DISSERTATION

THE DEVELOPMENT AND INITIAL VALIDATION OF THE *DAILY EXPERIENCES OF PLEASURE, PRODUCTIVITY AND RESTORATION PROFILE*

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ABSTRACT

THE DEVELOPMENT AND INITIAL VALIDATION OF THE *DAILY EXPERIENCES OF PLEASURE, PRODUCTIVITY AND RESTORATION PROFILE*

Occupational scientists and occupational therapists believe that people experience time and occupation differently, and that understanding these unique subjective experiences is essential to enhance the understanding of occupational participation, health and well-being. Yet the efforts toward the identification and development of ways of understanding people's unique subjective experiences are limited. In this dissertation, the researcher provides the theoretical underpinning of a newly developing instrument designed to capture the objective and subjective experiences of occupational engagement titled the *Daily Experiences of Pleasure, Productivity and Restoration Profile (PPR Profile)* (Atler, 2008) and reports the validity evidence of the *PPR Profile* as examined in two studies.

Cognitive interviewing was used in the first study to examine validity evidence based on test content, response processes, and the consequences of completing the instrument. The study provides beginning validity evidence of the *PPR Profile's* use as an instrument designed to capture the subjective experiences of daily activities. In addition, the study illustrates the benefits of using cognitive interviewing as a means of engaging clients who may potentially use the instrument in the development process.

In the second study, validity evidence related to consequential and convergent validity was examined using a mixed method design. Adults living with the consequences

of stroke completed three health surveys and the *PPR Profile* for three days. Use of the *PPR Profile* increased awareness of daily activities and related experiences. Although there was limited convergent validity evidence gathered in the study, consequential validity evidence indicated that participants' completion of the *PPR Profile* led to reflection and examination. However awareness was not always seen by participants as beneficial. Potential reasons for the limited convergent validity found are discussed.

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CHAPTER 1: INTRODUCTION

Among occupational scientists and occupational therapists, how people spend or use their time is defined as *occupation* (Wilcock, 1993). Occupation has also been referred to as "chunks of activities within the ongoing stream of human behavior ….which are named in the lexicon of the culture" (Yerxa et al., 1990, p. 5). Although there are various ways to categorize or name types of occupations (i.e., self-care, work, leisure), individuals uniquely carry out occupations because of their own needs, preferences, and abilities within various contexts (Kielhofner, 1985).

Early philosophical principles of occupational therapy alleged occupation was a catalyst for health (Burke, 2003; Meyer, 1922). Initial leaders in the field believed health was supported by a rhythm between activity and rest. Experiencing both pleasure and achievement were essential during daily activities (Burke, 2003). Meyer (1922) described human life as shaped by a rhythm that guides time:

> …there are many other rhythms we must be attuned to: the larger rhythms of night and day, of sleep and waking hours, of hunger and its gratification, and finally the big four – work and play and rest and sleep, which our organism must be able to balance even under difficulty. The only way to attain balance in all this is actual doing, actual practice, a program of wholesome living as the basis of wholesome feeling and thinking and fancy and interests (Meyer, p. 6).

Meyer's early writings were believed to suggest that a balance of time spent in occupational categories (i.e. work, rest) was important to health (Christiansen, 1996). However a closer review of Meyer's and other health care providers' efforts at the time

clearly detail how these leaders recognized and structured treatment and prevention based on the belief that individuals experience time and occupation differently (Hall, 1905; Hall & Buck, 1915; Meyer, 1922; Tracy, 1910). More recent reviews of Meyer's work also summarize the early assumptions about health and occupation: assisting individuals to discover their own balance of rest, pleasure and accomplishment during daily occupations was what was important to balancing life and thus to promoting health (Christiansen, 2007; Quiroga, 1995; Slagle & Robeson, 1941).

Some of the early conceptualizations of life balance remain evident today (e.g., chronobiology as the study of the biological and life rhythms related to balance), yet there is greater diversity in how balance is conceptualized and measured. At present, *balance* leading to improved health and well-being is seen as a pattern of engaging in occupations that results in one's ability to meet his or her needs and desires (Christiansen, 1996; Christiansen & Matuska, 2006; Wilcock, 1998a). How individuals use time remains at the core of balance; however ways of attempting to measure use and perception of time have broadened. *Balance* is now characterized by an assumed connection between various states, such as satisfaction, contentment, harmony and how time is spent (Christiansen, Matuska, Polatajko, & Davis, 2009). Even though there has been a long established connection between life balance and health and well-being, balance, as a concept remains elusive, defined in many different ways (Backman, 2004; Christiansen & Matuska, 2006).

With the emergence of occupational science as a recent science committed in part to understanding the individual's unique experiences, there has been a developing appreciation for the complexity of human occupation (Clark & Lawlor, 2009; Yerxa et

al., 1990). Of late, there has been increasing dialogue identifying a need to expand ways to understand how people experience engaging in occupations over time (K. Hammell, 2004; K. Hammell, 2009; Jonsson, 2008). Some researchers are also attempting to conceptualize alternative ways to measure balance in order to capture the subjective experience of occupation and balancing occupations (Jonsson & Persson, 2006; Matuska & Christiansen, 2008; Matuska & Christiansen, 2009; Pentland & McColl, 2009; Persson & Jonsson, 2009). Advancements in understanding how people experience occupations will assist with developing an experience-based categorization of occupation and will continue to expand our understanding of the connections between patterns of engaging in occupations and health and well-being (Jonsson, 2008).

Purpose of the Study

The intent of this study was to provide the theoretical underpinning of a newly developing instrument designed to capture the objective and subjective experiences of occupational engagement titled the *Daily Experiences of Pleasure, Productivity and Restoration Profile (PPR Profile)* (Atler, 2008), and to examine the emerging validity evidence of the instrument throughout various stages of the *PPR Profile's* development. The *PPR Profile* (Atler, 2008) was constructed to provide: (a) an occupation measure capturing the objective and subjective dimensions of occupational engagement; (b) an alternative means to understanding the human experience of daily occupations through examining the three subjective experiences, viewed as biological and sociological needs met through engaging in daily life: pleasure, productivity, and restoration (Clark, 1997; Doble & Caron-Santha, 2007; Pierce, 1997, 2001; Wilcock, 1998b), and (c) a means for allowing individuals to reflect on occupational experiences and patterns thus providing a

means for discovering their balance (Backman, 2005). Measuring the subjective experiences of pleasure, productivity, and restoration provides a means to move beyond the impediments found in categorizing occupation using the categories of self-care, work, and leisure.

Theoretical Rationale of the Study

Two bodies of literature provided the theoretical foundation guiding the development of the *PPR Profile* and the subsequent examination of the *PPR Profile's* initial validity evidence. First the literature focused on supporting the importance of understanding the subjective experience of occupational engagement is presented. This section provides the theoretical foundation and empirical evidence as the context for designing the *PPR Profile* as a measure that captures the unique individual experiences of engaging in daily occupations. Secondly, Messick's (1993) notion of validity as a unified concept and his framework for examining validity that guided the validation studies of the *PPR Profile* are synthesized. His framework was chosen because his views and conceptualization of validity expands beyond examining empirical evidence to examining consequential validity evidence. In other words, consequential validity is an analysis of the extent to which the intended purpose of the instrument is met. Because the *PPR Profile* was designed to enhance one's awareness of daily occupations and associated experiences through reflection and identification of occupational concerns, evaluating its intended and unintended outcomes was critical.

Significance of the Subjective Experience

An underlying assumption of occupational therapy is that both the objective and subjective aspects of occupation influence occupational engagement which in turn

influence one's health and overall participation in life (American Occupational Therapy Association, 2008). Within occupational therapy practice, discovering and understanding the person's perspective or subjective experiences of daily life is considered an essential element of best practice referred to as using a client-centered approach (Elliott & Coppola, 2008). Once the person's individual perspectives and experiences are gathered they are used to guide the remainder of the occupational therapy assessment and intervention process.

Foundational assumptions from occupational science, a new science that addresses the nature of humans as occupational beings, supports measuring the subjective experiences of occupational engagement (Larson, Wood, & Clark, 2003). Three specific assumptions supporting the importance of capturing the subjective or personal experience are:

- Occupational engagement occurs within a socio-cultural, physical, temporal, and historical context;
- Occupation is a multi-dimensional and complex experience; and
- Occupation can be understood only by comprehending the personal experience, because individuals attach different meanings to engagement (Burke, 2003; Clark et al., 1997; Crist & Royeen, 1997; Yerxa et al., 1990).

From these assumptions, how people engage in occupation (what they do, when, where, and how) is believed to be self-directed. Thus each person creates his or her own daily experiences (Yerxa et al., 1990). Because of the individual nature of engagement, occupational scientists believe that occupation can only be understood by realizing the

personal experience (Burke, 2003; Clark, 1993; Clark et al., 1997; Crist & Royeen, 1997; Pierce, 1997, 2003; Yerxa et al., 1990).

Acknowledging and seeking understanding of the individual's unique experience are essential when studying human occupation (Yerxa et al., 1990) Early occupational scientists asserted: "observing behavior is not sufficient for understanding occupation" (Yerxa et al., 1990, p. 11). When attempting to understand performance and participation, recent research advocates that it is important to understand the quality of experiences (Jonsson & Persson, 2006; Lo & Zemke, 1997) and unique individual experiences (Erlandsson & Eklund, 2001; Persson, Eklund, & Isacsson, 1999; Primeau, 1992).

Seminal work by Glass and his colleagues is frequently cited to convey that the relationship between occupation and health and well-being is not associated with a particular category of occupation (i.e., physical activity) but appears to be influenced by how people experience their occupations (Glass, Mendes de Leon, Marottoli, & Berkman, 1999). A qualitative study exploring the meaning of health among twenty-two older adults supports Glass and colleagues work indicating that, when examining relationships to health, the quality of the occupational experiences were more important than the specific type of occupation (Bryant & Kutner, 2001).

Not only have researchers explored the importance of subjective experience related to occupations but others have examined the role of subjective experience related to occupational balance. Wilcock and colleagues (1997) examined the relationship between perceived occupational balance and well-being. One hundred and forty-six participants representing a broad range of people from different age groups, living

situations and locations (i.e., urban and rural) in South Australia identified their current and ideal levels of engagement in physical, mental, social, and rest occupations. Occupational balance was operationalized as congruency between one's current and ideal levels of occupations. Levels of occupational balance were correlated with responses to a single item question rating health status using a five point scale. Findings indicated participants whose current and ideal levels of occupational engagement were identical, reported their health somewhere between fair to excellent. In addition participants who reported greater differences between current and ideal levels of occupational engagement reported their health as poor.

Qualitative studies exploring the experiences of occupational balance among individuals with disabilities indicated meaningful occupational engagement was essential to occupational balance (Hakansson, Dahlin-Ivanoff, & Sonn, 2006; Stamm et al., 2009). All 19 women who received treatment for a stress disorder illness interviewed by Hakansson and colleagues (2006) talked about the need for occupational experiences that were meaningful, which they described as providing pleasure, enjoyment, satisfaction, and improvement. In a second qualitative study, ten adults living with rheumatoid arthritis (42-63 years of age) engaged in narrative interviews, sharing their stories of their life in relationship to rheumatoid arthritis (Stamm et al., 2009). Three dimensions of occupational balance were drawn from the stories. Balance between: (a) challenging and relaxing occupations; (b) activities that were meaningful for self versus within the socio-cultural context, and (c) activities focused on caring for self versus caring for others.

In summary, the connections among health, well-being, and balance for individuals (healthy or living with a disability) appear to be more related to how

occupations are experienced rather than done. Or in other words, the subjective experiences associated with occupational engagement provide greater understanding of the importance of occupation to health, well-being, and balance, than does reporting the types or categories of occupations. Additionally, some studies clearly show how a type of occupation (e.g. quiet activities) can be experienced differently even among individuals with the same diagnosis (Bejerholm & Eklund, 2006).

Because of the importance and relevance of developing measures that capture the subjective experiences of occupational engagement, ensuring these measures are well designed requires the use of current standards for developing and evaluating their use. An overview of Messick's (1993) unified concept of validity that has strongly influenced current standards will be reviewed next.

A Unified Concept of Validity

Creating strong reliable and valid measures is essential because the information gained from specific assessments is only as valid as the measure itself (Morgan, Gliner, & Harmon, 2006). The current Standards for Educational and Psychological Testing (*Standards)* provide detailed criteria for test development and evaluation, along with test use and evaluation of the effect of their use (American Educational Research Association (AERA), 1999). The *Standards* present the importance of gathering and integrating validity evidence as a unified concept built on five sources based on: (a) test content; (b) response processes; (c) internal structure; (d) relationship to other variables; and (e) consequences of testing (AERA, 1999). Determining what types of evidence are important for establishing measurement validation is related to the proposed use of the specific instrument (AERA, 1999).

Viewing validity as a whole or unified concept rather than separate types of validity in the current *Standards* was strongly influenced by the work of Samuel Messick (1980, 1989). Not only did Messick introduce the idea that validity is comprised of various sources of evidence, he proposed that sources of validity evidence can be based on empirical as well as consequential evidence (Messick, 1993). Although his perspectives have been controversial and not accepted by all psychometricians (Lissitz & Samuelsen, 2007), the *Standards* currently include consequences of testing as a source of evidence which should be used to build validity evidence (AERA, 1999).

Messick's (1993) four-fold classification system not only sheds clarification on Messick's definition of validity but also provides a framework or a structure to examine unified validity. Test outcomes, defined as test interpretation and test use, are examined using two sources of evidence: evidential or empirical and consequential (see Figure 1). Messick's intent was to provide a way to sort out the complexities in evaluating the meaning and use of test results, not to create a new way of dividing aspects of validity. Thus, validity moves beyond empirical evidence to include theoretical sources. His framework guides the researcher to examine value implications related to the test construct and format, as well as relevance, utility and consequences of taking the test and interpreting the scores.

Messick (1993) described two major threats to validity: construct underrepresentation and construct irrelevance. Construct underrepresentation occurs when aspects of the construct are not reflected in the test. Construct irrelevance is when concepts or ideas that are not truly a part of the construct are presented in the test (Messick, 1993). To avoid these threats to validity, Messick advised

	Test Interpretation	Test Use
Evidential Basis	Construct Validity	Construct Validity + Relevance/Utility
Consequential Basis	Value Implications	Social Consequences

Figure 1. Messick's Facets of Validity (Messick, 1993, p. 20)

examining six separate but related aspects of validity: (a) content; (b) substantive; (c) structure; (d) generalizability; (e) external, and (f) consequential. Each of Messick's six interdependent aspects of validity is described below.

Content considerations to construct validity. Traditionally, content validity evidence addresses how well test items reflect the construct domain (Messick, 1993). Two aspects are assessed: content relevance and content representation. Assessing relevance of the test content includes the examination of the boundaries of the construct domain and item specification. The format of the test including methods (paper-pencil, observation, task performance) and the instructions for completing the test and scoring the test also influence content relevance. For instance, if the instructions or examples on how to complete the test are unclear or confusing, validity is potentially threatened. Content representation addresses questions of whether the test items accurately reflect the domain of the intended construct. Messick (1993) points out the limitation of using content validity evidence as the sole basis of test validity. He states test validation is not merely the means for providing a rationale for how the test was constructed or why certain items were included, validation "is in essence hypothesis testing" (1993, p. 41). In addition, Messick advocates that content validity does not exist within the test but "in the

judgment of experts about domain relevance and representativeness" (Messick, 1993, p. 41).

The substantive element of construct validity. To strengthen a test's ability to reflect the intended construct, Messick (1993) describes a substantive approach to test development. Messick recommends combining methods to ensure the content of the test measures the construct, and that there is consistency in how individuals are responding to items or aspects of the test. For example, Messick outlines the importance of combining expert content review and empirical testing for refining the content during construction of the test. Empirical testing might include convergent-discriminant strategies comparing scores from tests measuring similar and dissimilar constructs, factor analysis (confirmatory or exploratory), or structural equation modeling (Messick, 1989). This approach strengthens the traditional content validity approach by combining theory testing through empirical analysis.

The structural component of construct validity. The structural component of construct validity addresses how well the construction and organization of the test corresponds to the structure of the underlying construct represented (Messick, 1993). Inter-item correlations and scoring instructions are two specific areas examined. Questions guiding evaluation of the structural components might include the following: Do items reflecting the same domain of the construct have strong correlations, and unrelated constructs have weak correlations? Does the theory provide support for which item responses are combined to form specific test scores? Should certain item responses be weighted? Can or does a cumulative score reflect the nature of the construct? Again both quantitative item analysis and expert panel review can provide valuable information.

External components of construct validity. External validity evidence examines the relationship between the developing test scores and scores from other tests (Messick, 1993). The underlying theory or assumptions substantiating the developing test's construct identifies the expected relationship with other variables (operationalized using other tests). Hypothesis testing guides the detection of external validity evidence. Both convergent and discriminant validity are sought. To help explain: if the developing test is designed to measure health, then scores from a different health survey would be expected to be positively correlated. The reverse would also be true and examined: scores from a depression survey would not be expected to have a strong positive correlation with health, but rather a negative correlation.

Generalizability considerations for construct validity. Messick (1993) states the meaning of test scores cannot be assumed or generalized across different contexts. Various types of generalizability have been identified and need to be considered including: (a) population generalizability (across different groups of individuals, commonly referred to as external validity (Morgan et al., 2006; Pedhazur & Schmelkin, 1991); (b) ecological generalizability (across different settings or places); and (c) temporal generalizability (across different times). Generalizability should not be thought of as types of validity (i.e., external validity), but more as a form of validity evidence that can assist with deciding upon the strength of validity and how the test can or might be used across various contexts (Messick, 1993).

Consequential (significance) considerations of validity. Two main aspects of consequential validity have been identified by Messick: values implications and social consequences (1993). He states the issue is not whether to consider the role of values in

test validation but how. Messick supports the idea that one cannot separate values from facts or theories. Therefore conveying the values associated with the test is essential. Values can be: (a) associated with how the construct is labeled (i.e. the use of the word structure versus rigidity; structure may be viewed as ordered, whereas rigidity may be viewed as inflexible); (b) embedded in the underlying theories associated with the construct, and (c) a part of the larger ideologies or ways in which one perceives and functions in the world.

Careful and deliberate decisions must be made when constructing the test and determining its use to avoid value bias, even though value biases can be very subtle and difficult to identify. One particular area that requires careful assessment is examining the implications for how test scores are interpreted (AERA, 2006). Useful questions to guide the critique of how values influence tests scoring and use include: How will the scores be used; will decisions about what a person can or cannot do be based on scores received on a test, and what are the biases toward different groups of individuals who may be administered the test?

Another important aspect of consequential evidence related to test validity is the social consequences of test use (Messick, 1995). To determine if a test serves its intended purpose requires evaluation of the intended and unintended social consequences. Does the test lead to the stated outcomes? Are there unexpected or unintended results or effects? Unintended effects could be evaluated as either positive or negative, and need to be further evaluated to determine if they are linked to sources of test invalidity or not. Ultimately the major question being addressed is how worthwhile is the test, bearing in mind both positive and negative effects either on individuals or society.

Messick's unified concept of validity not only continues to influence the current edition of the *Standards* but his framework prompts test developers to examine construct validity through empirical testing, and to also consider the utility, relevance, and value implications of how the test is designed and used. Despite Messick's views of validity emerging from the educational and psychology measurement context, his framework has been used previously by occupational therapists to guide development of client-centered assessments (Chan, 1995; Kramer, 2008).

Need for the Study

As identified earlier, one of the purposes of this study was to provide the theoretical underpinning of the newly developing instrument, the *PPR Profile*. However prior to the initiation of developing a new assessment, a review of current assessments is essential to legitimately identify the need (Benson & Clark, 1982; Kielhofner, 1988; Wood, 2005). Although in the last 20 years that has been an increased emphasis on using valid and reliable assessments that measure occupational performance and participation (Powell, 2008), the literature reviewed provides a clear picture of the need for continued development of assessments capturing the subjective experience of occupational engagement. This section provides a synthesis of the literature reviewed describing current participation assessments, client-centered assessments and balance assessments.

Occupational Participation Measures

Although measuring observable characteristics of participation has recently been critiqued as limiting (Cott, Wiles, & Devitt, 2007; Hemmingsson & Jonsson, 2005; Perenboom & Chorus, 2003; Ueda & Okawa, 2003; Wade & Halligan, 2003), currently

the “majority of participation measures focus on the observable characteristics of participation” (Law, Dunn, & Baum, 2005, p. 109). In Table 1, a summary of the most commonly reported participation measures used with the general population of adults is provided. Indeed, more often participation is measured by a level of engagement or level of difficulty with engagement rather than measured by capturing the subjective experiences of participation. Only a few of the participation measures listed in Table 1 examine aspects of the subjective experience of satisfaction; these include the Life Habits Assessment (LIFE-H) and the Post Acute Care (PM-PAC) (Gandek, Sinclair, Jette, & Ware, 2007; Noreau, Fougeyrollas, & Vincent, 2002). Additionally, the Impact on Participation and Autonomy Questionnaire (IPAQ) measures the perceived quality of participation (Cardol et al., 2002). Leaders in the field continue to advocate for evaluating the subjective experience of participation to enhance our understanding of participation and health and well-being (Hemmingsson & Jonsson, 2005).

Client-Centered Occupation Assessments

Within the occupational therapy profession, investigation of the subjective experience of engaging in occupation has been advanced with the development of client-centered assessments. Using client-centered assessments is the means to discovering or measuring the subjective or personal experience of occupation (McColl & Pollock, 2001; Pollock, 1993). As shown in Table 2, four of the five general adult client-centered assessments were developed using theoretical constructs from the Model of Human Occupation, which leads to subjective experience being measured as competency, importance, and satisfaction. Although each of the client-centered assessments reviewed in Table 2 capture clients’ perspectives on various aspects of daily life, in two

Table 1

Overview of 'General' Participation Measures

Assessment	Participation Areas Assessed			Quantity or Quality Measures
Activity Card Sort (ACS)	Instrumental	Social	Leisure	Frequency of engagement Retained activity = current/previous
Craig Handicap Assessment & Reporting Technique (CHART)	Cognitive Independence Occupation self-sufficiency	Economic Physical independence	Mobility Social integration	Level of assistance Level of difficulty Amount of time spent (hours)
Impact on Participation & Autonomy (IPAQ)	Education Leisure Self care	Family roles Social relations Finances	Mobility Work and education	Perceived levels of participation Perceived levels of difficulty
LIFE-Habits Assessment (LIFE – H)	Communication Employment Interpersonal relations Recreation	Community Fitness Mobility Responsibility	Education Housing Nutrition	Level of difficulty Level of assistance Level of satisfaction
London Handicap Scale	Economic Self-sufficiency Orientation	Mobility Physical independence	Occupation Social Integration	Level of disadvantage
Psychosocial Adjustment to Illness Scale (PAIS)	Domestic environment Vocational environment Extended family	Sexual relationships Psychological distress	Health care orientation Social environment	Frequency of engagement Impact/Extent of disruption
Participation Measure for Post Acute Care (PM-PAC)	Civic life Domestic life Interpersonal relations Social	Community Economic life Mobility Work	Communication Education Role functioning	Perceived limitations Frequency of engagement Level of satisfaction
Reintegration to Normal Living Index (RNL)	General coping Personal relationships Social activity	Family roles Recreational activities Work	Mobility Self-care	Perceived ability/inability at desired level

ACS (Baum & Edwards, 2001); CHART (Whiteneck, Charlifue, Gerhart, Overholser, & Richardson, 1992); IPAQ (Cardol, de Haan, De Jong, Van den Bos, & De Groot, 2001); LIFE-H (Noreau et al., 2002); London Handicap Scale (Harwood & Ebrahim, 2000); PAIS (Derogatis, 1986); PM-PAC (Gandek et al., 2007); RNL (Wood-Dauphinee, Opzoomer, Williams, Marchand, & Spitzer, 1988)

Table 2
Overview of Common "General" Client-Centered Assessments

Assessment	Format	Primary Purpose	Outcomes Reported
Canadian Occupational Measure (COPM)	Semi-structured interview focusing on what a person does in a typical day	Describe client's perceptions and priorities related to occupational issues or concerns that are rated on competency and satisfaction	Client rates using a 1-10 scale Performance Satisfaction
Occupational Circumstances Assessment Interview and Rating Scale (OCAIRS)	Semi structured interview focusing on gathering a client's occupational functioning level	Describe client's roles, habits, personal causation, interests, values, skills, goal setting, interpretation of the past and current environments	Therapist rates client using a rating key (4 options) that identifies whether each portion facilitates, allows, inhibits, or restricts participation in occupations.
Occupational Performance History Interview II (OPHI-II)	Semi-structured interview focusing on client's life history	Describe client's level of occupational adaptation, identity, and competence, and impact of the environment	Therapist rates client using a 1-4 scale exceptionally competent occupational functioning to extremely occupationally dysfunctional.
Occupational Questionnaire (OQ)	Time log focusing on what a person does every ½ hour in a 24 hour period of time	Describe client's perceptions of type of occupation they engage in (work, daily living, recreation and rest) rated on competency, importance and satisfaction	Client rates using a 1-5 scale Competency – very well to very poorly Importance – extremely important to waste of time Enjoyment – like it very much to strongly dislike it
Occupational Self Assessment (OSA)	21 item questionnaire focusing on gaining client's sense of competency and values	Describe client's perceptions of occupational competence and importance related to skills, activities, habits and roles	Client rates using rating key (4 options) Competence – I have a lot of problems doing to I do extremely well. Importance – not so important to most important

COPM (Law et al., 1991; Law, Baptiste, et al., 2005); OCAIRS (McColl & Pollock, 2005); OPHI-II (Kielhofner et al., 1998); OQ (Smith, Kielhofner, & Watts, 1986); OSA (Baron, Kielhofner, Goldhammer, & Wolenski, 1998)

assessments the therapist rates the client's performance, thus potentially altering the clients' perceptions through the perspective of the therapist (Kielhofner et al., 1998; McColl & Pollock, 2005). Expanding to include different ways of operationalizing the personal experience of occupational engagement will assist occupational therapy and occupational science in further understanding the complexity of occupation.

Assessments Measuring the Subjective Experience of Time-Use

Although time use [an objective measure] remains the most familiar and common method used to measure balance (Christiansen & Matuska, 2006; Law, 2002), some researchers have begun exploring ways to conceptualize balance that include the subjective experience (Jonsson & Persson, 2006; Matuska & Christiansen, 2008; Matuska & Christiansen, 2009; Pentland & McColl, 2009; Persson & Jonsson, 2009). While many of the more recent works remain theoretical, Backman (2005) highlights four approaches, described in Table 3, that capture both objective and subjective aspects of daily life. She identified these approaches as useful in allowing adults to examine time use and associated characteristics of the occupations in order to consider ways to enhance satisfaction of daily occupational experiences (see Table 3). Two of the assessments described in Table 3 are time use diaries: the Occupational Questionnaire and the National Institutes of Health Activity Record (ACTRE) (Gerber & Furst, 1992; Smith et al., 1986). Both of these time use diaries operationalize subjective experiences using key constructs from the Model of Human Occupation as discussed earlier. Additionally, Table 3 describes the two social ecological approaches that attempt

Table 3

Various Ways of Assessing and Conceptualizing Balance as Subjective Experience of Time Use

Method or Assessment	Description or purpose	How Subjective Experience is operationalized	Use in Research
The Occupational Questionnaire (OQ)	To identify perceptions of type of occupation they engage in (work, daily living, recreation and rest) and levels of perceived competency, importance and satisfaction	Use of Likert scale recording levels for each ½ hour period of time	Exploration of occupational experiences and patterns within and among different groups of individuals (Cahill, Connolly, & Stapleton, 2010; Crist, Davis, & Coffin, 2000; Niva & Skar, 2006; Stewart & Craik, 2007)
National Institute of Health Activity Record (NIH ACTRE)	To describe occupations engaged in a 48 hour period and client's perceived levels of pain, fatigue, importance, competency and satisfaction	Use of Likert scale recording levels for each ½ hour period of time	None
Personal Projects	To identify top 10 life projects or occupational pursuits and rate each based on 17 potential dimensions (i.e., importance, enjoyment, difficulty, stress, and adequacy). Each project is then rated as to impact of each project on each other	Measured by totaling likert scaled responses to each dimension (ranging from 0 - 10) (Little, 1983). Or measured by overall descriptive evaluation of projects (i.e., an overload, or project imbalance) (Little, 2009)	(refer to Christiansen, Little, & Backman, 1998) also used as intervention guide (Affleck et al., 1998; Salmela-Aro, Naatanen, & Nurmi, 2004; Vroman, Warner, & Chamberlain, 2009)
Experiential Sampling Method (ESM)	To identify affective experiences related to daily life experiences in a natural context. When randomly prompted (using a beeper) individuals record responses to questions. Commonly levels of concentration, enjoyment, and intrinsic motivation are recorded	Responses to questions using Likert scales are aggregated into measures of "flow", an optimal experience determined by fit between skill and challenge (Nakamura & Csikszentmihalyi, 2009). Channel models identified to examine flow (Jonsson & Persson, 2006)	ESM used as a measure of activities in context, and internal states and traits (i.e., pleasure, anxiety, self-esteem) (deVries, 1992; Farnworth, Mostert, Harrison, & Worrell, 1996; Hektner, Schmidt, & Csikszentmihalyi, 2007)

OQ (Smith et al., 1986); NIH ACTRE (Gerber & Furst, 1992); Personal Projects (Christiansen, Backman, Little, & Nguyen, 1999; Christiansen et al., 1998; Little, 1983); ESM (Csikszentmihalyi & Larson, 1987, 1992; Hektner et al., 2007)

to capture subjective experience during actual engagement: the Personal Projects Analysis (PPA), and Experience Sampling Method (ESM) (Christiansen et al., 1999; Christiansen et al., 1998; Csikszentmihalyi & Larson, 1987, 1992; Hektner et al., 2007; Little, 1983).

Although ESM was designed to address the weakness of time diaries not capturing the subjective experience of daily life, several researchers have suggested ESM has several limitations in capturing subjective experiences of daily life. Specifically, ESM is expensive and is not designed to gather activities across a full day; it involves high levels of participant burden, and is not seen as practical for clinical use by some (Backman, 2005; Kahneman, Krueger, Schkade, Schwarz, & Stone, 2004; Michelson, 2005; Pentland, Harvey, Lawton, & McColl, 1999; Pentland & McColl, 1999; Ver Ploeg et al., 2000). Additionally, Jonsson and Perrson proposed an alternative model of examining ESM data suggesting capturing the subjective experience of flow, which was too limiting to examine occupational balance (Jonsson & Persson, 2006; Persson & Jonsson, 2009).

One study was found that compared some of the methods identified in Table 3. Time diary, observation, video, and random sampling were used to capture one woman's daily life experiences over four days (Erlandsson & Eklund, 2001). While each method provided different information, identifying her personal experiences during occupational engagement was essential to understanding her daily life patterns. The authors concluded assuming: "it is occupational patterns … reflecting a detailed time perspective that influences people's state of health" (Erlandsson & Eklund, 2001, p. 38). However,

Erlandsson and Eklund (2001) recognized combining these four methods would not be feasible for studying daily life patterns at a group level. Although subjective experience is frequently used to measure aspects of balance, many of the measures may not provide enough detail to understand the individualistic nature of occupational engagement.

In summary, there is a continued need to develop occupation and occupational balance measures capturing the subjective experience of occupational engagement. Providing additional occupational balance measures would advance the study of life balance and health and provide empirical support for occupation-based practice (Backman & Anaby, 2009; Coster, 2006; James & Corr, 2004; Law & Baum, 2001, 2005; Law, Dunn, et al., 2005). In particular, developing occupation measures capturing the subjective experience of time use would be congruent with occupational scientists' belief that occupational engagement is an individual experience (Yerxa et al., 1990)

Significance of the Study

Development and validation of the *PPR Profile* will provide an additional measure of occupation within occupational science and occupational therapy that will assist in providing occupation-based, client-centered occupational therapy, as well as in demonstrating the efficacy of occupation-based services (Coster, 2006). Authenticating the *PPR Profile* as an instrument that integrates gathering subjective experiences of pleasure, productivity, and restoration with a basic time-use survey will provide a more powerful way of expanding our understanding of the experience of time by allowing analysis of qualitative and quantitative factors (Michelson, 2005). Reporting a combination of the three characteristics eliminates categorizing occupations into

objective categories thus providing a way to uncover and reflect upon a more complex view of peoples' engagement in occupations.

It is anticipated the *PPR Profile* will be: (a) a useful occupation-based instrument assisting individuals to examine occupational balance, as well as (b) a quantitative research tool that may be useful in studying occupational balance and occupational patterns among and across groups of individuals. Development and validation of the *PPR Profile* as a client-centered balance instrument will assist individuals in discovering the complexities of occupational experiences in daily life, thus supporting their ability to enhance occupational experiences that promote their health and well-being (McColl & Pollock, 2001; Pollock, 1993). As a research tool, *the PPR Profile* allows a new way of exploring the relationship between occupation and health and well-being. As one of the first instruments to bring the construct of rest (restoration) into prominent view, the *PPR Profile* will provide a way to examine the role of rest in the rhythm of life, balance, and health (Fox, 2007; Ledoux, 2007; Nurit & Michal, 2003; Pierce, 1997).

Brief Overview of the Organization of the Dissertation

In the next four chapters, the researcher explicates the theoretical underpinnings of the *PPR Profile* and reports validity evidence gathered using the *PPR Profile* during its development and with a sample of adults living in the community with the consequences of stroke. Chapters 2, 3 and 4 were written as manuscripts prepared for specific journals. In the following section a brief outline of each of these three chapters follows. The dissertation culminates with Chapter 5 providing a discussion of key findings and lessons learned throughout the process of developing and initiating validation of the *PPR Profile*.

Chapter 2: Examining the Subjective Experience of Daily Occupational Experiences through Pleasure, Productivity and Restoration

Chapter 2 is a manuscript written and formatted for the *Canadian Journal of Occupational Therapy*. This chapter presents the theoretical and empirical support for operationalizing the subjective experiences of occupational engagement using pleasure, productivity and restoration. Early philosophical foundations of occupational therapy along with more recent theories from within and outside of occupational therapy and occupational science are presented. Additionally empirical work supporting the importance of understanding the inter-relationship of pleasure, productivity, and restoration in daily life is articulated. The chapter ends with a discussion of how understanding the inter-related experiences of pleasure, productivity, and restoration during occupational engagement will provide occupational therapists and occupational scientists with greater insights into the complexity of occupation and insights into enabling occupational performance and participation to promote health and well-being.

Chapter 3: Employing Cognitive Interviewing to Strengthen the Validity of Client-Centered Assessments

Chapter 3 is a manuscript written and formatted for the *Occupational Therapy Journal of Research: Occupation, Participation and Health.* Chapter 3 introduces cognitive interviewing as an emerging method being used to identify, prevent, and address problems with self- administered questionnaires that is congruent with occupational therapy's value of honoring and using the subjective or client-centered perspective in practice. The purpose of the manuscript is to illustrate the use of cognitive interviewing in refining and developing client-centered assessments in occupational

therapy. Reporting on the process used during the development of the *PPR Profile*, the findings illustrate the benefits of using cognitive interviewing to gather validity evidence related to the content, major constructs and consequential validity. The chapter ends with a discussion on the various ways cognitive interviewing could strengthen development and modification of client-centered assessments in occupational therapy.

Chapter 4: Consequential and Convergent Validity Evidence of the *Daily Experiences of Pleasure, Productivity and Restoration Profile*: A Pilot Study

Chapter 4 is a beginning draft of a manuscript written for submission to the *Scandinavian Journal of Occupational Therapy*. This chapter reports the results of a study examining convergent and consequential validity evidence as two aspects of construct validity (Messick, 1993). Twenty-five community dwelling adults living with the consequences of stroke participated in completing three health surveys and recording their activities and experiences for three days using the *PPR Profile*. Consequential aspects of construct validity were explored using constant comparative analysis of participants' interviews that followed completion of the *PPR Profile*. External aspects of construct validity were investigated by examining the associations between the *PPR Profile* and Ryff's Scales of Psychological Well-Being (SPWB), the SF-36 Health Survey, and the Center for Epidemiologic Studies – Depression Scale (CES-D). Only minimal convergent validity evidence was found. However consequential validity evidence indicated that participants' completion of the *PPR Profile* led to increased awareness. The chapter ends with a discussion of possible reasons for the limited convergent validity evidence found and recommendations for future use and validation of the *PPR Profile*.

Chapter 5: Key Findings and Lessons Learned

Chapter 5 briefly identifies and discusses the key findings related to the *PPR Profile* and the studies reported in this project. Following a synthesis of findings and a summary of the researcher's current views on the potential use of the *PPR Profile*, the researcher highlights several lessons learned and insights gained related to the process of instrument development and validation of the major constructs of the *PPR Profile*.

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CHAPTER 2: UNCOVERING THE COMPLEXITY OF OCCUPATION THROUGH EXPERIENCES OF PLEASURE, PRODUCTIVITY, AND RESTORATION

Summary

Key Words –Subjective Experience, Restoration, Pleasure, Productivity

Background. The need to explore the subjective experiences of daily occupations to better understand the contribution of occupation and occupational balance to health has been advocated by several occupational therapists. **Purpose.** The aim of this article is to provide evidence for the conceptualization of occupation as the interwoven experiences of pleasure, productivity, and restoration within and across daily occupations. **Key Issues**. Early philosophical foundations of occupational therapy explicate the importance of experiencing pleasure, productivity, and restoration to balance life and maintain health. Current theories and empirical works substantiate the inter-related nature of these three subjective dimensions of daily life. **Implications**. Understanding the inter-related experiences of pleasure, productivity, and restoration during daily occupations will provide occupational therapists greater insights into the complexity of occupation. This knowledge will assist therapists in their role of facilitating occupational performance and participation in the promotion of health and well-being.

Have you ever thought about how experiences of pleasure, productivity, or restoration impact your health and well-being? Or thought about their inter-related nature, and how they might uncover the complexity of occupation? Leaders in the profession have recognized all of these experiences as innate or biological human needs met through occupation. In this article the author asserts that the inter-related nature of pleasure, productivity, and restoration is a way to capture the subjective nature of occupational engagement. This conceptualization (a) allows for the examination of subjective experience with equal attention given to pleasure, productivity, and restoration; (b) highlights the inter-relatedness of occupational experiences, and (c) brings restoration, an essential element of health, well-being, and balance, into prominence.

The article begins with an account of the current suggestions for the use of experience-based categories to examine occupation and health. Subsequently the conceptualization of pleasure, productivity, and restoration as subjective experiences linked to occupational engagement are discussed. Restoration, which is often overlooked in our profession (Nurit & Michal, 2003) is discussed first, followed by productivity and pleasure. After situating each subjective experience as an innate human need, early philosophical beliefs of the profession and current theories and evidence that support the article's thesis are provided. Throughout each section the inter-related nature of the subjective experiences within and across daily occupations is presented. The article concludes with the implications of the conceptualization of pleasure, productivity, and restoration for occupational therapy practitioners.

Experienced-Based Categories and Conceptualizations of Occupation

The use of experience-based categories to describe occupation and occupational balance stems from the identified limitations of categorizing occupations into the categories of self-care, productivity, and leisure (K. Hammell, 2004; K. Hammell, 2009a, 2009b; Jonsson, 2008). These three categories have been portrayed as unrealistically fixed, as well as "simplistic, value laden, decontextualized and insufficiently descriptive of subjective experience" (Pierce, 2003, p. 252). For example, some maintain that people define occupation differently at different times in their lives (Dickie, 2009), while others report that people experience the same occupation differently (Bejerholm & Eklund, 2004; Primeau, 1992). Primeau (1996) found that work and leisure were not dichotomous experiences, and recommended that an alternative means be used to analyze occupational balance.

Supporting movement away from the use of the categories of self-care, productivity, and leisure, Hammell (2004; K. Hammell, 2009b) proposed the use of experience-based categories of occupation that reflect subjective experiences of doing. She suggested consideration of four experience-based categories which were derived from recurring themes found in qualitative research. The four categories reflect experiences of being restored, connecting and contributing to others, doing, and making connections between past and present in order to sense a future. Being restored is identified as experiences of rejuvenation or relaxation with pleasure and enjoyment. Occupations that produce feelings of connection and contribution lead to a sense of belonging. Engagement in doing leads to feelings of accomplishment. Lastly, for

individuals who have experienced crisis or life changes, occupations can be experienced as connections among past, present, and future.

Jonsson (2008) also proposed the use of experience-based categories as a way to avoid reliance on objective and distinct categories of occupation. Similar to Hammell's method, Jonsson derived his seven experience-based categories from qualitative research. The seven categories were engaging, basic, social, relaxing, regular, irregular, and time killing. These experiences were described as occurring across self-care, productivity, and leisure occupations. Jonsson found two patterns among the seven categories. Engagement in diverse occupations that were engaging, social, and relaxing were associated with well-being, while engagement in occupations experienced as time-killing, basic, and irregular were not associated with well-being.

Many of the categories identified by Hammell (2009b) and Jonsson (2008) have been identified by others as innate needs of humans. That humans possess innate needs to engage in occupation is a fundamental assumption of occupational therapy (Wood, 1998; Yerxa et al., 1990). It is through occupational engagement that human's needs are met. Wilcock (1993, 2006) identified satisfaction, fulfillment, and pleasure as innate needs, and also described sleep and relaxation as "natural mechanisms to prevent overuse and a time for repair" (p. 61). The innate needs of pleasure, productivity, and restoration are explored below.

Subjective Experiences of Restoration

"It is in our daily lives that self-renewal is needed most. Renewal must be built into the ordinary ongoing rhythms of our lifestyles and work styles" (Hudson, 1999, p. 235). Engagement in occupations that produce a sense of restoration result in feeling

renewed. Other familiar words that may be used synonymously for restoration are refreshed, energized, rejuvenated, rested, and recovered. Restoration is a biological requirement that supports people's abilities to engage successfully and with satisfaction over time (Pierce, 1997). Because the human body makes and spends energy to function, restoration is essential to a well-functioning system.

Early leaders in the field of occupational therapy believed health was supported by a rhythm of activity and rest. Acknowledging the work of Hall, Meyer (1922) stated that the ability to balance work, play, rest, and sleep led to health. Integration of this rhythm of rest and activity in treatment became known as habit training (Slagle & Robeson, 1941). Habit training, consisting of opportunities for engaging in occupation balanced with rest, required individualization for each client, since "no general habit…is common to all mankind" (Slagle & Robeson, 1941, p. 33).

Today, occupational scientists and psychologists studying sleep, work-life balance, and chronic stress concur with Meyer's early descriptions of human life as being shaped by the ability to balance activity and rest. In the literature on sleep, the relationship between restoration, health, and occupational engagement is clear (Fox, 2007; Ledoux, 2007). While sleep is known to regenerate the brain thus providing energy to engage in daily activities, sleep is not the only activity that may help to regenerate or enhance people's performance in daily activities.

Restorative Activities Outside of Sleep

While sleep is essential, it is not sufficient to restore people's capacities for daily living. In Kaplan's (1995) Attention Restoration Theory, engagement in restorative activities is necessary to maintain the capacity to direct attention needed for everyday

living. People use directed attention to focus their concentration while also inhibiting irrelevant and distracting information. Executive functions used in everyday life such as problem solving, anticipating, and monitoring one's emotions and behaviors, rely on directed attention. Because the capacity to direct attention is prone to fatigue, engagement in restorative activities that do not require the same neural mechanisms can enhance and maintain the capacity to direct attention and thus enhance performance.

Kaplan (1995) identified four qualities essential to restorative activities: (a) *being away*, or the ability of the activity to allow the mind to drift; (b) *extent*, or the degree to which the activity allows the person to be in a different world; (c) *fascination*, or the ability of the activity to be fully engaging and absorbing, and (d) *compatibility*, or the fit between the activity and the person, which creates a sense of ease and comfort. Since individuals are unique, individual preferences need to be considered when determining restorative activities. Jansen's (2008) research supports the tenants of Kaplan's Attention Restoration Theory. Jansen found that although there was no significant correlation between the frequency of participation in restorative activities and daily functioning, there was a positive correlation between restorative feelings and daily functioning among community dwelling elders. Perceptions of one's restorative activity experiences was a more accurate way to examine the relationship of restorative activities and daily functioning than frequency of participation due to the individual and subjective nature of restorative activities.

Recovery Activities, Work Performance and Health

Meijman and Mulder's (1998) Effort-Recovery Model provides a framework for understanding the importance of restorative activities. The model infers that as people

utilize physiological and psychological resources to respond to varying work demands, a period of recovery is required to restore the body's resources. Engagement in rest or other activities outside of work allows the physiological and psychological reactions to return to their pre-stressor level of functioning. Without this recovery period, work productivity as well as health and well-being may be compromised (van Hooff, Geurts, Beckers, & Kompier, 2011).

A growing body of research has focused on discovering what types of activities are related to a sense of recovery or restoration. Physical activities and volunteer work have been consistently associated with recovery (Mojza & Sonnentag, 2010; Sonnentag, Binnewies, & Mojza, 2008). However there are mixed results regarding the relationship between other types of activities and their restorative abilities. Rook and Zijlstra (2006) found low effort activities such as watching TV and social activities did not lead to recovery, while in other studies low effort activities did lead to recovery (Sonnentag & Zijlstra, 2006). Similarly, some have found household activities to lead to recovery (Rook & Zijlstra, 2006), others have not (Winwood, Bakker, & Winefield, 2007).

Several researchers have proposed that recovery may actually occur in a work context. Feelings of recovery and enhanced performance can occur when individuals modify or add variety to how work tasks are patterned and paced. Workers incorporating breaks (e.g. coffee or lunch), engaging in a variety of work tasks, and having control over adjusting work pace or work tasks can manage feelings of fatigue and maintain performance (Geurts & Sonnentag, 2006).

Because a variety of activity types have been found to allow recovery from work, Sonnentag and Fritz (2007) have focused on understanding experiences during activities.

"Going beyond the specific activities, and examining the underlying experiences is crucial for getting more insight into the psychological processes leading to recovery" (p. 204). Disengagement from work, mastery of new challenges, and connection with others were activity experiences associated with restoration.

Leisure Activities as Replenishment and Reserve

Other disciplines have examined stress as a global life experience. In the leisure, stress, coping, and health literature, leisure activities have been studied as an aid in replenishing abilities to cope with negative effects brought on by stress (Iwasaki, Mactavish, & Mackay, 2005; Kleiber, Hutchinson, & Williams, 2002). Leisure activities may also aid in strengthening resources or reserves to cope with daily life.

Iwasaki and colleagues (2005) gathered a phenomenological perspective of stress, coping strategies, and the role of leisure. Three themes were identified. Leisure was experienced as (a) 'space' or time to care for or focus on self; (b) 'time out' or context for rejuvenation and renewal, and (c) a strategy to balance or counterbalance stress. Numerous activities that encompassed these themes (e.g., spiritual activities, playing piano, and volunteering) were identified by participants thus verifying that experiences during activities were more important than a specific activity itself.

Subjective Experiences of Productivity

"*In every man and woman there is born the instinct to make and to do."* (Plato as cited in Bruce, 1933, p. 6). *"Failure to spend and to use what he has in the performance of the tasks that belong to his role in life makes him less human than he could be."* (Reilly, 1962, p. 88). Engagement in occupations that produce a sense of productivity results in people experiencing accomplishment or satisfaction. Experiencing satisfaction

may occur from progress towards or completion of a task, as well as from making a contribution or learning something. Having opportunity to work, do, or learn is important because doing through the use of one's hands leads to a sense of achievement (Meyer, 1922).

Early leaders in the profession not only viewed experiencing achievement and satisfaction as necessary for health, they also believed these experiences could restore or lessen the impact of illness, disease, or stress (Howland, 1933; Meyer, 1922). Engagement in doing used as a means to restore health was known as the work cure. The use of "work" was believed to be essential because without experiencing tangible outcomes that led to a sense of satisfaction and accomplishment, people experienced a sense of mental unrest and delayed recovery (Hall & Buck, 1915; Slagle & Robeson, 1941). Paying particular attention to how patients experienced work was more important than specific types of activity. Laundry, farm work, arts and crafts, and going for a walk were activities used to ensure that engagement led to a sense of accomplishment and satisfaction (Slagle & Robeson, 1941).

Although there was a large focus on ensuring that patients experienced a sense of accomplishment and satisfaction, the work cure expanded beyond the importance of doing. The work cure was described as a "division of the twenty-four hours into changeable periods of work, rest and recreation . . ." (Hall, 1910, p. 13). The need to experience both accomplishment and restoration were addressed simultaneously.

Productivity Experiences and Employment

Contemporary researchers in work and organizational psychology are interested in understanding productivity in relationship to tangible outcomes as well as

psychological aspects or subjective experiences of work. As depicted in the Effort-Recovery Model, work outcomes, and physiological and psychological experiences related to work are influenced by multiple work factors, which in turn, influence health and well-being (Meijman & Mulder, 1998). The model asserts that because people strive to reach desired outcomes, they adapt their work behaviors in order to experience fulfillment. Adjustment of work behaviors requires increased effort, which may lead to varying levels of productivity and restoration.

When increased work efforts lead to a state of exhaustion with a reduced sense of accomplishment, people are at risk for experiencing burnout and depression (Couser, 2008). Learning to balance occupations that help individuals experience relaxation, pleasure, and fulfillment is essential to alleviation of burnout and maintenance of health (Christiansen, Matuska, Polatajko, & Davis, 2009). McGee-Cooper, Trammell and Lau (1992) recommended engaging in activities that lead to experiences of learning, growth, and development because experiencing satisfaction and fulfillment, they believe, can create a sense of restoration that can reduce burnout.

Impact of Loss of Work and Experiences of Productivity

Examination of situations in which the ability to engage in work has been lost provides additional insights into the importance of experiencing a sense of productivity. Unemployment is often associated with diminished experiences of accomplishment and satisfaction (Ball & Orford, 2002; Scanlan, Bundy, & Matthews, 2011); yet not all who are unemployed have these experiences. In Ball and Orford's (2002) study, activities that were valued by others and experienced as challenging or requiring commitment substituted for employment among the long term unemployed. Activities such as

educational, household, childcare, and some active leisure activities led to feelings of achievement, confidence, competence, and self- development.

Similar to the unemployment literature, studies examining people's experiences following injury or illness that led to limitations in or inability to work reported many negative feelings related to being unproductive (Forhan & Backman, 2010; White, MacKenzie, Magin, & Pollock, 2008). However others described experiencing productivity in occupations outside of work. Being challenged or having opportunities for growth and learning were common phrases people living with a variety of health conditions used to convey their experiences of productivity outside of work (Hakansson, Dahlin-Ivanoff, & Sonn, 2006; Kelly, Lamont, & Brunero, 2010; la Cour, Nordell, & Josephsson, 2009). Without opportunities to experience rewarding and challenging occupations some expressed a void in life (Matuska & Erickson, 2008).

Leisure Experienced as Productivity

The importance of leisure as an avenue to experiencing a sense of productivity has been well documented. Studies examining congenital physical disabilities (Specht, King, Brown, & Foris, 2002), acquired physical disabilities (Reynolds, Vivat, & Prior, 2008), mental health issues (Iwasaki, Coyle, & Shank, 2010), terminal or life threatening illnesses (Unruh, Smith, & Scammell, 2000), and aging (Bedding & Sadlo, 2008) all discussed how leisure activities provided opportunities to experience a sense of achievement, accomplishment, and satisfaction. While not all studies specified the types of leisure activities, a variety of leisure activities were reported including arts and crafts, gardening, sport, education, and volunteering.

Experiencing Productivity and Successful Aging

Experiencing a sense of productivity is not only a critical element of health and well-being (Creek & Hughes, 2008), it has been proposed as an essential element of successful aging (Kahana et al., 2005; Rowe & Kahn, 1998). Bryan and Kutner's (2001) model of successful aging was informed by qualitative interviews where elders described successful aging as being able to do something worthwhile. At 99 years of age, individuals still described experiencing challenge or learning as a central feature of daily life (Haggblom-Kronlof, Hultberg, Eriksson, & Sonn, 2007).

Subjective Experiences of Pleasure

"Enjoyment is still essential to make life worth living and to drive us toward increasingly creative adaptive efforts" (Csikszentmihalyi, 1985, p. 496). Engagement in occupations that produce a sense of pleasure result in people enjoying the process of doing. Little emphasis is placed on the outcome; the person is enjoying "the moment" (Pierce, 2003). Other familiar words used when describing experiences of pleasure are having fun, feeling good, being in the moment, laughing, feeling a sense of freedom or escape, and expressing "I can't wait to do that again." Experiences of pleasure are as vital to humans as the experiences of productivity and restoration (Wilcock, 2006). In fact, pleasure in life enhances productivity and restoration.

Early views of occupation leading to health emphasized the importance of experiencing both achievement and pleasure. Hall's use of the work cure provided evidence that a variety of meaningful occupations resulted in clients reporting a sense of productivity and pleasure (Hall & Buck, 1915). A woman hospitalized with a nervous condition secondary to a poor fit with her job enjoyed learning to weave during her stay.

Her experiences of weaving cured her of her nervous exhaustion and led to her employment as a weaving teacher. During her new job she expressed enjoyment and a greater sense of accomplishment than her original job.

Pleasure and Productivity

Current psychology and work-life balance literature support the notion that experiences of pleasure can occur in a variety of occupations, as well as simultaneously with experiences of productivity or restoration in some activities. Flow, or the subjective state associated with an individual's complete involvement in an activity, occurs when people have a clear purpose in mind that moves them toward accomplishment while also experiencing a high sense of enjoyment (Csikszentmihalyi, 1997). The activity's characteristics must match the person's abilities for flow to occur, regardless of whether the activities involve self-care, work, school, or leisure (Emerson, 1998).

Individuals promoting work-life balance recommend adding pleasure to all aspects of life. Although addressed in slightly different ways, each viewpoint includes an emphasis on engaging in enjoyable activities (Drake, 2000; Loehr & Schwartz, 2003; Pearsall, 1996). When teaching courses on time management to balance work and life, McGee-Cooper and colleagues (1992) discovered managing time was not sufficient; joy and fun were needed to restore energy, whether at work or outside of work. Loehr and Schwartz (2003) stated "The point is not just that pleasure is its own reward, but more practically, that it is a critical ingredient in sustained performance" (p. 76).

Pleasure and Restoration

Although pleasure can enhance performance, it also has been associated with greater experiences of recovery or restoration (van Hooff et al., 2011; Winwood et al.,

2007). These authors, along with Gutman and Schindler (2007), maintain that activities experienced as pleasurable release hormones thus reversing the effects of the stress response in the body. Music, food consumption, sex, art, and activities leading to a sense of flow have been related to experiences of pleasure.

Adults of all ages and ability levels have described engagement in pleasurable occupations as vital to experiencing balance, well-being, and quality of life. Women recovering from stress disorders described life as harmonious when they engaged in occupations that led to enjoyment and fulfillment (Hakansson et al., 2006). Experiencing pleasure during activities allowed women recovering from depression to re-create themselves (Fullagar, 2008). Other studies have identified the amount of time spent in enjoyable occupations as a contributor to balance (Forhan & Backman, 2010; Matuska & Erickson, 2008; Sandqvist & Eklund, 2008).

Implications of Pleasure, Productivity and Restoration as Inter-related Experiences

As supported by the preceding literature, the author asserts that the subjective experiences of pleasure, productivity, and restoration occur not only simultaneously within single occupations but also across occupations. Further, people's experiences during occupation at one point in the day can influence their occupational performance and experiences throughout the day. These assertions are first illustrated with scenarios of two individuals who participated in a study designed to measure pleasure, productivity, and restoration. Their direct quotes are reported and then elaborated upon with respect to implications for occupational therapy.

> Following a stroke, Jim spends the majority of his time at home alone. Reflecting upon his experiences of pleasure, productivity, and restoration during daily occupations, Jim states: "Boy did I learn a lot…I sit and watch TV too long or too much." He recognizes that not doing any other activities makes him tired. "I used

to go to the senior center for water exercises, but I haven't done that in a while; I need supervision…Water exercises gave me energy; it felt good every time I did that." Jim daily makes the bed and does the dishes to support his wife who is working. This makes him feel good; "at least I accomplished something." However he recognizes these activities don't require any problem solving. "I like figuring things out, that's what gives me a sense of productivity, not just completing things." While he experiences a sense of relaxation and enjoyment in reading and sitting outside with the dog, without accomplishment of other things, these activities lose their meaning. His greatest pleasure comes from being with others – like going out to eat with this daughter.

"I use to be a workaholic; now I have learned to sit well." Kara describes her life following stroke as very routine, doing certain activities with certain priorities. Kara reports living alone is great; she has fewer demands on herself and her time. Reflecting upon her experiences of pleasure, productivity, and restoration for three days brought many insights about her current and past experiences. She realizes that she has fallen into doing many of her activities very unintentionally, and is not getting much out of her activities. However Kara also notices that as she engages more consciously, she experiences a greater sense of pleasure and productivity. Through reflecting on her activities and experiences, Kara notices her experiences of restoration have changed. Immediately after the stroke, Kara felt restored only after she slept, which she allowed herself to do whenever she felt tired. She realizes she doesn't need as much sleep today, and restoration occurs during many of her activities in which she also experiences a high sense of productivity. Experiencing success at doing everyday activities like pulling weeds, or completing her self-care routine gives her as sense of elation which gives her energy to engage in other activities.

In the above scenarios, Jim and Kara found that their reflection on experiences of pleasure, productivity, and restoration were invaluable, providing them with new insights into their daily occupations. Each began to adjust their ways to enhance their experiences associated with daily occupations. As illustrated in Jim's story, he reported that without experiencing a greater sense of productivity during his daily activities, his sense of pleasure and restoration from other daily activities were diminished. Although completion of household activities was important to him as a way to support his wife, Jim

reported lower levels of productivity and pleasure because these activities did not challenge him in the same way as previous work activities.

A comparison of Jim and Kara's stories illustrates how subjective experiences are unique, shaped by different types of activities and different spatial, temporal, and social contexts. Jim expressed great restoration and enjoyment when doing with others, while Kara expressed greater restoration and enjoyment doing occupations when and how she wanted without the demands of engaging with others. In Jim's case he experienced high levels of pleasure and productivity simultaneously, whereas Kara shared that her highest levels of restoration were on the same day she experienced high levels of productivity. Additionally Jim's story illustrates how time and spatial context influenced his experiences. After a certain period of time, Jim found watching TV less enjoyable and restorative. He also reflected on how his occupational experiences changed considerably after he and his family moved.

Although the multidimensional and complex nature of occupation is seen not only in people's unique experiences associated with different occupations and contexts, the author contends it is seen in people's expressions of their experiences. Kara and Jim, who both live with the consequences of stroke, expressed their experiences of productivity differently. Jim expressed high levels of productivity as being able to figure things out, not just getting things done. Kara conveyed her sense of productivity as progress toward her goals, often expressed as a simple "I did it" statement.

Implications for Occupational Therapy

As suggested by the scenarios of Kara and Jim, and the literature presented, reflection on the inter-related nature of pleasure, productivity, and restoration may help

people explore the multidimensional nature of their occupations. As occupational therapists assist clients in the examination of the relationship between occupation, occupational balance, and health and well-being, this conceptualization may prove beneficial. Examination of how these subjective experiences occur simultaneously and are influenced by contextual factors brings the multifaceted features of occupation to the forefront rather than trying to place occupations into specific categories (i.e., pleasurable versus productive activity).

As therapists and clients listen for how, when, where, and what occupations do or do not lead to fulfillment of innate needs of pleasure, productivity, and restoration, they may begin to discover ways to modify, enhance, or adapt occupations to support health and well-being. For example, if a client realizes that she does not experience as much pleasure in her new job because she has fewer opportunities to interact with others, she might advocate for work tasks that require interaction with others. This careful reflection may enhance clients' recognition and appreciation for how daily occupations and their surrounding contexts effect their health and well-being. Additionally, therapists may learn ways to enhance their interventions through inquiring about clients' experiences during interventions. Incorporation of activity characteristics and key contextual factors that enhance and create simultaneous experiences of pleasure and accomplishment may improve intervention effectiveness.

Occupational therapy intervention may also be enhanced by explicitly giving attention to the importance of restoration. As Meyer (1922) advocated years ago, it is the rhythm of activity and rest that is essential for health. Without restoration people are unable to sustain engagement, and enjoyment may be reduced. Incorporation of

restoration during occupational therapy assessment and intervention may enhance the effectiveness of intervention and clients' participation in everyday contexts. Paying attention to restorative experiences, along with pleasure and productivity, provides an alternative way to examine occupation, occupational balance, and health and well-being, along with gaining an understanding the unique experiences of individuals.

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CHAPTER 3: EMPLOYING COGNITIVE INTERVIEWING TO STRENGTHEN THE VALIDITY OF OCCUPATIONAL THERAPY ASSESSMENTS

Summary

Understanding occupational performance and participation from the client's perspective is essential for best practice in occupational therapy. Trends involving clients in the development of client-centered assessments have increased. However, little has been written regarding systematic methods that can be used. The objectives of this article were a) to illustrate the use of cognitive interviewing to engage individuals in the process of developing occupational therapy assessments and b) report validity evidence on a new instrument designed to capture the objective and subjective experiences of daily life. Three rounds of cognitive interviewing involving 19 individuals were implemented to examine and improve validity evidence of the instrument. Cognitive interviewing was found to strengthen the validity evidence of self-report instruments, intended to capture the complexity of occupation, and to involve clients in the process. Implications for use in occupational therapy are discussed.

Introduction

The lack of measures addressing occupation is one factor that negatively influences occupational therapy's ability to support evidence-based practice, a well-established mandate for the profession today. As Coster (2006) stated, "although an abundance of instruments to identify and measure limitations in body function or impairment exists, there are limited choices if one's interest is activity, participation or features of the environment in which the person is living his or her daily life." (p. 131). Coster concluded that additional instruments measuring activity and participation are needed. Other researchers have identified the more specific need to develop measures that capture subjective experiences of engaging in daily life activities (Hemmingsson & Jonsson, 2005; Rochette, Korner-Bitensky, & Levasseur, 2006).

To develop such measures, some instrument developers have suggested that a client-centered approach should be extended during the research process (C. Clark, Scott, & Krupa, 1993; Hammel et al., 2008; Hammell, 2007; Laliberte-Rudman, Hoffman, Scott, & Renwick, 2004). A client-centered approach to practice in occupational therapy seeks to embrace "a philosophy of, respect for, and partnership with, people receiving services" (Law, Baptiste, & Mills, 1995, p. 253). In similar fashion, a client-centered approach to instrument development involves partnering with research participants in the early stages of development in order to ensure assessments are useful and reflect clients' issues. To date, these approaches have primarily included focus groups (Forhan & Backman, 2010; Hammel et al., 2008; Laliberte-Rudman et al., 2004; Molke, Laliberrte-Rudman, & Polatajko, 2004) and ethnographic interviews (Bauman & Adair, 1992).

Cognitive interviewing has been identified as another qualitative method that could incorporate a client-centered approach to instrument development (Dillman, Smyth, & Christian, 2009; Magwood, Jenkins, & Zapka, 2009). Cognitive interviewing is employed as a means to gain insights into how people understand, mentally process, and respond to materials that are being used to share or gather information (Carbone, Campbell, & Honess-Morreale, 2002; Desimone & Flock, 2004; Miller, 2003; Willis, 2005). The use of cognitive interviewing is most commonly reported during the process of developing surveys (Beatty & Willis, 2007; Dillman et al., 2009). Researchers can, however, adapt the method to evaluate any type of written or oral materials to help identify, prevent, and address known or unknown difficulties related to people's understanding of materials and interpretations of information and requests for responding to survey questions (Willis, 2005).

In practice, cognitive interviewing involves two main techniques: think-aloud interviews and verbal probing methods (Willis, 2005). During a think-aloud interview, the interviewer asks the person to give his or her response to a survey question while also articulating his or her thoughts used to arrive at his or her response. The interviewer listens for the processes the person uses to understand and respond. Verbal probing is an alternative technique. The interview begins as the interviewer asks a predetermined survey question. After the person responds, the interviewer poses a probing question to uncover or reveal the process the person used to arrive at his or her response.

Similar to other methods such as expert reviews and interview debriefings, cognitive interviewing can be used to assist with establishing reliability and validity of surveys and instruments (DeVellis, 2003; Knafl et al., 2007). The Standards for

Educational and Psychological Testing (*Standards)* provide detailed criteria for test development and evaluation, along with test use and evaluation of the effect of their use (American Educational Research Association (AERA), 1999). In the *Standards* validity is viewed as a unified concept established from integrating five sources of evidence based on (a) test content; (b) response processes; (c) internal structure; (d) relationship to other variables; and (e) consequences of testing (AERA, 1999). Cognitive interviewing allows for gathering validity evidence related to test content, response processes, and the consequences of testing (Magwood et al., 2009). More importantly, cognitive interviewing is particularly valuable when attempting to capture complex phenomenon such as subjective experiences of occupational engagement (Beatty & Willis, 2007). With this method, developers are better able to understand if the content, format, items, and responses are generating the information intended.

The objectives of this article are to: illustrate the use of cognitive interviewing as a systematic method to involve people in the process of developing an instrument designed to capture the objective and subjective dimensions of occupational engagement and to report the initial validity evidence of the instrument. Cognitive interviewing was used to refine the *Daily Experiences of Pleasure, Productivity and Restoration Profile (PPR Profile),* a developing instrument that allows individuals to record and reflect on their experiences of pleasure, productivity, and restoration during their daily activities (Atler, 2008). Building on the work of Pierce (1997, 2003), the *PPR Profile* measures the levels or degrees of pleasure, productivity, and restoration people experience during daily occupations. Pierce (1997, 2003) distilled these three characteristics from the

commonsense objective categories of self-care, work, and leisure; she also proposed that pleasure, productivity, and restoration constitute innate human needs.

Methods

Cognitive interviewing was used to examine the following features of the *PPR Profile:* (a) specific characteristics of the instrument including instructions, format and layout, and rating scale, (b) major constructs of the instrument, and (c) issues of burden for participants in completing the instrument.

Participants

Nineteen individuals, ranging from 18 to 89 years of age, were selected using non-probability quota sampling to obtain a broad spectrum of individuals from various life situations (see Table 4 for further description of the participants). Following approval from the institution's human subjects review committee, participants were recruited from a variety of agencies including the local university and various community organizations, businesses, and churches. E-mail announcements, posted flyers, and in-person announcements were used to invite individuals 18 years of age or older who had not experienced a major illness or injury (requiring hospitalization) in the last six months to participate. Inclusion criteria included the ability to (a) read and understand English, (b) recall and record one's activities and experiences, and (c) be willing to discuss one's process of completing the instrument and give feedback. Meeting the inclusion criteria was determined by the participant's ability to: (a) read, understand, and sign the consent form, and (b) fill out the demographic form accurately. Each participant completing the entire research process was compensated $15.00 for his or her time.

Table 4
Participants' Demographics (n = 19).

Descriptive	Number	Percentage
Age (years)		
18-25	4	21.0
26-39	2	10.5
40-59	5	26.4
60-74	5	26.4
75+	3	15.8
Gender		
Female	14	73.7
Male	5	26.3
Employment[a]		
Full-time	8	
Part-time	1	
Retired	6	
Unemployed	0	
Student	6	
Level of Education		
High school or less	3	15.8
Some college	7	36.8
College degree	3	15.8
Graduate School	6	31.6
Live		
With Others	14	73.7
Alone	5	26.3
Relationship Status		
Married/Partnered	9	47.4
Widowed	4	21.1
Single	3	15.8
Divorced	3	15.8
Children		
Don't have any/Not at home	12	63.2
Live at home	7	36.8
Health Status		
Excellent	8	42.1
Very Good	7	36.8
Good	4	21.1
Fair	0	0
Poor	0	0

[a]Total adds to more than 19 as several participants held more than one employment status (i.e., full-time employee and student).

The Instrument: *PPR Profile*

The *PPR Profile* allows individuals to share their personal experiences of daily activities over time by rating the level of pleasure, productivity, and restoration for each activity. Using time budget methodology, the "experience of daily activities over time" is operationalized as the activities the person reports doing during a specific period of time. Information recorded during a 24 hour period includes data commonly gathered in time use studies: (a) what a person did during the day described in his or her own words; (b) the time the activity began and ended; (c) where the person was during the activity; and (d) who was present (Harvey, 1999). Additionally ratings of pleasure, productivity, and restoration are recorded using a rating scale ranging from lacking (1) to extremely high (5). The rating scale provides a definition and additional descriptors for each of the three characteristics (See the first two columns of Table 5).

Data Collection

Using a pre-established interview guide, the cognitive interviews were completed by the primary investigator and a graduate assistant. To establish consistency in how the interviews were completed, both investigators were present during the first seven interviews. All cognitive interviews were audio-taped so the investigators could go back and review information gathered. Following each interview, investigators made field notes to capture participants' main areas of feedback and ideas.

Thinking aloud and verbal probing techniques were used in combination. When using the thinking aloud method, the interviewee was asked to share his or her thinking aloud as they completed the *PPR Profile*. The investigator's role was to remind

Table 5

PPR Profile Rating Scale Descriptors Provided and Commonly Used by Participants

Definitions	*PPR Profile* Descriptors Provided	Descriptors Commonly Used by Participants
Pleasure - experience of enjoying the process of engaging	Delightful Being in the moment Fun Laughing Freedom/escape Feeling good	Enjoyment Anything that brings a smile to my face. Feeling great – things I would do again Being in the moment Liking to do it Made me happy
Productivity - experience of accomplishment	Did some work Got something done Completed a task Met a goal Made a contribution Learned something Satisfied	Achieving something Learning – contributing or improving my life Building something Organizing Starting something; getting something done
Restoration - experience of being renewed	Refreshed Rested Energized Restored Rejuvenated Centered Calmed	Getting me ready for what is next. Calming Time for yourself Refills you mentally and emotionally Restful Rejuvenating Energy Relief, recovery and renewal

the interviewee to continue to talk if he or she reduced their verbalizations (Beatty & Willis, 2007; Willis, 2005). When using verbal probing, the interviewer began by asking questions from the pre-interview guide. Interview questions focused on: (a) obtaining feedback on instructions, format and layout, and rating scale; (b) understanding the participants' experiences during completion of the *PPR Profile* (including issues of burden), and (c) exploring the clarity or lack of clarity with words and concepts used in the *PPR Profile*. After the interviewee explained his or her answers, probing questions "explored" the interviewee's responses. Table 6 provides some examples of different types of probes identified by Willis (2005) that were used during the cognitive

interviews. The intent of the cognitive interviews was to gain information and feedback about the *PPR Profile,* not necessarily to complete the entire *PPR Profile.*

Three rounds of cognitive interviews were completed based on Willis'(2005) recommendations. Willis (2005) advocates interviewing in rounds as a more effective way of improving the design of an instrument. Multiple rounds allow for modifications to be made, and then re-tested in smaller steps, thus providing additional feedback to the designer. Quota sampling was used in each round, ensuring that the overall sample used in the study represented a diverse group based on age, levels of education, and life roles.

Table 6

Sample Probing and Evaluative Questions by Type of Probe

Examples of probing questions used	Types of Probe (Willis, 2005)
Tell me about your experience completing the PPR Profile, what was easy; what was difficult?	General
Can you tell me in your own words, what the instructions/questions were asking you?	Paraphrasing
What does the word _____ mean to you as it is used in the instrument? *(i.e., pleasure, productivity, restoration)* Tell me what you were thinking when I asked about _____, or when you answered _____.	Comprehension
The question uses the word _____. Does that sound OK to you or would you choose something different?	General
Explain how you rated (an activity) as a (number on a characteristic). Tell me what you were thinking and how you differentiated a _____ rating from a _____ rating on this activity.	Specific probe

Round 1. Seven participants whose ages, levels of education and life roles varied were selected. After consent to participate was obtained and demographic data were collected, participants were introduced to the *PPR Profile* and a 45-60 minute face-to-face interview was scheduled. Participants were given a choice to (a) fill out the *PPR*

Profile 24 hours before the scheduled interview as a self-administered questionnaire, or (b) complete the *PPR Profile* during the interview as a Yesterday Interview, a semi-structured interview method used to reconstruct the preceding 24 hours (Lawton, 1999). Both options, self-administered questionnaires and Yesterday Interviews are common methods used to capture time use. In this study, the researcher wanted to evaluate both procedures. Three of the seven participants chose to complete the Yesterday Interview.

When participants completed the *PPR Profile* as a self-administered questionnaire, they were encouraged to follow the instructions in the *PPR Profile*, takng 15 minutes 3 times a day to record their daily activities and experiences. On the morning of the following day, participants completed the last recording of daily activities and the reflection questions at the end of the instrument. The reflection questions asked participants to list and explain one to two of the activities that they had ranked as highly pleasurable, highly productive, and highly restorative. Completion of the *PPR Profile* took no more than 60-75 minutes. When participants chose the Yesterday Interview, the investigator led them to recall what they had done over the past 24 hours. Once the day's activities were reconstructed, the participants went back to report their levels of pleasure, productivity, and restoration for each activity recorded.

Despite the format chosen, the interview began with participants talking aloud about their process of completing the *PPR Profile*. Participants who filled out the *PPR Profile* prior to the interview shared what they thought about when they completed the instrument. The instructions were: "In this study, I am interested in what you feel or what you think as you complete the *PPR Profile*. In order to do this, I will ask you to think aloud. Think-aloud means that I want you to say out loud everything that you are saying

to yourself or thinking about as you read and follow the instructions to complete the *PPR Profile*. If you are silent for any length of time, I will remind you to keep talking." Some participants choose to jot down notes about their activities in the last 24 hours to support their recall during the interview.

Probing and evaluating questions followed to further understand participants' thinking during completion of the instrument and to gain feedback about the instructions, wording, format and layout, and rating scale (see Table 6 for examples of probing questions). The first round of interviews stopped when participants' feedback consistently supported that specific changes needed to occur. Changes were implemented and a second round of interviews were initiated.

Round 2 and 3. Continuing with the use of quota sampling to obtain a diverse sample, seven new participants were selected and oriented to the study. However, during Round 2, participants were not given a choice on how to complete the *PPR Profile*. Not giving a choice allowed the researcher to further evaluate the clarity of the instructions without providing any orientation or exaplanation of the instrument. Participants were given the *PPR Profile* to take home and asked to select a day of the week to read and complete the *PPR Profile* including the reflection questions. On the following day a one hour face-to-face interview was completed. Participants reflected on the process and thinking they used to complete the *PPR Profile* and gave feedback on the characteristics of the instrument and their experiences completing the *PPR Profile*.

Following the completion of Round 1 and 2 interviews, the investigators met to examine feedback from all of the interviews collectively. A decision was made to complete five additional interviews (Round 3) to add more participants 65+ years of age

and older who also represented a broader range of education levels. Participants in Round 3 were also given the option of completing the *PPR Profile* as a self-administered questionnaire or as a yesterday interview. Three of the five participants in Round 3 choose to complete Yesterday Interviews.

Data Analysis

Although there is a growing body of literature supporting the use of cognitive interviewing, there are few guidelines for how to analyze, interpret, and use the findings (Knafl et al., 2007). Content analysis (Creswell, 1998) and organized visual display strategies developed by Miles and Huberman (1994) were used to examine: (a) the specific characteristics of the instrument including instructions, format and layout, rating scale; (b) pleasure, productivity, and restoration, the three major constructs of the instrument, and (c) issues of burden in completing the assessment. Three key steps during content analysis were completed: (a) all data were initially reviewed by each investigator; (b) investigators came together to compare and discuss key findings, thus verifying their interpretations, and (c) interpretations and recommendations identified by the investigators were compared to the visual displays used to organize the data taken from the audio tape recordings (see first column in Table 7). Content analysis identified emerging themes that were used to guide decisions about adding, modifying, or deleting content and formatting of the *PPR Profile.*

Each interview was discussed by the two investigators. During the first seven interviews when both investigators were present, discussion occurred immediately following the interview. Following Round 2 and Round 3 interviews, the investigator who did not complete the interview listened to the audio-taped interviews, noting

Table 7

Visual Data Display and Analysis of Interview Data – Specific Charactersitics of the PPR Profile

Instructions (including the example provided)

Participants' Comments	Investigators' Interpretations	Decisions Made
"Easy to understand" "Fine" "Example was great, very helpful, told you how specific to be" "If you want more context, you should modify the example to include more"	Instructions are clear. Most participants found the example helpful. Some participants referred to the example to help them know how to complete the PPR Profile.	Modified the example to clearly (a) reflect acceptable comments to indicate what a person does in a day, and (b) model the thought process used to rate the *PPR Profile*.

Layout and Format

Participants' Comments	Investigators' Interpretations	Decisions Made
"Simple and user friendly" "I wanted more room to write comments" "Would be nice to have more room" "I ran out of space in terms of lines, but everything else was ok" "Could probably combine where it happened and with whom together" "With whom was important in recalling …. experiences"	Overall format was working well, but additional space would be helpful.	Increased the width of the lines. Increased the number of lines provided. Added a space for comments. Deleted "with whom" column to add more space.

Use of Rating Scale
Note: The majority of participants used all five numbers as they rated their experiences

Participants' Comments	Investigators' Interpretations	Decisions Made
"Liked small scale of 1 to 5" "I like the words (absent and extremely high) except I would rather have a 0 be absent. "neutral (3) was having to sit there and decide whether it was pleasure or not" "I can't mark down a 1 because I feel I am negative" "3 would be average" "once you score something a 1 or a 5 it makes it easier"	The 1 to 5 scale worked well and most participants could differentiate levels. People seemed to use a "reference point" to rate the level of experience. However providing additional words to the scale would not allow individuals to reflect one's own subjective experience.	No changes made to the rating scale. Expanded instructions on how to rate levels. Provided examples on how to determine different levels.

highlights and themes prior to discussion between the two investigators. Discussions focused on information gathered during the interview related to the characteristics and major constructs of the *PPR Profile* as well as insights gained as to whether the proposed purpose of the *PPR Profile* was realized as participants completed the assessment.

Following the initial review of each of the interviews, data from the audio-taped interviews were organized using visual displays to re-evaluate and confirm the recommended changes to the *PPR Profile* that were discussed by the investigators. Participants' feedback was organized according to the following categories: (a) instructions (including the example); (b) layout and format; (c) rating scale and identification of levels of pleasure, productivity, and restoration, and (d) constructs of pleasure, productivity, and restoration (see Table 7).

Dependability and Trustworthiness

Three to four weeks after the initial decisions for changes to the *PPR Profile* were identified, the investigators re-examined the data, thus adding to the dependability of the research (Krefting, 1991). To increase the credibility and validity of the results, methodological triangulation and investigator triangulation were employed (Krefting, 1991; Merriam, 2009). Multiple methods of data collection were used to gather and analyze participants' thinking processes when rating pleasure, productivity, and restoration. The investigators examined consistency among PPR *Profile* ratings that were recorded, participant's answers to the reflection questions, and data gathered through cognitive interviews.

Findings and Decisions Made

The information gained through cognitive interviewing and the subsequent revisions recommended for the *PPR Profile* are organized into three sections: (a) characteristics of the *PPR Profile* (i.e., instructions, format, layout, and rating scale), (b) the major constructs of pleasure, productivity and restoration, and (c) the benefits and challenges of completing the *PPR Profile*.

Characteristics of the *PPR Profile*

During Round 1 participants consistently provided feedback regarding confusion with the word "lacking" in the rating scale. Comments reported included: "something needs to indicate 'not' ….I am not just lacking productivity, there is no productivity." Additionally several participants had a hard time rating their levels of pleasure, productivity, and restoration. Instead of responding with a clear answer (using the 1-5 rating scale), particpants asked repeated questions for clarity. After reviewing the feedback and suggestions provided, the primary investigator changed the wording "lacking" on the rating scale to "absent," and initiated Round 2 and 3 interviews.

Following Round 2 and 3 interviews, analysis of the data that focused on participants' thinking aloud revealed that participants' thinking processes reflected more about how they chose a rating rather than being concerned with the wording of the rating scale. Further analysis revealed participants used the entire range of the rating scale (1-5), and participants could explain how they differentiated levels of the three subjective experiences when probed. However, the process of rating the experiences of pleasure, productivity, and restoration remained the most challenging aspect of the *PPR Profile*.

Table 7 provides examples of participants' comments gathered during the cognitive interviews that supported the investigators' interpretation that the rating scale of 1 (absent) to 5 (extremely high) was working well. Although the primary investigator kept the initial design and format of the rating scale, the instructions on how to use the rating scale were expanded by adding an example that illustrated how to determine different levels of pleasure, productivity and restoration.

In addition, Table 7 provides examples of data collected on other characteristics of the *PPR Profile.* Investigators' interpretations and decisions that were made are also reflected in the table. In summary, after reviewing the feedback given by participants, the primary investigator integrated their ideas to: (a) clarify and add to the instructions, (b) increase the number and width of the lines, (c) add additional examples on how to differentiate levels of pleasure, productivity and restoration.

Understanding Levels of Pleasure, Productivity and Restoration

Construct validity of the *PPR Profile* was examined by evaluating if and how participants' were: (a) using the definitons and descriptions of pleasure, productivity, and restoration as intended by the developer; (b) interpreting the definitions on the rating scale similarily, and (c) using the rating scale in a consistent manner. Analysis of interview responses where participants described the pleasure, productivity, and restoration in their own words revealed that participants did use similar descriptors to those provided on the rating scale. In addition written responses to the reflection questions at the end of the *PPR Profile* corresponded to participants' verbal responses during the interview. See Table 5 for comparison of descriptors that were provided and common words used by the participants.

While the majority of participants stated they understood the constructs of productivity and pleasure, some participants expressed less familiarity with the concept of restoration. Taking time to probe and understand how participants viewed restoration led to a deeper understanding of this construct. Several participants discussed the difference between physical renewal, and mental or emotional renewal. For example, exercise could lead to mental renewal, while requiring or using up physical energy. Discussions during the cognitive interviews provided new insights into the constructs, and alternative words or phrases that participants felt captured the three main constructs. A few commonly used descriptors were added to the rating scale for future use (see Figure 2).

Responses to the questions that asked participants to explain how they determined ratings of pleasure, productivity and restoration were analyzed, again looking for consistency in how the three main constructs were understood. The majority of responses

Pleasure Enjoying the process of doing the activity	**Productivity** Getting something done	**Restoration** Being renewed by doing the activity
When doing this activity, my level of pleasure was: 1 2 3 4 5 Absent Extremely High	When doing this activity, my level of productivity was: 1 2 3 4 5 Absent Extremely High	When doing this activity, my level of restoration was: 1 2 3 4 5 Absent Extremely High
Pleasure descriptors Delightful Being in the moment Fun Laughing Freedom/escape Feeling good Can't wait to do it again	Productivity descriptors Did some work Got something done Completed a task Met a goal Made a contribution Learned something Satisfied	Restoration descriptors Refreshed Energized Rested Restored Centered Calmed

Figure 2. Revised PPR Profile Rating Scale

reflected consistency as stated above. However, there was a theme in how people responded when describing why they rated certain activities high in pleasure that suggested possible overlapping of concepts. Some participants stated they ranked an activity high in pleasure because they enjoyed getting something done. Without further probing, it was unclear whether participants enjoyed the process of completing the activity, if they were satisified that the activity was done, or both. Combining these findings with participant feedback regarding wording of the definitions led to simplifying the definitions of the constructs to reflect more common everyday language (see Figure 2). Instruction clarifications and examples were also added to assist in rating levels of pleasure, productivity, and restoration.

Completing the *PPR Profile* – What is its Impact?

Interview data were examined to discover whether the purpose of the *PPR Profile* was met without high levels of participant burden. It was anticipated that completion of the *PPR Profile* would guide participants in discovering (a) their levels of pleasure, productivity and restoration experienced during daily activities, and (b) possible patterns or associations between levels of pleasure, productivity, and restoration and certain aspects of daily life (i.e., specific activities, times of the day or temporal rhythms, social and spatial contexts).

Two of the nineteen participants reported that the process of completing the *PPR Profile* at home interfered with their daily activities, but only with minimal burden. The remaining seventeen participants reported no burden; describing completion of the *PPR Profile* as “easy and enjoyable.” During the cognitive interviews when participants were asked what they gained from completing the *PPR Profile*, most participants talked about

how the process required them to reflect on their daily activities in a manner they typically did not engage in during daily life. However, with additional probing questions, many participants shared insights they had gained about themselves, their activities, and their patterns of subjective experiences.

Overall the process of completing the *PPR Profile* assisted individuals with discovering and recognizing their experiences during daily activities with little to no burden. “I realized that I was satisfied with what I did through the day” (this participant was surprised to discover she experienced more pleasure than she realized). One participant who rode a bike to get to places reflected: “I found one thing that was surprising; I really like riding my bike. It was an “aha” to me because it is time to get back in touch with myself.” Others recognized patterns in how they experienced their daily activities or how the context of the activities influenced their experiences. One participant found that the *PPR Profile* confirmed that working with others made activities at work more enjoyable. Another participant recognized that he only rated his activities at work as high in productivity. This discovery caused him to stop and reflect on whether this was truly how he felt, and if so he wondered how his imminent retirement from work would impact his quality of life.

Discussion

Cognitive interviewing proved valuable in engaging participants in a systematic way to substantiate some validity evidence of the *PPR Profile*. The discussion is organized into three sections. First, the validity evidence gathered related to test content, response processes, and consequences of completing the *PPR Profile* are presented. Next the implications for using cognitive interviewing in occupational therapy are discussed.

The section ends with a discussion of the strengths and limitations of this study and the general use of cognitive interviewing.

Validity Evidence Based on Test Content

Test content refers to the specific features of an instrument such as wording, format and layout of the instrument, or questions on the instrument (American Educational Research Association (AERA), 1999). Examining these fundamental features is critical because poor wording and formatting are causes of measurement error. These errors can lead to imprecise or inaccurate responses when people complete survey items or questions (Dillman et al., 2009).

In this study, cognitive interviewing provided invaluable perspectives from those who completed the *PPR Profile*, assisting with the gathering of evidence based on test content. During Round 1, the use of the word "lacking" on the rating scale clearly created confusion, which limited participants' abilities to even attempt to rate levels of pleasure, productivity, and restoration. Comparing the thought processes of participants from Round 1 and Round 2 illustrates the importance of paying attention to choice of words when designing assessments. After changing the wording on the rating scale from "lacking" to "absent," participants in Round 2 and Round 3 were better able to complete the process required by the assessment. Results from this study support the research findings on cognitive interviewing that recommend its use to enhance design of instruments (Carbone et al., 2002; Drennan, 2003; Jobe & Mingay, 1989; Miller, 2003; Yorkston, Baylor, et al., 2008).

In addition to enhancing the reliability or consistency in how people comprehend, interpret, and make responses on an assessment, the cognitive interviewing process used

in this study reflected a client-centered approach. Listening to participants and probing deeper to understand their perspectives allowed the investigators to verify whether the structure of the rating scale with definitions and additional descriptors was clear and comprehensive. Participants were also invited to identify alternative wording and formatting. Through the cognitive interviewing process, the primary investigator partnered with the participants to enhance the clarity and ease of using the *PPR Profile*.

Validity Evidence Based on Response Processes

Examining people's response processes during completion of the instrument helps determine the "fit between the construct and the detailed nature of performance or response actually engaged in by the examinees" (AERA, 1999, p. 12). In this study, information that was gathered using think-aloud interviews and verbal probing methods provided insights into how participants understood and interpreted the key constructs of the *PPR Profile.* Analyzing the participants' responses as to how they viewed and rated levels of pleasure, productivity, and restoration generated evidence that enhanced the definitions and descriptors of the three main constructs. Although participants demonstrated they understood the three constructs, discussion with the participants provided additional insights into alternative wording or phrases, thus expanding the richness of the constructs.

The process of listening to and talking with the participants who completed the *PPR Profile* provided additional insights into how people might think through and approach completion of the instrument. Understanding the participants' experiences in completing the *PPR Profile* and their thought processes in determining their levels of pleasure, productivity, and restoration helped shape changes that improved the clarity of

the instructions and rating scale. These changes will increase the consistency in how people respond.

Validity Evidence Based on the Consequences of Completing the *PPR Profile*

Evidence based on the consequences of testing provides a source of validity evidence that examines the intended and unintended consequences of using the instrument (AERA, 1999). Messick (1993) introduced the concept of consequences in the examination of validity. He supported the notion that developers should be clear in stating their values and evaluating whether those biases are present in how concepts or ideas have been worded. In this study, the use of probing questions that asked participants to reflect on the process and outcomes (or lack of outcomes) of completing the *PPR Profile* provided validity evidence related to the consequences of testing. By examining the consequences of completing the *PPR Profile*, the primary investigator was able to reflect on whether: (a) the developer's values used to guide the development of the *PPR Profile* were biased; (b) the intended purpose was realized, and (c) positive or negative implications related to the design and use of the instruments were perceived by participants.

One key value held by the primary investigator in the design of the *PPR Profile* was that creating strong client-centered assessments requires providing opportunities to allow people to become aware of and reflect on their daily activities and experiences. Analysis of participants' thought processes used to complete the *PPR Profile* and their perspectives on the instrument itself indicated that the purpose of the instrument was realized by most of the participants. As important was discovering that engaging in the process, for this sample, did not have negative consequences related to disrupting or

interfering with daily life. The investigators were not surprised to find that many of the participants talked about how they frequently did not think about their daily activities at the level being requested in the *PPR Profile*. These results clearly support one of the values held by the primary investigator in designing the instrument; that, as posed by Clark, Jackson and Carlson (2004), many individuals have little recognition of how their daily occupations influence their health and well-being.

The primary investigator's values were also reflected in the definitions and descriptors of the three main constructs, pleasure, productivity, and restoration. As discussed earlier, the findings indicated that the participants did not have concerns about how the constructs were labeled, and frequently used similar wording to the descriptors provided in the rating scale. The unique design of the rating scale, providing a definition and commonly used phrases, appeared to reduce the bias in how the major constructs were presented. Participants talked about how the words provided some parameters for how to think about the construct, but did not find the additional descriptors limiting.

Implications for Developing Occupational Therapy Assessments

Occupational therapy's continued efforts toward development of strong client-centered assessments is essential not only because of a stated need (Coster, 2006), but because of current evidence that supports the benefits of using formal client-centered assessments in practice (Neistadt & Seymour, 1995; Simmons, Crepeau, & White, 2000). In this study, participants confirmed that cognitive interviewing can enhance the validity of newly developing instruments by (a) ensuring understanding; (b) lessening the burden of completing instruments, and (c) incorporating client's perspectives to make certain

instruments accurately and meaningfully reflect their perspectives and preferences. Cognitive interviewing methods provided a systematic way to examine validity evidence from a broad perspective.

These findings add to occupational therapy's body of knowledge on how and why clients' perspectives are important to the instrument development process. Only a few studies in the occupational therapy literature have reported clients' perspectives on the utility of client-centered assessments (McColl, Paterson, Davies, Doubt, & Law, 2000; Melville, Baltic, Bettcher, & Nelson, 2002). Therefore, this study suggests a technique that can be used to facilitate client participation in research, thus responding to the need acknowledged by Clark and colleagues (C. Clark et al., 1993).

The cognitive interviewing approach offers several benefits to instrument developers that support examination of potential wording or language issues. It is important that occupational therapists avoid using "jargon" or words that clients may not understand or typically use. Recently published studies outside the field have demonstrated the effectiveness of cognitive interviewing in order to ensure that items or questions were relevant, understandable, and acceptable to potential users (Housen et al., 2008; Larsen Beck, Towsley, Berry, Brant, & Lavoie Smith, 2010; Mason, Skevington, & Osborn, 2008; Murtagh, Addington-Hall, & Higginson, 2007; Yorkston, Kuehn, et al., 2008). The findings from this study also demonstrated how investigators can explore and ensure that potential clients are using and interpreting key words and concepts in a similar manner as intended by the instrument developer. Clarifying meanings and ensuring mutual understanding of terms will assist in developing strong occupational therapy assessments. Clarification of the meaning and interpretation of words and

concepts when existing questionnaires or assessments are considered for use in different settings, cultures, or with various client populations can also be examined using cognitive interviewing (Karabenick et al., 2007). Several studies examining the use of health questionnaires highlighted the importance of not assuming that previously validated general questionnaires are appropriate for specific populations (Borges & McDougall, 2006; Magwood et al., 2009; Miller, 2003). As illustrated in this study, careful selection of the samples used during cognitive interviewing can provide feedback from diverse groups, allowing instrument developers to examine validity in different situations.

Strengths and Limitations of This Study and the Use of Cognitive Interviewing

Many of the benefits of cognitive interviewing were presented above. These included cognitive interviewing as a systematic way to extend a client-centered approach and to gather validity evidence. However, the results cannot be generalized to other populations or geographic limitations due to sampling limitations. Although non-probability quota sampling was used to obtain a diverse sample across age, education, and relationship status, diversity of cultural background was limited partially due to the geographic location of the study. Due to the inclusion criteria and the nature of the study, the results were limited to those without identified cognitive impairments.

Occupational therapy researchers need to be cognizant of the limitations or challenges in using cognitive interviews. In Willis' (2005) evaluation of cognitive interviewing, he identified two main challenges. First cognitive interviewing is time consuming and resource intensive (Carbone et al., 2002; Magwood et al., 2009; Willis, 2005). Secondly cognitive interviewing assists with identifying problems with an assessment, but does not identify the underlying causes of the problems (Willis, 2005).

While researchers must be aware of the benefits and limitations of cognitive interviewing, cognitive interviewing may help ensure that occupational therapy assessments are comprehensible and considerate of clients' perspectives and preferences.

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CHAPTER 4: CONSEQUENTIAL AND CONVERGENT VALIDITY EVIDENCE OF THE *DAILY EXPERIENCES OF PLEASURE, PRODUCTIVITY AND RESTORATION PROFILE*: A PILOT STUDY

Summary

Two aspects of construct validity of the *Daily Experiences of Pleasure, Productivity and Restoration Profile* (*PPR Profile*) were examined. The *PPR Profile* is a time-use survey designed to capture the objective and subjective aspects of occupational engagement. Twenty-five community dwelling adults living with the consequences of stroke completed three health surveys and recorded their activities and experiences for three days using the *PPR Profile*. Consequential aspects of construct validity were explored using constant comparative analysis of participants' interviews that followed completion of the *PPR Profile*. External aspects of construct validity were investigated by examining the associations between the *PPR Profile* and Ryff's Scales of Psychological Well-Being (SPWB), the SF-36 Health Survey, and the Center for Epidemiologic Studies – Depression Scale (CES-D). Although limited convergent validity evidence was found, consequential validity evidence indicated that participants' completion of the *PPR Profile* led to reflection and examination. The *PPR Profile* provides information that can assist practitioners and researchers in understanding the uniqueness and complexity of human occupation.

Introduction

Since the inception of occupational therapy, recognition and use of people's individual experiences of occupational engagement have been a central tenet in the application of occupation to promote health. Today, the importance of subjective experiences remains strong with some believing that occupation can only be understood through personal experiences due to the individualistic nature of engagement (Burke, 2003; Clark, 1993; Clark et al., 1997; Crist & Royeen, 1997; Pierce, 1997, 2003; Yerxa et al., 1990). Several occupational therapists have proposed the use of experiences of occupational engagement as a means of conceptualizing and categorizing occupations that may assist practitioners and researchers with understanding how occupation relates to health and well-being (Hammell, 2009; Jonsson, 2008). However, there is a need to develop measures that capture the subjective experiences of engagement in daily life. This study aims to validate a newly developing instrument designed to capture the objective and subjective experiences of daily activities by examining construct validity through consequential and external validity evidence.

In their remarks on the concept of participation in the *International Classification of Functioning, Disability and Health (ICF)*, Hemmingson and Jonsson (2005) urged the occupational therapy profession to take part in continuing to shape this international document that aims to assist with understanding and studying health outcomes. In the most recent version of the *ICF*, participation is a central component that provides a more "integrative" understanding of health. However, participation, defined as involvement in life situations, is currently operationalized by the observation of performance. Hemmingson and Jonsson (2005) along with others (Perenboom & Chorus, 2003; Ueda

& Okawa, 2003; Wade & Halligan, 2003), state that this is a shortcoming of the current conceptualization of participation. Other methods besides observation are needed to also address people's subjective experiences of involvement in daily occupations.

The importance of subjective experiences in occupational engagement is of central importance in the life balance or occupational balance literature. Seen as a pattern of engaging in occupations that results in one's ability to meet needs and desires, and leads to improved health and well-being (Christiansen, 1996; Christiansen & Matuska, 2006; Wilcock, 1998a), balance is characterized by an assumed connection between various states (i.e., satisfaction, contentment, harmony) and how time is spent (Christiansen, Matuska, Polatajko, & Davis, 2009). One of its defining characteristics is its subjectivity (Backman & Anaby, 2009).

Csikszentmihalyi's seminal work in the development of a measure that captures people's experiences during daily occupations, defined as flow, is a well-established method used across a number of fields including occupational therapy (Emerson, 1998; Farnworth, 2000; Seligman & Csikszentmihalyi, 2000). Flow, defined as optimal experience, examines the interaction between a person's skills and the challenges of the occupation. The experiential sampling method (ESM), which allows individuals to record what they are doing and their experiences, has provided a way to study subjective experiences of daily life in context (Backman, 2005; Csikszentmihalyi & Larson, 1987; Farnworth, Mostert, Harrison, & Worrell, 1996).

As a life balance measure, little empirical evidence has been found for the use of ESM. Some suggest the use of ESM as a measure of optimal experience examines balance at an activity level: balance between a person's skill and the challenge of the

activity. Others suggest optimal experience is not a measure of life balance as there is more to balance than experiencing flow (Jonsson & Persson, 2006; Persson & Jonsson, 2009). Jonsson and Persson (2006) have begun efforts towards the development of an experiential model of occupational balance adopting Csikszentmihalyi's eight channel model of flow by measuring exacting, calming, and flowing experiences. Being able to function at high levels of exacting experiences (challenging occupations leading to a sense of competence through accomplishment) requires a balance of calming experiences, allowing individuals time to rest and relax (Jonsson & Persson, 2006). The preliminary examination of these experiences appears promising.

The relationship between occupational experiences and life balance has also been explored from other diverse perspectives (i.e., affective experiences, pattern complexity, congruency with values, meaning, and choice) (Doble & Santha, 2008; Erlandsson & Eklund, 2006; Erlandsson & Hakansson, 2009; Erlandsson, Rognvaldsson, & Eklund, 2004; Jonsson & Persson, 2006; Pentland & McColl, 2009; Persson & Jonsson, 2009; Pierce, 2003). These perspectives have emerged because of the need to expand beyond categorizing occupation as self-care, productivity, and leisure. Many agree that categorizing of occupations as self-care, productivity, and leisure can be conceptualized differently based on the person's age, culture, or socio-economic status (Backman, 2001, 2005; Christiansen & Matuska, 2006; Hammell, 2009; Pierce, 2003; Primeau, 1996; Shaw, 1985; Thompson & Bunderson, 2001). Those having the experience also categorize differently depending upon time of day, goals, presence of others, or mood (Bejerholm & Eklund, 2004; Hammell, 2009; Pierce, 2003). The diversity of people's

experiences confirms the importance of subjectivity as an important characteristic employed when measuring life balance.

At the same time these discussions regarding subjective experience and life balance are occurring, so too are discussions of methods that can be used to depict the personal experiences of participation. Hammel and colleagues are developing a participation assessment in which the items reflect important elements of personal experiences obtained through interviews with people living with disabilities (Hammel et al., 2008). In their commentary on participation, Rochette and colleagues (2006) have introduced the concept of optimal participation. The conceptualization of optimal participation as the fit between people's perceptions of their current engagement and their desired engagement provides another means for capturing people's experiences in daily occupations. Jonsson (2008) recommends continued research to reveal people's subjective experiences of engagement in occupation and to help explicate the relationship between occupation and health and well-being. He maintains that researchers need to be open to a variety of experience-based conceptualizations of occupation, rather than seeking one best way to conceptualize experience based categories.

The *Daily Experiences of Pleasure, Productivity and Restoration Profile*

In response to the stated need for further development of measures that capture the subjective experiences of occupational engagement, the *Daily Experiences of Pleasure, Productivity, and Restoration Profile (PPR Profile)* is being developed (Atler, 2008). As a unique time use survey, the *PPR Profile* measures three subjective experiences that are viewed as biological and sociological needs met through engagement in daily life: pleasure, productivity, and restoration (Clark, 1997; Doble & Caron-Santha,

2007; Pierce, 1997, 2001; Wilcock, 1998b). Distilled from the commonsense objective categories of self-care, work, and leisure, and based on the early work of Zemke and Pierce, pleasure, productivity, and restoration can be experienced at different levels during daily activities depending upon the context (Pierce, 2003). Expanding upon the work of Pierce (1997, 2003), the *PPR Profile* emphasizes the inter-related nature of these three experiences. This conceptualization (a) allows for the examination of subjective experience with equal attention given to pleasure, productivity, and restoration; (b) highlights the inter-relatedness of occupational experiences, and (c) brings restoration, an essential element of health, well-being, and balance, into prominence.

Support for the development of the *PPR Profile* can also be found in the foundational tenets of the occupational nature of humans (Clark, et al., 1997; Crist & Royeen, 1997; Wood, 1998; Yerxa, et al., 1990). The four main tenets supporting the *PPR Profile* are (a) humans have an innate need or drive to engage in occupation; (b) engagement in occupation is a dynamic transaction between the person, occupation and context; (c) occupation is a multi-dimensional and complex experience, and (d) occupation can be better understood by comprehending the personal experience, because individuals attach different meanings to engagement. In her theory on the occupational nature of humans, Wilcock (1993, 2006) has identified satisfaction, fulfillment and pleasure as innate needs, and described sleep and relaxation as "natural mechanisms to prevent overuse and a time for repair." (2006, p. 61).

Validation in the Process of Instrument Development

Validation, or the process of gathering evidence that supports the intended purpose of an instrument, is an essential step of instrument development. The Standards

for Educational and Psychological Testing (*Standards)* provide detailed criteria for development, use and evaluation of tests (American Educational Research Association (AERA), 1999). Viewed as a unitary concept, validity is the integration of evidence from a variety of sources that illuminate different aspects of validity. Each source of evidence focuses on different aspects of the test, its use, and its relationship to the constructs represented as well as to external variables. The purpose of the test influences the aspects of validity evidence that are to be gathered (AERA, 1999).

Messick's framework of a unified concept of validity. Messick (1993) proposed a framework that would enable the examination of validity to be conceptualized as a unified concept. He viewed and labeled the unified concept as construct validity because it was based on the integration of any evidence that supports the interpretation or use of test scores. In his framework, test outcomes identified as test interpretation and test use are evaluated through two sources of evidence, evidential and consequential (see Figure 3). Messick's framework prompts the researcher to examine value implications related to the test construct and format, as well as relevance, utility and consequences of taking the test and interpreting the scores. Convergence of various sources of evidence leads to validity as a unified concept. According to Messick, construct validity is comprised of various sources of validity evidence including (a) content; (b) substantive; (c) structure; (d) generalizability; (e) external and (f) consequential. Although Messick's unified concept of validity emerged out of the educational and psychology measurement context, his framework has been used by occupational therapists to guide development of client-centered assessments (Chan, 1995; Kramer, 2008).

	Test Interpretation	Test Use
Evidential Basis	Construct Validity	Construct Validity + Relevance/Utility
Consequential Basis	Value Implications	Social Consequences

Figure 3. Messick's Facets of Validity (Messick, 1993, p. 20)

Messick's framework is used in this study to classify the different aspects of validity evidence gathered to evaluate two purposes of the *PPR Profile* (see Figure 4). First, the *PPR Profile* was designed as an instrument intended to enhance one's awareness of daily occupations and associated experiences through reflection. Secondly, the intent of the *PPR Profile* is to provide an alternative means to examine the relationship between occupation and health and well-being.

Two sources of validity evidence were used to examine the two purposes of the *PPR Profile*. According to Messick (1993), consequential aspects of construct validity examine issues related to relevance and utility of the instrument, along with inspection of the effects or consequences of the use of the instrument. This examination explores issues related to positive or negative consequences such as bias, fairness, burden, or impact during administration or interpretation of the test results (Goodwin & Leech, 2003). Reflective analysis is most commonly used, often examining utility of the test in relationship to its intended purpose through examination of perspectives of the examinees or the examiners (Beran, Violato, Kline, & Frideres, 2005; Hassan, 2009; Reckase, 1998).

	Instrument Interpretation	Instrument Use
Empirical Evidence	Construct Validity (CV) Methods: Quantitative Possible Evidence: External	CV + Relevance/Utility (R/U) Methods: Qualitative Possible Evidence: Consequential
Consequential Evidence	Value Implications (VI) Methods: None Possible Evidence: None	Social Consequences Methods: Qualitative Possible Evidence: Consequential

Figure 4. Aspects of Validity Evidence Gathered in This Study.

External aspects of construct validity examine the relationship between the developing instrument scores and scores from other instruments (Messick, 1993). The underlying theory or assumptions substantiating the developing instrument's construct identifies the expected relationship with other variables (operationalized using other instruments). Using statistical analysis, examination of convergence is guided by hypotheses testing and is reported using validity co-efficients (Pedhazur & Schmelkin, 1991).

This study aims to validate the *PPR Profile*, designed to capture the objective and subjective experiences of daily activities, by examining construct validity through consequential and external validity evidence. The two research questions are (1) what evidence is there to support that the *PPR Profile* meets the objectives related to its purpose (consequential validity), and (2) what evidence is there of a relationship between *PPR Profile* indicators of subjective experiences and measures of perceived health, well-being, and depressive symptomology (convergent validity)? Adding to the documented

validation of the *PPR Profile* will strengthen and clarify its use as an instrument designed to capture the objective and subjective aspects of occupational engagement.

Materials and Methods

A triangulation mixed method design was used in this study (Creswell & Clark, 2007; Greene, 2007). Quantitative and qualitative data were gathered simultaneously and brought together during data analysis. This approach was undertaken because convergence of the results from two or more processes leads to greater confidence in the reliability and validity evidence that are gathered (Campbell & Fiske, 1959; Johnson, Onwuegbuzie, & Turner, 2007; Onwuegbuzie, Bustamante, & Nelson, 2010).

Sample

The data for this study are drawn from a larger study in which individuals living with the consequences of stroke (n = 25), who had previous contact with the Neurorehabilitation Research Lab (NRRL) at Colorado State University, agreed to participate in a study focused on examination of how people who completed the stroke rehabilitation program were currently participating in daily life. Inclusion criteria included: (a) being autonomous in making one's own decisions regarding daily activities; (b) speaking and reading English, and (c) having sufficient cognitive ability to record daily activities and rate the associated experiences in a chosen day. Meeting inclusion criteria was determined by the participant's ability to (a) read, understand and sign the consent form; (b) complete the Demographic Form, and (c) successfully complete sample entries of the *PPR Profile* during orientation. Individuals experiencing a major illness or injury in the last six months were excluded from the study due to the potential disruption in daily activities following a major illness/injury. Sixteen participants were male and

nine female. Age of the participants ranged from 25 to 85 years with more than half being over 60 years of age. See Table 8 for additional descriptive information.

The Daily Experiences of Pleasure, Productivity and Restoration Profile

As a developing time use instrument, the *PPR Profile* (Atler, 2008) is designed to capture the objective and subjective experiences of daily activities. The *PPR Profile* was designed to facilitate people's awareness of their daily activities and related experiences. The "experience of daily activities over time" is operationalized as the activities and resultant experiences of pleasure, productivity, and restoration a person reports during a specific period of time. To complete the *PPR Profile*, individuals document what they did, the time the activity began and ended, where the activity occurred, who was present, and their level of pleasure, productivity, and restoration experienced during the activity.

Using the *PPR Profile* as a self-administered time use instrument, participants stopped two to three times throughout the day to record their activities and rate their levels of pleasure, productivity and restoration. Detailed instructions and an example illustrating how to complete the *PPR Profile* were provided along with the rating scale. This included a definition of each construct (pleasure, productivity, and restoration) and additional descriptors. The scales used for determining levels of pleasure, productivity, and restoration range from absent (1) to extremely high (5).

Measurements

Four measures were used to answer the two research questions in this study. To examine the consequential validity evidence as presented in Question One, a semi-structured interview was used. Three quantitative measures were used to examine the convergent validity evidence (Question Two) of the *PPR Profile.* These included

perceived health, psychological well-being, and depressive symptomology. A brief description of each of the four measures follows.

Table 8
Demographics of Participants (N = 25)

Characteristic		Frequency	Percentage
Age in Years			
	<40	2	8
	41-50	3	12
	51-60	6	24
	61-70	9	36
	71-80	3	12
	>81	1	4
	Missing data	1	4
Level of Education			
	High School	3	12
	Some College	11	44
	College Degree	4	16
	Some Graduate Work	7	28
Living Situation			
	Alone	5	20
	With Others	19	76
	Missing data	1	4
Side Affected by Stroke			
	Left	16	64
	Right	9	36
Time Since Stroke			
	<1 year	4	16
	>1 year and <2 years	6	24
	>2 years and <5 years	9	36
	>5 years and <10 years	4	16
	>10 years	2	8
Perceived Health Status			
	Excellent	3	12
	Very Good	7	28
	Good	12	48
	Fair	2	8
	Poor	1	4
Perceived Satisfaction Level			
	Excellent	2	8
	Very Good	5	20
	Good	11	44
	Fair	5	20
	Poor	2	8

Semi-structured interviews. The three main topics of the semi-structured interviews were the participant's perspectives on completing the *PPR Profile,* advantages or disadvantages of using the *PPR Profile*, and participants' suggestions and recommendations for changes or usage of the *PPR Profile*. The interview guide was designed and informed by main ideas found in the literature on consequential validity (Beran, et al., 2005; Hassan, 2009; Reckase, 1998). To examine the intended and unintended outcomes and concerns of the *PPR Profile*, neutrally worded open ended questions and probes were developed and used as a systematic and comprehensive line of inquiry (Patton, 2002). This process was used to encourage participants to share anything and everything about their experiences. Example questions included: 'how much pleasure, if any, did you experience during your day?", and "some people have told us they experienced high pleasure in all of their activities. Others have reported they experienced little to no pleasure. What about you?"

Perceived health. The SF-36*v2*, a 36 item general health survey, is known internationally as a standard measurement of health outcomes (Ware et al., 2007) As a self-report measure, the SF-36v2 provides a summary of how a person's health status affects daily functioning. Eight dimensions of health are measured: (a) physical function, (b) role limitations due to physical health, (c) bodily pain, (d) social function, (e) mental health, (f) role limitations due to emotional health, (g) vitality, and (h) general health perceptions. Two component summary measures, perceived physical and mental health, can be aggregated from the eight dimensions (Ware, et al., 2007). The use of the SF-36v2 has been documented in nearly 4,000 publications used across general populations and in intervention studies (Ware, 2000). Adequate to strong internal

consistency reliability (.83-.95) across the eight health domains has been reported in many studies.

Psychological well-being. Ryff's Scales of Psychological Well-Being (SPWB) is a multi-dimensional measure of well-being based on theory and knowledge from developmental psychology, clinical psychology, and the field of mental health (Ryff & Keyes, 1995). The measure consists of six dimensions: (a) self acceptance, (b) positive relations with others, (c) autonomy, (d) environmental mastery, (e) purpose in life, and (f) personal growth (Ryff, 1989b). The measure has been widely used in the general adult population and has good psychometric properties that have been extensively examined (Kafka & Kozma, 2002; Keyes, Shmotkin, & Ryff, 2002; Ryff, 1989a, 1989c, 1991; Ryff & Keyes, 1995; Schmutte & Ryff, 1997). Several versions of the Ryff's Scales are available which vary in the number of items scored for each dimension. The scales containing 7-items were used in this study as recommended by Ryff (personal communication, April 5, 2007).

Depressive symptomology. The Center for Epidemiologic Studies – Depression Scale (CES-D), a 20 item self administered survey, asks respondents to rate the frequency of depressive symptoms experienced during the past week (Radloff, 1977). Major symptoms include both affective and behavioral elements such as depressive mood, feelings of guilt, loss of appetite, and changes in sleep routines. The scale, ranging from 0 to 3, was designed to be used in the general adult population (18 years of age and older) (Radloff, 1991; Radloff & Teri, 1986). The CES-D has been used in various studies with survivors of stroke with good internal consistency and test-retest reliability reported

(King et al., 2001; Radloff, 1977; Teoh, Sims, & Milgrom, 2009; Whyte, Mulsant, Vanderbilt, Dodge, & Ganguli, 2004).

Table 9 provides a summary of the health and well-being variables obtained from the three quantitative measures.

Procedures

Data were collected during two visits to the NRRL. Participants completed the health and well-being surveys during the first visit and were introduced to the *PPR Profile*. Following review of the *PPR Profile* instructions, several example written entries were completed by the participants to ensure understanding. If participants required or requested accommodations for recording their daily activities and experiences on the *PPR Profile*, adaptations were then determined. Three participants chose alternative methods including use of audio-taping and recording on the computer.

Participants selected three days (two week days and one weekend day) in a seven day period to record their activities and experiences. On the morning following each day recorded, participants recorded the last activities of the previous day and completed the questions at the end of the instrument. The Likert questions at the end of the *PPR Profile* asked participants to identify their current and preferred level of pleasure, productivity, and restoration experiences during daily activities. Time to complete the *PPR Profile* varied but took approximately one hour for each day recorded.

The second visit was a 45-60 minute face to face interview following completion of the three *PPR Profiles*. Interviews occurred at the NRRL, with the exception of three participants who were interviewed at home due to limited transportation resources. The

researcher took time to memo following each interview. Additionally, the researcher periodically wrote down her own thoughts and experiences that arose from spending time with the participants and reflected upon characteristics of the *PPR Profile*.

Table 9
Summary of Health and Well-being Variables

Health and Well-Being Variables	Method of Measurement	Possible Ranges
Perceived Physical Health		
Physical Function	RAND SF36v2-Physical functioning (SF36v2-PF)	0 (low) to 100 (high)
Roles (Physical)	RAND SF36v2-Role Physical (SF36v2-RP)	0 (low) to 100 (high)
Bodily Pain	RAND SF36v2-Bodily Pain (SF36v2-BP)	0 (low) to 100 (high)
General Health	RAND SF36v2-General Health (SF36v2-GH)	0 (low) to 100 (high)
Perceived Mental Health		
Mental Health	RAND SF36v2-Mental Health (SF36v2-MH)	0 (low) to 100 (high)
Roles (Emotional)	RAND SF36v2-Role Emotional (SF36v2-RE)	0 (low) to 100 (high)
Social Functioning	RAND SF36v2-Social Functioning (SF36v2-SF)	0 (low) to 100 (high)
Vitality	RAND SF36v2-Vitality (SF36v2-VT)	0 (low) to 100 (high)
Psychological Well Being		
Autonomy	Ryff's Scales of Psychological Well-Being	7 (low) to 42 (high)
Environmental Mastery	Ryff's Scales of Psychological Well-Being	7 (low) to 42 (high)
Personal Growth	Ryff's Scales of Psychological Well-Being	7 (low) to 42 (high)
Positive Relationship with Others	Ryff's Scales of Psychological Well-Being	7 (low) to 42 (high)
Purpose in Life	Ryff's Scales of Psychological Well-Being	7 (low) to 42 (high)
Self Acceptance	Ryff's Scales of Psychological Well-Being	7 (low) to 42 (high)
Depressive Symptomatology	Center for Epidemiologic Studies for Depression Scale (CESD)	0 (low) to 60 (high)

Two interviews were shortened to reduce their burden as it was apparent the participants were not able to fully participate in responding to some of the questions. If participants had a partner or significant other present during the interview, they participated in the interview. After completion of all steps of the study, each participant received $50.00 cash compensation to assist with travel expenses.

Data Analysis

Qualitative and quantitative data analyses were used to examine consequential (Question One) and convergent (Question Two) validity evidence. Each analysis is described, followed by an explanation of how the two methods informed each other.

Qualitative analysis. All audio-taped interviews were transcribed and placed into Atlas.ti v. 6.2 (Scientific Software Development GmbH, 2011). Data were triangulated by using two data sources and by two reviewers who completed multiple phases of analysis (Denzin & Lincoln, 1994). The two data sources, interviews and the researcher's memos and personal reflections, were synthesized during the data analysis process.

All interviews were analyzed using an iterative process of coding and discussion between the researcher and the research assistant. The researcher read several interviews in their entirety first to become acquainted with the data and initiate development of a code list beginning with content related to the interview questions (Bailey & Jackson, 2003). The researcher and research assistant then independently coded three interviews before coming together for discussion. Codes were refined and developed into general and specific codes with definitions. Examples include the general code of "recording" which was refined to include the specific codes of "recording frequency" and "recording interference," and the general code of "impact of completing" which was specified as

"impact benefit" and "impact cost." The definitions were taken from the wording or concepts from the interviews (Bailey & Jackson, 2003).

Analysis continued with line by line coding of each interview using the coding list. Once all 25 interviews were read, coded, and discussed, the data were queried using the three main topics in the interview questions: experiences of completing the *PPR Profile*, the intent and purpose of the *PPR Profile*, and recommendations for future use of the PPR Profile. This allowed the researcher and research assistant to re-examine all the portions of coded text. Throughout this stage of data analysis, the researcher returned to the intent of the *PPR Profile* and continually reflected on the question: what outcomes were anticipated and which were inadvertent or unintentional? A second question that was asked that influenced the process was: what have we learned that may be influencing people's experiences of the *PPR Profile*?

A constant comparative analysis approach was used throughout to examine relationships between initial codes and to explore broader concepts (Strauss & Corbin, 1990). This was accomplished through queries initially guided by the main interview questions that were asked following completion of the *PPR Profile*. Data from the queries were read and examined again independently by the researcher and research assistant prior to meeting to discuss perspectives as a means to question, check, and confirm the emerging themes. During discussions, the researcher shared thoughts from her written memos made throughout the interview process, and ideas from both sources were combined together. As well the researcher made connections among themes in the data and previously reviewed literature. The researcher and research assistant went back to the

data several times, examining emerging themes from various perspectives to ensure consistency in the themes.

The final analysis examined the codes related to the three main topics in the interviews of the 15 participants who recorded three complete days of the *PPR Profile*. The researcher and research assistant discussed their overall impressions of the themes shared by each participant to again confirm previous discussions and final themes. In this last analysis, the researcher counted and reported the percentages of participants' ideas to ensure that dominant and minor perspectives were reflected (Miles & Huberman, 1994). Identification and sharing of all perspectives related to the experience of the *PPR Profile* was deemed essential as the purpose of the interviews were to identify the intended and unintended consequences of the *PPR Profile*.

Trustworthiness. In qualitative research, issues of reliability and validity are often investigated through the examination of credibility, dependability, and reflexivity (Merriam, 2009; Shenton, 2004). Credibility of the qualitative analysis was strengthened through the use of triangulation, a technique used for validation of the data analysis by the use of two or more sources (Denzin & Lincoln, 1994). This technique was used extensively throughout the analysis process as described above. Provision of actual descriptions from the data were used to strengthen the credibility of the analysis (Shenton, 2004). Dependability was addressed by providing an in-depth description of the methods used to analyze the data (Shenton, 2004).

Another means of ensuring trustworthiness of the qualitative research is self-reflexivity (Merriam, 2009). During self-reflexivity, the researcher shares and acknowledges the awareness of his or her own experiences, values, and beliefs that may

have influenced any or all of the steps in the research process (Merriam, 2009; Primeau, 2003). This researcher's interest in the development of a method to enhance people's awareness of their daily occupations was influenced by the work of Clark and her colleagues (Clark, Jackson, & Carlson, 2004), which resonated with the researcher's clinical experiences.

The researcher's personal reflections. I entered the project with a clear recognition that I believed that reflection leading to awareness is an essential element required to support any learning or change in thoughts and actions. Cognitively aware that not all people are comfortable with reflection, I wondered if some people living in the community with the consequences of stroke would find becoming aware of their activities and experiences difficult. This awareness resulted in a concern, which became evident during the first interview. This early experience influenced my approach during the remaining interviews by attempting to invite participants to share *any* and *all* feelings. My experiences during the interviews have influenced my desire to establish a manual to provide education that might support effective use of the *PPR Profile* by occupational therapy practitioners. While I still believe that awareness through reflection is essential for change, I recognize that strong interpersonal skills are required to effectively use the *PPR Profile*.

Unlike my clear insights into my beliefs about reflection, I was unaware of my biases that could be unconsciously presented in the choice of words used to convey key constructs or ideas. Being an occupational therapist, and doing occupational therapy for many years, one's use of words can easily take on the language and lingo of the profession. However when attempting to develop an instrument that is perceived as

useful and accessible, increasing one's awareness of the impact of words is essential. While I anticipated that restoration would be an unfamiliar concept to some, I was not prepared for how some people who live with the consequences of stroke would "view" restoration totally different from my perspectives. Because my main intent was and continues to be to develop an instrument that is viewed as valuable by those who complete the *PPR Profile*, continued refinement of the language of the instrument, and development of guidelines for those who will administer the instrument appear to be even more critical.

Quantitative analysis. Three research hypotheses were derived from the second research question in order to examine convergent validity evidence. Directional hypotheses were not written due to the emerging nature of the development of *PPR Profile* indicators.

- Hypothesis 1: Among community dwelling people living with the consequences of stroke, there will be a correlation between *PPR Profile* indicators of subjective experiences and CEDS;
- Hypothesis 2: Among community dwelling people living with the consequences of stroke, there will be correlations between *PPR Profile* indicators of subjective experiences and Ryff's Scales of Psychological Well-Being constructs of autonomy, personal growth, environmental mastery, purpose in life, positive relations with others, and self acceptance;
- Hypothesis 3: Among community dwelling people living with the consequences of stroke, there will be correlations among *PPR Profile* indicators of subjective experiences and perceived mental and physical health (SF-36v2 Health Survey).

Data preparation of health and well-being variables. Data from all three surveys (well-being, health, and depression) were entered into SPSS version 19, and examined for accuracy and completeness. Before summated rating scales were calculated, missing data were addressed using the guidelines for each variable. Alpha coefficients were examined and found acceptable for all health and well-being variables (see Table 10 and Appendices B-D).

Data preparation and development of PPR Profile indicators.

Data preparation of PPR Profile data. Raw data obtained from the *PPR Profile* diaries were placed into episode files in Excel (Harvey & Pentland, 1999; Michelson, 2005). Each row in the episode file contains data for a single episode or unit of activity reported by the participant. The number of rows or episodes per participant per day

Table 10
Descriptive Statistics for Health and Well-Being Variables (N=24)

	Mean	SD	Range	Cronbach's Alpha
CEDS (0-60)[a]	14.43	11.18	2.0-43.0	.892
Ryff's Scales of Psychological Well-being				
Autonomy (7-42)	25.71	4.71	16.0-33.0	.823
Mastery of Environment (7-42)	27.29	8.18	8.0-38.0	.932
Personal Growth (7-42)	27.83	6.33	16.0-38.0	.875
Positive Relations with Others (7-42)	30.04	6.94	17.0-39.0	.881
Purpose in Life (7-42)	25.46	7.27	10.0-38.0	.860
Self Acceptance (7-42)	27.75	7.57	11.0-39.0	.819
SF36v2 Health Survey				
Physical Function (10-30)	18.63	5.16	10.0-30.0	.914
Role Physical (4-20)	11.13	4.70	4.0-20.0	.920
Bodily Pain (2-12)	9.19	2.41	4.2-12.0	.888
General Health (5-25)	18.38	4.45	8.0-25.0	.852
Vitality (4-20)	12.54	3.73	6.0-18.0	.839
Social Functioning (2-10)	7.29	2.37	2.0-10.0	.716
Role Emotional (3-15)	11.88	3.26	6.0-15.0	.888
Mental Health (5-25)	19.58	2.73	13.0-23.0	.704

[a] Numbers within parenthesis refer to possible range of scores.

varied according to how they organized their day into units of activity. At the time the data were entered, the amount of time that occurred for each episode was calculated into minutes.

PPR Profile data were then examined for completeness and accuracy. Pre-established guidelines for missing or unreliable data (i.e., what to do when someone provided two ratings for one experience) were used. Data were eliminated if (a) activities were not recorded for a full 24 hour period of time; (b) beginning and ending times for activity units were unclear, and (c) responses for pleasure, productivity, and restoration were missing and could not be determined from available data. An exception was made if the data were complete except for the ratings for levels of pleasure, productivity, and restoration for sleep. The preparation process led to a total of 59 days that could be used in the quantitative data analyses. Data obtained from the qualitative interviews led to the deletion of one participant's data as it was deemed to be potentially unreliable due to not following procedures for completion of the *PPR Profile*, receiving help from others, and an inability to fully partake in the interview, suggesting questionable cognitive status for accurate completion of the *PPR Profile*.

The next preparatory step was to code the units of activities. After reviewing commonly used activity coding schemes in national time use studies (Michelson, 2005), the researcher chose to create a basic activity coding guideline as the intent of the study was to examine subjective experiences rather than differentiate activity types in detail. The activity coding list was derived from the areas of occupation described in the American Occupational Therapy Practice Framework (American Occupational Therapy Association, 2008) and the leisure and social categories identified in the Activity Card

Sort (Baum & Edwards, 2001). Leisure was divided into two categories. High demand leisure requires high physical strength or endurance, while low demand leisure does not demand physical strength or endurance (see Appendix A).

Once the preliminary activity code list was established, two coders (the researcher and a research assistant) independently coded a section of the data. The percentages of agreement were calculated by dividing the number of entries the two independent coders agreed upon by the total number of entries examined. Coding guidelines were refined until 85% agreement was reached between the two coders as suggested by Morgan and colleagues (2006). The coding guidelines were further tested by the researcher and a third independent coder. Percentages of agreement for all data using the revised activity code was 93%.

The final step of data preparation was the creation of summary files. In a summary file, the participant, not the episode, becomes the unit of analysis (Michelson, 2005). At this point Microsoft Access was used to manage data and create *PPR Profile* indicators. Data were then exported to SPSS Version 19.

Development of PPR Profile indicators. Prior to the development of *PPR Profile* indicators, descriptives of the rating scale usage were run revealing that the full range of scores were used for each of the three scales (pleasure M = 3.35, SD = 1.16; productivity M = 3.03, SD = 1.31, and restoration M = 3.10, SD= 1.17). Frequencies of scores were normally distributed with skewness ranging from -.10 to -.27. However, examination of the frequencies of scale usage at the level of each individual revealed that while the majority of participants used the scale consistently across multiple days, some of them were not using the full range of the scale. At this point a decision was made to not use

average subjective experience indicators as measures of central tendency are deemed to be ineffective in describing more complex patterns or distributions of data (Vaske, 2008).

Non parametric statistics (i.e., chi-squares) were run and displayed visually. Examination of the visual data led to further exploration of indicators that represented simpler or more basic units of the data (instead of average subjective experiences across a day). Several indicators of subjective experience including time spent in minutes, percentages of time in waking hours, and weighted percentages at the different levels of subjective experiences were explored. Established methods used in the examination of affective experiences guided this phase of developing *PPR Profile* indicators of subjective experiences (Kahneman, Krueger, Schkade, Schwarz, & Stone, 2004; Lo, 1996; Lo & Huang, 2000; Lo & Zemke, 1997; Stone et al., 2006). Lo and colleagues aggregated scores across a day, while Kahneman and colleagues examined affective experiences in activity types. PPR Profile indicators were calculated at each level recorded ranging from absent (1) to extremely high (5). Subjective experiences were also grouped according to low, neutral, and high levels for all indicators in an attempt to find a more simplified way to present the results. An overview of the *PPR Profile* indicators used in this study, the variable names and a description of how indicators were calculated are found in Table 11.

***Examination of associations*.** Non-parametric statistics were chosen to examine associations due to the lack of normalcy in the distribution of the data (Morgan, et al., 2006). Examination of the associations between *PPR Profile* indicators of subjective experiences and perceived health, psychological well-being and depression symptomology were investigated using Spearman correlations (r_s).

Table 11

Summary of PPR Profile Indicators of Pleasure, Productivity and Restoration

Categories	Variable Name	Description
Time spent at each level of Pleasure (PL), Productivity (PR), and Restoration (R) • In a day • In activity types	PL Time: L1[a], L2[b], L3[c], L4[d], L5[e] PR Time: L1, L2, L3, L4, L5 R Time: L1, L2, L3, L4, L5 PL Time: Low, Mid, High PR Time: Low, Mid, High R Time: Low, Mid, High	Sum of time in minutes reported at each level of experience or in Low, Mid, and High Low = Levels 1 and 2 Mid = Level 3 High = Levels 4 and 5
Percent of time spent at each level of Pleasure (PL), Productivity (PR) and Restoration (R) • In a day • In activity types	PL %Time: L1, L2, L3, L4, L5 PR %Time: L1, L2, L3, L4, L5 R %Time: L1, L2, L3, L4, L5 PL %Time: Low, Mid, High PR %Time: Low, Mid, High R %Time: Low, Mid, High	Total number of minutes spent at each level of experience divided by total waking minutes in a day reported at each level of experience or in Low, Mid, and High
Weighted percentage of time spent at each level of Pleasure (PL), Productivity (PR), and Restoration (R) • In a day • In activity types	PL wt%: L1, L2, L3, L4, L5 PR wt%: L1, L2, L3, L4, L5 R wt%: L1, L2, L3, L4, L5 PL wt%: Low, Mid, High PR wt%: Low, Mid, High R wt%: Low, Mid, High	Percentages of time spent multiplied by the level of experience reported at each level of experience or in Low, Mid and High

[a] L1 = level 1
[b] L2 = level 2
[c] L3 = level 3
[d] L4 = level 4
[e] L5 = level 5

The integration of quantitative and qualitative data. While the researcher initiated preparation of the quantitative data prior to starting the qualitative data analysis, analysis of both types of data occurred simultaneously. Once all interviews were coded, and *PPR Profile* indicators created, the researcher began to use the information gained from each type of data to guide continued analysis. Results from the quantitative and qualitative data analysis were combined to strengthen the validity evidence gathered (Campbell & Fiske, 1959; Johnson, et al., 2007; Onwuegbuzie, et al., 2010)

How quantitative data informed qualitative data. Quantitative data were used on several occasions to query the qualitative data. Demographic groupings (i.e., age, gender, time since stroke) were used for examination of factors that may have been inadvertently influencing participants' perspectives and experiences with the *PPR Profile*. In addition, using maximal variation sampling (Creswell, 2005), the researcher selected four interviews of participants experiencing the highest levels of overall average pleasure, productivity, and restoration (determined through the *PPR Profile* indicators) and the interviews of the four participants with the lowest overall averages of pleasure, productivity, and restoration. The eight interviews, which documented diverse subjective experiences related to daily activities, were examined to see if similar themes were found across all the data (Miles & Huberman, 1994).

***How qualitative data informed quantitative data*.** Results from the qualitative data analysis guided some decisions as to which quantitative data would be used and how the quantitative data would be examined. As stated earlier, an understanding of how participant's completed the *PPR Profile* assisted with making final decisions on whether the data were deemed accurate. Themes that reflected participants' perspectives about

how many days should be completed as a more accurate representation of one's daily experiences were used to make decisions on if and how to use profile data across one, two or three days.

Results

Consequential Validity Evidence of the *PPR Profile*

A summary of the experiences participants reported in completing the *PPR Profile* provides a contextual foundation for the evidence gathered to address the first research question: What evidence is there to support that the *PPR Profile* meets the objectives related to its purpose? Findings examined included participants frequency in recording their experiences, their reported levels of burden or interference, and aspects of completing the *PPR Profile* they identified as most difficult. Eighteen of the twenty two participants (82%), who shared how they completed the *PPR Profile,* conveyed that they recorded their activities throughout each day. The frequency of recording activities varied from three times a day to each time there was a transition from one activity to another. When asked how much the process of completing the *PPR Profile* interfered or caused burden, 62% (13/21) reported no interruption or sense of burden; 14% (3/21) reported initial interference, and 24% (5/21) reported interference. Time was a main factor for those who reported interference or initial interference. However two additional explanations for interference included having to stop and think or realize what one was doing, and disliking having to track and write down activities. Several of the participants who did not see the *PPR Profile* as being intrusive or burdensome described how they incorporated the recording of their activities and experiences into their already

established routines (i.e., when on the computer, just before or after meal times). One participant stated “it wasn’t intrusive or anything, it just became a part of what I did.”

When responding to what was the hardest aspect of completing of the *PPR Profile*, two major themes emerged (a) responding to the closing questions which asked participants to identify their preferred levels of pleasure, productivity, and restoration, and (b) determining the levels of pleasure, productivity, and restoration associated with their activities. Six participants found determination of preferred levels as the most difficult aspect because the question led them to compare their current life with what their life was like before the stroke. One participant stated “I wished it (the stroke) wouldn’t of happened. I can’t do what I use to do.” This person went on to recommend that those who are administering the *PPR Profile* should let people know that it may be difficult for some people to be aware of their current activity levels or to see their struggles with doing things. Another participant felt identification of preferred levels of pleasure, productivity, and restoration was difficult because the question made her think towards the future, which was not something she had been doing.

Six different participants shared that rating their levels of experiences was the most difficult aspect when completing the *PPR Profile*. This portion of the administration of the *PPR Profile* requires the person to interpret or decipher levels of experiences. One participant commented that you have to really stop and think to evaluate your experiences against other experiences “. . . it is very hard.” Another participant shared how at times she would look at the activity and think, did I do it or did I get it done and determine the rating. Other times she reported a tendency to compare how she felt about the activities she completed in the three days, to what she would have felt like right after her stroke.

Despite some participants reporting interference with their daily activities or that parts of the process were challenging, all participants or their spouses (24 participants and 1 spouse) shared that completion of the *PPR Profile* led to an increased awareness of their activities or experiences, whether awareness was seen as a benefit or a challenge. The qualitative themes from the interviews associated with awareness are described below and illustrated with comments from the participants' data. The section ends with a review of participants' recommendations and cautions in the usage of the *PPR Profile*.

Analysis of the interview data revealed that the process of completing the *PPR Profile* brought different cognitive and emotional reactions to the participants. Additional cognitive and emotional responses arose during the interviews as participants discussed their process and experience of using the *PPR Profile*. Cognitive responses varied from descriptions that revealed participants noted things about their daily activities, to responses that suggested that participants engaged in exploration or evaluation of what they noted, to responses that reflected possible changes in their perceptions or ideas for actions.

Several participants referred to the process of the *PPR Profile* as allowing or leading them to "see," "notice" or become "aware." Increased awareness was related to activities, time, experiences associated with activities or one's abilities or inabilities. As one person said, "It makes you aware of what you're doing. And I think you don't pay any attention to what you do every day." "It (the *PPR Profile*) puts down what you do and identifies the pleasure, productivity, and restoration." Other participants talked about noticing things they typically wouldn't. "Well, the three days that I did this, it kind of

opened my, it opened my mind or my eyes to see what is…", or "…it did make me more aware of my daily activities, the time I spent doing things, um how I did them."

Descriptions offered by other participants' suggested that they began to appraise the information they gleaned from completion of the *PPR Profile*. "I realized I am watching a lot of TV, and I don't get much out of it." Another person stated: "I sat and thought about it a little bit. Some days I am not very productive, you know and some days, I'm very productive and sometimes they're productive but you don't feel like they're productive." In describing what he discovered about pleasure and his activities, one man talked about his wife: "she comes home for lunch, and I talk to my wife. I find that **very pleasurable** (bolded to reflect his emphasis)." Exploration and thinking led participants to ask questions such as: "did I get something done?"; "did the activity restore me?"; "what do I enjoy?", or "why am I doing these things?"

Some participants readily shared how their thinking about their activities and experiences led them to change their perceptions about themselves, or their experiences, and at times initiated thoughts about future actions. One participant shared how someone asked him what he got from the process of completing the *PPR Profile*. He stated: "I don't do anything. I enjoy reading or being outside or being with the dog. But I know I got to do more physical exercise.....And with my mind too, I gotta go back to things that are challenging." When asked, what if anything will you take away from the process of completing the *PPR Profile*, another person said:

> "I think I will choose to spend my time in some activities over others. For example like Sunday I was on the computer a lot and that was like wow, I do spend a lot of time on the computer, and that's not good. So I think I will chose to do you know like Wednesday I chose to do other stuff over the computer."

Other participants suggested that the process of completing the *PPR Profile* acted as a "spark" or "motivator" to get something done or to plan to do things. "This made me aware of - oh I got to get some of this done and…why not today… it helped me plan my week… I usually don't think about it [my activities and schedule]."

As some participants discussed their experiences of using the *PPR Profile*, often the cognitive process they revealed was intermixed with emotional responses. The range of emotions expressed was wide; some people found their discoveries encouraging, others frustrating and difficult. For example, a number of participants seemed pleased with the recognition that they were doing more than they thought. "It made me think about the things I do and how I spend my time. It made me think about how far I've come and celebrate that." Sounding surprised another person shared: "I actually got more done that I thought; I often think I am not getting enough done, where this showed that I actually keep moving, so I feel better about that." Others were more neutral or undecided: "The process was enlightening … it shows you what kind of habit you're falling into…. if you want to know."

Still other participants expressed frustration; for what they experienced during the process or what they imagined others might feel. "It [the *PPR Profile*] was frustrating, hard to see that the things that you have enjoyed in the past, you are not doing." Another person said: "I only was reminded that I can't do the things I want to do. I've been this way for a long enough time that I have accepted that…. If I was newer to having the stroke, I'd be very, very, very frustrated." Another person stated "it could be depressing for some people who don't see it as opportunity. It can be very disheartening, like a slap in the face." Yet another reflected on the process of completing the *PPR Profile*, clearly

thinking about the impact of the stroke: "If I had done this (the *PPR Profile*) without the stroke……it would be almost always fives. It makes me wonder if you maybe should draw a line for people who had a stroke or challenge. I sense the inequality of the doing of it with a stroke versus without a stroke." In response to the interviewer reflecting that the process appeared to increase awareness and that was hard, and sad, the participant responded "yea it really is."

In contrast, a participant (P) suggested that the process of completing the *PPR Profile* led to his increased involvement. When asked to share more with the interviewer (I) he stated:

P: "It made me concentrate a little bit more….I started looking at the clock. Before my days were not driven by what time it was…because my days kind of go by slow."
I: Did these days go faster or slower?
P: "Believe it or not they went faster…..because it was a job for me."
I: What else did you learn?
P: "Well I came to things like productivity and restoration and I had to change my thought pattern to a more positive approach. I found that beneficial. Because initially when I first started, I just put ones on everything and moved on. My wife would say honey, think about it, one doesn't mean much…..You're right it doesn't. It caused me to pause and have to think about life and how I felt about it."
I: What's your conclusion?
P: "Life isn't as bad as I thought it was."
I: Can you give me an example?
P: "Well before when I was unloading the dishwasher, I was looking at how fast I can do it, and get back to my couch"
I: So are you saying that now that you've taken the time to stop and think about what you realized, unloading the dishwasher is really a part of being productive?
P: "Now it is yes."
I: How do you anticipate having participated with the PPR Profile will or will not influence how you continue to engage in life over the next two weeks or month?
P: "Well I think it gives me a completely different attitude about what I accomplish now. It's more positive than it was before. Yeah I can really say that it created a positive response for me, which I did not expect."

Recommendations and considerations for use. Throughout the interview process, participants were asked if they would or would not recommend the *PPR Profile* and why. Sixteen of the twenty-two (73 %) participants recommended the *PPR Profile*, five (23%) participants were not sure, and one participant suggested use under certain conditions. One of the five people not sure about using the *PPR Profile* stated that the use of the *PPR Profile* "may stir you up mentally." Still another person said, it "may be too hard to see the changes in one's life, or changes in one's abilities." The participant who suggested conditional use also referred to the idea that there are times in a person's life where it may be too difficult to complete the *PPR Profile*.

Just as some participants expressed the *PPR Profile* would not be appropriate to use with people who experienced a major change or loss, or with older adults, others expressed that these same people would benefit from the process. During the more specific conversation about the use of the *PPR Profile* with others who had experienced a stroke, many felt the *PPR Profile* would not be appropriate for use in the hospital. However, there was a wide difference as to when participants felt it could be used. Some thought it would be good to use after a couple of months, others not until a year, or 18 months or even 2 years after the incident. Important requirements for using the *PPR Profile* as seen by those who participated in the study were: strong cognition, sufficient energy, and a willingness to be honest. Lastly, while 55% (12/22) of the participants felt that three recorded days reflected their occupational experiences, 42% (9/22) believed that recording five to seven days would account for a more complete picture of their experiences.

In summary, the evidence presented in the above section illustrates that participants' completion of the *PPR Profile* led to reflection and examination of the subjective experiences or pleasure, productivity, and restoration. However awareness was not always seen by the participants as valued or beneficial. In the following section convergent validity evidence examined is presented.

Convergent Validity Evidence of the *PPR Profile*

The second research question: what evidence is there of a relationship between *PPR Profile* indicators of subjective experiences and measures of perceived health, well-being, and depressive symptomology was examined by testing each of the three hypotheses. The quantitative data from the fifteen participants who completed three days was used because 97% (3% missing) of the participants who were interviewed felt that a minimum of three recorded days was needed to capture their occupational experiences. All *PPR Profile* indicators were averaged across the three days. Ranges in percentages of time spent were reported because of the non-normally distributed data. The percentages of time spent in low, mid, and high levels of pleasure, productivity, and restoration across three days and in activity types are provided in Table 12 and 13. Results related to relationships found among *PPR Profile* indicators and health and well-being are reported responding to each of the three hypotheses.

Hypothesis 1: There will be a correlation between *PPR Profile* indicators of subjective experiences and CEDS. No support of Hypothesis 1 was found when examining correlations between *PPR Profile* indicators of the number of episodes, or percentage of time spent in various levels of pleasure, productivity or restoration and CEDS.

Table 12

Descriptive Statistics for the Average Percentage of Time Spent in Low, Mid and High Levels of Pleasure, Productivity, and Restoration Across Three Days (n =15)

	Low [a]	Mid [b]	High [c]
Pleasure			
Median	10.34	33.55	42.83
Mean	18.35	33.42	48.05
Standard Deviation	18.00	17.01	24.36
Minimum	.00	3.76	13.74
Maximum	51.60	61.50	96.24
Productivity			
Median	27.66	21.62	48.29
Mean	27.28	25.71	48.86
Standard Deviation	23.57	15.83	26.76
Minimum	.00	4.80	.78
Maximum	87.60	64.04	91.98
Restoration			
Median	26.02	23.58	46.28
Mean	31.90	25.21	47.55
Standard Deviation	24.53	14.49	27.44
Minimum	.00	6.18	.78
Maximum	73.74	52.97	85.50

Notes: Percentage of time was calculated across three days. Time spent at a specific level was divided by waking hours per day and averaged across three days.

Levels of experience were rated 1-5.

[a] Low levels are the sum of scores 1 and 2

[b] Mid levels are scores of 3

[c] High levels are the sum of scores 4 and 5

Hypothesis 2: There will be correlations between *PPR Profile* indicators of subjective experiences and Ryff's Scales of Psychological Well-Being. In partial support of Hypothesis 2, several positive and negative correlations were found among the *PPR Profile indicators* of weighted percentages of time in levels of pleasure, productivity, and restoration in activity types with several of Ryff's Scales of Psychological Well-Being (See Table 14). All positive and negative correlations found were substantial correlations and are described according to activity types (Vaske, 2008) .

Table 13

Descriptive Statistics for the Percentages of Time Spent in Low, Mid and High Levels of Pleasure, Productivity and Restoration in Activity Types (n = 15)

	Self-Care			Home Management			High Demand Leisure			Low Demand Leisure			Social		
	Low [a]	Mid [b.]	High [c]	Low	Mid	High	Low	Mid	High	Low	Mid	High	Low	Mid	High
Pleasure															
Median	.61	5.05	2.88	4.52	6.24	5.32	.00	.00	2.13	.19	8.93	14.44	.00	2.30	9.57
Mean	2.52	6.30	6.83	6.70	7.57	5.75	1.61	1.35	3.76	2.87	11.46	16.62	2.64	3.57	11.69
Std Deviation	4.49	6.32	9.07	8.18	8.69	4.69	2.54	2.22	5.81	3.79	11.11	12.92	3.79	4.54	9.26
Minimum	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Maximum	16.49	21.57	32.13	26.29	31.18	14.47	7.81	5.75	22.29	11.31	43.02	45.33	9.69	15.25	31.03
Productivity															
Median	2.06	3.99	5.64	2.88	4.52	6.24	.00	.00	3.92	6.38	6.85	6.53	2.64	3.30	4.09
Mean	3.36	4.57	6.82	2.33	3.93	13.41	2.35	1.24	4.72	11.80	6.44	12.46	6.43	5.52	5.94
Std Deviation	3.49	4.67	7.54	9.07	8.18	8.69	6.82	3.26	7.72	15.55	5.40	13.11	9.30	6.19	6.77
Minimum	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Maximum	9.20	13.20	25.85	10.71	16.97	32.13	26.74	12.59	30.09	60.47	16.36	43.33	31.91	19.60	24.37
Restoration															
Median	1.55	5.32	6.90	6.20	3.87	4.68	.00	.00	1.68	4.03	5.00	13.23	.00	3.00	6.38
Mean	2.56	4.86	7.25	9.07	5.92	6.36	2.15	1.43	3.15	7.20	7.53	16.02	4.30	4.16	9.44
Std Deviation	2.91	3.64	5.68	9.77	5.79	7.22	2.85	2.85	5.70	11.76	7.57	16.23	6.51	4.77	8.69
Minimum	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Maximum	9.32	10.87	19.96	32.90	17.17	20.25	9.14	9.14	22.29	47.29	25.77	51.83	20.74	15.32	31.03

Notes: Percentage of time was calculated across three days. Time spent at a specific level was divided by waking hours per day and averaged across three days. Levels of experience were rated 1-5.

[a] Low levels are the sum of scores 1 and 2

[b] Mid levels are scores of 3

[c] High levels are the sum of scores 4 and 5

Table 14

Correlation of Ryff's Scales of Psychological Well-Being Constructs and Weighted Percentages of Time Spent in Levels of Pleasure, Productivity and Restoration in Activity Types (n =15)

		Autonomy	Environmental Mastery	Personal Growth	Positive Relations with Others	Purpose in Life	Self-Acceptance
Self Care							
	Productivity						
	Level 4	---	---	---	---	-.615*	---
	Level 5	.572*	---	---	---	---	---
	Restoration						
	Level 3	-.571*	---	---	---	---	---
	Level 4	---	---	---	---	---	---
	Level 5	---	-.534*	-.514*	---	-.524*	---
Home Management							
	Pleasure						
	Level 4	---	---	---	---	-.587*	---
	Productivity						
	Level 3	---	---	---	---	-.577*	---
	Level 5	.581*	---	---	---	---	---
High Demand Leisure							
	Pleasure						
	Level 3	.656**	---	---	---	---	---
	Productivity						
	Level 3	.577*	---	---	---	---	---
	Level 5	.650*	---	---	---	---	---
	Restoration						
	Level 3	.663**	---	---	---	---	---
	Level 5	---	-.544*	---	---	---	---
Low Demand Leisure							
	Pleasure						
	Level 1	---	---	.574*	---	.573*	---
	Productivity						
	Level 5	.547*	---	---	---	---	---
Social							
	Pleasure						
	Level 4	---	---	.659**	.575*	.637*	.582*
	Productivity						
	Level 2	---	.680**	---	---	---	---
	Level 3	---	---	---	---	.540*	---
	Level 4	-.611*	---	---	---	---	---
	Level 5	---	-.580*	---	---	---	---
	Restoration						
	Level 2	---	.680**	---	---	---	---
	Level 3	---	---	---	---	.540*	---
	Level 4	-.611*	---	---	---	---	---
	Level 5	---	-.580*	---	---	---	---

*p < .05. ** p < .01.

Notes. --- indicates no significance found. Weighted percentages of time were calculated across three days. Time spent at a specific level was divided by waking hours per day and averaged across three days.

Self-care activities. Experiences of both productivity and restoration in self-care activities were negatively associated with several of Ryff's Scales of Psychological Well-Being. Specifically, productivity level 4 (high) and restoration level 5 (extremely high) negatively correlated with purpose in life. In other words, as shown in Table 14, higher percentages of time coupled with high experiences of productivity and restoration during self-care activities were associated with a lower sense of purpose in life. Additionally, more time spent in extremely high experiences of restoration during self-care activities such as dressing and grooming also correlated with a lower sense of environmental mastery and personal growth. A positive correlation was found between productivity level 5 (extremely high) and autonomy during self-care activities. As seen in Table 14, there was an association between report of higher levels of autonomy and greater percentage of time experiencing extremely high levels of productivity or accomplishment during activities related to caring for self.

Home management activities. Subjective experiences during home management tasks (i.e., cleaning the house, making meals, watering the lawn) also correlated positively and negatively with two of the Ryff's Scales of Psychological Well-Being. Experiences of pleasure level 4 (high) and productivity level 3 (mid) correlated negatively with purpose in life suggesting a similar association as described in self-care activities. In another way, higher percentages of time experiencing an average or mid sense of productivity during home management tasks led to a lower sense of purpose in life, as did experiencing a greater percentage of high pleasure during activities related to care of the house. Also similar to the associations identified during self-care activities,

extremely high experiences of productivity were positively correlated with a greater sense of autonomy.

Low demand leisure activities. Interestingly three positive correlations were found between experiences of pleasure and productivity during engagement of low demand leisure, which was defined as leisure not requiring physical endurance or strength. Examples might include reading or watching sports. A high percentage of time spent experiencing no pleasure (absent) during low demand leisure positively correlated with personal growth and purpose in life (See Table 14). Said in another way, participants who spent a higher percentage of time during low demand leisure with no sense of pleasure had a higher sense of personal growth and purpose in life. The last positive correlation found was between a greater percentage of time in extremely high productivity experiences (level 5) during low demand leisure activities and having a higher sense of autonomy.

High demand leisure activities. Experiences of pleasure, productivity, and restoration in high demand leisure activities were positively correlated with autonomy as shown in Table 14. Higher percentages of time experiencing neutral or mid-level pleasure and restoration were the strongest correlations with autonomy. Weaker but still significantly positive correlations were found with autonomy and a greater percentage of time spent in mid and extremely high (level 5) productivity. In addition, there was one negative correlation between experiences of restoration and environmental mastery. A greater percentage of time spent experiencing extremely high restoration during leisure activities requiring physical strength and endurance was associated with a lower sense of environmental mastery.

Social activities. More correlations were found with social activities and Ryff's Scales of Psychological Well-Being than any other type of activity (see Table 14). Like high demand leisure activities, experiences of pleasure, productivity, and restoration in social activities were found to correlate positively and negatively with various scales. The strongest positive correlations were with productivity and restoration level 2 (low) and environmental mastery. In other words higher percentages of time experiencing a low sense of productivity and restoration when engaging in social activities were associated with a stronger sense of environmental mastery. Interestingly the reverse relationship was also found: a higher percentage of time experiencing extremely high (level 5) productivity and restoration was found to associate with a lower sense of environmental mastery.

Two other negative correlations were found in which a greater percentage of time spent experiencing high (level 4) productivity and restoration during activities done with others (e.g. eating out in a restaurant, visiting with family and friends, worship) was associated with a lower sense of autonomy. Four of the remaining six positive correlations were seen when a higher percentage of time was spent experiencing high (level 4) pleasure during social activities. These associations suggest that those who have greater occurrences (time) of high pleasure during social activities also have a stronger sense of personal growth, positive relationships with others, a purpose in life, and self-acceptance. Although not quite as strong, a stronger sense of purpose in life was associated with a higher percentage of time in which one experiences level 3 (mid or neutral) productivity and restoration during social activities.

Hypothesis 3: There will be correlations among *PPR Profile* indicators of subjective experiences and perceived physical and mental health. Partial support was found for Hypothesis 3. Positive and negative correlations were found among the *PPR Profile indicators* of weighted percentages of time in levels of pleasure, productivity, and restoration during activities with SF-36v2 physical and mental health scales (See Table 15). Again all correlations were found to be substantial (Vaske, 2008). Overall there were fewer correlations found between subjective experiences during different activity types and the four physical health scales of the SF-36v2 than with the four mental health scales. Correlations with the physical health scales are presented first.

Associations with SF-36 v2 Physical Health Scale.

Self-care, low demand leisure, and home management activities. No statistically significant associations were found between percentages of time spent in levels of pleasure, productivity, and restoration in self-care or low demand leisure activities with any of the physical health scales as shown in Table 15. A strong positive correlation between a higher percentage of time spent in level 3 (mid) productivity during home management activities and Bodily Pain (SF-36*v2*) was found. In other words, participants who experienced a greater amount of time with a neutral sense of productivity while engaged in home activities reported less pain and that pain is not interfering with daily activities.

*High demand leisure activities***.** The same association between level 3 productivity and Bodily Pain (SF-36*v2*) was observed during high demand leisure activities as in home management activities described above (see Table 15). Conversely, there was a negative correlation between Bodily Pain (SF-36*v2*) and a higher percentage of time

Table 15

Correlations of Rand SF-36v2 Constructs and Weighted Percentages of Time Spent in Levels of Pleasure, Productivity and Restoration in Activity Types (n = 15)

	Physical Functioning	Role Functioning	Bodily Pain	General Health	Vitality	Social Functioning	Role Emotional	Mental health
Self Care								
Pleasure								
Level 1	---	---	---	---	---	-.500*	---	---
Low Demand Leisure								
Restoration								
Level 2	---	---	---	---	---	.547*	---	---
Home Management								
Productivity								
Level 3	---	---	.647**	---	---	---	---	---
High Demand Leisure								
Pleasure								
Level 1	---	---	---	---	---	-.550*	---	---
Level 3	---	---	---	---	---	---	.639**	.531*
Productivity								---
Level 3	---	---	.647**	---	---	.514*	---	---
Restoration								
Level 3	---	---	---	---	---	.551*	.657**	.577*
Level 4	---	---	---	.523*	---	---	---	.615*
Level 5	---	-.564*	-.568*	-.578*	---	-.538*	---	-.529*
Social								
Productivity								
Level 2	.516*	.532*	---	---	.589*	---	.657**	.524*
Level 4	---	---	---	---	---	-.625*	-.538*	---
Level 5	---	-.685**	---	---	-.640**	-.590*	---	---
Restoration								
Level 2	.516*	.532*	---	---	.589*	---	.657*	.524*
Level 4	---	---	---	---	---	-.675*	-.538*	---
Level 5	---	-.685**	---	---	-.640**	---	-.590*	---

*p < .05. ** p < .01.

Notes. --- indicates no significance found. Weighted percentage of time was calculated across three days. Time spent at a specific level was divided by waking hours per day and averaged across three days.

coupled with extremely high experiences of restoration during leisure activities that require physical strength and endurance. Said in another way, those reporting that bodily pain was high and did interfere with daily activities conveyed that they experienced a higher percentage of time spent feeling extremely high restoration when physically active during leisure. Negative correlations were also found with Role Functioning (SF-36*v2*) and General Health (SF-36*v2*) and a higher percentage of experiences of extremely high restoration during high demand leisure activities. A positive correlation noted during high demand leisure activities was that General Health (SF-36*v2*) was positively correlated with level 4 (high) restoration.

Social activities. Experiences of both productivity and restoration in social activities were positively associated with the same two physical health scales. Specifically, productivity and restoration level 2 (low) positively correlated with Physical Functioning (SF-36*v2*) and Role Functioning (SF-36*v2*) (See Table 15). In other words, higher percentages of time coupled with a sense of low productivity and restoration during social activities were associated with greater physical and role functioning. Interestingly, the reverse relationship was also found: a higher percentage of time experiencing extremely high (level 5) productivity and restoration was found to be associated with greater problems reported in physical and role functioning.

Associations with SF-36v2 Mental Health Scales.

Self-care, low demand leisure, and home management activities. Similar to the correlations found between weighted percentages of time spent at various levels of pleasure, productivity, and restoration and physical health scales, there were two correlations found with self-care and low demand leisure activity experiences and mental

health scales. Also no correlations were found related to experiences during home management activities and mental health scales. Subjective experiences during self-care and low demand leisure activities correlated with Social Functioning (SF-36*v2*). Higher percentages of time experiencing no pleasure during self-care correlated negatively with Social Functioning (SF-36*v2*). However higher percentages of time experiencing low restoration during low demand leisure correlated positively with Social Functioning (SF-36*v2*). This indicates that participants who spent more time experiencing no sense of pleasure during self-care reported they had lower social functioning. In the opposite, participants who spent a higher percentage of time experiencing low restoration during low demand leisure reported higher social functioning.

High demand leisure activities. Experiences of pleasure, productivity, and restoration during high demand leisure activities were found to positively and negatively correlate with three of the mental health scales of the SF-36*v2* (See Table 15). Interestingly a higher percentage of time spent coupled with extreme experiences, including no sense of pleasure and extremely high experiences of restoration negatively correlated with Social Functioning (SF-36*v2*). Additionally extremely high experiences of restoration negatively correlated with Mental Health (SF-36*v2*). Higher percentages of time spent in the mid ranges of subjective experiences positively correlated with Social Functioning (SF-36*v2*), Mental Health (SF-36*v2*) and Role Emotional (SF-36*v2*). One correlation was found with a higher percentage of time in mid range productivity and Social Functioning (SF-36*v2*). Both a higher percentage of time spent in mid range pleasure and mid and high levels of restoration experiences during high demand leisure activities correlated positively with Mental Health (SF-36*v2*) and Role Emotional (SF-

36*v2*). In other words participants who identified higher percentages of time experiencing mid to high pleasure and restoration during high demand leisure activities reported their physical and emotional health did not interfere with their ability to engage in daily activities.

Social activities. Similar to the relationship between *PPR Profile* indicators and Ryff's Scales of Psychological Well-Being there were more correlations with the SF36v2 mental health scales and subjective experiences that occurred during social activities (See Table 15). However there were no correlations found in experiences of pleasure. As reported in high demand leisure activities, higher percentages of time spent coupled with low experiences of productivity and restoration positively correlated with Vitality (SF-36*v2*), Role Emotion (SF-36*v2*) and Mental Health (SF-36*v2*). These correlations suggest an association between experiencing low productivity and restoration during social activities and feeling that physical and emotional health do not interfere with everyday activities. Conversely, negative correlations were found between higher percentages of time spent in high and extremely high experiences of productivity and restoration and Vitality (SF-36*v2*), Social Functioning (SF-36*v2*) and Role Emotion (SF-36*v2*). Those who experience higher percentages of time in high and extremely high productivity and restoration during social activities reported that their physical and social health do interfere with daily life.

Discussion

The purpose of this study was to examine the consequential and convergent evidence of construct validity of the *PPR Profile* designed to capture the objective and subjective experiences of daily activities. The results provide evidence for the *PPR*

Profile's use as an instrument designed to enhance people's awareness of daily occupations and associated experiences through reflection with some caution. Yet limited convergent validity evidence was found between *PPR Profile* indicators and the three health and well-being measures. Convergent validity evidence results will be discussed first with an emphasis on identifying possible reasons for the lack of evidence gathered. Next consequential validity evidence is discussed followed by the study's limitations and the researcher's recommendations for future use and research of the *PPR Profile*.

Convergent Validity Evidence

The correlations between *PPR Profile* weighted percentages of time in various levels of subjective experiences and perceived health and well-being revealed minimal convergent validity evidence. No correlations were found between experiences of pleasure, productivity, and restoration and depression. This may be due to the fact that the items on the CES-D scale are broad statements related mostly to affect rather than actions. Or it may be due to other factors such as social support that were not accounted for in this study. Lynch and colleagues discuss the importance of social factors related to quality of life post stroke (Lynch et al., 2008).

Correlations found among experiences of pleasure, productivity and restoration and Ryff's Scales of Psychological Well-being and SF36v2 scales were often not intuitive and did not reveal any strong or clear patterns of relationships. Overall, the limited convergent validity evidence of the *PPR Profile* found may be due to several reasons, three of which include (a) inadequate aggregation of *PPR Profile* data to run correlations; (b) unsuitable measures used to examine convergent validity evidence, and (c) insufficient sample size with great variability in demographics.

Inadequate aggregation of the PPR Profile data. Limited convergent validity evidence between *PPR Profile indicators* and the three health and well-being measures may be due to (a) the design of the *PPR Profile* which measures three subjective experiences simultaneously, or (b) how data were combined to create the indicators. Rating pleasure, productivity, and restoration for each unit of activity during the day produced a large amount of data with the potential to be aggregated in many different ways. Additionally the belief that the *PPR Profile* highlights the inter-relatedness of occupational experiences compounds the issue. Initial analysis of the *PPR Profile data* revealed that use of subjective experience averages across a day did not represent the variability in participants' subjective experiences. Therefore combining Lo and colleagues (Lo, 1996; Lo & Huang, 2000; Lo & Zemke, 1997) and Kahneman and colleagues (Kahneman, et al., 2004; Lo, 1996; Lo & Huang, 2000; Lo & Zemke, 1997; Stone, et al., 2006) methods used to measure affective experiences, percentages of time spent in activity types at various levels of subjective experiences were aggregated.

However, is measuring time spent in levels of subjective experience the most logical way to aggregate the data? Would there be alternative means to aggregating the data that would better reflect a person's overall subjective experiences? For example, would aggregation of the *PPR Profile* data in a manner that reflect the variability of subjective experiences be more representative of the data (i.e., consistently experiences neutral pleasure during all activities, or experiences the full range of pleasurable experiences [absent to extremely high])? *PPR Profile* indicators that combine or comprise aspects of more than one subjective experience may also better reflect the nature of subjective experiences that are related to one's sense of health or well-being.

Unsuitable external measures. Another possible reason for the limited convergent validity evidence is that unsuitable external measures were chosen to evaluate convergence between the *PPR Profile* and related variables. The three health and well-being measures were chosen because (a) of the underlying theory or assumptions that substantiates the *PPR Profile* constructs (i.e., occupation and particularly subjective experiences of occupation influence and are influenced by health and well-being) and (b) the strong well-established psychometric properties of the measures. However, because of the theoretical nature of the relationship between occupation and health and well-being, these may not have been the most appropriate measures to assess the actual constructs of the *PPR Profile*.Continued examination of convergent validity evidence would provide important information regarding the major constructs of the *PPR Profile*. Utilization of established measures focused on the specific constructs of pleasure, productivity or restoration may provide an alternative means. Yet a review of the literature revealed only a few pleasure assessments which have been used primarily in psychiatry (Endicott, Nee, Harrison, & Blumenthal, 1993; Franken, Rassin, & Muris, 2007; Nakonezny, Carmody, Morris, Kurian, & Trivedi, 2010; Stevanovic, 2011) and one assessment focused on restorative activities among older adults with no published psychometrics (Jansen, 2008).

Sampling limitations. The last reason discussed here for the limited correlations between *PPR Profile* indicators and the health and well-being measures is the small sample size (n = 25) with great variability in demographic characteristics (see Table 8). Only 15 of the 25 participants accurately completed three full recordings of the *PPR Profile*, thus further reducing the sample size. Sample size in one variable is directly

related to power of statistical tests (Pedhazur & Schmelkin, 1991). Given the multidimensional and complex nature of occupational experiences, the variability in demographic characteristics (i.e., gender, living situations, time since stroke) are all potential extraneous variables that were not controlled for within this study (Pedhazur & Schmelkin, 1991).

Consequential Validity

The aim of the examination of consequential validity was to investigate the effects of its use by community individuals living with the consequences of stroke. One of the main objectives of the *PPR Profile* is to enhance people's awareness of their daily activities and related experiences of pleasure, productivity and restoration. As stated in the literature, enabling people to become aware of their occupations is necessary to encourage or facilitate changes in occupations that will support health and well-being (Clark, et al., 2004). A combination of the qualitative results from this study offer evidence that the *PPR Profile* can assist individuals in the examination of subjective experiences.

Completion of the *PPR Profile* did lead to an increased awareness for all participants in this study. The focus of the awareness that people gained varied. Some became aware of their activities, some their associated experiences with their activities, and others the factors they felt influenced what they did and how it was experienced. These insights led some to experience a greater sense of motivation in engaging in their everyday occupations with new perspectives or purpose. While the majority felt that reflecting on pleasure, productivity, and restoration was good, determining the level of experiences was one of the most challenging aspects of the instrument.

Recognition of one's activities and experiences moved beyond awareness as some participants placed a value judgment on their activities and subjective experiences. From their perspective, at times those assessments were positive (i.e., I am doing more than I thought I was); other times negative (i.e., I watch too much TV). One of the unintended effects was the emotional impact that occurred for some participants. Reflection on one's current activities led to or caused some participants to compare their current abilities and inabilities to their abilities prior to their stroke. While this was not the intent, this information is invaluable in improving the use and interpretation of the *PPR Profile* as an instrument.

While the researcher was aware of the challenge that reflection might bring for people due to the cognitive demand of rating their experiences, she was not cognizant of how reflection would be so strongly tied to one's past experiences and abilities. When an instrument, such as the *PPR Profile,* asks a person to examine his or her activities and experiences, the process is not just a cognitive activity, but a more complex experience in itself that can bring up its own experiences, memories, and realizations; some of which may not be appreciated or desired.

It is unclear whether reflection upon pleasure, productivity, and restoration, which have been identified in the literature as basic biological and sociological needs met through occupational engagement was a part of what caused some participant's strong reactions. "I only saw the things I use to enjoy that I can't do anymore." Or as another participant commented it felt unfair to ask about pleasure, productivity, and restoration because life is different following the stroke. These types of comments support the premise identified in Christiansen's (1999) work that suggest that occupations are not just

what we do, but they go beyond to influence our actual identity and sense of competence. Rochette and colleagues (2006) have also discussed the meaning behind occupational performance and participation. Occupational engagement not only meets our basic needs, but it also reflects activities that are integrated into who we are, how we enjoy life and how we see and experience ourselves (Rochette, et al., 2006).

Participants in the study clearly articulated that the use of the *PPR Profile* may not always be feasible for people following stroke or other significant changes in life. The timing of when the *PPR Profile* might be used was one factor identified to consider because of potentially limited cognitive abilities and possible emotional limitations. As one participant shared, if she would have had to do this at a time when she had been sick, she felt like it would have put her over the edge; she would have lost all hope. Another participant suggested that the therapist be the one to determine if and when the timing would be appropriate to ensure more of a therapeutic use of the instrument. Despite when the *PPR Profile* may be used, it appears that at times people may come to realize that the reality of their occupational performance and participation does not fit with their expectations of what they would prefer reality to be (Rochette, et al., 2006). This may provide an opportunity to assist people with redefining their expectations and creating a better fit between what is and what is possible (Rochette, et al., 2006).

The results of this study do illustrate the value in examining validity as a unified concept, gathering evidence from different sources. In particular, without the exploration of consequential validity evidence, the researcher's awareness of the impact of the *PPR Profile* and its effects would be limited. These results also illustrate the value of gaining the perspective of the examinee, or those who will be using the instrument.

Limitations

Caution must be taken with the interpretation of the results from this study due to the small sample size of people who live with the consequence of stroke in one area of the country. The majority of the participants suggested that at least three days, if not more, were required to reflect their subjective experiences. Because only three days of data were gathered this may be seen as a potential limitation of the study. Results of this study cannot be generalized to other populations.

Future Recommendations and Research

The use of mixed methods enriched this validation study of the *PPR Profile* as an instrument designed to capture the subjective experiences of daily life through measuring levels of pleasure, productivity and restoration. Because it measures subjective experiences at the level of each activity unit or episode, the *PPR Profile* provides a wealth of information that can assist both the practitioner and researcher in understanding the uniqueness and complexity of human occupation. At this time, the researcher recommends the use of the *PPR Profile* as an instrument to increase one's awareness of daily occupations and related experiences. Exploration of its clinical utility from clients and practitioners perspectives is essential. Continued refinement and study of the *PPR Profile* is required to explore its potential as a measure that would provide an alternative means to study the relationship between occupation and health and well-being.

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CHAPTER 5: KEY FINDINGS AND LESSONS LEARNED

Introduction

In this research project, I set out to: (a) articulate the theoretical underpinning of the *Daily Experiences of Pleasure, Productivity and Restoration Profile* that was designed to capture the objective and subjective experiences of occupational engagement, and (b) to examine the developing validity evidence of the instrument through various stages of the *PPR Profile's* development. Messick's (1993) notion of validity as a unified concept, and his framework including consequential validity evidence provided the theoretical foundation for the initial validation studies. In this chapter, I summarize the key findings of the examination of the *PPR Profile*, including my current thoughts on the use of the *PPR Profile*, share some of the lessons and insights learned through the process, and identify actions to be taken in the continuing development and validation of the *PPR Profile.*

Key Findings

In Chapters 2, 3 and 4, I reported on several of the major steps undertaken during the development and validation of the *PPR Profile*. Chapter 2 summarized the theoretical foundation of the *PPR Profile*. Articulation of the theoretical foundation was the fundamental phase in the clarification of the *PPR Profile's* purpose. This articulation provided structure for the evaluation of the consequential validity evidence.

The studies presented in Chapters 3 and 4 were designed in part to gather consequential validity evidence from the perspective of people who might likely use the *PPR Profile* in occupational therapy. Results from these studies supported one of the major intents of the *PPR Profile*: that it is an instrument designed to facilitate examination of subjective experiences related to daily occupations in order to increase awareness. Participants from both studies shared that completion of the *PPR Profile* required them to reflect upon their daily activities in a distinctive way. During the follow-up interviews, many participants shared insights gained about themselves, their activities, and their patterns of subjective experience. Only a small portion of participants in either study reported some burden or interference with their daily activities as they completed the *PPR Profile*. Many valuable recommendations were gained for continued development and use of the Profile (See Appendix E for recommendations gained from the Chapter 4 study).

One of the unintended effects discovered was that completion of the *PPR Profile* led some participants who had had a stroke to compare their current life to life preceding their stroke. This unintended consequence caused what appeared to be a greater emotional response during or resulting from engagement in the *PPR Profile*. A question that emerges is: does the activity of completion of the *PPR Profile* by itself influence experiences of daily life? Additionally another question that needs to be explored is: how does one's perception of the past influence use of the rating scale and its reliability? In some ways comparing current to past experiences is no different than any other contextual factor that we know that influences experiences of one's occupations.

Another key finding from the Chapter 4 study was the limited convergent validity evidence of the *PPR Profile*. Several reasons for the results found were discussed which provide insights into next steps that may assist with refinement and development of the *PPR Profile*. Prior to its use as an instrument used in descriptive research more work is required to ensure suitable and meaningful *PPR Profile* indicators.

Potential Use of the *PPR Profile*

At this time in the development and validation of the *PPR Profile,* I believe that the instrument has potential utility for clinical practice and use in descriptive research. For use in practice, the *PPR Profile* may add to the field of occupational therapy's client-centered tools. As an instrument that supports examination of subjective experiences of pleasure, productivity, and restoration, the *PPR Profile* may assist with gathering important data regarding daily activities, their context, and associated experiences. Findings from both Chapters 3 and 4 uncovered the importance of the utilization of a follow-up interview after completion of the *PPR Profile*. It is my belief that the interview contributed to the effectiveness of the *PPR Profile's* intended purpose.

Several participants in both studies suggested several different uses of the *PPR Profile*. Some felt that repeated administration of the *PPR Profile* had the potential to allow people to see change over time. Guidance or follow-up on how to use the information gleaned from completion of the *PPR Profile* was also suggested or desired by some participants. Expansion of the use of the *PPR Profile* beyond assessment to assist with goal setting and individualization of occupational therapy services may facilitate individuals taking on a more active role during occupational therapy and in daily life (Duggan, 2005). Lastly, while the *PPR Profile* has not been validated as a

balance instrument, I believe that the design and format of the *PPR Profile* facilitates reflection of what activities are performed and the associated experiences and contextual factors influencing those experiences, thus lending it to being used as an occupational balance instrument. Backman (2005) suggested that balance measures should be designed as client-centered, allowing individuals to reflect and identify their own occupational satisfaction and concerns. Future actions for refinement and development as a clinical tool are discussed under actions for development and validation of the *PPR Profile*.

The utility of the *PPR Profile* as a research measure is currently limited without further development and validation. However, I believe that the *PPR Profile* at this time could provide a rich phenomenological perspective on how individuals organize their daily occupations in order to meet their basic needs as well as a way to examine the relationship of subjective experiences to health and well-being. It is my hope that the *PPR Profile* will provide a way to study restoration and to discover important ways that occupation can be utilized to prevent illness or dysfunction and restore health and well-being.

Lessons Learned and Insights Gained

My journey over the past six years of embarking on the development and validation of the *PPR Profile* was both unexpected and life changing. I have gained a new appreciation for the effort, integrity, and discipline required to initiate the development of an instrument. In this section, I discuss some of the lessons learned and insights gained. While I could share many lessons learned, I have chosen to focus on three: 1) the conceptualization of validity as strands of evidence; 2) the instrument development process, and 3) the challenges in the examination of reliability in a measure designed to

capture subjective experiences. Following a brief discussion of each lesson, I will provide a summary of my insights.

The Conceptualization of Validity as Strands of Evidence

Validity is a concept that has evolved over time. Today, validity is seen as a "unitary concept" built through the accumulation of various aspects of validity that provide support for the use and interpretation of an assessment. This perspective, which is found in the current *Standards* (American Educational Research Association (AERA), 1999), is however not without ongoing debate. It is also anticipated that as knowledge related to measurement and research analysis continues to evolve, so will the concept of validity.

Engagement in this project highlighted three key realities for myself. First, validation of an assessment is an ongoing, never complete process due to the nature of reliability and validity. These concepts are not tied to the assessment itself, but to the scores or outcomes associated with a specific sample, in a specific context. Secondly, I now understand how aspects versus types of validity influence how validation research is completed and reported. In particular I recognize the need to integrate and bring different aspects of validity together to strengthen what is known about and from the assessment. These first two realities lead me to the importance of being intentional when planning validation research of a developing assessment. Remaining cognizant of the various aspects of validity and how they can be evaluated will assist in the development of future studies with the *PPR Profile.* Lastly, I recognize the controversial nature of consequential validity as a strand of evidence, but have come to agree with and appreciate Messick's (1993) inclusion of consequential validity evidence. While there is much room for my

growth in understanding Messick's work and conceptualization of consequences, I feel that the examination of consequential validity evidence in the *PPR Profile* caused me to think about the intent and purpose of the instrument and to keep a broader perspective. More importantly the integration of consequential and external aspects of construct validity evidence found in the Chapter 4 study allowed for recognition of greater insights into the use and interpretation of *PPR Profile* indicators.

The Instrument Development Process

In the literature, the instrument development process is often described as a series of distinct steps or phases. In this project, I learned that the process was not linear, but iterative. For example, the first step in the development of an instrument is the articulation of the intended purpose. This purpose is often viewed as the foundation that the designer can return to. I found that while this was very true, I was continually working to refine how I conveyed the purpose and the underlying beliefs. In the initial phases of pilot testing *the PPR Profile,* the importance of clearly articulating the underlying theory of the instrument became evident. The use of hypothesis testing became an essential step in beginning validation of the *PPR Profile*. Whether the hypothesis is supported or not is not as critical to the process as the researcher's ability to appraise the results and suggest alternative explanations or methods to move forward in the validation process.

The development and validation of the *PPR Profile* was also an iterative process. I learned that one does not just develop and then validate, but that in the process of validation, development of the instrument continues by way of enhancements and modifications. During the validation process I learned the value in and challenges of

using mixed methods. Little has been written about the utility of mixed methods for strengthening the development and validation of instruments. In this project I learned that one of the challenges as well as exciting features of mixed methods is determining ways to converge or bring the information together. Triangulation or the process of converging methods or data has what I believe to be great potential for enhancing the validation of assessments like the *PPR Profile*.

Examination of Reliability and Validity Evidence in a Measure Designed to Capture Subjective Experiences

Although the *PPR Profile* is still in the early phases of development, it appears from the data that the process undertaken by individuals when using the *PPR Profile* assists them and the examiner in exploring subjective experiences. However, without clarification and development of a means for evaluating reliability of the instrument, the validity of the instrument remains tenuous as a tool that captures and compares subjective experiences within populations. My readings about and exploration of reliability of the *PPR Profile* is a work in progress. I have found differing discussions on the reliability and validity of time use data. The majority of references report on the process of obtaining objective data, suggesting that time use methods are more reliable and valid than stylized questionnaires or retrospective reporting.

Two studies that specifically examined affective experiences related to daily activities did use a Likert scale similar to the *PPR Profile* rating scale (Krueger & Schkade, 2008; Lo & Zemke, 1997). Both studies examined test-retest reliability. Lo and Zemke (1997) gathered data for a full seven days over three different periods of time when studying the affective experiences during daily occupations and well-being. They

calculated affective scores and then compared the patterns of experiences for each individual across the three weeks using correlation co-efficients. Test-retest reliability was then examined comparing Week 1 to Week 2 to Week 3 data.

In the study in Chapter 4, my initial examination of reliability led to several discoveries. First while there was good use of the range of the rating scale (1-5) by the sample, upon closer review of the individual data, participants used the scale consistently but not to its full range. This may reflect inconsistency, lack of understanding of the scale, or that some people see experiences in a narrow range. But this could also suggest that some people did not experience certain levels of experiences within the three days recorded. In visual examination of the usage of the scale in similar activity type episodes, and combining the quantitative data with the qualitative data gained from the interviews, it appears that participants in this study used the three scales of pleasure, productivity, and restoration differently. Further study and evaluation of methods used to assess reliability will be important next steps to determine if the *PPR Profile* can become a psychometric measure.

Actions for Development and Validation of the *PPR Profile*

Thinking back on the development of the *PPR Profile* and what I have learned, I look forward to moving the *PPR Profile* toward a reliable, valid, and clinically useful instrument for occupational therapists and occupational scientists. Continued refinement and use of the *PPR Profile* in practice and research will ultimately reveal its applications. The following are my current priorities.

- Refinements and enhancements of the *PPR Profile* focusing on feedback received in the two studies. Considerations will be given to modification of the rating scale,

examples, and introduction to the *PPR Profile*. The major enhancement to the *PPR Profile* will be the incorporation of a systematic method to structure a way to share information gleaned from the *PPR Profile* and promote collaboration between the therapist and client to identify desired areas of change. Once people identify areas for change related to their daily activities and experiences, goals and a plan to move toward desired change can be established. One such method that might be incorporated is Goal Attainment Scaling (GAS) (Becker, Stuifbergen, Taxis, Beal, & Pierini, 2009; Yip et al., 1998). As an individualized measure, GAS is a method designed to track within-subject change over time (Ottenbacher & Cusick, 1989). Goal attainment scaling has been used in combination with other occupational performance measures (i.e., Canadian Occupational Performance Measure) (Doig, Fleming, Kuipers, & Cornwell, 2010). It is anticipated that inclusion of a system that guides goal development and provides an outcome measure of goal attainment would potentially strengthen the format of the *PPR Profile* to enhance the ability to evaluate validity evidence with use across multiple samples or client populations.

- Development of a manual to support proper administration and use of the *PPR Profile* data.
- Examination of alternative ways to report and use *PPR Profile* information including *PPR Profile* indicators.
- Investigation of the *PPR Profile's* reliability and validity as a measure that would allow for comparison studies in different contexts, with larger samples, and over extended period of times.

- Exploration of the clinical utility of the *PPR Profile*, with emphasis on gathering perspectives of both therapists and clients in a variety of settings.

Insights Gleaned from the Project

I conclude this project by sharing some of my insights gained through the process.

- Although I have previously discussed my thoughts on Messick's (1993) work, one additional insight gained was how study of his theoretical model brought me to a new awareness of my own often tacit values and beliefs that continually influence what I see and how I conceptualize ideas and constructs. Messick's model encouraged me to examine and reflect upon even the words used in the development of the *PPR Profile*. Restoration is one word that I feel continues to need further refinement or clarification in the *PPR Profile.* Additionally, I am now aware of the need to stop and consider the use of language and what might be unintended consequences of words chosen to reflect ideas.
- While this project was not my first endeavor into the use of mixed methods, I have increasingly recognized the value of using both quantitative and qualitative methods simultaneously, particularly for instrument development and validation. I believe that stretching oneself to examine constructs or ideas from different perspectives allows for greater depth of understanding and possibly brings new insights. Mixing quantitative and qualitative methods did just this for me. The process of engaging in qualitative research assisted in gaining insights into my own values and beliefs about the daily experiences of pleasure, productivity and restoration.
- Not having any previous experiences with time use research, I was and still am astounded by the amount of data gathered. Never before have I recognized the

importance of building and using effective data management systems. Additionally the importance of preplanning one's research questions and considering the data needed to answer the specific questions has become clearer to me.

- The process of instrument development requires significant collaboration. I look forward to expanding my relationships with mentors, and in particular finding colleagues who have interests in instrument development and in understanding and exploring the subjective experiences of daily activities.
- I feel this project has afforded me new insights related to occupation and, in particular, the subjective experiences of pleasure, productivity, and restoration. As a professional interested in the study of human occupation, I am intrigued by the construct of restoration and what appears to be a temporal context that influences subjective experiences of daily occupations. On a personal level I have gained (a) new insights into the inter-related nature of pleasure, productivity, and restoration, (b) an increased sense of awareness for monitoring my own subjective experiences to identify needs for change in occupation, and (c) new interests in studying and exploring restoration.

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Appendix A

Reliability Statistics for Health and Well-Being Measurements: Rand SF-36v2

Reliability for Rand SF-36v2 (N = 24)

	Item Total Correlation	Alpha if deleted	Cronbach's Alpha
Physical Function (PF)			.914
3. The following questions are about activities you might do during a typical day. Does your health now limit you in these activities? If so, how much?			
a. Vigorous activities, such as running, lifting heavy objects, participating in strenuous sports.	.455	.917	
b. Moderate activities, such as moving a table, pushing a vacuum cleaner, bowling, or playing golf.	.733	.903	
c. Lifting or carrying groceries.	.656	.907	
d. Climbing several flights of stairs.	.821	.897	
e. Climbing one flight of stairs.	.553	.913	
f. Bending, kneeling, or stooping.	.509	.916	
g. Walking more than a mile.	.813	.898	
h. Walking several hundred yards.	.893	.892	
i. Walking one hundred yards.	.756	.901	
j. Bathing or dressing yourself.	.644	.908	
Role Physical (RF)			.920
4. During the past 4 weeks, how much of the time have you had any of the following problems with your work or other regular daily activities as a result of your physical health?			
a. Cut down on the amount of time you spent on work or other activities.	.740	.926	
b. Accomplished less than you would like.	.873	.878	
c. Were limited in the kind of work or other activities.	.850	.885	
d. Had difficulty performing the work or other activities (for example, it took extra effort).	.816	.897	
Bodily Pain (BF)			.888
7. How much bodily pain have you had during the past 4 weeks?	.804	- -	
8. During the past 4 weeks, how much did pain interfere with your normal work (including both work outside the home and housework)?	.804		
General Health (GH)			.852
1. In general, would you say your health is:	.826	.725	
11. How TRUE or FALSE is each of the following statements for you?		.	
a. I seem to get sick a little easier than other people.	.709	.822	
b. I am as healthy as anybody I know.	.737	.600	
c. I expect my health to get worse.	.509	.423	
d. My health is excellent.	.658	.725	

(Appendix A continues)

(Appendix A continued)

	Item Total Correlation	Alpha if deleted	Cronbach's Alpha
Vitality (VT)			.839
9. These questions are about how you feel and how things have been with you during the past 4 weeks. For each question, please give the one answer that comes closest to the way you have been feeling. How much of the time during the past 4 weeks…			
a. Did you feel full of life?	.573	.844	
e. Did you have a lot of energy?	.754	.757	
g. Did you feel worn out?	.702	.784	
i. Did you feel tired?	.678	.795	
Social Function (SF)			.716
6. During the past 4 weeks, to what extent has your physical health or emotional problems interfered with your normal social activities with family, friends, neighbors, or groups?	.560	-	
10. During the past 4 weeks, how much of the time has your physical health or emotional problems interfered with your social activities (like visiting friends, relatives, etc.)?	.560	-	
Role Emotional (RE)			.888
5. During the past 4 weeks, how much of the time have you had any of the following problems with your work or other regular daily activities as a result of any emotional problems (such as feeling depressed or anxious)?			
a. Cut down on the amount of time you spent on work or other activities	.816	.813	
b. Accomplished less than you would like.	.892	.745	
c. Did work or other activities less carefully than usual.	.677	.928	
Mental Health (MH)			.704
9. These questions are about how you feel and how things have been with you during the past 4 weeks. For each question, please give the one answer that comes closest to the way you have been feeling. How much of the time during the past 4 weeks…			
b. Have you been very nervous?	.108	.761	
c. Have you felt so down in the dumps that nothing could cheer you up?	.369	.685	
d. Have you felt calm and peaceful?	.519	.617	
f. Have you felt downhearted and depressed?	.467	.571	
h. Have you been happy?	.519	.612	

Appendix B

Reliability Statistics for Health and Well-Being Measurements: Ryff's Scales of Psychological Well-Being

Reliability for Ryff's Scales of Psychological Well-Being (N = 24)

	Item Total Correlation	Alpha if Deleted	Cronbach's Alpha
Autonomy			.823
1. I am not afraid to voice my opinions, even when they are in opposition to the opinions of most people.	.604	.798	
2. My decisions are not usually influenced by what everyone else is doing.	.329	.847	
3. I tend to worry about what other people think of me.*	.598	.795	
4. I tend to be influenced by people with strong opinions.*	.720	.778	
5. I have confidence in my opinions, even if they are contrary to the general.	.734	.793	
6. It's difficult for me to voice my own opinions on controversial matters.*	.522	.808	
7. I judge myself by what I think is important, not by the values of what others think is important.	.704	.774	
Environmental Mastery			.932
1. In general, I feel I am in charge of the situation in which I live.	.776	.922	
2. The demands of everyday life often get me down.	.793	.920	
3. I do not fit very well with the people and the community around me.*	.830	.916	
4. I am quite good at managing the many responsibilities of my daily life.	.738	.925	
5. I often feel overwhelmed by my responsibilities.*	.790	.920	
6. I have difficulty arranging my life in a way that is satisfying to me.*	.846	.915	
7. I have been able to build a home and a lifestyle for myself that is much to my liking.	.701	.928	
Personal Growth			.875
1. I am not interested in activities that will expand my horizons.*	.691	.856	
2. I think it is important to have new experiences that challenge how you think about yourself and the world.	.561	.869	
3. When I think about it, I haven't really improved much as a person over the years.*	.669	.856	
4. I have the sense that I have developed a lot as a person over time.	.771	.844	
5. I do not enjoy being in new situations that require me to change my old familiar ways of doing things.*	.782	.839	
6. For me, life has been a continuous process of learning, changing, and growth.	.514	.874	
7. I gave up trying to make big improvements or changes in my life a long time ago.*	.664	.859	

(Appendix B continues)

(Appendix B continued)

	Item Total Correlation	Alpha if Deleted	Cronbach's Alpha
Positive Relationships with Others			.881
1. Most people see me as loving and affectionate.	.636	.868	
2. Maintaining close relationships has been difficult and frustrating for me.*	.823	.842	
3. I often feel lonely because I have few close friends with whom to share my concerns.*	.749	.853	
4. I enjoy personal and mutual conversations with family members or friends.	.456	.887	
5. People would describe me as a giving person, willing to share my time with others.	.708	.865	
6. I have not experienced many warm and trusting relationships with others.*	.723	.856	
7. I know that I can trust my friends, and they know they can trust me.	.624	.869	
Purpose in Life			.860
1. I live life one day at a time and I don't really think about the future.*	.437	.865	
2. I have a sense of direction and purpose in life.	.807	.813	
3. My daily activities often seem trivial and unimportant to me.*	.802	.813	
4. I don't have a good sense of what it is I'm trying to accomplish in life.*	.411	.870	
5. I enjoy making plans for the future and working to make them a reality.	.801	.816	
6. Some people wander aimlessly through life, but I am not one of them.	.647	.837	
7. I sometimes feel as if I've done all there is to do in life.*	.517	.854	
Self Acceptance			.819
1. When I look at the story of my life, I am pleased with how things have turned out.	.659	.779	
2. In general, I feel confident and positive about myself.	.773	.766	
3. I feel like many of the people I know have gotten more out of life than I have.*	.328	.840	
4. I like most aspects of my personality.	.534	.799	
5. In many ways, I feel disappointed about my achievements in life.*	.531	.801	
6. My attitude about myself is probably not as positive as most people feel about themselves.*	.651	.778	
7. When I compare myself to friends and acquaintances, it makes me feel good about who I am.	.555	.796	

* Items are reversed scored.

Appendix C

Reliability Statistics for Health and Well-Being Measurements: Center for Epidemiologic Studies – Depression

Reliability for Center for Epidemiologic Studies – Depression (CES-D) (N = 24)

CES-D Items	Item Total Correlation	Alpha if deleted	Cronbach's Alpha
			.892
Below is a list of some of the ways you may have felt or behaved. Please indicate how often you have felt this way during the **past week:**			
1. I was bothered by things that usually don't bother me	.529	.887	
2. I did not feel like eating; my appetite was poor	.205	.894	
3. I felt that I could not shake off the blues even with help from my family or friends.	.836	.878	
4. I felt I was just as good as other people.*	.541	.888	
5. I had trouble keeping my mind on what I was doing.	.330	.892	
6. I felt depressed.	.851	.877	
7. I felt that everything I did was an effort.	.462	.889	
8. I felt hopeful about the future.*	.402	.892	
9. I thought my life had been a failure.	.707	.882	
10. I felt fearful.	.519	.888	
11. My sleep was restless.	.429	.890	
12. I was happy.*	.688	.882	
13. I talked less than usual.	.580	.885	
14. I felt lonely.	.516	.887	
15. People were unfriendly.	.549	.887	
16. I enjoyed life.*	.171	.878	
17. I had crying spells.	.583	.898	
18. I felt sad.	.847	.878	
19. I felt that people dislike me.	.273	.893	
20. I could not get going.	.445	.890	

* Items are reversed scored

Appendix D

Participation Codes and Guidelines

Derived from AOTA Practice Framework and Activity Card Sort Categories (American Occupational Therapy Association, 2008; Baum & Edwards, 2001)

Code	Category
1000	Sleep related or rest related Includes getting ready for sleep, trying to fall asleep, and staying asleep. Also includes watching TV or reading after getting ready to sleep, or as a way to get ready to sleep.
2000	Self- care Personal activities including dressing, bathing, toileting, getting ready for work, eating.
3000	Instrumental Activities of Daily Living (IADL) Activities related to more complex caring for self (grocery shopping, finances, paying bills, taking care of investments, going to doctor, dentist, barber, etc.), property (home, yard, car, other objects), and others (pets, children, adults).
4000	Leisure High demand (01) – require high physical strength or endurance. Low demand (02) – does not demand physical endurance or strength. List of Leisure Activities (modified from Activity Card Sort)

Low Demand 4002		High Demand 4001	
Spectator sports	Collecting	Swimming,	Horseback
Photography	Puzzles	Woodworking	riding
Recreational	Reading (books,	Bowling,	Camping
shopping	religious, newspaper)	Golfing,	Canoeing
Cooking as	Letter writing	Walking	Boating
hobby	Attending concerts	Running,	Sailing
Sewing	Going to theater	Exercise	Hunting
Quilting	Watching movies	Tennis	Fishing
Hand crafts	Watching TV	Hiking,	Gardening,
Table games	Listening to music	Bicycling	Growing flowers
Computers(not	Sitting	Yard games	
related to work	Thinking		
or education)			

(Appendix D continues)

(Appendix D continued)

Code	Category
5000	Social activities
	Includes activities performed with others. Relationship activities, including sexual activity, are included here. Social activities also include volunteering, such as the completion of the *PPR Profile*.
	List of Social Activities (modified from Activity Card Sort)
	Volunteering / Marriage/relationship
	Family gathering / Parties
	Visiting with family / Picnics
	Visiting with friends / Talking on the phone
	Dancing / Eating at a restaurant
	Traveling / Going to place of worship
	Going to children/grandchildren activity / Storytelling with children
	Entertaining at home or club
6000	Education
	Related to formal education. Includes academics (classes), non-academics (studying, breaks from class, etc.) and vocational participation. Informal education is included under low demand leisure or social activities
7000	Work
	Activities related to engaging in remunerative employment (volunteer work goes under social activities).

Guidelines for Participation Codes

- Travel becomes connected with the activity category. For example, if I am driving to a dance, that time goes under social activities. If I am driving to the store to run errands, it goes under IADL.
- When two categories are on the same line attempt to discern the dominate category, the one that is most time consuming, and use that code. When the primary activity cannot be discerned, code the first activity.
- When the person ate with friends or spouse, code as social activity.
- When fixed meal and ate, code activity as eating.

Appendix E

Summary of Recommendations for Changes to the *PPR Profile*

Aspects of the PPR Profile	Major Ideas Shared to be Considered
Introduction of the PPR Profile	Use of graphic designer to assist with layout. (1) Strengthen the introduction - Hook the user, or get them excited to learn more about the tool and what they will be doing. State why this tool is important; maybe use facts to illustrate key points.(1) If you want people to really think about how their experiences relate to health, make this more prominent. Recommend a stronger connection to health. (1) Keep wording minimal. (1)
Instructions	This is an "I" journal, it is about how you feel, not how society thinks about these concepts. (2) How honest you are with yourself will influence what you get out of the process. (2) Let people know that the process could be challenging – they may discover things that may be hard to be aware of. (2) Let people know that some of the activities that they record will seem routine, that is ok. (1)
Examples Provided	In the example, put comments under the scores to show how the person was thinking when they determined the rating score. (1) Include a second sample – have the example be very different and allow both examples to identify clear patterns. (1)
Rating Scale	Increase rating scale; from 1-10 (1) Put additional words to the rating scale besides the two ends. (1) Change the word "restoration" (2); it's not a common word we use (1), more related to objects than people (1). Suggestions include rejuvenation.
Addition of Other Columns	Motivation level (1) Importance level (1) Fatigue level (1)
Methods of Completion	Continued use of tape recorder; may be helpful and provide researcher additional insights. (2/2)[a]

Note. Numbers within parenthesis refer to the number of participants who shared this recommendation.

[a] Two individuals used audio recording to complete the PPR profile. This refers to two of two individuals recommend continued use of tape recorder.