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# Community Integration Following Severe Traumatic Brain Injury: Outcomes and Best Practice

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Community integration is often cited as the ultimate aim of rehabilitation. However, outcome studies show that following severe traumatic brain injury (TBI), many people do not return to valued life roles or reach previous levels of integration within their community. More recent research, in association with extensive clinical experience, reveals significant variability in outcomes within this group. Although some people return to productive activity and maintain a network of family and friends, others lead lives characterised by boredom and loneliness. This paper has two aims. The first is to examine TBI community integration outcome literature and selected theoretical models. The second is to describe a Community Approach to Participation (CAP), an individualised and collaborative model of community-based practice, which endeavours to address the poor outcomes identified following TBI. The CAP will be illustrated in the detailed case study of Sarah.

Outcome studies indicate that between 26–45% of people with severe Traumatic Brain Injury (TBI) are poorly integrated into their community in the longer term in spite of access to rehabilitation services (Doig, Fleming & Tooth, 2001; Tate, 2003; Winkler, 2002). Decreased opportunities for meaningful occupation and role fulfilment, as well as social isolation, are the main issues consistently reported in follow-up studies (Ponsford, 2003; Tate 2003, Winkler 2002), pointing to the need for more effective rehabilitation services.

Community-based rehabilitation is a new service model for people with TBI (Department of Human Services, 2001) that addresses the functional sequelae of brain injury in the context of the person's home, their local community

and/or society in general. Community-based rehabilitation works with people with TBI, their families and carers to achieve maximum community integration, participation and quality of life through increased independence, choice, opportunity and access to appropriate and responsive services. Limited literature exists to direct clinical practice in this area, however, in this paper reviews of the community integration outcome literature and theoretical models or approaches that can inform clinical practice are initially presented. Following this, the principles underpinning the Community Approach to Participation (CAP) are identified and examined. Finally, factors that facilitate participation in community life or that can be influenced by clinical interventions are detailed and explored.

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## Defining Community Integration

Willer and his colleagues were amongst the first authors to address and advocate the measurement of community integration, defined as “effective role performance in community settings” (Willer, Rosenthal, Kreutzer, Gordon & Rempel, 1993, p. 76). They outlined three areas of integration: *home integration*, that is, active participation of the individual in the operation of the home; *social integration*, that is, participation in a variety of activities outside the home and interpersonal relations; and *productive activities*, that is, the extent to which the individual is involved in employment, education and volunteer activities (Willer et al., 1993).

McColl proposed a broader, multifaceted definition of community integration as “having something to do; somewhere to live; and someone to love” (McColl, Carlson, Johnston, Minnes, Shue & Davies et al., 1998, p.16). In a later publication, McColl and colleagues (2001) identified four major components of community integration: *assimilation*, that is, being able to fit in with other people, knowing your way around and being accepted; *social support*, that is, being part of a network of family, friends and acquaintances; *occupation*, that is, having things to do for fun, and meaningful and productive activity to do during the main part of the day; and *independent living*, that is, competence in everyday tasks and making everyday decisions and life choices. Winkler summarised community integration as being concerned with “the inclusion of people with activity limitations in the common life of their local community” (2002, p.34).

## Community Integration Outcomes following Traumatic Brain Injury

People with TBI are substantially less integrated into the community than people in the general population (Willer et al., 1993; Willer & Corrigan, 1994). Further, there is a negative and long-term impact on participation in valued life roles such as worker, family member, friend, hobbyist and student.

## Independent Living

While the majority of people with severe TBI return to their previous living situation some, who had established their own household prior to an injury, return to live with their parents (Brzuzy & Corrigan, 1996). A small proportion of young people with severe TBI are discharged to aged care facilities. For many individuals, their change

in accommodation can be traced to a loss of the skills necessary for completion of personal, domestic or community activities (Brzuzy & Speziale, 1997). Specifically, executive cognitive impairments may detrimentally impact on more complex activities such as financial and household management (Ashley, Persel, & Krych, 1997; Brzuzy & Speziale, 1997).

Dikmen, Machamer & Temkin (1993) examined the living situation, financial and employment outcomes of people with TBI, at two years post injury, and compared these with their friends. They found a significant difference at all time intervals between the participants and their peers. By 1 year post-injury 50% of participants were living independently. By 2 years post-injury 68% were living independently — the majority of those not living independently were living with their parents. Those individuals who had moved out of their family home prior to the injury were more likely to return to independent living (Dikmen et al., 1993), possibly because they had already established the skills required to run a household. It is also possible that living in one's own home may, for someone who has not experienced it before, take longer to become an expectation or desire (Brzuzy & Corrigan, 1996).

## Employment and Study

Only 26–46% of people working prior to severe TBI return to competitive employment (Felmingham, Baguley, & Crooks, 2001; Fleming, Tooth, Hassell, & Chan, 1999; Olver, Ponsford & Curran, 1996; Ponsford, Olver, & Curran, 1995; Ponsford, Olver, Curran, & Ng, 1995). In addition to higher levels of unemployment in the TBI population, researchers have found that employment is often not stable. Sander, Kreutzer, Rosenthal, Delmonico, & Young (1996) reported that people with TBI appear to have difficulty maintaining work, evident by the fact that 25% of people who were working at initial follow-up were not working at three years. Tate (2003) also found that return to work outcomes fluctuated over time, with 41% percent of participants reporting changes in their occupational status between 10 and 25 years.

In addition, people with TBI frequently experience difficulties returning to study (Ashley et. al., 1997, Colantonio, Dawson, & McLellan, 1998) and, in order to do so, may require additional resources and support. Even with this intervention, many students need to change or modify their course or vocational goals (Stewart-Scott & Douglas, 1998).

## Social Contact

A number of follow-up studies of people with TBI have documented social isolation and negative effects on relationships. Eames, Cotterill, Kneale, Storrar & Yeomans (1996) found that 71% of their TBI subjects had “no social life except that arranged by their family”, and a further 15% reported a marked reduction in social activity. Only 14% of participants reported an independent, active social life (Eames et al., 1996). Many people with moderate to severe TBI report needing help to meet people (Brzyzy & Speziale, 1997). Olver et al. (1996) found at five years post-injury, 50% of people reported having lost friends and at ten years this had increased to 59% (Ponsford, 2003).

Winkler (2002) reported that despite being involved in tasks associated with social integration, isolation was still a significant issue, with over half of 40 participants with severe TBI reporting that their relationships with friends had changed substantially. These participants also spent less time in shared leisure interests with family and friends and more time alone than the general Australian population.

## Leisure

Leisure pursuits, defined as “occupations for enjoyment” (Canadian Association of Occupational Therapists, 1997, p. 37), are another area of role participation often adversely affected by severe TBI. Studies indicate that people with TBI are often unable to return to previous leisure activities (Olver et al., 1996) and have fewer interests than they did prior to their injury (Kersel, Marsh, Havill, & Sleigh, 2001; Winkler, 2002). They also tend to be involved in less physical and more passive recreation (e.g., watching television) than previously (Ashley et al., 1997; Dikmen et al., 1993). Although they may, over time, develop alternate leisure interests (Olver et al., 1996) many people will continue to require help to participate in recreational opportunities (Brzyzy & Speziale, 1997).

## Variability in Community Integration Outcomes

Recent research indicates significant variability in long-term outcomes within the TBI population. Tate (2003) found that 25 years after a severe brain injury 23% of participants reported a good level of psychosocial reintegration, 51% limited reintegration and 26% poor reintegration and for whom life was described as “impoverished in the extreme”

(personal communication). Cluster analysis of Winkler’s 40 subjects identified two groups: 55% with a high level of community integration who had returned to many of their previous occupations and maintained a network of friends and family and 45% with a low level of community integration who led lives characterised by boredom and loneliness (Winkler, 2002).

In Doig et al. (2001), cluster analysis identified three groups: 38% who achieved a high level of productivity, 22% who had a balanced lifestyle and 40% who were poorly integrated. Interestingly, the group with the high level of productivity were less integrated into home and social activities, while the group with a more balanced lifestyle were involved in part-time work, study and volunteer work. The poorly integrated group were socially isolated and tended to participate in social activities limited to friends with a brain injury or family. The relationship between an overall high level of community integration and part-time work is supported by other studies (Brown & Vandergoot, 1998; O’Neill, Hibbard, Brown, Jaffe, Sliwinski, Vandergoot et al., 1998). Doig et al. (2001) speculated that, for some individuals, the resumption of full-time work is paramount, but the demands impede the ability to integrate into home and social roles.

In spite of the overall bleak outcomes portrayed, research and clinical experience suggests that community integration outcomes can be enhanced for some people with TBI despite the presence of ongoing, severe cognitive-behavioural sequelae. The following section of this paper presents summaries of a number of theoretical models and approaches and provides the framework for the authors’ development of the Community Approach to Participation.

## THEORETICAL MODELS AND APPROACHES

### International Classification of Functioning, Disability and Health

The International Classification of Functioning, Disability and Health (ICF) (World Health Organization, 2001) provides a useful model to conceptualise the range of outcomes associated with severe TBI. ICF defines three levels of health: (a) body functions and structures, the physiological functions and anatomical parts of the body; (b) activities, the execution of tasks or actions; and (c) participation, the involvement in a life situation. Health conditions negatively impact on each of these three levels, namely impairments, activity

limitations and participation restrictions. The ICF model acknowledges the moderating influence of environmental and personal factors on health outcomes (World Health Organization, 2001).

A top-down approach (McLaughlin-Gray, 1998) to the three levels of health proposed by the ICF is applicable to community integration. That is, participation/restrictions are the primary focus and direct an understanding of the underlying activity limitations/skills and the specific impairments/function displayed by the person. Environmental and personal factors (the presence or absence of which modify participation levels) also need to be identified and understood for either positive or negative impact on participation. In the final section of this paper, the Community Approach to Participation model describes methods of addressing these factors to promote participation.

### **Cognitive-behavioural Rehabilitation**

Whilst this paper focuses on the participation level of health outcomes described in the ICF model, it is clear that many of the long-term issues faced by people with ABI can be traced to the impact of severe, residual cognitive-behavioural impairments (Ponsford, Sloan, & Snow, 1995; Winkler, 2002). Over the past two decades there has been vigorous debate in the literature regarding the most efficacious approach to cognitive rehabilitation (see recent reviews by Adams, 2003; Carney, Chesnut, Maynard, Mann, Patterson, & Helfand, 1999). Recent approaches have moved beyond repetitive, impairment-specific exercises designed to retrain cognitive functions, towards interventions that emphasise the importance of the person's individual, ecological context (Ylvisaker, 2003). Such interventions recognise that aspects of cognition are interconnected, and that cognitive performance will be influenced by a range of factors, including the individual's goals and emotions as well as the contexts in which actions are carried out (Ylvisaker, 2003). It is argued that learning is more effective if it occurs in natural settings, in the context of everyday interactions. Such approaches overcome a major limitation of traditional cognitive rehabilitation paradigms, that being the lack of generalisation of the skills learnt in trained contexts to untrained situations.

The management of challenging behaviours is also crucial, as ongoing behavioural disturbances are associated with psychosocial maladjustment and poor community integration outcomes, particularly in social contexts (Winkler, 2002).

Numerous authors have detailed intervention frameworks for addressing challenging behaviours (e.g., Jacobs, 1999; Ponsford, Sloan, & Snow, 1995; Ylvisaker, Jacobs, & Feeney, 2003), many of which outline the application of behavioural analysis to specific behaviours in real-world settings. Effective management plans can provide guidance for both proactive and reactive strategies that, over time, assist in shaping positive behavioural responses. Ideally, positive behavioural support will also encompass a more general approach that aims to meet the individuals' personal needs and maximise their quality of life. In addressing these more distant antecedents, challenging behaviours may significantly reduce over the longer-term.

The contextualised model of cognitive rehabilitation and the application of positive behavioural support are both consistent with, and necessary components of, the CAP. Intervention aimed at reducing participation restrictions must have, as its central focus, a range of strategies directed at reducing the impact of long-term cognitive-behavioural impairment, such that, despite persisting difficulties, people are able to adjust socially and reintegrate into valued community roles.

### **Canadian Model of Occupational Performance**

Human beings innately seek activity and opportunities to perform or "do" things. Occupations provide structure, routine, a sense of productivity and achievement and an opportunity for skill development and life role participation (Clark, 1997). Given that reduced opportunities for engaging in meaningful occupation are consistently reported in TBI follow-up studies, occupational performance models provide valuable insights to assist with the development of community integration interventions.

The Canadian Model of Occupational Performance (CMOP) highlights aspects of occupation highly relevant to the TBI population, including choice and control, balance in types of occupations performed, satisfaction and means of organising time and generating income (Canadian Association of Occupational Therapists, 1997). It also highlights the personal and environmental resources that occupations require, which may be lacking following TBI. Occupations assist people to organise their time into patterns and habits (Kielhofner, 2002), and when people lose major life roles following TBI (Davies Hallett, Zasler, Maurer, & Cash, 1994), the changes in routines and balance of occupation have an important

impact on their lives (Canadian Association of Occupational Therapists, 1997).

The concept of client centred practice is one of the CMOP's key components. In addition, it takes a developmental perspective and acknowledges that changes occur in the person, environment and occupation over a lifespan. In response to change, a person's life course pattern will adapt, evolve, and be transformed into new life patterns (Canadian Association of Occupational Therapists, 1997).

### Whatever it Takes

Whatever it Takes (WIT) (Willer & Corrigan, 1994) proposes that the desired goal for rehabilitation is community integration and describes an approach to overcoming the participation restrictions that people with TBI experience. Ten key principles of practice are outlined and include an individualised, holistic and respectful approach to working with each individual; real life, real environment skill development; consideration of environmental modifications and the development of natural supports. It acknowledges that people with severe TBI have lifetime needs and should have access to resources accordingly (Willer & Corrigan, 1994). Services therefore need to be flexible, innovative and life-long, responding to individuals' changing needs and desires over time and offering opportunities to develop natural, community-based supports. The significance of holistic assessment of individual needs, as the first step for community service provision, is highlighted in WIT and discussed in more detail below.

### COMMUNITY APPROACH TO PARTICIPATION (CAP)

The theoretical models and approaches previously outlined, in addition to the authors' combined 20 years of experience working in community settings, provide a foundation for deriving principles of practice within a model of community-based service provision. The CAP has been trialled with many people living with TBI, and is illustrated in the case study of Sarah.

The CAP aims to:

- Maximise the person's level of participation in valued life roles and their inclusion in home and community life
- Assist the person to maintain or develop a network of social relationships and supports

- Facilitate engagement in meaningful occupation
- Support the development of independence in specific activities that underpin role performance
- Promote feelings of self confidence and empowerment to make everyday decisions and life choices
- Enhance adjustment and satisfaction with the changed life.

Therapists need to be mindful that community integration is a challenging process. Progress towards the above aims is often variable, sometimes unpredictable and not always fully achievable. The needs of the individual will change over their lifetime, as will the resources required to support community participation (Willer & Corrigan, 1994). Typically, for each area of need, the individual will require a high level of initial intervention followed by a period of consolidation during which supports can be scaled back.

### Principles Underpinning Practice

#### Participation-oriented Assessment

When assessing the community integration of individuals with complex needs there will be a vast number of injury related issues, in addition to environmental and personal factors, that will impact on participation. Given this, it is unrealistic for clinicians to expect a complete picture of the person and their particular circumstances prior to commencing intervention. Assessment, goal development, intervention, evaluation and reassessment of the individual are cyclical and ongoing processes. As a more detailed understanding of the individual emerges, regular updating and refinement of goals and strategies is required. Assessment needs to be flexible, client centred and participation-focused. A semi-structured interview which elicits information about the individual's pre-injury lifestyle, daily activities and routines, life roles and satisfaction, personal achievements, perceived level of community integration and coping strategies is a starting point. While employing a participation and strength focus, the semi-structured interview also gathers information about the barriers and impairments that negatively impact upon role performance.

An interview format may integrate the use of formal assessments (see Table 1) that focus on *occupation* (e.g., the Occupational Questionnaire, [Smith, Kielhofner & Watts 1986], Canadian Occupational Performance Measure [Law, Baptiste, McColl, Opzoomer, Polatajko, & Pollock, 1990],

**TABLE 1**  
Summary of Tools Used to Measure Community Integration

Tool	Aim	Items	Scoring	Approximate Administration Time	Key References
Community Integration Questionnaire (CIQ)	To measure an individual's level of integration into the home and community	15 items	Three subscales: home integration, social integration and productivity. Total score with a range of 0-29.	15 minutes	(Willer et al., 1993)
Community Integration Measure (CIM)	To measure community integration from the perspective of people with ABI	10 items, each with 5 response options	Single summary score with a range of 10-50.	5 minutes	(McColl et al., 2001)
Sydney Psychosocial Reintegration Scale (SPRS)	To measure psychosocial integration. Forms for the person with TBI and family	12 items	Three domains: vocational-avocational, interpersonal relationships and independent living. Total score ranges from 0-72.	15 minutes	(Tate, Hodgkinson et al., 1999)
Role Checklist	Role participation and value attached to roles	18 items	Part I — role identification Part II — value designation No summary score	10 minutes	(Oakley et al., 1986)
Canadian Occupational Performance Measure (COPM)	To measure change in a client's self-perception of occupational performance over time	Individual identifies up to five problems with occupational performance	Self evaluation of current performance and satisfaction with current performance. Following intervention, performance is reassessed.	30-40 minutes	(Law et al., 1990)
Occupational Questionnaire	Elicits information about occupation over the course of a typical day	Records information in half hour intervals throughout the day	Produces scores that represent the amount of value, interest, personal causation, pain and fatigue experienced in a day.	40 minutes over the course of a day.	(Smith, Kielhofner & Watts 1986)
Interest Checklist	Leisure inventory appropriate for adolescents. Focuses on avocational interests that influence activity choices.	Asks about current interests, how interests have changed and whether one participates or wishes to participate in an interest in the future.	Reveals each individual's unique pattern of interests.	20-30 minutes	(Kielhofner, 2002)
Life Satisfaction Questionnaire	Measures the level of satisfaction in nine domains of life.	Nine items	Each item is checked along a six point ordinal scale ranging from 1 (very dissatisfied) to 6 (very satisfied).	5 minutes	(Fugel-Meyer, 1991)
Satisfaction With Life Scale	Global measure of life satisfaction.	Five items	Each item is scored on a 7-point Likert-type scale, the range of possible scores is 5 (low satisfaction) to 35 (high satisfaction). A score of 20 represents a neutral point at which the respondent is equally satisfied and dissatisfied (Pavot, 1991).	5 minutes	(Diener, 1985)

Interest Checklist [Kielhofner, 2002]); *community integration* (e.g., the Community Integration Questionnaire [Willer et al., 1993], Community Integration Measure [McColl et al., 2001], Sydney Psychosocial Reintegration Scale [Tate et al., 1999]); or *life satisfaction* (e.g., the Life Satisfaction Questionnaire [Fugel-Meyer 1991] and Satisfaction With Life Scale [Diener, Emmons, Larsen, & Griffin, 1985]). Formal assessments may provide a quantitative baseline measure and further identify those participation restrictions the person is dissatisfied with and desires to change. It is these areas that form the initial focus of intervention.

Structured observation of completion of functional tasks (Canadian Association of Occupational Therapists, 1997) is a key tool for examining performance of activities and identifying limitations experienced as they relate to the individual's chosen participation goals. Sound observation skills are required within a hypothesis testing, or clinical reasoning, approach (Unsworth, 1999). Structured observation requires examination of task components that the individual is able to complete and those within which errors occur; strategies that the individual spontaneously uses; their ability to respond to natural environmental prompts and cues and recognise errors or modify behaviour accordingly; the individual's level of satisfaction with their task performance and behavioural and emotional responses. Such observations will determine whether the person can complete the required task or not, in addition to identifying factors impacting upon performance. Ideally, structured observation should occur in real-time, within the individual's real-life environment (Willer & Corrigan, 1994).

Typically, at the stage post injury when community integration becomes a focus, people with TBI have had some lived experience of attempting to resume past valued occupations or life roles. At a minimum, most people will have developed a concrete level of insight into specific occupational experiences, which can be drawn out within an interview. Awareness of participation restrictions (e.g., loss of friendships; lack of participation in competitive sport) will typically predate insight into activity limitations and impairments, so a participation focussed assessment is most likely to elicit insightful observations on the part of the individual.

Significant others (e.g., family, friends or carers) should also be interviewed and formal assessments (see Tables 1 and 2) may be administered to gain a more complete picture of the person with TBI's current levels of community

integration and reduce the burden on the individual to provide detailed information.

## Life Roles/Meaningful Occupation Focus

Identification of the individual's goals, participation desires and valued life roles informs a shared vision for the individual's future and assists in the development of short and medium term intervention goals. Focus by the individual on what appear to be "unrealistic" life goals can be a challenge for therapists. However, it is important not to dismiss a person's dreams as evidence of lack of insight. Rather, individuals should be supported in their attempt to achieve these goals in one of two ways. First, "unrealistic" expectations can be conceptualised as long-term aims. By examining components of the life goal or occupation important to the individual, more realistic short-term aims, explicitly related to the long-term goal, can be set. Individuals may be motivated by incremental progress experienced. Second, individuals may be supported to attempt goal attainment, even when goals are unlikely to be achieved (e.g., return to driving or previous full time occupation). This offers the individual opportunities to test existing skills, potentially develop some insight into their current abilities and adjust their goals accordingly.

### *Sarah – Life Roles and Occupation*

Sarah identified that she would like to be involved in the life role of hobbyist, develop social and recreational opportunities in her week, independently access community based activities and, in the longer term, move out of home. In discussing these broad life areas, a number of specific occupations were identified that Sarah saw as personally meaningful and as assisting her to move towards her long-term goals. For example, Sarah identified shopping at the local supermarket for her personal needs as an activity in which she could develop her independence. This activity involved catching a bus, finding her way around the shopping complex, using a shopping list, money handling and budgeting. Over a 3-month period of training, she learnt to develop a routine of shopping and banking, to locate the bank and supermarket and was able to select up to four items without help. Strengths observed during this activity included good oral and written communication skills and commonsense within meaningful, functional situations. However, ongoing difficulties were also noted and she found catching public transport extremely challenging.

TABLE 2

Assessment — Sarah

Name	Sarah
Age	32
Date of Injury	1990
Type of Injury	Extremely severe traumatic brain injury; secondary hypoxic event.
Length of PTA	Estimated at 9 months
Length of Inpatient Rehabilitation	2 years
Discharge Destination	Home with family
Accommodation History	Living independently, moving out of the family home 6 months prior to injury
Weekly Support Upon Discharge	50 hours per week of paid attendant care support Family support for remainder of week 1:1 supervision for all community access and transport
Initial Impressions	Distressed regarding current circumstances Boredom, frustration with perceived control by parents and intense dislike of attendant care workers apparent
Client's Goals	"Get rid of carers"; "Go out by myself"; "In the future, to live by myself".
Time Use	No identified daily routine; gym up to two hours per day, leading to overuse injuries.
Strengths	Pride in physical appearance Good awareness of some participation restrictions Demonstrated motivation to increase independence within daily tasks Some ability to remove herself from a situation when she was becoming angry
Physical Status	Mildly ataxic; physically independent within personal care tasks.
Cognitive-behavioural Status	Profound amnesic syndrome Required prompting to initiate and organise activities Significant executive cognitive deficits (e.g., concrete thinking; poor planning and decision making; difficulty with complex problem-solving) Unstable mood Low frustration tolerance Verbal and physical aggression at times
Interest Checklist Results	Woodwork; rowing; singing; walking; yoga; water aerobics.
Community Integration Questionnaire Results	Home Integration Subscale Score — 0/10 Social Integration Subscale Score — 5/12 Productivity Subscale Score — 2/7 Total CIQ Score — 7/29
Role Checklist Results	Current life roles: Family member and gym participant Pre-injury life roles: Worker; home maintainer; friend; hobbyist and family member Focused on developing a friendship role
Findings from Structured Observation Within Functional Tasks	Sarah identified meal preparation as an activity in which she wanted to increase her independence, in context of goal to "live by myself". Structured observation of simple dinner preparation in Sarah's parents' kitchen was undertaken. Sarah was observed to display a logical, commonsense approach to locating items in the kitchen. However, she was observed to make numerous errors in task completion, even when provided with a simplified and step-by-step recipe. Unless the item was labelled, she could not recognise ingredients and substituted them in a haphazard way. She lost track of steps in a task, often repeating or omitting them. She displayed difficulties using equipment (e.g., independently lighting an oven). After a number of unsuccessful attempts, Sarah typically initiated seeking assistance, although unsolicited help was angrily rejected.
Intervention Planning	Initial interview and structured observation in cooking provided a basis for commencing intervention. For example, the therapist trialled approaching the provision of support by asking Sarah if she would like feedback when an error was observed. Questions such as "Sarah, if I see you making a mistake, would you like me to mention it?" triggered a positive response and led to the development of mutual respect which enabled Sarah to accept and act on therapist's feedback. This cyclical assessment and intervention planning process elicited more detailed information regarding Sarah's participation levels, functional abilities and underlying impairments. In turn, this led to more active structuring of cooking and other tasks and the gradual development of more effective strategies to increase independence.

For instance, she could not remember which side of the road to wait on to catch the bus; she repeatedly searched for and changed the position of her bus ticket in her bag; and, while in transit, could not remember if she was going or coming from the shops. These difficulties led to such a high level of anxiety that the transport component of the task was ceased and she accepted carer support to drive her to the shops and wait for her outside the complex. Despite her limitations, Sarah was pleased and saw her achievements as contributing to her long-term goal of living by herself.

### Development of a Therapeutic Relationship

The relationship between the therapist and individual is an important determinant of the success or failure of intervention (Ylvisaker & Feeny, 1998). Fundamental to this relationship is the therapist's respect for the individual and a belief that everyone is capable of making a contribution to their community through role participation. Two vital aspects in this relationship are empathy and trust. Empathy involves seeking to understand the thoughts, feelings and needs of the individual and actively communicating this understanding to them (Burke & Cassidy, as cited in Kielhofner, 2002). Trust is established through honesty and openness (Kielhofner, 2002).

During the process of increasing role participation, people will explore new situations, choose to take risks and be required to sustain effort when they are experiencing difficulties. The therapeutic relationship can support people through this process. Negotiation to achieve a common understanding of goals and plans, validation of the individual's perspective, fostering self-advocacy and the provision of encouragement and feedback is required. As the development of an effective therapeutic relationship with someone with severe and multiple cognitive-behavioural difficulties generally takes considerable time, ideally, therapists should make a long-term commitment.

#### *Sarah – Therapeutic Relationship*

The development of a therapeutic relationship with Sarah was influenced by her profound memory difficulties, in addition to a past negative experience with therapists in which she perceived an unacceptable imbalance of power in their relationship. However, over the first 12 months of an eight-year working relationship, Sarah developed a sense that the therapist understood her and was actively working with her towards her goals. This was

helped by adopting a less directive therapeutic role and allowing Sarah to experience the natural consequences of her impairments.

Working towards Sarah's goals dictated that, after discussion with Sarah and her family, risks needed to be taken in order to test the possibility of her achieving desired goals. This also allowed opportunities to unmask Sarah's potential, even when tasks were thought to be challenging. For example, considering her profound memory difficulties, the therapist felt Sarah would be unable to independently navigate her way around a shopping complex. However, this activity was trialled and was surprisingly achievable given the logical layout of the complex, in addition to Sarah's good sense of direction and commonsense, problem solving approach to negotiating her environment. The genuine excitement expressed by the therapist and Sarah at this achievement reinforced the mutual respect and common goal sharing that underpinned the development of the therapeutic relationship.

### Collaborative and Integrated Approach

Effective community practice requires close collaboration with everyone affected by the intervention including the individual, family, friends, paid carers, therapists and members of the local community. Given that natural supports usually last longer than paid ones (Willer & Corrigan, 1994), it is vital that family are included in the development of goals and interventions and the impact of increased role participation on them is considered.

Outcome studies show that following severe TBI many people lose friends and have difficulty establishing new relationships, resulting in socially isolation (Eames et al., 1996; Olver et al., 1996; Winkler, 2002). It is vital that friends are supported and included from the earliest stages of rehabilitation. Where friends are still actively involved, consideration should be given to interventions that help maintain their engagement in the individual's community life. Where friends are not actively involved, the therapist may consider ways of re-engaging past friends and developing shared occupations with new acquaintances (Callaway, Sloan, & Winkler, 2004).

An interdisciplinary team approach ensures that intervention is coordinated around common goals that stem directly from the participation objectives identified with the individual. Close collaboration with attendant carer workers and other team members is essential to ensure effective and efficient use of resources and eliminate conflicting or repetitious service delivery. Further, it ensures that, while maximising learning opportunities,

different therapists are not demanding too much of the individual.

### *Sarah – Collaborative Approach*

Key people in Sarah's life who could play a significant role in maximising her community participation were identified. They included her parents, grandmother and brother, attendant care workers, pre-injury friends and her gym instructor. Their perspective on Sarah's personal strengths, ideas for potential areas of role participation and observations of current abilities were gathered. For example, it was identified that Sarah could assist her grandmother by purchasing bread rolls for her lunch once a week.

An understanding of the very high level of support that Sarah's parents provided to enable her to undertake any activity (e.g., providing reassurance when she became anxious about a new activity) led to awareness that her community integration needed to be developed slowly. A step-by-step approach ensured that the family's stress was not increased and that, ultimately, the development of community-based occupations would provide them with some respite. By integrating her parents' perspective and addressing their concerns, a collaborative relationship was developed and ensured that they reinforced strategies and provided feedback on achievements, potential barriers and issues arising. They were also partners in her progress and together celebrated the achievement of incremental goals.

Collaboratively, the occupational therapist and physiotherapist worked with Sarah to identify and trial a sport that offered some social contact as well as physical challenge, while replacing some gym sessions. Activities trialled included yoga, tai chi, rowing and aqua aerobics. Regular participation in yoga and aqua aerobics are now incorporated into her weekly routine. The physiotherapist also liaised with the gym instructor to review and upgrade Sarah's gym program and provide education regarding her support needs within a gym setting.

### *Individualised, Flexible Support*

Flexible and innovative practice is required to ensure effective support services that promote community integration (Willer & Corrigan, 1994). In addressing complex issues, considerable creativity and problem solving skills are required (Ylvisaker & Feeney, 1998). The person's unique needs and wants must be considered in the context of their abilities and adjustment to their current level of community integration (Willer &

Corrigan, 1994). Rather than attempting to fit the person to existing service and support models, solutions should focus on what would ideally work for the individual. Some barriers (e.g., limited or inflexible funding; lack of age appropriate accommodation facilities), when encountered, will require innovative solutions or compromise.

### *Sarah – Individualised Support*

Sarah's cognitive behavioural impairments severely impacted upon everyday functioning such that support was required to participate in many activities. However, she rejected attendant care workers as she felt they highlighted her disabilities and this triggered her challenging behaviours. Her family expressed concern regarding her ability to achieve a level of community integration independent of paid carers.

Investigating successful relationships within which she was already receiving support (e.g., gym instruction; home help) demonstrated that she would accept assistance in the context of a normalised relationship (e.g., teacher–student; cleaner–employer). Hence, the therapist investigated opportunities to provide more naturally occurring support within the context of shared occupation. This led to Sarah accepting some necessary assistance to achieve her participation goals. For example, within a woodwork class, attendant care worker funding was used to employ a woodwork assistant assigned to support Sarah, whilst from Sarah's perspective he was seen as a teacher's assistant.

It was observed that close parental or paid carer supervision prevented Sarah from experiencing the consequences of mistakes, inhibiting development of insight. An intercom system, set up between her living quarters and the family home, allowed Sarah to receive "on the spot" assistance as requested, rather than unsolicited instruction. Subsequently, Sarah perceived a greater sense of control and autonomy, facilitating discovery of strengths and limitations within everyday tasks. The change in provision of support also led to a significant reduction of challenging behaviours.

Formal counselling sessions were trialled with little success. Sarah was unable to remember details of incidents that had caused her distress, nor the content of these sessions later on. Ongoing provision of brief, "on the spot" telephone discussions with her occupational therapist or Neuropsychologist has proved more successful. This contact assists Sarah to discuss problems at the time she is experiencing them and reinforces coping strategies. This intervention has led

to an increased level of psychological adjustment and reduction in stress.

### Long-term View

Achieving participation goals with people with severe TBI requires a long-term perspective (Ylvisaker, 2003) and intervention needs to be cyclical and dynamic (Willer & Corrigan, 1994). Although residual impairments plateau over time (Sloan & Ponsford, 1995), activity and participation levels may fluctuate over the life span. Long-term services are ideally placed to plan proactively, foster supports and develop ways of modifying those supports over the years as life circumstances change (Ylvisaker, 2003). This approach may lead to periodic, intense bursts of intervention in order to meet evolving community integration issues. Further, coping difficulties resulting from TBI will hamper the individual's ability to manage naturally occurring life events such as loss of employment, death of a parent or change of accommodation. These situations may present as life crises that will be more effectively managed with the assistance of support personnel who already have a strong therapeutic relationship with the individual.

#### *Sarah – Long-term View*

As previously stated, Sarah expressed a long-term goal to live independently in the community. Within the first 12 months, a number of specific activities that related to independent living were addressed (e.g., cooking and shopping) and a thorough understanding of her strengths and potential for long-term independence was gained. This experience provided a platform for the formulation of a long-term plan for independent living and a range of accommodation options were explored. There were two key defining factors that shaped the goals regarding Sarah's future accommodation and support needs. First, she was adamant that she did not wish to share accommodation with other people with disabilities. Secondly, apart from assistance with transport, Sarah continued to reject attendant care support within daily tasks. As a result, in consultation with Sarah, her family and the funding body, a decision was made to purchase a transportable bungalow to be situated, initially, on the family property. A bungalow was selected in the context of long-term planning for Sarah's future when her parents would no longer be able to support her. The potential relocation of the bungalow meant that her learning within this setting was transportable to a new location. For example, becoming familiar with the kitchen, its layout, and

the location of food and equipment took considerable time, repetition and effort on Sarah's behalf. Opportunities for development of independence including cooking and housework, which slowly improved over a 5-year timeframe, were offered and could potentially be sustained in the long term, in the same home environment.

Currently her parents, now in their mid-50s, are looking to sell the family home and, in line with her independent living goals, Sarah has decided that she would like to live in a small, rural town, where she has regularly holidayed for the past 30 years. Sarah identified a number of advantages to this new location, including knowing her way around the local area, having some existing social contacts in the town, and access to local shops and services within a two kilometre radius. This reduces her reliance on paid supports for transport and community access assistance, further increasing her sense of autonomy and independence.

Prior to committing to relocating her bungalow, Sarah secured a rental property and, over a 12-month period, with a high level of support from her parents, spent 2 days each week in the new community. During this time, and considering the unfamiliar home environment, demands of domestic activities (e.g., meal preparation, laundry) were eliminated via the provision of delivered meals and home help. This trial enabled Sarah to explore opportunities for community-based occupation, examine the benefits and challenges of living in this new location and commence making social contacts. This trial was highly successful and resulted in Sarah making a decision to purchase a property on which she could relocate her bungalow.

Following the CAP undertaken with Sarah to date, her Role Checklist results illustrate active and valued participation in the life roles of family member, gym participant, community group member, friend, pet owner and home owner. Her Community Integration Questionnaire score has increased from 7/29 prior to the CAP to 16/29, with home and social integration the most apparent increases. Sarah has developed independence in cooking, shopping, laundry and daily housework tasks and is now able to independently access her local community using a motorised scooter. She requires ongoing support with financial management, heavy domestic tasks, home maintenance, day-to-day problem-solving and psychological adjustment. She currently receives 11 hours per week of paid attendant care support, structured as domestic home help and occasional transport assistance.

Once the bungalow is moved to this new location, Sarah's family will initially move into the house on her property to replicate the living arrangements that she has been familiar with over the last five years. Following a 12-month period of consolidating Sarah's skills and routines in this new community, her parents will vacate the house, moving to their own home in the local area, and the house on Sarah's property will be rented to someone who will be compensated for providing her with periodic support as required. Once she permanently moves to this new location, interventions aimed at furthering her sense of belonging and inclusion will be required to assist Sarah to extend social connections, shared occupations and meaningful life roles within the local community. During this transition period, the intensity of professional input will increase to assist Sarah to achieve a desired level of community participation and to problem solve issues and additional needs. At 32 years of age, this is the beginning of a new life stage for Sarah, as she now lives by herself and is oriented to and feels part of her community. There has been a marked reduction in challenging behaviours and it is expected that she will benefit from continued, intermittent support and reviews of her ongoing needs and desires.

### **Factors that can Be Modified to Promote Participation**

Effective clinical practice in community settings is enhanced by the models, approaches and principles discussed previously. The CAP assumes people can increase their level of community participation despite complex, persisting impairments. Within the context of ICF (World Health Organization 2001), participation can be facilitated by clinical interventions that target the three moderating factors described; that is, environmental and personal factors and the reduction of activity limitations via skill development. The following addresses the application of the CAP to intervention focussing on these three components.

#### **Environmental Factors that Influence Participation**

Individuals with TBI must make numerous physical, social and emotional adjustments in order to engage in meaningful occupation. When environmental manipulation can be made to compensate for cognitive impairments or activity limitations experienced, the individual is left with more energy to address desired goals for participation (Willer & Corrigan, 1994). Environmental manipulations

may also serve to increase motivation of the individual to keep trying new occupations, as well as solving challenges within current situations.

A person's interaction with their physical, social and attitudinal environment is a dynamic, two-way process (Kielhofner, 2002). When considering environmental variables there are three main modification strategies that can be introduced to impact upon participation. Firstly, modifications undertaken to promote independence in activities related to participation goals (e.g., modifying a kitchen and providing adaptive equipment to enable independent meal preparation); secondly, structuring the environment to eliminate the need to perform an activity that is not highly valued by, or is currently beyond the abilities of, the individual (e.g., receiving home-delivered meals rather than learning to cook); and finally, environmental modifications providing natural prompts to assist initiation of activity (e.g., leaving pyjamas out may prompt the person to change for bed).

Community integration environments need to be carefully selected and structured to promote access and inclusion. Alternatively, the person can be supported to learn to cope within an existing environment. This approach allows the therapist and individual to collaborate and determine whether to develop the person's skills to overcome the occupational challenge faced in the particular environment, or whether to modify the environment to compensate for the challenge. Environmental modification and/or skill development assists in reducing the stressors associated with new community activities. In addition, environments that reduce activity limitations and promote independence in occupations offer the opportunity for more naturally occurring and sustainable participation and reduce the need for paid care or support.

When considering community integration options with an individual, assessing the range of environments in which this occupation may be pursued highlights, in relation to the person's specific needs at that time, the relative strengths and weaknesses of each environment. This process allows for the selection of the most appropriate environment, which can then be tailored to the individual. For example, the physical environment (such as entry and exit points, location and availability of transport), social environment (such as the age range or compatibility of others in the environment compared with the individual) and attitudinal environment (including the acceptance and understanding of people with cognitive behavioural impairments) must be considered.

“Facilitators are any environmental factors in a person’s environment that through their absence or presence improve function and reduce disability” (World Health Organisation 2001, p. 166). Some facilitators will be fixed and may preclude participation by the individual (e.g., timing of the activity) whereas others can be modified (e.g., attitudes towards and level of understanding of the abilities of people with TBI). Identification and consideration of both fixed and malleable environmental facilitators is a key requirement of the CAP.

### *Sarah – Modification of Environmental Factors*

Sarah’s community-based occupations required careful selection and consideration of the potential environments in which they could take place. In supporting Sarah to select a gym in her new community, preference was initially given to the availability of aqua aerobics at a gym 10 kilometres from her home. While this gym offered comprehensive facilities, transport to and from it proved difficult. Unwilling to accept attendant care support, Sarah chose to investigate an alternative gym in her local community, although it lacked pool facilities. Though this physical environment offered less activity options, the social and attitudinal environment was more inclusive and she routinely came in close contact with a group of local people exercising at similar times to her. The gym owner warmly welcomed her to his facility and agreed to provide some natural support to encourage participation and, most importantly for Sarah, this activity could be undertaken independently.

When pursuing opportunities to develop social networks, Sarah trialled a community-based social group for young people with TBI. In this environment, she tended to engage most readily with staff facilitating the group. She did make an attempt to initiate social contact with other group members, however she perceived this was not reciprocated, leading to feelings of rejection. On subsequent attendances she was observed talking to other group members; unfortunately her memory difficulties meant that she only ever recalled her first, negative emotional reaction to being in the group and she subsequently declined to attend. Within social interactions, Sarah relies heavily on her conversational partner to modify and structure the interaction to ensure a positive experience. Social groups, with a heavy reliance on conversation and social interaction, rather than shared occupation, were more challenging for her, particularly when conversa-

tional partners also exhibited communication difficulties. These observations led to the selection of environments within mainstream settings, in which the focus was on a shared occupation and proved to be more successful and sustainable for Sarah.

When commencing skill development in meal preparation, a number of physical environmental modifications were required to compensate for Sarah’s various impairments. Kitchen appliances were selected based on whether she was intuitively able to establish, within a showroom setting, how the appliance worked. This ensured immediate success and reduced learning needs via the provision of simple user interfaces. Kitchen cupboards were organised on a logical basis, using Sarah’s intuitive and past knowledge. The option of labelling cupboards for items was discussed with Sarah, and revised a number of times to capture items that proved difficult to find. For cupboard labelling, Sarah, after viewing a number of fonts, chose a decorative script as she felt plain scripts were unacceptable because they highlighted her disability. Safety considerations were paramount when structuring the physical environment. As Sarah has no sense of smell, electric appliances rather than gas were used. An induction cooktop eliminated the risk of Sarah burning herself.

When examining her social environment, Sarah expressed a desire to increase her social contact with friends from prior to the injury. After consultation with her parents, it was agreed that they would make initial contact with past friends to explore the possibility of re-establishing social links and identify suitable shared occupations. The sharing of a meal was identified as an activity that could be undertaken with friends and also addressed Sarah’s strong desire for independent living. She was supported to develop the confidence and skills to prepare, and then invite friends to share, a simple meal at her home. She used the same menu plan each time thus ensuring success and reducing the stress related to entertaining.

With Sarah’s permission, prior to her commencing a new community-based yoga group, telephone contact was made with the group instructor. This contact enabled the therapist to provide education regarding Sarah’s abilities and support needs for participation. In addition to discussing Sarah’s profound memory deficits, it was highlighted to the yoga instructor that Sarah is sensitive regarding her impairments and intensely dislikes being treated differently. For example, it was suggested that, if there were changes in times or dates for the group, rather than single

Sarah out, all participants be prompted to get their diaries to write down the information provided. The yoga instructor applied these suggestions in a subtle and effective manner, leading to Sarah sustaining weekly participation in the group, within which she has developed a sense of belonging. Attitudinal modification included negotiation with Sarah's family regarding taking calculated risks in order to provide opportunities to increase autonomy and independence within everyday activities. Over time, with graded participation to ensure safety and a level of success, Sarah's family became more comfortable with risks and were willing for direct supervision to be reduced to enable her to test out skills within community environments.

### Personal Factors that Influence Participation

TBI is a life-changing event that has serious and long-term repercussions for the individual. Community integration involves a process of discovering the changes that have occurred due to the injury and coping with the day-to-day stressors that are associated with community living following TBI (Karlovits & McColl, 1999). People will bring various personal strengths and weaknesses to bear in response to complex circumstances. Successful reintegration into the community requires considerable personal adjustments and the development of coping strategies. An overall goal of the CAP is to assist the person to adjust their life goals and reach a level of self acceptance.

The ICF model emphasises the impact of personal factors in moderating the relationships between function, activity and participation. Some personal factors are fixed (e.g., age and cultural background) and require that rehabilitation is tailored to account for them. Other personal factors are fluid and are amenable to modification via psychological interventions (e.g., coping style and locus of control). Moore and Stambrook (1995) refer to these as "cognitive moderators".

Some coping strategies are adaptive whereas others are maladaptive, and 3 main types have been described by Karlovits and McColl (1999): problem-focused coping, emotion-focused coping and perception-focussed coping. Coping skills integrated into everyday routines will usually be more practical and reduce the expectation of recall and generalisation of skills. This avenue also offers opportunities for repeated practice to consolidate learning and may be achieved by training support persons in the individual's envi-

ronment to prompt use of coping strategies on a regular basis. Understanding that the individual's day-to-day experience may be stressful underlies the importance of allowing an extended timeframe for change.

Modifying dynamic personal factors may involve a number of approaches. Firstly, it is important to identify the nature of the issues or stressors (immediate antecedents) related to coping, as they impact upon participation. Further, assisting the individual to develop an awareness of background factors (remote antecedents) that influence their ability to cope with specific daily stressors can be undertaken. For example, change of routine, lack of sleep or ill health, create a psychological climate upon which specific stressors (e.g., making a mistake within a task or conflict with a family member) are superimposed and further impact upon the individual's coping ability. Often by working on these background factors, there is a general improvement in coping, as the climate in which the person functions is more conducive to the management of stressors. The therapist can assist the individual to make explicit links between these antecedents and coping. This raises awareness and creates a platform for the individual to actively participate in the development of coping strategies.

### *Sarah – Modifying Personal Factors*

Over the long-term therapeutic relationship with Sarah a range of coping strategies has been developed that has extended her personal resources to manage and adjust to the sequelae of her injury. Practically, Sarah benefits from a very structured daily routine that commences with a physical activity outside the home setting. Lack of structure and exercise in the morning was identified as an underlying factor to her not coping. In the void created by the absence of activity, she spent considerable time ruminating over the negative aspects of her life circumstances which tended to precipitate a spiralling depression. By structuring a gym or yoga session each morning, she had a focus for her day and a reason to participate in routine personal care and domestic activities. This gave her less opportunity to dwell on her problems and, engaging in activities, created feelings of satisfaction and self-worth.

A structured problem-solving approach to daily demands was developed to assist in reducing the anxiety she experienced when confronted with tasks she was unable to perform. For instance a written checklist for dealing with home management issues (e.g., what to do if the dog goes missing; and how to reset the electrical

safety switch) was developed and placed in a “procedure manual”. Additionally, a contact list of people to ring if she was unable to problem solve was compiled and helped to increase her level of confidence in her ability to cope with the demands of independent living.

Psychologically, “on the spot” telephone counselling assisted Sarah to reframe and de-personalise challenging day-to-day experiences, enabling her to form a realistic perspective of the issue before it became distorted and cemented into her memory. Strategies to reduce powerful emotional responses to stressors (e.g., relaxation; counting to 10; walking away; release of emotion through physical activity) have been promoted. Further, she has learnt to accept that some issues are not able to be resolved or changed and are best ignored, whilst other issues can be positively influenced through assertiveness and effective communication. She has developed realistic expectations and is able to take satisfaction in what she can achieve, without excessively dwelling on, or being frustrated by, activities she can no longer manage. For instance, she has accepted that she cannot manage cooking a meal every night and is satisfied with convenience foods 3 nights a week.

Psychological adjustment has been extremely challenging for Sarah and with each life cycle change experienced by her brother and peers (e.g., overseas travel; marriage and childbirth), she experiences a renewed sense of loss. However, she has accepted that her life is different to that of her peers and positively reframes her lifestyle as “early retirement”. This is comparative to others in her new local neighbourhood and has led to a level of satisfaction with attending tai chi with older-aged women, for instance.

### Reducing Activity Limitations Through Skill Development

Skill is defined as “the level of proficiency in a specific task” (Christiansen & Baum, 1991, p. 23), and is in part determined by the person’s abilities. Skills underlie performance of a vast range of life tasks, many of which may be severely compromised following TBI. A key focus of CAP is to assist with the acquisition of skills to facilitate competence in selected tasks, which in turn supports role participation. However, memory and learning impairments, coupled with other physical and communication difficulties, will impede skill development and generalisation. These difficulties can be minimised by a structured approach that draws on the

principles of procedural memory, characterised by the following:

- *Skills related to the individual’s goals:* The top-down approach drives the selection of skills that support valued role participation. To be motivated to work on skill development there needs to be an explicit link between the skill and the desired goal. Motivation is also maximised by supporting control and choice within activities.
- *Simplify and structure the task in which the skills to be learnt:* Task simplification reduces demands on impaired functions and promotes the likelihood of successful skill development. Strategies or techniques to facilitate skill development may be applied to maximise learning and compensate for impairments. Mastery requires opportunities to test and practice skills in more complex settings. As the individual’s skill level and confidence increases, challenges within the tasks can be upgraded to meet everyday demands.
- *Building on strengths:* Observation of performance will reveal personal strengths, residual fragments of past skills and spontaneous compensatory strategies. These positive traits provide a platform for skill development. The fact that it is easier to relearn an old skill than to learn a new one suggests the therapist should support the individual to consider the pursuit of familiar activities. However, the potentially confronting nature of participation in previously mastered activities requires consideration. At times, the valued tasks or experiences that underpin a desired occupation can be replaced or replicated within an alternative, achievable activity (e.g., training on the use of a scooter as an alternative to driving).
- *Developing routines:* The ultimate aim of skill development is that performance is automatic within the context of the individual’s structured daily routine. Embedding skill development within functional tasks, routines and environmental contexts provides natural cues and prompts, increasing the efficiency of learning. Routines also provide opportunities for repeated, consistent practice within real-life environments. It is important to build on pre-established routines rather than imposing new ones where possible.

### *Sarah – Skill Development*

When Sarah moved into her bungalow she identified breakfast making as a component of her

long-term goal of independent living. Structured observation revealed that she was independent in all aspects of preparing breakfast except for the skill of operating her microwave oven to warm milk for cereal. Task simplification was utilised through the purchase of a microwave with a simple user interface. A jug was clearly marked with the level of milk required. Written cues were provided to prompt each step of the skill and her mother was provided with a similar guide that could be reinforced if Sarah requested help via the intercom. This ensured consistency of practice and over a period of 2 months she achieved independence in the task.

## CONCLUSION

Community rehabilitation is an emerging area of clinical practice with the potential to make a substantial impact upon the lives and long-term support needs of people with TBI. This paper outlines a flexible Community Approach to Participation. Such an approach reflects a synthesis of long-term outcome studies, current intervention literature and professional knowledge and application. Clinical experience indicates that, with the application of the approach outlined, a significant increase in community integration can be achieved and the quality of life for people with TBI enhanced. Further research is required to assess the comparative efficacy of this approach. The authors acknowledge that, due to the heterogeneity of the TBI population and the necessarily individualised nature of community interventions, such research is particularly challenging to conduct.

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