The Possibilities for Activity Scale (PActS): Development, validity, and reliability

Mackenzi Pergolotti and
Department of Health Policy and Management, Gillings School of Global Pubic Health, University of North Carolina, Chapel Hill, NC, United States

Malcolm P. Cutchin
Department of Health Care Sciences, Eugene Applebaum College of Pharmacy and Health Sciences, Wayne State University

Abstract

Background—Laliberte-Rudman (2005) proposed the concept of occupational possibilities to represent what older adults feel they "should be" and "could be" doing.

Purpose—This study aimed to develop and validate a measure of perceived occupational possibilities: the Possibilities for Activity Scale (PActS).

Method—Two factors of the PActS, activity expectations and activity self-efficacy, were operationalized in a 14-item instrument. The instrument was then evaluated with a sample of older adults diagnosed with cancer ($n = 179$).

Findings—The PActS demonstrated promising internal consistency reliability (stratified coefficient $\alpha = .77$) and construct-related ($r = .58$; $p < .0001$), structural (Chi-square, 61.57; CFI, .97; RMSEA, 0.05; TLI, .96; NFI, .91) and known-groups validity.

Implications—The PActS appears to be a useful measure of internalized occupational possibilities for participation in activity for older adults with cancer. This scale can enhance the measurement of participation in activity by evaluating the perceptions of occupational possibilities.

Keywords

Measurement; Oncology service; Occupational participation; Occupational possibilities; Structural models

Informed by the work of Michel Foucault (1991) and his descriptions of power as a social force, Laliberte Rudman (2005, 2010) identified social norms, powerful ideals, and pressures that shape older adults' participation in activities after retirement. Laliberte Rudman's (2010) core construct in this theory of occupational possibilities states that "people take for granted… what they can and should do" (p. 55). The construct suggests that a group's tacit knowledge about societal ideals is shaped by their past experiences as well as their

Corresponding author: Mackenzi Pergolotti, Department of Health Policy and Management, CB# 7411, 1102G McGavran-Greenberg Hall, University of North Carolina at Chapel Hill, Chapel Hill, NC, 27599-741, United States. pergolot@email.unc.edu.

internalized beliefs. This knowledge influences members' participation in meaningful activity. Powell (2009) theorized that in retirement, older adults are considered "consumers" or "clients" and are quickly marginalized by society if they are not able financially to act out those ideals. Compounding these pressures, older adults with cancer may face unique challenges.

Older adults with cancer may have physical, mental, emotional, and financial effects of cancer and its treatments that may make it more difficult to live up to the standards of "successful aging" (Parry, Kent, Mariotto, Alfano, & Rowland, 2011; Reeve et al., 2009). The concept of successful aging has been criticized to include age- and illness-defying ideals (Powell, 2006, 2009). In some studies, successful aging was specifically defined as living without cancer (Rowe & Kahn, 1997; Sabia et al., 2012). By not maintaining or attaining cancer-free status, or becoming financially strained by the cancer treatments, older adults may be stigmatized for their diagnosis/illness. This stigma may lead to decreased perception of their occupational possibilities and potentially decreased participation. Use of the construct of occupational possibilities may inform our understandings of participation in occupation for older adults who may not be able to live up to the societal ideals of successful aging.

Laliberte Rudman (2005, 2006a, 2010) also emphasized a recent trend in the occupational therapy and science disciplines toward the individualization of occupation. This trend toward individualization was exemplified by the focus on meaning and upon the ability of individual agents with little consideration of the situated (social, political) nature of occupation. This individualistic turn places the responsibility for action upon/within the individual by normalizing a perspective that emphasizes individual responsibility for health, well-being, and financial security (Rudman, 2006b; Rudman & Huot, 2013). Potential occupations are filtered through these social norms, cultures, and memberships in a social group (Hutton, Gutman, Martin, & Foucault, 1988; Rudman & Huot, 2013; Taylor, 2011). Therefore, choice, personal meaning, and ability alone do not determine participation in occupation. Instead, experiences, relations, and self-governance (which directs behaviour and affords possibilities for participation) within societal norms assist in the formation of an individual's perceived possibilities for participation in particular occupations (Rudman & Huot, 2013). Understanding and possible measurement of these perceptions of occupational possibilities could offer new insights into participation beyond individual meaning and physical performance.

However, research that uses the concept of occupational possibilities is limited without a practical application of the concept (Rudman, 2010; Rudman, Huot, & Dennhardt, 2009). Measurement of occupational possibilities could also enhance the scope of research and interventions by taking into consideration social influences and situational participation. This could potentially be significant in populations where living up to social ideals may be difficult (i.e., living with cancer). Clinically, this measurement tool could assist with goal making and general engagement with clients about their perceptions about potential for participation in activity. To address this gap in the literature and to extend the concept to clinical research, the aim of this study was to determine whether the construct of occupational possibilities could be operationalized into a reliable and valid measure within a

population of older adults with cancer. The remainder of the article reports our approach to the development and validation of the Possibilities for Activity Scale (PActS).

The PActS was designed to include the two factors that comprise occupational possibilities: individuals' internalized social norms (of what they should do) and perceptions of their own ability to participate in activities (what they believe they could do). This new instrument provides an opportunity to measure a construct of increasing interest to occupational scientists and therapists. Moreover, the ability to measure occupational possibility opens the way to further bridge occupational science, occupational therapy, and other health-related disciplines through empirical research.

Method

Instrument Development

We used an iterative process to develop the PActS. The first step was to determine activities to include in the new instrument. The construct of occupational possibilities suggests that specific activities are promoted within social discourse and we needed a list of activities that would be consistent with that understanding. We chose the Meaningful Activity Participation Assessment (MAPA) because it contained a comprehensive set of activities of importance to older adults that indicated meaningful participation. Also, the MAPA represented a similar yet separate construct of participation (meaning and frequency). Second, we used the exploratory factor analysis results of the MAPA to determine activity categories (Eakman, 2007; Eakman, Carlson, & Clark, 2010).We found sets of related activities that could be grouped together to reduce the number of items from the 28 activities in the MAPA into seven new activity categories for the PActS. We chose activity categories instead of using all of the MAPA activities to streamline the PActS and to reduce participant burden. The activity participation categories used for both factors of the PActS were *creative activities, spiritual activities, getting around town, communicating with others, doing physical exercise, keeping up with traditional media*, and *doing service activities.* While the categories do not represent the full range of possible occupations, their combined association with occupation-related outcome measures suggests the range of activities included is a good representation of everyday activity (Eakman et al., 2010). Furthermore, each activity category contains examples of what is included in each except for physical exercise (see Appendix A). Approval from the Internal Review Board at the University of North Carolina at Chapel Hill was granted for research on this instrument.

Once we determined the items for the PActS, we then refined the PActS through expert reviews and cognitive interviews. Five occupational science and occupational therapy experts who understand occupational possibilities and/or general measurement design were given a brief description of the use of the PActS and the theoretical background, including occupational possibilities construct (if required), and asked to provide feedback on the measure and content validity (DeVellis, 2011; Kline, 2011). The feedback provided by these experts suggested additional refinements for instructions and items. For example, a previous version of the PActS asked, "Most people who are important to me think I should do/ participate in…." We changed this item stem to "How much do you believe that a person of your age and diagnosis should be…?" to better represent perceptions of occupational

possibilities and to target the construct as conceptualized as a social understanding. The Likert scaling was also changed from *strongly agree* through *strongly disagree* to *very little (1)* through *quite a lot (5)*. The revised version was then used for cognitive interviews with five older adults of both sexes who ranged in age from 65 to 85 years. Interviews consisted of each adult "talking out loud" through each item on the PActS to determine any difficulties the instrument directions or items presented for respondents (Presser & Blair, 1994; Willis, 2005). This process was used to modify the instrument by reframing introductions and rewording activity groups to improve clarity.

After refinements, the PActS consisted of two factors, termed "activity expectations" and "activity self-efficacy," with 7 items each (see Appendix A). Laliberte Rudman (2010) defined occupational possibilities as what "people take for granted as what they can and should do" (p. 55); the PActS is designed to measure the perceived "should do" with the activity expectations factor and the perceived "can do" for use with the activity self-efficacy factor. The PActS is scored with sum score across both sections; possible scores range from 14 to 70 with higher scores representing more perceived possibilities for participation in activity. A sum score was chosen because it is easy to complete and understood by users, and summed scores can be comparable in predicting outcomes to other scoring options (Xu & Stone, 2012). Furthermore, we decided on sum scoring because we felt it better represented the full construct of perceived occupational possibilities (what you feel like you should be and could be doing) better than two separate scores.

Participants

Participants were recruited through a large observational cohort study titled "Carolina Senior: A Registry for Older Patients" (protocol approved by the Institutional Review Board of the University of North Carolina [UNC], NCT01137825; 2009–present). We recruited participants in two different ways: (1) through mailing a letter of explanation, the instruments, and the consent forms to participants already enrolled in the Registry; and (2) from within the Lineberger Comprehensive Cancer Center at UNC outpatient clinic simultaneously during enrolment into the Registry. Any adult 65 years and older with a diagnosis of cancer was included. Exclusions were made for adults who were assessed in other institutions, for which a medical record was not available, who did not consent to future contact by the research team, and/or who were deceased. A total of 340 older adults were screened, 250 from the Registry and 90 in clinic. Two hundred and six met eligibility criteria (135 from the Registry and 71 from clinic), and 179 participants signed consent, completed the tools, and were included in the analysis.

Data Collection

The PActS and the MAPA were mailed to the 250 people identified through the registry, along with a letter of explanation, a consent form, and a self-addressed envelope for returning the instrument. For the participants who met the eligibility criteria, instruments were given to them on site, filled out either on site or at home, and returned by mail. When the instruments were returned, they were examined for completeness and scanned into a program called the Research Electronic Data Capture (Grunfeld, 2006).

Data Analysis

An *a priori* power analysis was completed to sufficiently perform the reliability and validity assessments. The minimum sample size needed to maintain the standard of 10 adults per survey item was 140 adults (DeVellis, 2011; Jackson, 2003; Kline, 2011). There was minimal missing data (< 1%), and so maximum likelihood estimation was used to impute values for missing data in the analysis (Kline, 2011; Larsen, 2011).

Internal consistency reliability—We used stratified coefficient alpha to test internal consistency reliability. This is a type of reliability analysis that is typically chosen when items that make up a single scale have two subtests (activity expectations, activity self-efficacy). It is computed by taking the variance and Cronbach coefficient alpha for each subtest than computing a stratified composite score (Huysamen, 2006; Osburn, 2000). This formula is more accurate than a total Cronbach's coefficient a itself because the PActS consists of two factors to measure perceived occupational possibilities.

Construct validity—Construct validity was tested through (1) structural validity using a confirmatory factor analysis (CFA; Levine, 2005); (2) convergent validity; and (3) known-groups method. CFA was chosen for this analysis because it allows for testing of a predetermined theoretical model (occupational possibilities) against empirical data.

Structural equation modeling and CFA—CFA is a form of structural equation modeling (SEM) in which testing of the whole model is considered and evidence for construct validity can be provided (Kline, 2011; Strauss & Smith, 2009). Within the PActS model (see Figure 1), activity expectations and activity self-efficacy were considered latent variables because they were considered to be distinct factors of the overall construct and because they were measured by multiple items (indicators) but together measured perceived occupational possibilities.

The CFA model was tested against the empirical data to determine whether overall model fit indicated that the model was reasonable and represented the underlying construct. In this study, tests of model fit and criteria examined included the model Chi-square value ($p > .05$); comparative fit index (CFI, $> .95$); root mean square error of approximation (RMSEA, $< .06$); Tucker-Lewis Index (TLI, $> .95$); and the normed fit index (NFI, .95) (Bentler, 2007; Sivo, Fan, Witta, & Willse, 2006) .

Convergent validity—Convergent validity is used to identify the degree to which a measure is related to another measure. For this analysis the MAPA was used because it was hypothesized that the MAPA measured a related but unique construct of participation as compared to the PActS. The MAPA is a checklist of 28 varied activities that assesses older adults' personal level of meaning of an activity, weighted by their frequency of engaging in those activities (Eakman, 2007; Eakman et al., 2010). For each stem there are five possible Likert-type answers ranging from *not at all* (0) to *extremely* (5) for meaning items and from *not at all* (0) to *every day* (7) for frequency items. To score the MAPA, the score from each item of the meaning section is multiplied by its corresponding frequency to provide a total score that represents meaningful activity participation. The total MAPA score can range

from 0 to 672, with higher scores representing greater meaningful activity participation. There were also two intra-individual MAPA scores as defined by Eakman et al. (2010). We examined the negative and positive intra-individual scores as well as the total MAPA score. These intra-individual scores are z-scores created to delineate activities that are either considered individually positive or negative. Eakman and colleagues (2010) found a greater relationship between the positive scores and well-being. Reliability and validity of the MAPA was obtained with a convenience sample of 154 participants all over the age of 65. High-to-medium MAPA frequency scores, summary scores, and the intra-individual positive scores were positively correlated with better psychological well-being and health-related quality of life. The negative scores were not correlated with health-related quality of life, well-being, purpose in life or role emotional scores (Eakman et al., 2010; Rowland, Hewitt, & Ganz, 2006)

Convergent validity was tested between scales (MAPA and PActS) using correlational analysis to determine associations. Higher PActS were hypothesized to be partly associated with higher activity participation scores because it was hypothesized that higher scores on the PActS (adults who feel like they should be and could actually be doing those activities) would correlate with higher scores on the MAPA total score (higher meaningful participation scores associated with improved quality of life). The PActS was hypothesized to have a moderate correlation to the MAPA total score and the positive intra-individual score ($.20 < r < .60$) and have low correlation ($0 < r < .20$) to the negative intra-individual score due to its non-significant association with other measures related to activity participation (Eakman et al., 2010; Rudman, 2010).

Known-groups method—Known-groups method compares scores across groups hypothesized to be different based on theoretical construct. The theoretical construct of occupational possibilities posits that one's possibilities for activity are shaped by and through context (Rudman, 2006b, 2010; Rudman et al., 2009). Therefore differences between demographics, specifically, sex, race, and level of education would result in differing scores. For this study, PActS scores were compared by groups (sex, race, and education) using an unpaired *t*-test. It was hypothesized that these groups would score significantly different on the PActS. A finding of such a difference helps to support the validity of the measure (DeVellis, 2011; Portney, 2009). For these analyses, statistical programs RStudio, Version 2.15.1 (RStudio, Boston, 2012) and Analysis of Moment Structures (AMOS) Graphics, Version 19.0. (SPSS, Chicago, 2012) were used.

Findings

Sample Characteristics

The final sample for this aim comprised 179 participants. Of the potential sample who received the instrument by mail, 140 participants completed the scale (a 56% response rate) and 108 were eligible for use. Participants were excluded if they returned incomplete consent forms or if full pages of either the MAPA or PActS were blank. No differences were found between groups who received the instruments by mail and those who filled them out in the clinic. The average age of the sample was 72 years. Eighty-nine per cent of the sample

was White, 71% female, and 77% had at least some college education. The majority of the sample (63%) was diagnosed with breast cancer; the rest of the sample was heterogeneous by cancer type with 13 total cancer types represented. A small subsection of the sample (10%) scored an 80 or below on the Karnofsky Performance Status Tool, which is a crude measurement of functional ability commonly used in geriatrics (Hurria, 2009; Hurria et al., 2005). On the Karonfsky Tool, higher numbers represent more functional independence and a score of 80 corresponds to "normal activity with some difficulty, some symptoms or signs" of functional decline (Hurria, 2009; Hurria et al., 2005). Scores on the PActS ranged from 38 to 70 and the mean score was 29. See Table 1 for sample characteristics.

CFA: Model Fit

A CFA was conducted initially to investigate the fit of a two-factor model (activity expectations and activity self-efficacy) with seven indicators for each latent variable (factor) as determined by the theoretical construct. The initial model also included correlations between error terms with similar activities, for example, the error terms for question one on the expectations factor and question one the self-efficacy factor were allowed to correlate because the activities asked about were the same (Hooper, Coughlan, & Mullen, 2008). Because this model did not initially fit sufficiently well (CFI, .92; RMSEA, 0.72; TLI, .90; NFI, 0.85; see Table 2), we then shifted to *post hoc* analyses as is recommended in such cases (Bentler, 2007; Kline, 2011). We then examined modification indices and a few standardized residuals were found to be possibly problematic.

The items about *communicating with others* and *keeping up with traditional media* on the activity self-efficacy factor had large standardized residuals. *Communicating with others* was described as writing letters or talking on the telephone; *keeping up with traditional media* was described as watching TV or listening to the radio. Those questions were removed from the self-efficacy factor. We hypothesized that those items would still be valuable within the activity expectations factor because *keeping up with traditional media*, (watching TV, reading the newspaper) and *communicating with others* may be where older adults are hearing/processing social norms. After further examination into modification indices, and with attention to the construct, error terms for items regarding *service activities* and *spiritual activities* were allowed to correlate. We hypothesized that error terms for items regarding *service activities* and *spiritual activities* would be correlated, because individuals with religious affiliation are more inclined to volunteer (Lam, 2002). Items removed (the two questions within the self-efficacy section) or added (correlation between two error terms) to the PActS final model were removed for the following additional reasons: (1) the items represent activities that are more passive; they require less self-efficacy to do; (2) they are uniformly scored high among this population; and (3) are not related to perceptions of activity self-efficacy. Testing of the final two-factor model demonstrated adequate fit to data, which provides support for the validity of the model (Chi-square, 61.57; CFI, .97; RMSEA, 0.05; TLI, .96; NFI, .91). The final model is depicted in Figure 1, which includes the standardized factor loadings.

Standardized factor loadings signify the strength of indicators for the latent variable (Albright & Park, 2009). For this model, *creative activities* (.60), *getting around town* (.58),

communicating with others (.53), *physical exercise* (.56), and *service-related activities* (.52) appeared to be the best indicators of activity expectations. The best indicators of the activity self-efficacy were the observed indicators, *creative activities* (.52), *getting around town* (. 67), *physical exercise* (.56), and *service-related activities* (.71). The squared factor loadings (R^2) represent the amount of variance the observed variable (in this case the question itself) holds within the corresponding latent variable. In this model, "activity expectations" represents 36% of the variance of *creative activities* and 34% of the variance in *getting around town*. The latent variable "activity self-efficacy" explains 45% of the variance of *getting around town* and 51% of *service related activities*. The standardized factor loadings for *spiritual activities* demonstrated that it was not a strong indicator of both factors. It was retained to maintain the content validity of the PActS for considering the importance of spirituality for the study population.

Reliability and Validity

Internal consistency reliability—The stratified coefficient alpha reliability produced satisfactory results (stratified coefficient a = .77). The total score of the PActS was also strongly correlated with each factor of the test (activity expectations r = .91; activity self-efficacy r = .89), which provided further confirmation of good internal consistency. These item-total correlations were all significant at $p < .0001$.

Convergent validity—The PActS summed score was significantly correlated with summary MAPA score (r =. 58; $p < .0001$) and the MAPA intra-individual positive scores (r =. 54; $p < .0001$). However, the PActS total score was not significantly correlated with the MAPA intra-individual negative scores ($r = -.129$; $p = .10$). This finding is similar to the results from the validation of the MAPA where the negative intra-individual scores did not appear to have a strong relationship with well-being (Eakman et al., 2010). The correlations for the PActS factors with the MAPA scores, which were similar to the correlations with the PActS total score analysis, provided further evidence of convergent validity.

Known-groups method—For this study, we used the known-groups method to compare differences between group membership defined by sex, race, and education. We hypothesized there would be significant differences between those groups' PActS scores. To test this hypothesis we computed unpaired *t*-tests to compare scores based on group membership. The PActS was able to discriminate between groups based on sex, race, and education ($t = 114.2$, $p < .0001$; $t = 113.6$, $p < .0001$; $t = 92.7$, $p < .0001$ respectively).

Discussion

The findings of this study suggest the PActS has promising psychometric properties. We have provided supporting results for its reliability, context, convergent, and known-groups validity. The PActS is a novel way to measure the perceptions of occupational possibilities by extending the measurement of participation beyond the measurement of ability and meaning.

Although this tool was developed as primarily a research tool, the PActS has theoretical and clinical value. It can be used in the clinic to expand discussions regarding the possibility for

activity potentially beyond the constructs of meaning and performance ability. By understanding a person's perceived possibilities we may be able to better understand that person's perspective. When describing occupational possibilities, Rudman (2010) addressed differences based on different groups defined by society. This was tested with this scale using known group's validity. The PAcTS demonstrated that perceived occupational possibilities can be created and enacted through these contextual groups and certain occupations differed by demographics (sex, race, and education). Furthermore, the use of this scale when used with other forms of measurement could potentially assist in goal making and communication of societal pressures, demands and power between the adult and the therapist by expanding their conversation beyond the adult's ability. These concepts are emerging areas of focus and research for occupational scientists and therapists. Additional research and reliability testing is needed before PActS can be used as a clinical tool.

Future Research

As the PActS is a newly developed instrument, our aim was to complete initial steps in validation and refinement of the model. Future research should focus on further validation with the final model suggested here with a similar group or other groups. This validation would provide further support for the psychometric properties of the PActS. Also, the PActS scores should be examined for consistency with other populations more representative of the general population including but not limited to the following: adults who are disease-free or of different ages, and adults with disabilities or other chronic illnesses. For example, younger adults may relate to other activities and new items may need to be tested. Future research should also assess how these perceptions of occupational possibilities that may change in time and in differing contexts. Finally, additional cross-validation of these findings and the final modifications is warranted to expand our understanding of participation beyond meaning, frequency, and ability and to accurately represent the social pressures of occupation.

Study Limitations

This study was limited in a few ways. First, although the PActS was revised through cognitive interviews and an expert panel, further testing is recommended especially before use within different populations. Second, the final model of PActS, including the dropped variables that were trimmed, fit well for this population of older adults with cancer but will need further testing for model fit with other populations. Third, while the reliability was sufficient for group comparison, further work should be completed to improve the reliability with the scale for individual level comparison to improve its effectiveness in the clinic. Because this construct consists of two-factors and is scored using a sum score there may be heavier weight given to the activity expectations factor because it has more items. Fifth, while the PActS was validated in a number of ways, there are other forms of validity and more testing that could further strengthen the psychometrics of this tool. It should be noted, however, that this study is one of the first to begin to operationalize occupational possibilities for quantitative research.

Conclusion

The findings of this study suggest the PActS has promising psychometric properties. The scale operationalizes a construct (i.e., occupational possibilities) already developed within occupational science. By asking older adults about their perceived occupational possibilities, the PActS extends the existing tools for measuring participation potentially beyond ability and meaning. In addition, this scale allows for the construct of occupational possibilities to be examined in a quantitative manner. The measurement of this construct also adds to the understanding of participation by objectively examining power through occupational possibilities. This paper demonstrated the development, and promising content validity; construct validity and reliability of the PActS. The present findings are noteworthy because they are consistent with theoretical positions that specify participation in meaningful activity is related to the social norms and pressures that define the possibilities for occupation (Rudman, 2005, 2006b).

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

Acknowledgments

Biographies

Mackenzi Pergolotti, PhD, OTR/L, is Post-Doctoral Fellow, Cancer Care Quality Training Program, Department of Health Policy and Management, Gillings School of Global Pubic Health, University of North Carolina, Chapel Hill, NC, United States. At the time of this study, M. Pergolotti was a doctoral student in the Department of Allied Health Sciences, Division of Occupational Science and Occupational Therapy, University of North Carolina, Chapel Hill.

Malcolm P. Cutchin, PhD, is Professor and Chair, Department of Health Care Sciences, Eugene Applebaum College of Pharmacy and Health Sciences, Wayne State University. At the time of this study, M. Cutchin was Associate Professor, Department of Allied Health Sciences, Division of Occupational Science and Occupational Therapy, University of North Carolina, Chapel Hill.

References

Bentler PM. On tests and indices for evaluating structural models. Personality and Individual Differences. 2007; 42:825–829. DOI: 10.1016/j.paid.2006.09.024

DeVellis, RF. Scale development: Theory and applications. Vol. 26. Thousand Oaks, CA: SAGE; 2011.

Eakman, AM. Doctoral dissertation. Ann Arbor, MI: ProQuest Information and Learning Company; 2007. A reliability and validity study of the Meaningful Activity Participation Assessment. UMI Microform 3278497 (Copyright 2008)

Eakman AM, Carlson ME, Clark FA. The meaningful activity participation assessment: A measure of engagement in personally valued activities. International Journal of Aging and Human Development. 2010; 70:299–317. DOI: 10.2190/AG.70.4.b [PubMed: 20649161]

Grunfeld E. Looking beyond survival: How are we looking at survivorship? Journal of Clinical Oncology. 2006; 24:5166–5169. DOI: 10.1200/JCO.2006.06.5953 [PubMed: 17093281]

Hooper D, Coughlan J, Mullen MR. Structural equation modelling: Guidelines for determining model fit. Electronic Journal of Business Research Methods. 2008; 6:53–60.

Hurria A. Geriatric assessment in oncology practice. Journal of the American Geriatrics Society. 2009; 57:s246–s249. DOI: 10.1111/j.1532-5415.2009.02503.x [PubMed: 20122022]

Hurria A, Gupta S, Zauderer M, Zuckerman EL, Cohen HJ, Muss H, Saltz L. Developing a cancer-specific geriatric assessment. Cancer. 2005; 104:1998–2005. DOI: 10.1002/cncr.21422 [PubMed: 16206252]

Hutton, PH.; Gutman, H.; Martin, LH.; Foucault, M. Technologies of the self: A seminar with Michel Foucault. University of Massachusetts Press; 1988.

Huysamen G. Coefficient alpha: Unnecessarily ambiguous; unduly ubiquitous. SA Journal of Industrial Psychology. 2006; 32:34–40.

Jackson DL. Revisiting sample size and number of parameter estimates: Some support for the N: q hypothesis. Structural Equation Modeling. 2003; 10:128–141. DOI: 10.1207/S15328007SEM1001_6

Kline, RB. Principles and practice of structural equation modeling. Guilford press; 2011.

Larsen R. Missing data imputation versus full information maximum likelihood with second-level dependencies. Structural Equation Modeling: A Multidisciplinary Journal. 2011; 18:649–662. DOI: 10.1080/10705511.2011.607721

Levine TR. Confirmatory factor analysis and scale validation in communication research. Communication Research Reports. 2005; 22:335–338. DOI: 10.1080/00036810500317730

Osburn HG. Coefficient alpha and related internal consistency reliability coefficients. Psychological Methods. 2000; 5:343–355. DOI: 10.1037/1082-989X.5.3.343 [PubMed: 11004872]

Parry C, Kent EE, Mariotto AB, Alfano CM, Rowland JH. Cancer survivors: A booming population. Cancer Epidemiology Biomarkers & Prevention. 2011; 20:1996–2005. DOI: 10.1158/1055-9965

Portney, LG.; Watkins, MP. Foundations of clinical research: Applications to practice. Upper Saddle River, NJ: Pearson/Prentice Hall; 2009.

Powell, JL. Foucault and aging. New York, NY: Nova Science; 2006.

Powell JL. Social theory, aging, and health and welfare professionals a Foucauldian "Toolkit". Journal of Applied Gerontology. 2009; 28:669–682. DOI: 10.1177/0733464809335596

Presser S, Blair J. Survey pretesting: Do different methods produce different results. Sociological Methodology. 1994; 24:73–104.

Reeve BB, Potosky AL, Smith AW, Han PK, Hays RD, Davis WW, Clauser SB. Impact of cancer on health-related quality of life of older Americans. Journal of the National Cancer Institute. 2009; 101:860–868. DOI: 10.1093/jnci/djp123 [PubMed: 19509357]

Rowe JW, Kahn RL. Successful aging. Gerontologist. 1997; 37:433–440. DOI: 10.1093/geront/37.4.433 [PubMed: 9279031]

Rowland JH, Hewitt M, Ganz PA. Cancer survivorship: A new challenge in delivering quality cancer care. Journal of Clinical Oncology. 2006; 24:5101–5104. DOI: 10.1200/JCO.2006.09.2700 [PubMed: 17093270]

Rudman DL. Understanding political influences on occupational possibilities: An analysis of newspaper constructions of retirement. Journal of Occupational Science. 2005; 12:149–160. DOI: 10.1080/14427591.2005.9686558

Rudman DL. Positive aging and its implications for occupational possibilities in later life. Canadian Journal of Occupational Therapy. 2006a; 73:188–192. DOI: 10.1177/000841740607300305

Rudman DL. Shaping the active, autonomous and responsible modern retiree: An analysis of discursive technologies and their links with neo-liberal political rationality. Ageing and Society. 2006b; 26:181–201. DOI: 10.1017/S0144686X05004253

Rudman DL. Occupational terminology: Occupational possibilities. Journal of Occupational Science. 2010; 17:55–59. DOI: 10.1080/14427591.2010.9686673

Rudman, DL.; Huot, S. Conceptual insights for expanding thinking regarding the situated nature of occupation. In: Cutchin, M.; Dickie, V., editors. Transactional perspectives on occupation. New York, NY: Springer; 2013. p. 51-63.

Rudman DL, Huot S, Dennhardt S. Shaping ideal places for retirement: Occupational possibilities within contemporary media. Journal of Occupational Science. 2009; 16:18–24. DOI: 10.1080/14427591.2009.9686637

Sabia S, Singh-Manoux A, Hagger-Johnson G, Cambois E, Brunner EJ, Kivimaki M. Influence of individual and combined healthy behaviours on successful aging. Canadian Medical Association Journal. 2012; 184:1985–1992. DOI: 10.1503/cmaj.121080 [PubMed: 23091184]

Sivo SA, Fan X, Witta EL, Willse JT. The search for "optimal" cutoff properties: Fit index criteria in structural equation modeling. Journal of Experimental Education. 2006; 74:267–288. DOI: 10.3200/JEXE.74.3.267-288

Strauss ME, Smith GT. Construct validity: Advances in theory and methodology. Annual Review of Clinical Psychology. 2009; 5:1–25. DOI: 10.1146/annurev.clinpsy.032408.153639

Taylor, D. Practices of the self. Michel Foucault: Key concepts. Durham: Acumen; 2011.

Willis, GB. Cognitive interviewing: A tool for improving questionnaire design. Thousand Oaks, CA: SAGE; 2005.

Xu T, Stone CA. Using IRT trait estimates versus summated scores in predicting outcomes. Educational and Psychological Measurement. 2012; 72:453–468. DOI: 10.1177/0013164411419846

Author Manuscript

Author Manuscript

Author Manuscript

Author Manuscript

Key Messages

- To enhance the scope of research and interventions directed at participation, it is imperative to measure the occupational possibilities construct.

- The PActS was developed to measure what older adults feel like they should be and could be doing to understand participation from a social perspective.

- This study supports the promising validity and reliability of the PActS and provided suggestions for future use and research.
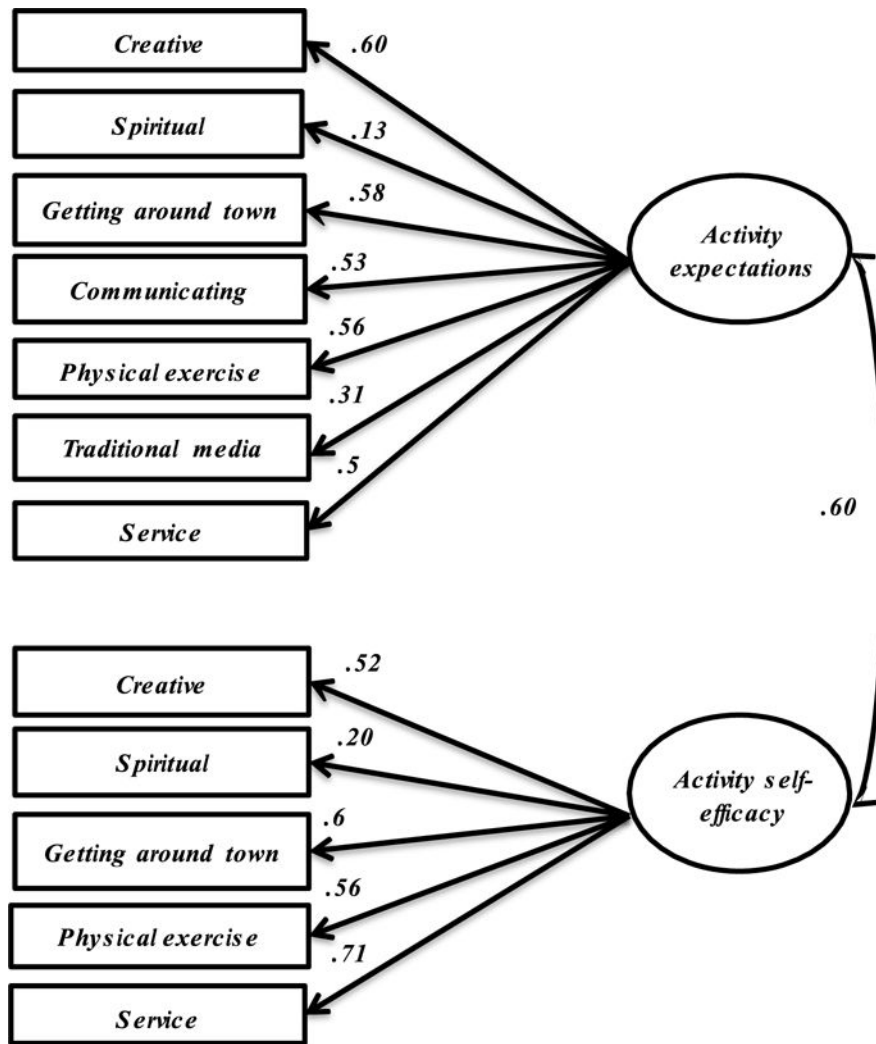
Figure 1.
The model of the Possibilities for Activities Scale (PActS).

Table 1

Sample Demographics

Characteristic	Sample	Population norm[a]
Mean age (yrs)	72	75
African American (%)	10	9
Male (%)	27	41
Bachelor's degree or more (%)	55	23

Note. $n = 179$.

[a]Population norms retrieved from the United States Census Bureau (2011).

Table 2

Fit of the Model of the Possibilities for Activities Scale (PActS)

Model	Chi-squared	CFI	RMSEA	TLI	NFI
1	127.95[*]	.92	.72	.90	.85
2	61.57	.97	.05	.96	.91

Note. CFI = Comparative Fit Index; NFI = Normed Fit Index; RMSEA = Root Mean Square Error of Approximation; TLI = Tucker Lewis Index.

[*]
$p < .001$