2016

PURPOSE AND SATISFACTION OF ACTIVITIES IN RURAL COMMUNITIES USING ECOLOGICAL MOMENTARY ASSESSMENT

Jennifer Lauren Wong

PURPOSE AND SATISFACTION OF ACTIVITIES IN RURAL COMMUNITIES USING

ECOLOGICAL MOMENTARY ASSESSMENT

By

JENNIFER LAUREN WONG

B.A., University of San Francisco, 2009
M.A., California State University, Sacramento 2014

Dissertation

presented in partial fulfillment of the requirements
for the degree of

Doctorate of Philosophy
in Experimental Psychology

The University of Montana
Missoula, MT

December 2016

Reviewed by:

Scott Whittenburg, Dean of The Graduate School
Graduate School

Tom Seekins, Co-Chair
Psychology

Craig Ravesloot, Co-Chair
Psychology

Allen Szalda-Petree
Psychology

Bryan Cochran
Psychology

Bryce Ward
Bureau of Business and Economic Research

Wong, Jennifer L., M.A., December 2016   *Experimental Psychology*

Purpose and Satisfaction of Activities in Rural Communities Using Ecological Momentary Assessment

Co-Chairperson: Tom Seekins

Co-Chairperson: Craig Ravesloot

Individuals' wellbeing have been investigated through one of two primary perspectives, hedonic or eudaimonic. The hedonic perspective has focused on studying happiness and considers individuals' maximization of their pleasurable moments as the pathway to happiness (Henderson & Knight, 2012). The eudaimonic perspective suggests that people should live a life of virtue and that actualizing their potential is the pathway to wellbeing (Henderson & Knight, 2012). Both perspectives have used retrospective recall to investigate individuals' wellbeing. This method has given researchers a better understanding of individuals' overall wellbeing, but is unable to describe their wellbeing as it varies throughout the day. The exploration of wellbeing throughout the day is especially useful for describing individuals with disabilities whose wellbeing is contingent on their participation in daily activities and those who live in rural communities with less variety of activities.

The current study sampled 25 individuals with disabilities from two rural communities. Participants attended a 90-minute training, agreed to carry a touchscreen device for 14 consecutive days that prompted them with 8 to 10 mini surveys, and completed paper and pencil surveys on global measures of wellbeing two weeks apart. The study aimed to investigate how individuals' purpose of daily activities, happiness, satisfaction of daily activities, and person-environment fit were associated contemporaneously within the same prompt and across prompts within the same study day.

A series of regressions supported the hypotheses that contemporaneous measures of wellbeing were associated with one another, and that satisfaction of daily activities was positively associated with person-environment fit contemporaneously. Noteworthy time series analyses indicated that individuals' happiness earlier in the day was positively associated with both purpose of daily activities and satisfaction of daily activities later in the day. Also, individuals' satisfaction regarding daily activities earlier in the day was positively associated with their person-environment fit three periods later. Implications include evidence for the use of new temporal measurements of wellbeing and support for future individualized intervention opportunities aimed at increasing happiness earlier in the day for lasting relationships on purpose and satisfaction daily activities later in the day.

Acknowledgements

I would like to thank my mentors and co-chairpersons, Craig Ravesloot and Tom Seekins, for your continued support and counsel. In addition to my co-chairs I would also like to thank the other members of my committee, Allen Szalda-Petree, Bryce Ward, and Bryan Cochran, for your guidance, constructive criticism, and validation. To Gretchen McCaffrey, thank you for your time, expertise, and sage advice. I am in deep gratitude for each of you.

I am eternally grateful for the love and support of my family: Neil, Debi, and Philip. Your affirming words, good spirits in stressful times, and, even more important than before, your frequent trips to Montana. Lastly, I am greatly indebted for the love and support from my extended family, friends, and colleagues. Without each and every one of you, this project could not have been possible.

TABLE OF CONTENTS

IX. TABLES

X. FIGURES

Purpose and Satisfaction of Activities in Rural Communities using Ecological Momentary

Assessment

Executive Summary[1]

Background

This project aimed to investigate wellbeing related to activities that people with

disabilities experience throughout their day. The background literature focuses on three

domains: psychological investigations of life purpose and satisfaction with life as indicators of

wellbeing, the environment's influence on wellbeing, and the current state of disability literature

as it pertains to participation in activities as an indicator of wellbeing. Wellbeing has been

studied to understand optimal psychological experience and functioning in a variety of ways.

Multi-dimensional measurement of wellbeing has included hedonistic and eudaimonic

perspectives. These perspectives have been linked to two modern constructs of wellbeing, life

satisfaction and purpose in life. In psychology, life satisfaction and purpose in life have been

studied extensively, but primarily through retrospective recall and across different groups.

While psychological theorists have been investigating wellbeing across the life span of

individuals, a number of ecological models have included environmental influences on

individuals' wellbeing. For example, disability, the interaction between a person's level of

impairment and their environment, has been studied to understand how impairment influences

wellbeing, depression, and isolation. Further, participation in communities has been studied as

the gold standard outcome in disability research.

This study aimed: (1) to explore the stability of known global measures of purpose and

life satisfaction across two measurement periods; (2) to examine whether there was a relationship

between established global measures and temporal measures of purpose and satisfaction; (3) to

---

[1] This paper was submitted in partial fulfillment of requirement for the Doctor of Philosophy Degree in Psychology.

explore the relationship between purpose of daily activities and the frequency of activities measured temporally; and (4) to explore whether purpose of daily activities and satisfaction of daily activities were related to one another and related to happiness and perceived person-environment fit.

Methods

The current study sampled 25 individuals with disabilities from two rural communities, Havre, Montana and Soda Springs, Idaho. Participants were recruited from a larger longitudinal study and agreed to participate in an ecological momentary assessment study across 14 consecutive days. Participants agreed to carry a touchscreen device for the length of the project, and to complete paper and pencil surveys on global measures of wellbeing twice. A series of correlational and regression analyses were conducted to explore the study aims.

Results

The between subjects results indicated that global measures of purpose and life satisfaction scores were stable over a two-week time period (Aim 1). There was a positive relationship between the global measures of purpose and life satisfaction and the temporal measures of purpose and satisfaction of daily activities measured using ecological momentary assessment (Aim 2). Individuals' purpose of daily activities was negatively related to activity frequency (Aim 3).

A series of regressions explored how measures of wellbeing (i.e., purpose of daily activities; satisfaction of daily activities; happiness) were associated with one another and with person-environment fit contemporaneously and across time (Aim 4). Time series analyses indicated that individuals' happiness earlier in the day was positively associated with purpose of daily activities one, three, and five periods later, and with satisfaction of daily activities, one,

two, and three periods later. Another time series analysis found that satisfaction of daily

activities earlier in the day was positively associated with higher person-environment fit three

prompts later.

Discussion

The observed consistency of the global wellbeing measures over two weeks was

consistent with the literature for the general population and extends these results to the

population of individuals with disabilities. Further, these global measures were also positively

related to the temporal EMA measures of purpose and satisfaction, indicating that global self-

assessment was consistent with *in situ* measures of purpose and satisfaction with daily activities.

Additionally, these analyses indicated that individuals spend the majority of their time doing

activities with low purpose, suggesting that purpose is derived from infrequent activities like

religious services rather than from common daily activities like household chores.

The time series results demonstrated the importance of collecting wellbeing research

moment to moment. For example, individuals' happiness earlier in the day was associated with

their satisfaction of daily activities and purpose of daily activities later in the day in patterns that

were much longer than satisfaction and purpose of daily activities had among one another.

These results suggest that the previous distinctions between various indicators of wellbeing may

account for the difference in significant lags across relationships. Additional analyses on

individuals' person-environment fit also provide evidence for this explanation. Specifically,

individuals' satisfaction of daily activities earlier in the day was positively associated with their

person-environment fit later in the day, but individuals' purpose of daily activities earlier in the

day was not associated with their person-environment fit later. While these results add to the

current state of wellbeing research, they also spark additional questions regarding temporal

fluctuations of indicators of wellbeing (e.g., happiness, satisfaction, and purpose) and person-

environment fit, questions that will require additional research to answer.

Introduction

Individuals' Wellbeing as an Evolving and Multifaceted Construct

Historically, wellbeing has been studied to understand optimal psychological experience and functioning (Deci & Ryan, 2008; Jung, 1933; Maslow, 1968; Ryan & Huta, 2009; Ryff, 1989; Rogers, 1961). Despite being multifaceted, wellbeing research can be categorized into two philosophical traditions, hedonic and eudaimonic. The hedonic tradition is concerned with studying happiness because maximizing one's pleasurable moments is understood to be the pathway to happiness (i.e., wellness; Henderson & Knight, 2012). Happiness is usually considered as the presence of positive affect and the absence or minimization of negative affect (Deci & Ryan, 2008). Studies of wellbeing typically fall within the hedonic tradition (e.g., positive and negative affect); however, the eudaimonic tradition offers a different understanding of wellbeing. The eudaimonic perspective suggests that individuals should aim to live a life of virtue and actualizing their potential is the way to achieve wellbeing (Henderson & Knight, 2012). Therefore, the perspective focuses on understanding how individuals live in a full and satisfying way (Deci & Ryan, 2008). Eudaimonic ways of studying wellbeing usually include explaining what is understood as the cognitive component of wellbeing (e.g., purpose) and is a separate construct from individuals' affect (e.g., positive affect). Eudemonia considers a person's conscious evaluation of his/her life circumstances that may reflect their conscious values and goals (Pavot, Diener, Colvin, & Sandvik, 1991). Although, these two philosophical traditions exist, a great deal of research has focused on wellbeing as one construct.

In the twentieth century, psychology evolved from studying human pathology within behaviorism and psychoanalytic schools of thought prior to the emergence of the humanistic movement. Humanistic psychology was interested in the wellness and positive/healthy

functioning of individuals (Sheldon & Kasser, 2001; Thorne & Henley, 2005). There were many

intrapsychic theories of wellbeing that were born out of humanistic investigation. They include:

Rogers' (1961) understanding of the fully functioning person and application of client-centered

therapy; Maslow's (1943) use of the "hierarchy of needs" and of innate self-actualization; May's

(1977) role of anxiety as a core element in individuals' ability to live a life of dignity and

freedom; and Yalom's (1980) conceptualization that individuals all experience isolation,

meaninglessness, mortality, and freedom and respond to these experiences in either functional or

dysfunctional ways.

Individual differences in life composition and daily activities have been of interest to

understand predictors of increased wellbeing. To examine these variations in wellbeing,

individuals are asked to evaluate their lives retrospectively over time; these self-assessments are

considered subjective (Diener, Oishi, & Lucas, 2003). Subjective wellbeing includes

individuals' emotional responses and global judgments of life satisfaction (Diener, Suh, Lucas &

Smith, 1999). People's subjective wellbeing has a strong relationship with their physical health

and social circumstances (Helliwell & Putnam, 2004). Further, their marital status and family

dynamics, relationships with friends and neighbors, workplace relationships, individual and

collective civic engagement, trustworthiness and trust in others were independently associated

with subjective wellbeing (i.e., happiness and life satisfaction), directly and indirectly through

their impact on health (Helliwell & Putnam, 2004).

The variety of wellbeing traditions, theories, constructs, application, and measurement

have all increased the understanding of individuals' positive psychological experience and

functioning. This has included the converging of such constructs and perspectives as they relate

to one another. For example, subjective wellbeing has been associated with the hedonic tradition

of wellbeing (Deci & Ryan, 2008). Some have argued that a precise measurement of hedonic

wellbeing should only include positive and negative affect to index happiness in individuals

because life satisfaction is not a clear hedonic concept (Deci & Ryan, 2008). Rather, life

satisfaction has been linked to both hedonic and eudaimonic perspectives (Huta & Ryan, 2010).

In contrast, individuals' purpose has been solely linked to the eudaimonic prospective (Huta &

Ryan, 2010; Ryan & Deci, 2000). Global understandings of purpose and life satisfaction have

ultimately served wellbeing research as reliable predictors of positive psychological functioning.

Global Purpose

The concept of purpose has been used to examine individuals' global understanding of

how fulfilling their life is, such as purpose in life (Crumbaugh & Maholick, 1964), and the

reason for doing an activity (e.g., Ravesloot, 1995; Scheier et al., 2006). Globally, purpose has

been conceptualized as "a central, self-organizing life aim that organizes and stimulates goals,

manages behaviors, and provides a sense of meaning" (McKnight & Kashdan, 2009, pg. 242).

Although the understanding of purpose includes managing behavior, it does not govern behavior;

instead, it offers direction and following that direction is optional for an individual (McKnight &

Kashdan, 2009). The existence of purpose in an individual's life is hypothesized to be a

mechanism for a longer lifespan, general health, and wellbeing (Bonebright, Clay, &

Ankenmann, 2000; McKnight & Kashdan, 2009). Overall, purpose provides a foundation that

facilitates resiliency in the face of obstacles, stress, and strain (Kashdan & McKnight, 2009).

There are essential elements that are required for an individual to have purpose. First,

purpose is able to stimulate behavioral consistency (McKnight & Kashdan, 2009). Purpose can

be used as a motivating force to overcome obstacles by seeking alternative means and to focus

on the goal of the behavior regardless of changing environmental conditions (McKnight &

Kashdan, 2009). Second, purpose is related to approach oriented behaviors commonly

considered goals (i.e., going out to meet up with friends; reading a book in time for a book club;

McKnight & Kashdan, 2009). Third, purpose enables individuals to be psychologically flexible

including the ability to change according to demands, obstacles, and opportunities (McKnight &

Kashdan, 2009). Fourth, purpose promotes efficient resource allocation, which leads to

productive cognitive, behavioral, and psychological activity (McKnight & Kashdan, 2009).

Lastly, purpose involves higher-level cognitive processing, which distinguishes it from primal

motivations (i.e., food; safety; pleasure; McKnight & Kashdan, 2009). These elements are

considered essential for an individual to have purpose; however, none of the elements are solely

enough to create or indicate purpose in an individual's life (McKnight & Kashdan, 2009).

Since purpose is able to direct life goals and daily decisions through guiding finite

personal resources, it can provide an individual's reason for doing daily activities. Purpose in

life has been used to understand meaning associated with the daily activities among young

adults, individuals with a spinal cord injury, and in a mixed-impairment group (Ravesloot, 1995;

Ravesloot, Wong, Ward, Livingston, & Hargrove, unpublished manuscript). In this research on

persons with disabilities, meaning was operationalized using attributions of purpose (Yalom,

1980) for engaging in daily activities. Overall, these studies found their purpose in doing

activity and who the individuals are with were positively related to an increase in the meaning of

the activity.

A number of measures have been created to assess individuals' global purpose; the most

familiar measure in psychological research is the Purpose in Life Test (PILT; Crumbaugh &

Maholick, 1964). The creators of this measure utilized Frankl's (1955; 1958; 1959; 1960)

clinical findings using his logotherapy paradigm and existential lens to understand how

individuals were exhibiting a "complete emptiness of purpose in life" (Crumbaugh & Maholick, 1964). Specifically, the logotherapy paradigm concentrated on the importance of both perceived meaning and purpose in life and how they enhanced wellbeing (Frankl, 1959; 1985; Schulenberg & Melton, 2010). For meaning and purpose in life to be perceived, individuals need to be conscious of which life aspects are vital and live their lives consistently with those values (Schulenberg & Melton, 2010). The PILT attempts to assess individuals' purpose based on this perception.

The PILT is an instrument created to evoke responses related to the degree to which an individual experienced "purpose in life" (Crumbaugh & Maholick, 1964, p. 200). The PILT is composed of several parts, including quantitative (Part A) and qualitative (Parts B and C) sections. The quantitative section of the PILT is of high interest to researchers because data from this section are easily aggregated and compared across samples (Schulenberg & Melton, 2010), and therefore it is the focus of this discussion.

The quantitative section consists of 20 items and utilizes a seven-point Likert-type response format using item specific anchors (Schulenberg & Melton, 2010). The PILT was normalized on five subpopulations: Junior League females and Harvard graduate students (Group I; nonpatients); undergraduate students (Group II; nonpatients); a mixed diagnosis psychiatrists' private practice outpatients (Group III), outpatients of a clinic (Group IV); and hospitalized patients all diagnosed with alcoholism (Group V; Crumbaugh & Maholick, 1964). When assessing the mean of the measure, there was a significant difference between nonpatients and patients, as well as a progressive decline in scores from Group I to Group V (Crumbaugh & Maholick, 1964). Overall, nonpatients reported higher purpose in life than patients across the total score and on each scale item (Crumbaugh & Maholick, 1964). These findings were

consistent with the creators' hypotheses, suggesting this instrument was a good measure of purpose in life.

The original use of the PILT demonstrated both concurrent validity and construct validity (Crumbaugh & Maholick, 1964). Later research has continued to support the PILT's strong validity; scores of the PILT have been positively correlated with extroversion, life satisfaction, self-control, happiness, responsibility, self-acceptance, and emotional stability and negatively correlated with depression and anxiety (Crumbaugh & Henrion, 1988; Schulenberg & Melton, 2010). Additionally, these relationships are consistent with the logotherapy paradigm documenting the association between purpose in life, meaning, and wellbeing (Schulenberg & Melton, 2010). Unfortunately, there has been some debate regarding the psychometric properties of the PILT. There is some evidence supporting the use of the test as a unidimensional measure (Chamberlain & Zika, 1988; Marsh, Smith Piek, & Saunders, 2003; Steger, 2006); while, others has found that the PILT consists of more than one factor (e.g., Dufton & Perlman, 1986; Schulenberg & Melton, 2010). One criticism of these varying analyses is researchers often report solutions that have little theoretical value and have not been replicated in additional samples (Schulenberg & Melton, 2010).

Life Satisfaction

Another cognitive component of wellbeing is an individual's life satisfaction. Life satisfaction is a judgmental process where an individual assesses the quality of their lives on the basis of their own criteria (Shin & Johnson, 1978). Specifically, individuals create a standard and use that standard to compare their life circumstances (Pavot, Diener, Colvin, & Sandvik, 1991). This subjective judgment is person specific and is not a judgment based on an externally imposed standard, such as societal norms (Diener, Emmons, Larsen, & Griffin, 1985).

People may collectively understand what makes "a good life" (i.e., health and successful relationships). However, the weights individuals assign to different components of what makes a good life may differ for each individual (Pavot & Diener, 1993). Individuals' particular criteria for what makes a good life may be more relevant to their lives than the collective components of a "good life." Regardless of the relevant criteria, an individual's life satisfaction has been found to be generally consistent over time while still able to change in reaction to life events (Pavot & Diener, 1993).

Due to the unique criteria individuals use to assess their lives, early researchers thought it was necessary to assess global judgments of individuals' lives rather than their satisfaction with specific domains (Pavot & Diener, 1993). The focus on global assessments of life satisfaction may be attributed to measurement limitations. For example, an individual's satisfaction with common "good life" domains provided useful information for these domains; it was considered in relation to the individual's importance of that domain to their overall wellbeing (Frisch, Cornell, Villanueva, & Retzlaff, 1992).

Similar to purpose in life, a number of measures have been created to assess individuals' life satisfaction. Early scales of general life satisfaction often consisted of only a single item and/or were designed for geriatric populations (e.g., Life Satisfaction Index; Neugarten, Havighurst, & Tobin, 1961). These limitations in measurement led the creators of the Satisfaction With Life Scale (SWLS) to fill the need of a multi-item scale that assesses life satisfaction across age groups (Diener, Emmons, Larson, & Griffin, 1985). Further, the creators aimed to design this measure to include a cognitive-judgment process by asking individuals for an overall judgment of their lives to measure life satisfaction as a construct (Diener et al., 1985).

The SWLS has been widely used to assess global life satisfaction in individuals due to its strong psychometric properties. It was originally normalized on a number of undergraduate populations and a geriatric population from the Urbana-Champaign, Illinois area (Diener et al., 1985). The SWLS demonstrated high internal consistency, temporal reliability, and strong validity when compared to other measures of subjective wellbeing (Diener et al., 1985). It also demonstrated correlations with specific hypothesized personality characteristics (e.g., self esteem, emotionality, sociability) related to life satisfaction (Diener et al., 1985). Additional studies confirm that the SWLS has consistent high reliability, good convergent validity, good discriminant validity; supporting the use of a single-factor solution (Pavot, Diener, Colvin, Sandvik, 1991; Pavot & Diener, 1993). Lastly, when measured by the SWLS, life satisfaction shows a degree of temporal stability, while still being sensitive to changes in individuals' reaction to their life events (Pavot & Diener, 1993). Considering the strong psychometric properties of this instrument, the SWLS has been used across age groups and cultures (e.g., older adults, prisoners, inpatients receiving treatment for alcohol abuse, abused women, psychotherapy clients, elderly caregivers of spouses with dementia, and persons with physical disabilities) to assess life satisfaction, an important indicator of wellbeing (Pavot & Diener, 1993).

Ecological Considerations in the Study of Human Experience

Going beyond the intrapsychic theories of wellbeing, there has been an emerging interest in how the environment influences wellbeing (e.g., Björk et al., 2008; Lawton, 1983). One approach examined existing wellbeing measures to develop six theory-driven dimensions of psychological wellbeing, one of which is environmental mastery (Ryff, 1989). Environmental mastery includes an individual's ability to control external activities, to effectively use surrounding opportunities, and to choose or create contexts suitable for personal needs and

values (Ryff, 1989). Individuals' environmental mastery has strong to moderate positive

relationships with their self-acceptance, happiness, and life satisfaction and a moderately

negative relationship with depression (Ryff & Keyes, 1995). The inclusion of environmental

mastery in wellbeing research asserts that wellbeing is comprised of more than just attributes and

experiences within individuals.

Social ecological theories of behavior have attempted to contribute to the understanding

of individuals' life experience by filling in knowledge regarding the environment. Early social

ecological theories of behavior evolved from mere recognition of effects the environment has on

individuals' behavior to more complicated hierarchical models. Bronfenbrenner (1977)

identified five environmental systems as areas that an individual interacts with and develops

within: microsystem (e.g., home, school, workplace), mesosystem (e.g., interactions among

family and peer groups), exosystem (e.g., major institutions of the society: local, state and

national agencies), macrosystem (e.g., prototypes that exist in the culture or subculture), and

cronosystem (e.g., transitions over the life course; sociohistorical circumstances). These systems

have been applied to the scientific study of human development that is rooted in the relationship

between individuals and the changing environments in which this individual lives and grows.

An application of these systems uses increasing family support services, home visits, and

education for parents in an attempt to positively change environments of disadvantaged children

in the United States Head Start Program (Bronfenbrenner, 1967).

These five environmental systems categorize ecological factors, but do not explain the

impact of these factors. Additional ecological models focus on the social climate of an

environment and individuals' adaptation to their environment and their growth within their

environment (i.e., social ecological model; Walsh, 1987). This social ecological model considers

the physical settings, organizational settings, sociocultural characteristics of the people in an

environment, and the supportiveness of a social setting for a particular behavior (i.e., social

climate) to understand how people and environments reciprocally influence each other (Moos,

1980; Walsh, 1987). The social climate has been proven to affect individuals' coping resources

and beliefs about care settings (Moos & Lemke, 1984). A more recent model, the Eco-Social

Model, used the categorizations arranged by Moos (1987) and organized them in hierarchical

order. Specifically, the Eco-Social Model modified the causation of the model by including time

and nested levels of social and biological systems to predict individuals' behavior (Glass &

McAtee, 2006). The Eco-Social Model hypothesizes that environmental factors provide

opportunities and constraints, while biological processes of individuals regulate expressions of

behavior (Glass & McAtee, 2006).

Ecological considerations have also influenced how psychologists have analyzed

individuals' perceived environments and situations. Person-environment fit describes how the

congruence between individuals and their environments influences their behavior and

psychological functions (Beasley, Jason, & Miller, 2012; Lewin, 1935). Person-environment fit

has been used to explore the stress individuals encounter in their environment; this model has

been used to explore numerous stress related phenomena, including stress encountered in

organizational settings (Edwards, 1996), job satisfaction and retention (Edwards, Cable,

Williamson, Lambert, & Shipp, 2006), and length of stay in treatment facilities (Beasley et al.,

2012). Person-environment fit as a construct has been considered as a general paradigm;

however, it can be split into two distinct areas of fit (Edwards, 1996). The first area is where

stress is viewed as a misfit between the values of an individual and the environmental supplies

that are available to fulfill those values (i.e., supplies-values fit; Edwards, 1992). The second

area is where stress encompasses environmental demands that either tax or exceed the abilities of

the person (i.e., demands-abilities fit; Edwards, 1996). Regardless of whether person-

environment fit is considered as either all-encompassing or evaluated by both supplies-values

and demands-abilities, the degree to which fit is cognitively evaluated and important to an

individual is considered central to each person (Edwards, 1996). Therefore, the way individuals

perceive the environment will influence the way they will behave in their environment.

As described in person-environment fit theories, environments are made up of

communities and neighborhoods, which profoundly affect individuals' daily lives (Cutrona,

Russell, Hessling, Brown, & Murry, 2000). Communities constitute places, relationships, and

collective political power (Chavis & Wandersman, 1990). Individuals belong to many

communities that are defined by the places they work and live, organizations and institutions that

they belong to, and shared activities with others (Heller, 1989). The geographical or territorial

notion of community includes an individual's neighborhood, town, or city (Gusfield, 1975).

Relational community includes the quality of human relationships and social ties that bring

people together (e.g., online support group; Gusfield, 1975; Heller, 1989). Community can also

serve as a collective political power through people organizing for a social action; this often

occurs within democracies to help develop social structures that are responsive to individuals'

needs (Heller, 1989).

Physical activity has been an indicator of individuals engaging in their communities. The

role of the built environment on physical activity has been investigated by applying ecological

frameworks and macro-scale assessments (Frost, Goins, Hunter, Hooker, Bryant, Kruger, &

Pluto, 2010; Hartley, 2004). Using this lens pleasant scenery, safe neighborhoods, multiple

destinations within walking distance, sidewalks, and light traffic have been positively associated

with physically active communities (Frost et al., 2010). Overall, urban areas have access to a

greater variety of physical activity resources than rural areas; further, the more rural the area the

fewer the resources (Frost et al., 2010). Rural residents are at risk for poor health in comparison

to urban residents (Hartley, 2004); therefore, limited access to physical activity resources (e.g.,

sidewalks) is an additional disadvantage rural residents must overcome to participate in their

communities.

The number of ecological models and environmental considerations applied to

understand human experience suggests that effects of the environment are incredibly important

to individuals' choices they make in daily activities. These models have progressed from

categorizations of environmental factors (Moos, 1980) to arranging these environmental factors

in a hierarchy to test which environmental factors are the most influential on individuals'

experiences. One of the trends in ecological models considers the fit between individuals and

their environments as it pertains to individuals' thoughts and beliefs about their environment.

Investigations of organizational stress using person-environment fit have aimed to vet how

stressful environments influence individuals' retention and length of stay in an environment

(Beasley et al., 2012; Edwards et al., 2006). These relationships suggest a need to understand

outcomes of poor person-environment fit. Studies suggest that person-environment fit is

positively associated with retention and length of stay in an environment.

Health Economic Research used to Explain Activity Choices

The environment impacts the types of activities individuals engage in. One approach to

understanding how the environment affects daily activities is through health economics.

Previously, insufficient time or money were viewed as constraints to individual behavior and

influenced individuals' behavior (Becker, 1965). More recently, individuals' health (i.e.,

"healthy time") was examined and revealed poor health reduces the amount of time available for both production and leisure (Grossman, 1972). Instead, individuals are able to participate in production and leisure when they are healthy and this "healthy time" depends on a person's investment of their health capital. Overall, early behavioral economic theorists hypothesized that individuals engage in activities according to a person's health status.

Beyond Grossman's (1972) theory that poor health deters people from engaging in high value activities including work or leisure, an expanded model aims to define a mechanism by which poor health reduces activity beyond its effects on time (Ward, 2015). Health status is understood to affect choice either by weighing the cost of some activities or by decreasing the effort of certain activities. If individuals are low in energy (e.g., exhausted; fatigued; in pain) they must engage in activities with a lower effort cost (e.g., leisure activities) and/ or engage in activities that recharge their capacity for effort (e.g., resting). This model illustrates how energy, or lack of energy, affects individual choice advancing the behavioral economic theories used previously (Ward, 2015).

A Link between Wellbeing and Activities

The variety of wellbeing traditions, theories, constructs, application, and measurement have all increased the understanding of individuals' positive psychological experience and functioning. This has included the converging of such constructs and perspectives as they relate to one another. For example, subjective wellbeing has been associated with the hedonic tradition of wellbeing (Deci & Ryan, 2008). Some have argued that a precise measurement of hedonic wellbeing should only include positive and negative affect to index happiness in individuals because life satisfaction is not a clear hedonic concept (Deci & Ryan, 2008). Rather, life satisfaction has been linked to both hedonic and eudaimonic perspectives (Huta & Ryan, 2010).

In contrast, individuals' purpose has been solely linked to the eudaimonic prospective (Huta & Ryan, 2010; Ryan & Deci, 2000). Global understandings of purpose and life satisfaction have ultimately served wellbeing research as being reliable predictors of positive psychological functioning.

As discussed previously, purpose in life and life satisfaction are two common global areas assessed in wellbeing research. Global purpose is considered a self-organizing aim that is able to influence an individual's goals and behaviors while creating a sense of meaning in life (McKnight & Kashdan, 2009). Therefore, individuals may utilize purpose while engaging in activities or choosing activities depending on the scope, strength, and awareness. In addition, individuals assess their lived experiences as a whole as a measurement of life satisfaction (Shin & Johnson, 1978). The person assesses the quality of their lived experiences as a whole rather than their satisfaction of each activity or life domain.

Purpose of Daily Activities

Researchers have investigated individuals' purpose of daily activities in contrast to their purpose in life. In this context, purpose has been conceptualized in positive psychology using three continuous dimensions: scope, strength, and awareness (McKnight & Kashdan, 2009). Scope refers to how prevalent purpose is in an individual's life. When purpose is central to an individual's life it can influence their actions, thoughts, and emotions and is considered broad in scope (McKnight & Kashdan, 2009). Specifically, scope facilitates how purpose influences action within different conditions and contexts (McKnight & Kashdan, 2009). A purpose with a broader scope will influence a greater range of behaviors across a variety of contexts; however, purpose may be less influential in targeting a particular reason for doing a particular action (McKnight & Kashdan, 2009).

Strength is the tendency for the purpose to influence actions, emotions, and thoughts in areas that are relevant to its scope (McKnight & Kashdan, 2009). A strong purpose is able to powerfully influence relevant behaviors. Strength and scope are both relevant to one another and have been considered together when discussing dimensions of purpose. For example, an average person will have many small scope purposes that are all weak influences on behavior (McKnight & Kashdan, 2009). The strength and scope of purpose is able to influence individuals' longevity, health, and wellbeing; a strong, broad purpose will have a more pronounced effect on these outcomes (McKnight & Kashdan, 2009).

Lastly, awareness is the extent that a person is aware of and can articulate their purpose by its availability and saliency (McKnight & Kashdan, 2009). Availability and saliency of purpose dictate how aware the individual is of their purpose. Using all three dimensions together, a purpose that is broad in scope, strong in influence, should also be available to an individual (McKnight & Kashdan, 2009). The distinction of the scope, strength, and awareness of a purpose uses a global sense as it refers to individuals' life and personal agency influencing behavior; however, the understandings of how purpose for daily life activities affect wellbeing and are related to individuals' overall purpose in life is less understood.

Individuals' differences in activities change due to shifts in preferences, constraints, abilities, and health status (Verbrugge, Gruber-Baldini, & Fozard, 1996). These fluctuations affect the specific activities a person participates in, what procedures they use to accomplish activities, the frequency with which the individual engages in activities, and the duration of activities (Verbrugge et al., 1996). Daily activities have been organized in three categories: obligatory, committed, and discretionary activities (Moss & Lawton, 1982; Verbrugge et al., 1996). Obligatory activities are those required for survival and self-sufficiency, such as personal

care and sleep; committed activities include household management and principal productive

roles (e.g., paid work and household work); and discretionary activities are considered free-time

pursuits including hobbies and leisure (Verbrugge et al., 1996). Often, activities are not

exclusively categorized into only one category (i.e., obligatory, committed, or discretionary).

Why individuals participate in an activity may be a combination of choice and constraint;

further, different people vary in the combination of choice and constraint (Verbrugge et al.,

1996).

An individual could have a single purpose attribution for an activity, or they may employ

multiple purposes that are independent of one another. Having multiple purposes for an activity

may be beneficial for an individual (McKnight & Kashdan, 2009). For instance, a person who

has a single purpose for an activity could become discouraged if there are obstacles that get in

the way of engaging in that activity. However, if that individual has multiple purposes for an

activity, then the shift from the impeded purpose(s) could lead to more obtainable purposes

(McKnight & Kashdan, 2009). The additional benefit of shifting between purposes is that the

individual is able to continue their pursuit of purposeful living. A drawback of increased

switching between purposes is that it could lead to minimal progress in completing activities,

obtaining goals, or in the overall pursuit of purposeful living. Moreover, purpose may only be

one way that individuals choose which activities to do throughout their day.

Satisfaction of Daily Activities

Understanding individuals' satisfaction has mainly entailed a global assessment of their

satisfaction with their entire life (e.g., SWLS) rather than specific areas of their lives or

activities. Some understandings of life satisfaction assume that an individual's overall life

satisfaction is a composite of the sum of their satisfactions in particular areas of life that they

consider important (Frisch et al., 1992). Unfortunately, most researchers have stayed away from assessing specific life domains for two reasons. The first is that by assessing specific domains as a measure of life satisfaction, they might miss a domain that is important for an individual (Pavot & Diener, 1993). Second, it is hypothesized that individuals give specific domains different weights of importance or relevance to their overall life satisfaction (Pavot & Diener, 1993). Some research has been conducted on 17 common domains of life, though it is not clear if these domains were ever combined as a group of predictors of a person's life satisfaction (Frisch et al., 1992). Both of these reasons for not using specific life domains to predict an individual's life satisfaction are related to limitations of measurement. If an individual's life satisfaction may be comprised of satisfactions of activities, satisfaction ratings of daily activities may help unpack the complex nature of life satisfaction.

Rationale for the Current Study

Over time, theories have been developed to explain how individuals engage in certain activities to maintain or increase their wellbeing. Philosophical thought indicates that individuals utilized hedonic or eudaimonic avenues to obtain positive wellbeing. Centuries later, psychologists divided wellbeing into constructs that are indicators of optimal positive life functioning, such as purpose in life and life satisfaction. Later, psychologists investigated the link between individuals' wellbeing and mastery of the environment (e.g., Ryff, 1989) and overall subjective wellbeing (e.g., Diener et al., 2003), while ecological models posited that individuals' behavior was influenced by their interaction with their environments (Moos, 1980; Beasley et al., 2012). Additionally, health economic theorists argue that an individual's abilities, health, and constraints (e.g., pain; time; money; energy) influence their choice to engage in certain behaviors while accounting for effort. Recently, positive psychologists have investigated

how to measure the influence of purpose and satisfaction of daily activities. These theories provide a foundation of understanding how individuals' wellbeing is comprised of their environmental factors, activity engagement, and assessment of their lives.

These theories serve as a starting place to investigate how individuals' purpose and satisfaction of activities is related to their wellbeing. Individuals' engagement in activities and participation in community environments have been linked to longer and happier lives (Rimmer, Riley, Wang, Rauworth, Jurkowski, 2004). For instance, individuals participating in volunteer services, social support, pet care, and religious attendance live longer than those who do not (Rimmer et al., 2004). Unfortunately, previous studies have not included whether the types of activities available in the environment influence individuals' wellbeing, nor how individuals' wellbeing has been influenced by the available activities they engage in. The proposed research will attempt to address these knowledge gaps by measuring the purpose and satisfaction individuals attribute to their daily activities throughout the day to capture real world experiences. Since most of what is known about purpose and satisfaction has been conducted using retrospective recall and utilizing cross-sectional data (e.g., Purpose in Life test; Satisfaction with Life Scale), research that is able to reflect individuals' momentary fluctuations in daily living is essential to fill in the gaps of the current knowledge.

Individuals' wellbeing may be greatly impacted by their degree of access to available activities, thus it is of interest to study specific populations who have limited access to activities. One representative group are individuals with disabilities. This group has previously been studied in regards to available activities through personal rehabilitation, although this research is limited in scope and application. The current study will aim to address these limitations by

investigating how individuals with disabilities engage in activities with respect to their purpose

and satisfaction of the activity in the moment.

        Participation and available activities for persons with disabilities. Since the

wellbeing of persons with disabilities is associated with opportunities for participation in

communities, understanding the participation in this group is important (Rimmer et al., 2004).

Disability is an umbrella term that covers impairment, activity limitations, and participation

restrictions (World Health Organization (WHO), 2001). Impairment is a difficulty or a problem

in body function and/or structure; activity limitation is considered a difficulty experienced when

engaging in an action or executing a task; and participation restriction is a problem experienced

by an individual when engaging in life situations. Participation in communities is of growing

interest and has even been labeled as the "gold standard" of rehabilitation and outcome research

for persons with disabilities (Seekins et al., 2012). Rehabilitation services are intended to help

people with impairments compensate for limitations to maintain participation (e.g., assistive

technology equipment; Brodwin, Star, & Cardoso, 2004). Unfortunately, rehabilitation services

address only functional improvement to integrate individuals with disabilities into activities,

although many other factors influence people's ability and choice to participate in their

communities.

        The *International Classification of Functioning, Disability, and Health* (ICF), is a

classification system created to include individuals' participation and activities as components of

their health in reflection of a social model of disability. As within the umbrella of disability,

participation is an individual's involvement in a life situation (WHO, 2001). Participation has

been operationally defined in research as "a person fulfilling social roles; programs to promote

such participation; or judgments, measures or assessments of the quality or quantity of the form,

duration, intensity, richness, or variety of activities involved in fulfilling societal roles" (Seekins

et al., 2012, p. 225). Relatedly, activities are defined as an individual's execution of a task or

action (WHO, 2001). The term "participation" was chosen in an effort to replace the negative

terminology (i.e., handicap) used in the previous model (i.e., ICDH; Whiteneck & Dijkers,

2009). However, the inclusion of positive terms in the model does not eliminate the negative

aspects persons with disabilities experience when participating in communities. In fact, the ideal

of individuals with disabilities becoming fully active and participating in their communities

remains unrealized (White, Simpson, Gonda, Ravesloot, & Coble, 2010).

There are many reasons why community participation is lower in disability populations

(Ravesloot et al., 1998; Rimmer et al., 2004). One reason for lower participation has been

attributed to the narrower margin of health individuals with disabilities have reported (Pope &

Talov, 1991). People with disabilities are at a high risk for a variety of secondary conditions that

can add to the level of disability they may experience, while simultaneously decreasing the level

of integration in the communities that they experience (Marge, 1988; Pope & Talov, 1991;

Seekins, Smith, McCleary, Clay, & Walsh, 1990).

Lower community participation in disability populations can also be attributed to

environmental factors. Although, environmental factors can be the geographical composition of

the environment (e.g., steep hills), more likely, environmental factors include inaccessible

characteristics of the built environment (e.g., sidewalks, ramps, parking spaces). These built

environmental factors have the greatest environmental effects on individuals' participation.

Environmental characteristics have been found to impede community participation because they

create obstacles or limit engagement in activities for people with disabilities (Clarke, Ailshire,

Nieuwenhuijesen, & de Kleijn-de Vrankrijker, 2011). When investigating environmental

barriers to participation, 80% of participants reported encountering barriers on a daily basis that

started from small and led to large problems (Whiteneck, 2004). The top five environmental

barriers individuals reported, in descending order, were the natural environment, transportation,

home help, health care, and governmental policies (Whiteneck, 2004). The impacts of these

environmental barriers seem to be related to individuals' physical impairments, limitations of

activities, and participation restrictions (Whiteneck, 2004). Individuals with disabilities are

acutely aware of the ways in which the community environment shapes their lived world (Myers

& Ravesloot, n.d.), an awareness that fueled the passage of the Americans with Disabilities Act.

This awareness has continued to grow among advocates, researchers, and policy makers since

the publication of the ICF (WHO, 2001). In seeking to understand the role of environments in

shaping the lived world, it is helpful to consider the social and cultural processes that shape and

form these environments.

In many ways, environment is the groundwork of participation. Community

environments are as much cultural (e.g., significance, affect) as they are physically constructed

(e.g., streets, buildings). Further, social values and beliefs are instilled into these community

environments through individuals conferring meaning to the physical world, that is,

environments are not given nor axiomatic, they are very much constructed and ductile (i.e.,

landscape; Greider & Garkovich, 1994). For example, the transportation infrastructure in the

United States has undergone numerous changes throughout history from the walking and

horsecar era (circa 1800-1890), to the streetcar era (circa 1890-1920), to the automobile era

(1920s-1940s), to the present highway era (Muller, 1986). Those who have examined human-

environment interactions understand environments as "cultural expressions used to define who

we were, who we are, and who we hope to be at this place and in this space" (Greider &

Garkovich, 1994, p. 2). The meanings embedded into community environments along with their

built form set bounds for how people live in place (Mitchell, 2005). In other words, the

environment is both what is and what can be for a community, which in turn, shapes how people

can or cannot participate. When considering the social construction of environments, researchers

have investigated social exclusion that takes place when the social construction of the

environment is limited across social power (Smith, 2005). People with disabilities encounter

social exclusion in the creation of environments and have major concerns regarding physical

access to their environments (Anderson, 2001; Dyck & O'Brien, 2003). Environmental access

affects the choice of activities and experiences for individuals (i.e., job, housing, educational,

and medical appointment access; Anderson, 2001; Dyck & O'Brien, 2003). Over time, limited

environmental access suggests individuals' social and cultural experiences may change.

Although societal and cultural experiences may be impacted by limited environmental

access they have also been found to impact individuals' participation in their communities.

Specific cultural influences that have been found to be influence individuals' participation are:

their life experiences, inherited values and beliefs (e.g., ethnic and cultural identity), and self-

identity within the social and cultural surroundings of an individual (Booth et al., 2001). Societal

influences are much more dynamic. They are conceptualized as roles and relationships, acquired

values and beliefs, social trends, and how society views the individual and how the individual

views the society (Booth et al., 2001). Cultural influences have been posited to interact with

societal influences including how society views individuals and affects how individuals view

themselves within their environments, both of which affect what activities individuals participate

in (Whiteneck, Meade, Dijkers, Tate, Bushnik, & Forchheimer, 2004). Rural communities have

proven to be a unique example of how cultural and societal influences impact community

participation.

      Rural communities. Rural communities highlight how the environment influences

individuals' choices and activities. Rural communities have been defined according to their

populations (e.g., less than 2,500 inhabitants) and by their environmental characteristics (Murray

& Keller, 1991). Typically, rural environments are open spaces and outside of closely settled

suburbs of metropolitan cities (Murray & Keller, 1991). More recent understandings of rural

communities have stemmed from the U.S. federal government. The federal government defined

two types of urban areas (i.e., urbanized areas of 50,000 or more people and Urban Clusters of at

least 2,500 and less than 50,000 people); rural areas include all population, housing, and territory

that is not included within an urban area. The people of rural America are heterogeneous and

include a great diversity in cultures, occupations, wealth, ways of life, and physical geography

(Murray & Keller, 1991). Despite this great diversity, the overall quality of life in rural regions

continues to lag behind more urban areas (Murray & Keller, 1991).

      Two streams of research have specifically studied the impact rural environments have

had on individuals' daily life. Geographic differences have shown that rural areas have

problematic population health indicators that include poor health behaviors, low maternal and

child health indicators, increased mortality, and morbidity (Hartley, 2004). Further, rural

"culture" has been utilized as a health determinant and is a predictor of risky health behaviors

among rural persons (Hartley, 2004). Some rural communities' water quality, agriculture

methods, forestry composition, or mining activity have been found to complicate the effect of a

place of residence (Hartley, 2004). Additionally, rural communities' landscape may affect health

through the creation of real or perceived isolation of individuals (Hartley, 2004). The negative

impact of the environment on rural communities suggests that individuals' activities may be profoundly influenced by both environmental factors and how individuals feel they fit in their environment, ultimately impacting individuals' wellbeing. Considering the importance of participation in communities and the potential limitations of rural environments, measuring individuals' daily life activities is essential to understanding how they influence wellbeing.

       Ecological momentary assessment (EMA). For any group of individuals, there is a much clearer distinction between purpose in life and purpose of activities than the distinction between life satisfaction and satisfaction of activities. Although differences have been discovered, how purpose of activities is specifically related to or able to predict individuals' overall purpose in life is less understood. Further investigations of satisfaction of daily activities (e.g., domains) need to be conducted to understand whether assumptions of global life satisfaction should remain viable. Daily activities have been previously measured by measuring individuals' participation in their communities. Participation happens moment to moment (e.g., resting at home to running household chores), but has been evaluated using retrospective recall (e.g., Diener et al., 1985). Hence, dimensions like purpose in life and life satisfaction have been evaluated over some arbitrary aggregation of time (e.g., the past week or the past year). To understand how satisfaction and purpose change from moment to moment, researchers need to change the way they measure these constructs.

       Ecological Momentary Assessment is an Experience Sampling Method that queries individuals *in situ* while they are engaging in their life activities (Csikszentmihalyi, Larson, & Prescott, 1977; Stone & Shiffman, 1994). This highly repeated, within person measurement method captures dynamic inter- and intra-individual processes, limiting the degree of autographical recall bias, and has been used successfully in prior emotion and activity research

(Ebner-Priemer & Trull, 2009; Shiffman, Stone, & Hufford, 2008; South & Miller, 2014; Stone & Shiffman, 1994). This method prompts the individual using event, time, or signal contingent sampling. Event contingent sampling is a method of data collection whereby a recording is made each time a predefined event occurs (Stone & Shiffman, 1994). Time-based sampling is a method of data collection whereby a recording is solicited based on a time schedule, often based on random time intervals (Stone & Shiffman, 1994). Signal contingent sampling typically includes having an individual carry a signaling device and the subject partakes in an action when the device signals them (Stone & Shiffman, 1994). Overall, EMA is technologically reliant and there are a variety of ways to implement the data collection strategy depending on the intent of the study.

There are many reasons why EMA is generally selected to gather information on daily human experience. First, it eliminates retrospection because it collects data *in situ*, meaning assessments focus on subjects' current state rather than asking them to recall or summarize their state over longer time periods (Shiffman, Stone, & Hufford, 2008). Because EMA is collected *in situ*, it is also collected in real world environments, rather than out of context (e.g., laboratories), across time and across situations (Shiffman et al., 2008). As with any data collection method there are also a number of drawbacks to using EMA. The initial drawback is compliance; EMA is said to be technologically intensive and can be invasive in the lives of participants. Additionally, after agreement to participate in an EMA study, participants may be reactive to the survey questions therefore creating a possible intervention. By inquiring individuals about their daily lives researchers inadvertently implement an intervention by having them evaluate their lives in a way that they normally don't do, thereby affecting their behavior. Although there are a number of disadvantages to using EMA, the benefits to capturing individuals' daily life in real

time and within their real world environments suggests that this method is superior to other data collection methods.

Aims and hypotheses. There are a number of aims and hypotheses this project addresses that are consistent with previous literature and the utilization of ecological momentary assessment (EMA) as a methodology. The aims of this study are:

1. To explore the stability of known global measures of purpose (i.e., Purpose in Life Test) and life satisfaction, (i.e., Satisfaction with Life Scale) across two measurement periods.

2. To examine whether there is a relationship between established global measures and temporal measurements of purpose and satisfaction. Global measures include Purpose in Life Test and Satisfaction with Life Scale scores and temporal measures recorded using EMA will include purpose of daily activities and satisfaction of daily activities.

3. To explore the relationship between purpose of daily activities and the frequency of activities measured temporally.

4. To explore whether purpose of daily activities and satisfaction of daily activities are related to one another and related to happiness and perceived person-environment fit.

With these aims, the following hypotheses were made:

Between subjects hypotheses.

1. Purpose in Life Test scores and Satisfaction with Life Scale scores will be consistent over a two-week period (Aim 1).

2. Purpose of daily activities measured with EMA will be positively related to Purpose in Life Test scores (Aim 2).

3. Similarly, satisfaction of daily activities measured with EMA will be positively related to higher Satisfaction with Life Scale scores (Aim 2).

Within subject hypotheses.

4. Activities with higher purpose measured with EMA will be done more frequently than activities with lower purpose (Aim 3).

5. Satisfaction of daily activities and happiness measured with EMA will be positively related to purpose of daily activities within the same time period (Aim 4).

6. Satisfaction of daily activities and happiness measured with EMA earlier in the day will be positively related to purpose of daily activities later in the day (Aim 4).

7. Purpose of daily activities and happiness measured with EMA will be positively related to satisfaction of daily activities within the same time period (Aim 4).

8. Purpose of daily activities and happiness earlier in the day will be positively related to satisfaction of daily activities later in the day (Aim 4).

9. Satisfaction of daily activities and purpose of daily activities will be positively related to person-environment fit scores within the same time period (Aim 4).

10. Satisfaction of daily activities and purpose of daily activities will be related to person-environment fit scores later in the day (Aim 4).

Method

Longitudinal Ecology Study

  Participants. The sample for the current study was drawn from a larger longitudinal study. The longitudinal study sample included 283 adult respondents, who live in one of 12 American rural communities and self-identify as having a disability based on the American Community Survey disability screener questions (U.S. Census Bureau, 2012). The communities were selected to be representative of their U.S. Census region on the following demographic variables: age, gender, race, income, and impairment. Communities also needed to be within a Center for Independent Living (CIL) service area.

  Respondents to the longitudinal survey were between the ages of 21 and 91 years ($M = $ 57.74, $SD = $ 13.63) and were slightly more female (52.5%), Caucasian (89.1%), and college educated (57.7% reported post high school education; demographics from the first wave of data). The majority were not employed (63.4%) and reported median household income between $30,000 and $40,000. The percentage of respondents who endorsed each impairment question was: 20.4% hearing, 10.2% visual, 54.6% mobility, 27.5% cognitive, 23.6% self-care, and 31.0% independent living.

  Procedures. A population-based mailing technique was used to establish the sampling frame for the longitudinal survey (Evers, Cummins, Prochaska, & Prochaska, 2005). Thirteen-thousand and six hundred addresses were randomly selected by US Data Corporation, a commercial mailing list company, for the 12 rural communities stratified by population size. The entire recruitment process and survey follow-up were conducted following mixed-mode survey procedures to contact respondents and encourage responses (Dillman, Smyth, & Christian, 2009). This approach has two major benefits, it can improve response rates and

reduce coverage and nonresponse error (Dillman et al., 2009). Following these procedures,

households were mailed a recruitment letter requesting their participation in the study if an

individual in the household could answer "yes" to one of the six American Community Survey

(ACS) disability screener questions (U.S. Census Bureau, 2012). Individuals who could answer

"yes" to one of the six ACS questions and were willing to complete a survey were instructed to

mail back the self-addressed business reply postcard. Six hundred and eighty individuals who

returned the postcard were mailed the Rural Community Living Survey including an informed

consent letter, a self-addressed stamped return envelope, and a $5.00 incentive. The survey

served as the second mode of contact with respondents. At this time, one survey has been mailed

to these participants every year for three years; the last annual survey will be mailed next fall.

This will total four waves of longitudinal surveys using the second mode of contact. Two

hundred and eighty-three surveys were returned during the first wave of recruitment.

     Longitudinal measures. The longitudinal study measures collected demographic

information: personal characteristics, income, employment, household status, health benefits and

insurance, impairment, health conditions, equipment use, and transportation availability. The

longitudinal study surveys also assessed participation in the community, secondary conditions,

feelings and emotions, hope, social support, social activities within the past week and the past

month, person-environment fit, and getting out into the community (see Appendix A). Other

than the previous reported demographic information, the following instruments were utilized for

this project.

     Disability. One of the most frequently cited estimates of disability comes from the

American Community Survey (ACS; U.S. Census Bureau, 2012). The ACS asks individuals

whether or not they are: deaf or have serious difficulty hearing; blind or have serious difficulty

seeing even when wearing glasses; difficulty concentrating, remembering, or making decisions; have serious difficulty walking or climbing stairs; difficulty dressing or bathing; or have difficulty doing errands alone.

The General Environment Fit Scale (Beasley, Jason, & Miller, 2012). The original General Environmental Fit Scale (GEFS; Beasley et al., 2014) was created to assess individuals' fit within a recovery home (i.e., Oxford House). The scale items were previously arranged to measure person-environment fit regarding: value congruence, needs-supplies, demands-abilities, interpersonal similarity, and the unique role of respondents (Beasley et al., 2012). This scale was adapted to include either "community" or "town" in the longitudinal survey and utilized a four-point response scale from 1 (strongly disagree) to 4 (strongly agree). For example, the original scale asked "I have the ability to meet the demands of my Oxford House" was adapted to the longitudinal study to "I have the ability to meet the demands of my community."

To investigate if the adaption of the GEFS were similar to Beasley et al.'s (2012) findings when measuring a recovery home, a series of principal component analyses were used to investigate the survey data collected for this study. A series of exploratory factor analyses of the 23 items of the GEFS was performed on the first wave of the longitudinal data. The full scale is 26 items, these analyses did not include items 8, 12, and 26 according to the original psychometric analyses conducted by Beasley et al. (2012). An exploratory principal component analysis was performed on the 23 items. All six factors had eigenvalues greater than 1.00, cumulatively accounting for 70.24% of the total variance. Next, a principal component analysis was performed on the 23 items limiting the number of factors to be extracted to one and using a promax rotation. This structure accounted for 39.65% of the total variance.

The GEFS is said to have five dimensions (i.e., individual's values, needs-supplies, demands-abilities, interpersonal similarity and unique contributions). A five-factor solution of the current longitudinal data when extracted accounted for 66.65% of the total variance and resembles the work of Beasley et al. (2012). Beasley et al. (2012) trimmed their factor structure to three items that most strongly indicated one of the five factors. With the exception of item 15, the factor structure suggests the same five factors as Beasley et al (2012). This suggests that the GEFS has good construct validity values, needs-supplies, demands-abilities, interpersonal similarity, and unique contributions within this mixed impairment community sample. The structure matrix of the five-factor solution is displayed in Table 1 and the component matrix is shown in Table 2.

Reliability Statistics were conducted on the five-subscales. The coefficient alphas were: Demands-Abilities α = .882; Needs-Supplies α = .790; Value Congruence α = .863; Interpersonal Similarity α = .749; Unique Contributions α = .685. One item from each factor was adapted to represent each of the five dimensions of person-environment fit for EMA use (see Appendix B).

Ecological Momentary Assessment (EMA) Study

Participants. The sample consisted of 25 subjects who responded to real-time experiences over a consecutive 14 day period. Subjects were recruited from the longitudinal study cohort who indicated they would participate in additional research opportunities from two rural communities (Havre, Montana and Soda Springs, Idaho).

Respondents were between the ages of 26 and 72 years (M = 53.217, SD = 11.89) and were slightly more likely to be male (52%), Caucasian (89.1%), and college educated (68% reported post-high school education). The majority were not employed (68%) and reported median household income between $40,000 and $50,000. The percentage of respondents who

endorsed each impairment question was: 4% hearing, 4% visual, 32% mobility, 28% cognitive,

12% self-care, and 20% independent living.

Procedures. Longitudinal survey subjects from Havre, MT ($N = 30$) and Soda Springs,

ID ($N = 20$), who responded that they would be willing to participate in another study, were

contacted by telephone (for talking points see Appendix C). Twenty-five subjects (eight Soda

Springs residents and 17 Havre residents) agreed to attend a 90-minute training session and

participate in a 14 consecutive day EMA study. The training session was hosted at a public

building in the center of each town; the EMA study included using a smartphone to record

survey data eight to ten times a day.

The subjects were trained in person by two researchers with a training guidebook, using

Samsung touchscreen devices specifically programed for training, along with paper and pencil

measures. The training included information about the device (i.e., charging the device, turning

the device on/off, adjusting volume level, etc.), instruction for subjects on how to interpret each

question and available responses, and how to enter their responses on the Samsung device. In

addition, subjects were trained on how to skip questions they did not wish to answer. They were

allowed to skip any question at any time and had the option to skip any survey at any time.

Subjects were reminded that their participation was voluntary and therefore they were allowed to

drop out of the data collection and return the device for the full incentive (i.e., $100.00) at any

time. Each subject was provided with contact information for the research team if they needed

assistance during their data collection and were able to use their training guidebook for

reference.

The devices were used to collect ecological momentary assessments using two

procedures. First the device presented a set of regularly scheduled prompts for participants to

answer questions about their daily activities, temporal wellbeing associated with their activities, emotional states, and physical states. These prompts were scheduled from 7:00 am - 11:00 pm daily for 14 consecutive days. During the day, eight scheduled prompts were sent to subjects on an average of one every two hours. These surveys were estimated to take participants one to two minutes per prompt.

All subjects agreed to allow the Global Positioning System (GPS) tracking of their devices. This allowed the device to send them additional surveys contingent on their movements away from home as the second procedure of the device. When GPS was unavailable, the devices used wireless internet to record positioning. The devices were preprogrammed with the home addresses of the subjects. When participants left their homes and the device reported that they were stationary for 10 minutes, the device prompted subjects with an additional survey that also was estimated to take one to two minutes to respond. This GPS continent survey asked respondents to report their daily activities, temporal wellbeing associated with their activity, and person-environment fit. The previously described longitudinal data indicated that within a seven day time period people traveled 7.35 times away from home and participated in 4.45 activities on average. Considering these longitudinal survey findings, it was anticipated that subjects would be asked to answer only one to two surveys more than the eight scheduled surveys each day at a maximum estimate (ten surveys total a day).

Within the training session, subjects were given a paper and pencil pamphlet of global measures (see Appendix D) and an opportunity to complete the measures within the 90-minute training session. The trainers described to the participants that they would be receiving a duplicate survey in the mail along with a self-addressed stamped return envelope and instructions for returning the device. The two paper and pencil measures were used as separate measures,

time-one and time-two. Once the device was returned to the researchers, the subjects were

mailed a $100.00 money order for their participation.

EMA measures. Two sets of questions were used during the EMA data collection. The

regularly scheduled prompts asked subjects what they are experiencing and feeling in the

moment, including: how well they slept the night before, type of activity, purpose for their

activity, satisfaction with their activity, exertion, pain, emotional states, and environmental

features (see Appendix B). These measures were previously used in a prior implementation of

EMA to investigate pain, disability, and participation in Missoula, Montana (Livingston et al.,

2015). For subjects who consented to GPS tracking, when sent a GPS generated survey they

were asked: what they are doing, why they are doing it, purpose for the activity, satisfaction with

the activity, person-environment fit, and any environmental features they are experiencing (i.e.,

GPS prompts; see Appendix B).

Activity Type. This item asked subjects to indicate what type of activity they were

engaged in at the time they were prompted. Subjects chose between 17 categories of activities

(see Table 3).

Purpose of Daily Activities. This item asked subjects to report whether what they are

doing is 0 (useless, serves no purpose), 3 (neutral), or 5 (serves a purpose). These anchors have

been created in reference to the definitions of purpose in life (e.g., Chamberlain & Zika, 1988;

Crumbaugh and Maholick 1964; Mcknight & Kashdan, 2009).

Satisfaction of Daily Activities. This item asked subjects to report their satisfaction of

their activity from by indicating whether they were 0 (not at all satisfied), 1 (a little satisfied), 2

(somewhat satisfied), 3 (quite satisfied), or 4 (very satisfied). This item has been used in a

previous ecological momentary assessment study (see Livingston et al., 2015).

Happiness. The happiness item asked participants to record how happy they were at the time of the prompt on a five-point scale. The scale ranged from 0 (not at all), 1 (a little), 2 (somewhat), 3 (quite a bit), or 4 (very much). This item was only asked during regularly scheduled prompts.

The General Environment Fit Scale (Beasley et al., 2012). The general environment fit scale measured the degree to which the subject felt as though their community matches their person-environment fit using five items to assess subjects' values, needs, abilities and characteristics using a four-point response scale from 1 (strongly disagree) to 4 (strongly agree). This scale was adapted to include the word "situation" to change the setting to subjects' immediate surroundings. For example, the original scale item is "I have the ability to meet the demands of my Oxford House" and was adapted in the EMA study to "I have the ability to meet the demands of this situation." These items were only asked during GPS prompts (i.e., person environment fit).

Paper and pencil global measures of purpose and satisfaction. Two sets of paper and pencil global measures were administered to the participants who agreed to take part in the EMA study. The first paper and pencil global measures were administered at the initial training and the second set was mailed to the participants' home and returned with the device at the completion of the study. The paper and pencil global measures asked subjects to report their purpose in life, satisfaction with life, and purposeful reasons for conducting activities (i.e., Paper and Pencil Global Measures of Purpose and Satisfaction; see Appendix D).

Satisfaction with Life Scale (Diener et al., 1985). The SWLS included five statements asking subjects to indicate their satisfaction with life using a seven-point Likert-type scale from 1 (strongly disagree) to 7 (strongly agree). A sample item is, "In most ways my life is close to my

ideal" (Diener et al., 1985). When standardizing the SWLS, a mean score of 23.5 (*SD* = 6.43)

and a .57 correlation was found with summed domain satisfactions, suggesting that global

satisfaction and domain satisfactions share common variance, but are not equivalent constructs

(Diener et al., 1985). Further, a two-month test-retest was used to assess reliability and revealed

a .82 statistic and a coefficient alpha of .87 (Diener et al., 1985). Last, a principal axis factor

analysis was utilized and a single factor emerged and accounted for 66% of the variance (Diener

et al., 1985).

   Purpose in Life Test (PILT; Crumbaugh & Maholick, 1964). The test consisted of 20

items that are rated on a seven-point Likert-type scale; a total score is calculated based on the

sum of each individual item and ranges from 20-140 (Schulenberg & Melton, 2010). A sample

item is, "I am usually…" 1 (completely bored), 4 (neutral), or 7 (exuberant, enthusiastic;

Crumbaugh & Maholick, 1964); neutral is the middle anchor of the response scale for every

item. Total score averages were standardized across five sub-samples including "high purpose"

non-patient undergraduate and graduate students (*M* = 124.78, *SD* = 11.80), outpatients from a

nonprofit outpatient psychiatric clinic (*M* = 101.30, *SD* = 18.14), and inpatient patients

diagnosed with alcoholism (*M* = 89.57, *SD* = 16.60). High internal consistency has been found

using split-half correlation coefficients (Crumbaugh, 1968; Crumbaugh & Maholic, 1964; Reker

& Cousins, 1979). Specifically, reliability of the PILT revised total score was calculated by the

odd-even method (Pearson *r,* N = 255) revealed a test statistic of .81 and a Spearman-Brown test

statistic was .90 (Crumbaugh & Maholic, 1964). The dimensionality of the PILT has been

debated among researchers, the majority of published findings reveal one- and two-factor model

solutions (Schulenberg & Melton, 2010). Unidimensional models support the use of the PILT as

a global scale for purpose in life (Steger, 2006), while bi-dimensional models support the use of

"life satisfaction" (items: 1, 2, 5, 6, 9, 10, and 19) and "life purpose" (items: 3, 4, 8, 11, 12, 17, and 20; Dufton & Perlman, 1986). In the current study the PILT was assessed for unidimensionality and stability over time using the pencil and paper global measures.

Data Handling and Analytic Strategy

The longitudinal data was entered into an Excel (Microsoft, 2013) spreadsheet programmed with input value constraints that did not allow entries that were out of range and was checked for data input accuracy. The EMA data were uploaded from the devices and converted into Excel files. All data were imported into SPSS (IBM Corp., 2013) and STATA (STATACorp, 2015) for analysis and standardized to improve interpretability for variables with different scales.

Ecological Momentary Assessment prompt data was collected in two different ways (i.e., regularly scheduled and GPS) and were kept separately to maximize the number of observations depending on the analyses. Individuals' EMA prompt data was averaged across all 14-days to compute mean scores prior to conducting between subject analyses. Between subjects analyses include descriptive statistics, bivariate correlations, and regression analyses across individuals. Within subjects analyses included similar analyses, although analyses were computed within individuals. Contemporaneous analyses were used to assess relationships between variables within measurement periods for each individual. Additionally, lagged variables were used for one to seven time periods prior to any given measurement period. For instance, a one period lag tested within the day could be evaluated with seven time periods (time period: 2, 3, 4, 5, 6, 7, and 8); a seven period lag is only evaluated with time one period (period 8). These lagged variables were used to compute series of regression equations to evaluate if any time lags of specific variables were predictive of participants' purpose, satisfaction, or person-environment fit.

To account for the clustered nature of the GPS prompt data and possible type I error inflation, confidence intervals were computed using cluster-robust standard errors, clustered on the individual (Cameron & Miller 2015). Cluster-robust standard errors is the recommended approach when analyzing data with "clustered errors," which offers an adjustment for autocorrelation (Cameron & Miller 2015). Therefore, the GPS prompt data findings are robust because a conservative test of statistical significance was used.

Results

Descriptive Statistics of Datasets

Three sets of data were collected in this project and used to test the previous outlined hypotheses: paper and pencil measures of global purpose and satisfaction, regularly scheduled prompts that were administered eight times a day, and the GPS prompts collected when participants were away from their homes. Of the 112 regularly scheduled surveys that participants were prompted with, 72.2% were answered. Participants answered between 0 and 49 GPS prompts with a median of 9 prompts for each person ($N = 285$ across 22 participants, $M = 12.95$). Three subjects were not prompted with GPS prompts.

Between Subject Analyses

Analyses of global measures of purpose and satisfaction. Descriptive statistics, coefficient alphas, and correlations were conducted to examine the Purpose in Life Test and Satisfaction with Life Scale for consistency (Aim 1). Average Purpose in Life Test scores across a two week period were similar (time-one: $M = 101.72$, $SD = 16.78$, $\alpha = 901$; time-two: $M = 101.07$, $SD = 16.22$, $\alpha = .925$). A strong, positive correlation was found between the time-one and time-two Purpose in Life Test scores ($r = .917$, $p < .001$). Similarly, average Satisfaction with Life Scale scores across the same two week period were similar (time-one: $M = 25.00$, $SD = 1.45$, $\alpha = .849$; time-two: $M = 24.17$, $SD = 1.40$; $\alpha = .851$). A strong positive correlation was also found between the time-one and time-two Satisfaction with Life Scale scores ($r = .877$, $p < .001$). A visual representation of the time-one and time-two scores for Purpose in Life Test and Satisfaction with Life Scale is presented in Figures 1 and 2. Given these consistent findings, the mean of the time-one and time-two scores from the Purpose in Life Test and Satisfaction with

Life Scale scores were computed for each individual and used in subsequent analyses (Purpose in

Life Test: $M = 101.89$, $SD = 16.74$; Satisfaction with Life Scale: $M = 24.52$, $SD = 6.90$).

Analyses using regularly scheduled data. To examine whether there was a relationship

between the global measures and temporal measurements of purpose and satisfaction (Aim2), a

series of correlations were conducted. The global measures of purpose and satisfaction were the

Purpose in Life Test and the Satisfaction with Life Scale scores of participants. The temporal

measures were purpose of daily activities and satisfaction of daily activities and were averaged

across all EMA time periods for each participant. The first two-tailed Pearson's r correlation

revealed that individuals' purpose of daily activities was significantly correlated with higher

Purpose in Life Test scores ($r = .202$, $p < .001$). Likewise, individuals' higher satisfaction of

daily activities was positively correlated with higher Satisfaction with Life Scale scores ($r =$

$.436$, $p = .030$). These between subjects analyses depict that participants' global assessments of

purpose in life and life satisfaction were related to their contemporaneous measures of purpose

and satisfaction of daily activities.

Within Subject Analyses

Analyses using regularly scheduled data. Regularly scheduled prompt data (2724

administered prompts; 1967 answered prompts) were used to examine the relationship between

the activities that participants reported and their reported purpose of those activities (Aim 3).

Initial descriptive statistics were conducted on the measure of purpose of daily activities across

activities and are presented in Table 3. Participants reported that religious activities ($N = 10$; M

$= 3.90$), healthcare appointments ($N = 17$; $M = 3.53$), and community or volunteer activities ($N =$

36; $M = 3.44$) were activities with the highest purpose. In contrast, watching television or a

movie ($N = 244$; $M = 2.97$), resting ($N = 246$; $M = 2.27$), and recreation or leisure activities ($N =$

224; $M = 2.45$) were the activities with the lowest reported purpose. A two-tailed Pearson's r

correlation indicated that the average purpose for activities was significantly negatively

correlated with the number of times each activity was reported, $r = -.701$, $p = .002$. Specifically,

the number of times individuals reported an activity was strongly negatively related to the

activity's endorsed purpose and was contrary to what was expected (see *Figure 3*).

Satisfaction of daily activities and happiness on purpose of daily activities. The number

of observations, means, and standard deviations of purpose of daily activities, satisfaction of

daily activities, and happiness in the regularly scheduled prompts are presented in Table 4. A

series of fixed effects within subjects regressions was conducted to examine the relationship

between happiness and satisfaction of daily activities on purpose of daily activities within the

same time period using EMA data (Aim 4). These relationships were investigated separately due

to the organization of the subsequent time analyses to be explored subsequently. Participants

satisfaction of daily activities was a positive significant predictor of purpose of daily activities

($b^* = .367$, $p < .001$, see Table 5). Participants' happiness was also a positive significant

predictor of purpose of daily activities within the same time period ($b^* = .145$, $p < .001$, see

Table 6). These contemporaneous relationships highlight that participants' satisfaction of daily

activities and happiness were significant predictors of their purpose of daily activities,

respectively.

        To further explore the relationship between participants' happiness and satisfaction of

daily activities on their purpose of daily activities (Aim 4), time was explored. In this instance,

time was considered across time periods and only within each study day. A series of fixed

effects within subjects regressions of participants' lagged satisfaction of daily activities on their

purpose of daily activities and their happiness on their purpose of daily activities was conducted.

Participants' satisfaction of daily activities earlier in the day was associated with higher purpose of daily activities one period later, ($b* = .064$, $SE = .024$, $t = 2.62$, $p = .009$). These results indicate that individuals who engaged in activities with higher satisfaction of daily activities earlier in the day reported slightly higher purpose of daily activities in the measurement period immediately following the prior period. Participants' satisfaction of daily activities was not significantly associated with their purpose of daily activities with the remaining six possible lags within a study day. The second within subjects regression indicated participants' happiness earlier in the day was positively associated with their purpose of daily activities for only three of the seven possible time lags: one period later ($b* = .044$, $SE = .021$, $t = 2.09$, $p = .037$), three periods later, ($b* = .057$, $SE = .026$, $t = 2.20$, $p = .028$), and five periods later ($b* = .096$, $SE = .035$, $t = 2.73$, $p = .006$). Individuals who reported higher happiness earlier in the day reported higher purpose of daily activities later in the day; this relationship was not significantly substantiated across all lagged periods options (i.e., two periods, four periods, six periods, or seven periods) within the day. Although these series of regressions indicate that participants' satisfaction of daily activities and happiness earlier in the day is positively associated with purpose of activities later in the day, the accounted variance of these relationships is small.

Purpose of daily activities and happiness on satisfaction of daily activities. Similar to the initial investigation of purpose of daily activities, an additional series of fixed effects within subjects regressions was conducted to examine the relationship between happiness and purpose of daily activities on satisfaction of daily activities within the same time period (Aim 4). Participants' purpose of daily activities was a positive significant predictor of their satisfaction of daily activities within the same time period ($b* = .294$, $p < .001$, see Table 7). Participants' happiness was a positive significant predictor of their satisfaction of daily activities ($b* = .483$, p

< .001, see Table 8). Again, these within period relationships indicate that participants'

happiness and purpose of daily activities were significant predictors of their satisfaction of daily

activities.

The relationships of individuals' purpose of daily activities and happiness on their

satisfaction of daily activities were further explored across time (Aim 4). A series of fixed

effects within subjects regressions was conducted using participants' lagged purpose of daily

activities on their satisfaction of daily activities. Participants' purpose of daily activities earlier

in the day was positively associated with their satisfaction of daily activities only one period later

($b^* = .071$, $SE = .030$, $t = 2.32$, $p = .020$). Participants who engaged in activities with higher

purpose earlier in the day reported slightly higher satisfaction of daily activities one period later.

Participants' purpose of daily activities was not significantly associated with their satisfaction of

daily activities in the remaining six lagged time periods. Correspondingly, participants'

happiness earlier in the day was positively associated with their satisfaction of daily activities

one period later ($b^* = .111$, $SE = .023$, $t = 4.85$, $p < .001$), two periods later ($b^* = .083$, $SE =$

$.025$, $t = 3.33$, $p = .001$), and three periods later ($b^* = .074$, $SE = .028$, $t = 2.61$, $p = .009$). Higher

happiness earlier in the day was related to higher satisfaction of daily activities later in the day,

although this relationship was not significant across every time period later in the day. These

series of regressions show that participants' purpose of daily activities and happiness earlier in

the day was positively associated with their satisfaction in activities later in the day;

nevertheless, the accounted variance of these relationships is small.

Analyses using global positioning system data. Global positioning system prompt data

($N = 285$ answered prompts) was used to consider participants' person-environment fit. Previous

research has established that the person-environment fit subscale is comprised of five-

dimensions (i.e., value congruence, needs-supplies, demands-abilities, interpersonal similarity, and unique contribution; Beasley et al., 2012). As presented previously, an item from each dimension was chosen empirically through analyses of the longitudinal survey data and administered in the GPS prompts. Descriptive analyses were conducted to better understand how these five items were answered and presented with the descriptive analyses for the GPS purpose and satisfaction of daily activities variables (see Table 9).

A principal component analysis was used to explore the factor structure of the five person-environment fit items collected within the GPS prompts. Only one-factor had an eigenvalue greater than 1.00, accounting for 61.74% of the total variance and was further examined. A promax rotation indicated that the five items were unidimensional and the structure coefficients are presented in Table 10. Due to these findings, the five items were combined and treated as a unidimensional scale of person-environment fit for the remaining analyses. The internal consistency of the unidimensional person-environment fit subscale, as assessed by coefficient alpha, exhibited good internal consistency ($\alpha = .840$).

Satisfaction of daily activities and purpose of daily activities on person-environment fit. To examine the relationship between participants' purpose and satisfaction of daily activities on their person-environment fit within the same time period (Aim 4), two fixed effects within subjects regressions were conducted. To account for the clustered nature of the GPS prompt data and possible type I error inflation, confidence intervals were computed using cluster-robust standard errors, clustered on the individual (Cameron & Miller, 2015). These regressions were analyzed separately to mirror the following planned time series analyses. Participants' satisfaction of daily activities was a positive predictor of person-environment fit ($b^* = .421$, $p < .001$, see Table 11). Although, participants' purpose of daily activities was not a significant

predictor of their person-environment fit within the same time period ($b* = .110$, $p = .072$, see

Table 12). These within subjects regressions indicate that only participants' satisfaction of daily

activities was significantly associated with their contemporaneous person-environment fit.

To explore time within the relationships of individuals' purpose and satisfaction of daily

activities earlier in the day with their person-environment fit later in the day (Aim 4), a series of

fixed effects within subjects regressions were conducted. Again, to adjust for autocorrelation the

use of cluster-robust standard errors was used, clustered on the individual (Cameron & Miller,

2015). Participants' satisfaction of daily activities earlier in the day was associated with higher

person-environment fit scores three prompts later ($b* = .328$, $SE = .086$, $t = 3.80$, $p = .003$).

Those who engaged in activities with higher satisfaction earlier in the day reported better fit in

their environments three prompts later. Two hundred and thirty-six minutes was the average

time between individuals' three period prompts ($n = 53$). Consistent with the contemporaneous

finding, participants' purpose of daily activities was not associated with their person-

environment fit within the day ($p > .05$ for periods one through six; the seventh lag was not

computed due to collinearity issues). Overall, only participants' satisfaction of daily activities

earlier in the day was positively correlated with their person-environment fit later in the day;

purpose of daily activities earlier in the day was not significantly associated with their person-

environment fit later in the day.

Post Hoc Analyses

Happiness proved to be a strong predictor in the temporal analyses on purpose of daily

activities and satisfaction of daily activities and warranted further exploration. The global

measures of Purpose in Life and Life Satisfaction were used to compare happiness across the

study period. Specifically, the regularly scheduled prompt data were used to compute an average

happiness score across all 112 prompts for each individual. Descriptive statistics and

correlations with global measures of purpose and satisfaction were conducted to explore

individuals' happiness scores (happiness across participants: $N = 25$, $M = 2.59$, $SD = .86$).

Individuals' happiness scores were strongly positively related to their Purpose in Life Test score

average from time-one and time-two ($r = .757$, $p < .001$). Likewise, Individuals' happiness

scores were strongly positively related to their Satisfaction with Life Scale score average from

time-one and time-two ($r = .708$, $p < .001$). Additionally, individuals' Purpose in Life Test

average scores was strongly positively related to their Satisfaction with Life Scale average scores

($r = .762$, $p < .001$). These correlations indicate that individuals' happiness averaged across the

two week period was positively related to their global scores of purpose and satisfaction.

Discussion

The vast number of wellbeing traditions, theories, constructs, applications, and measurements have increased the understanding of individuals' positive psychological functioning and experience. A number of studies have indicated that the wellbeing of people with disabilities can be influenced by additional factors such as engagement in activities, participation in community environments and physical health. At this time, it is assumed that this is the first study to explore the use of measuring wellbeing by purpose of daily activities, satisfaction of daily activities, and happiness as individuals move throughout the day and person-environment fit as a measure of environment. Considering that previous theory and research have highlighted the importance of participation of persons with disabilities, it is important to explore the relationship of wellbeing and environment associated with participation.

The current study used paper and pencil measures to investigate global measures of wellbeing and ecological momentary assessment to explore temporal relationships between wellbeing and person-environment fit in persons with disabilities. Twenty-five participants with disabilities were recruited from rural communities in Montana and Idaho to participate in the current study and were given touchscreen devices to record their responses to questions over a two week period.

Experimental Findings

To assess the four aims of the current study, three sets of data were used: the paper and pencil data, regularly scheduled prompt data, and the global positioning prompt data. As presented previously, ten hypotheses were created to address these aims and a summary of these hypotheses and their related findings are provided in Table 13. These hypotheses are discussed

in the planned portion of this section and the post hoc analyses include additional unplanned

results.

      Planned analyses. The first aim of the current study was to explore the stability of

known global measures of Purpose in Life Test and Satisfaction with Life Scale across two

measurement periods. Purpose and satisfaction have been found to be important indicators of

happiness, a construct of wellbeing (Diener et al., 1999; Pavot et al., 1991). Moreover, the

wellbeing of persons with disabilities has been associated with participation in communities

(Rimmer et al., 2004) and understanding participation and activities in this group is vital. For the

current study, the exploration of the preexisting wellbeing measures administered in this study

was conducted. The between subjects analyses supported previous findings that the Purpose in

Life Test and Satisfaction with Life Scale scores were reliable by demonstrating consistency

over time within this group (Crumbaugh & Maholic, 1964; Diener et al., 1985).

      These relationships led to analyses addressing the second aim, to examine whether there

is a relationship between global measures and temporal measures of purpose and satisfaction.

Consistent with the associated hypotheses, individuals' Purpose in Life Test and Satisfaction

with Life Scale scores were related to the temporal measures of purpose of daily activities and

satisfaction of daily activities, respectively. The positive relationships found between the global

measures and the temporal measures supported the continued investigation in this study of the

temporal measures of purpose of daily activities and satisfaction of daily activities in subsequent

analyses as indicators of individuals' wellbeing.

      To explore the relationships between purpose of daily activities and the frequency of

activities measured temporally was the third aim of the current study. The hypothesis stated that

the frequency of activities were conducted would be related to high purpose ratings and the

results proved to be contrary to the hypothesis. Specifically, purpose for activities was strongly

negatively correlated with the number of times an activity was reported. These results suggest

that individuals spend the majority of their daily activities doing activities reported with low

purpose. Possibly the weekly novelty of certain activities adds to their reported purpose (e.g.,

religious activities) or the people associated with specific activities increase their purpose (e.g.,

community or volunteer activities either partaking with others or volunteering for others).

The last aim of the current study was to explore whether purpose of daily activities and

satisfaction of daily activities were related to one another and related to happiness and perceived

person-environment fit. Ecological momentary assessment data were collected with the

expectation that these highly repeated measures would be valuable in the exploration between

these variables in individuals with disabilities in rural communities. From the initial within

subjects analyses, individuals' satisfaction of daily activities was moderately related to their

purpose of daily activities contemporaneously. This moderate relationship is consistent with

previous research that indicates that purpose and satisfaction measure two distinct areas of

wellbeing following the hedonic and eudaimonic theories, respectively. Therefore, the two areas

of wellbeing should be related, although not overlap completely. Individuals' contemporaneous

happiness positively predicted their purpose of daily activities to a small extent. Previously,

individuals' purpose has been defined as a combined function of their attitude towards the

activity and subjective norms (Mullen et al., 1987). Perhaps happiness is more closely related to

attitudes towards activities, if the activity brings them pleasure, or it might be related to who

participants are with during their activity. This would be consistent with previous findings that

found that individuals' purpose for doing an activity and the company they were with was

positively related to a higher meaning of the activity (Ravesloot et al., unpublished manuscript).

Considering the exploratory nature of the intricate relationships between temporal measures of wellbeing thus far, purpose of daily activities and happiness were used as predictors of satisfaction in a series of analyses. Individuals' purpose of daily activities and happiness were positive predictors of satisfaction of daily activities. Contemporaneous purpose of daily activities was a positive predictor of their satisfaction of daily activities to a small to medium magnitude. This pattern is similar to the opposite relationship and indicates that purpose and satisfaction of daily activities are closely related as past theories and research have suggested that should be investigated further. Additionally, individuals' happiness was a positive predictor of medium magnitude of their satisfaction of daily activities. One of the most notable additions to previous literature that these relationships demonstrate is the effective approach which these variables were collected, *in situ*, to describe wellbeing moment to moment throughout the day. The contemporaneous within person results also add to the previous literature on hedonic and eudaimonic perspectives that theorized positive relationships between these variables, by signifying small to moderate contemporaneous relationships between all measured variables of wellbeing (Deci & Ryan, 2008; Huta & Ryan, 2010). Although the positive relationships are consistent with previous literature, the magnitude of some of these relationships was small.

Due to the significantly positive relationships between the contemporaneous variables, time was included in the subsequent analyses to explore the lasting associations of the variables with one another. The ecological momentary assessment data was also used to examine the relationships between individuals' satisfaction of daily activities and happiness earlier in the day on their purpose of daily activities later in the day. Individuals' satisfaction of daily activities were found to be associated with their purpose of daily activities one period later and their happiness earlier in the day was found to be associated with their purpose of daily activities one,

three, and five periods later. The positive relationships found in the current study were consistent with expectations; although, the amount of variance satisfaction of daily activities and happiness accounted for within purpose of daily activities was small. These findings suggest that individuals' purpose of daily activities may be influenced by other variables other than their satisfaction in activities and happiness earlier in the day. For the accounted for variance, the relationship found between individuals' satisfaction of daily activities earlier in the day and purpose in activities one period later suggests that these variables are closely related to what participants are doing rather than how they are feeling. In contrast, the relationship of participants' reported happiness earlier in the day on their purpose in activities later in the day indicates that how participants are feeling has a lasting relationship on the purpose they find within later activities.

This finding may be explained by understanding how happiness was asked; participants were asked to rate their happiness in the moment, a wellbeing item that was not directly tied to the activity that they were doing. This difference in relationships over time may be picking up individuals' general feelings for happiness in the moment, whereas purpose is asked in relation to the activity they had just reported previously. These findings suggest that individuals' general feelings of happiness earlier in the day may better account for later purpose of daily activities than measuring their satisfaction of daily activities earlier in the day. Perhaps this finding is explained by the fact that happiness has a more enduring relationship on purpose in activities later in the day than satisfaction does.

Similarly, when examining purpose of daily activities and happiness earlier in the day on satisfaction of daily activities later in the day, the same patterns were found. Individuals' earlier purpose of daily activities on later ratings of satisfaction of daily activities were only associated

within a one period lag. This finding is similar to the inverse relationship. This result adds to

the growing body of literature that contemporaneous purpose and satisfaction of daily activities

are related to one another and are related to one another within two hours of measuring each

variable. The analyses across time are smaller than those conducted contemporaneously,

suggesting that purpose of daily activities and satisfaction of daily activities are related to the

activities reported, rather than a general sense of wellbeing.

In contrast, the influence of happiness on satisfaction of daily activities throughout the

day had a similar pattern to the happiness on purpose of daily activities relationship. The

significant lagged variable structure indicated that happiness was associated with satisfaction of

daily activities at one, two, and three periods later, respectively. These results continue to

support the notion that distinctions of various constructs of wellbeing may account for the

increased number of significant lags between happiness and the dependent variable, satisfaction

of daily activities. For example, satisfaction has been theorized to stem from the hedonic

tradition that is concerned with maximizing pleasurable moments as a pathway to happiness

(Henderson & Knight, 2012). Often times, happiness is used as a proxy to describe wellbeing

(e.g., Henderson & Knight, 2012). This understanding of satisfaction may explain why

happiness had a longer lasting relationship on satisfaction on daily activities in contrast to the

shorter relationship between purpose of daily activities earlier in the day on satisfaction later in

the day. These analyses begin to explore the intricate nature of happiness, purpose in activities

and satisfaction in activities as measures of wellbeing.

When investigating wellbeing of persons with disabilities, both activities and

participation in communities have been found to matter as well as environments (Rimmer et al.,

2004). Specifically, rural communities have highlighted how the environment influences

people's activity choice (Hartley, 2004). Person-environment fit has become a good indicator of

individuals' willingness to engage in communities, participate in communities, and stay in

communities (Beasley et al., 2012; Edwards et al., 2006). The GPS EMA data were examined to

explore individuals' person-environment fit as an ecological construct and wellbeing through

purpose of daily activities and satisfaction of daily activities. As anticipated, the five items

collected in the current study, which represented each of the five dimensions of the original

measure (Beasley et al., 2012), were one-dimensional. The unidimensionality of these items

enabled them to be aggregated for each participant and represent a measure of person-

environment fit for each timed prompt. Only individuals' satisfaction of daily activities was

positively associated with individuals' person environment fit contemporaneously.

Past literature indicates that the environment impacts the types of activities individuals

engage in and it is understood that for individuals' with disabilities that participation is an

important indicator of wellbeing. Until now, a measure of individuals' environment as they

engage in activities throughout the day has not been published. Thus, these findings between

purpose of daily activities and satisfaction of daily activities on person-environment fit are the

first of their kind. When assessing these relationships across time, only individuals' satisfaction

of daily activities earlier in the day was positively associated with their person-environment fit

scores three periods later; individuals' purpose of daily activities earlier in the day was not

associated with their person-environment fit later in the day. This non-significant finding

mirrors the contemporaneous findings and may also indicate a distinction between variables of

wellbeing. Life satisfaction has been linked to the hedonic and the eudaimonic perspectives

(Huta & Ryan, 2010) and therefore satisfaction of daily activities might be picking up

fluctuations in wellness that purpose of daily activities is not. Individuals' purpose has been

solely linked to the eudaimonic perspective (Huta & Ryan, 2010; Ryan & Deci, 2000).

Post hoc analyses. Given the importance of happiness temporally, an investigation was

conducted on the global measures of wellbeing (i.e., Purpose in Life Test and Satisfaction with

Life Scale) and happiness across individuals' regularly scheduled prompts. These relationships

demonstrate that happiness across time is a strong indicator of these global wellbeing constructs

and is promising to be an overall measure of wellbeing. Future research may aim to investigate

whether happiness is a strong predictor of person-environment fit in individuals. The findings of

the current study suggest that happiness will be a strong positive predictor of person-

environment fit. If substantiated in future research, people with disabilities should aim to

increase their happiness throughout the day to increase their purpose and satisfaction of daily

activities later in the day and increase their perception of person-environment fit. This might be

accomplished through cognitive behavioral intervention.

Limitations and Future Directions

The current project represents an important step in understanding the relationship of

wellbeing and the environment as it aimed to study how temporal fluctuations of purpose and

satisfaction of daily activities were related to individuals' person-environment fit. The current

study aimed to fill many gaps in the previous literature, although it is not without its own

limitations. One limitation is that the study sample is geographically limited and therefore these

results may not generalize to other rural regions of the United States nor international rural

communities. In that regard, without a sample of individuals without disabilities I was not able

to test if these results are specific to individuals with disabilities or whether they may be

experienced in the general population. Expansion and duplication of this study is worth

consideration for a solution to this limitation. Further exploration of these variables of wellbeing

and daily activities would add to this body of literature beyond the limits of this small

community sample of individuals with disabilities in rural communities.

The participants of the current study were a rural community sample of individuals with

various disabilities recruited for a larger study. Although these participants recorded over 2,500

points of data, the small sample could account for random trends in the data that may not appear

in a larger dataset. Another drawback of this sample is that different impairment groups may

limit or increase different levels of purpose or satisfaction of daily activities. These distinctions

are hard to identify in this sample because it was community based and there was too much

variation between people and not enough congruity between participants to group them together.

If future questions about disability and participation explore individuals' limitations and

increases in activities based on temporally defined variables, participants should be recruited

with an effort to aggregate across impairment groups.

In general, EMA methods have a number of known drawbacks. Although temporal

relationships were assessed in the within subjects analyses, no causal relationships can be

established within this methodology. The time series analyses were able to test relationships

between variables across time. These explorations created a more complete investigation of

these variables, but were still not able to assess causal relationships. There are a number of

limitations associated with the methods of this study, however EMA methods aim to enhance the

understanding of the dynamic interactions between individuals and their environments (Shiffman

et al., 2008).

The use of EMA is intended to reduce recall error, though the repeated assessment may

lead to reactivity (Hufford, Shields, Shiffman, Patty, & Balabanis, 2002). For example, asking

individuals about their purpose and satisfaction eight times a day may have served as catalyst for them to change their behavior or their responses. Considering participants were asked regularly scheduled prompt questions eight times a day, a separate set of questions queried them about their person-environment fit only when they left the house to lessen the likelihood of participant fatigue. Unfortunately, this strategy led to less data for questions asked within the GPS EMA prompts and the inability to conduct analyses across datasets. For example, the exploration of happiness earlier in the day was not able to be tested on person-environment fit later in the day even though the initial within subjects analyses revealed that happiness was a positive predictor in the contemporaneous and time series analyses of purpose and satisfaction of daily activities, respectively. Future studies should increase the data collection of person-environment fit measures for a better understanding of fit within a variety of environments and at a variety of times.

The within person findings suggest some utility in interventions specified for specific persons. For instance, a strong relationship between an individual's happiness and high purpose of daily activities and satisfaction of daily activities has implications for increasing their activities and participation in their communities. Additionally, information about their purpose and satisfaction of daily activities on person-environment fit may help further unpack participation in communities. Specifically, rehabilitation and health practitioners could assess an individual's purpose in activities and intervene by helping to provide support needed to increase the frequency of higher purpose activities to enhance overall wellbeing in this individual. Overall, individuals' temporal relationships of happiness were positively associated with both purpose and satisfaction of daily activities, respectively, and satisfaction of daily activities was a positive predictor of their person-environment fit across the day. Ultimately, future research

should expand this investigation across geographical regions and various populations and then

apply it to interventions to increase individuals' wellbeing and participation in their

communities.

Conclusion

Previous research has used individuals' subjective global measures to explain their wellbeing. These measures have often been separated within the larger wellbeing construct to represent individuals' purpose or their satisfaction in life. The results of this study highlight that the global measures used previously are consistent across a two week time period in this community sample of people with disabilities. They also highlight that contemporaneous measures of wellbeing are positively related to one another and that happiness in individuals earlier in the day is positively associated with purpose of daily activities and satisfaction of daily activities, respectively. While these findings are important for further understanding of wellbeing within this population, the more important findings are how individuals' satisfaction earlier in the day is related to their person-environment fit later in the day. Future research may examine the relationship between happiness, satisfaction related to daily activities, person-environment fit, and participation.

+

References

Anderson, C. A. (2001). Claiming disability in the field of geography: Access, recognition and integration. *Social and Cultural Geography, 2*(1), 87-93.

Anderson, T. (2001). The hidden curriculum in distance education an updated view. *Change: The Magazine of Higher Learning, 33*(6), 28-35.

Beasley, C.R., Jason, L.A., & Miller, S.A. (2012). The General Environmental Fit Scale: A factor analysis and test of convergent construct validity. *American Journal of Community Psychology, 50*(1-2), 64-76.

Becker, G. S. (1965). A Theory of the Allocation of Time. *The Economic Journal*, 493-517.

Björk, J., Albin, M., Grahn, P., Jacobsson, H., Ardö, J., Wadbro, J., ... & Skärbäck, E. (2008). Recreational values of the natural environment in relation to neighbourhood satisfaction, physical activity, obesity and wellbeing. *Journal of Epidemiology and Community Health, 62*(4), e2-e2.

Booth, S. L., Mayer, J., Sallis, J. F., Ritenbaugh, C., Hill, J. O., Birch, L.L., Frank, L. D., ... Hays, N. P. (2001). Environmental and societal factors affect food choice and physical activity: rationale, influences, and leverage points. *Nutrition Reviews*, *59*(3), S21.

Bonebright, C. A., Clay, D. L., & Ankenmann, R. D. (2000). The relationship of workaholism with work–life conflict, life satisfaction, and purpose in life. *Journal of Counseling Psychology*, *47*(4), 469.

Brodwin, M. G., Star, T., & Cardoso, E. (2004). Computer assistive technology for people who have disabilities: Computer adaptations and modifications. *Journal of Rehabilitation*, *70*(3), 28.

Bronfenbrenner, U. (1967). The psychological costs of quality and equality in education. *Child Development*, *38*(4), 909-925.

Bronfenbrenner, U. (1977). Toward an experimental ecology of human development. *American Psychologist*, *32*(7), 513.

Cameron, A. C., & Miller, D. L. (2015). A practitioner's guide to cluster-robust inference. *Journal of Human Resources, 50*(2), 317-372.

Chamberlain, K., & Zika, S. (1988). Religiosity, life meaning and wellbeing: Some relationships in a sample of women. *Journal for the Scientific Study of Religion*, *27*(3), 411-420.

Chapin, F. S., & Chapin, F. S. (1974). *Human activity patterns in the city: Things people do in time and in space*. New York, NY: Wiley.

Chavis, D. M., & Wandersman, A. (1990). Sense of community in the urban environment: A catalyst for participation and community development. *American Journal of Community Psychology, 18*(1) 55-81.

Clarke, P. J., Ailshire, J. A., Nieuwenhuijesen, E. R., de Kleijn-de Vrankrijker, M. W. (2011). Participation among adults with disability: The role of the urban environment. *Social Science & Medicine, 72*(10)*, 1674-1684.

Crumbaugh, J. C. (1968). Cross-validation of purpose-in-life test based on Frankl's concepts. *Journal of Individual Psychology, 24*(1), 74.

Crumbaugh, J. C., & Maholick, L. J. (1964). Manual of instructions for the purpose-in-life. *Munster, Psychometric Addiliates*.

Csikszentmihalyi, M., Larson, R., & Prescott, S. (1977). The ecology of adolescent activity and experience. *Journal of Youth and Adolescence*, *6*(3), 281-294.

Cutrona, C. E., Russell, D. W., Hessling, R. M., Brown, P. A., & Murry, V. (2000). Direct and

    moderating effects of community context on the psychological well-being of African

    American women. *Journal of Personality and Social Psychology*, *79*(6), 1088-1101.

Deci, E. L., & Ryan, R. M. (2008). Hedonia, eudaimonia, and well-being: An introduction.

    Journal of Happiness Studies, *9*(1), 1-11.

Diener, E. (1994). Subjective well-being: Progress and opportunities. *Social Indicators*

    Research, 31(2), 103-157.

Diener, E. D., Emmons, R. A., Larsen, R. J., & Griffin, S. (1985). The satisfaction with life

    scale. *Journal of Personality Assessment*, *49*(1), 71-75.

Diener, E., Oishi, S., & Lucas, R. E. (2003). Personality, culture, and subjective well-being:

    Emotional and cognitive evaluations of life. *Annual Review of Psychology*, *54*(1), 403-

    425.

Diener, E., Suh, E., Lucas, R. E., & Smith, H. L. (1999). Subjective well-being: Three decades

    of progress. *Psychological Bulletin*, *125*(2), 276-302.

Dillman, D. A., Phelps, G., Tortora, R., Swift, K., Kohrell, J., Berck, J., & Messer, B. L. (2009).

    Response rate and measurement differences in mixed-mode surveys using mail,

    telephone, interactive voice response (IVR) and the Internet. *Social Science Research,*

    38(1), 1-18.

Dillman, D. A., Smyth, J. D., & Christian, L. M. (2009). *Internet, mail, and mixed-mode surveys:*

    The tailored design method. John Wiley & Sons, Inc.: New York, NY.

Dufton, B. D., & Perlman, D. (1986). The association between religiosity and the purpose-in-life

    test: Does it reflect purpose or satisfaction? *Journal of Psychology and Theology, 14*(1),

    42–48.

Dyck, I., & O'Brien, P. (2003). Thinking about environment: incorporating geographies of

    disability into rehabilitation science. *The Canadian Geographer/Le Géographe canadien,*

    47(4), 400-413.

Ebner-Priemer, U. W., & Trull, T. J. (2009). Ecological momentary assessment of mood

    disorders and mood dysregulation. *Psychological Assessment*, *21*(4), 463.

Edwards, J. (1996). An examination of competing versions of the person-environment fit

    approach to stress. *The Academy of Management Journal, 39*(2), 292-239.

Edwards, J. R., Cable, D. M., Williamson, I. O., Lambert, L. S., & Shipp, A. J. (2006). The

    phenomenology of fit: linking the person and environment to the subjective experience of

    person-environment fit. *Journal of Applied Psychology*, *91*(4), 802.

Evers, K. E., Cummins, C. O., Prochaska, J. O., & Prochaska, J. M. (2005). Online health

    behavior and disease management programs: are we ready for them? Are they ready for

    us? *Journal of Medical Internet Research, 7*(3), 27.

Frankl, V. E. (1959). *From death-camp to existentialism: A psychiatrist's path to a new therapy.*

    Boston, MA: Beacon Press.

Frisch, M. B., Cornell, J., Villanueva, M., & Retzlaff, P. J. (1992). Clinical validation of the

    Quality of Life Inventory: A measure of life satisfaction for use in treatment planning and

    outcome assessment. *Psychological Assessment*, *4*(1), 92-101.

Frost, S. S., Goins, R. T., Hunter, R. H., Hooker, S. P., Bryant, L. L., Kruger, J., & Pluto, D.

    (2010). Effects of the built environment on physical activity of adults living in rural

    settings. *American Journal of Health Promotion*, *24*(4), 267-283.

Glass, T. A., & McAtee, M. J. (2006). Behavioral science at the crossroads in public health:

    extending horizons, envisioning the future. *Social Science & Medicine*, *62*(7), 1650-1671.

Greider, T., & Garkovich, L. (1994). Landscapes: The social construction of nature and the

environment. *Rural Sociology, 59*(1), 1-24.

Grossman, M. (1972). On the concept of health capital and the demand for health. *The Journal of Political Economy*, *80*(2), 223-255.

Gusfield, J. R. (1975). *The community: A critical response.* New York: Harper Colophon.

Hartley, D. (2004). Rural health disparities, population health, and rural culture. *American Journal of Public Health*, *94*(10), 1675-1678.

Heller, K. (1989). The return to community. *American Journal of Community Psychology*, *17*(1), 1-15.

Helliwell, J. F., & Putnam, R. D. (2004). The social context of well-being. *Philosophical Transactions of the Royal Society, 359*(1449), 1435–1446.

Henderson, L.W., & Knight, T. (2012). Integrating the hedonic and eudaimonic perspectives to more comprehensively understand wellbeing and pathways to wellbeing. *International Journal of Wellbeing*, *2*(3), 196-221.

Hufford, M. R., Shields, A. L., Shiffman, S., Paty, J., & Balabanis, M. (2002). Reactivity to ecological momentary assessment: an example using undergraduate problem drinkers. *Psychology of Addictive Behaviors, 16*(3), 205.

Huta, V., & Ryan, R. M. (2010). Pursuing pleasure or virtue: The differential and overlapping well-being benefits of hedonic and eudaimonic motives. *Journal of Happiness Studies, 11*(6), 735-762.

IBM Corp. Released 2013. IBM SPSS Statistics for Windows, Version 22.0. Armonk, NY: IBM Corp.

Jung, C. G. (1933). *Modern man in search of a soul.* New York, NY: Harcourt.

Kashdan, T. B., McKnight, P. E., Richey, J. A., & Hofmann, S. G. (2009). When social anxiety

disorder co-exists with risk-prone, approach behavior: Investigating a neglected,

meaningful subset of people in the National Comorbidity Survey-Replication. *Behaviour*

Research and Therapy, *47*(7), 559-568.

Lawton, M. P. (1983). The varieties of wellbeing. *Experimental Aging Research, 9*(2), 65-72.

Livingston, N.A., Hargrove, T., Greiman, L., Myers, A., Ipsen, C., & Ravesloot, C. (2015). An

investigation into the temporal scaling of community participation measurement.

Rehabilitation Psychology, 60(4), 367-375.

Lewin, K. (1935). *A dynamic theory of personality*. New York, NY, US: McGraw-Hill.

Marge, M. (1988). Health promotion for persons with disabilities: Moving beyond rehabilitation.

American Journal of Health Promotion, *2*(4), 29-44.

Marsh, A., Smith, L., Piek, J., & Saunders, B. (2003). The purpose in life scale: Psychometric

properties for social drinkers and drinkers in alcohol treatment. *Educational and*

Psychological Measurement, 63(5)*, 859–871.

Maslow, A.H. (1943). A theory of human motivation, *Psychological Review, 50*(4), 370-396.

Maslow, A. H. (1964). Synergy in the society and in the individual. *Journal of Individual*

Psychology, *20*(2), 1964, 153-164.

May, R. (1977). *The meaning of anxiety*. New York, NY: The Round Press Company.

McKnight, P.E., & Kashdan, T.B. (2009). Purpose in life as a system that creates and sustains

health and well-being: an integrative, testable theory. *Review of General*

Psychology, *13*(3), 242.

Microsoft (2010). Excel, Version: 14.4.9. Redmond, Washington: Microsoft.

Mitchell, D. (2005). Landscape. In *Cultural geography: A critical dictionary of key ideas*, eds.

David Sibley, Peter Jackson, David Atkinson, and Neil Washbourne, 49-56. New York,

NY: I. B. Tauris & Co. Ltd.

Moos, R. H. (1980). "Social-Ecological Perspectives on Health." In G. C. Stone, F. Cohen, and

N. E. Adler (eds.), *Health Psychology: A Handbook.* San Francisco, CA: Jossey-Bass.

Moos, R. H. (1987). Person-environment congruence in work, school, and health care settings.

Journal of Vocational Behavior, *31*(3), 231-247.

Moss, M. S. & Lawton, M. P. (1982). Time budgets of older people: A window on four

lifestyles. *Journal of Gerontology, 37*(1), 115-123.

Lemke, S., & Moos, R. H. (1984). Coping with an intra-institutional relocation: Behavioral

change as a function of residents' personal resources. *Journal of Environmental

Psychology, 4*(2), 137-151.

Livingston, N. A., Hargrove, T., Greiman, L., Myers, A., Ipsen, C., & Ravesloot, C. (2015). An

investigation into the temporal scaling of community participation measurement.

Rehabilitation Psychology, 60(4), 367.

Mullen, P. D., Hersey, J. C., & Iverson, D. C. (1987). Health behavior models compared. *Social

Science & Medicine*, *24*(11), 973-981.

Muller, P. O. (1986). Transportation and Urban Growth. *Focus, 36*(2), 8-17.

Murray, J. D., & Keller, P. A. (1991). Psychology and rural America: Current status and future

directions. *American Psychologist, 46*(3), 220.

Myers, A. & Ravesloot, C. (n.d). Out of time, out of space: How Americans with disabilities use

time and transportation. *Unpublished manuscript.*

Neugarten, B. L., Havighurst, R., & Tobin, S. (1961). The measurement of life satisfaction. *Journal of Gerontology, 16*, 134-143.

Patmore, J. A. (1983). *Recreation and resources: Leisure patterns and leisure places*. London, UK: Basil Blackwell.

Pavot, W., & Diener, E. (1993). Review of the satisfaction with life scale. *Psychological Assessment*, *5*(2), 164.

Pavot, W., Diener, E. D., Colvin, C. R., & Sandvik, E. (1991). Further validation of the satisfaction with life scale: Evidence for the cross-method convergence of well-being measures. *Journal of Personality Assessment, 57*(1), 149-161.

Pope, A. M., & Tarlov, A. R. (Eds.). (1991). *Disability in America: Toward a national agenda for prevention*. Washington, DC: National Academies Press.

Ravesloot, C. H. (1995). Attributions of purpose and meaningful activity: A study of positive development following loss. Dissertation Abstracts International: Section B: *The Sciences & Engineering, 55*(8-B), 3600. (UMI Dissertation Order Number AAM9501592).

Ravesloot, C., Seekins, T., & Young, Q. R. (1998). Health promotion for people with chronic illness and physical disabilities: The connection between health psychology and disability prevention. *Clinical Psychology & Psychotherapy*, *5*(2), 76-85.

Ravesloot, C., Wong, J. L., Ward, B. A., Livingston, N. A., & Hargrove, T., (n.d.) Shared meaning in daily life. *Unpublished manuscript.*

Ravesloot, C., Young, Q., Norris, K., Szalda-Petree, A., Seekins, T., White, G., ... & Lopez, C. (1998). Living well with a disability: A workbook for promoting health and wellness. *Missoula, MT: The University of Montana Rural Institute.*

Reker, G. T., & Cousins, J. B. (1979). Factor structure, construct validity and reliability of the

Seeking of Noetic Goals (SONG) and Purpose in Life (PIL) tests. *Journal of Clinical*

Psychology, 36(1), 85-91.

Reker, G. T., Peacock, E. J., & Wong, P. T. P. (1987). Meaning and purpose in life and well-

being: A life-span perspective. *Journal of Gerontology, 42*(1), 44-49.

Rimmer, J. H., Riley, B., Wang, E., Rauworth, A., & Jurkowski, J. (2004). Physical activity

participation among persons with disabilities: barriers and facilitators. *American Journal*

of Preventive Medicine, 26(5), 419-425.

Rogers, C. R. (1961). *On becoming a person*. Boston, MA: Houghton Mifflin.

Rosebverg, M. (1965). *Society and the adolescent self-image.* Princeton, NJ: Princeton

University Press.

Rotter, J. B. (1966). Generalized expectancies for internal versus external control of

reinforcement. *Psychological Monographs*, *80*(1, Whole No. 609), 1-28.

Ryan, R. M., & Huta, V. (2009). Wellness as healthy functioning or wellness as happiness: The

importance of eudaimonic thinking (response to the Kashdan et al. and Waterman

discussion). *The Journal of Positive Psychology*, *4*(3), 202-204.

Ryff, C. D. (1989). Happiness is everything, or is it? Explorations on the meaning of

psychological well-being. *Journal of Personality and Social Psychology*, *57*(6), 1069.

Ryff, C. D., & Keyes, C. L. M. (1995). The structure of psychological well-being revisited.

Journal of Personality and Social Psychology, *69*(4), 719.

Scheier, M. F., Wrosch, C., Baum, A., Cohen, S., Martire, L. M., Matthews, K. A., ... & Zdaniuk,

B. (2006). The life engagement test: Assessing purpose in life. *Journal of Behavioral*

Medicine, *29*(3), 291-298.

Schulenberg, S. E., & Melton, A. M. A. (2010). A confirmatory factor-analytic evaluation of the

Purpose in Life test: Preliminary psychometric support for a reliable two-factor model.

Journal of Happiness Studies, 11(1), 95-111.

Seekins, T., Shunkamolah, W., Bertsche, M., Cowart, C., Summers, J. A., Reichard, A., &

White, G. (2012). A systematic scoping review of measures of participation in disability

and rehabilitation research: A preliminary report of findings. *Disability and Health

Journal*, *5*(4), 224-232.

Seekins, T., Smith, N., McCleary, T., Clay, J., & Walsh, J. (1990). Secondary disability

prevention: Involving consumers in the development of a public health surveillance

instrument. *Journal of Disability Policy Studies*, *1*(3), 21-36.

StataCorp. 2013. Stata Statistical Software: Release 13. College Station, TX: StataCorp LP.

Steger, M. F. (2006). An illustration of issues in factor extraction and identification of

dimensionality in psychological assessment data. *Journal of Personality Assessment,

86*(3), 263–272.

Sheldon, K. M., & Kasser, T. (2001). Goals, congruence, and positive well-being: New empirical

support for humanistic theories. *Journal of Humanistic Psychology, 41*(1), 30-50.

Shiffman, S., Stone, A. A., & Hufford, M. R. (2008). Ecological momentary assessment. *Annual

Review of Clinical Psychology, 4,* 1-32.

Shin, D. C., & Johnson, D. M. (1978). Avowed happiness as an overall assessment of the quality

of life. *Social Indicators Research*, *5*(1-4), 475-492.

Smith, P. (2005). Off the map: A critical geography of intellectual disabilities. *Health and Place

Journal*, *11*(2), 87-92.

South, S. C., & Miller, M. L. (2014). Measuring momentary stress, affect, and cognition: Relationships with the internalizing and externalizing spectra. *Journal of Psychopathology and Behavioral Assessment*, *36*(1), 93-104.

Stone, A. A., & Shiffman, S. (1994). Ecological momentary assessment (EMA) in behavorial medicine. *Annals of Behavioral Medicine, 16*(3), 199-202.

Thorne, B. M. & Henley, T. B. (2005). *Connections in the history and systems of psychology (3rd Edition).* Boston, MA: Houghton Mifflin Company.

U.S. Census Bureau (2012). Retrieved from: http://www2.census.gov/programs-surveys/acs/methodology/questionnaires/2012/quest12.pdf on February 24, 2016.

Verbrugge, L. M., Gruber-Baldini, A. L., & Fozard, J. L. (1996). Age differences and age changes in activities: Baltimore Longitudinal Study of Aging. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, *51*(1), S30-S41.

Walsh, V. (1987). Models and theories. Pages 482–483 in J. Eatwell, M. Milgate, and P. Newman, editors. *The new Palgrave. A dictionary of economics.* Volume III. London, UK: Macmillan.

Ward, B. A. (2015). *Beyond Time and Money: How Scarcity of Effort Affects Choices* [Paper presented]. University of Montana, Missoula, MT.

Waterman, A. S. (1984). The psychology of individualism. New York, NY: Praeger.

White, G. W., Simpson, J. L., Gonda, C., Ravesloot, C., & Coble, Z. (2010). Moving from independence to interdependence: A conceptual model for better understanding community participation of Centers for Independent Living consumers. *Journal of Disability Policy Studies, 20*(4), 233-240.

Whiteneck, G., Meade, M. A., Dijkers, M., Tate, D. G., Bushnik, T., & Forchheimer, M. B. (2004). Environmental factors and their role in participation and life satisfaction after spinal cord injury. *Archives of Physical Medicine and Rehabilitation*, *85*(11), 1793-1803.

Whiteneck, G. & Dijkers, M.P. (2009). Difficult to measure constructs: conceptual and methodological issues concerning participation and environmental factors. *Archives of Physical Medicine and Rehabilitation, 90*(11), S22-S35.

Wilson, W. (1967). Correlates of avowed happiness. *Psychological Bulletin, 67*(4), 294-306.

World Health Organization (WHO; 2001). International classification of functioning, disability and health. Geneva: World Health Organization.

Yalom, I. D. (1980). *Existential psychotherapy*. New York, NY: Basic Books.

Appendix A

The Longitudinal Survey

Rural Community Living

Survey #1

RTC

RURAL

University of Montana

_____**ID #**

Getting Started

Thank you for taking part in the rural community living survey. On the following pages, you will find the "Informed Consent" to participate and the survey questions as well as an extra copy of the informed consent for you to keep for your own personal records. Your answers are very important to us and we will keep your information confidential.

Here are a few tips for completing the survey:

1. On the next page, please **read**, **sign** and **date** the **informed consent** for research.

2. Keep the extra copy of the informed consent provided for your personal records.

3. You don't have to answer all of the questions, but if you are unsure about which answer is best for you, just pick one. We understand that people sometimes have different answers depending on how they feel at the time.

4. It's easy to accidently skip a page. After you complete the survey, **double check** that you did not skip any pages.

5. If you have trouble reading printed materials and would like someone to go through the survey over the telephone, call Tannis at 406-243-5760.

6. If you lose track of the envelope we sent and need another one or if you have any other questions, call Tannis at 406-243-5760.

Again, thank you for your time and effort completing this survey.

PARTICIPANT INFORMATION AND CONSENT FORM

The Ecology of Rural Disability- Longitudinal Study

Title: The Ecology of Rural Disability

Sponsor: Department of Education, National Institute on Disability and Rehabilitation Research

Study Directors: Craig Ravesloot, Ph.D., University of Montana, Rural Institute on Disabilities, 52 Corbin Hall, Missoula, MT 59812, (406) 234-2992, craig.ravesloot@umontana.edu

Purpose: The purpose of this research is to increase understanding of person environment fit for predicting and potentially improving rural community participation.

Procedure:

If you agree to participate in this study, you will receive five surveys over the five years. The first survey is included with this consent form. The other four surveys will be mailed to you once each year. Each survey takes about 30 minutes to complete. The surveys have questions about your health, independence, feelings, social supports, environmental barriers, and participation in the community. We will include $5.00 with each survey. You can keep the incentive payment whether or not you return the survey. If we do not receive a survey from you, however, we may not send additional surveys.

Risks: The risks to you are minimal. Answering the questions may cause you to experience feelings that make you sad or upset. You may refuse to answer any of the questions. You may withdraw from the study at any time. If you feel very sad or hopeless and these feelings have lasted more than two weeks, you may want to contact a mental health center in your area.

Benefits: Although you may not benefit from taking part in this study, your help will contribute to a better understanding of the relationship between individuals, their environments and community participation.

Privacy: Your identity and records will be kept private. We will not release records without your permission except as required by law. Only the researchers on this project will have access to the data files. Your name will not be used when talking about or reporting the results of this   study.

Your signed consent form and contact information will be stored in a locked file cabinet and will be kept separate from the surveys.

Permission to Contact You Again: We will contact you again in order to send you additional surveys. We may also contact you by telephone to clarify answers on your survey.

The University of Montana IRB
Expiration Date 7-9-2015
Date Approved 7-10-2014
Chair/Admin

Page 2 of 2

Voluntary Participation/Withdrawal: Your decision to take part in this study is completely voluntary. You may refuse to answer any of the questions. You may withdraw from the study at any time. You can keep the incentive payment whether or not you return the survey.

Personal Information: You will provide data about your health, independence, feelings, social supports, environmental barriers, and participation. By signing this form, you allow Craig Ravesloot, Ph.D. and his staff to use this information for this project. Your name and contact information will only be used to contact you about your surveys.

Questions: Contact Craig Ravesloot if you have questions about the study. He can be reached by phone at 406-243-2992 or by email at craig.ravesloot@umontana.edu. If you have questions about your rights as a research subject, you may contact the Chair of the Institutional Review Board (IRB) through the University of Montana Research Office at 406-243-6672.

Participant's Consent: I have read the description of this research study. I have been informed of the risks and benefits involved. At this time, all my questions have been answered. I know that future questions will be answered by a member of the research team. I voluntarily agree to take part in this study. Understand I will receive a copy of this consent form.

Printed or Typed Name: _____

Signature: _____

Date: _____

Telephone number: _____

The University of Montana IRB
Expiration Date 7-9-2015
Date Approved 7-10-2014
Chair/Admin _____

BACKGROUND INFORMATION

1. **What is your age?** _____

2. **What is your gender? <u>Check one.</u>**

☐ Male ☐ Female

3. **What is your race? <u>Check all that apply.</u>**

☐ American Indian/Alaska Native ☐ Native Hawaiian/Other Pacific Islander

☐ Asian ☐ White

☐ Black/African American ☐ Other(specify:) _____

4. **Are you Hispanic/Latino?**

☐ Yes ☐☐☐☐No

5. **What is your <u>current</u> relationship status? <u>Check one.</u>**

☐ Married ☐ Widowed

☐ Separated ☐ Never been married

☐ Divorced ☐ Member of an unmarried couple

6. **What is the highest grade or year of school you have completed? <u>Check one.</u>**

☐ Less than 8th grade ☐ Associate or technical degree

☐ Grades 9 through 11 (Some high school) ☐☐ ☐ Bachelor's degree

☐ Grade 12 or GED (High school graduate) ☐ Master's degree or higher

☐ Some college or technical school training

7. **How many people live in your household?** _____

8. **What is your annual <u>household </u>income, including personal income, spouse or partner's income, as well as other income sources like interest, retirement, or social security payments? <u>Check one.</u>**

☐ $10,000 or less	☐ $40,001 - $50,000	☐ $80,001 - $90,000
☐ $10,001 to $20,000	☐ $50,001 - $60,000	☐ $90,001 – $100,000
☐ $20,001 to $30,000	☐ $60,001 - $70,000	☐ More than $100,000
☐ $30,001 to 40,000	☐ $70,001 - $80,000	

9. **What is your current employment status? <u>Check one.</u>**

☐ Employed full time with pay (30 hours per week or more)

☐ Employed part time with pay (29 hours per week or less)

☐ Not employed

10. **Do you volunteer in the community? <u>Check one.</u>**

☐ Full time volunteer (30 hours per week or more)

☐ Part time volunteer (29 hours per week or less)

☐ Occasional volunteer

☐ I do not volunteer

11. **Do you live in a:**

☐ Single Family House (one unit home detached from any other building)

☐ Apartment, condo, townhouse or duplex

☐ Mobile home

☐ Other (specify): _____

12. **Do you:**

☐ Own your home.

☐ Rent your home.

☐ Occupy a home without payment of rent.

13. **Is it possible to enter your home/apartment without climbing up or down any steps or stairs?**

☐ Yes

☐ No

14. **Which of the following benefits do you currently receive? Check all that apply.**

☐ Social Security benefits (SSI, SSDI, or SS retirement)

☐ Veteran's Disability benefits

☐ Temporary Assistance for Needy Families (TANF)

☐ Worker's Compensation

☐ Unemployment benefits

☐ SNAP benefits (food stamps)

☐ Subsidized housing such as a section 8 voucher

☐ None of the above

15. **What health care coverage do you have? Check all that apply.**

☐ Medicaid

☐ Medicare

☐ Military provided health insurance benefits

☐ Indian Health Service

☐ Private health insurance for example: Blue Cross, HMO, Cigna

☐ No health insurance

☐ Other (specify:) _____

16. **Are you deaf, or do you have serious difficulty hearing?**

☐ Yes   ☐ No

17. **Are you blind, or do you have serious difficulty seeing even when wearing glasses?**

☐ Yes   ☐ No

18. **Because of a physical, mental or emotional condition, do you have serious difficulty concentrating, remembering or making decisions?**

☐ Yes   ☐ No

19. **Do you have serious difficulty walking or climbing stairs?**

☐ Yes   ☐ No

20. **Do you have difficulty dressing or bathing?**

☐ Yes   ☐ No

21. **Because of a physical, mental or emotional condition, do you have difficulty doing errands alone such as visiting a doctor's office or shopping?**

☐ Yes   ☐ No

19. **Please check all of your current health conditions or problems. <u>Check all that apply</u>.**

☐ Eye or vision problems	☐ Cerebral Palsy
☐ Hearing problems	☐ Depression, anxiety or emotional problem
☐ Arthritis or rheumatism	☐ Weight problem
☐ Back or neck problem	☐ Amputation
☐ Fracture, bone or joint injury	☐ Asthma
☐ Fibromyalgia	☐ Muscular Dystrophy
☐ Tendonitis	☐ Multiple Sclerosis
☐ Heart problem	☐ Gastro-intestinal problems
☐ Stroke problem	☐ Spinal Cord Injury
☐ Hypertension or high blood pressure	☐ Paralysis
☐ Diabetes	☐ Epilepsy
☐ Lung or breathing problems	☐ Circulation problems
☐ Cancer	☐ Migraine headaches
☐ Traumatic Brain Injury	☐ Intellectual disability or mental retardation
☐ Other (Please describe:) _____	

20.   **When going out into the community, what types of special equipment or help from others do you use? <u>Check all that apply.</u>**

☐ No special equipment or help used   ☐ Manual wheelchair

☐ Other people   ☐ Power wheelchair

☐ Walker   ☐ Scooter

☐ Cane or walking stick   ☐ Brace

☐ Crutch or crutches   ☐ Artificial limb such as prosthetic leg or arm

☐ Service animal such as a guide dog   ☐ Oxygen or special breathing equipment

☐ Other (specify): _____

21.   **Do you have regular, reliable access to transportation to get where you need to go such as a personal vehicle, public transportation, family or friends? <u>Check one.</u>**

☐ Never   ☐ Sometimes   ☐ Often   ☐ Routinely

22.   **What is your primary means of transportation? <u>Check one.</u>**

☐ I drive a personal vehicle   ☐ Family members, friends or coworkers provide rides

☐ Bus   ☐ Paratransit

☐ Bike   ☐ Walk or wheelchair

☐ Taxi   ☐ Other(specify:) _____

23.   **Overall, would you say your health over the past twelve months was:**

☐ Excellent   ☐ Good   ☐ Fair   ☐ Poor

24.   **Overall, would you say that your ability to <u>INDEPENDENTLY</u> engage in desired activities such as work, recreation, or daily living over the past 12 months was:**

☐ Excellent   ☐ Good   ☐ Fair   ☐ Poor

PARTICIPATION IN THE COMMUNITY

Please circle the number of <u>times</u> you visited each of these places in the <u>past 7 days</u>. Compared to what you usually do, circle if this was <u>less</u> often, about the <u>same</u>, or <u>more</u> often than usual.

Places I went last week…	Circle number of <u>visits</u> in the past 7 days											Circle if this was less, same or more than usual.
1. Grocery stores	0	1	2	3	4	5	6	7	8	9	10+	☐ Less ☐ Same ☐ More
2. Doctors or other healthcare providers	0	1	2	3	4	5	6	7	8	9	10+	☐ Less ☐ Same ☐ More
3. Pharmacies	0	1	2	3	4	5	6	7	8	9	10+	☐ Less ☐ Same ☐ More
4. Restaurants	0	1	2	3	4	5	6	7	8	9	10+	☐ Less ☐ Same ☐ More
5. Large box stores such as Walmart	0	1	2	3	4	5	6	7	8	9	10+	☐ Less ☐ Same ☐ More
6. Public parks or recreation areas	0	1	2	3	4	5	6	7	8	9	10+	☐ Less ☐ Same ☐ More
7. Exercise facilities	0	1	2	3	4	5	6	7	8	9	10+	☐ Less ☐ Same ☐ More
8. Shopping malls	0	1	2	3	4	5	6	7	8	9	10+	☐ Less ☐ Same ☐ More

PARTICIPATION IN THE COMMUNITY

Please circle the number of <u>times</u> you participated in each of these activities in the <u>past 7 days</u>. Then circle if this was <u>less</u> often, about the <u>same,</u> or <u>more</u> often than usual.

Things I did last week…	Circle number of <u>times</u> in the past 7 days											Check if this was less, same or more than usual.
1. Active recreation such as exercise, sports or fishing	0	1	2	3	4	5	6	7	8	9	10+	☐ Less ☐ Same ☐ More
2. Socializing outside the home	0	1	2	3	4	5	6	7	8	9	10+	☐ Less ☐ Same ☐More
3. Religious activities such as church services	0	1	2	3	4	5	6	7	8	9	10+	☐ Less ☐ Same ☐More
4. Community activities such as voting, meetings	0	1	2	3	4	5	6	7	8	9	10+	☐ Less ☐ Same ☐ More
5. Entertainment such as movies or sporting events	0	1	2	3	4	5	6	7	8	9	10+	☐ Less ☐ Same ☐More

Things I did last week…	Circle the number of <u>hours</u> spent in the past 7 days									Circle if this was less, same or more than usual.
6. Employment	0	5	10	15	20	25	30	35	40+	☐ Less ☐ Same ☐ More
7. School or Education	0	5	10	15	20	25	30	35	40+	☐ Less ☐ Same ☐ More
8. Volunteering	0	5	10	15	20	25	30	35	40+	☐ Less☐ Same ☐ More

LIMITING CONDITIONS

Please rate how much each of the following conditions have **affected your activity and independence** in the **past 30 days**. If you have not experienced the condition in the past 30 days, or if it is a small problem for you, circle "0." **Refer to the rating scale when making your ratings.**

Rating Scale

0 = Not experienced during the past month/insignificant problem (rarely or never limits activity or independence)

1 = Mild or infrequent problem (limits activity 1-5 hours per week)

2 = Moderate/occasional problem (limits activity 6-10 hours per week)

3 = Significant/chronic problem (limits activity 11 or more hours per week)

Rating				Limiting Condition	Description
0	1	2	3	**Problems with mobility**	Many physically disabled individuals are troubled by difficulty with getting around, due to a loss of strength or muscle control.
0	1	2	3	**Fatigue**	A tired, though not necessarily sleepy feeling, after minimal exertion.
0	1	2	3	**Chronic Pain**	Usually experienced as chronic tingling, burning or dull aches. It may occur in an area that normally has little or no feeling.
0	1	2	3	**Physical Fitness/ Conditioning Problems**	Not being able to do normal activities, being out of shape.
0	1	2	3	**Sleep Disturbance**	Difficulty falling asleep or staying asleep, difficulty staying awake during the day, or waking up early.
0	1	2	3	**Eating or Weight Problems**	This includes difficulty in regulating weight, as well as problems with eating (e.g., overeating, under eating, vomiting food).

LIMITING CONDITIONS

Rating	Limiting Condition	Description
0 1 2 3	**Depression**	Depression is more than feeling blue. Symptoms include: extreme, long-term sadness, loss of pleasure in favorite things and activities, difficulty sleeping, weight loss or gain, thoughts of suicide and frequent and/or unexplained crying.
0 1 2 3	**Anxiety**	Feeling worried or fearful about the future. Symptoms included rapid heartbeat, shortness of breath, sweating and stressful feelings.
0 1 2 3	**Joint & Muscle Pain**	This includes pain in specific muscle groups or joints. Individuals who must overuse a particular muscle group (e.g., persons with paraplegia who may strain shoulder muscles) or those who must put too much strain on joints are at risk of developing joint and muscle pain.
0 1 2 3	**Anger**	Extreme displeasure with situations or persons that is difficult to forget.
0 1 2 3	**Isolation**	Isolation from social contact and support may be a problem for some individuals, and may be due to a loss of relationships or being house-bound.
0 1 2 3	**Access Problems**	Access problems in the environment, such as lack of curb cuts or accessible buildings and restrooms, can pose an obstacle to functioning independently.
0 1 2 3	**Arthritis**	Arthritis results from inflammation of the joints, making movement both difficult and painful. Symptoms include pain and swelling around the joints. Cold weather and stress can make this condition worse.

FEELINGS & EMOTIONS

Following are words that describe different feelings and emotions. Read each item and then check the box for the most appropriate answer for you. Indicate to what extent you feel this way right now, at the present moment.

Feeling/Emotion	Not at all	Very slightly	A little	Moderately	Quite a bit	Extremely
Interested	☐	☐	☐	☐	☐	☐
Distressed	☐	☐	☐	☐	☐	☐
Excited	☐	☐	☐	☐	☐	☐
Upset	☐	☐	☐	☐	☐	☐
Strong	☐	☐	☐	☐	☐	☐
Guilty	☐	☐	☐	☐	☐	☐
Scared	☐	☐	☐	☐	☐	☐
Hostile	☐	☐	☐	☐	☐	☐
Enthusiastic	☐	☐	☐	☐	☐	☐
Proud	☐	☐	☐	☐	☐	☐
Irritable	☐	☐	☐	☐	☐	☐
Alert	☐	☐	☐	☐	☐	☐
Ashamed	☐	☐	☐	☐	☐	☐
Inspired	☐	☐	☐	☐	☐	☐
Nervous	☐	☐	☐	☐	☐	☐
Determined	☐	☐	☐	☐	☐	☐
Attentive	☐	☐	☐	☐	☐	☐
Jittery	☐	☐	☐	☐	☐	☐
Active	☐	☐	☐	☐	☐	☐
Afraid	☐	☐	☐	☐	☐	☐

YOUR EXPERIENCES

Read each item carefully. Please select the box that **best describes YOU** and put a check mark in that box.

Which best describes you?	Definitely False	Mostly False	Mostly True	Definitely True
1. I can think of many ways to get out of a jam.	☐	☐	☐	☐
2. I energetically pursue my goals.	☐	☐	☐	☐
3. I feel tired most of the time.	☐	☐	☐	☐
4. There are lots of ways around any problem.	☐	☐	☐	☐
5. I am easily downed in an argument.	☐	☐	☐	☐
6. I can think of many ways to get the things in life that are most important to me.	☐	☐	☐	☐
7. I worry about my health.	☐	☐	☐	☐
8. Even when others get discouraged, I know I can find a way to solve the problem.	☐	☐	☐	☐
9. My past experiences have prepared me well for my future.	☐	☐	☐	☐
10. I've been pretty successful in life.	☐	☐	☐	☐
11. I usually find myself worrying about something.	☐	☐	☐	☐
12. I meet the goals that I set for myself.	☐	☐	☐	☐

SOCIAL SUPPORT

Please look at the following list and decide how much each person or group of persons is **supportive** for you at this time in your life. Put a check mark in the box that best describes each person or group of persons.

How <u>supportive</u> are these people now?	No Such Person	None	Some	A Lot
Family Members				
1. Your wife, husband, or significant other person	☐	☐	☐	☐
2. Your children or grandchildren	☐	☐	☐	☐
3. Your parents or grandparents	☐	☐	☐	☐
4. Your brothers or sisters	☐	☐	☐	☐
5. Your other blood relatives	☐	☐	☐	☐
6. Your relatives by marriage (for example: in-laws, ex-wife, ex-husband)	☐	☐	☐	☐
Non-Family Members				
7. Your neighbors	☐	☐	☐	☐
8. Your co-workers	☐	☐	☐	☐
9. Your church members	☐	☐	☐	☐
10. Your other friends	☐	☐	☐	☐

11. **Do you have one particular person whom you trust and to whom you can go with personal difficulties?**

☐ Yes

☐ No

12. **If you answered "YES", which of the above types of person is he or she?** (For example, child, parent, neighbor, etc.)

Please list the type of person whom you trust here:

_____

SOCIAL ACTIVITY & GETTING OUT

Think about each day of the <u>past 7 days</u> and what you did other than working, taking care of your family, or doing necessary shopping.

1. How many days **in the past week** did you do **voluntary social activities**? Include activities like sports, meals out, religious events, or any other social events.

   Number of Days (select one): 0   1   2   3   4   5   6   7

2. Was this a normal week for you?

   ☐ Yes

   ☐ No, I did more social activities than usual.

   ☐ No, I did fewer social activities than usual.

NOW THINK OF THE PAST MONTH:

In the past month, circle a number for how many times you:

3.	Went shopping with friends or family you do not live with.	0	1	2	3	4	5	6+
4.	Had friends or family come to visit.	0	1	2	3	4	5	6+
5.	Talked on the telephone with friends or family you do not live with.	0	1	2	3	4	5	6+
6.	Went to a movie, concert, theater, or other cultural or entertainment musical event.	0	1	2	3	4	5	6+
7.	Went to a sports game to watch.	0	1	2	3	4	5	6+
8.	Participated in sports with other people you do not live with.	0	1	2	3	4	5	6+
9.	Got emails, letters, cards, or notes from people you know, but do not live with.	0	1	2	3	4	5	6+

SOCIAL ACTIVITY & GETTING OUT

In the past month, circle a number for how many times you:

10.	Went to the museums, art exhibits, or similar activities.	0	1	2	3	4	5	6+
11.	Had coffee, tea, or other drinks with friends or family you do not live with.	0	1	2	3	4	5	6+
12.	Sent emails, letters, cards, or notes to people you know but do not live with.	0	1	2	3	4	5	6+
13.	Played cards or games with people you do not live with.	0	1	2	3	4	5	6+
14.	Went to other social events (parties, meals, or other happenings) where you talked with people you do not live with.	0	1	2	3	4	5	6+
15.	Did **other social activities** with people you do not live with (select "0" if you did NO OTHER social activities other than the ones already listed). Please describe your **other** social activities: _____ _____	0	1	2	3	4	5	6+

YOUR COMMUNITY

The items below ask about how well the community you currently live in matches your values, needs, abilities, and characteristics. Please check the box to indicate how much you agree or disagree.

Your Community	Strongly Disagree	Disagree	Agree	Strongly Agree
1. The things that I value in life are very similar to the things that other people in my community value.	☐	☐	☐	☐
2. The community that I currently live in gives me just about everything I could ever need from a town.	☐	☐	☐	☐
3. My abilities and personal experience are a poor fit with the requirements of the community.	☐	☐	☐	☐
4. My personal values match those of people in my community.	☐	☐	☐	☐
5. My personal abilities and education are a good match for the demands that my community places on me.	☐	☐	☐	☐
6. The other residents in my community are similar to me.	☐	☐	☐	☐
7. I do not add anything unique to my community.	☐	☐	☐	☐
8. My needs are met by the community I live in.	☐	☐	☐	☐
9. My values prevent me from fitting in with my community.	☐	☐	☐	☐
10. I have the ability to meet the demands of my community.	☐	☐	☐	☐
11. The other residents of my community are different from me.	☐	☐	☐	☐
12. My community fulfills my needs.	☐	☐	☐	☐

Your Community	Strongly Disagree	Disagree	Agree	Strongly Agree
13. There is a poor fit between what my community offers me and what I need in a town.	⬚	⬚	⬚	⬚
14. I don't fit in with my community because I am different than other residents.	⬚	⬚	⬚	⬚
15. The values of my community do not reflect my own values.	⬚	⬚	⬚	⬚
16. My unique differences add to the success of my community.	⬚	⬚	⬚	⬚
17. The community that I live in does not have the attributes that I need in a town.	⬚	⬚	⬚	⬚
18. I am different than the other residents in my community.	⬚	⬚	⬚	⬚
19. The match is very good between the demands of my community and my personal skills.	⬚	⬚	⬚	⬚
20. I am not able to meet the demands of my community.	⬚	⬚	⬚	⬚
21. Nothing unique about me adds to the success of my community.	⬚	⬚	⬚	⬚
22. I am similar to other residents of my community.	⬚	⬚	⬚	⬚
23. I make unique contributions to my community.	⬚	⬚	⬚	⬚
24. My personal values are similar to those of my community.	⬚	⬚	⬚	⬚
25. The values of my community are a good fit with my values.	⬚	⬚	⬚	⬚
26. I fill an important role in my community that others in the house don't fill.	⬚	⬚	⬚	⬚

In the <u>past 7 days</u>, what were your experiences getting out into the community? Select "never" if the item does not apply to you. <u>Check your rating.</u>

Getting Out Last Week………	Never	Sometimes	Often	Routinely
1. It was easy to get in and out of my house.	☐	☐	☐	☐
2. My community had too few curb cuts.	☐	☐	☐	☐
3. I felt safe when leaving my home.	☐	☐	☐	☐
4. Poor air quality or other pollutants bothered me.	☐	☐	☐	☐
5. The weather was too bad to get out.	☐	☐	☐	☐
6. Buildings were accessible to me.	☐	☐	☐	☐
7. I didn't have transportation.	☐	☐	☐	☐
8. I had the assistive equipment I needed.	☐	☐	☐	☐
9. My health was limiting me too much.	☐	☐	☐	☐
10. I had a hard time thinking and concentrating.	☐	☐	☐	☐
11. I was too busy to do everything I needed to do.	☐	☐	☐	☐
12. People's attitudes towards me were positive.	☐	☐	☐	☐
13. My daily self-care needs took too much energy.	☐	☐	☐	☐
14. I had the help I needed.	☐	☐	☐	☐
15. I was too tired.	☐	☐	☐	☐

16. **May we contact you about taking part in a follow-up study?**
   ☐ Yes

   ☐ No

Thank you for your time!

Please return this survey in the self-addressed envelope provided.

If you are interested in learning about the results of this study or participating in other RTC: Rural projects email us at rtcrural@mso.umt.edu.

If you have any comments you would like to share, we welcome your input in the space below.

Appendix B

EMA Questions

Regular Scheduled Prompted Questions

The *italic and bold font* is used to indicate questions that branch to follow-up items. The branched follow-up items immediately follow the main question in this document.

This item will be asked at the beginning of each day, but will not appear throughout the day.
A. How did you sleep last night? (0 to 10) (Item 1)

0	1	2	3	4	5	6	7	8	9	10

Worst possible   Best possible
sleep   sleep

1. **Are you at home?** (Item 2)
    Yes, I am at home
    No, I am not at home (1a)

    (1a) Where are you? *Scroll and choose one* (Item 3)
        Business or store: *such as grocery store, shopping mall, laundromat, hair dresser*
        Church or religious facility
        Gym or exercise facility
        Health care facility: *such as hospital, doctor's office, rehab facility*
        Home
        Office building: *defined as government, private*
        Outside: *such as parking lot, sidewalk, forest, park, outdoor recreation complex*
        Restaurant or bar
        School or educational facility
        Someone else's home
        Transportation vehicle: *defined as private, public*
        Venue: *such as movies, theater, museum, or sports arena*
        Other (1b)
        *(1b). Other - **Please describe where you are**: Tap box below to type* (Item 4)

2. **What type of activity are you engaged in?** *Scroll and choose one* (Item 5)
    Community or volunteering: *such as rotary, PTA, volunteering at the food bank*
    Eating: *such as having a regular meal at home or out*
    Education
    Employment
    Family caregiving: *such as caring for children, assisting with homework, helping an elderly
        parent*
    Financial Management: *such as paying bills, preparing taxes, investments, or completing
        benefits paperwork*
    Healthcare appointments: *such as physical therapy, occupational therapy, acupuncture,
        doctor's visit, or other health care provider visit, chiropractor, massage*
    Household chore: *such as housework, improvements, meal preparation, upkeep and
        maintenance, lawn care*
    Household shopping: *such as grocery shopping, household errands*
    Recreation or leisure (2a): *such as exercising for fun, gardening, fishing, recreating,
        swimming, clothes shopping, listening to music, watching sports, reading, computer,
        arts/culture, eating, crafts, hobbies, games, going to the movie, play, concert, sporting
        events*
    Religious activities: *such as worship, choir, committees, spirituality, mission work*
    Resting: *such as sleeping, napping, sitting quietly*
    Self-care (2b): *such as exercise, grooming, blood pressure readings, blood and sugar
        readings*
    Socializing or visiting (2c): *such as interacting with other people in person, over the phone,
        or online*
    Transporting: *such as driving, passenger, walking, biking, rolling*
    Watching TV or a movie
    Other (2d)

    2a. ***What type of recreation or leisure activity?*** *Scroll and choose one* (Item 6)
        Community event: *such as farmer's market, the Fair, or a home and garden show*
        Computer: *such as computer games or online shopping*
        Crafts or hobbies: *such as knitting, sewing, painting, photograph, cooking or
            baking*
        Exercising: *such as running, walking, hiking, rolling*
        Gardening
        Music (playing or listening): *such as playing musical instrument, singing, listening to
            music*
        Reading
        Recreating: *such as floating, fishing, playing cards or games*
        Shopping: *such as buying new clothes, window shopping*
        Sports (spectator): *such as watching soccer, basketball, swim meet, baseball*
        Sport (participant): *such as playing soccer, basketball, baseball, skiing, swimming*
        Other 2d: *such as going to museums, plays, orchestras, or ceremonies*

2b. What type of *self-care* activity? *Choose One* (Item 7)

Exercise: *such as stretching, lifting weights, running, walking, swimming, biking, rolling*

Grooming: *such as showering, shaving, fixing hair, brushing teeth, clipping nails*

Health Maintenance: *such as taking blood pressure readings, blood sugar readings, care of durable medical equipment (DME)*

Other 2d

2c. *How are you socializing?* *Choose One* (Item 8)

In person

Talking on the phone

Electronically*: such as texting, chatting, and email*

Social networking: *such as Facebook, Twitter, Four Square or LinkedIn*

Other 2d

2d. *What type of "other" activity? Please describe:* *Tap box below to type* (Item 9)

3. What you are doing right now is: (item 9)

0 - Useless, serves no purpose

1 -

2 - Neutral

3 -

4 - Serves a purpose

3. How satisfied are you with this activity? *Choose One* (Item 10)

0 - Not at all satisfied

1 - A little satisfied

2 - Somewhat satisfied

3- Quite satisfied

4 - Very satisfied

4. Who is with you? *Scroll and check all that apply* (Item 11)

Alone

Children: *children under the age of 18 years old*

Spouse or partner

Other family: *children over the age of 18 years old, aunts, uncles, cousins or other extended family*

Friends

Coworkers

Service or healthcare provider: *physical therapist, social worker, case manager, or other healthcare provider*

Personal care assistant

Pet: *bird, cat, dog, etc.*

Service animal: *animal trained to provide assistance*

Other (4a)

4a. *Who is "other?" Please describe.* (Item 12)

5. Why are you doing this activity? *(Scroll and check all that apply)* (Item 13)

> Have fun
> Relax
> Make something creative
> Learn something
> Pass the time
> Help someone
> Advance an important cause
> Meet an obligation
> Be with other people
> Make a living
> Self-improvement

7. Rate your level of physical exertion for this activity? *(0-10)* (Item 14)

> 0 - Nothing at all
> 1 - Very light
> 2 - Fairly light
> 3 - Moderate
> 4 - Somewhat hard
> 5 - Hard
> 6
> 7 - Very hard
> 8
> 9
> 10 - Very, very hard

8. How much pain are you experiencing right now? *(0-10)* (Item 15)

0   1   2   3   4   5   6   7   8   9   10

No pain   Pain as bad as
                                                                                       you can imagine

9. How fatigued are you? *Choose One* (Item 16)

> 0 - Not at all
> 1 - A little
> 2 - Somewhat
> 3- Quite a bit
> 4 - Very much

10. How stressed are you? *Choose One* (Item 17)

> 0 - Not at all
> 1 - A little
> 2 - Somewhat
> 3 - Quite a bit
> 4 - Very much

11. How depressed are you? *Choose One* (Item 18)
      0 - Not at all
      1 - A little
      2 - Somewhat
      3 - Quite a bit
      4 - Very much

12. How happy are you? *Choose One* (Item 19)
      0 - Not at all
      1 - A little
      2 - Somewhat
      3 - Quite a bit
      4 - Very much

13. Since the last prompt, have you experienced any of these environmental features?
Scroll and check all that apply (Item 20)
      None
      Access problems/ Lack of accessibility: *such as curb cuts, walkways, lack of accessible ramp*
      Allergens: *such as pollen, hay fever, pets or anything that causes an allergic reaction*
      Air quality or smells
      Climate or Weather
      Crowds
      Darkness
      Lights: *such as overly bright lights, flashing lights, low lighting*
      Noisy or loud
      People's attitudes
      Room temperature
      Traffic or parking
      Transportation problems
      Other (13a)
      13a. *What type of "other" environmental feature? Please describe.* (Item 21)

Please provide any additional comments or clarification: *Tap box below to type* (Item 22)
      This final screen is an opportunity to provide any other thoughts or comments not previously covered in the survey.

GPS Prompted Questions

The ***italic and bold font*** is also used to indicate questions that branch to follow-up items. The branched follow-up items immediately follow the main question in this document.

I. Where are you? *Scroll and choose one* (Item 23)

Business or store: *such as grocery store, shopping mall, laundromat, hair dresser*
Church or religious facility
Gym or exercise facility
Health care facility: *such as hospital, doctor's office*, *rehab facility*
Home
Office building: *defined as government, private*
Outside: *such as parking lot, sidewalk, forest, park, outdoor recreation complex*
Restaurant or bar
School or educational facility
Someone else's home
Transportation vehicle: *defined as private, public*
Venue: *such as movies, theater, museum, or sports arena*
Other (1a)
1a. *Other - Please describe where you are**: Tap box below to type* (Item 24)

II. What type of activity are you engaged in? *Scroll and choose one* (Item 25)

Community or volunteer activity: *such as rotary, PTA, volunteering at the food bank*
Eating: *such as having a regular meal at home or out*
Education
Employment
Family caregiving: *such as caring for children, assisting with homework, helping an elderly parent*
Financial Management: *such as paying bills, preparing taxes, investments, or completing benefits paperwork*
Healthcare appointments: *such as physical therapy, occupational therapy, acupuncture, doctor's visit, or other health care provider visit, chiropractor, massage*
Household chore: *such as housework, improvements, meal preparation, upkeep and maintenance, lawn care*
Household shopping: *such as grocery shopping, household errands*
Recreation or leisure (IIa): *such as exercising for fun, gardening, fishing, recreating, swimming, clothes shopping, listening to music, watching sports, reading, computer, arts/culture, eating, crafts, hobbies, games, going to the movie, play, concert, sporting events*
Religious activities: *such as worship, choir, committees, spirituality, mission work*
Resting: *such as sleeping, napping, sitting quietly*
Self-care (IIb): *such as exercise, grooming, blood pressure readings, blood and sugar readings*
Socializing or visiting (IIc): *such as interacting with other people in person, over the phone, or online*
Transportation or mobility: *such as driving, passenger, walking, biking, rolling*
Watching television or a movie
Other (IId)

IIa. *What type of recreation or leisure activity?* *Scroll and choose one* (Item 26)

Community event: *such as farmer's market, the Fair, or a home and garden show*
Computer: *such as computer games or online shopping*
Crafts or hobbies: *such as knitting, sewing, painting, photograph, cooking or baking*
Exercising: *such as running, walking, hiking, rolling*
Gardening
Music (playing or listening): *such as playing musical instrument, singing, listening to music*
Reading
Recreating: *such as floating, fishing, playing cards or games*
Shopping: *such as buying new clothes, window shopping*
Sports (spectator): *such as watching soccer, basketball, swim meet, baseball*
Sport (participant): *such as playing soccer, basketball, baseball, skiing, swimming*
Other IId: *such as going to museums, plays, orchestras, or ceremonies*

IIb. *What type of self-care activity?* *Choose One* (Item 27)

Exercise: *such as stretching, lifting weights, running, walking, swimming, biking, rolling*
Grooming: *such as showering, shaving, fixing hair, brushing teeth, clipping nails*
Health maintenance: *such as taking blood pressure readings, blood sugar readings, care of durable medical equipment (DME)*
Other IId:

IIc. *How are you socializing?* *Choose One* (Item 28)

In person
Talking on the phone
Electronically*: such as texting, chatting, and email*
Social networking: *such as Facebook, Twitter, Four Square or LinkedIn*
Other IId:
    IId. *What type of "other" activity? Please describe:* *Tap box below to type*
(Item 29)

III. What you are doing right now is (Item 30)

0 - Useless
1 -
2 - Neutral
3 -
4 - Serves a good purpose

IV. How satisfied are you with this activity? *Choose One* (Item 31)
    0 - Not at all satisfied
    1 - A little satisfied
    2 - Somewhat satisfied
    3- Quite satisfied
    4 - Very satisfied

V. Who is with you? *Scroll and check all that apply* (Item 32)
    Alone
    Children: *children under the age of 18 years old*
    Spouse or partner
    Other family: *such as children over the age of 18 years old, aunts, uncles, cousins or other extended family members*
    Friends
    Coworkers
    Service or healthcare provider: *such as physical therapist, social worker, case manager, or other healthcare provider*
    Personal care assistant
    Pet: *bird, cat, dog, etc.*
    Service animal: *animal trained to provide assistance*
    Other (4a)
    4a. *Who is "other?" Please describe.* (Item 35)

VI. Why are you doing this activity? *(Scroll and check all that apply)* (Item 36)
    Have fun
    Relax
    Make something creative
    Learn something
    Pass the time
    Help someone
    Advance an important cause
    Meet an obligation
    Be with other people
    Make a living
    Self-improvement

VII. Thinking about where you are now: (5-point scale: Not at all to Very Much)
    VIIa. The values of the people here reflect my own values. (Item 37)
        1 - Not at all
        2 - Slightly
        3 - Somewhat
        4 - Moderately
        5 – Very Much

VIIb. There is a good fit between what this place offers me and what I need. (Item 38)
      1 - Not at all
      2 - Slightly
      3 - Somewhat
      4 - Moderately
      5 – Very Much

VIIc. I have the ability to meet the demands of this situation. (Item 39)
      1 - Not at all
      2 - Slightly
      3 - Somewhat
      4 - Moderately
      5 – Very Much

VIId. I am similar to the other people here. (Item 40)
      1 - Not at all
      2 - Slightly
      3 - Somewhat
      4 - Moderately
      5 – Very Much

VIIe. My presence contributes to what is happening here. (Item 41)
      1 - Not at all
      2 - Slightly
      3 - Somewhat
      4 - Moderately
      5 – Very Much

VIII. Which of these environmental conditions are you experiencing?
Scroll and check all that apply (Item 42)
    None
    Access problems/ Lack of accessibility: *such as curb cuts, walkways, lack of accessible ramp*
    Allergens: *such as pollen, hay fever, pets or anything that causes an allergic reaction*
    Air quality or smells
    Climate or Weather
    Crowds
    Darkness
    Lights: *such as overly bright lights, flashing lights, low lighting*
    Noisy or loud
    People's attitudes
    Room temperature
    Traffic or parking
    Transportation problems
    Other (Va)
        Va. What type of "other" environmental feature? Please describe. (Item 43)

IX. Please provide any additional comments or clarification: *Tap box below to type* (Item 44)

This final screen is an opportunity to provide any other thoughts or comments not previously covered in the survey.

Appendix C

Recruitment Talking Points

Hi, my name is Jennifer Wong calling from the Rural Institute at the University of Montana. May I speak to _____?

Establishing memory of survey and completion

- Calling to follow-up on a surveys we have sent to you for the last two years and most recently this past fall.
- The survey was called the "Rural Community Living Survey"
- The survey asked questions about health, environmental factors and community participation
- The most recent survey has a blue cover, the previous survey was brown
- You mailed it back to us in a large white envelope
- You completed an informed consent as part of the study and we mailed you a copy of the consent in a separate letter
- You may have received several letters and copies of the survey asking that you return it to us

EMA Description

- On your survey you said you might be willing to participate in a follow-up study
- The follow-up study collects more in-depth information about your participation in the community and your daily life experiences with the environment.
- To collect this data, we are asking participants to carry a small touchscreen device (similar to an ipod, or smartphone) that can be easily carried with you as you go about your day.
- Each day over a 15-day period, the touchscreen device will prompt you to answer of brief series of questions 8-10 times per day. The series of questions take most people about 1 to 2 minutes to answer each time (for about 12 minutes per day).
- **We will provide you with the device** and ask **you to attend a 1.5 hour training** session to learn about the device and the survey questions
- Some people feel a little nervous about using touchscreens, but once they get started they find it is pretty easy – we have made the devices so the only thing you can do with them is take the survey
- You will answer questions like: Where are you? How well did you sleep? What are you doing?
- You will receive a $50 money order for helping us with this project and providing your feedback
- Do you think you might be willing to participate in this study?

<u>Scheduling</u>

- Schedule the participant for one of the available training dates.
- Provide a follow-up letter with the training date and time – including a map to the location (i.e., Public Library or Court House).
  - Describe what will be covered in the training, including the informed consent
  - I will also call them before the training with a reminder call

<u>Leaving Messages</u>

- Introduce yourself
- Speak Slowly and SMILE
- We are asking people to participate in a research study
- Individuals who participate will receive $50 and be asked to answer mini-surveys on a touchscreen device
- If you are interested in participating please call **Jennifer at 406-243-2808**

Appendix D

Paper and Pencil Global Measures of Purpose and Satisfaction

Getting Started

Thank you for taking part of the Rural Community Living-Real Time Experiences study! As we mentioned in the training there is one more survey for you to complete.

On the following pages, you will find a number of survey questions that you completed at the device training with Tannis and Jennifer. Your answers to this set of questions is very important to us and we will continue to keep your information confidential.

Here are a few tips for completing the survey:

1.) Read each question carefully. Some questions may seem similar and some questions may ask you to respond differently than before.

2.) You don't have to answer all of the questions, but if you are unsure about which answer is best for you, just pick one. We understand that people sometimes have different answers depending on how they feel at the time.

3.) It is easy to skip a page. After you complete the survey, **double check** that you did not skip any pages.

4.) If you have trouble reading printed materials and would like someone to go through the survey over the telephone, call Jennifer at 406-243-2808 or the toll free number 1-888-268-0323.

5.) If you lose track of the envelope we sent you and need another one or if you have any other questions, call Jennifer at 406-243-2808 or the toll free number
1-888-268-0323.

My Life Overall

Below are five statements with which you may agree or disagree. Using the 1-7 scale to the right of the statements, indicate your agreement with each item by placing an "X" on the box. Please be open and honest in your responding.

	Strongly disagree	Disagree	Slightly disagree	Neither agree nor disagree	Slightly agree	Agree	Strongly agree
1. In most ways my life is close to my ideal…	☐	☐	☐	☐	☐	☐	☐
2. The conditions of my life are excellent…	☐	☐	☐	☐	☐	☐	☐
3. I am satisfied with my life…	☐	☐	☐	☐	☐	☐	☐
4. So far I have gotten the important things I want in life…	☐	☐	☐	☐	☐	☐	☐
5. If I could live my life over, I would change almost nothing…	☐	☐	☐	☐	☐	☐	☐

My Life's Purpose

1. I am usually…

1	2	3	4	5	6	7
(Completely bored)			(Neutral)			(Exuberant)

2. Life to me seems…

1	2	3	4	5	6	7
(Always exciting)			(Neutral)			(Completely routine)

3. In life I have…

1	2	3	4	5	6	7
(No goals or aims at all)			(Neutral)			(Very clear goals & aims)

4. My personal existence is…

1	2	3	4	5	6	7
(Utterly meaningless, without meaning)			(Neutral)			(Very purposeful and very meaningful)

5. Every day is…

1	2	3	4	5	6	7
(Constantly new & different)			(Neutral)			(Exactly the same)

6. If I could choose, I would…

1	2	3	4	5	6	7
(Prefer never to have been born)			(Neutral)			(Live nine more lives just like this one)

My Life's Purpose

For each of the following statements, circle the number that would be most nearly true for you. The numbers extend from one extreme feeling to the opposite on the other side.

7. After retiring, I would…

1	2	3	4	5	6	7
(Do some of the things I have always wanted to do)			(Neutral)			(Loaf completely the rest of my life)

8. In achieving life goals I have…

1	2	3	4	5	6	7
(Made no progress whatsoever)			(Neutral)			(Progressed to complete fulfillment)

9. My life is…

1	2	3	4	5	6	7
(Empty, filled only with despair)			(Neutral)			(Running over with exciting, good things)

10. If I should die today, I would feel that my life has been…

1	2	3	4	5	6	7
(Very worthwhile)			(Neutral)			(Completely worthless)

11. In thinking of my life, I…

1	2	3	4	5	6	7
(Often wonder why I exist)			(Neutral)			(Always see a reason for my being)

12. As I view the world in relation to my life, the world…

1	2	3	4	5	6	7
(Completely confuses me)			(Neutral)			(Fits meaningfully with me life)

13. I am a…

1	2	3	4	5	6	7
(Very irresponsible person)			(Neutral)			(Very responsible person)

My Life's Purpose

14. Concerning one's freedom to make their own choices, I believe one is...

1	2	3	4	5	6	7
(Absolutely free to make all life choices)			(Neutral)			(Completely bound by limitations of heredity and environment)

15. With regard to death, I am...

1	2	3	4	5	6	7
(Prepared and unafraid)			(Neutral)			(Unprepared and frightened)

16. With regard to suicide, I have...

1	2	3	4	5	6	7
(Thought of it seriously as a way out)			(Neutral)			(Never given it a second thought)

17. I regard my ability to find meaning, purpose, or mission in life as...

1	2	3	4	5	6	7
(Very great)			(Neutral)			(Practically none)

18. My life is...

1	2	3	4	5	6	7
(In my hands and I am in control of it)			(Neutral)			(Out of my hands and controlled by external forces)

19. Facing my daily tasks is...

1	2	3	4	5	6	7
(A source of pleasure and satisfaction)			(Neutral)			(A painful and boring experience)

20. I have discovered...

1	2	3	4	5	6	7
(No mission or purpose in life)			(Neutral)			(Clear-cut goals and a satisfying life purpose)

Purposeful Reasons Questions

People have different reasons for choosing what they do with their free time. For example, one person might go skiing to have fun while another person goes skiing to help a younger skier learn new tricks. Next, is a list of paired reasons for doing an activity. Your task is to check the box for the reason in each pair that you believe has greater purpose.

Here's an example: Would it be more purposeful for you to "meet new friends" or "impress other people?" If you believe **meeting people** would be more purposeful for you than impressing others, then you would check the box next to "meet new friends" as has been done below.

Example:

☑ Meet new friends
☐ Impress other people

Remember, we are interested in what you believe has **<u>greater purpose</u>** for **<u>you</u>**!

Purposeful Reasons Questions

15. ☐ Help someone ☐ Have fun	22. ☐ Make a living ☐ Have fun
16. ☐ Self-improvement ☐ Be with other people	23. ☐ Self-improvement ☐ Pass the time
17. ☐ Pass the time ☐ Make something creative	24. ☐ Make something creative ☐ Relax
18. ☐ Self-improvement ☐ Have fun	25. ☐ Be with other people ☐ Meet an obligation
19. ☐ Pass the time ☐ Learn something	26. ☐ Learn something ☐ Relax
20. ☐ Be with other people ☐ Have fun	27. ☐ Meet an obligation ☐ Advance an important cause
21. ☐ Self-improvement ☐ Advance an important cause	28. ☐ Self-improvement ☐ Learn something

Purposeful Reasons Questions

29. ☐ Pass the time ☐ Relax	36. ☐ Advance an important cause ☐ Pass the time
30. ☐ Advance an important cause ☐ Make something creative	37. ☐ Help someone ☐ Learn something
31. ☐ Self-improvement ☐ Make a living	38. ☐ Pass the time ☐ Have fun
32. ☐ Make a living ☐ Pass the time	39. ☐ Be with other people ☐ Relax
33. ☐ Meet an obligation ☐ Make something creative	40. ☐ Self-improvement ☐ Make something creative
34. ☐ Make a living ☐ Be with other people	41. ☐ Be with other people ☐ Learn something
35. ☐ Help someone ☐ Make something creative	42. ☐ Meet an obligation ☐ Relax

Purposeful Reasons Questions

43. ☐ Be with other people ☐ Advance an important cause	50. ☐ Help someone ☐ Pass the time
44. ☐ Make a living ☐ Learn something	51. ☐ Advance an important cause ☐ Have fun
45. ☐ Make a living ☐ Meet an obligation	52. ☐ Help someone ☐ Relax
46. ☐ Be with other people ☐ Help someone	53. ☐ Meet an obligation ☐ Help someone
47. ☐ Meet an obligation ☐ Have fun	54. ☐ Make a living ☐ Relax
48. ☐ Make a living ☐ Help someone	55. ☐ Self-improvement ☐ Relax
49. ☐ Meet an obligation ☐ Learn something	

Table 1

Structure Coefficients of the Five-Factor Principal Component Analysis with a Promax Solution

The General Environment Fit Scale – Adapted items	Components				
	1	2	3	4	5
13. There is a poor fit between what my community offers me and what I need in a town.*	.867				
17. The community that I live in does not have the attributes that I need in a town.*	.849				
14. I don't fit in with my community because I am different than other residents*.	.781				
3. My abilities and personal experience are a poor fit with the requirements of the community.*	.727				
2. The community that I currently live in gives me just about everything I could ever need from a town.	.711				
15. The values of my community do not reflect my own values.*	.657				
19. The match is very good between the demands of my community and my personal skills.		.788			
10. I have the ability to meet the demands of my community.		.785			
5. My personal abilities and education are a good match for the demands that my community places on me.		.720			
20. I am not able to meet the demands of my community.*		.685			
25. The values of my community are a good fit with my values.			.810		
24. My personal values are similar to those of my community.			.807		
4. My personal values match those of people in my community.			.759		
9. My values prevent me from fitting in with my community.			.744		
1. The things that I value in life are very similar to the things that other people in my community value.			.735		
6. The other residents in my community are similar to me.				.777	
22. I am similar to other residents of my community.				.755	
18. I am different than the other residents of my community.*				.720	
11. The other residents of my community are different from me.				.700	
23. I make unique contributions to my community.					.823
7. I do not add anything unique to my community.*					.784
21. Nothing unique about me adds to the success of my community.*					.778
16. My unique differences add to the success of my community.					.695

Note. Component 1 = Demands – Abilities; Component 2 = Needs-Supplies; Component 3 = Value Congruence; Component 4 = Interpersonal Similarity; Component 5 = Unique Contributions.
* = Reverse coded items.

Table 2

Component Correlation Matrix for the Five-Factor Solution of the General Environmental Fit Scale

Component	1	2	3	4	5
1	--				
2	.322	--			
3	.449	.438	--		
4	.397	.471	.477	--	
5	.321	.353	.314	.293	--

Note. Component 1 = Demands – Abilities; Component 2 = Needs-Supplies; Component 3 = Value Congruence; Component 4 = Interpersonal Similarity; Component 5 = Unique Contributions.

Table 3

Descriptive Statistics of Purpose of Daily Activities across Activity Types

Activity Type	*N*	*M*	*SD*	Min.	Max.
Community/ Volunteering	36	3.44	.843	2	4
Eating	241	3.19	.967	0	4
Education	17	3.24	.831	2	4
Employment	131	3.22	.880	0	4
Family Caregiving	97	3.16	.997	0	4
Financial Management	8	2.88	1.126	1	4
Healthcare Appointments	17	3.53	.800	2	4
Household Chore	207	3.20	.889	1	4
Household Shopping	23	3.30	.822	2	4
Recreation or Leisure	224	2.45	.978	0	4
Religious Activities	10	3.90	.316	3	4
Resting	246	2.27	1.141	0	4
Self-Care	59	3.28	.951	1	4
Socializing/ Visiting	119	2.79	.856	1	4
Transportation	50	3.14	1.160	0	4
Watching TV or Movie	244	2.09	.947	0	4
Other	154	2.97	1.050	0	4

Note. Observations = 1883. Purpose was measured across five points: 0 (Useless, serves no purpose) to 4 (Useful, serves a purpose).

Table 4

Observations, Means, and Standard Deviations of Variables in the Regularly Scheduled Prompt

Data

Variable	Observations	*M*	*SD*
Purpose of Daily Activities	1886	2.81	1.07
Satisfaction of Daily Activities	1941	2.91	0.98
Happiness	1920	2.63	1.10

Table 5

Regression Analysis Summary for Contemporaneous Satisfaction of Daily Activities on Purpose

of Daily Activities

Variable	b	SE	95% CI		t	p
Satisfaction of Daily Activities	.367	.024	.319 -	.415	15.01	.000
Constant	1.749	.074	1.604 -	1.893	23.71	.000

Note. 1879 Observations over 25 participants. Within SS $R^2 = 0.109$.

Table 6

Regression Analysis Summary for Contemporaneous Happiness on Purpose of Daily Activities

Variable	b	SE	95% CI	t	p
Happiness	.145	.031	.084 - .204	4.72	.000
Constant	2.432	.082	2.270 - 2.595	29.32	.000

Note. 1857 Observations over 25 participants. Within SS R^2 = 0.012.

Table 7

Regression Analysis Summary for Contemporaneous Purpose of Daily Activities on Satisfaction of Daily Activities

Variable	*b*	*SE*	*95% CI*	*t*	*p*
Purpose of Daily Activities	.294	.020	.256 - .333	14.99	.000
Constant	2.066	.058	1.952 - 2.180	35.47	.000

Note. 1877 Observations over 25 participants. Within SS R^2 = 0.108.

Table 8

Regression Analysis Summary for Contemporaneous Happiness on Satisfaction of Daily

Activities

Variable	b	SE	95% CI	t	p
Happiness	.483	.025	.434 - .532	19.27	.000
Constant	1.638	.068	1.504 - 1.771	23.96	.000

Note. 1917 Observations over 25 participants. Within SS $R^2 = 0.164$.

Table 9

Observations, Means, and Standard Deviations of Variables in the GPS Prompt Data

Variable	Observations	*M*	*SD*
Purpose of daily activities	276	2.97	1.00
Satisfaction of daily activities	278	3.05	0.98
The values of the people here reflect my own values	275	3.05	1.15
There is a good fit between what this place offers me and what I need	273	3.14	1.06
I have the ability to meet the demands of this situation	272	3.42	0.91
I am similar to other people here	272	3.01	1.11
My presence contributes to what is happening here	271	2.99	1.26

Table 10

Person-Environment Fit Structure Coefficients for the One Principal Component Analysis

Promax Solution

Item	Component
I am similar to other people here.	.865
The values of the people here reflect my own values.	.858
There is a good fit between what this place offers me and what I need.	.846
My presence contributes to what is happening here.	.710
I have the ability to meet the demands of this situation.	.620

Table 11

Regression Analysis Summary for Contemporaneous Satisfaction of Daily Activities on Person-

Environment Fit

Variable	b	SE	95% CI		t	p
Satisfaction of Daily Activities	.421	.056	.306	.539	7.51	.000
Constant	1.855	.173	1.491	2.219	10.71	.000

Note. 254 observations, across 19 participants. Within SS R^2 = 0.290.

Table 12

Regression Analysis Summary for Contemporaneous Purpose of Daily Activities on Person-Environment Fit

Variable	*b*	*SE*	*95% CI*		*t*	*p*
Purpose of Daily Activities	.110	.057	-.110	.230	1.91	.072
Constant	2.843	.168	2.489	3.196	16.91	.000

Note. 252 observations, across 19 participants. Within SS $R^2 = 0.018$.

Table 13

Summary of the Current Study's Hypotheses, Confirmation of Hypotheses, and Associated Findings

| Hypothesis	Y/N	Associated finding
1. Purpose in Life Test scores and Satisfaction with Life Scale scores will be consistent over a two-week period.	Yes	The PILT and SWLS scores were consistent over time.
2. Purpose of daily activities measured with EMA will be positively related to Purpose in Life Test scores.	Yes	Purpose of daily activities was positively related to the PILT scores.
3. Satisfaction of daily activities measured with EMA will be positively related to higher Satisfaction with Life Scale scores.	Yes	Satisfaction of daily activities was positively related to the SWLS scores.
4. Activities with higher purpose measured with EMA will be done more frequently than activities with lower purpose.	No	Activities with higher purpose were related to lower reported frequency.
5. Satisfaction of daily activities and happiness measured with EMA will be positively related to purpose of daily activities within the same time period.	Yes	Satisfaction of daily activities and happiness were both positively related to purpose of daily activities within the same time period, respectively.
6. Satisfaction of daily activities and happiness measured with EMA earlier in the day will be positively related to purpose of daily activities later in the day.	Yes	Satisfaction of daily activities earlier in the day was associated with higher purpose of daily activities one period later (p. 40). Also, happiness earlier in the day was positively associated with their purpose of daily activities one, three, and five periods later.
7. Purpose of daily activities and happiness measured with EMA will be positively related to satisfaction of daily activities within the same time period.	Yes	Purpose of daily activities and happiness were both positively related to satisfaction of daily activities within the same time period, respectively.
8. Purpose of daily activities and happiness earlier in the day will be positively related to satisfaction of daily activities later in the day.	Yes	Purpose of daily activities earlier in the day was associated with higher satisfaction of daily activities one period later (p. 42). Also, happiness earlier in the day was positively associated with their satisfaction of daily activities one, two, and three periods later.
9. Satisfaction of daily activities and purpose of daily activities will be positively related to person-environment fit scores within the same time period.	Yes	Satisfaction of daily activities was positively related to person-environment fit within the same time period, respectively.
10. Satisfaction of daily activities and purpose of daily activities will be related to person-environment fit scores later in the day.	Yes	Satisfaction of daily activities earlier in the day was associated with higher person-environment fit one and three prompts later.
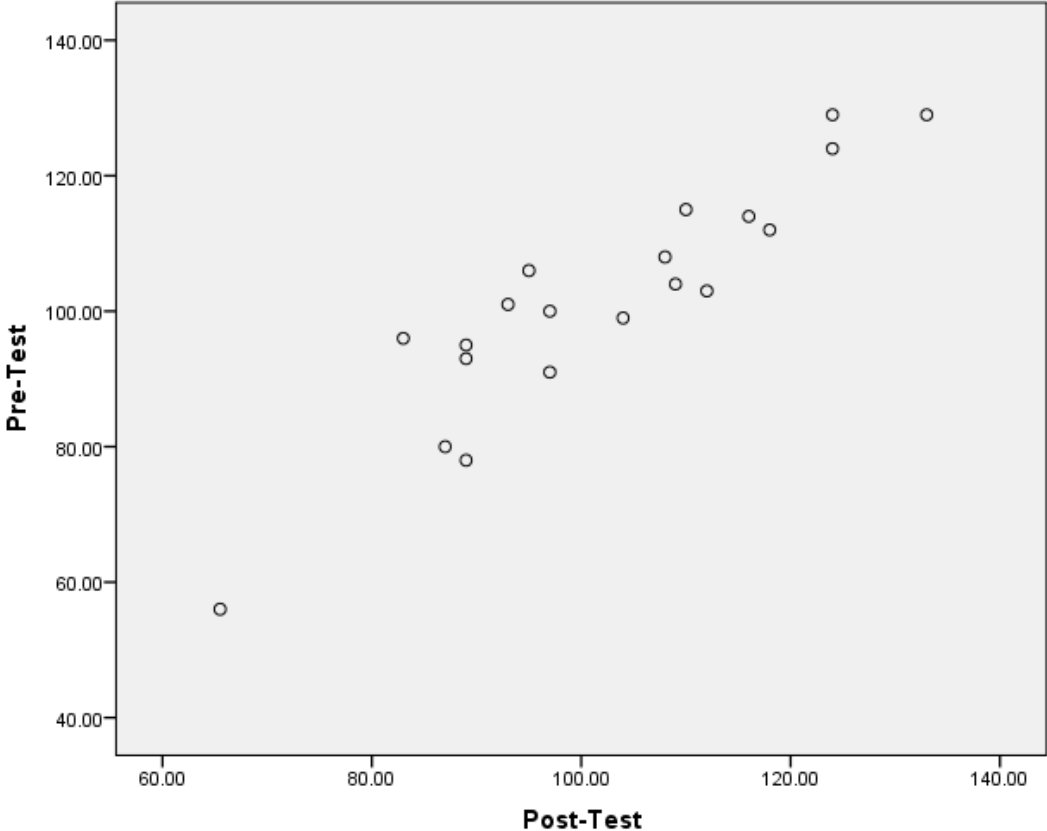
Figure 1. The Purpose in Life Test time-one (pre-test) and time-two (post-test) scores
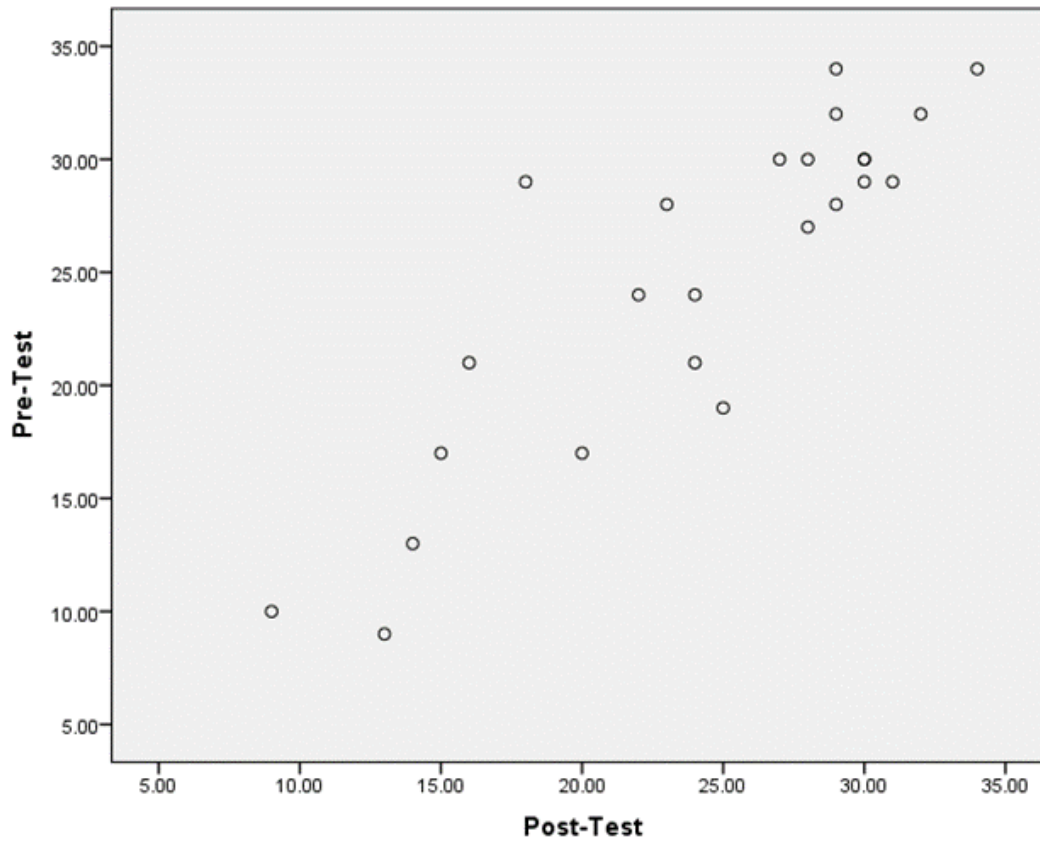
Figure 2. The Satisfaction with Life Scale time-one (pre-test) and time-two (post-test) scores
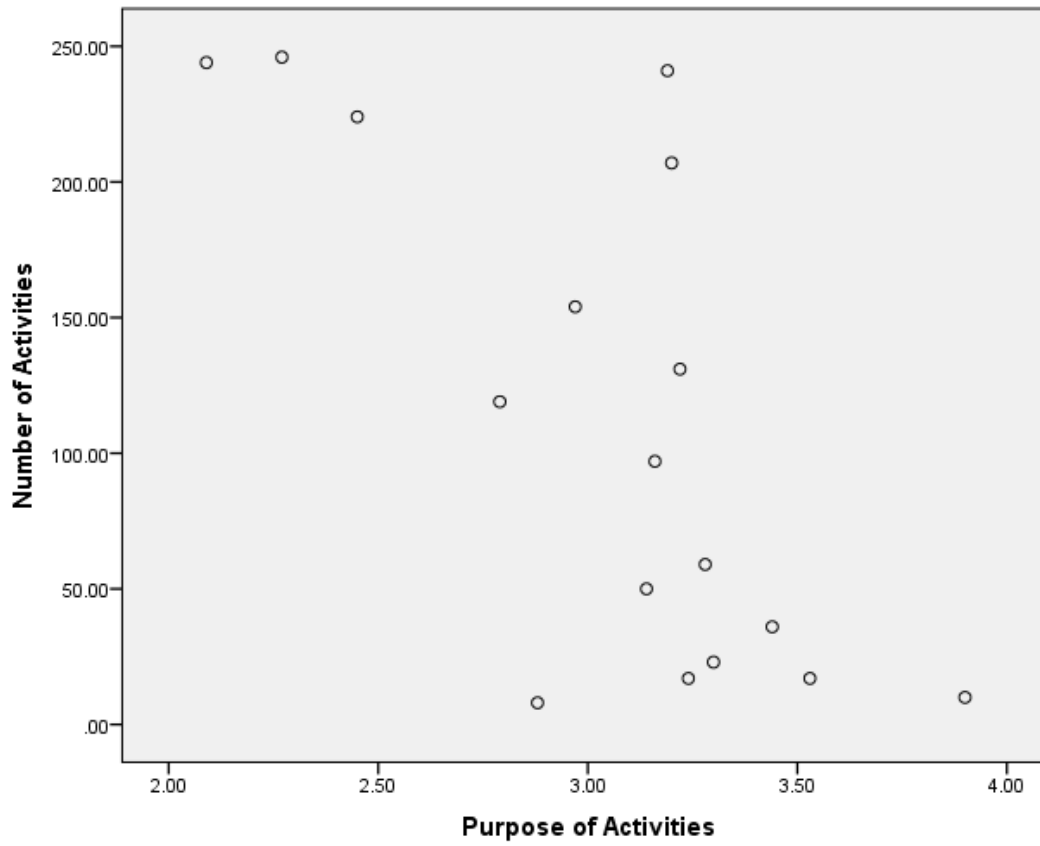
Figure 3. The relationship between the number of times an activity was conducted and the

activity's associated average purpose.