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Factor Structure, Reliability and Convergent Validity of the Engagement in Meaningful Activities Survey for Older Adults

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Abstract

This study evaluated the psychometric properties of the Engagement in Meaningful Activities Survey (EMAS) (Goldberg, Brintnell, & Goldberg, 2002) in a sample of older adults living in the greater Los Angeles area. The EMAS evidenced moderate test-retest reliability ($r = .56$) and good internal consistency ($\alpha = .89$). Exploratory factor analysis (principal components) discerned a two-component structure within the EMAS, indicative of Personal-Competence and Social-Experiential meaning. The EMAS demonstrated theoretically predicted zero-order correlations with measures of meaning and purpose in life, depressive symptomology, life satisfaction, and health-related quality of life. Regression analyses discerned that purpose and meaning in life consistently predicted the EMAS and its components. Furthermore, persons reporting greater levels of Social-Experiential relative to Personal-Competence meaning had the lowest levels of physical health-related quality of life. This study offers initial evidence in support of the EMAS as a valid measure of meaningful activity in older adults.

Keywords

Measurement; Meaning and Purpose in Life; Health-Related Quality of Life; Life Satisfaction

There is growing recognition that participation in personally valued activities contributes to individual well-being. For example, Cantor & Sanderson (1999) have argued that well-being may be enhanced when a person participates in life tasks that are intrinsically valued and autonomously chosen. It has also been suggested that the meaning persons derive from their day to day activities ultimately infuse life with meaning (Clark et al., 1991; Hasselkus, 2002; Sharrott, 1983; Thomson, 2003), and consequently have significant implications for both physical and mental health (Jackson, Carlson, Mandel, Zemke, & Clark, 1998; Ryff & Singer, 1998). Further, the meaning persons attribute to their activities may mediate the manner in which those activities are perceived, thereby influencing health, well-being and successful aging (Carlson, Clark, & Young, 1998; Law, Steinwender, & Leclaire, 1998; Little, 1998; Rowe & Kahn, 1998).

There has been recurring interest in the nature of meaningful activity engagement in social gerontology. For example, Kelly, Steinkamp, and Kelly (1986) derived five forms of activity meaning related to companionship within an activity, strengthening personal relationships, competence and skill development, expression and personal development, and health and exercise. Lawton (1993) reviewed the status of the meaning of leisure activities, making a distinction between denotative meaning, which refers to the more objective physical characteristics and uses of activities, and connotative meaning, referring to the personally subjective or affective aspects of activity involvement; a difference clearly reflective of

Pierce's (2001) discussion of activity and occupation. Lawton identified three classes of connotative meaning: experiential, developmental and social leisure, and offered the term 'multiplexity' to suggest that any single activity, in denotative terms, may take on a variety of connotative meanings across persons.

Beyond the categorization of activity meanings, measurement of this concept has also taken on varied forms. One approach involves ratings of the degree of commitment or importance attributed to one's activity participation; studies have consistently demonstrated positive relationships with subjective well-being (Pushkar, Arbuckle, Conway, Chaikelson, & Maag, 1997; Ray & Heppe, 1986). Another approach to quantifying meaning measures the level of satisfaction individuals ascribe to their activity involvement. Generally, activity satisfaction is associated with subjective well-being, and moderates the relationship between measures of activity and well-being in older adults (Fernandez-Ballesteros, Zammarron, & Ruiz, 2001; Lomranz, Bergman, Eyal, & Shmotkin, 1988; Mancini & Orthner, 1980). A third tactic consists of measuring older adults' reasons for engaging in activity. As an example, Everard (1999) found that older adults reported engaging in their activities for reasons such as seeking fun, providing mental stimulation, passing the time, or fulfilling an obligation. Selected reasons for activity participation contributed to the prediction of personal well-being beyond the number of activities, activity frequency, and perceived health. These investigations have shown that activity meaning may be quantified and is associated with personal well-being in older adults. Unfortunately, most approaches tap into limited aspects of meaning such as importance or satisfaction. Though progress in operationalizing activity meaning has been made, well validated instruments intended to tap the breadth of this construct do not presently exist.

The purpose of this study was to explore the psychometric properties of the Engagement in Meaningful Activities Survey (EMAS) (Goldberg, Brintnell, & Goldberg, 2002) in a sample of older adults. The content of the EMAS items were derived primarily through criteria suggested within the occupational therapy literature. The items within the scale reflect a broad conceptualization of meaning, including the perceived capacity of one's activities to: a) be congruent with one's value system and needs, b) provide evidence of competence and mastery, and c) have value in one's social and cultural group. In a sample of 32 persons with persistent mental illness, the EMAS scale evidenced good internal consistency ($\alpha = .84$) and moderate test-retest reliability ($r = .69$) (Goldberg et al.). Nonetheless the EMAS demonstrated a weak relationship with life satisfaction, as measured by the Quality of Life Index (Lehman, 1988), that disappeared after controlling for depression. Goldberg, et al., (2002) had suggested the EMAS evidenced sound psychometric properties, though additional studies are surely warranted to support the construct validity of the EMAS (Pedhazur & Schmelkin, 1991; Streiner & Norman, 2003). This paper involves the secondary analysis of data originally reported in a prior publication (Eakman, 2007). This study sought to establish the factor structure of the EMAS, and it was hypothesized that the EMAS would demonstrate sufficient psychometric properties as a measure of meaningful activity.

Method

Participants

Data were collected on 154 older men and women during September and October of 2004 following approval of the University of Southern California Institutional Review Board. The participants constituted a convenience sample of persons who lived in the Los Angeles area and were residents of retirement communities and residential facilities, or who were community dwelling elders visiting local area senior centers. All participants were at least 65 years of age, sufficiently fluent in English, and cognitively able to participate in the

study. Recall of the general purpose and procedures of the study, as reviewed through the process of informed consent, served as the screening mechanism to establish cognitive capacity. This screening was conducted by the first author, an occupational therapist with 13 years of clinical experience working with older adults. Persons with significant language or cognitive deficits were excluded from the study. Participants reviewed and signed an informed consent form before testing was initiated.

Instruments

The Engagement in Meaningful Activities Survey (EMAS) is a 12 item scale purported to reflect the construct of meaningful activity participation (Goldberg et al., 2002). For this study, the exact item wording and five-point scale were maintained from the original article. However, the adjectival scaling was slightly revised, expanding to 1-Never, 2-Rarely, 3-Sometimes, 4-Usually and 5-Always from the original “Never” and “Always” endpoints to provide greater clarity in response options (Streiner & Norman, 2003). Each of the 12 EMAS items begins with, “The activities I do...” and include respectively: help me take care of myself (e.g., keep clean, budget my money), reflect the kind of person I am, express my creativity, help me achieve something which gives me a sense of accomplishment, contribute to my feeling competent, are valued by other people, help other people, give me pleasure, give me a feeling of control, help me express my personal values, give me a sense of satisfaction, and have just the right amount of challenge.

A broad range of criterion-related scales were chosen to address constructs theoretically linked with meaningful activity. Version 2 of the SF-36 ® Health Survey (SF-36v2) (Ware, Kosinski, & Dewey, 2000) is an improved version of the well validated SF-36 ® Health Survey (McHorney, Ware, & Raczek, 1993) designed to assess eight health-related domains: physical functioning, role limitations due to physical problems, social functioning, bodily pain, general mental health, role limitations due to emotional problems, vitality, and general health perceptions. The Physical and Mental Health component scores were utilized to represent two key health-related quality of life constructs. The Satisfaction with Life Scale is a five-item assessment of global life satisfaction suitable for use with older adults (Diener, Emmons et al. 1985). The Center for Epidemiologic Studies Depression Scale is a twenty-item self-report scale designed to measure current levels of depressive symptomology, which evidences very good psychometric properties with older adult samples (Radloff, 1977). The Purpose-in-Life Test was developed by Crumbaugh and Maholick (1964; 1969) and is a validated measure of purpose and meaning in life for older adults (Reker & Fry, 2003).

Testing Procedures

Participants were tested in groups of 3 to 15 with the first author present at all times. For groups with more than 6 participants, graduate students trained in test administration were also available to assist in the assessment process. Participants were allowed as much time as needed to complete the questionnaires; approximately 45 minutes on average was required. After completing the battery of instruments, participants were given a \$10 stipend as compensation for their time. A randomly chosen group of 25 participants were tested one to two weeks later on a reduced battery of instruments including the EMAS to establish test-retest reliability.

Data Management

Prior to analyses, all data were reviewed for missingness. The median income value was imputed for four subjects missing income data. Missing items from SF-36v2 scales were imputed and the Physical and Mental health component scores were calculated in the manner suggested by Ware, Kosinski and Dewey (2000). For the remaining instruments,

scores were calculated according to published algorithms and mean intrapersonal scale values were imputed for missing items; no instruments were missing more than 5% of their items.

Data Analyses

Descriptive statistics were calculated for the demographic variables, the EMAS and criterion-related variables. Internal consistency reliability (Cronbach's alpha) was determined for each scale. Test-retest reliability was calculated using a Pearson product-moment correlation. Item analysis was conducted on the EMAS. To evaluate the structure of the EMAS, exploratory factor analysis (EFA) was conducted using principal components with an Eigenvalue of 1.0 set for item extraction. Varimax (orthogonal-uncorrelated components) and Promax (oblique-correlated components) rotations were utilized in search for simple structure; structure coefficients (≥ 0.30 to identify substantial loadings) were used as a guide for interpreting simple structure. Standardized regression coefficients were generated for each component identified from the final EFA solution.

Pearson's product-moment correlations were also used to investigate the level of association between the EMAS, EMAS component regression coefficients and criterion-related variables. Normalizing transformations were conducted on variables with non-normal distributions. Multiple regression analyses were employed to evaluate which of the demographic and criterion-related variables best predicted the EMAS and its components. Each model contained the following variables: age, gender (male, female), race/ethnicity (Caucasian, other), marital status (married/living together, other), housing status (independent living, assisted living), years of education, income (US Dollars), SF36v2 - Physical Health and Mental Health component scores, Satisfaction with Life Scale, Center for Epidemiologic Studies Depression Scale and the Purpose in Life Test. One-way analyses of variance were also conducted to investigate group differences within the study sample according to respective levels of EMAS component scores; the Tukey statistic was used for multiple-comparisons. A two-tailed alpha level of .05 was used for statistical tests. All data analyses were performed with SPSS version 15.0 (SPSS, 2006).

Results

Demographics

Table 1 presents the demographic characteristics of the sample. Participants were on average 80.5 ± 7.1 years old with a range of 65 to 100 years. Within the sample, 82% of the elders were Caucasian, 86% reported being married or living with another, and 66% indicated some post-high school education.

Reliability Statistics for the EMAS and Criterion-Related Variables

The internal consistency of the EMAS was very good, ($\alpha = .89$) (see Table 2). Internal consistency reliabilities for the criterion-related variables were quite good, ranging from .81 to .89. Two week test-retest reliability for the EMAS was moderate [$r(24) = .56, p < .01$]. Corrected item-total correlations for the EMAS ranged from .48 to .72 (see Table 3).

EFA of the EMAS

The EFA resulted in two components that explained 56.8% of the variance in the EMAS; communality values ranged from .42 to .74. The Varimax (uncorrelated components) rotation first used to identify simple structure resulted in half of the EMAS items having structure coefficients (ranging from .33 to .73) loading across both components. The Promax (correlated components) rotation was then employed resulting in a significantly improved EFA solution (see Table 4). Component 1 accounted for 47.2% of the EMAS variance,

contained 7 of the 12 EMAS items and represented the Social-Experiential component (SEC). The two SEC items with the highest loadings included socially-related perceptions of meaning (valued by others, help others). Other SEC items incorporated activity meaning reflecting pleasure, satisfaction, control, just-right challenge and expression of personal values. Inter-item correlations for the SEC ranged from .28 to .73 with a mean of .47 (all $ps < .01$). Component 2 accounted for 9.6% of the EMAS variance and represented the Personal-Competence component (PCC), containing the remaining 5 EMAS items. PCC items included activity meaning related to personal experiences of competence or accomplishment, expression of the self and personal creativity. Inter-item correlations for the PCC ranged from .30 to .65 with a mean of .48 (all $ps < .01$). Finally, the two components (SEC and PCC) were moderately correlated at .62.

Zero-Order Correlations between the EMAS and Criterion-Related Variables

The EMAS demonstrated statistically significant correlations with each of the criterion-related variables ranging in absolute value from .19 to .57 (See Table 4). The largest correlation was found with the Purpose in Life Test ($r = .57, p < .01$). Correlation coefficients between the EMAS components and criterion-related variables were fairly consistent except for the SF36v2 Physical and Mental Health components. The SEC was not statistically significant related to the SF36v2 Physical Health component ($r = .09, p = .29$), while substantially different correlation coefficients were evidenced between the SF36v2 Mental Health component and the SEC ($r = .22, p < .01$) and PCC ($r = .36, p < .01$).

Regression Models Predicting the EMAS and EMAS Components

Regression analysis was employed to identify demographic and criterion-related variables capable of explaining the variance within the EMAS and its components. Only the PIL resulted in significant model contributions for the EMAS ($\beta = .57, t(141) = 6.03, p < .001$; Model $R^2 = .37, p < .001$) and the SEC ($\beta = .49, t(141) = 4.74, p < .001$; Model $R^2 = .26, p < .001$), whereas the SF36v2 Mental health component ($\beta = .21, t(141) = 2.16, p = .03$) and the PIL ($\beta = .47, t(141) = 4.84, p < .001$) helped to explain the PCC (Model $R^2 = .36, p < .001$). A review of partial correlation coefficients revealed that the PIL contributed unique variance to the prediction of the EMAS variables ranging from 7.0% to 10.1%. The remaining criterion-related variables and all of the demographic variables failed to provide statistically significant contributions to the prediction of the EMAS and its components.

Exploration of Ways to Meaning via the EMAS

It was of interest to determine if participants varied in their ascriptions of activity meaning as a function of the two EMAS components (SEC and PCC) found through exploratory factor analysis, and if so, what might account for these differences. To investigate these questions, a new variable was created called Ways to Meaning, which reflected three categories of persons: 1) those whose EMAS scores reflected an equal ascription of SEC and PCC meanings to their activities, 2) those who preferred SEC meaning over PCC meaning, and finally 3) those who preferred PCC meaning over SEC meaning. To generate this variable, three levels of SEC and PCC component regression coefficients respectively were generated (low: $< -.499$; medium: $-.499$ to $.499$, and high: $> .499$) resulting in 92 persons with equal SEC and PCC ascriptions of meaning to their activities (SEC = PCC), 29 persons who ascribed greater levels of SEC than PCC meaning (SEC > PCC) and 33 persons who ascribed greater levels of PCC meaning (PCC > SEC).

To validate Ways to Meaning group membership, one-way analysis of variance (ANOVA) were conducted on the SEC and PCC component regression coefficients resulting in statistically significant differences for both SEC [$F(2,151) = 10.72, p < .001$] and PCC [$F(2,151) = 7.81, p = .001$]. Post-hoc analyses indicated that for SEC, persons assigned to

the SEC > PCC group held higher mean values than persons in SEC = PCC ($p < .01$) and PCC > SEC ($p < .001$). Whereas PCC values were higher for persons assigned to PCC > SEC compared to persons in SEC = PCC ($p = .06$) and SEC > PCC ($p < .001$).

Based upon results from the zero-order correlations, and to maintain parsimony of statistical tests within the study, analyses were conducted to determine if Ways to Meaning assignment was related to SF36v2 Physical and Mental Health component scores. Results from one-way ANOVA evidenced a significant relationship between Ways to Meaning and the SF36v2 Physical Health component [$F(2,151) = 4.49, p = .01$]. Multiple comparisons showed that persons assigned to SEC > PCC had Physical Health scores 7.6 points less than PCC > SEC members ($p = .01$), and 4.8 points less than SEC = PCC ($p = .07$) members. In fact, the mean SF36v2 Physical Health component scores for persons categorized as SEC > PCC was 36.7, which was below the 25th percentile for persons aged 65–74 years and at about the 40th percentile for persons aged 75 and over (Ware et al., 2000). There was no statistically significant mean difference in SF36v2 Physical Health scores between PCC > SEC and SEC = PCC members and no association was found between Ways to Meaning assignment and the SF36v2 Mental Health component scores [$F(2,151) = .29, p = .75$].

Discussion

Reliability

Overall, the EMAS demonstrated favorable psychometric qualities in this sample. The internal consistency of the EMAS was very good; and item-analysis results confirmed the homogeneity of the EMAS items, as item-total correlations were considered adequate for the purposes of scale development (Streiner & Norman, 2003). The two-week test-retest reliability of the EMAS was moderate. Goldberg, et al. (2002) reported a moderate test-retest reliability coefficient for the EMAS in their sample of persons with persistent mental illness. Though these coefficients suggest modest levels of reliability for the EMAS, this need not be perceived as an indication of an inefficient measuring instrument. There is an increasing understanding that test-retest reliability coefficients for changeable phenomenon (e.g., anxiety) may be rather low (Spielberger & Reheiser, 2003). Nesselroade and Boker (1994) have argued that strict adherence to test-retest reliability may have clouded researchers concerns for issues such as sensitivity to change, especially regarding process-based phenomenon. For example, weekly variability in intra-individual perceived control was found to predict mortality rates of participants in the MacArthur Aging Studies (Eizenman, Nesselroade, Featherman, & Rowe, 1997). It is highly likely that the meaning we ascribe to our activities may change in some way from week to week as the exigencies of our daily lives shape our experiences (Hasselkus, 2002; King, 2004; Klinger, 1977; Lawton, 1993). Given this, the EMAS may afford not only a window into our present meaning, but also a tool with which to evaluate longitudinal shifts in our attributions of meaning to our daily lives. At present, this position on the potential utility of the EMAS is merely speculative, and more research is warranted. Nonetheless, for each given application a determination should be made as to whether an instrument demonstrates sufficient reliability for its intended purpose (Pedhazur & Schmelkin, 1991).

Factor Structure

Evaluating factor structure by means of EFA provides a key piece of evidence for establishing the validity of a measuring instrument (Thompson, 2004). Typically, scale developers will provide some information about the manner with which the instrument is intended to measure the construct of interest. Goldberg et al. (2002) had suggested that the items within the EMAS were intended to reflect meaning-relevant criteria including the capacity of a person's activities to: a) be congruent with one's value system and needs, b)

provide evidence of competence and mastery, and c) have value in one's social and cultural group. Though only these criteria were provided, it was assumed that the EMAS was meant to tap a higher-order, unidimensional construct: meaningfulness of activities. Results of the EFA demonstrated that the EMAS was comprised of two related components in the present sample. These components were labeled Social-Experiential and Personal-Competence to best reflect their unique composition of EMAS items. It appears that the items comprising the EMAS are in effect tapping two rather closely related aspects of activity meaning, given an inter-component correlation of 0.62. To better appreciate the nature of these activity meanings, a brief review of the EMAS items and relevant literature may be useful.

The two EMAS items contributing the greatest amount of variance to the SEC component reflected socially related meaning. The social attributes of activity meaningfulness have been richly addressed in a diversity of literature. For example, authors in social gerontology and social psychology have clearly articulated the key importance of human relationships in supporting well-being (Baumeister, 1991; Lawton, 1993; Rowe & Kahn, 1998; Ryan & Deci, 2000). A social perspective on meaningful activity has also been asserted by authors in occupational therapy and occupational science (Hammell, 2004; Hasselkus, 2002), and references to the social nature of activity meaning are replete in qualitative investigations (e.g., Debats, 1999; King, Brown, & Smith, 2003; Unruh, 1983). Additional SEC items suggested meaning relevant to affective activity experiences, expression of values, just right challenge and control. Beyond those sources cited by Goldberg et al. (2002), these aspects of activity meaning or life experiences are consistent with a variety of theorists (Bandura, 1997; Csikszentmihalyi, 1990; Klinger, 1977; Maslow, 1971).

Of the five items comprising PCC, three meanings reflected personal independence, competence and accomplishment. These three aspects of meaning are pertinent to developmental regulation and perceived control, intrinsic motivation and personal goal pursuits (Baltes & Baltes, 1990; Brandtstädter & Rothermund, 1994; Emmons, 1986, 1999; Heckhausen, 1999; Ryan & Deci, 2000; Schultz & Heckhausen, 1996). The importance of personal independence and competence, especially for older adults, has repeatedly surfaced in the qualitative literature (Ahern, 1996; Ball et al., 2004; Ball et al., 2000; Laliberte-Rudman, 2002; Van't Leven & Jonsson, 2002). The remaining two EMAS items comprising the PCC included wording that reflected self expression and creativity through doing. It appears as these items may well be tapping issues related to the expression of personal identity (Christiansen, 1999; Herzog & Markus, 1999; Kaufman, 1986) or continuity (Atchley, 1989, 1999) by means of occupational engagement.

Convergent Validity

Results from zero-order correlations provided clear convergent validity evidence in support of the EMAS. The largest relationship was found between the EMAS and the PIL. The PIL has been found to effectively represent the construct of meaning and life purpose (Reker & Fry, 2003); it has demonstrated positive relationships with indicators of activity (Gerwood, 1995; Weinstein & Xie, 1995) and is commonly associated with measures of psychosocial well-being (Ulmer, Range, & Smith, 1991; Zika & Chamberlain, 1987, 1992). The finding of a positive correlation between the PIL and the EMAS highlights an intimate relationship between perceptions of activity meaningfulness and a sense of meaning and purpose in life. The importance of this relationship has been emphasized in occupational therapy and occupational science (Christiansen, Backman, Little, & Nguyen, 1999; Clark et al., 1991; Hasselkus, 2002; Wilcock, 1998), as well as from a diversity of related perspectives (Atchley, 1999; Csikszentmihalyi, 1990; Frankl, 1959/1984; Klinger, 1977; Rowe & Kahn, 1998; Thomson, 2003; Yalom, 1980).

In continued support of the EMAS, a low positive association was found with the Satisfaction with Life Scale, and a low negative relationship was evidenced between the EMAS and the Centers for Epidemiological Studies Depression Scale. Zero-order correlations between the EMAS component scores (SEC and PCC) and these criterion related variables generally paralleled those of the entire EMAS scale. The SF-36v2 component scores were both positively correlated with the EMAS, though the relationship with the SF-36v2 Mental Health score was considerably larger. Given that the EMAS was intended to provide a subjective evaluation of meaningful activity participation, this finding was not unexpected.

Multiple regression analyses discerned that the PIL was the most substantial predictor of the EMAS and its components, as it provided the largest amount of variance across the three models. The PIL provided the only statistically significant contributions to the EMAS and the SEC, and the PIL combined only with the SF-36v2 Mental Health score predicted the PCC. These findings offer additional convergent validity evidence, as a measure of meaning and purpose in life accounted for a substantial portion of the variance within the EMAS.

What was not anticipated was the relative lack of consequential contributions from the large majority of the criterion-related and demographic variables employed in these models. In their study Goldberg et al. (2002) had found that the EMAS was positively related to life satisfaction, yet when they controlled for depression, this relationship was no longer significant. In the present study, zero-order correlations evidenced that depression and life satisfaction were related to the EMAS; however, these relationships were no longer significant in the multiple regression model given the presence of the PIL. In this sample, meaning and purpose in life appears to be most predictive of ascriptions of personal meaning to activities, regardless of depressive symptomology, life satisfaction and health-related quality of life.

The EMAS and Ways to Meaning

The Ways to Meaning variable was conceptualized as a tool intended to capture variations in personal ascriptions of meaning within the EMAS. Creation of this variable was feasible only after the two-component structure of the EMAS was identified using exploratory factor analysis. Subsequently, the Ways to Meaning variable was employed to explore the apparent discrepancies in correlation coefficients found between the SF-36v2 scales and the EMAS component scores. The most substantial finding from these analyses indicated that differences in Ways to Meaning were associated with SF-36v2 Physical Health scores. More specifically, the 29 persons who preferred SEC over PCC meaning had substantially lower mean levels of physical health than persons who had adopted the other two EMAS Ways to Meaning. The Ways to Meaning variable reflected the intra-individual relationships between SEC and PCC ascriptions of meaning. By definition, persons who preferred SEC over PCC meaning did not need high levels of SEC meaning, just SEC component regression scores greater than their PCC component regression scores.

Ultimately, a number of questions arise from this finding. First, what might explain the discovery that persons preferring SEC meaning over PCC meaning had the lowest levels of physical health? Is it reasonable to suspect that persons with lower levels of physical health might derive a greater relative degree of personal meaning from socially mediated sources than their more able-bodied peers? Related to these questions, Park and Folkman (1997) articulate a complex process of meaning-making wherein persons constantly evaluate and reinterpret global and situational meaning as a way of coping with daily life stressors. Their model suggests that positive reappraisals and re-evaluation of personal goal pursuits may in part enable persons facing age-related losses to negotiate a satisfactory sense of personal meaning, thereby fostering coping with declining physical health. Given this, there are a

number of research areas that may have implications for this aspect of meaning-making. Social comparisons are a means by which older adults may positively reappraise their situation, employing what Heckhausen (1999) refers to as a secondary control process. As an example, older adults have been found to reinterpret their physical health by employing social comparisons (i.e., a person with poor health would compare themselves to others evidencing poorer health) thereby enabling perceptions of relative health and well-being (Suls, Marco, & Tobin, 1991).

Another perspective suggests that advancing age and declining physical health may be related to shifting values and importance in personal life domains. Carstenson (1992) has posited that as persons age the frequency of interaction and intensity of feelings increase for siblings and family. These changes have been associated with an increased motivation to derive emotional meaning from our daily lives. Carstensen, Fung & Charles (2003) have argued that increased emotional investments are made in personal relationships as a means of coping with age-related losses; which in turn may be evidenced through greater relative ascriptions of SEC over PCC meaning. In a related viewpoint, persons with lower levels of physical health-related quality of life may have devalued some activities as their competencies with those activities declined. This use of secondary control might have lead to lesser relative levels of PCC meaning for persons with low physical health-related quality of life (e.g., inability to climb stairs or walk a city block). Park and Folkman (1997) have indicated that measures of personal meaning are necessary to enable a greater understanding of meaning-making as a way of coping. The results of this study offer some hope that the EMAS may support knowledge development in this area.

Limitations and Future Directions

Several considerations may limit the generalization of these findings. First, a convenience sample of older adults was utilized for this study, consisting primarily of Caucasian women who were fairly well educated. Future validity studies involving the EMAS will benefit from larger, more demographically diverse samples. Future studies are also warranted to validate the EMAS within different populations such as well young and middle-aged adults, or persons with various activity participation limitations. Additionally, given the cross sectional design of this study, it is not possible to substantiate a causal relationship between meaningful activity, health-related quality of life and well-being. Finally, it is recommended that future studies be conducted with the EMAS to continue to establish the psychometric properties of the instrument given its unique approach to measuring activity meaningfulness.

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Table 1

Demographic Characteristics (N = 154)

		Frequency	Percent
Gender	Female	119	77
	Male	35	23
Race/Ethnicity	Caucasian	126	82
	Other	28	18
Marital Status	Married/Living Together	132	86
	Other	22	14
Housing Status	Independent Living	123	80
	Assisted Living	31	20
Education	5–8 Years	1	1
	Some High School	5	3
	High School Completed	45	30
	Business or Trade School	19	12
	1–3 Years College	37	24
	4 Years College	22	14
	Post Graduate Study	25	16
Income	\$0 to \$1,000 / Month	44	29
	\$1,001 to \$3,000 / Month	61	40
	\$3,001 to \$5,000 / Month	30	20
	\$5,001 to \$7,000 / Month	8	5
	\$7,001 to \$10,000 / Month	4	2
	\$10,000 or more / Month	7	4

Table 2

Descriptive Statistics for Criterion-Related Variables and the Engagement in Meaningful Activities Survey

	Mean	SD	Range	Cronbach's Alpha
SF36v2 - Physical Health Component Score	41.2	10.3	12.6 – 62.7	*
SF36v2 - Mental Health Component Score	51.6	10.4	14.7 – 70.0	*
Satisfaction with Life Scale	24.5	6.1	7 – 35	0.81
Center for Epidemiologic Studies Depression Scale	10.8	8.8	0 – 49	0.87
Purpose in Life Test	108.5	17.3	74 – 140	0.89
Engagement in Meaningful Activities Survey	48.2	6.5	17 – 60	0.89

Note.

* SF-36v2 scales comprising the Component Scores ranged from .62 – .92.

Table 3
Exploratory Factor Analysis and Item Analysis Coefficients for the Engagement in Meaningful Activities Survey

	Varimax Rotation Component Matrix		Promax Rotation Pattern Matrix		Corrected Item-Total Correlations
	Component 1	Component 2	Component 1	Component 2	
1) Take care of self	.168	.628	-.065	.688	.48
2) Reflect the person I am	.226	.694	-.023	.743	.57
3) Express my creativity	.225	.692	-.023	.741	.57
4) Sense of accomplishment	.226	.810	-.072	.884	.67
5) Feel competent	.363	.726	.128	.726	.67
6) Valued by others	.855	.083	.995	-.256	.60
7) Help others	.787	.138	.889	-.161	.58
8) Give me pleasure	.591	.425	.531	.267	.64
9) Feeling of control	.480	.376	.418	.254	.53
10) Express personal values	.663	.457	.604	.276	.72
11) Sense of satisfaction	.644	.451	.584	.277	.70
12) Right amount of challenge	.562	.333	.536	.168	.55

Note. SEC: Social-Experiential; PCC: Personal-Competence Component

Table 4

Zero-Order Correlations between Criterion-Related Variables, the Engagement in Meaningful Activities Survey (EMAS) and EMAS Components

	1	2	3	4	5	6	7	8
1) SF36v2 - Physical Health Component Score	1							
2) SF36v2 - Mental Health Component Score	.00	1						
3) Satisfaction with Life Scale	.06	.41**	1					
4) Center for Epidemiologic Studies Depression Scale	-.14	-.67**	-.48**	1				
5) Purpose in Life Test	.28**	.42**	.58**	-.45**	1			
6) Social-Experiential Component (SEC)	.09	.22**	.31**	-.27**	.47**	1		
7) Personal-Competence Component (PCC)	.24**	.36**	.33**	-.31**	.55**	.62**	1	
8) Engagement in Meaningful Activities Survey	.19*	.32**	.35**	-.29**	.57**	.90**	.90**	1

Note.

*
 $p < .05$,**
 $p < .01$