

Title: Transitional Rehabilitation Goals for People with Spinal Cord Injury:
Looking beyond the hospital walls

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Key words: Spinal Cord Injuries, Goals, Community Rehabilitation, Transition

ABSTRACT

Purpose This study aimed to identify, describe and classify the transitional rehabilitation goals of people with spinal cord injury (SCI) and map these goals to the International Classification of Functioning, Disability and Health (ICF).

Method The five most important rehabilitation goals as rated by clients were extracted from records for 220 clients of a transitional rehabilitation service for people with SCI in Australia over a 5 year period. These goals were thematically classified into domains and then mapped to the ICF framework. Goals were compared across age, gender, length of hospital stay, compensation status, level and completeness of injury.

Results A total of 1100 goals were classified into 18 different goal domains, representing most aspects of the ICF framework. Age was negatively related to vocational goals. Length of hospital stay was positively related to personal care goals but negatively related to community access and vocational goals. Goals did not differ across gender or compensation status but did differ across level and completeness of injury.

Conclusions People with SCI have a range of transitional rehabilitation goals that represent most aspects of the ICF framework. Client-centred community rehabilitation during this transition period offers continuity of care to support the realisation of these rehabilitation goals.

INTRODUCTION

Spinal cord injury (SCI) can result in major losses in physical, psychological, emotional and social functioning [1]. Spinal cord injury rehabilitation has typically focussed on the acute management of disability, in particular the improvement of physical functioning, becoming estranged from the long term and broader health need. While significantly important, these services often fail to address the long term rehabilitation needs of people with SCI because they are not adapted to each person's particular lifestyle and needs [2]. Rehabilitation can be seen as a stepping-stone to ongoing transition and learning that takes place in the community, aiming to maximise an individual's physical, psychological and social potential to achieve valued life goals. To this end, individuals with SCI have voiced a need to play a greater role in their ongoing healthcare and rehabilitation.

Client-centred rehabilitation is a pivotal element in enabling individuals to achieve this. In patient or client centred care, resources and care are organised around the client and their life goals, rather than around specialised disciplines [3]. Cott [4] looked at client perspectives on client centred rehabilitation using focus groups with adult rehabilitation clients and found that one major theme was the need for better transitions between rehabilitation programs and the community. A number of clients felt ill prepared for community living and the emotional challenges of living with a condition, they felt isolated and had difficulty finding out about and accessing community services, despite their participation in inpatient rehabilitation.

Goal setting is widely accepted as a fundamental and effective part of the rehabilitation process [5-7]. Rehabilitation goals can be long-term aims or more specific achievements that are to be attained within a shorter period of time [8]. Goal setting has the capacity to promote client engagement in the rehabilitation process and to facilitate coordinated service delivery

[9]. It is integral to improving client centred rehabilitation and enhancing the transition of the individual from the hospital to the community where goals are collaborative, relevant and meaningful to the client and their future life contexts [10-12]. Work conducted within community-based rehabilitation services has previously highlighted the value of tracking and categorising rehabilitation goals, both in terms of understanding the nature of the goals identified [13] and the organisational influences on goal setting [14]. The introduction of the International Classification of Functioning, Disability and Health (ICF) [15] provides an excellent framework within which rehabilitation goals can be considered, in terms of the needs of the client as well as the scope of health and rehabilitation services offered.

Incorporating the major models of disability, the ICF recognises the role of environmental factors in the creation of disability and the importance of participation as a desired outcome, as well as the relevance of underlying health conditions and their effects. Functioning and disability are defined through the dynamic interactions of the *body structure and functioning* of the individual, the *activities* that the individual undertakes and their *participation* in life roles in combination with the *environmental factors* which affect these experiences [16].

Transitional rehabilitation is a relatively new community service model in the rehabilitation literature, especially for people with spinal cord injury. Transitional rehabilitation models have been reported in many populations including people with stroke [17], the elderly [18], neonates [19] and individuals with acquired brain injury [20-22] in an effort to improve continuity of care and facilitate the transition from hospital to home. Smoothing the transition from hospital to home is the primary objective of most transitional rehabilitation models and a variety of models exist across inpatient, outpatient and home settings. Transitional living programs are more common [23-26] and are typically offered in inpatient settings with the intention of preparing individuals for community re-entry. This was the earliest model of

transitional rehabilitation. More recently however, increasing attention has been focused on the development of transitional rehabilitation services that are offered in the community setting. These models differ from outpatient rehabilitation or day rehabilitation models because they are typically offered in the client's home. Kendall and colleagues [27] described the introduction of transitional rehabilitation services for people with spinal cord injury, offering a client-centred, goal-directed model aiming to decrease length of stay in inpatient rehabilitation and provide end-stage primary rehabilitation in the client's home or a home-like setting. Addressing the client's rehabilitation needs within a real life context is a key aim of the model.

Because these service models are typically based in community settings, multidisciplinary goal setting is considered integral to the ways in which such services work with their clients. To date however, little research exists in relation to a) transitional rehabilitation models in spinal cord injured populations; b) goal setting in community settings for people with spinal cord injury and c) outcome measurement of goal setting in community rehabilitation. As such, there is a significant gap in our understanding as health practitioners of what goal setting entails, how do we best achieve it and how might we measure it in this community rehabilitation context.

The potential application of client goals to studies of service delivery is at present limited by the considerable variations in goal setting within and across rehabilitation settings. In community rehabilitation, the content, themes, quality and outcomes of goals have rarely been topics for formal research [13]. While the development of measures of goal attainment and strategies for goal setting have received a significant amount of attention in the literature, little description of the goals themselves has been provided, especially within a community

setting, despite the fact that these goals may offer a 'window' into service delivery at the client, service and organisational level [13].

Dedding [28] did find a range of goals reported in an outpatient context across different rehabilitation groups including activity level goals (self care tasks), participation level goals including productivity tasks and leisure tasks, as well as physical goals at a body structure/function level. Affective goals, cognitive goals and environmental adaptation goals were also identified. Many of these goals are not covered in standardised measures. Donnelly et al. [29] used health records from 41 people with SCI and found that self care goals were identified most frequently followed by productivity and leisure. The top three problems identified were functional mobility, dressing and grooming. However, this study was conducted early in the rehabilitation process and therefore self care tasks may have been more of a focus than productivity. Furthermore, this study was conducted prior to the widespread introduction and acceptance of the International Classification of Functioning, Disability and Health (ICF) as a framework for considering the scope of health and rehabilitation needs.

Kuipers et al. [13] conducted an exploratory study with a population of individuals with acquired brain injury to develop a framework for working with, categorising and comparing client goals. The goal taxonomy developed was purported to be an effective tool for classifying client goals within a population of community residing individuals with acquired brain injury. The study found that, based on experience in development and application of the taxonomy, it appeared that the tool had considerable potential for classifying client goals and investigating foci and changes in service delivery. There is no reference made to the ICF framework in this study despite the fact that the goal domains appear to represent many

conceptual domains of the ICF. An approach which utilises taxonomy development within the context of the ICF for examining goals seems particularly relevant to the exploration of client goals within emerging rehabilitation models such as transitional rehabilitation. The degree to which this type of taxonomy could apply within other populations such as people with spinal cord injury is yet to be established however.

The current project builds on this existing work by exploring goal setting within transitional rehabilitation for people with spinal cord injury. There is a need to identify the types of goals developed approaching and following discharge, thereby highlighting what is important to people and how it may differ across different demographic groups. This information will assist clients and rehabilitation workers within transitional rehabilitation but may also assist people who do not have access to transitional rehabilitation services in preparing for discharge to the community.

METHOD

Design

This paper reports on the first phase of a four phase study investigating goal setting and attainment within community transitional rehabilitation for people with SCI. An exploratory qualitative and descriptive/comparative design was selected to identify, describe and classify the range of rehabilitation goals prioritised in the transition from hospital to home.

Setting

The study was set within the context of a community transitional rehabilitation service in Australia. The Transitional Rehabilitation Program (TRP) has been previously described as an end-stage primary rehabilitation program delivered in a community setting to people with

spinal cord injury who are being discharged from inpatient rehabilitation [27]. All people who sustain a spinal cord injury in Queensland or northern New South Wales receive inpatient rehabilitation services at the Princess Alexandra Hospital located in Brisbane. The Queensland Spinal Cord Injury Service (QSCIS) at this hospital offers a unique continuum of care with inpatient rehabilitation, transitional rehabilitation and long-term outreach services provided by the Spinal Outreach Team (SPOT). All inpatients are offered transitional rehabilitation at TRP prior to discharge with the aim to decrease the length of stay in the inpatient setting at transfer the final phases of primary rehabilitation to the community setting. Individuals are offered transitional rehabilitation services in their own home where possible however community accommodation is provided for those whose principal place of residence is geographically isolated from Brisbane (greater than 150 kilometres away). While primarily intended for inpatients who are hospitalised following acute injury, the TRP does also provide transitional rehabilitation services for individuals who have been readmitted to the inpatient spinal injuries unit for secondary complications.

Participants

Data for this first phase of the study involved secondary data drawn from the service records of a sequential sample of individuals who were discharged from inpatient rehabilitation into transitional rehabilitation between 1998 and 2003. This sample was drawn over the first five years of service delivery to establish a baseline of rehabilitation goals identified prior to 2004 when goal setting processes were changed from individual (one client/one therapist) to group (one client/multiple therapists) goal setting. Inclusion criteria were that the person had a discharge destination in the community. Individuals who were readmitted to hospital were excluded from this study as it was suspected that their transitional goals would be quite different to individuals who were being discharged home for the first time. Furthermore, the

numbers of people attending transitional rehabilitation who are readmissions to hospital is quite low compared to those with new injuries. Figure 1 illustrates the inclusion and exclusion of individuals to the sample based on the target population of individuals who are admitted to the Spinal Injuries Unit for inpatient rehabilitation. Those individuals who were eligible for transitional rehabilitation but did not receive transitional rehabilitation were functionally more independent (e.g., had complete or near complete recovery during inpatient rehabilitation) and were more likely to reside outside of the metropolitan area (e.g., chose to return home rather than complete transitional rehabilitation in community accommodation). Those who completed transitional rehabilitation during the period of data collection but were excluded from the sample all had inpatient stays that were readmissions to hospital. Therefore this group had significantly longer time since injury than the sample included. Chi-square and Mann Whitney U tests were utilised to examine whether this group differed from those included in the sample across other demographic variables. It was found, as anticipated, that this group were more likely to had tetraplegia level injuries ($p < 0.01$), higher personal care needs ($p < 0.01$), were older ($p < 0.01$) and had a shorter length of stay in hospital ($p < 0.01$).

Data Collection

Secondary data was drawn from client records during the identified period. Goal setting processes to identify goals were conducted with participants in the week prior to discharge from hospital through interviews between individual therapists and clients. During the goal setting process, individuals would identify their top five priority goals for transitional rehabilitation. While at the point of goal setting individuals did not have experience in community living, most had been home on weekend pass and therefore had some expectations about the challenges they would face on discharge to the community. Members of the transitional rehabilitation team (including a physiotherapist, occupational therapist,

social worker and nurse) conducted semi-structured interviews with clients to identify their community rehabilitation goals. Individuals then nominated their five most important goals as part of the goal setting process and this was recorded by the therapist that was assigned as their case coordinator. The case coordinator rotated across disciplines for different clients as they entered transitional rehabilitation but principally held an administrative function in this role. These top 5 goals were then reported in the client records reviewed to gather the secondary data used in this analysis.

Data Analysis

A thematic analysis process was commenced to identify the range of 'types of rehabilitation goals' identified within client records. This process began with an initial read over all goal statements by one of the researchers (MK) and was followed by goal by goal coding of the theme of each goal, resulting in the identification of first level goal codes. This process was followed by second level coding of the goals in which major themes or 'goal domains' were identified by the same researcher based on the semantic and functional similarity of first level goal codes. During the third phase of analysis, a content analysis approach was taken at the level of the goal domain where both researchers (MW + MK) commenced with the goal domains and coded each goal according to its domain. The second researcher was to identify instances where they could not code a goal according to a domain and record this, with suggestions for expanding the domains to capture this goal. During the next phase of analysis, an inter-rater reliability coefficient was established on the agreement between raters during the previous analysis phase. Following calculation of the coefficient, raters then discussed the need for addition of goal domains and reached agreement on goals where disagreements occurred in the rating of domains. This allowed consensus on goal coding to enable numerical counting of goal domains to be finalised. During the next phase, individual goal

codes were used to provide descriptors for each of the goal domains, and the goal domains were mapped, through agreement between researchers, to the conceptual domains of the ICF, namely body structure/function, activity, participation and environment. This process involved each researcher comparing the aims and descriptors of the domains to the conceptual domains of the ICF. For example, managing spasms was descriptive of the medical conditions goal domain. Spasms are aspects of the body structure and functioning. Therefore this goal domain was mapped to the body structure and functioning domain of the ICF. Similarly, the acquisition of equipment as a goal domain reflected the individual's desire to implement environmental supports to assist their functioning and therefore this goal domain was mapped to the environmental factors domain of the ICF.

Comparative analysis of goal differences across domains were conducted using non-parametric statistics, with Independent samples Mann-Whitney U tests used to examine differences across gender, level and completeness of injury and compensation status.

Spearman's rho was used to identify relationships between the number of each goal identified and demographic variables of age and length of stay in hospital. Spearman's rho was also used to identify relationships between goal domains.

Results

Rehabilitation goals were drawn from the service records of a total of 220 individuals and the demographic characteristics of this sample are provided in Table 1.

Table 1: Demographic characteristics of the 220 participants

Demographic		Number (%)
Gender	Male	165 (75.0)
	Female	55 (25.0)

Marital status	Single	98 (44.5)
	Married/de facto	101 (45.9)
	Divorced/separated	18 (8.2)
	Widowed	3 (1.4)
Employment status at injury	Employed full or part time	139 (63.2)
	Unemployed	28 (12.7)
	Student	19 (8.6)
	Home duties	15 (6.8)
	Retired	19 (8.6)
Injury characteristics	Complete Paraplegia	45 (20.5)
	Complete Tetraplegia	33 (15.0)
	Incomplete Paraplegia	70 (31.8)
	Incomplete Tetraplegia	72 (32.7)
Cause of injury	Motor accident	79 (35.9)
	Fall	51 (23.2)
	Medical	55 (25.0)
	Diving/surf	15 (6.8)
	Other (e.g., assault, sports, crush)	20 (9.0)
Compensation status	Compensable	48 (21.8)
	Non compensable	172 (78.2)
Location	Metropolitan	128 (58.2)
	Regional/rural	76 (34.5)
	Interstate/overseas	16 (7.3)
Age	Mean (SD)	38.44 (16.60)
Length of hospital stay*	Mean (SD)	152.16 (101.77)

* Length of hospital stay and time since injury are the same (acutely injured sample)

A total of 1100 goals were identified from the 220 participants. Thematic grouping of these goals resulted in the development of a typology of 18 different goal domains. These goals represent a spread of outcomes across the domains of the ICF, namely body structure and function, activity, participation and environment. The goal domains and their related ICF domains are displayed in Table 2, along with descriptors for goal statements and the number of goals in each domain identified. Percentage agreement between raters was 93.3% and the kappa coefficient was 0.927, suggesting that the descriptors can be consistently applied in describing goal statements according to the 18 goal domains identified. There was no pattern to the disagreements and the number of agreements did not differ across gender, lesion level, completeness of injury or compensation status of the participant.

General health and function-related goals typically represented efforts to improve body structure and function, in particular strength of some body part, overall body strength or increased cardiovascular capacity. Goals related to medical conditions typically involved improving the symptoms of some pre-existing medical condition or complication, including pain. Goals related to Activity included mobility related goals (focussed on transfers or walking) or bladder and bowel management related goals (changing catheters). Participation directed goals included community access, participation in activities of daily living or household management, recreation, vocational or educational aims and sexuality. Equipment was the most frequently identified goal targeting the environment, although environmental goals did represent the highest percentage and range of goals identified. Other environment focussed goals included services or ongoing therapy, personal care, spinal specific education, psychosocial support, family support, financial support, accommodation and medications.

Table 2: Goal domains of transitional rehabilitation placed within the ICF framework

ICF Domain	Goal Domain	Number (%)	Focus of goals
Number (%)			
Body structure	General	160 (14.5)	Exercise
and function	health/function		Swimming
176 (16.0)			Hydrotherapy
			Strength building
			Weight training
			Stretching
	Medical conditions	16 (1.5)	Pathology
			Colostomy care
			Eyesight care
			Cognitive support
			Managing orthopaedic injuries
Activities	Mobility	223 (20.3)	Walking endurance
			Wheelchair skills

325 (29.6)			Walking style/function	Bed mobility
			Transfers including chair/bed, car, stand, pool, floor, shower commode	Standing ability
			Negotiating stairs	Posture/seating in wheelchair
			Running	Gutters in wheelchair
				Removal of walking aids
	Bladder/bowel management	102 (9.3)	Cleaning catheters	Inserting bowel therapy
			Trialling self catheterisation	Prevention of bowel accidents
			Managing leg bags	Establishing consistency of bowel function
			Catheter changes	Education of carers in bladder/bowel management
			Prevention of bladder infection	
			Voiding	
Participation	Activities of Daily Living (ADL)/household	99 (9.0)	Self care (grooming, showering, dressing)	Writing
268 (24.6)			Cooking/kitchen tasks	Climbing ladder
				Household maintenance/cleaning

		Household independence	Accessing garage
		Accessing food and drink	Participation in everyday activities
		Safety access- calls	Computing access
Community access	86 (7.8)	Accessing local neighbourhood in wheelchair	Public transport access
		Driving	Frequency of community access
		Licensing	Travel
		Shopping	Motorcycle/bike use
		Travel home from hospital	Navigating outdoor terrain
Vocational/educational	45 (4.1)	Exploration of future work/study options	Self employment/business development
		Return to previous employment	Access to Technical and Further Education (TAFE)
			Return to university/school
Sexuality	25 (2.3)	Understanding of sexual function	Application of aids to assist sexual function

	Recreation	13 (1.2)	Exploring creative activities and hobbies (e.g., sewing, jewellery making)	Sport (golf, lawn bowls) Reading
			Daily leisure/occupation	Gardening
Environment	Equipment	107 (9.7)	Ordering catheters/urology equipment	Technology/computer
331 (31.2)			Mobility equipment prescription	Back supports
			Wheelchair delivery and set-up	Communication supports
			Environmental control unit setup	Showering equipment
			Exercise equipment	Office equipment
			Electric beds	Electric hoist ordering and servicing
			Motor vehicles and modifications	Daily living aids
			Pressure relieving mattresses	
	Psychosocial support	48 (4.4)	Social support	Sadness, loss and grief counselling
			Stress management	Lifestyle change support
			Emotion management	Adjustment to injury

		Anger/frustration management	Management of anxiety
Services	40 (3.6)	Physiotherapy (outpatient and community) Sporting Wheelies Day therapy Information on and access to services Respite care	Community health Occupational therapy (outpatient and community) Hand therapy Functional Electrical Stimulation
Personal care	25 (2.3)	Employment of personal care assistants Training of personal care assistants	Education of personal care assistants regarding manual handling
Accommodation	30 (2.7)	Housing department applications Home modifications House setup Public rental/housing applications	Home help Locating suitable accommodation Accommodation staff communication Outdoor modifications
Family support	32 (2.9)	Emotional support of family members	Understanding of injury

		Training of family members to manage mood	Time management/additional workload Parenting
		Balancing workload in marriage	Relationship support
Financial/legal support	22 (2.0)	Compensation seeking (e.g., W/C. CTP)	Superannuation entitlements
		Legal support	Organisation of personal insurance
		DSS lifestyle support applications	Liaison with insurers
		Fulfilling legal obligations/community service	Carers payments and centrelink benefits
SCI specific education	20 (1.8)	Understanding of SCI specific skin risks and protection	Problem solving pressure area management Understanding secondary conditions
		Understanding of dysreflexia	
Medications	7 (0.6)	Organisation of prescriptions and receipt of medications	Understanding medications and their interactions
		Management of medication regimes	Sourcing medications (chemist locations)

Demographic differences across goals were examined. There was no difference in the patterns of goal domains identified across participant gender or compensation status. Goal domains did differ across lesion level and completeness of injury. Domains of personal care ($p < 0.001$) and Activities of Daily Living (ADL)/household participation ($p < 0.001$) were identified more frequently by individuals with tetraplegia level injuries while community access ($p = 0.002$) goals were identified more frequently by individuals with paraplegia level injuries.

Of the 220 participants, 24 identified personal care goals, of which 22 of these individuals had tetraplegia level injuries. Of the 86 individuals who identified ADL/household participation goals, 54 of these individuals had tetraplegia level injuries. Of the 78 individuals who identified community access goals, 52 had paraplegia level injuries. Domains of ongoing services ($p < 0.001$) and psychosocial support ($p = 0.006$) differed according to completeness of injury. Of the 38 individuals who identified goals related to ongoing services, 34 of these individuals had incomplete injuries while 39 of the 48 individuals who identified psychosocial support goals also had incomplete injuries. When considering level and completeness together, further differences were apparent. Ongoing services ($p = 0.006$), personal care ($p < 0.001$), community access ($p = 0.002$), ADL/household participation ($p = 0.003$), psychosocial support ($p = 0.005$) and vocational goals ($p = 0.002$) all differed across level and completeness of injury. Over 25% of those individuals with incomplete tetraplegia identified goals related to ongoing services. Similarly, over 25% of individuals with incomplete paraplegia identified psychosocial support goals. Approximately 1/3 of those individuals with complete tetraplegia identified personal care goals while more than 50% of individuals with incomplete paraplegia identified community access goals and approximately 2/3 of those individuals with complete tetraplegia identified ADL/household participation

goals. Vocational goals were most frequently nominated by individuals with complete paraplegia.

Age was negatively correlated with the identification of vocational goals ($\rho = -0.209$, $p = 0.002$) while length of stay in hospital was positively correlated with the identification of personal care goals ($\rho = 0.347$, $p < 0.001$) and negatively correlated with community access ($\rho = -0.238$, $p < 0.001$) and vocational ($\rho = -0.203$, $p = 0.003$) goals.

Mobility goals were negatively correlated with equipment ($\rho = -0.251$, $p < 0.001$), psychosocial ($\rho = -0.204$, $p = 0.002$), financial ($\rho = -0.181$, $p = 0.007$) and accommodation goals ($\rho = -0.177$, $p = 0.009$). Equipment goals were negatively correlated with psychosocial goals ($\rho = -0.210$, $p = 0.002$) and vocational goals ($\rho = -0.218$, $p = 0.001$). Personal care goals were negatively correlated with community access goals ($\rho = -0.188$, $p = 0.005$) and general health goals were negatively correlated with bowel/bladder management goals ($\rho = -0.204$, $p = 0.002$).

When considering the ICF domains, there were no demographic differences in the goal statements across each of the domains.

Discussion

Transitional rehabilitation is a relatively new service delivery model, particularly in the field of spinal cord injury rehabilitation. As such, little is known about the goals and directions within such services. The current study found that goals in transitional rehabilitation are broad and varied, spanning the spectrum of conceptual domains identified within the International Classification of Functioning, Disability and Health [15]. A typology was

developed that identified 18 different goal domains within transitional rehabilitation that represented the ICF conceptual domains of body structure and functioning, activity, participation and environmental factors. Goal domains of *general health/function* and *medical conditions* were representative of the ICF body structure and functioning domain. Goal domains of *mobility* and *bladder and bowel management* were reflective of the ICF activity domain. *Community access, ADL/household, vocational/educational, sexuality and recreation* goal domains were representative of the ICF participation domain. Environmental factors as defined by the ICF were reflective within the goal domains of *equipment, psychosocial support, services, personal care, accommodation, family support, financial/legal support, SCI specific education and medications*.

Client or patient centred care is considered a key paradigm in community rehabilitation and therefore is integral in assisting individuals to transition from hospital to home environments. Goals can reflect ambitions as well as possible or realistic achievements for individuals in this stage of their rehabilitation journey. Consideration and inclusion of both is important for client centred care [7] and both were identified across the goal domains within the typology developed from the current findings, highlighting their relevance for transitional rehabilitation. Client involvement in goal setting has been suggested to be currently limited by expert ideals and organisational factors [25]. While this may still be present in transitional rehabilitation settings, the current findings suggest that these contextual factors may have less impact than they would in a hospital setting because new services such as transitional rehabilitation are developed with client-centred practice in mind and are therefore not entrenched in preconceptions about what peoples goals should be. Therefore, goals were identified that were relevant to the life contexts of the clients.

The findings both support and extend existing work surrounding goal frameworks and rehabilitation goal descriptions in spinal cord injury rehabilitation. The findings support functioning, activity and participation goals that Dedding [23] identified across different rehabilitation groups in an outpatient context and support his conclusion that many of these goals are not assessed in standardised outcome measures. The typology further supports the work of Donnelly et al. [24] with individuals with spinal cord injury. Indeed, similar to this study, the current typology identifies the importance of self care and mobility goals. However, perhaps highlights greater emphasis on productivity and participation goals, consistent with a more community focus.

Comparisons to the Kuipers et al. [13] taxonomy developed within community rehabilitation for people with acquired brain injury suggest that the typology developed within the current study continues to have a greater focus on physical aspects of functioning. This is perhaps not surprising for two reasons. Firstly, transitional rehabilitation is offered to people for transitioning from hospital to home. As such, these individuals may continue to be more focussed on improving their physical functioning as a carryover from their often long stay in hospital and their experiences with inpatient rehabilitation. It is noted that the Kuipers et al. [13] typology was developed with a long-term community residing sample of people with acquired brain injury rather than individuals who were in transition from hospital to home. Secondly, it must be recognised that spinal cord injury is principally a physical disability and therefore these domains remain a rehabilitation focus whereas within acquired brain injury rehabilitation, it is often the cognitive aspects of functioning that take precedence.

Both the current typology and that developed by Kuipers et al. [13] support the importance of participation goals such as ADL/household goals, recreation goals and vocational goals.

Similarly, both typologies support the importance of environmentally focused goals such as personal care, equipment, family, financial/legal support and disability specific information. Differences however emerge from the different nature of impairment. For example, bladder/bowel management goals are important in transitional rehabilitation for people with SCI but were not identified in the Kuipers et al. [13] typology. Similarly, no cognitive goals were identified within the current typology other than minor issues within medical care goals. Accompanying the greater cognitive focus in the Kuipers et al. [13] typology is the greater focus on goals related to psychosocial support. It is unknown whether these goals would become more important to people with SCI as they spend longer living in the community setting. Similarly, recreation and leisure goals were identified but not as frequently within the current typology. The Kuipers et al. [13] typology identified goal domains related to social networks such as friends. This area did not really emerge within the typology of transitional rehabilitation goals and given that individuals have had limited exposure to their community setting since their injury, it remains a question for future research as to whether these social issues become a greater focus at periods further post-discharge from hospital. Alternatively, individuals with spinal cord injury may not experience as much disruption to their friendship networks because their impairment is primarily physical. Further work is needed to explore these issues.

Previous work with the Kuipers et al. [13] taxonomy developed in acquired brain injury has noted that the emphasis in rehabilitation (not the taxonomy per se but the relative frequency of the goals within it) can change over time and with changes in service direction [14]. Goals were relatively consistent within their domains across the five year data collection period for the current study. It must be recognised however, that the service itself did not change substantially in this period of time and therefore further research exploring possible goal

changes during more recent years and with service direction changes is needed to identify whether this phenomenon equally applies to the current typology.

In development of the current typology, the conceptual domains of the goals were mapped to the conceptual domains of the ICF. This suggests that the ICF offers a viable framework within which to consider goal typologies. What becomes apparent however is that the focus of rehabilitation goals may vary across ICF domains depending on the context within which rehabilitation goals are developed. Bovend'Eerd et al. [26] suggested that most goals are typically written around activity and participation domains. While the current findings support the importance of activity and participation domains, it appears, within transitional rehabilitation, that environment goals are more important and more frequently identified as a focus for intervention in the transition from hospital to home. This indeed represents a shift from the inpatient setting where interventions are more consistently focused on individual functioning rather than environment manipulation. Body structure and function goals do continue to be identified by clients who have transitioned to community living however.

In clinical practice, goal setting should be embedded within real life contexts [27,28] and the current findings support the notion that the community environment changes the focus in goal setting to these real life contexts such as living conditions, available supports, location etc while recognising the impact that previous inpatient rehabilitation has had in terms of maintaining a focus on mobility, bowel/bladder management goals. The emergence of family goals in the transitional rehabilitation setting is one such example. Family are often restricted in goal setting in inpatient settings [29,30] either through lack of invitation or lack of proximity and availability. The current findings suggest that it is vitally important to involve family in this goal setting process, particularly where the family will become a key

environmental support for the realisation of other transitional rehabilitation goals, and ultimately, successful community integration.

Interestingly, the exploration of personal differences in goal domains suggested that injury factors rather than demographic factors were more explanatory of goal choices, with the exception of age. For example, individuals with paraplegia level injuries, especially those with incomplete paraplegia level injuries, more frequently identified community access goals, perhaps related to their greater mobility in addressing these rehabilitation goals while individuals with tetraplegia level injuries, especially those with complete tetraplegia level injuries had a greater focus on personal care and ADL/household goals. Indeed, most individuals with paraplegia level injuries would be sufficiently independent in daily activities such that they would have no need for personal care services and would perhaps be more adept at completing ADL/household tasks. Given success in these domains, their attention moves to more participation oriented tasks.

An unexpected finding related to the greater identification of service and psychosocial support goals for people with incomplete functional impairment. This perhaps may be related to the exploration of ongoing services to maximise functioning for which a plateau or expected plateau has not been reached. Indeed, ultimate functioning is probably much more predictable for people with complete functional injuries and therefore these individuals may not seek additional services such as ongoing therapy to improve functioning. Similarly, in psychosocial domains, individuals with complete injuries have greater certainty about their future functioning possibly fostering greater acceptance and negating a need or desire to seek additional psychosocial support. Indeed, those individuals with complete paraplegia more frequently identified vocational goals, suggesting a readiness to move forward with a full

return to active community living. As expected, younger individuals were more likely to identify vocational goals in line with social and personal expectations about ongoing contributions to society.

Transitional rehabilitation is an emerging rehabilitation context within which an exploration of rehabilitation goals has facilitated the development of a goal typology. This typology offers existing services a benchmark framework for comparison while also providing those who may consider offering transitional rehabilitation services, a guide on which to assist with program planning. The scope of the framework suggests that this transition period offers an opportunity for services to assist individuals in realising a successful return home when they adopt client-centred goal setting approaches. The current typology does have limitations however that must be recognised and considered when being utilised for evaluative or program planning purposes. Firstly, the typology was developed within one localised specialist transitional rehabilitation service in Australia and therefore its application to other locales and services requires further exploration. Furthermore, the sample selected was restricted to individuals being discharged to the community for the first time following their injury. Individuals who were readmitted to hospital and received transitional rehabilitation were significantly different on a range of demographic variables. Further research could explore transitional rehabilitation goals for individuals who have had readmissions or who are being discharged to other facilities (e.g., other hospitals or nursing homes). Secondly, the rehabilitation goals identified that form the basis of this typology were developed using individualised goal setting processes between specific disciplines and clients. It is suspected that different goal setting processes (e.g., whole team with client) may offer a different typology or at the least demonstrate different priorities within the typology. Further research is required to explore the ways in which the goal setting process itself impacts on the nature

of the rehabilitation goals identified. Finally, it is suggested that priorities in client goals may change over time, with changes in service, personal and policy contexts. The current study offers a relatively static view of the rehabilitation goals of transitional rehabilitation clients and more longitudinal research is required to explore changes over time within transitional rehabilitation as well as personal changes in priorities of clients as they move from transitional rehabilitation into other community rehabilitation supports, including vocational support services.

Conclusion

The current study explored the rehabilitation goals of individuals with spinal cord injury who were participating in transitional rehabilitation services to support their transition home from hospital. The resulting typology mapped well to the International Classification of Functioning, Disability and Health, supporting this as an overall framework within which to consider transitional rehabilitation. The scope of the typology was broad and varied, while highlighting the focus on environmental rehabilitation goals of individuals with spinal cord injury. The typology offers rehabilitation professionals a guide to service planning and evaluation, within both hospital and community settings. Client-centred practice is essential for supporting individuals to identify their hopes and ambitions for rehabilitation beyond the hospital walls.

Acknowledgments: Special thanks to Dr Pat Dorsett, Greg Ungerer and Jamie Hunter for their assistance in the completion of this paper.

Declaration of Interest: This research was supported by the Centre of National Research on Disability and Rehabilitation Medicine (CONROD), Brisbane, Australia as part of a larger service development and evaluation grant.

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Figure 1: Sample selection from the target population of individuals with spinal cord injury receiving inpatient rehabilitation in Queensland

