being the most commonly used. The scoping review showed that there is a disparity between goal setting approaches described in research reports and those used in clinical practice. The review highlighted that in clinical practice (i.e., studies which examined usual practice such as qualitative studies e.g., Parry, 2004; Van De Weyer et al., 2010), informal goal setting approaches are largely used. Informal goal setting approaches tend to be used due to the varied needs and presentations of clients with ABI, as well as the difficulties associated with the implementation of formal tools due to

service-related barriers. For example, when investigating the implementation of a formal goal setting approach, IOG, Ylvisaker and colleagues (2008) identified that clients' cognitive impairment and therapist attitudes were barriers. Overall, the findings of the scoping review highlighted the need for further investigation of informal goal setting approaches in routine clinical practice.

The scoping review also identified a number of principles that underpin the goal setting approaches used with clients with ABI using a systematic qualitative content analysis. Previous reviews in related areas of goal setting with clients with stroke found that reliable conclusions could not be drawn because of the low quality of evidence available (Rosewilliam et al., 2011; Sugavanam et al., 2013). By contrast the studies included in the scoping review related to people with ABI who were in the working age range. The principles extracted from these studies may be used to guide practice with this client group as they represent evidence about how goal setting is currently provided. The principles of 'client-centredness' and 'collaboration' were identified as the most common goal setting approaches used in all studies. As client-centredness and collaboration appear to be necessary components of goal setting in research studies, the need for a psychometrically sound measure of the level of client-centredness of the goal setting process, as well as the client-centredness of the actual goals, was evident.

Thus, the second research aim was to examine the internal consistency and test-retest reliability of the C-COGS, a questionnaire which measures both client-perceived involvement in the goal setting process as well as the importance, meaning and relevance of the resultant goal statements. This aim was addressed in Chapter 4, which presents the findings of a study establishing the internal consistency and test-retest reliability of the C-COGS. The investigation of internal consistency resulted in revision of items included in scoring the C-COGS. The test-retest reliability study indicated consistent ratings across the time points examined, even though the test-retest interval was up to 35 days for some participants, with an average of 6.5 days. Another



questionnaire, the Goal Engagement Scale, has been designed to measure engagement in the goal setting process (Turner-Stokes, Rose, et al., 2015). When using this scale, therapists rate client engagement in goal setting using a six point visual analogue scale (Turner-Stokes, Rose, et al., 2015). A score of zero indicates that the client is unable to engage in goal setting, whereas a score of five represents excellent engagement. Unfortunately, this questionnaire was not available at the time of commencing this study. However a potential limitation is that it measures engagement from the rehabilitation team's perspective based on therapist judgements of how much support is required to enable client participation in goal setting (Turner-Stokes, Rose, et al., 2015). In contrast, the C-COGS considers level of client-centredness of goal setting from the client's perspective, which may be considered a more valid means of measuring client engagement. The evaluation of client perspectives about goal setting allows therapists to understand whether they have sufficiently supported clients with ABI to be actively involved in the goal setting process and to reflect about how much they have listened to and understood clients' views about their goals. Critical thinking and reflection about client feedback such as that provided by the C-COGS may help therapists to embed a client-centred rehabilitation philosophy in practice (Taylor, 2010).

The C-COGS was then used to examine the client-centredness of goal setting in the context of routine clinical practice. The relationship between the client-centredness of goal setting and goal outcome was investigated in Chapter 5 and the findings highlighted that goal setting was perceived to be highly client-centred in the cohort of 44 participants with ABI included in this study. Furthermore, higher levels of client-centredness of goal setting were associated with better goal outcomes, which is consistent with previous findings (Ownsworth et al., 2008; Turner-Stokes, Rose, et al., 2015; Webb & Glueckauf, 1994). Previous reviews in this area have concluded that there has only been low quality evidence to support the use of goal setting to improve outcomes (Levack, Weatherall, et al., 2015; Rosewilliam et al., 2011; Sugavanam et al., 2013). This study provides additional evidence of the value of using a client-centred goal setting approach for achieving better goal outcomes. It therefore contributes to the emerging body of evidence for using client-centred

goal setting in practice, an approach which has largely been implemented based on philosophical and anecdotal evidence to date.

The findings from this study also suggest that the C-COGS provides a more comprehensive measure of client-centredness of goals, compared to single measures of goal importance (e.g., goal importance ratings using the COPM). Instead of using a single question to evaluate the client-centredness of goals, the C-COGS incorporates six questions to measure the extent to which clients feel they have been involved in the goal setting process. It also includes four questions to evaluate the importance, meaningfulness, relevance and ownership of the goals that are set. Given the multi-dimensional nature of client-centred goal setting, it makes sense that a comprehensive measure is required to adequately capture client-perceived levels of client-centredness of goal setting in practice. Another interesting finding from this study was that there were no significant differences in goal recall between highly client-centred goals and those perceived to be less client-centred. Approximately 40% of highly client-centred goals were not able to be recalled. This suggests that, prior to goal setting, it may be beneficial to gather information about a client's level of cognitive function to gauge whether he or she may benefit from additional strategies to support goal recall. These strategies may include the use of frequent text messaging between rehabilitation sessions to reinforce the goals that have been set (Culley & Evans, 2010).

In addition to goal recall, Chapter 5 also encompassed an examination of the content and characteristics of goal statements in this cohort of clients with ABI. Previous research about goal statement writing has recommended that goals should address the SMART goal criteria, include the client's name, use everyday language and should be ordered using frameworks such as the ICF (Barnes & Ward, 2000; NSW Agency for Clinical Innovation, 2014; Schut & Stam, 1994; Wade, 2009). The results showed that perceived levels of client-centredness of goals did not differ according to the characteristics, content and recall of goals, with the exception of the 'specific' goal criteria. Specific goal statements were perceived to be significantly less client-centred than those

that did not meet this criteria. This finding suggests that in practice therapists should consider who the goal statement is being written for, as the importance and personal meaningfulness of goals may be lost when goal statements are too specific. Interestingly, use of the other goal criteria, for example whether the goal is measurable or includes a time frame, does not appear to detract from the importance of goals to clients. Although goals are typically documented for service evaluation purposes (Levack, Dean, McPherson, et al., 2006; Wade, 2009), this study suggests that general goal statements may better represent the essence of what is important and meaningful to clients. Furthermore, the findings suggest that if text messaging is used as a strategy to enhance goal recall, the content of the text message may only need to capture the general area of the client's goal. The therapists in the study did not receive any instruction about who the goal statements were to be written for, meaning that the significant findings about goal specificity may not have been obtained if therapists were instructed to write the goal statements for clients. However, the therapists were aware that the goal statements would be used by the researchers to administer the C-COGS Goals sub-scale questions and the COPM importance question to client participants.

Another aim of this thesis was to investigate the extent to which identified barriers impact on client-centred goal setting. One identified barrier to participation in client-centred goal setting is impaired self-awareness (Bouwens et al., 2009; Doig et al., 2009; Hale, 2010). Additionally, the need to examine another sub-group of clients with changes in self-awareness has been identified, namely those clients who are "hyperaware" or overestimate their impairments (Smeets et al., 2014; Smeets et al., 2017). Clients with hyper-awareness appear to have lower mood levels compared to clients with impaired self-awareness and accurate awareness, which may result in reduced engagement in rehabilitation (Smeets et al., 2014; Smeets et al., 2017). Therefore, Chapter 6 presented a study of the effect of changes in self-awareness on goal engagement and goal outcome. The findings provide evidence that clients with changes in self-awareness were engaged in client-centred goal setting to a similar extent as clients with accurate awareness and were able to achieve clinically significant goal outcomes. This contrasts with previous qualitative studies which found

that self-awareness impairment is a barrier to participation in goal setting (Bouwens et al., 2009; Doig et al., 2009; Hale, 2010). Across the three self-awareness groups (hyper-awareness, accurate awareness and impaired self-awareness), there were no significant differences in goal outcomes and all groups reported a strong therapeutic alliance with therapists. Possibly, the establishment of a strong therapeutic alliance enabled the setting of client-centred goals with clients with changes in self-awareness. The need to understand how therapeutic alliance impacts on outcome has been identified in a previous study (Schonberger, Hulme, & Teasdale, 2006b). By developing a strong alliance with clients, therapists may support clients with impaired self-awareness to discover personally meaningful and important activities. This may help clients to feel understood and actively involved in the goal setting process despite their impairments. Whereas, for clients who are hyperaware, therapists may validate their heightened experience of ABI impairments, whilst supporting them to feel that the achievement of goals after brain injury is possible. It should be noted however, that the cohort of 12 impaired self-awareness participants in this study included only two participants with severe impairment of self-awareness. This may reflect the stage of rehabilitation, in which clients living in the community are exposed to greater opportunities to learn about their post-injury limitations and strengths through experiential feedback and as a result, start to develop better self-awareness. It is also possible that the impaired self-awareness group did not have a severe enough level of impairment of self-awareness to detect statistically significant differences from the other groups.

Another factor known to influence rehabilitation engagement after brain injury is motivation for rehabilitation, where lower levels of motivation are associated with reduced engagement (Oddy et al., 2008). In particular, clients with impaired self-awareness may have difficulty identifying the need for treatment, which not only reduces motivation for rehabilitation, but makes realistic goal setting challenging (Fleming & Strong, 1995). Chapter 6 therefore also examined motivation across the three self-awareness groups. There were no significant differences found, although there was a trend towards lower levels of motivation in the impaired self-awareness group and higher levels of

motivation in the hyper-aware group. Furthermore, no significant differences were detected in terms of total number of words spoken by the client or time taken to set goals, with both of these measures chosen as proxy measures of client engagement in goal setting. Significant differences may have been detected with a larger sample size. However, on average the clients with impaired self-awareness spoke for only 28% of the total goal setting time, indicating that therapists provided increased verbal direction to actively engage these clients. This contrasts with the hyper-aware group who talked for 38% of the time, suggesting that the therapists may have supported clients who were hyper-aware to talk more. The therapists generally took longer to set goals with the impaired-self-awareness (Mdn=125 minutes) and hyper-awareness groups (Mdn=118.8 minutes), compared with the accurate awareness group (Mdn=77.5 minutes). These findings suggest that the therapists skilfully adapted goal setting discussions to support underlying impairments. For example, by allowing clients with hyper-awareness to talk more, an opportunity was provided to explore their brain injury experiences which may have reduced levels of emotional distress for these clients. Time availability and therapist skills have been identified as factors which contribute to goal setting success (Playford et al., 2009). The findings in this study provide further evidence that goal setting engagement is enhanced when therapists skilfully adapt goal setting discussions by understanding and supporting underlying impairments.

While Chapter 6 examined known barriers of client-centred goal setting using quantitative methods, Chapter 7 extended upon this using qualitative exploration of the factors that influence goal setting in practice by interviewing therapists. The findings indicate that the goal setting process may be influenced by contextual factors, including environmental and personal influences. The personal and environmental contextual influences are related to both the client and therapist and may affect the development of therapeutic alliance. Client personal factors include pre-morbid goal setting use, having valued roles, personal beliefs and drug and alcohol dependency. Therapist personal factors encompass beliefs regarding client-centred intervention, knowledge of brain injury and experience of goal setting. The environmental factors that influence clients are related to their

family situations, as well as the source of funding for their rehabilitation. The environmental factors impacting on the therapist are associated with the service in which the goal setting is implemented, for example the rehabilitation team structure, the delivery of therapy in a naturalistic or non-naturalistic setting, as well as the time available to complete goal setting. Previous studies have also identified a range of ABI impairments, environmental and service-related factors which may influence goal setting in practice (for example, Doig et al., 2009; Hunt, Le Dorze, Trentham, et al., 2015; Levack et al., 2009; Sander et al., 2012; Van De Weyer et al., 2010). This study illustrates the personal and environmental factors that may influence client-centred goal setting and establishes that therapists need to be mindful of these factors in practice.

As identified in the scoping review, informal goal setting approaches are largely used in practice (Holliday et al., 2005; Leach et al., 2010; Scobbie et al., 2015). This highlighted the need for a framework to guide the implementation of goal setting with community dwelling clients with ABI, in addition to the practice principles drawn from previous research. Chapter 7 presents the Client-Centred Goal Setting Practice Framework which was developed by interviewing 22 therapists, drawn from multiple disciplines. The framework describes the processes and strategies that therapists use to actively engage clients in goal setting discussions, so that intervention can be tailored to meet client-identified rehabilitation needs. It encompasses three phases: a needs identification phase, a goal operationalisation phase, and an intervention phase. The three phases of the framework are represented by five broad processes. The initial needs identification phase incorporates the processes of ‘establishing trust’ and ‘identifying the person’s needs’, which are considered synchronous processes within this phase. Next, the goal operationalisation phase includes ‘goal mapping’ or when rehabilitation needs are unable to be identified, clients are engaged in the ‘allowing time’ process. Lastly, the intervention phase is categorised by ‘active engagement’. Each of the processes of the framework are represented by properties which include the strategies that therapists use during each phase. For example, the final ‘active engagement’ process includes the strategies of goal clarity, monitoring, generalisation, family support and

progress feedback. Previous studies have specified some of these strategies which may be used with clients with ABI (Bergquist & Jacket, 1993; Doig et al., 2009; Hunt, Le Dorze, Polatajko, et al., 2015) and the framework extends on these by providing a comprehensive understanding of the client-centred goal setting process and strategies in ABI rehabilitation. It also illustrates how formal goal setting approaches are used as adjunctive tools in the context of a broader informal process.

The findings in Chapter 7 also highlight that strategies can be adapted to support clients with underlying issues, especially impaired self-awareness and psychological distress. Impaired self-awareness was singled out as a major factor which impacts on a client's ability to participate in goal setting. To support clients with impaired self-awareness, the 'goal mapping' process incorporates metacognitive strategies which include 'link to therapy', 'impairment-activity link' and 'providing feedback'. Therapists also identified that clients with psychological distress needed to be engaged using different strategies. These strategies are addressed by the 'allowing time' process and may involve referral to specialist psychological services, providing supportive contact, and engagement in meaningful occupation. A previous study found that motivation for rehabilitation after brain injury is influenced by both cognitive and psychological impairments (Oddy et al., 2008). This study confirms that in practice, motivation is enhanced by understanding and addressing underlying cognitive and psychological impairments to encourage active engagement in the goal setting process. Active engagement enables client-centred goals to be set, thus enhancing client motivation by focussing intervention on what is important and meaningful to the client.

To test the application of the framework in practice and to refine the strategies identified in the framework, further qualitative investigation using audio-recorded goal setting sessions was completed (see Chapter 8). The findings reinforced that 'establishing trust' or developing therapeutic alliance is a core process used throughout the entire goal setting process. The strategies that therapists commonly used to develop alliance included 'collaboration', 'listening' and

‘providing education’, which is consistent with findings in previous studies (Bright et al., 2012; Hunt, Le Dorze, Polatajko, et al., 2015). However, an additional strategy used to establish trust, not identified in previous research or by the original framework was ‘social connection’. Social connection was observed in 62% of sessions and represented instances where therapists attempted to relate to what the client had said at a social level (i.e., general chit-chat or laughing with the client to demonstrate that the therapist has related personally to what the client has said). The identification of this strategy reinforced that, when interviewed, therapists may not articulate all of the strategies that they use in practice as some aspects of clinical reasoning are intuitive (Law, 2002). A key aspect of refining the framework was that the ‘establishing trust’ process was interwoven throughout all phases of goal setting, confirming that it is a central process in client-centred goal setting.

Overall, the findings of Chapter 8 substantiate the findings in Chapter 7, by providing evidence that the framework reflects routine practice. They also confirm that even though goal setting is necessarily an individualised process with people with ABI, inherent goal setting processes exist and that therapists commonly use similar strategies to implement goal setting in practice. It also allows an enhanced understanding of how formal tools are used in practice. Formal goal setting tools were more commonly used to provide feedback about progress during the intervention phase, rather than being used in the needs identification phase. These findings suggest that goal setting practice may be enhanced with explicit knowledge about the core goal setting processes and strategies, as well as the way that formal tools can be used to enhance the overarching informal process.

Collectively, the findings of this thesis have established that client-centred goal setting is an approach that is of value with clients with ABI. Furthermore, clients with changes in self-awareness may be engaged in client-centred goal setting to achieve clinically significant goal outcomes, but clients with emotional distress may need additional time for new identity



development and adjustment. However, personal and environmental factors may influence the effectiveness and implementation of a client-centred goal setting process. These thesis findings have many implications for clinical practice and these are discussed in the next section.

## **9.2 Clinical Implications**

This thesis investigates goal setting in routine clinical practice, as opposed to a research context. As a result fundamental clinical questions have been answered about how to engage clients in goal setting in ABI rehabilitation making the findings directly relevant to everyday practice.

The results of the studies in this thesis illustrate that client-centred goal setting is a complex multi-stage process in ABI rehabilitation, and that there are a variety of principles and strategies on which therapists can draw. Consequently, it is recommended that therapists undergo training to understand how client-centred goal setting may be enhanced with clients with ABI. To this end, the results of the thesis have been translated into a training package which may be used in education or professional development with therapists who work in ABI rehabilitation. Figure 9.1 illustrates the core components of the training package. The core components are designed to provide explicit knowledge about the key findings of this thesis. The components include defining client-centred goal setting, outlining the practice principles, as well as education about implementing the processes and strategies identified by the Client-Centred Goal Setting Practice Framework. The final component of the training focuses on evaluating client-centred goal setting practice. Each of the components are discussed in detail below.

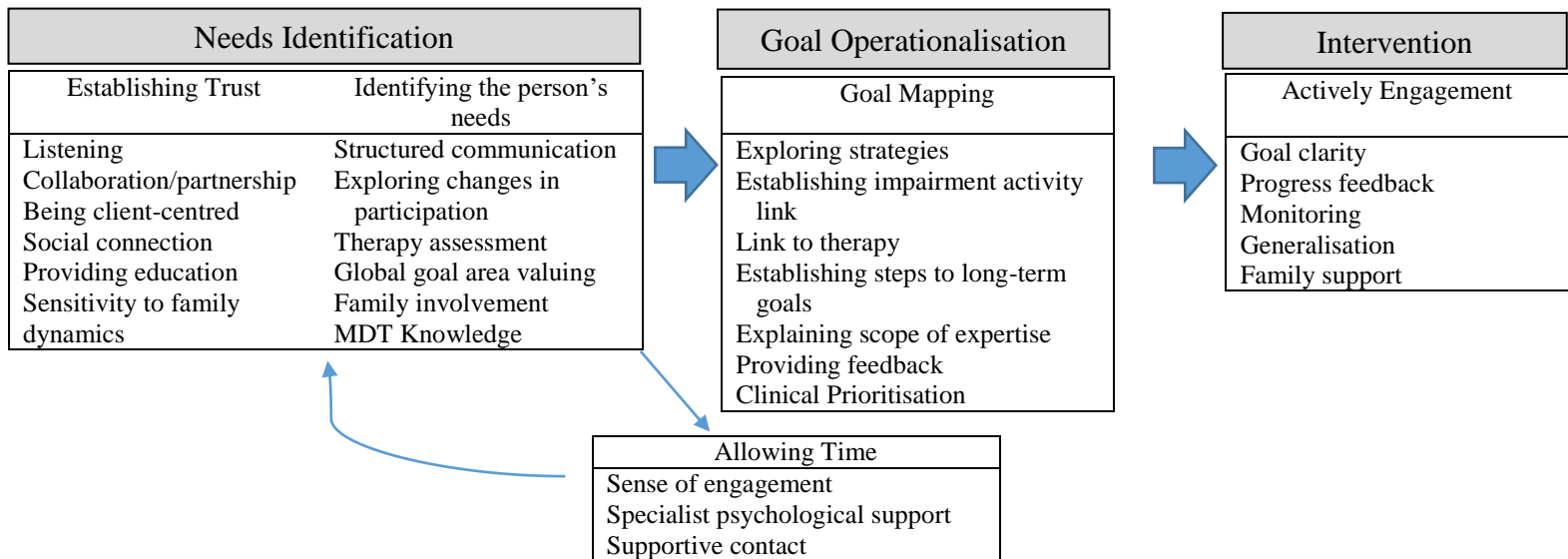
Definition

A client-centred goal setting approach focuses on eliciting goals that are relevant and important to the client. Goals are elicited using an informal process which involves actively engaging clients in goal setting discussions, so that intervention can be tailored to meet unique client-identified needs.

Practice Principles

Collaborative Client-Centred Measurable Realistic	Proximal goals Feasible Motivational Therapist-driven	Family Involvement Domain-specific Linked to therapy Education	Metacognitive Flexible Experiential Learning
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Processes and Strategies



Evaluation

The Client-Centred Goal Setting in Practice Questionnaire

Figure 9.1. The Training Package Components

### **9.2.1 Definition**

The first component of training explains the definition of client-centred goal setting and contrasts it with a definition of a formal goal setting approach. The definition for client-centred goal setting has been generated from the scoping review findings, as well as the findings in Chapters 7 and 8. Client-centred goal setting in ABI rehabilitation is defined as an approach which focuses on eliciting rehabilitation goals that are relevant and important to the client. Goals are elicited using an informal process which involves actively engaging clients in goal setting discussions, so that intervention can be tailored to meet unique client-identified needs. Clients with cognitive impairment and emotional distress are actively engaged in this process through skilful adaptation of strategies to support underlying impairments.

By contrast, a formal approach is defined as one that can be replicated in clinical practice, due to the availability of written standardised guidelines regarding the procedure of administration (see Chapter 2). It makes sense that in ABI rehabilitation, goal setting is an informal process to cater for the varied needs and contexts of clients. The definition provided in the training package is supported by Australian and UK surveys of goal setting practice, which confirm that an informal process is typically used in practice (Leach et al., 2010; Scobbie et al., 2015). As informal approaches are typically employed in practice, the need for practice principles has been established.

### **9.2.2 Practice principles**

The next component of training outlines the practice principles which have been generated from the scoping review (see Chapter 2). The practice principles may be used to guide the informal goal setting process and may be used by rehabilitation teams to reflect on their current goal setting practice. Specifically, the findings show that ‘client-centred’ and ‘collaboration’ are the most common principles employed in research. In contrast, a therapist-driven principle was derived from studies which compared traditional treatment conditions (e.g., ‘usual care’) with approaches that

aimed to foster higher levels of client-centredness (e.g., Dalton et al., 2012; Holliday, Cano, et al., 2007).

Along with discussing the importance of implementing the ‘client-centred’ and ‘collaboration’ principles, this component of training also explains how goal setting may be enhanced with use of additional principles. Examples of this include the principles which are designed to increase motivation to achieve goals and to develop independent goal directed behaviour. These principles include ‘motivational’, ‘metacognitive’, ‘education’, and ‘experiential learning’. The ‘metacognitive’ principle is closely aligned with the ‘linked to therapy’ and ‘proximal goals’ principles. ‘Education’ provides an opportunity for the client to understand the purpose of goal setting and the ‘linked to therapy’ principle establishes a clear link between therapy activities and goals. The ‘proximal goal’ principle refers to breaking goals down into a series of smaller steps, as well as developing an action plan to attain goals. This helps clients to monitor and understand progress made in goals. Overall, the metacognitive principles are designed to facilitate self-monitoring and self-management (Cicerone & Maestas, 2014).

### **9.2.3 Processes and strategies**

The next component of training details the processes and strategies identified by the Client-Centred Goal Setting Practice Framework (see Chapter 7 and 8). The content discussed during this component of training is presented in the context of the three goal setting phases identified in the framework. As per Figure 9.1, the phases are also represented by five processes including ‘establishing trust’, ‘identifying the person’s needs’, ‘goal mapping’, ‘allowing time’ and ‘active engagement’. This component of training also provides an understanding of how the practice principles may be implemented. It highlights the most relevant principles and illustrates how they are related to each of the phases (see Table 9.1). Discipline-specific differences as well as the way that personal and environmental factors influence this process are discussed. A summary of the

Table 9.1. The phases of client-centred goal setting and related principles

Phase	Related principle	Principle Definition
Needs Identification	Education	Education about goal setting provided (for example detailed written information re the purpose and process of goal setting)
	Family Involvement	Family members consulted in setting client goals
Goal Operationalisation	Realistic	Use of therapist expertise to set achievable goals taking into consideration individual client strengths and limitations
	Proximal Goals	Goals broken down into defined sub-goals (for example fortnightly short term goals)
	Motivational	Focus on increasing motivation and self-efficacy based on factors such as saliency of goals
	Domain Specific	Goals set within defined impairment or functional areas relevant to the service
	Linked to therapy	Establishment of a clear link between therapeutic intervention and goals set
	Metacognitive	Use of intervention techniques to enable the client to independently set goals and monitor progress in relation to goals
Intervention	Flexible	The ability to modify goals with changing client priorities/needs

content presented according to each goal setting phase is outlined below, with an explanation about how individual goal setting principles relate to each phase.

### **Needs Identification**

The first phase presented is the needs identification phase. ‘Establishing trust’ or building a therapeutic alliance is recommended as the first process to be prioritised, with continued use throughout the remaining goal setting phases. It is central to client-centred goal setting with clients with ABI and emerged as a factor which may help overcome other identified barriers. This was demonstrated by the finding that clients with impaired self-awareness could be engaged in goal setting to the same extent as clients with accurate self-awareness, when therapeutic alliance levels were high. The strategies to build therapeutic alliance include ‘listening’, ‘collaboration/partnership’, ‘being client-centred’, ‘social connection’, ‘providing education’ and ‘sensitivity to family dynamics’. The importance of building therapeutic alliance has been echoed in another study which highlighted that it is the core of effective rehabilitation (Schonberger, Hulme, & Teasdale, 2006a). Other studies have identified that the development of therapeutic alliance is best achieved when therapists focus less on the technical aspects of rehabilitation and focus more on ‘being with’ and valuing the client’s input during goal setting (Bright et al., 2012; Lloyd et al., 2014).

The second process explained in this phase is ‘identifying the person’s needs’. When implementing this process, therapists talk with clients about their important and meaningful activities in the context of their big picture life goals to identify what needs to be worked on in therapy. The strategies used when implementing this process are ‘structured communication’, ‘exploring changes in participation’, ‘therapy assessment’, ‘global goal area valuing’, ‘family involvement’ and ‘multi-disciplinary team knowledge’. The use of the ‘structured communication’ strategy during all phases of goal setting is highlighted, given the finding in Chapter 8 that it is used

in conjunction with all of the other strategies in the framework. Interestingly, ‘providing education’ was identified as a strategy which was linked to the ‘establishing trust’ process in Chapter 7. The principle of ‘education’ extracted in the scoping review highlights that it is also related to the ‘identifying the person’s needs’ process as it enables clients to understand the purpose of goal setting discussions (i.e., the reason for exploring changes in participation and talking about global goal areas). For some clients, the family may need to be involved to understand the client’s important and meaningful activities. This is reinforced by the ‘family involvement’ practice principle.

During this phase, therapists may use formal goal setting tools to assist with the identification of rehabilitation needs as well as the activities that are perceived to be important and meaningful for the client. They may also draw on information gathered from other assessments to understand the client with ABI. At this time, the client’s big picture life goals or global goal areas may be perceived by the therapist as unrealistic. However, it is important that these goals are valued and considered by the therapist to determine the rehabilitation needs of the client (i.e., global goal area valuing). An understanding of the client’s rehabilitation needs with reference to his or her personally meaningful activities is essential so that they may be engaged in the next, phase of goal operationalisation.

### **Goal operationalisation**

This is the phase when therapists use their expertise to operationalise the client’s rehabilitation goals, by employing the ‘goal mapping’ process. They support clients to understand how intervention may target identified rehabilitation needs and enable clients to actively participate in decision making about their rehabilitation activities. This phase is also represented by the ‘realistic’ principle as therapists skilfully employ strategies to involve the client in converting an identified rehabilitation need into an achievable therapy goal. Numerous strategies may be used during this

phase including ‘exploring strategies’, ‘establishing impairment activity link’, ‘link to therapy’, ‘establishing steps to long-term goals’, ‘explaining scope of expertise’, ‘providing feedback’ and ‘clinical prioritisation’. Goal setting principles that relate to this phase are closely aligned with the strategies. These principles include, ‘proximal goals’, ‘motivational’, ‘domain-specific’, ‘linked to therapy’ and ‘metacognitive’. For example, if a client identifies that the occupation of preparing meals for family is important, the therapist may draw upon the ‘linked to therapy’ principle to explain how upper limb rehabilitation activities relate to tasks such as using a knife. The strategies used in this phase are especially applicable for use with clients with impaired self-awareness. To engage these clients, therapists make an assessment about level of self-awareness based on information gathered prior to goal setting and during goal setting discussions.

However, some clients cannot be engaged in the goal operationalisation phase due to emotional distress or feeling overwhelmed by their brain injury. For these clients, the ‘allowing time’ process may need to be implemented. They benefit from being engaged in goal setting using alternative strategies, including ‘sense of engagement’, ‘specialist psychological support’ and ‘supportive contact’. The ‘sense of engagement’ strategy is about engaging clients in meaningful occupations which may require the inclusion of families in goal setting discussions to identify what is important and meaningful for the client. Referral to specialist psychological services may also be needed to develop a new sense of identity. As a new sense of self develops, re-referral to the rehabilitation service may also be required, whilst maintaining contact with the client in the interim period to continue to build therapeutic alliance (i.e., ‘supportive contact’).

## **Intervention**

The final phase to be detailed in the training is the intervention phase. This phase is indicated given the finding (see Chapter 7) that goal setting activities pervade all aspects of rehabilitation and extend into the intervention phase of rehabilitation. It is represented by the ‘active engagement’



process. Given the nature of cognitive impairment after ABI, clients benefit from strategies to provide ‘progress feedback’ about the achievement of goals during the intervention phase. Formal goal setting tools may need to be considered to provide this feedback. Therefore, the ‘metacognitive’ principle is also related to this phase. Furthermore, the ‘flexible’ principle is a representation of the ongoing monitoring of client needs during the intervention phase and is aligned with the ‘monitoring’ strategy. Other strategies in this phase include ‘goal clarity’, ‘generalisation’ and ‘family support’.

During this component of training discipline-specific differences and similarities are highlighted by discussing how goal setting was examined across disciplines, within the context of multi-disciplinary team structures. The only differences noted across studies were related to the frequency of strategy use. For example, in the goal operationalisation phase, occupational therapists typically used ‘strategy choice’ to actively engage clients. Whereas during the same phase, physiotherapists tended to prefer the ‘establishing steps to long-term goal strategy’. However, therapists from all disciplines used the core goal setting processes and identified that these were influenced by personal and environmental factors. This indicates that the framework is applicable to therapists who set goals within a multi-disciplinary team model, regardless of their discipline.

The findings in Chapter 7 also demonstrate that the informal goal setting process is influenced by personal and environmental factors. Moreover, Chapter 8 also confirmed that client-centred goals may be set despite these factors. Therefore goal setting may be enhanced with reflection about the therapist and client personal and environmental factors that may influence this process. The practical application of these findings will be discussed in the final component of training.

## Formal Goal Setting Measures and the Client-Centred Goal Setting Framework

This section of the training will conclude by highlighting how formal or standardised goal setting measures (e.g., the COPM) may be used in conjunction with the Client-Centred Goal Setting Practice Framework in practice. Figure 9.2. illustrates how the COPM was used in conjunction with the framework (see Chapter 8), mainly to implement the ‘progress feedback’ strategy during the intervention phase. Discussion during the training will focus on how these findings demonstrate that goal setting in practice is a much broader process than using a standardised goal setting measure on its own.

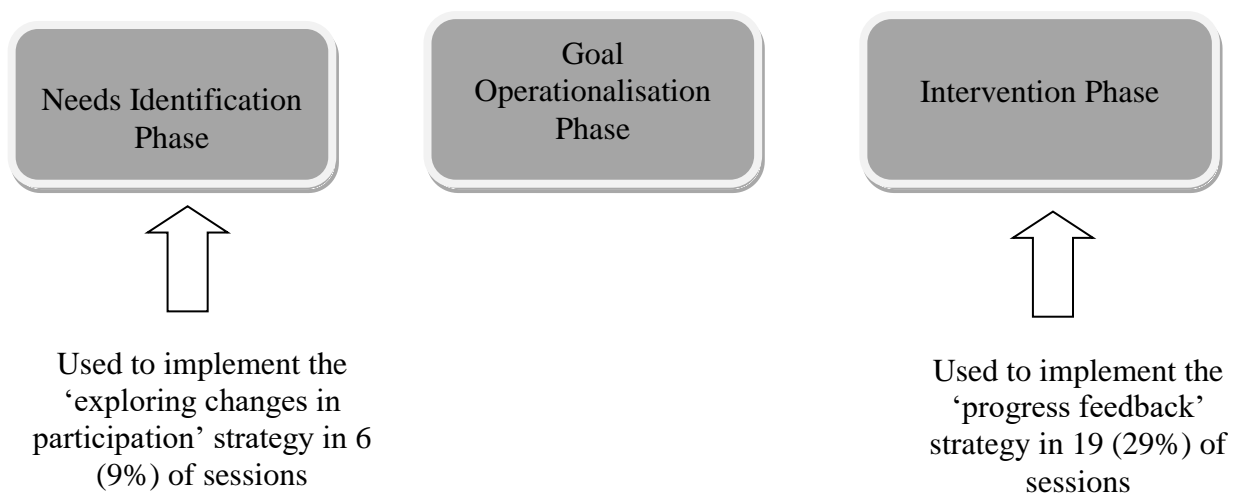


Figure 9.2. How the Client-Centred Goal Setting Practice Framework was used in conjunction with the COPM during a study to test the framework

### 9.2.4 Evaluation

The final component of training provides an overview of how therapists can evaluate their practice with the use of the ‘Client-Centred Goal Setting in Practice Questionnaire’. The questionnaire has been designed for therapists to reflect about whether the key findings of this thesis have been incorporated in practice. This questionnaire is shown in Appendix G and is appropriate for use by students and novice therapists, as well as experienced therapists. It incorporates 24 questions, which are grouped according to three time points in the goal setting process: prior to goal setting,

during goal setting and after goal setting. A summary of how training can incorporate the questionnaire in relation to these time points is outlined below.

### **Prior to Goal Setting**

The first question highlights the need to ask clients whether they want to be involved in a client-centred goal setting process. This question was indicated based on the findings of the scoping review, as well as Chapter 7 and Chapter 8 and is supported by expert group consensus (Playford et al., 2009). Lloyd et al. (2014) showed that therapist-directed goal setting approaches are preferred by some clients, particularly in the acute and sub-acute phases of ABI rehabilitation and in older stroke populations. However, regardless of age or stage of recovery, it is recommended that therapists gauge whether the client wants to be involved in client-centred goal setting prior to commencing a goal setting session.

Gathering information about the client's cognitive and communication impairment is also beneficial at this time (see Question 2 and 3). Questions 4 to 8 relate to the recommendation to reflect about therapist and client personal factors and environmental factors prior to goal setting, as they influence all aspects of goal setting. When background information is gathered about the client, and during initial goal setting discussions, there is a need to understand the personal and environmental factors which may influence client engagement in goal setting. After this, therapists should think about which of the strategies (see Table 8.4) may be used to reduce the influence of identified barriers. For example, if the client's family is identified as a potential barrier to participation in goal setting, the therapist should ensure that they are 'sensitive to family dynamics', whilst being mindful that the 'family involvement' strategy may not be as appropriate.

## Setting the Goals

This section of the questionnaire includes four separate sections: therapeutic alliance, structured communication, needs identification and goal operationalisation. The therapeutic alliance section is a single item that reinforces the need to strengthen alliance during all aspects of goal setting (see Question 9). Structured communication is also a separate section of the questionnaire (see Questions 10-12), as it appeared to represent the mechanism by which the other strategies and processes were used (i.e., was used at the same time as all other strategies identified in the framework). The questionnaire encourages therapists to think about using information that they have previously gathered about the client. It also recommends use of verbal statements or questions with concrete concepts, rather than using abstract ideas that clients are unlikely to understand. Therapists can gauge whether communication is structured sufficiently by actively listening to the verbal responses that clients give. For example, if the client is able to provide verbal responses to questions rather than speech utterances such as ‘um’, it is likely that the client is responding to this strategy. The questionnaire recommends audio-recording goal setting discussions with clients when the client cannot actively participate.

The ‘needs identification’ section of the questionnaire (see Questions 13 to 18) reinforces the strategies which may be used to elicit and understand the client’s rehabilitation needs in the context of their important and meaningful life activities. The final question in this section (i.e., Question 18) prompts therapists to consider whether the person appears overwhelmed by their brain injury and unable to identify any rehabilitation needs. The questionnaire outlines the strategies to support these clients. The ‘goal operationalisation’ section helps therapists to think about using the strategies to support clients to actively participate in the translation of identified rehabilitation needs into rehabilitation goals.

## **After Goal Setting**

After goal setting therapists are asked to consider how they document rehabilitation goals.

Specifically, Question 21 recommends that goal statements be written in broad terms (i.e., not be too specific), when rehabilitation goals are documented for the client. The next question (Question 22) helps therapists to think about whether other strategies to enhance goal recall are indicated (e.g., the use of text messaging between sessions or giving the client a copy of their goals). Therapists are also cued to administer the C-COGS after goals are documented to enhance goal setting practice (see Question 23).

Finally, the last two questions relate to the processes and strategies of the intervention phase. They encourage therapists to keep checking with clients about whether goals are still important in subsequent sessions. Therapists are also prompted to think about whether they are using strategies to provide feedback about their progress in relation to the goal, particularly with the use of a formal tool (e.g., the COPM).

## **9.3 Limitations and Future Research Directions**

This thesis employed multiple methods of enquiry to address the aims of the thesis. Therefore, the limitations of each particular study have been described in detail within each of the relevant thesis chapters. This section will discuss the main limitations of this thesis and highlight areas where future research is needed.

The methodological evaluation of both the quantitative studies using the OCEBM Levels of Evidence classification (OCEBM Levels of Evidence Working Group, 2011) and qualitative studies with the QES (Turner et al., 2008) in Chapter 2 was also limited and additional interpretation of these results is required. In relation to the quantitative evidence, other factors such as publication bias (i.e., an external source of bias), precision of the estimates of effect sizes, statistical

heterogeneity of findings across similar studies, and many other variables may contribute to the certainty of the conclusions from a review of quantitative studies. For example, Webb and Glueckauf's (1994) study was substantially under powered, with only 16 participants randomised to treatment control groups. This study had a 30 percent attrition rate of the study participants, leaving only 11 people contributing to the data reported in the study. Furthermore group allocation was not concealed during participant recruitment. In terms of the evaluation of the qualitative studies, it should also be noted that well conducted qualitative studies with high trustworthiness do not provide high quality evidence that the participant's opinions (or experiences) may be interpreted with a higher degree of certainty. This means that the qualitative evidence reviewed in Chapter 2 essentially provides evidence about how goal setting in rehabilitation is currently provided; not how it should be provided necessarily. Future systematic reviews about goal setting rehabilitation with ABI clients should account for these factors, including use of newly developed methods for evaluating qualitative studies (Harris et al., 2018; Noyes et al., 2018).

The quantitative findings in this study are drawn from a prospective cohort study. Therapist and client participants were aware of the aims of the study, as well as the intention of the study to measure goal outcomes at the twelve-week follow-up time point. Therefore, participants were not blinded to these factors. The use of a robust randomised controlled trial design would determine causal relationships, as well as control for the risk of bias (Levack, Dean, et al., 2015). However, given the exploratory nature of this thesis and the focus on evaluation of informal processes used in the context of routine clinical practice, a prospective cohort study design was chosen as the most suitable approach to answer the research questions. Another limitation of this study was that the only outcomes measured were goal outcomes. Measurement of other health outcomes such as functional ability, quality of life and social participation may provide a more comprehensive picture of the value of implementing a client-centred goal setting approach in practice (Levack, Dean, et al., 2015).

The C-COGS also appears to be a positively skewed measure of client-centredness, with high mean C-COGS scores obtained for the majority of participants indicating that the C-COGS may have a ceiling effect. However, high mean COPM importance scores were also obtained, which was the secondary measure of client-centredness. Therefore, this may indicate that the high C-COGS and COPM importance scores may reflect the highly client-centred goal setting processes used in the ABI rehabilitation services involved in this study. However, further testing of the C-COGS in larger populations is required to examine whether the C-COGS has a ceiling effect. Further validation of the C-COGS may be beneficial by comparing it with the Goal Engagement Scale (Turner-Stokes, Rose, et al., 2015). Additional development of the C-COGS is indicated with use of item response theory to develop a Rasch-transformed interval scale (De Ayala, 2009). The final quantitative limitation relates to the small sample sizes in Chapter 5 and Chapter 6. The findings of these studies provide preliminary evidence and need to be confirmed in future studies with larger samples of participants.

This study also employed qualitative methodologies, including grounded theory and framework analysis to develop, test and refine the goal setting practice framework. However, the Client-Centred Goal Setting Practice Framework may only be applicable to the services and private practices who participated in this study, where goals were typically set within a multi-disciplinary team structure rather than by an inter-disciplinary team. Further testing of the framework in community-based services using an inter-disciplinary rehabilitation model is needed. The clients who participated in this study were generally young with a diagnosis of TBI. Therefore, the results may not be applicable to clients who are older with different diagnoses. Older clients with ABI may need to be engaged in client-centred goal setting using alternative strategies. Furthermore, most participants were in the community re-integration phase of recovery rather than the long-term rehabilitation phase, and findings therefore may not be applicable to clients who are many years post injury. The application of the framework to older populations, in the long-term rehabilitation phase is therefore indicated. Qualitative investigation of the framework from client and significant

other perspectives would also be beneficial. For example, exploring client and significant other perceptions about the processes and strategies that have been identified by the framework is indicated. Finally, as this thesis has described the contextual barriers associated with client-centred goal setting, future research is required to understand the processes used in practice to address contextual barriers.

Clients with significant communication impairment such as severe aphasia were excluded from this study. The identified strategies therefore may not be relevant to this group of clients, especially the use of structured communication. Future research is required to understand whether the components of the model are applicable to clients with significant communication impairment. The therapist participants in this study were on average highly experienced and therefore the results may not be applicable to less experienced therapists. However, there was a wide range of years of experience, ranging from 1 to 34 years. This study was also limited as the ethnic background of participants was not considered. However, there were no Indigenous participants involved in this study perhaps reflecting the geographical region of the population sampled. Future research is required to examine the application of findings in indigenous populations.

As therapeutic alliance emerged as a central process of client-centred goal setting with this population of ABI participants, further qualitative exploration of the strategies to develop strong therapeutic alliance is indicated. For example, consideration of these strategies from the client's perspective by interviewing clients about their perceptions of how therapists could develop strong therapeutic alliance with them. It would also be beneficial to examine relationships between therapeutic alliance and other outcome variables, as this thesis was limited to an examination of goal outcomes. Furthermore, the relationship between the development of therapeutic alliance and therapists' experience requires investigation.

The audio-recordings of goal setting discussions were analysed thematically and quantitatively, including the total number of words spoken by the therapist. Further investigation of these data using conversational analysis techniques may provide additional insight into the way



therapists adapt their goal setting discussions to accommodate the individual needs of clients with brain injury. In particular, an examination of the audio-recordings of clients with and without changes in self-awareness would be beneficial. This was beyond the scope of this thesis given that the main aim of the thesis was to broadly examine the implementation of goal setting in practice, rather than an investigation of the process at a conversational level.

## **9.4 Conclusion**

This thesis aimed to investigate client-centred goal setting with community dwelling clients with ABI, a topic which has been scarcely investigated. Evidence has been established to support the implementation of client-centred goal setting in community-based ABI rehabilitation to achieve better goal outcomes. Additionally, the use of multiple methods of enquiry has confirmed that most community dwelling clients with ABI may be engaged in a client-centred goal setting process, to set achievable client-centred goals.

This thesis provides insight into how the client-centred goal setting process is implemented in routine clinical practice. The essence of the client-centred goal setting process is valuing and understanding the important and meaningful activities of clients in the context of their big picture life goals, which may change after brain injury. This understanding leads to the identification of rehabilitation needs, which therapists translate into rehabilitation goals by involving the client in decision making and helping them to understand how important and meaningful activities are translated into a rehabilitation goal. Given the nature of brain injury, therapists may need to work harder to actively engage the client in this process by skilfully adapting goal setting discussions to support underlying impairments. This requires increased strategy use and time to tailor interventions to meet the unique rehabilitation needs of each client. Because of the intricate nature of this process, it makes sense that client-centred goal setting is an informal and flexible process in

practice. The implementation of this process may be enhanced by understanding the core processes and strategies of client-centred goal setting.

Finally, by actively engaging clients in client-centred goal setting, rehabilitation therapists play a vital role in supporting clients with ABI to understand, formulate and translate existing and altered life goals into rehabilitation goals. Therefore, therapists are in a privileged position to assist with re-shaping and re-moulding an individual's life journey after brain injury. To maximise the enrichment of this life journey, research which explores client-centred goal setting from the perspectives of clients and significant others is necessary. This will provide a more complete understanding of how to best support clients to participate in the client-centred goal setting process after brain injury.

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# Appendix A

## Ethical Clearance Documentation

Metro South Health

Enquiries to: Metro South  
Human Research Ethics Committee  
Phone: 07 3443 8049  
Fax: 07 3443 8003  
HREC Ref: HREC/13/QPAH/496  
E-mail: [PAH\\_Ethics\\_Research@health.qld.gov.au](mailto:PAH_Ethics_Research@health.qld.gov.au)

Dr E Doig  
School of Health and Rehabilitation  
Sciences  
The University of Queensland  
St Lucia Qld 4072

Dear Dr Doig

**HREC Reference number: HREC/13/QPAH/496**

**Project Title: Goal planning in community-based rehabilitation settings - exploration of the process and relationship between client-centredness, contextual factors and outcomes.**

Thank you for submitting the above research protocol to the Metro South Human Research Ethics Committee for ethical and scientific review. This protocol was first considered by the Human Research Ethics Committee (HREC) at the meeting held on 3<sup>rd</sup> September 2013.

*You are reminded that this letter constitutes ethical approval only. You must not commence this research protocol at a site until separate authorisation from the Metro South Chief Executive or Delegate of that site has been obtained.*

*A copy of this approval must be submitted to the Research Governance Office(r)/Delegate of the relevant institution with a completed Site Specific Assessment (SSA) Form for authorisation from the Chief Executive or Delegate to conduct this research at the Princess Alexandra Hospital.*

I am pleased to advise that the HREC has granted approval of this research protocol. The documents reviewed and approved include:

Document	Version	Date
Cover letter		9 August 2013
NEAF		9 August 2013
Protocol	1	7 August 2013
PICF - Clinicians of participants with Acquired Brain Injury	2	11 September 2013
PICF - Clinicians of participants with Spinal Cord Injury	2	11 September 2013
PICF - Patients with Acquired Brain Injury	2	11 September 2013
PICF - Patients with Spinal Injury	2	11 September 2013
PICF - Significant Others of participants with Acquired Brain Injury	2	11 September 2013
PICF - Significant Others of participants with Spinal Cord Injury	2	11 September 2013

<p>Surveys/Questionnaires/Interview Schedule:</p> <ul style="list-style-type: none"> <li>o Therapist (working in acquired brain injury rehabilitation) Survey</li> <li>o Therapist (working in spinal injury rehabilitation) Survey</li> <li>o Client-Centredness of Goal Setting (C-COGS) Scale</li> <li>o Goal Rating Scale (patient version) to be completed after goal planning</li> <li>o Goal Rating Scale (patient version) to be completed at 3 month follow up</li> <li>o Goal Rating Scale (therapist version) to be completed after goal planning</li> <li>o Goal Rating Scale (therapist version) to be completed at 3 month follow up</li> <li>o The Helping Alliance Questionnaire (patient version)</li> <li>o Motivation for Traumatic Brain Injury Rehabilitation Questionnaire (MOT-Q)</li> <li>o Participant Information Sheet Template</li> <li>o Mayo-Portland Adaptability Inventory-4</li> <li>o Awareness Questionnaire Patient Form</li> <li>o Awareness Questionnaire Family/Significant Other Form</li> <li>o Awareness Questionnaire Clinician Form</li> <li>o Therapist Semi-structured Interview Schedule</li> </ul>		
Goal Planning Study Script (Translational Rehabilitation Program, Princess Alexandra Hospital)		
Goal Planning Study Script (Brain Rehabilitation Unit, Day Hospital)		
Letter of Offer of Grant		7 May 2013
UQ HREC Approval		19 March 2013
UQ HREC Amendment Approval		23 April 2013
Letter of Response to HREC Comments		18 September 2013
NEAF sign-off page with signatures		

Please note the following conditions of approval:

1. The Principal Investigator will immediately report anything which might warrant review of ethical approval of the protocol in the specified format, including unforeseen events that might affect continued ethical acceptability of the protocol. Serious Adverse Events must be notified to the HREC as soon as possible. In addition the Investigator must provide a summary of the adverse events, in the specified format, including a comment as to suspected causality and whether changes are required to the Patient Information and Consent Form. In the case of Serious Adverse Events occurring at the local site, a full report is required from the Principal Investigator, including duration of treatment and outcome of the event.
2. Amendments to the research protocol which may affect the ongoing ethical acceptability of a protocol must be submitted to the HREC for review. Amendments should be accompanied by all relevant updated documentation and a cover letter from the principal investigator, providing a brief description of the changes, the rationale for the changes, and their implications for the ongoing conduct of the study. Hard copies of the cover letter and all relevant updated documents, with *tracked changes*, must also be submitted to the HREC office as per standard HREC SOP. (Further advice on submitting amendments is available at [http://www.health.qld.gov.au/ohmr/documents/researcher\\_userguide.pdf](http://www.health.qld.gov.au/ohmr/documents/researcher_userguide.pdf) <http://www.health.qld.gov.au/pahospital/research/amendments.asp>)
3. Amendments to the research protocol which only affect the ongoing site acceptability of the protocol are not required to be submitted to the HREC for review. These amendment requests should be submitted directly to the Research Governance Office/r.
4. Proposed amendments to the research protocol which may affect both the ethical acceptability and site suitability of the protocol must be submitted firstly to the HREC for review and, once HREC approval has been granted, then submitted to the Research Governance Office/r.
5. Amendments which do not affect either the ethical acceptability or site acceptability of the protocol (e.g. typographical errors) should be submitted electronically (track changes) and in hard copy (final

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clean copy) to the HREC Coordinator. These should include a cover letter from the Principal Investigator providing a brief description of the changes and the rationale for the changes, and accompanied by all relevant updated documents with tracked changes.

6. The HREC will be notified, giving reasons, if the protocol is discontinued at a site before the expected date of completion.
7. The Principal Investigator will provide at least, an annual report to the HREC on the anniversary of the approval and at completion of the study in the specified format.
8. If you require an extension for your study, please submit a request for an extension in writing outlining the reasons. Note: One of the criteria for granting an extension is the compliance with the approval's conditions including submission of progress reports.
9. Any research study that prospectively assigns human participants or groups of humans to one or more health-related interventions to evaluate the effects on health outcomes ([WHO / ICMJE 2008 definition](#)) should be registered, including early phase and late phase clinical trials (phases I-III) in patients or healthy volunteers ([WHO Recommendation / ICMJE policy](#)). If in doubt, registration is recommended. All studies must be registered prior to the study's inception, i.e. prospectively.  
<http://www.anzctr.org.au/>

This HREC approval is valid for three (3) years from the date of this letter.

Should you have any queries about the HREC's consideration of your protocol please contact the Metro South HREC Office on 07 3443 8049.

Please note that the Metro South HREC is constituted and operates in accordance with the National Health and Medical Research Council's (NHMRC) *National Statement on Ethical Conduct in Human Research (2007)*, *NHMRC and Universities Australia Australian Code for the Responsible Conduct of Research (2007)* and the *CPMP/ICH Note for Guidance on Good Clinical Practice*. Attached is the HREC Composition (Attachment I).

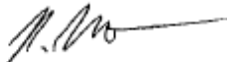
The HREC Terms of Reference, Standard Operating Procedures, membership and standard forms are available from the following websites:

<http://www.health.qld.gov.au/pahospital/research/ethics.asp>  
[http://www.health.qld.gov.au/ohmr/html/regu/regu\\_home.asp](http://www.health.qld.gov.au/ohmr/html/regu/regu_home.asp)

*Once authorisation to conduct the research has been granted, please complete the Commencement Form (Attached) and return to the Metro South Human Research Ethics Committee.*

The Metro South HREC wishes you every success in your research.

Yours sincerely,



A/Professor Richard Roylance  
Deputy Chair  
Metro South Hospital and Health Service  
Human Research Ethics Committee (EC00167)  
Centres for Health Research  
Princess Alexandra Hospital

26/9/13

Enquiries to: Centres For Health Research  
Research Governance  
Phone: (07) 3443 8050  
Fax: (07) 3443 8003  
Our Ref: HREC/13/QPAH/496 -SSA/13/QPAH/511  
E-mail: [PAH-Research@health.qld.gov.au](mailto:PAH-Research@health.qld.gov.au)

Dr Emmah Doig  
School of Health and Rehabilitation Sciences  
University Of Queensland  
St Lucia QLD 4072

**SSA AUTHORISATION  
PRINCESS ALEXANDRA HOSPITAL  
METRO SOUTH HOSPITAL AND HEALTH SERVICE**

**HREC Reference number:** HREC/13/QPAH/496

**SSA reference number:** SSA/13/QPAH/511

**Project title:** Goal planning in community-based rehabilitation settings - exploration of the process and relationship between client-centredness, contextual factors and outcomes.

Dear Dr Doig,

Thank you for submitting an application for authorisation of this project. I am pleased to inform you that authorisation has been granted for this study to take place at Princess Alexandra Hospital.

On the recommendation of the Human Research Ethics Committee approval is granted for your project to proceed.

The following conditions apply to this research proposal. These are additional to those conditions imposed by the Human Research Ethics Committee that granted ethical approval.

1. Problems and SAEs: The Research Governance Office must be informed of any problems that arise during the course of the study which may have ethical implications. Where serious adverse events (SAEs) are encountered, the events must be notified as soon as possible.  
[http://www.health.qld.gov.au/pahospital/research/adverse\\_events.asp](http://www.health.qld.gov.au/pahospital/research/adverse_events.asp)
2. Proposed amendments to the research protocol or conduct of the research which may affect the ethical acceptability of the project are to be submitted to the HREC for review. A copy of the HREC approval/rejection letter must be submitted to the RGO;
3. Proposed amendments to the research protocol or conduct of the research which only affects the ongoing site acceptability of the project, are to be submitted to the research governance office;
4. Proposed amendments to the research protocol or conduct of the research which may affect both the going ethical acceptability of the project and the site acceptability of the project are to be submitted firstly to the HREC for review and then to the research governance office after a HREC decision is made.

Office	Postal	Phone	Fax
Centres for Health Research Princess Alexandra Hospital Metro South Hospital and Health Service	37 Kent Street Woolloongabba Qld 4102	61 7 3443 8050	61 7 3443 8003

If this research involves the recruitment of patients from the Metro South Hospital and Health Service (MSHHS), it is my responsibility to remind you of your ongoing duty of care for all people recruited into projects or clinical trials whilst public patients. All conditions and requirements regarding confidentiality of public information and patient privacy apply. You are required to comply at all times with any application requirements of Australian and Queensland Laws including the Health Services Act, the Privacy Act, Public Health Act (2005) and other relevant legislation, ethics obligations and guidelines which may be applicable to the MSHHS from time to time including, without limitation, any requirement in respect of the maintenance, preservation or destruction of patient records.

When the study involves patient contact, it is your responsibility as the principal investigator to notify the relevant consultant and request their approval.

We wish you every success in undertaking this research.

Yours sincerely,



Professor Ken Ho  
Chair, Centres for Health Research  
METRO SOUTH HEALTH

2 / 10 / 13

c.c. Nicole Weir  
Occupational Therapy Department  
Brain injury Rehabilitation Unit  
Princess Alexandra hospital  
199 Ipswich Road  
Woolloongabba QLD 4102

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Office	Postal	Phone	Fax
Centres for Health Research Princess Alexandra Hospital Metro South Hospital and Health Service	37, Kent Street Woolloongabba Qld 4102	61 7 3443 8050	61 7 3443 8003

G:\Research\Governance\Correspondence\2013\2013 - 501-550\2013 - 511\ssa-13-511 Ltr of Authorisation.dot

Page 2 of 2





Queensland  
Government

## AGREEMENT

BETWEEN

*The University of Queensland ("UQ")*

AND

*Metro South Hospital & Health Service ("MSHHS")*



496  
HREC/13/QPAH/511 Doig: Goal Planning in community based  
rehabilitation settings – exploration of the process and relationship between  
client-centredness, contextual factors and outcomes

UQ Employee or UQ Student Only

### Background

1. THIS AGREEMENT is made and entered into by and between The University of Queensland ("UQ") and Metro South Hospital and Health Service ("MSHHS") on this day ..... of ..... 2013.
2. The Agreement will stay in force until modifications are made and agreed upon by both parties.
3. Any Addendum ("Schedule 1") that is EXECUTED will form part of this Agreement as an attachment to the Agreement.

### Terms of Agreement

#### 1. Conduct of Project

MSHHS agrees to permit UQ to carry out the Project in accordance with Schedule 1.

#### 2. Supply of Information

MSHHS undertakes to supply UQ, at UQ's cost, such information which UQ requests in writing from time to time concerning patients participating in the Project, provided that at all times the provision of any information by MSHHS to UQ pursuant to this clause 4 shall be subject to:

- (a) any required Metro South Ethics Committee approvals;
- (b) any required patient consents;
- (c) compliance by MSHHS with any applicable requirements of Australian law including the Health Services Act, the Privacy Act and other relevant legislation, ethics obligations and guidelines which may be applicable to MSHHS from time to time (including, without limitation, any requirement in respect of the maintenance, preservation or destruction of patient records); and
- (d) UQ undertaking any administrative requirement (including but not limited to appropriate labelling and categorising of patient records or other records generated during the Project, which MSHHS may retain) which may increase the preservation time of records. All data pertaining to the Project will be stored by UQ at its own risk.

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#### 3. Confidential Information and Publication

- 3.1 Each Party agrees that it will not disclose or publish in any manner any Confidential Information owned by the other Party without obtaining written consent from the owner. For the purposes of this clause, "Confidential Information" means all trade secrets and know-how, pre-existing intellectual property, financial information, patient data and other valuable information of whatever description and in whatever form that is not in the public forum, but excludes the interpretation, analysis and application of general information generally known to the public.
- 3.2 UQ agrees to acknowledge the involvement of MSHHS in any published articles and publicity pertaining to the Project.

3.3 The Student may publish the results of his/her research work in accordance with this clause 3.

3.4 Subject to clause 3.1, no restriction may be placed on the Student's ability to lodge his/her work for examination in accordance with normal UQ rules.

#### 4. Indemnity

4.1 UQ agrees to indemnify MSHHS and its directors, trustees, governors, officers, researchers, employees contractors and agents (collectively the Indemnified Party) from and against any and all demand, claim, action suit, liability, loss, damage, cost or expense (including reasonable attorney's fees, court and other expenses of litigation) ("Claim") suffered by any Indemnified Party arising out of or in conjunction with third party claims relating to the conduct of the Project on MSHHS premises or using its facilities and staff except and to the extent that such Claim arises out of or in connection with the wilful misconduct or negligence of the Indemnified Party.

4.2 The liability of MSHHS, howsoever arising under this Agreement, is limited to the value of the fees paid by UQ to MSHHS for the provision of the MSHHS Services.

4.3 The liability of a Party under this Agreement in respect of all consequential and indirect loss (including, but not limited to, loss of profits, loss of revenue and expectation loss) is excluded.

#### 5. Warranties

UQ warrants that the Project will be performed in compliance with:

- (a) the principles of good scientific and clinical research practices;
- (b) all applicable local, state and federal laws, legislation, regulations, rules, by-laws; and
- (c) Metro South Ethics Committee approvals and directions.

#### 6. Intellectual Property

6.1 Any Intellectual Property developed by UQ, and by MSHHS as a direct result of the provision of the MSHHS Services during the term of this Agreement will be owned by UQ as at the date of creation.

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6.2 Copyright in the Student's research thesis and any publication solely authored by him/her will be owned by the Student.

6.3 For the purposes of this clause, "Intellectual Property" includes but is not limited to all inventions, discoveries, innovations, technical information and data, prototypes, processes, improvements, patent rights, circuitry, computer programs, drawings, plans, specifications, copyright, trade mark rights, design rights, plant variety rights and Confidential Information.

#### 7. Termination

7.1 Breach: A Party may terminate this Agreement by notice in writing if another Party breaches this Agreement and fails to remedy the breach within 30 days of

receipt of the written notice being given by the Party requiring the breach to be remedied.

- 7.2 Termination of this Agreement under clause 7.1 shall be without prejudice to the rights of any Party accrued under this Agreement prior to termination.
- 7.3 Safety: MSHHS may terminate this Agreement, with immediate effect, if in MSHHS's sole discretion MSHHS is of the reasonable opinion that the Project is not being conducted safely and patient well-being necessitates the termination of this Agreement.
- 7.4 Failure to Obtain Ethical Clearance: If UQ is wholly or partially precluded from complying with its obligations under this Agreement by failure to obtain and maintain Metro South Ethics Committee approvals, UQ may by written notice to MSHHS terminate the Agreement, with immediate effect, without further liability for its failure to obtain and maintain such approvals.
- 7.5 Consequences of Termination: On termination of this Agreement, for any reason whatsoever, UQ agrees to pay to MSHHS:
- (a) all outstanding correctly rendered invoices; and
  - (b) any sums which are due to MSHHS which have not been invoiced as at the date of termination,
- within seven (7) days of the date of termination.
- 7.6 Termination of Medical Procedures: On termination of this Agreement, for any reason whatsoever, each Party will cooperate with the other Party and do all things reasonably necessary to ensure an orderly and medically permissible termination of all procedures conducted in association the Project.
- 7.7 Withdrawal of Student – If the Student withdraws from his/her course of postgraduate study at UQ, UQ may immediately terminate this Agreement without any further liability.

## 8. Force Majeure

- 8.1 Where a Party is unable, wholly or in part, by reason of an event or circumstance beyond the control of the Parties to carry out any of its obligations under this Agreement ("Force Majeure event"), and that Party:

- (i) gives the other Party prompt notice of that the Force Majeure event including reasonable particulars, and, in so far as known, the probable extent to which it will be unable to perform or be delayed in performing its obligations; and
- (ii) uses all reasonable diligence to remove the Force Majeure event as quickly as possible,

that obligation is suspended so far as it is affected by the Force Majeure event during the continuance of the Force Majeure event and that Party shall be allowed a reasonable extension of time to perform its obligations.

- 8.2 If, after 30 days, the Force Majeure event has not ceased, the Parties shall meet in good faith to discuss the situation and endeavour to achieve a mutually satisfactory resolution to the problem.

8.3 Where the Force Majeure event precludes a Party from performing its obligations that would materially affect the completion and/or the generation of the expected or likely results of the Agreement or the Force Majeure Event exceeds 90 days in duration the Parties may, after meeting in accordance with clause 8.2, unanimously decide to terminate the Agreement without liability to the other Party. Alternatively where the Parties unanimously agree that the Agreement is capable of completion the Parties may decide upon written agreement to elect to continue the Agreement in accordance with any agreed variations.

8.4 The requirement that any Force Majeure event must be removed with all reasonable diligence does not require the settlement of strikes, lockouts or other labour disputes or claims or demands by any government or third party on terms contrary to the wishes of the Party affected.

## 9. Dispute Resolution

9.1 A Party must not commence legal proceedings relating to this Agreement unless the Party wishing to commence proceedings has complied with this clause 9. However, this clause 9 will not apply where a Party seeks urgent interlocutory relief from a court.

9.2 The Parties will co-operate with each other and use their best endeavours to resolve by mutual agreement any differences between them and all other difficulties which may arise from time to time relating to this Agreement.

9.3 Any dispute arising between the Parties relating to the ownership of Intellectual Property which cannot be resolved between them will be finally determined by an expert determination undertaken at the shared expense of the Parties by:

- (a) a licensed Patent Attorney agreed on by the Parties experienced in the relevant field; or, if the Parties are unable to agree;
- (b) a licensed Patent Attorney appointed by the Australian President of the Licensing Executives Society.

9.4 The expert's determination under clause 9.3 is binding on all the Parties.

9.5 If a dispute arises between the Parties relating to or arising out of this Agreement other than one covered by clause 9.3 (the "Dispute") then:

- (a) the Party alleging the Dispute must notify the existence and nature of the Dispute to the other Parties within 30 days of the dispute arising (the "Notification");
- (b) upon receipt of a Notification the Parties must request the General Manager of Queensland Health and the Deputy-Vice Chancellor (Research) of UQ, the student or their respective nominees to resolve the Dispute;
- (c) if the Dispute is not resolved as provided in clause 9.5(b) within 30 days of receipt of the Notification then any Party may refer the Dispute to mediation as provided in clause 9.5(d) and must do so before initiating proceedings in a court to resolve the Dispute;
- (d) any Dispute which is referred to mediation must be referred to The Institute of Arbitrators and Mediators Australia ("IArBA") and be conducted in accordance with the Mediation Rules of IArBA; and

(e) if the Dispute is not resolved within 60 days of referral to IArbA any Party is free to initiate proceedings in a court in respect of the Dispute.

9.6 Compliance with the provisions of this clause 9 is a condition precedent to seeking relief in any court or tribunal in respect of the Dispute.

**10. Equipment**

UQ will retain ownership of any equipment acquired in the course of the Project. UQ agrees any UQ or Project equipment which is kept on MSHHS premises shall for the duration of this Agreement be at UQ's sole risk.

**11. Facilities to be Returned to Original State**

The area used by UQ to conduct the Project must be returned to its original state at the completion of the Project at UQ's cost, and supervised by MSHHS building and maintenance department.

**12. Survival**

The Parties agree that clauses 3, 4, 6, 9, 12 and 13 will survive termination of this Agreement.

**13. Governing Law**

This Agreement is governed by the laws of Queensland. The Parties agree to submit to the exclusive jurisdiction of the Courts exercising jurisdiction within Queensland.

**14. Counterparts**

This Agreement may be executed in any number of counterparts. All counterparts taken together will be taken to constitute one agreement.

15. Notices

UQ

*Legal and Administrative matters:*

Director  
UQ Research and Innovation  
The University of Queensland  
Brisbane QLD 4072  
Phone: 07 3365 3559

*Project related matters:*

Refer to Metro South Human Research Ethics Committee Application


MSHHS

Business Unit Manager  
Centres for Health Research  
Level 7, TRI  
Princess Alexandra Hospital  
37 Kent St, Woolloongabba  
Brisbane, QLD, Australia 4102  
Tel: +61 7 3443 8050  
Fax: +61 7 3240 7667  
Email: PAH-CentresforHealthResearch@health.qld.gov.au

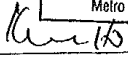
EXECUTED as an Agreement

Signed for and on behalf of The University of Queensland

Signed for and on behalf of Metro South Hospital and Health Service

  
\_\_\_\_\_  
Ian G Harris                      Date


18/9/13

  
\_\_\_\_\_  
Institution Representative                      Date

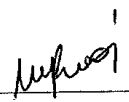
Professor Ken Ho  
Chair, Centres For Health Research  
Metro South Health

24/9/13

Director, Research Partnerships  
UQ Research and Innovation

  
\_\_\_\_\_  
Witness

Gail Roudenko  
\_\_\_\_\_  
Name of Witness

  
\_\_\_\_\_  
Witness

MARIA WOJCIECHOWSKI  
\_\_\_\_\_  
Name of Witness



## **SCHEDULE 1**

For full project information please see METRO SOUTH HUMAN RESEARCH ETHICS COMMITTEE – APPLICATION

### **1. Principal Investigator:**

Dr Emmah Doig  
NHMRC Post-Doctoral Research Fellow

Mailing Address  
School of Health and Rehabilitation Sciences  
The University of Queensland  
St Lucia QLD 4072  
Email: e.doig@uq.edu.au  
Phone (BH): 3896 3081  
Phone (AH): 3255 8278  
Mobile: 0432 901 340  
Fax: 3406 2267

### **2. Project Details**

HREC/13/QPAH/511

### **3. Project Title:**

Goal Planning in community based rehabilitation settings – exploration of the process and relationship between client-centredness, contextual factors and outcomes

### **4. Brief description:**

Understanding and working towards people's goals, such as regaining independence or returning to important life roles after injury or illness, is the central purpose of rehabilitation. People's goals are commonly used as a rehabilitation 'tool', to guide therapy and to measure whether the therapy is working. Also, it is widely believed that a 'client-centred' approach to goal planning where the patient participates in setting their own goals resulting in goals that are meaningful to the patient, is important for motivation and engagement in therapy and consequently, goal achievement. Even though goal planning is a common practice in rehabilitation, it has not been researched widely, especially in outpatient, community settings. This study aims to explore the process of goal planning and to explore how 'client-centred' goal planning is when conducted in community rehabilitation settings.

This study also aims to look at what factors limit and enable client-centred approaches to goal planning. It will also investigate whether the level of client participation in goal planning and the importance and meaningfulness of the identified goals is related to client progress on their goals and how much clients improve their abilities. Furthermore, there are many common changes to thinking skills that occur after ABI including problems with memory, problem solving and planning, and self-awareness. These changes may make it difficult for individuals to participate in planning their own goals; however this has not been systematically investigated.

This study will explore the process of goal planning and the factors influencing the process of goal planning for people with and without ABI. To explore the aims, the research will employ quantitative (surveys of participants and outcome measurement) and qualitative (audiotape usual goal planning sessions, semi-structured interviews) methods to capture the goal planning process and measure patient and contextual factors for people with and without ABI. This study will inform rehabilitation practice by exploring processes and factors which facilitate client-centred goal planning (i.e. client participation in goal planning, rehabilitation goals that are important and meaningful to the client), and exploring the relationship between contextual factors, client-centredness and rehabilitation outcomes.

#### **5. Work to be undertaken by University of Queensland Employee or Student**

Dr Emmah Doig, NHMRC Post-Doctoral Research Fellow  
Role: Study design, data analysis, dissemination of results, co-supervision of research officer and research higher degree student.

Associate Professor Jenny Fleming, Con-Joint Associate Professor in Occupational Therapy (with UQ and PAH)  
Role: Research/ study design, data analysis, dissemination of results and co-supervision of research officer and research higher degree student (PhD candidate).

Sarah Prescott, PhD candidate  
Role: Ms Prescott has been accepted to enrol as a PhD student as of February 2014. She will also be involved with data collection and analysis; and dissemination of results.

#### **6. Services/facilities to be provided by Brain Injury Rehabilitation Unit (BIRU), PAH and Transitional Rehabilitation Program (TRP), PAH**

A research officer (PAH Employee) will assist in consenting and data collection. Her position is part-time (16 hours per week) from the Community Rehabilitation Workforce Project (CRWP) Research and Development Grant. During working hours the research officer will require the use of a computer and desk space at Centre for Functioning and Health Research (CFAHR), Buranda. She will also utilise printing and copying facilities at PAH. Data collection through questionnaires will take place onsite (if practical for patient/significant other participants) in available rooms within BIRU and TRP.

In kind support provided by Clinical Support Services, the Princess Alexandra Hospital

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#### **7. Source of Funding**

Community Rehabilitation Workforce Project (CRWP) Research and Development Grant, The Division of Rehabilitation, PAH, \$30,866.00. This grant has been utilised to fund the part-time position of research officer at PAH

In kind support provided by Clinical Support Services, the Princess Alexandra Hospital

The principal investigator is also receiving an NHMRC post-doctoral fellowship



THE UNIVERSITY OF QUEENSLAND  
**Institutional Human Research Ethics Approval**

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**Project Title:** Goal Planning In Community-Based Rehabilitation Settings - Exploration Of The Process And The Relationship Between Client-Centredness, Contextual Factors And Outcomes - 02/04/2015 - AMENDMENT

**Chief Investigator:** Dr Emmah Doig

**Supervisor:** None

**Co-Investigator(s):** A/Prof Jenny Fleming, Dr Petrea Cornwell, Nicole Weir, Janelle Griffin, Dr Ron Hazelton, Sarah Prescott

**School(s):** School of Health and Rehabilitation Sciences

**Approval Number:** 2013000221

**Granting Agency/Degree:** None

**Duration:** 26th September 2016

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**Comments/Conditions:**

Note: if this approval is for amendments to an already approved protocol for which a UQ Clinical Trials Protection/Insurance Form was originally submitted, then the researchers must directly notify the UQ Insurance Office of any changes to that Form and Participant Information Sheets & Consent Forms as a result of the amendments, before action.

---

**Name of responsible Committee:  
Behavioural & Social Sciences Ethical Review Committee**

This project complies with the provisions contained in the *National Statement on Ethical Conduct in Human Research* and complies with the regulations governing experimentation on humans.

---

**Name of Ethics Committee representative:  
Associate Professor John McLean  
Chairperson  
Behavioural & Social Sciences Ethical Review Committee**

Signature

Date

13/4/2015

## Appendix B

### Participant information and informed consent forms



#### Participant Information Sheet (therapist/service manager version)

##### *Goal Planning Project*

**Title:** 'Goal planning in community-based rehabilitation settings – exploration of the process and the relationship between client-centredness, contextual factors and outcomes'

**Lay Title:** 'How client centred is goal planning in community rehabilitation?'

#### **Researchers:**

Dr Emmah Doig, Post-Doctoral Research Fellow, The University of Queensland,  
Ph: 07 3896 3081

Associate Professor Jenny Fleming, Con-Joint Associate Professor in Occupational Therapy, The University of Queensland and the Princess Alexandra Hospital,  
Ph: 07 3896 3084

Dr Petrea Cornwell, Principal Research Fellow, Metro North Hospital and Health Service, Griffith University, Ph: 07 3139 6112

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You are invited to participate in a research project which will explore goal setting in outpatient rehabilitation. Setting goals for rehabilitation is a common process that occurs before therapy starts and is important as the goals guide therapy. The main aim of this study is to find out what processes and factors result in rehabilitation goals that are important and meaningful to the client, and whether this is related to goal achievement and improvement in function after rehabilitation. As goal setting commonly involves the therapist, patient, and often the family, this study will involve participation by not only patients, but also therapists and family members.

**If you agree to participate, your involvement in this study will be as follows:**

#### **Therapist Participants:**

1. You will be required to audiotape any interviews/sessions which you are involved in with your clients who have consented to participate in the study. This audiotaped information will be used by the researchers to understand and describe the processes used to plan goals in outpatient rehabilitation settings.
2. Your involvement will also involve completing a:
  - *Therapist Survey* – this gives the researchers information about your experience in rehabilitation, professional background, experience and opinions about goal planning. This survey takes approximately 5 minutes.
  - *Goal Rating Scale* - this scale asks you to rate your client's current ability on each of their rehabilitation goals and to estimate what you think their ability will be on each of their goals in the future. This scale also has a question about the estimated time spent on aspects of

planning goals with the client as well as the presence of any factors that limit goal planning. This scale will need to be completed by you for each of your clients who are participants in the study. It will need to be completed as soon as possible after the participant's goals are established and again at 3 months post goal planning. A researcher will monitor the timing of this follow-up survey and contact you to remind you about completion. The follow up survey asks you to rate your client's ability at follow up on their goals and will assist the researchers to measure their progress on their goals. This survey takes approximately 10 minutes on each occasion.

- A *semi-structured interview* with the researcher which will take no longer than 30 minutes and ask you opinions about and experiences with goal planning in rehabilitation. The researcher will audiotape this interview.
- You may be asked to complete the 'therapist version' of the Awareness Questionnaire for each of your participating clients who do not have a significant other available to complete the 'relative version' of this questionnaire. This questionnaire asks you to rate your client's abilities compared to before their injury and takes approximately 3 minutes to complete.

### **Service Manager Participants:**

Your involvement in the study will be participating in a semi-structured interview with a researcher. This interview is not expected to take longer than 30 minutes. The purpose of the interview is for the researchers to understand any processes or procedures in place for goal planning, within the organization as well as to understand your experiences and opinions about goal planning in rehabilitation.

All information obtained in the study will be treated in the strictest confidence. All personal information relating to any specific participant will not be disclosed in any way. All information collected will be kept for a period of 7 years and thereafter destroyed. Participants may have access to the information collected on completion of the project upon request.

There is no foreseeable risk or discomfort associated with participation in this study. Where researchers need to make contact with you via telephone or in person, as necessary, every effort will be made to co-ordinate the timing of this to minimise inconvenience to you.

You may choose to withdraw from the study at any time. Your involvement in this study is not expected to be of direct personal benefit to you. However, it is anticipated that this research may help other people who are receiving outpatient rehabilitation services in the future, by providing health professionals with information about how to enhance the goal planning process.

This project has been cleared by the Behavioural and Social Sciences Ethical Review Committee at The University of Queensland in accordance with the National Health & Medical Research Council's guidelines.

For more information regarding the study, please feel free to contact Dr Emmah Doig (Occupational Therapy Department, The University of Queensland) on Ph 07 3896 3081 or Associate Professor Jenny Fleming (Occupational Therapy Department, The University of Queensland) on Ph 07 3896 3084 or Dr Petrea Cornwell (Griffith University) on Ph 07 3139 6112

While you are free to discuss your involvement with project staff, if you prefer to speak to an Ethics Officer who is not involved in this project you may contact the University Ethics Officer for Behavioural and Social Sciences on Ph 3365 3924.

Dr Emmah Doig  
University of Qld

Associate Professor Jenny Fleming  
University of Qld

Dr Petrea Cornwell  
Griffith University

*Goal Planning Project*

**Informed Consent Form – Therapist Participants and Service Managers**

**Title:** ‘Goal planning in community-based rehabilitation settings – exploration of the process and the relationship between client-centredness, contextual factors and outcomes’

**Lay Title:** ‘How client centred is goal planning in community rehabilitation?’

**Researchers:**

Dr Emmah Doig, Post-Doctoral Research Fellow, The University of Queensland,  
Ph: 07 3896 3081

Associate Professor Jenny Fleming, Con-Joint Associate Professor in Occupational Therapy, The University of Queensland and the Princess Alexandra Hospital,  
Ph: 07 3896 3084

Dr Petrea Cornwell, Principal Research Fellow, Metro North Hospital and Health Service, Griffith University, Ph: 07 3139 6112

---

Participant No: \_\_\_\_\_

Name of participant:.....

I have read the attached information sheet and understand the nature and purpose of the study ‘Goal planning in community-based rehabilitation settings – exploration of the process and the relationship between client-centredness, contextual factors and outcomes’. I have had an opportunity to ask any questions about this study, and all of my questions have been answered to my satisfaction. I am aware of any side effects or risks involved in participating in this study.

Applicable to therapist participants: I understand that the study involves audiotaping of my goal planning session/s with my clients who are participants in this study. I understand that my involvement in this study will involve explaining the study to my clients who may be eligible for the study. I also understand that my involvement in this study also involves participating in an interview with the researcher which will be audiotaped and that I will be required to complete one scale about progress on goals for each of my clients after goal planning and 12 weeks later, as well as one short survey. I acknowledge that I will be asked to provide information about my experience in rehabilitation, professional background, experience and opinions about goal planning as well as information about my client’s rehabilitation goals and goal planning process.

Applicable to Service Managers: I understand that my participation in this study involves participating in an interview with the researcher which will be audiotaped.

I acknowledge that the study may be of no benefit to me personally, but may benefit people undergoing rehabilitation goal planning in the future.

Continued Over

I understand that the information obtained in this study will be treated in the strictest confidence and destroyed after 7 years from the date of collection.

I understand that taking part in the study is voluntary and that I may withdraw from the study at any time. I understand that I may have access to the information collected for the purposes of this study.

I am aware that every effort will be made by the researchers to avoid inconvenience.

I,.....(Therapist Participant)

hereby consent to participate in this study ‘Goal planning in community-based rehabilitation settings – exploration of the process and the relationship between client-centredness, contextual factors and outcomes’.

Therapist Participant’s/Service Manager’s Name:.....

Therapist Participant’s/Service Manager’s Signature:.....

Witness:.....

Date:.....

A named, responsible researcher, whose signature appears below, has explained the study to me.

I have explained this study the participant above.

Name:.....

Signature:..... Date:.....



**Participant Information Sheet (patient version)**

***Goal Planning Project***

**Title:** ‘Goal planning in community-based rehabilitation settings – exploration of the process and the relationship between client-centredness, contextual factors and outcomes’

**Lay Title:** ‘How client centred is goal planning in community rehabilitation?’

**Researchers:**

Dr Emmah Doig, Post-Doctoral Research Fellow, The University of Queensland,  
Ph: 07 3896 3081

Associate Professor Jenny Fleming, Con-Joint Associate Professor in Occupational Therapy, The University of Queensland and the Princess Alexandra Hospital, Ph: 07 3896 3084

Dr Petrea Cornwell, Principal Research Fellow, Metro North Hospital and Health Service, Griffith University, Ph: 07 3139 6112

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You are invited to participate in a research project which will explore goal setting in outpatient rehabilitation. Setting goals for rehabilitation is a common process that occurs before therapy starts and is important as the goals guide therapy. The main aim of this study is to find out what processes and factors result in rehabilitation goals that are important and meaningful to the client, and whether this is related to goal achievement and improvement in function after rehabilitation. As goal setting commonly involves not only the therapist and patient, but also often involves family, your therapist and/or case manager and relative will be involved in the study too.

**If you agree to participate, your involvement in this study will be as follows:**

1. Your regular therapist will audiotape any sessions you have that involve discussions to decide what your initial rehabilitation goals will be. This audiotaped information will be used by the researchers to understand and describe the processes used to plan goals in outpatient rehabilitation settings. Background information about your injury (type of injury, date of injury) will also be collected from your therapy record kept with your referring private rehabilitation provider.
2. After your initial rehabilitation goals have been set and decided by yourself and your therapist, a researcher will contact you and arrange to meet with you to assist with completion of the questionnaires. These questionnaires will take approximately 40 minutes, in total, to complete. The questionnaires will include:

*Goal Rating Scale* – this scale asks you rate your current ability on each of your rehabilitation goals and to estimate what you think your ability will be on each of your goals in the future. This scale also has some questions about your beliefs and experience with goal planning.

*The Client-Centredness of Goal Setting Scale (C-COGS)* – a questionnaire which measures your opinion about how much your rehabilitation goals are important, meaningful and relevant to you and about your participation in the planning of the goals.

*The Helping Alliance Questionnaire* – a questionnaire which measures your relationship with your therapist (i.e. how helpful you feel your therapist was during your goal planning sessions).

*The Awareness Questionnaire (AQ)* – a questionnaire which asks you to rate your abilities compared to before your injury, in a range of areas.

*The Mayo Portland Adaptability Index (MPAI)* – a questionnaire about problems you may be experiencing as a result of your injury and about your ability to perform everyday activities at home, work and in the community.

*The Motivation for Traumatic Brain Injury Rehabilitation Questionnaire (MOT-Q)* - a questionnaire about your motivation for rehabilitation.

3. Twelve weeks later, the researcher will ask you to fill out the *Goal rating scale and the MPAI* a second time. Completing these scales again will help the researchers to measure how much progress you have made over time in your chosen goals.

All information obtained in the study will be treated in the strictest confidence. All personal information relating to any specific participant will not be disclosed in any way. All information collected will be kept for a period of 7 years and thereafter destroyed. Participants may have access to the information collected on completion of the project upon request.

There is no foreseeable risk or discomfort associated with participation in this study. Where researchers need to make contact with you via telephone or in person, as necessary, every effort will be made to co-ordinate the timing of this to minimise inconvenience to you.

Should you decide not to participate in the study, this will in no way affect your ongoing management or rehabilitation. You may choose to withdraw from the study at any time without your rehabilitation being affected in any way.

Your involvement in this study is not expected to be of direct personal benefit to you. However, it is anticipated that this research may help other people who are receiving outpatient rehabilitation services in the future, by providing health professionals with information about how to enhance the goal planning process.

This project has been cleared by the Behavioural and Social Sciences Ethical Review Committee at The University of Queensland in accordance with the National Health & Medical Research Council's guidelines.

For more information regarding the study, please feel free to contact Dr Emmah Doig (Occupational Therapy Department, The University of Queensland) on Ph 07 3896 3081 or Associate Professor Jenny Fleming (Occupational Therapy Department, The University of Queensland) on Ph 07 3896 3084 or Dr Petrea Cornwell (Griffith University) on Ph 07 3139 6112

While you are free to discuss your involvement with project staff, if you prefer to speak to an Ethics Officer who is not involved in this project you may contact the University Ethics Officer for Behavioural and Social Sciences on Ph 3365 3924.

Dr Emmah Doig  
University of Qld

Associate Professor Jenny Fleming  
University of Qld

Dr Petrea Cornwell  
Griffith University

*Goal Planning Project*

**Informed Consent Form – Patient participants**

**Title:** ‘Goal planning in community-based rehabilitation settings – exploration of the process and the relationship between client-centredness, contextual factors and outcomes’

**Lay Title:** ‘How client centred is goal planning in community rehabilitation?’

**Researchers:**

Dr Emmah Doig, Post-Doctoral Research Fellow, The University of Queensland,  
Ph: 07 3896 3081

Associate Professor Jenny Fleming, Con-Joint Associate Professor in Occupational Therapy, The University of Queensland and the Princess Alexandra Hospital, Ph: 07 3896 3084

Dr Petrea Cornwell, Principal Research Fellow, Metro North Hospital and Health Service, Griffith University, Ph: 07 3139 6112

---

Participant No: \_\_\_\_\_

Name of participant:.....

I have read the attached information sheet and understand the nature and purpose of the study ‘Goal planning in community-based rehabilitation settings – exploration of the process and the relationship between client-centredness, contextual factors and outcomes’. I have had an opportunity to ask any questions about this study in the presence of a relative/friend, and all of my questions have been answered to my satisfaction. I am aware of any side effects or risks involved in participating in this study.

I understand that my involvement in the study means audiotaping of my regular goal planning session/s with my private rehabilitation provider, completion of six questionnaires, a follow-up phone call and home visit if required to complete the questionnaires, and completion of a further two questionnaires 12 weeks later and phone call and/or visit if required.

I acknowledge that I will be asked to provide information about my everyday functioning, motivation for rehabilitation, goals, self-awareness and therapeutic alliance.

I acknowledge that my nominated significant other will be asked to provide information about my everyday functioning by completing two questionnaires.

I am aware that the researchers will collect background information about me, my injury and my progress in rehabilitation from my therapy record.

Continued over

I acknowledge that the study may be of no benefit to me personally, but may benefit people undergoing rehabilitation goal planning in the future.

I understand that the information obtained in this study will be treated in the strictest confidence and destroyed after 7 years from the date of collection.

I understand that taking part in the study is voluntary and that I may withdraw from the study at any time without affecting my clinical management. I understand that I may have access to the information collected for the purposes of this study.

I am aware that every effort will be made by the researchers to avoid inconvenience.

I,.....(Participant)

hereby consent to participate in this study ‘Goal planning in community-based rehabilitation settings – exploration of the process and the relationship between client-centredness, contextual factors and outcomes’.

Participant:.....

Participant’s Signature:.....

Witness:.....

Date:.....

A named, responsible person, whose signature appears below, has explained the study to me.

I have explained this study the participant above.

Name:.....  
(Circle one: therapist/researcher)

Signature:..... Date:.....

# Appendix C

## Therapist Survey

### *Working in acquired brain injury rehabilitation*

Name/ Participant No:

Date:

1. What is your professional background/qualifications (i.e. Occupational Therapist, social worker etc):  
\_\_\_\_\_

2. Where do you practice currently: \_\_\_\_\_

3. For how long have you worked in your profession (please give approximate time ie. number of years):  years

4. For how long have you worked with people with acquired brain injury (please give approximate time ie. number of years):  years

5. How skilled are you at planning goals with clients with acquired brain injury (please circle one):

5	4	3	2	1	
Highly Skilled	Moderately Skilled	Skilled	Somewhat Skilled	Not Very	Not Skilled at all

6. How confident are you with helping clients with acquired brain injury to plan their rehabilitation goals (please circle one):

5	4	3	2	1	
Highly Skilled	Moderately Skilled	Skilled	Somewhat Skilled	Not Very	Not Skilled at all

7. How skilled are you at planning goals with clients without brain injury (please circle one):

5	4	3	2	1	
Highly Skilled	Moderately Skilled	Skilled	Somewhat Skilled	Not Very	Not Skilled at all

8. How confident are you with helping clients without brain injury plan their rehabilitation goals (please circle one):

5	4	3	2	1	
Highly Skilled	Moderately Skilled	Skilled	Somewhat Skilled	Not Very	Not Skilled at all

9. Tick one that is most closely reflects your beliefs when you think about working with people with acquired brain injury to set their rehabilitation goals.

Most people with acquired brain injury:

- know more about what they need to work on than I do
- know as much about what they need to work on as I do
- know less about what they need to work on than I do

10. Tick one that most closely reflects your beliefs when you think about working with people without acquired brain injury to set their rehabilitation goals.

Most people *without* acquired brain injury:

- know more about what they need to work on than I do
- know as much about what they need to work on as I do
- know less about what they need to work on than I do

*End of Survey*

## Appendx D

### The Client-Centredness of Goal Setting Scale

Name: \_\_\_\_\_ Date: \_\_\_\_\_

This questionnaire is about how meaningful, important and relevant your rehabilitation goals are to you and how much you feel you participated in planning the goals and deciding about which goals to work on. There is no correct or incorrect response to these questions as the answer should reflect your opinion and feelings about your goals and how you arrived at your goals.

Think about the goal setting session/s you attended to plan your rehabilitation goals. Circle the number which indicates how much you agree or disagree with the following statements

		Strongly Disagree	Disagree	Unsure	Agree	Strongly Agree	C-COGs subscale	
							Goals	Participation
1	The goals are what I want to work on	1	2	3	4	5		
2	The goals are what my friend/relative wants me to work on	1	2	3	4	5		
3	The goals are what my therapist wants me to work on	1	2	3	4	5		
4	Significant people in my life (i.e. family, friends) were involved in planning the goals as much as I wanted them to be	1	2	3	4	5		
5	The therapist encouraged me to participate in setting the goals	1	2	3	4	5		
6	I was an active participant in the goal setting session	1	2	3	4	5		
7	My views and opinions about the goals were listened to	1	2	3	4	5		
8	I felt like a partner in the goal setting process (along with the other people involved in my goal setting session/s)	1	2	3	4	5		
9	I made the final decision about which goals were set	1	2	3	4	5		
Agreement subscale score							/15	
Participation subscale score							/ 30	

For the remaining questions, consider each of your goals individually. For each goal, circle one response that indicates how strongly you agree or disagree with the following statements.

Goal 1: \_\_\_\_\_

Goal 2: \_\_\_\_\_

Goal 3: \_\_\_\_\_

Goal 4: \_\_\_\_\_

Goal 5: \_\_\_\_\_

Goal 6: \_\_\_\_\_

		Goal	Strongly Disagree	Disagree	Unsure	Agree	Strongly Agree	Average: Total ratings for each goal and divide by number goals
10	The goal is <b>meaningful</b> and important to me as it relates to who I am and my future.	1	1	2	3	4	5	Average goal meaningfulness /5
		2	1	2	3	4	5	
		3	1	2	3	4	5	
		4	1	2	3	4	5	
		5	1	2	3	4	5	
		6	1	2	3	4	5	
11	The goal is <b>relevant</b> to my everyday life as it relates to what I want to do at home, work or in the community.	1	1	2	3	4	5	Average goal relevancy: /5
		2	1	2	3	4	5	
		3	1	2	3	4	5	
		4	1	2	3	4	5	
		5	1	2	3	4	5	
		6	1	2	3	4	5	
12	The goal is what I am <b>motivated</b> to work on	1	1	2	3	4	5	Average goal motivation /5
		2	1	2	3	4	5	
		3	1	2	3	4	5	
		4	1	2	3	4	5	
		5	1	2	3	4	5	
		6	1	2	3	4	5	
13	The goal is my <b>own goal</b>	1	1	2	3	4	5	Average goal ownership /5
		2	1	2	3	4	5	
		3	1	2	3	4	5	
		4	1	2	3	4	5	
		5	1	2	3	4	5	
		6	1	2	3	4	5	
Goals subscale score								/20
Total C-COGS score (Participation + Goal subscale scores)								/50



# Appendix E

## Ethical Clearance Amendment to collect C-COGS test-retest data

### Metro South Health

Enquiries to: Metro South  
Human Research Ethics Committee  
Phone: 07 3443 8049  
Fax: 07 3443 8003  
HREC Ref: HREC/13/QPAH/496  
E-mail: [Ethicsresearch.pah@health.qld.gov.au](mailto:Ethicsresearch.pah@health.qld.gov.au)  
Amendment AM01

Dr E Doig  
School of Health and Rehabilitation Sciences  
The University of Queensland  
St Lucia Qld 4072

Dear Dr Doig

**HREC Reference number: HREC/13/QPAH/496**  
**Project Title: Goal planning in community-based rehabilitation settings - exploration of the process and relationship between client-centredness, contextual factors and outcomes.**

The Office of the Metro South Human Research Ethics Committee noted and approved the following:-

Document	Version	Date
Notification of Amendment		16.7.14
PICF	2	16.7.14

The Metro South Hospital and Health Service HREC is constituted and operates in accordance with the National Health and Medical Research Council's "National Statement on Ethical Conduct in Human Research (2007)", NHMRC and Universities Australia Australian Code for the Responsible Conduct of Research (2007) and the "CPMP/ICH Note for Guidance on Good Clinical Practice".

This will be ratified by the HREC at its 2<sup>nd</sup> September meeting.

It should be noted that all requirements of the original approval still apply. Please continue to provide at least annual progress reports until the study has been completed.

If you have any queries please do not hesitate to contact the Human Research Ethics Committee office on +617 3443 8049.

Yours sincerely,



Sonia Hancock  
HREC Coordinator  
Metro South Hospital and Health Service  
Human Research Ethics Committee (EC00167)  
Centres for Health Research  
Princess Alexandra Hospital  
Woolloongabba QLD 4102

24.7.14



Queensland  
Government



THE UNIVERSITY OF QUEENSLAND  
Institutional Human Research Ethics Approval

**Project Title:** Goal Planning In Community-Based Rehabilitation Settings - Exploration Of The Process And The Relationship Between Client-Centredness, Contextual Factors And Outcomes - 07/08/2014 - AMENDMENT

**Chief Investigator:** Dr Emma Daig

**Supervisor:** None

**Co-Investigator(s):** A/Prof Jenny Fleming, Dr Petrea Cornwell, Nicole Weir, Janelle Griffin, Dr Ron Hazelton, Sarah Prescott

**School(s):** School of Health and Rehabilitation Sciences

**Approval Number:** 2013000221

**Granting Agency/Degree:** None

**Duration:** 31st Decomber 2014

**Comments/Conditions:**

Note: If this approval is for amendments to an already approved protocol for which a UQ Clinical Trials Protection/Insurance Form was originally submitted, then the researchers must directly notify the UQ Insurance Office of any changes to that Insurance Participant Information Sheets & Consent Forms as a result of the amendments, before action.

**Name of responsible Committee:**

**Behavioural & Social Sciences Ethical Review Committee**

This project complies with the provisions contained in the *National Statement on Ethical Conduct in Human Research* and complies with the regulations governing experimentation on humans.

**Name of Ethics Committee representative:**

**Associate Professor John McLean**

**Chairperson**

**Behavioural & Social Sciences Ethical Review Committee**

Signature

Date

20/8/2014

# **Appendix F**

## **Initial Interview Guide**

Tell me about how you do goal setting with clients with Acquired Brain Injury (ABI)?

What are some of the processes that have worked well in your experience?

What do you find challenging about goal setting with clients with ABI in rehabilitation?

Is there anything that influences setting goals with clients with ABI?

What was your experience of setting goals with people with brain injury and does that differ to setting goals with other patient groups without brain impairment?

Is there anything else you want to tell me about the way you set goals?

## Appendix G

### The Client-Centred Goal Setting in Practice Questionnaire

Prior to Goal Setting	Y/N
1. Does my client want to be engaged in a client-centred goal setting process?  If no consider an alternative goal setting approach	_____
2. Does the client have cognitive impairment associated with their brain injury?  If self-awareness impairment consider more time If memory impairment may need additional strategies to enhance goal recall	_____
3. Does the client have a significant communication impairment?  If 'yes' need to consider implementation of strategies identified by the speech pathologist	_____
<i>Personal and Environmental Factors</i>	
4. Have I thought about my beliefs about client-centred goal setting, knowledge of brain injury and experience with goal setting and how these may impact on involving the client in client-centred goal setting?	_____
5. Have I considered the service related factors which may impact on my ability to implement the client-centred goal setting process (e.g. consider team structure, the setting that goal setting is completed in as well as the time available to complete goal setting)?	_____
6. Have I considered whether the client has any pre-injury factors which may influence their participation in goal setting (e.g. pre-morbid goal setting use, valued roles, personal beliefs, drug and alcohol dependency)?	_____
7. Have I considered whether the client's family may enhance or inhibit goal setting? (e.g. if the family has their own adjustment issues in relation to the client's injury they may inhibit their ability to contribute to the goal setting process may be reduced)	_____
8. Have I considered how the client's source of funding for rehabilitation may affect their participation in goal setting? (e.g., if the client's rehabilitation is funded with compensable funding, their willingness to participate in client-centred goal setting may be reduced)	_____
<hr/> <i>Setting the Goals</i>	
<i>Therapeutic Alliance</i>	
9. Are strategies to build therapeutic alliance being employed (e.g. listening, collaboration/partnership, being client-centred, social connection, providing education and sensitivity to family dynamics)?	_____

*Structured Communication*

Y/N

10. Are questions framed using information that I have gathered about the client? \_\_\_\_\_
11. Is verbal communication concrete (i.e., are abstract concepts being avoided)? \_\_\_\_\_
12. Is the client providing detailed responses rather than verbal utterances? \_\_\_\_\_

If No and client unable to participate in goal setting discussions, consider audio-recording the session with the client's permission to reflect about the way verbal communication can be modified to elicit a response in subsequent sessions

*Needs Identification*

13. Have I explored and understood the client's important and meaningful life activities? \_\_\_\_\_
14. Do I need to involve the family to better understand the client's important and life activities? \_\_\_\_\_
15. Do I understand what the client's rehabilitation needs after talking with the client? \_\_\_\_\_
16. Do I need to complete further assessment to understand the client's rehabilitation needs? \_\_\_\_\_
17. Have I valued any long-term life goals identified by the client? \_\_\_\_\_
18. Does the client appear overwhelmed by their brain injury and unable to identify rehabilitation needs? \_\_\_\_\_

If 'yes' consider referral to specialist professional to provide increased psychological support and engagement in meaningful occupation by talking with their family about important and meaningful activities. Also consider providing supportive contact and re-referral to the rehabilitation service when the client is ready to participate in the client-centred goal setting process.

*Goal Operationalisation*

19. Have I supported the client to understand how intervention may target the goal area using identified strategies (i.e., establishing steps to long term goals, establishing an impairment activity link, providing feedback and link to therapy)? \_\_\_\_\_
20. Have I enabled the client to actively participate in decision making about how planned intervention will target the goal area (i.e., have I provided strategy choice)? \_\_\_\_\_

After goal setting

Y/N

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*Documenting/ Evaluating*

21. Have I documented a general goal area if the goal statement is for the client? \_\_\_\_\_

22. Do I need to consider additional strategies to enhance goal recall (i.e. text messaging between sessions or giving the client a copy of their goals)? \_\_\_\_\_

23. Have I used the C-COGS to evaluate whether the client has been actively involved in this process and whether the documented goal statement captures what is important and meaningful for the client? \_\_\_\_\_

*Intervention*

24. Have I checked in subsequent sessions that the identified rehabilitation goals are still important to the client? \_\_\_\_\_

25. Am I providing feedback about the client's progress to achieve a goal and have I considered the use of a formal tool to do this? \_\_\_\_\_