

Research Article

Use of the Perceive, Recall, Plan and Perform System of Task Analysis for persons with schizophrenia: A preliminary study

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Background/aim: Task analysis that targets information processing skills is an essential tool to understanding difficulties encountered by people with schizophrenia in their daily activities. The purpose of this preliminary study was to explore the use of the Perceive, Recall, Plan and Perform (PRPP) System of Task Analysis for this clientele. The specific objectives were to describe information processing difficulties as measured by the PRPP and to examine preliminary evidence of construct validity and interrater reliability.

Methods: In the first part of this study, 10 participants with schizophrenia living in the community were assessed using the PRPP during both a simple and a complex meal preparation task. Community functioning was measured using the Independent Living Skills Survey. In the second part, interrater reliability was appraised using three trained raters, who scored 15 participants preparing the complex meal preparation task.

Results: Analysis of performance demonstrates that people with schizophrenia have difficulties especially in the Perceive and Plan quadrants of the PRPP and are more challenged in the complex task. The PRPP total score for the complex task is strongly related to the community functioning score. Results

indicate good interrater reliability for the PRPP total score and moderate interrater reliability for the quadrant scores.

Conclusion: Despite the small sample size, results from this preliminary study support the use of the PRPP System of Task Analysis to further explore the impact cognitive deficits have on daily task performance and thus on community functioning in people with schizophrenia.

KEY WORDS cognition, occupational therapy, reliability and validity, schizophrenia, task performance and analysis.

Introduction

People diagnosed with schizophrenia experience a wide range of cognitive deficits that affect their performance of daily living tasks and, in turn, their community functioning (Green, 1996). Occupational therapists require occupation-focussed assessments to identify and explain more precisely how cognitive deficits interfere with daily task accomplishment in these persons. Researchers have called for an assessment format that evaluates the client's skills in the context 'in which the client chooses to live, learn, socialize and work' (MacDonald-Wilson, Nemeč, Anthony & Cohen, 2002, p. 425). Furthermore, these researchers assert that functional assessment in psychiatry needs: (i) to be skill oriented; (ii) to contain items that are behavioural, observable and measurable; and (iii) to have the capacity to assess both skill strengths and skill deficits. Hence, it is imperative that occupational therapists acquire an assessment instrument that is able to identify the level of skills demanded in relevant daily life tasks as they are performed in context. This instrument should also identify strengths and weaknesses in the cognitive processing strategies which are required to execute these critical activities. It has been suggested that measuring cognitive disorder as it occurs in the natural setting could lead to greater individualisation of treatment plans and therefore to more efficient therapy outcome (Semkowska, Bédard & Stip, 2001).

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One such ecological assessment is the Perceive, Recall, Plan and Perform (PRPP) System of Task Analysis (Chapparo & Ranka, 1997a) that measures both task performance skills and cognitive information processing capacity over time and in context. The first objective of this paper is to describe the use of the PRPP System of Task Analysis for people diagnosed with schizophrenia. The second objective is to examine preliminary evidence for the PRPP system's construct validity and interrater reliability.

Function and cognition in schizophrenia

A diminished level of functioning is one of the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV-TR) (American Psychiatric Association (APA), 2000) criteria for the diagnosis of schizophrenia along with positive and negative symptoms. Many life domains are usually impaired in these persons, such as daily activities (for example, personal hygiene and nutrition), social skills, use of leisure time and financial management (Dickerson, 1997). Only about 40% of these persons are employed, mostly in sheltered organisations or workshops (Harvey & Davidson, 2002).

It is generally agreed that cognitive impairments are a central dimension of this disorder (Goldberg & Green, 2002; Sharma & Antonova, 2003) and are present to varying degrees. Cognitive disorders in people diagnosed with schizophrenia have been extensively described using information processing models. Current observations indicate that dysfunction of neuronal circuitry dynamics contributes to the brain's abnormal information processing in schizophrenia (Hajos, 2006). Deficits in attention (Braff, 1993; Light & Braff, 2005), memory (Aleman, Hijman, de Haan & Kahn, 1999) and executive function (Velligan & Bow-Thomas, 1999) have all been found to affect community functioning in these people (Green, Kern, Braff & Mintz, 2000).

The ability to successfully perform and complete daily life tasks is also a significant factor that predicts community functioning in people with schizophrenia (Alexandersson, 2000; Arns & Linney, 1995; Bartels, Mueser & Miles, 1997; Dickerson, Ringel & Parente, 1999; Palmer *et al.*, 2002). Several studies have demonstrated that the capacity to perform activities of everyday life is affected by cognitive deficits (Brekke, Raine, Ansel, Lencz & Bird, 1997; Evans, Chua, McKenna & Wilson, 1997).

These observations have stimulated the development of ecological assessments that take into account the personal context and daily life constraints of persons being assessed (Hamera & Brown, 2000; Patterson, Goldman, McKibbin, Hughs & Jeste, 2001). Although this has resulted in a more precise measure of their functional abilities, only a small number of studies manage to use assessment tools addressing the impact of cognitive deficits on the specific functional skills needed for the accomplishment of daily life tasks (Aubin, Gélinas, Stip, Chapparo & Rainville, 2007). Except for a handful of

studies that describe the particular information processing deficits that may inhibit the occupational performance of people with schizophrenia in their functional context (Light & Braff, 2005), the research on this topic remains rather limited. Knowledge about the 'observable' effects of these deficits during real-life performance of daily activities in these persons is therefore restricted (Bowie, Reichenberg, Patterson, Heaton & Harvey, 2006).

Four studies identify problems related to cognitive disturbances during task execution in people with schizophrenia using a procedural task analysis (Greenwood, Landau & Wikes, 2005; Rempfer, Hamera, Brown & Cromwell, 2003; Semkovska, Stip, Godbout, Paquet & Bédard, 2002; Semkovska, Bédard, Godbout, Limoge & Stip, 2004). This type of task analysis focuses on the sequence and the mastery of the task steps (Chapparo & Ranka, 2005). It does not, however, describe the problematic cognitive behaviours observed, but rather demonstrates their impact on the effectiveness of task performance. In contrast, the PRPP System of Task Analysis specifically focuses on both the operations required to process cognitive information and on the behaviours to be used during the performance of a given activity.

A system of task analysis: The Perceive, Recall, Plan and Perform (PRPP) assessment

The PRPP System of Task Analysis was initially created to meet the needs of occupational therapists working with clients who had sustained a brain injury (Chapparo & Ranka, 1997a). These persons have cognitive deficits that are often similar to those observed in people with schizophrenia (Evans, Chua, McKenna & Wilson, 1997; Fuji, Ahmed & Hishinuma, 2004). The conceptual model underlying the PRPP system was at first adapted from an information processing model in the field of instructional design which was developed to explain the process of learning tasks in the work place (Romiszowski, 1984). This assessment is one of the measures associated with the Occupational Performance Model (Australia), which defines occupational performance as a product of the interaction between humans and their environment (Chapparo & Ranka, 1997b).

The PRPP system is a standardised, two-stage criterion-referenced assessment. It uses task analysis methods to examine the effectiveness of information processing, and results in the measurement of occupational mastery, information processing capacity, and contextual influences (Chapparo & Ranka, 1997a). The depth of processing that occurs depends on the nature and complexity of the task being performed.

Stage 1 of the PRPP system employs a standard behavioural task analysis, whereby everyday activity performance is broken down into steps, and errors in execution are identified (Kirwan & Ainsworth, 1992). An overall measure of mastery for specific and relevant occupations is generated. Stage 2 of the PRPP system uses a cognitive task analysis. Cognitive task analysis is a family of

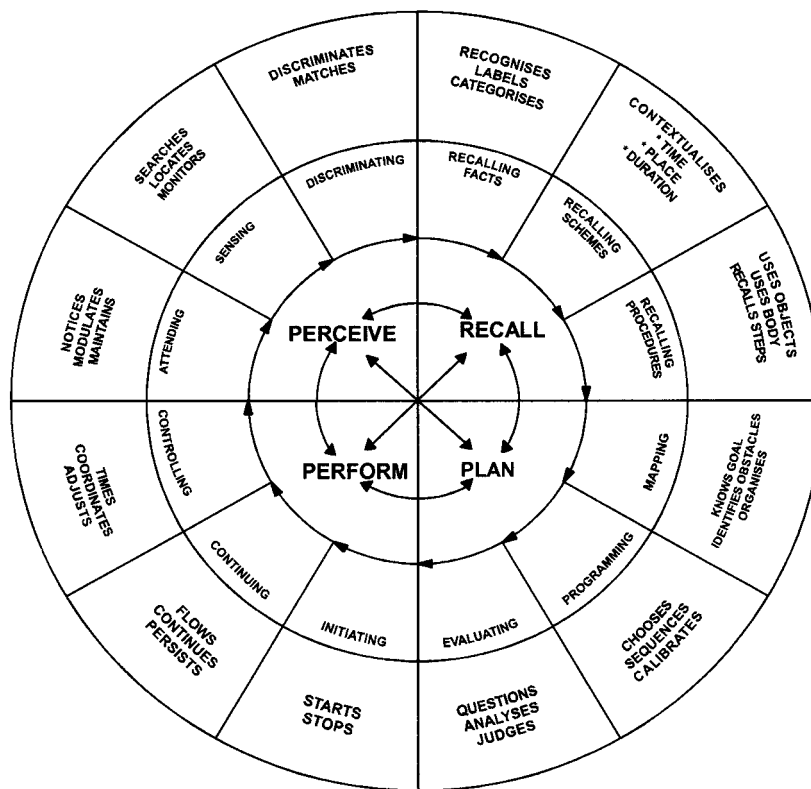


FIGURE 1: *The Perceive, Recall, Plan and Perform System of Task Analysis (Chapparo & Ranka, 2005).*

assessment methods that describe the cognitive processes underlying the performance of specific activities and the cognitive strategies used to respond efficiently to complex situations (Militello & Hutton, 1998; Schraagen, Chipman & Shalin, 2000). The information processing strategies measured in the PRPP assessment represent four processing dimensions: (i) attention and sensory perception (Perceive); (ii) memory (Recall); (iii) response planning and evaluation (Plan); and (iv) performance monitoring (Perform). These are illustrated in the central quadrants of the PRPP assessment’s conceptual model (Chapparo & Ranka, 2005; see Fig. 1). A total of 34 behavioural ‘descriptors’ are used individually or cumulatively to identify processing strengths and deficits within each of the four quadrants. They are featured on the outer ring of the PRPP conceptual model. These descriptors are observable behaviours, such as ‘maintains’ and ‘monitors’ in the Perceive quadrant, ‘contextualises to duration’ and ‘recalls steps’ in the Recall quadrant. They may be targeted as rehabilitation goals (Fry & O’Brien, 2002), and may also contribute to focussing interventions and to refining the quality of the decision-making process at the clinical level.

This evaluation is distinct from other functional assessments using task observation (for example Arndt, 1990; Baum & Edwards, 1993; Fisher, 1995) in its synthesis of information processing theory and occupational performance. The PRPP conceptual model roughly mirrors the staged processing flow of information that is

found in most theoretical models of information processing (see Fig. 2).

The aim of this preliminary study was to begin to describe in behavioural terms, the impact of information processing difficulties on everyday task performance in this sample of people with schizophrenia using the PRPP System of Task Analysis. Another aim was to determine whether these descriptions could be documented in a reliable manner. Specifically, this study was guided by the following research questions. First, what information processing difficulties are encountered by this sample of people with schizophrenia during meal preparation as measured by the PRPP system? Second, are there differences in information processing capacity during performance of tasks of different complexity in this sample? Third, what is the relationship between community functioning as measured by the French version of the Independent Living Skills Survey (ILSS; Cyr, Toupin, Lesage & Valiquette, 1994) and the PRPP in this sample of people with schizophrenia? Fourth, what is the interrater reliability of the PRPP assessment? This preliminary study was part of a larger study aimed at describing the impact of cognitive deficits on daily activities in people with schizophrenia.

Methods

In order to answer the above questions, the study was conducted in two parts. The first part of the study (Part A)

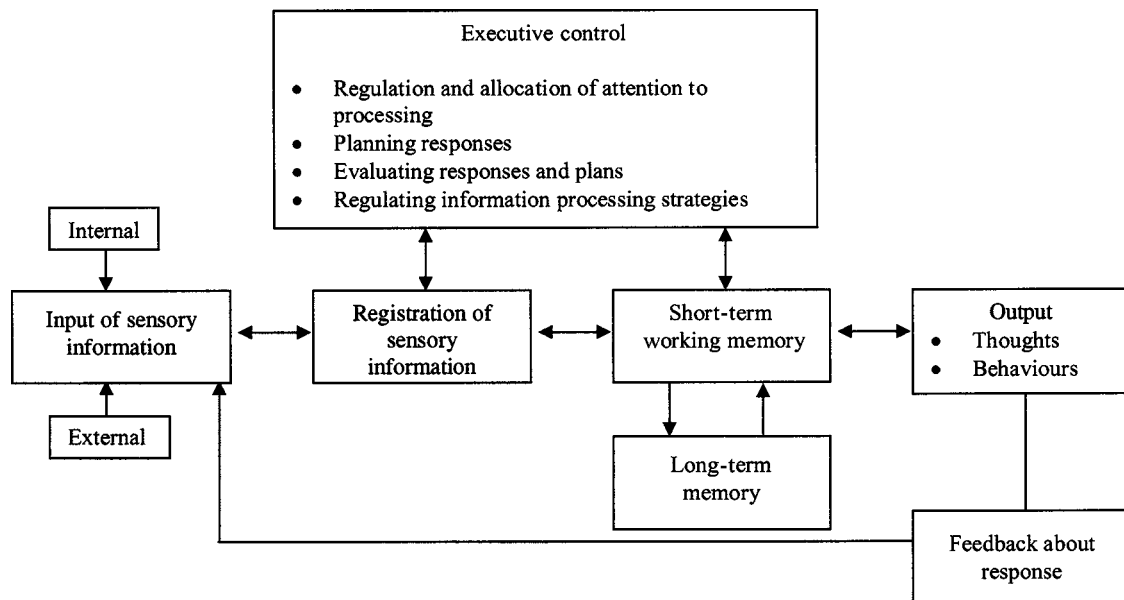


FIGURE 2: Information processing model (adapted from Lerner, 1997).

focused on the exploration of information processing difficulties as well as aspects of construct validity, while the second part of the study (Part B) focussed on the interrater reliability of the PRPP System of Task Analysis. Both parts of the study were approved by the ethics committees of the hospitals where they took place.

Part A

Participants

Ten participants with a DSM-IV-TR diagnosis of schizophrenia or schizo-affective disorder (APA, 2000) as established by their treating psychiatrist were recruited according to the following criteria: between 18 and 55 years of age, living in the community in a stable state, familiar with meal preparation, and lacking any physical disabilities, mental retardation or cognitive impairments caused by another diagnosis (such as dementia). The participants were recruited in an outpatient psychiatric clinic in Montreal, Canada. All agreed to sign an informed consent form to participate in the study and to be filmed while doing two daily living activities.

Instruments

Two instruments were used with the sample ($n = 10$) in Part A.

The PRPP System of Task Analysis (Chapparo & Ranka, 1997a, 2005). Although originally developed in the 1980s, the PRPP assessment in its current form is a relatively new assessment. As a number of studies referred to below have already been conducted across various client groups with this instrument, its usefulness is apparent.

As described previously, the PRPP system includes two stages: Stage 1, where errors in steps are identified, and Stage 2, where the errors are associated to different descriptors. Information processing scores are obtained after completing the latter stage. These scores are derived from 34 observable behaviours (descriptors) that are scored on a three-point rating scale, where a score of 1 indicates that the descriptor behaviour impacts negatively on task performance to the extent that the task is either incomplete or performance requires significant prompting; a score of 2 indicates some qualitative difficulties with the behaviour; and 3 indicates that the performance showed no deficit in a particular behaviour. From summed descriptor scores, a global PRPP system processing score can be calculated, as can specific PRPP quadrant or subquadrant scores that quantitatively describe processing capacity in attention, perception, memory, planning and performance monitoring. High agreement among six testers was achieved in identifying the breakdown of steps in Stage 1 for dressing, hygiene, and meal preparation tasks in normal adults (Chapparo & Ranka, 1997a). Acceptable to high interrater and intrarater agreement was obtained in the identification of Stage 1 errors in a sample of clients with acquired brain injury, along with high evidence of face and content validity using a panel of experts (Chapparo & Ranka, 1992). Internal consistency of items in each quadrant has been reported as high (Fordham, 2001), and interrater and test-retest reliability across a number of studies ranges from 0.64 to 0.99 (Lohri, 2005; Munkhetvit, 2005; Pulis, 2002). Studies using the PRPP System of Task Analysis have demonstrated agreement between PRPP quadrant and subquadrant scores and neuropsychological

measures of cognition in adolescents with early psychosis (Still, Beltran, Catts & Chapparo, 2002) and between PRPP quadrant and subquadrant scores and measures of cognitive play in normal and learning disabled children when raters were blind to the purpose of the study (Boland, 2004). The PRPP system has been used in Australia, Sweden, Switzerland, Thailand, Norway, and French Canada, with reports of cultural validity and utility (Munkhetvit, 2005).

All participants executed two meal preparation tasks, and their performance was rated using the PRPP System of Task Analysis by a professionally trained occupational therapist experienced with this clientele. In Task 1, the simple task, participants were asked to make breakfast for one person that included instant coffee, toast and fried eggs and serving them altogether, in a cup and on a plate, respectively. Task 2 was the more complex task, in which participants were asked to make a one-person dinner comprised of boiled potatoes, hamburger steak and a baked premixed cake. All parts of this meal were to be ready at the same time. The potatoes and meat had to be served on a plate and the kitchen was to be left clean and tidy. These two meal preparation tasks were pretested with five normal persons. The type and level of meal difficulty were chosen in order to evoke the greatest possible number of information processing operations. As well, the importance of maintaining cultural relevance for the sample was considered imperative in the choice of meals. The two tasks had different levels of complexity regarding the total duration of the meal preparation, the need to execute delayed intentions, the sequencing of the individual dishes and the capacity to follow written directions and to monitor the progression (process) of the task.

The ILSS (Wallace, Liberman, Tauber & Wallace, 2000). This is a questionnaire that measures community functioning in people with severe mental illness. The validated French version (Cyr *et al.*, 1994) includes nine sections (56 items in total) covering the performance of the following daily activities: self-care, grooming, household chores, eating habits and meal preparation, health management, financial management, leisure, transportation and work. Items are assessed for the last month and are scored. The higher the score on the ILSS, the more independent the person is in daily living activities. The results of the study by Cyr *et al.* also demonstrated that this tool has a good test-retest reliability (correlations varying between 0.62 and 0.85) and discriminates subjects according to their diagnosis, sex and type of housing. A factorial analysis highlighted two factors: basic activities and more complex activities.

Procedure

Data were collected from each participant over a 2-h session. All participants completed the ILSS questionnaire and were observed while performing the two meal preparation tasks in the occupational therapy department

kitchen. The performance of the participants was videotaped during both preparations. Sociodemographic and clinical data were collected from initial individual interviews with the clients as well as from client records.

Data analysis

In order to identify information processing difficulties experienced during meal preparation, descriptive statistics were calculated with the PRPP system's global quadrant and subquadrant scores for Task 1 and Task 2. To compare the performance according to the complexity of the task, *t*-tests were used to test the difference between mean PRPP system global scores of Task 1 and Task 2. Because of the unequal distribution of the quadrant and subquadrant scores, non-parametric Wilcoxon signed rank tests for paired samples were calculated to test differences between quadrant scores (Perceive, Recall, Plan and Perform quadrants, as shown in Fig. 1), between subquadrant scores, and individual descriptors of Task 1 and Task 2.

To investigate the construct validity of the PRPP assessment, its relationship to community functioning using the ILSS was analysed. Pearson correlations were calculated between the ILSS scores and the Task 1 global score and between the ILSS and the Task 2 global score. All analyses yielding a *P*-value of 0.05 or less were considered significant.

Part B

Participants

Fifteen participants were recruited with the same diagnosis and inclusion and exclusion criteria as those in Part A. These people were recruited from two psychiatric outpatient clinics in Montreal. As previously mentioned, all signed an informed consent form to participate and to be filmed while executing a cooking task in the occupational therapy department kitchen.

Three raters, one male and two females, were selected according to the following criteria: living in the Montreal (Canada) area; having received formal training in the PRPP System of Task Analysis by the assessment developers; working as occupational therapists with a clientele diagnosed with cognitive deficits; and having three or more years of clinical experience as an occupational therapist. The three selected raters had between 8 and 16 years of clinical experience. All had been recently trained in the use of the PRPP System of Task Analysis by the assessment developers. Two had experience in the mental health field, particularly with people diagnosed with schizophrenia, and one had experience in community services with the elderly.

Instruments

The PRPP System of Task Analysis (Chapparo & Ranka, 1997a, 2005) was the only instrument used in Part B of the present study.

TABLE 1: Sociodemographic data of participants in Parts 1 and 2 of the study

	Part 1	Part 2
	<i>n</i> = 10	<i>n</i> = 15
	Value, mean (SD)	Value, mean (SD)
Age (years)	35.6 (8.6)	38 (9.5)
Male/Female	4/6	7/8
Schizophrenia type		
Paranoid	7	11
Undifferentiated, disorganised or schizo-affective	3	4
Education		
Primary and high school	4	5
College or university	6	10
Duration of psychiatric follow up (years)	5,9 (4)	5,2 (4)
Living conditions		
Autonomous/supervised apartment	4	7
With family/group home	6	8

SD, standard deviation.

Procedure

Sociodemographic and clinical data were collected from an initial interview with the participants and from client records. The 15 participants were videotaped while performing the complex meal preparation task, as described in the *Procedure* section of Part A. In order to explore the interrater reliability of the PRPP System of Task Analysis, the three raters independently observed and scored the videos. Three scoring records were generated from the observations: Stage 1 (errors in steps), an interpretation grid, and the scoring sheet of Stage 2.

Data analysis

To investigate the interrater reliability, intraclass correlations (ICC) using a two-way mixed effects model for absolute agreement were calculated for the total score (PRPP total) and for each quadrant score, using *srss* for Windows version 10, 2000 (SPSS Inc., Chicago, IL, USA). All analyses yielding a *P*-value of 0.05 or less were considered significant. ICC values of 0.70 and higher were considered to be acceptable for this study. These values are considered sufficient for research purposes for group-level comparisons and for newly developed instruments (Nunnally, 1978; Polit & Beck, 2004; Slagle, Weinger, Dinh, Brumer & Williams, 2002).

Results

Participants in Part A and Part B of the study had a similar mean education level, distribution of sex, diagnosis,

mean duration of psychiatric follow up and level of autonomy in community living arrangements (Table 1). The mean age was slightly different for participants in Part B of this study, who were found to be slightly older than participants in Part 1 of the study, but this had no impact on the analysis of data.

Description of information processing difficulties during meal preparation tasks: Simple (Task 1) versus complex (Task 2)

In both meal preparation activities, problems with task-related behaviours were detected. Total PRPP scores showed variations that indicated difficulties had been observed in the performance of most participants (Fig. 3). More specifically, problems were demonstrated in all four quadrants, especially in the Perceive and Plan quadrants, where scores appeared to be lower than in the other two quadrants on both tasks (Table 2). Descriptors such as 'searches, locates, monitors, contextualises to place and to duration, recalls steps, chooses, sequences, questions, analyses and judges' were affected in both the simple and the complex meal preparation activities.

A significant difference was found between the mean PRPP total score on the simple task (mean = 98.4, SD = 2.6) and that of the complex task (mean = 89.5, SD = 7.3; $t = 4.835$, $P = 0.001$). According to the Wilcoxon signed rank test, significant differences were also found between the simple and the complex task mean quadrant scores in three quadrants: the Perceive, Recall and Plan quadrant mean scores were higher on the simple task than on the complex one, as shown in Table 2. Differences were

TABLE 2: PRPP quadrant and subquadrant mean and standard deviation scores: Tasks 1 and 2

PRPP quadrants	Task 1	Task 2	P-value
Perceive	22.8 (0.9)	20.7 (2.3)	0.011*
Recall	26.6 (0.6)	25.0 (1.4)	0.010*
Plan	25.6 (1.2)	21.5 (3.1)	0.005*
Perform	23.4 (0.9)	22.3 (1.7)	0.105
PRPP subquadrants	Task 1	Task 2	P-value
Attending	8.5 (0.5)	7.2 (1.4)	0.026*
Sensing	8.3 (0.67)	7.5 (1.2)	0.039*
Discriminating	6	6	—
Recalling facts	9	9	—
Recalling schemes	8.8 (0.63)	7.9 (0.87)	0.024*
Recalling procedures	8.8 (0.4)	8.1 (0.9)	0.059
Mapping	9.0 (0.0)	8.4 (0.69)	0.034*
Programming	8.5 (0.8)	7.7 (1.0)	0.074
Evaluating	8.1 (0.63)	5.4 (2.36)	0.007*
Initiating	6	5.9 (0.3)	0.317
Continuing	8.8 (0.63)	7.6 (1.34)	0.041*
Controlling	8.6 (0.5)	8.8 (0.4)	0.157

*Significant differences between Tasks 1 and 2 means according to Wilcoxon signed rank test, $P \leq 0.05$.

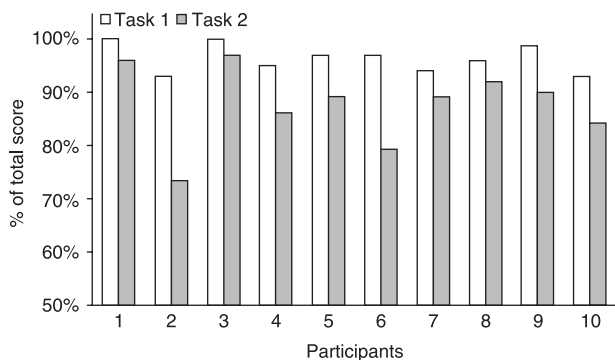


FIGURE 3: Participants' Perceive, Recall, Plan and Perform total scores for Tasks 1 and 2.

particularly found on the mean scores of the following subquadrants: Attending, Sensing, Recalling Schemes, Mapping, Evaluating and Continuing, as also shown in Table 2. Finally, significant differences were found between descriptors 'maintains, monitors, contextualises to place, analyses and judges' ($P = 0.05$) on both tasks. Because these descriptors were ranked significantly lower on the complex task, performance was thought to be more impaired in this activity in comparison to the simple task.

Relationship between community functioning and information processing capacity

A significant association was found between the PRPP System of Task Analysis' total scores on the complex activity (Task 2) and results on the ILSS (Cyr *et al.*, 1994)

TABLE 3: Intraclass correlations (ICC) for PRPP quadrants scores and total score

Items	ICC
Perceive	0.65
Recall	0.65
Plan	0.69
Perform	0.63
PRPP total	0.77

measuring community functioning ($r = 0.67$, $P = 0.032$). No significant association was found between the simple task (Task 1) and the ILSS total score.

Preliminary estimates of interrater reliability

Table 3 shows results for the interrater reliability of the PRPP system's total and quadrant scores. ICC values for the PRPP total score reaches 0.77 ($P = 0.001$), which is well over the minimum acceptable score of 0.70. The quadrants' reliability coefficient varies from 0.63 to 0.69 ($P = 0.001$), a modest level that almost reaches the minimum expected level of 0.70.

Discussion

This study is among the first to explore the use of the PRPP System of Task Analysis for people diagnosed

with schizophrenia and is part of a larger study aimed at investigating the impacts of cognitive deficits on their daily living activities. This preliminary study was conducted in two parts.

In Part A of this study, the objective was to describe the impact of information processing difficulties on the performance of daily living tasks in people with schizophrenia using the PRPP System of Task Analysis and to explore the relationship between information processing difficulties and community functioning.

Problems with task-related information processing behaviours appeared in all four quadrants of the PRPP assessment, in both simple and complex tasks, although no standard neuropsychological testing was used to quantify these deficits. This finding is similar to recent studies suggesting that the general effect of schizophrenia on cognitive performance in people with this disorder occurs at a very general level or through some fundamental process that underlies multiple complex cognitive functions (Dickinson, Iannone, Wilk & Gold, 2004). Disturbances in the Perceive and Plan quadrants were particularly evident, but specific behaviours measured in the Recall quadrant, such as 'contextualising to place and to duration' and 'recalling steps' were affected as well.

Similar results were obtained in the study by Knight (2000) examining the relationship between cognition and the ability to prepare simple recipes in 10 persons with schizophrenia. In her study, the intermediate level group had difficulties in maintaining and working out a plan, maintaining attention on the task and in solving problems. In another study exploring behavioural disorganisation during a daily life task in individuals with schizophrenia, associations were found between errors observed during a meal preparation, the ability to resist outside stimuli and interference, and generating efficient strategies and sequences, as measured by specific neuropsychological tests (Semkovska *et al.*, 2002). In the present study, not only were perception and attention (Perceive quadrant) and response planning and evaluation (Plan quadrant) difficulties identified, but 'Recall' or memory difficulties were also observed during the performance of the two kitchen tasks. As memory is also very often affected in persons with schizophrenia (Aleman *et al.*, 1999), the results of the present study suggest that the PRPP System of Task Analysis model might facilitate identification of a more complete continuum of behaviours relative to information processing, including those related to memory.

As expected, the more complex task (Task 2, cooking a dinner) generated significantly lower scores than the simple task (Task 1, making breakfast) on most quadrants of the PRPP assessment, suggesting that this System of Task Analysis is sensitive to differences in cognitive demands. Moreover, as also expected, the ILSS global score was correlated with the PRPP system's total score for the more challenging task (Task 2) but not for the less difficult task (Task 1). From these results, it could be hypothesised that community functioning is associated

more strongly to performance of complex daily living tasks than to the execution of simpler tasks in this population. The more complex task had a longer duration, involved more delayed intentions and sequence planning, and had written directions to be followed and constraints that necessitated continuous monitoring of the task's progression. Tasks such as complex meal preparation involve multitasking and are among the more complex daily tasks as they necessitate use of multiple cognitive abilities (Burgess, 2000), which in turn are probably essential on a regular, repetitive and daily basis for maintaining community functioning.

The objective of Part B of the study was to determine whether this assessment tool could be used in a reliable manner with this clientele. ICC value for the total score was good according to the study's specified criteria (0.70), while ICC values for the quadrants (Perceive, Recall, Plan and Perform) were moderate, almost reaching this level. Studies investigating cognitive and perception skills are few and far between in the reported literature, and those that have indeed looked at these two factors have reported fair to moderate interrater reliability results. In a study on the interrater reliability of another observational tool, the 'MAECES', an ergonomic assessment method comparing workers' abilities relative to the job demands (Lavoie, 1999), results were similar or lower than those obtained in the present study. The author suggested that more precise definitions and more comprehensive training for therapists who wish to use such tools are needed. In the present study, the three raters had an acceptable level of agreement for the PRPP total score. Nevertheless, they had greater differences in their ratings across quadrants, and ICCs were lower than those reported in earlier studies.

Differences in ratings in observational assessments are generally explained by the need for (i) more extensive training of the raters; (ii) a precise clarification of definitions; and (iii) scales that are more refined (Lavoie, 1999; Slagle *et al.*, 2002). Discrepancies in the interrater agreements of the present study may also be explained by the severity of the raters' judgements and by their possibly confounding experience with other performance assessments such as the Assessment of Motor and Process Skills (Fisher, 1995). In fact, two raters had also been previously extensively trained in this latter assessment's scoring procedure. Additionally, the differences among the raters' experiences with both the PRPP assessment and the type of participant might also have contributed to a lower interrater reliability: one of the three raters had little or no experience with a mental health clientele. Even though all the raters had completed the PRPP system scoring procedures training, this was conducted in English, their second language, possibly affecting their more thorough understanding of the English descriptor definitions. Finally, the participants were observed and rated via video performance, perhaps camouflaging nuances of behavioural responses that might have been more obvious '*in vivo*'.

Limitations

The results from this preliminary study were obtained with small samples ($n = 10$ and $n = 15$) therefore they can only be interpreted as exploratory. Also, a limited number of trained raters responding to the inclusion criteria were available for this study at the time it was conducted. Other studies investigating interrater reliability during task observation suggest that ICC values of 0.80 and more should be obtained for high-stakes situations (Slagle *et al.*, 2002) and for specific intervention (Donohue, 2006). These limitations should be taken into account for future studies on the interrater reliability of the PRPP System of Task Analysis in clinical settings.

Implication for practice

Results from this study support the relevance of using the PRPP System of Task Analysis with people diagnosed with schizophrenia. The PRPP system's descriptors are task-related behaviours that are observable and measurable as they occur in clinical and natural settings. Targeting problematic descriptors in the establishment of treatment goals might well contribute to realistic, individualised and generalisable interventions in order to maximise this population's community functioning.

Conclusion

This study is an important step towards substantiating critical psychometric properties of the PRPP System of Task Analysis. The acceptable interrater reliability resulting from the present study is promising and points to the potential for establishing other psychometric facets of this model. Based on an occupation-focussed information processing model, observation of task-related behaviours during the performance of daily life tasks by this sample of people with schizophrenia provides 'functional' information on the impact of cognitive impairments on these tasks. Although they are preliminary, the results of this study are consistent with the literature. Nevertheless, this study also highlights the numerous challenges that arise when measuring interrater reliability through observational assessments based on specific cognitive and perceptual behaviours, especially in a clinical context. Future investigations should consider replication of the results of the present study. Hopefully, larger studies including more participants and raters should be conducted to validate the results obtained in the present study. This preliminary study warrants further studies to explore the consequences of cognitive deficits on daily life tasks in people with schizophrenia, and particularly to understand more fully the relationship of these deficits to community functioning in these people.

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