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The patient's view of recovery: An emerging tool for empowerment through self-knowledge

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Abstract

Purpose—To introduce Recovery Preference Exploration (RPE) as a new technique for studying the personal significance of being able to perform one type of functional activity over others. To determine if patients' concepts of function reflect the ADL, sphincter management, mobility and cognition (ASMC) domains established through the factor analyses of observed patient performance.

Methods—RPE involves an adapted card sort procedure. Patients sorted 18 cards each listing a single functional skill such as eating, walking, and memory into subjectively meaningful groups of activities based on how they see those skills relating to one another in their daily lives. They then ordered the groups from most to least important. Recovery preferences were explored for 32 patients with disabilities resulting from neurological or other conditions undergoing inpatient rehabilitation in the USA.

Results—The abilities to eat, bathe and toilet were the activities most frequently placed in the most valued pile. At times, the patient's card sorts mirrored the ASMC domains. At other times, patients grouped activities that tended to occur in a particular place or that were linked through cause and effect. Patients' narrative explanations reflected the uniqueness of their personal circumstances.

Conclusions—RPE uncovers the life contexts that underlie patients' subjective beliefs about the meaning of being able to perform various types of activities. RPE might be applied in clinical practice and research to explore the idiosyncratic aspects of disability.

Keywords

Rehabilitation; patient-centered care; attitude to health; problem solving; activities of daily living; urinary incontinence; fecal incontinence; mobility limitation; communication; cognition

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Introduction

Motivational theory and its application to rehabilitation

Abraham Maslow in the mid-20th century defined the ‘hierarchy of human needs’, in which he proposed relatively standardized levels of needs [1]. In this theory, a person is motivated to meet basic physiological, and safety needs before attending to a higher level of need. As basic needs begin to be fulfilled, ‘self actualization’ emerges, defined as, ‘the desire to become everything that one is capable of becoming’ [1, p. 46]. As each need becomes partially fulfilled, others emerge as more powerful motivators for behaviour. More recent theorists recognize self actualization as a process of lifelong learning in response to environmental cues [2]. Needs are not seen as standardized. With onset of disability needs become re-prioritized. A person with new onset disabilities will respond to lost function by looking for a new equilibrium of mind and body within the physical and social-cultural environments surrounding them [3,4]. The equilibrium achieved depends on which lower level goals are achieved within that environment.

Emmons distinguished between lower level goals as more measurable and higher level goals as more abstract expressing ‘what a person is typically or characteristically trying to do’ [5, p. 315]. The degree to which the achievement of lower level goals feed into higher level goals determines the relative meaning of those goals to life [6]. Siegert and Taylor noted that by organizing lower order goals in relation to higher order goals it is possible to keep the individual’s existential self as a central focus in rehabilitation’ [6, p. 6]. They asked: ‘How do we best establish clients’ meaningful higher order goals and then help them achieve these through more concrete lower level goals or tracks?’ (p. 8).

We are developing a series of techniques referred to as Recovery Preference Exploration (RPE) intended to guide patients through a process of prioritizing the recovery of lower level objectives related to achieving independence in the performance of every day functional activities. Associations between difficulty performing those activities (objectively expressed status) and the subjective meaning of that status are believed to arise through complex interactions among intrinsic mental and physical processes and the extrinsic physical and social-cultural environmental contexts [7] surrounding each person’s life. The interactions between the intrinsic and extrinsic are conceptualized through a biopsychological model [3].

The most complex version of RPE referred to as ‘Free-growth RPE’ was derived from the ‘free growth’ phase of the ‘Features Resource Trade-off Game (The Game) [8]. In the game patients are asked to imagine that they have more severe disabilities than they actually have. They indicate the order of optimal recovery (assuming they could control the order) by selecting among multiple functional activities and multiple levels of imagined performance.

The RPE process presented here is an adaptation of free (or open) card sort methods [9]. The Card Sort RPE version was developed when it was found that patients with even mild cognitive impairments had difficulty ranking all 18 Functional Independence Measure (FIM) items simultaneously and understanding the concept of the 7 performance levels (see description below) [10]. In card sort RPE, the patient first creates personally and ecologically meaningful categories by sorting a set of functional status items into groups that reflect how they see the activities going together in their daily lives [11]. The patient then ranks each group by its relative importance. The rankings are applied to generate a person specific ‘preference hierarchy’. The driving forces motivating rehabilitation eventually emerge as the patient articulates increasingly abstract concepts [5].

Several assessment tools have been applied in either RPE or its game predecessor [8,12]. Because inpatient rehabilitation facilities in the USA are mandated to document patient status on the Functional Independence Measure (FIM™) [13] we chose the FIM definitions of everyday functional activities in this RPE study. In healthcare systems outside the US or in other settings, different assessment tools may be more appropriate. Developed by Granger and colleagues [10], the FIM describes patients' levels of independence on a 7-point scale for 18 activities. The performance scores on each of the 18 FIM activities are: total assistance '1', maximal assistance '2', moderate assistance '3', minimal assistance '4', supervision '5', modified independence '6' and complete independence '7'. A '0' indicates an activity did not occur.

The FIM definitions reflect the standard language that clinicians use to express the amount of assistance required by patients when performing daily activities. It includes the organization of the 18 items into 4 clinically related groups of activities confirmed through factor analysis. These groups include the ADLs, sphincter management, mobility and cognitive domains (ASMC) [12]. These domains logically group activity by ontogeny of disability according to anatomical region of the body (i.e., activities that primarily involve use of arms, bowel and bladder, legs and brain, respectively). Although these descriptions of status link dysfunction to anatomic impairment in a way that is logical for clinicians the domains are stripped of the meanings of that status [14].

The card sort RPE technique is presented as a potential clinical and research tool for uncovering person-specific domains of meaning along with the value people place in being able to perform various types of everyday activities. We hypothesize that driven by their values and experiences within personal surrounding physical and socio-cultural environments patients will not always group the 18 FIM items in ways that reflect the ASMC domains.

Methods

Sample

Thirty-four consecutive patients from an urban inpatient rehabilitation setting who agreed to participate in the study were enrolled. Participants signed written consent forms according to the institutional review board's requirements, agreeing to release de-identified quantitative and quoted portions of their interviews as well as quantitative data generated. Participants were selected who required no more assistance than prompting or supervision with comprehension, expression, social interaction, problem solving, or memory, as measured by the FIM.

Card sort technologies

All card sort strategies aim to categorize information based on personal subjective beliefs of how pieces of information (on cards) fit together within an individual's system of meaning. Some card sort strategies focus on gathering qualitative information while others focus on quantifying information. Card sorts performed by individuals in research studies are generally aggregated to obtain a better understanding of information architecture in the domain under study. Card sort methods are of two basic types. A 'closed' card sort has a fixed number of categories determined by the researcher. It lends itself readily to quantitative analysis because the fixed number of cards and categories to sort them into provides a common denominator. This type of card sort is used in applications where patient preferences [15], for example, need to be quantified for hypothesis testing. A specific type of closed card sort is the Q-Sort designed to quantify subjective value or meaning assigned by an individual to a construct. It involves rank ordering of constructs along a specified numeric continuum [16]. The 'free' or 'open' card sort provides a clean slate on which an individual can map relationships of concepts to one another in an unconstrained number of piles. This type of card sort yields more robust

qualitative information for consumer-centered design of information and services. Application of this type of card sort has produced website designs [17], models for building theory [18], and educational materials. Open card sorts are more difficult to quantify.

An open card sort procedure is ideal for our purpose of eliciting patient preferences for recovery. The card sort's open structure allows patients to rank self-generated units of meaning into priorities that fit the eco-cultural context of their life and intended lifestyle. Dialogue during the card sort generates substantive narrative information about the specific meaning of rehabilitation activities in the context of an individual patient's preferences for recovery.

The RPE procedure

The card sort RPE procedure was administered by a research assistant using a scripted protocol under the direction of a physician. Each of the 18 FIM items was listed on a separate card with its definition on the back. After ensuring that the patient understood the definitions for each activity the patient was asked to sort the 18 cards into piles of activities that they believed held 'similar meaning in their everyday life'. They made as many piles as they wished and formed groups of any size. They were encouraged to discuss and rearrange the cards as many times as they wished until they were satisfied with the groups. They explained the relationships among the grouped items and the meanings each set had to their life, revealing their personal domains of meaning.

Patients then formed preference hierarchies by ranking the groups from most to least important. To help guide their rankings, patients were asked to pretend that they needed help with all the activities in each group. Pretending greater disability represents a decentering technique that involves 'projective role taking' [19]. Projective role taking is commonly applied in family therapy and educational settings to inspire empathy for someone in a different circumstance than oneself [20]. The projective role taking with RPE takes the role of self, but a self with far more severe disabilities. The process of decentering away from concepts of one's own disability represents a shift in perception. The shift [19] presumably has the means to reduce thought distortions. Sharing feelings about the implications of not being able to perform activities such as managing bowel and bladder functions will be less embarrassing when one is talking hypothetically. Moreover, decentering is intended to inspire a more positive affect by encouraging patients to recognize that their disabilities could have been more severe. The procedure encourages focus on the skills they still have as well as those that were lost.

After the groups of activities are formed and ranked, patients label each group according to the meaning they attribute to the constituent activities. The group names represent the patient's concept labels. Each activity within a pile represents a lower level objective and a 'means' to achieving the higher order concept expressed by that label [21]. After naming the piles, the patient is asked to further discuss his or her hopes for rehabilitation more abstractly, i.e., what he or she is trying to do or achieve in preparation for returning home from the hospital. This is intended to represent the patient's motivation for recovery or the decision context [21] analogous to Emmons' concept of higher level abstract goal striving [5]. The decision context is referred to as the 'primary preference motivator'.

Drawing and interpreting the individualized preference hierarchy

The preference hierarchy is founded on concepts of disability combined with theories of motivation [4,6,21-24]. The preference hierarchy is drawn as two oppositely oriented lower and open triangular ladders [2,25]. The patient's sorted sets of activities are arranged hierarchically in the lower triangle organized by his conceptual labels which appear in quotes. The sorted groups are ordered so that the one the patient ranks as most important is at the base and the least important is at the apex of the lower triangular ladder. The patient's FIM status

measured by therapists at rehabilitation admission assessment is written in parentheses next to each activity in the hierarchy.

A short narrative phrase describing the patient's 'primary preference motivator' is written in his or her own words on the upper open triangular ladder pointing down to the hierarchy of activities on the lower ladder. The openness of the lower and upper ladders is intended to reflect the dynamic nature of preference; recognizing that values and potential for human growth as continually evolving [2,26]. The graphic structure reflects constant change in matter, energy and information between person and environment [3]. The activities in which therapists document patient difficulties become clinical objectives and potentially goals if functional recovery appears feasible. The ordered position of those goals within the hierarchy presumably represents the optimal track up towards achievement of the patient's primary preference motivator.

Case study

Description of a patient's RPE performance is provided to illustrate the procedure.

Data handling and analysis

Card Sort RPE sessions were recorded and transcribed verbatim. Research assistants entered the card sort pile structures and group orders into the TPL-KATS Card Sort [9] software shell. The software scored the adjacency of pairs of cards as well as the rank of the pile of cards. These data were imported into SPSS 11.5 [27] for Windows and analyzed.

Domains of meaning

The sorted piles were applied to explore how individual patients form personally meaningful domains of function. The degree to which the patients' subjective domains of meaning as a group reflected the ASMC domains was determined by applying the card sort adjacency matrix. That matrix was used to identify the most frequently paired groupings of items among the patient sorts expressing the most common ways in which patients saw the activities relating. A pair occurred between two FIM items any time the patient placed the items in the same pile. We determined all FIM pairs that appeared in the 32 patient card sorts. The pairs were sorted by decreasing frequency of occurrence. Items linked by the most frequent pairs were assigned to a domain together moving down the list until all 18 items were assigned. We explored activity pairs that did not appear among the sorts. Face validity of the patients' concepts was assumed if the ways in which they grouped items appeared logical (to the observers). Assumptions about patients' abilities to understand the procedure and to form a logical framework were supported by the face validity of their activity groupings.

Preference priorities for the FIM activities

The patient's rankings of their sorted piles generate a preference for each item relative to the items in the other piles analogous to its utility [28,29]. The preference represents the relative importance of being able to perform the set of activities in one pile compared to the other piles. Higher numbered preferences corresponded to less valued sets of activities. The most valued pile numbered '1' formed the base of the hierarchy. The relative importance of each FIM item to the individual is estimated by the group's position in the preference hierarchy. The relative importance of each FIM item according to the population of patients studied was determined by obtaining the most common pile number of each activity. This is referred to as the 'aggregated preference priority.'

Results

Of the 34 patients, one was unable to complete the procedure due to fatigue and another was only partially able to sort the cards. Among the remaining 32 participants, 17 men and 15 women, who ranged in age from 22 – 77 years (mean 53.8, SD 14.8) completed card sort RPE. The sample was 46.9% African American, 40.6% Caucasian and 12.5% Hispanic; 37.5% were married, 31.3% separated/ divorced/widowed and 31% never married (Table I). Fourteen patients received rehabilitation for neurological conditions and 18 for either complex medical or orthopaedic conditions. The mean FIM scores were: Cognitive 31.5 (SD = 1.7) range 5 – 35 and Motor 43.5 (SD = 11.3) range 13 – 91.

Case study

The patient was a woman in her mid-40s admitted to rehabilitation because of a multiple sclerosis exacerbation. Figure 1 shows her preference hierarchy. Her level of performance as measured by the therapists at admission to rehabilitation appears next to each activity.

She described her primary preference motivator as wanting to achieve: ‘independence in my home ... not needing my school-age daughter’s help with functions such as toileting’. Before hospitalization her daughter provided her with morning and evening care. This required that she plan her activities around her daughter’s school schedule. Through this primary preference motivator she was considering her daughter’s and her own enmeshed needs. Those needs together give insight into her creation, naming and ranking of her conceptual groupings. She developed 6 conceptual groups which she labelled ‘problem-solving’, ‘eating’, ‘communication’, ‘toileting’, ‘grooming’ and ‘ambulatory’. Although toileting was a strong theme in her narrative, she expressed problem-solving, eating, and communication as more important and foundational to the managing of toileting and all other achievements. She articulated: ‘The ability to develop a plan to better yourself’ as essential to all other objectives. Although she was already proficient in basic problem-solving skills at modified independence, level ‘6’, clearly being responsible for the well-being of a child and simultaneously needing care from that child called for advanced problem-solving skills, and creativity.

She viewed eating as central to ‘experiencing enjoyment and building strength’ necessary to the accomplishment of other activities. Since her multiple sclerosis exacerbation, hand tremors had caused significant difficulty with eating. Her current need for minimal assistance to eat (level 4) combined with its important position in her preference hierarchy makes the achievement of eating independence an important objective. Being able to ‘communicate’ in order to understand and tell others what is wrong emerged as the next most important objective. She linked the thinking task of memory with expression, comprehension and social interaction under the concept label of ‘communication’. Within this group, she had one mild deficit. Her objective would be to enhance comprehension from modified (6) to full independence (7).

The set of activities she collectively named ‘toileting’ became her fourth priority. She had significant deficits in toileting, bowel management, and toilet transfers. She desired independence in bathroom activities, not wanting to ask her daughter for help. She decorated her commode elaborately, disguising it so that it looked like a chair sitting next to her bed. ‘Grooming’, which she saw as encompassing dressing and bathing tasks, was her fifth priority. She expressed her desire to be ‘clean and feel wonderful’. Her final least important priority, labelled ‘ambulatory activities’ included walking or wheelchair use, stairs, and wheelchair transfer. She noted that she did not have stairs at her home, so her ability to climb them was fairly irrelevant. Although she had significant limitations in the activities included in her ‘grooming’ and ‘ambulatory’ groups, she felt less concerned about needing assistance with these activities.

Domains of meaning

Table II shows the 44 most frequent FIM pairs ranked in descending order of frequency. Pairs that appeared in less than 5 sorts are not shown. Information from the 22 most frequent activity pairs was sufficient to assign all FIM items to aggregate domains of meaning with the exception of eating. Bowel and bladder management, the most frequent pair, was placed in the same pile by 30 of the 32 patients. Comprehension and problem-solving, the 22nd pair, was placed in the same pile by 19 (59.4%) of patients. Eating, which patients often assigned to a group by itself, did not appear until the 39th pair. The mathematically feasible pairs that never appeared in the patient's sorts are shown in Table III.

Twenty seven of the most frequent 44 pairs (61.4%) were consistent with the ASMC domain structure. In contrast, none of the mathematically possible but unendorsed pairs were consistent with the ASMC domains.

The set of aggregated subjective domains of activity meaning constructed from the top 22 most frequent pairs and from pairs ranked 39, 40 and 41 (for eating) are contrasted in Figure 2 with the 'ASMC' domain structure. For example, the sphincter management domain includes 4 items rather than two. Bladder and bowel management are linked in card pair 1. Toileting comes in through its linkages with bowel management card pair 3 and so forth. FIM pairs in Table II that were applied in forming the domains are in *italic*. Four out of the 18 FIM items according to the patient's sorts did not group within the ASMC domains. Moreover, patients appeared to view eating (an ADL function) as distinct from the other activities. When it was grouped it appeared more often with items in the sphincter management domain than with the ADLs. Toilet transfers and toileting were more commonly placed with the sphincter management functions than with locomotion and ADLs, respectively. Tub or shower transfer was more commonly placed with bathing (an ADL) than in the mobility domain. The patients' groupings for the remaining 14 items typically conformed to the ASMC domains. The activity pairs most frequently formed by patients (those used to specify the aggregated subjective domains) appeared more rationally connected than did the activity pairs that did not appear among the sorts.

Item rankings

The minimum number of piles formed by the 32 patients was 4, and the maximum 10. The most frequent number of piles formed was 5. Eating and bathing (Table IV) were the items most commonly placed in the highest priority piles. These items were placed in pile 1 by 10 of the 32 patients. Talking or expression, problem-solving and social interaction tended to be placed in piles assigned the lowest values.

Discussion

We present card sort RPE as an interdisciplinary clinician-guided procedure through which patients reveal the personal significance of being able to perform one set of activities over another. The domains of meaning and preference hierarchies, established through card sort RPE results, are idiosyncratic and individual, presumably, distilling the patient's attitudes and responses to earlier life experiences up to the point of the procedure.

Card sort procedures and factor analytic procedures are somewhat analogous, mapping how similar functional activities relate to one another according to latent subjective systems of meaning, and objective domains of status, respectively. Factor analyses of the FIM as applied in earlier studies to thousands of patients' status rankings uncovered latent structure relating to the ontogeny of disability. This structure reflects observed patterns of patient performance [30]. In contrast, card sort RPE, presented here, involves only a few patients, and is more

qualitative than quantitative in nature. These value-laden structures reflect the non-observable idiosyncratic person-specific meaning of being able to perform the sorted activities within the eco-cultural contexts of each person's life. This relates to how an individual patient sees the items fitting together in his or her particular internal conceptualization of life given the context-rich physical and social environments within which he or she lives.

Clinicians and patients logically differ in how they think about functional activities and subsequent goals [31]. Rehabilitation clinicians are trained to think about functional loss and recovery according to measurable anatomic or impairment-related mechanisms, i.e., as captured through the ASMC domains. Patients' domains of meaning at times reflected the ASMC domains. At other times patients' domains of meaning were ecological, grouping activities that tend to be performed in the same place, or that are linked by cause and effect through a time sequence. Toileting and getting on and off the toilet are examples of activities linked by place, while eating and going to the bathroom are linked by cause and effect.

Our findings suggest a strong response shift when compared to results of an earlier study on FIM recovery preferences among people with longstanding disabilities [12]. A response shift occurs when individuals alter their standards, preferences and conceptualization of goals [32]. The result is a re-conceptualization of life priorities. People with longer term disabilities living in the community were shown, in the earlier study, to value independence in cognitive and communication functions more highly than physical activities [12] in sharp contrast to acutely disabled hospitalized people in the current study who tended to value independence in bowel, bladder and eating functions more highly.

The importance of environmental and temporal drivers of meaning coupled with suggestion of a response shift offer further support for the biopsychosocial framework [3,6]. Through this framework, illness, disability and its implications for quality of life are seen to occur as the result of ever-changing interactions between the intrinsic physical and mental status of the individual and the extrinsic qualities of the surrounding physical and social environments.

Clinical implications

RPE procedures are being designed for administration by any rehabilitation professional to enhance patient centeredness and empowerment [33]. Diverse fields have recognized the benefits inherent in patient-centred approaches to therapy and treatment [34-36]. Occupational science, for example, describes a narrative process in which the practitioner and the patient collaborate on shared understanding through 'empathy, inclusion of the ordinary, listening and reflection' [37, p. 377]. The card sort tool can be a vehicle for enhancing shared understanding as the cards are grouped discussed and ranked. RPE provides a standardized approach allowing clinicians to quantify the patient's functional status relative to its meaning and to further understand the motivations underlying patients' recovery preferences.

Analyses of taped transcripts suggest that RPE engages and empowers patients by uncovering their often unrecognized feelings about disability and recovery and the specific ecological contexts that shape their preferences. For example, discomfort associated with her need to depend on her school age daughter for physical care, and absence of stairs in her home represented motivating contexts for formation of the patient's preference hierarchy shown in Figure 1. The power of RPE to uncover meaning was expressed by one patient who stated, 'it's nice to help people put things into perspective. It helped me to express myself, to see myself on the table in words'. Emphasizing what a patient most wants to be able to accomplish can help structure the therapy session, ensuring patient-therapist collaboration. Increasing trust and therapeutic relevance, this could enhance patient motivation and improve outcomes [38]. Moreover, the process of learning and thinking about some of the functional activities therapists

assess and treat will help the patient generate a more personally focused expression of his or her primary preference motivator.

Combining measured status, with feasibility of improvement, and hierarchy position RPE preference hierarchies, might be applied in goal-setting. If a patient demonstrates difficulty in an activity and places that activity close to the base of her hierarchy, that activity represents an important objective. If improved function is feasible, the objective becomes a 'high leverage' goal. If improved function is not feasible, then the therapeutic approach shifts towards supportive psychological therapy, adaptive technology or environmental modifications. Theoretically, themes that emerge through the card sort procedure might help the clinician guide the patient towards the reconstruction of a positive image of self that incorporates residual functional impairment as contributing to but not dominating the traits that make her who she is [39].

Potential research applications

RPE might be applied as a phenomenological tool to explore the meaning of altered life states. The relative value of being able to perform particular daily activities represents a projection of physical and emotional needs. An understanding of those needs must account for both the objective state and the relative subjective meaning of being in that disability state [40]. Because all patients begin RPE anchored at the same level of total dependency, RPE activity preferences might be fused with measured status through techniques such as goal-attainment scaling [41]. This would yield a quantity that can be averaged that translates the patients' status into its subjective implications to quality of life.

Limitations and implications for future study

The example hierarchy and domains of meaning presented here are intended to be illustrative. The sample was not large enough to assume that the domains of meaning discovered will generalize. Moreover, in this first presentation of card sort RPE, preferences were established only for FIM activities. This is not intended to imply that the FIM (or any other single functional status measure) should be the sole determinant of rehabilitation objectives. A preference hierarchy based on defined activities is intended to represent only a starting point for understanding the perceived relative importance of particular sets of activities being addressed in therapy. Therapeutic objectives outside standard functional or health status measures may be essential when formulating actual goals for an individual patient. Further research on RPE should apply different sets of activities. It should also determine the degree to which preferences evolve and change according to one's life circumstances and real-time experiences. Future work will be necessary to address the feasibility of applying card sort RPE to clinical practice. It is too early to tell how the experience of card sort RPE will influence patient-clinician discussions, patient motivations, patient goal-setting, and ultimately functional outcomes. Moreover, it will be important to demonstrate an association between recovery preference-weighted functional status measurement and other quality of life outcomes. As it stands, card sort RPE represents a research tool appropriate for studying the phenomenology of disability as it relates to the contexts and meaning of being able or unable to perform functional activities.

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Figure 1.
Case example preference hierarchy.

Figure 2.
Functional map of meaning.

Table I

Sample characteristics expressed as numbers and percentages unless otherwise stated.

Gender	
Female	15 (46.7)
Male	17 (53.3)
Race/ethnicity	
Black or African American	15 (46.9)
Hispanic or Latino	4 (12.5)
White	13 (40.6)
Marital status	
Never married	10 (31.3)
Married	12 (37.5)
Widowed	5 (15.6)
Separated	2 (6.2)
Divorced	3 (9.4)
Reason for rehabilitation	
Neurological	14 (43.8)
Orthopedic or complex medical	18 (56.2)
Mean age in years (SD)	53.8 (14.8)
Mean admission motor FIM (SD)	43.5 (11.3)
Mean admission cognitive FIM (SD)	31.5 (1.7)

Table II

High frequency activity card pairs.

	Frequency
<i>Bladder management & bowel management</i>	30
<i>Dressing upper body & dressing lower body</i>	29
<i>Toileting & bowel management</i>	27
<i>Comprehension & talking/expressing yourself</i>	27
<i>Grooming & dressing upper body</i>	26
<i>Grooming & dressing lower body</i>	26
<i>Bathing & dressing upper body</i>	26
<i>Toileting & bladder management</i>	26
<i>Grooming & bathing</i>	25
<i>Bathing & dressing lower body</i>	24
<i>In/out bed, chair, wheelchair & walking or wheelchair use</i>	24
<i>Talking/expressing yourself & social interaction</i>	24
<i>Comprehension & memory</i>	23
<i>Toileting & on/off toilet</i>	22
<i>Bowel management & on/off toilet</i>	22
<i>Talking/expressing yourself & memory</i>	22
<i>Problem-solving & memory</i>	22
<i>Bladder management & on/off toilet</i>	21
<i>Comprehension & social interaction</i>	21
<i>Bathing & in/out tub or shower</i>	20
<i>Walking or wheelchair use & stairs</i>	19
<i>Comprehension & problem-solving</i>	19
<i>Talking/expressing yourself & problem-solving</i>	19
<i>Social interaction & memory</i>	18
<i>Social interaction & problem-solving</i>	17
<i>Grooming & in/out tub or shower</i>	16
<i>Dressing lower body & in/out tub or shower</i>	16
<i>Dressing upper body & in/out tub or shower</i>	15
<i>In/out bed, chair, wheelchair & stairs</i>	15
<i>In/out bed, chair, wheelchair & on/off toilet</i>	12
<i>On/off toilet & in/out tub or shower</i>	12
<i>Bladder management & in/out tub or shower</i>	9
<i>Bowel management & in/out tub or shower</i>	9
<i>Toileting & in/out tub or shower</i>	8
<i>Bathing & toileting</i>	7
<i>Bathing & bladder management</i>	6
<i>Toileting & in/out bed, chair, wheelchair</i>	6
<i>In/out bed, chair, wheelchair & in/out tub or shower</i>	6
<i>Eating & bathing</i>	5
<i>Eating & toileting</i>	5

	Frequency
<i>Eating & bladder management</i>	5
Bathing & bowel management	5
Bowel management & in/out bed, chair, wheelchair	5
On/off toilet & walking or wheelchair use	5

Note: Italic font indicates pairs used in formulating the aggregate domains of meaning.

Table III

Activities that were never paired.

Items not paired	Frequency
Dressing lower body & bladder management	0
Dressing lower body & bowel management	0
Dressing lower body & comprehension	0
Dressing lower body & talking/expressing yourself	0
Dressing lower body & problem-solving	0
Dressing lower body & memory	0
Toileting & comprehension	0
Toileting & talking/expressing yourself	0
Toileting & social interaction	0
Toileting & problem-solving	0
Toileting & memory	0
Bladder management & stairs	0
Bowel management & comprehension	0
Bowel management & problem-solving	0
In/out bed, chair, wheelchair & comprehension	0
In/out bed, chair, wheelchair & talking/expressing yourself	0
In/out bed, chair, wheelchair & social interaction	0
In/out bed, chair, wheelchair & problem-solving	0
In/out bed, chair, wheelchair & memory	0
On/off toilet & comprehension	0
On/off toilet & problem-solving	0
In/out tub or shower & comprehension	0
In/out tub or shower & problem-solving	0
Walking or wheelchair use & comprehension	0
Walking or wheelchair use & talking/expressing yourself	0
Walking or wheelchair use & social interaction	0
Walking or wheelchair use & problem-solving	0
Walking or wheelchair use & memory	0
Stairs & talking/expressing yourself	0
Stairs & social interaction	0
Stairs & problem-solving	0
Stairs & memory	0

Table IV

Preference priorities for FIM activity items.

Item	Rank	Frequency
Eating	1	10
Bathing	1	10
Getting in/out tub/shower	2	13
Getting on/off toilet	2	12
Bladder management	2	11
Bowel management	2	11
Toileting	2	10
Grooming	2	7
Walking or wheelchair use	3	10
Dressing upper body	3	9
Stairs	3	8
Comprehension	3	8
Dressing lower body	3	8
Memory	3	7
Getting in/out bed, chair, wheelchair	4	10
Talking or expressing yourself	5	8
Problem-solving	5	8
Social interaction	5	7