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Adaptation of the Possibilities for Activity Scale for women encountering cancer (PActS – W).

Mackenzi Pergolotti, PhD OTR/L¹, Kemi M. Doll¹, Emily O. Fawaz², and Bryce B. Reeve¹

¹Cancer Outcomes Research Group, Lineberger Comprehensive Cancer Center, University of North Carolina at Chapel Hill.

²Department of Occupational Therapy, Colorado State University, Fort Collins, CO.

Abstract

Objective: The original Possibilities for Activity Scale (PActS) examined the internalised societal pressures of older adults with cancer. Previous research found that scores from the original PActS scale were associated with participation in meaningful activity. Women of working age may have different societal pressures than older adults, which could impact their quality of life. Our aims were to (1) adapt the scale specifically for women, (2) test convergent and structural validity, and (3) test internal consistency reliability.

Method: First, we completed a literature review to add new items, then measured psychometric properties of PActS- W.

Findings: 186 women, one month after cancer surgery completed PActS-W. PActS-W demonstrated convergent-related (physical health $r = .40$, mental health $r = .30$, $p < .01$), structural validity (CFI, .96; RMSEA, .10; IFI, .96, NFI, .94) and high internal-consistency reliability (stratified coefficient $\alpha = .90$).

Conclusion: The PActS- W may be useful for measuring women's internalised societal pressures after encountering cancer, which relates to their quality of life, but further testing is needed.

Keywords

Cancer; occupational possibilities; women's health; PActS; scale development

Participation in activity that is personally meaningful can improve quality of life for adults with cancer (Svidén, Tham, & Borell, 2010). In occupational science, scholars have discussed the additional impact of societal pressures on participation and found there are certain activities adults perceive they *should be* and *could be* doing, called occupational possibilities (Laliberte Rudman, 2010). A person's occupational possibilities depend on their situation and context. For example, as Laliberte Rudman found, older adults may feel

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Correspondence concerning this article should be addressed to Mackenzi Pergolotti, Contact: mpergolotti@selectmedical.com. Mackenzi Pergolotti is now the Director of Research for ReVital Cancer Rehabilitation, Select Medical, Kemi M. Doll is now at the Division of Hematology and Oncology at the University of Washington at Seattle, Bryce Reeve is now at Duke University.

pressure to do certain occupations, such as being active, engaging in shopping activities, and eating healthy. She argued, persons have certain possibilities that are afforded and understood as available and socially acceptable occupations, for example older adults riding a bicycle or buying a new house and moving South. These occupations become meaningful because they are socially accepted, and adults feel they should be or could be doing these accepted occupations. We believe an adult may be more likely to recognise these internalised societal pressures to participate in meaningful activities when faced with a severe illness, such as cancer, that could change perspectives, or make engaging in these occupations difficult. As occupational therapists, asking our clients about occupations they feel like they “should be” and “could be” doing may illuminate internalised societal pressures, and potential participation restrictions related to quality of life. This differs from typical performance-based occupational assessments of basic and instrumental activities of daily living, that measure the quality or quantity of an individual’s participation in daily activities.

Cancer and its treatment, unlike acute illness or injury, is unique as it causes a gradual decline in strength and overall function and leaves individuals with long term physical and psychosocial effects that negatively impact their ability to participate in the meaningful activities of their daily life, and decrease their quality of life (Baxter, Newman, Longpré, & Polo, 2017). The original Possibilities for Activity Scale (PActS) was developed to operationalise the construct of occupational possibilities for older adults with multiple types of cancer (breast, colorectal, lung, leukaemia/lymphoma etc.) and at different time points (just diagnosed, in treatment or after treatment) of survivorship (Pergolotti, Cutchin, & Muss, 2015), see appendix 1. In a sample of 71 older adults with cancer, the PActS score, which was a composite score of both subscales, was the only predictor of participation in meaningful activity above a measure of functional status, cancer type, social support and demographics (Pergolotti et al., 2015). We feel the PActS and potentially a new scale, the PActS-W could have relevance for occupational therapists clinically, by providing therapists with a tool to (1) better understand the pressure or desire an individual may feel to participate in certain activities, and (2) to promote conversation between the client and therapist to address discrepancies between a client’s expectations for activity and their confidence in participating in those activities.

Some activities that individuals may find meaningful may be considered socially acceptable or associated with societal pressures related to gender roles and expectations about engaging in certain “gender-specific” activities. Due to these internalised gender expectations, women may have the similar expectations about themselves and the activities in which they believe they should or could participate (Ahn, Haines, & Mason, 2017). Research suggests that women tend to complete more work in the house than men despite the growing number of women in the workforce, and that women are expected to be nurturing caretakers. Therefore women may internalise these pressures, increasing feelings of responsibility related to gendered expectations and confidence in these activities (Ahn et al., 2017).

We believe women of working age who encounter cancer (either suspected and/or diagnosed), may have possibilities for activities they consider ideal that differ from older adults. To that end, we chose to adapt the original PActS for working age women. For this study, we chose to work with women with suspected gynaecologic cancers because (1) the

shared experience of gynaecologic cancer (i.e. cervical, ovarian, uterine, vaginal and vulvar) is unique to women (Centers for Disease Control and Prevention, 2017) and (2) gynaecological cancer directly involves organs related to femininity, sexual function, and reproduction (Akyuz, Guvenc, Ustunsoz, & Kaya, 2008). In a qualitative study about the post-surgical experience of women diagnosed with vulvar cancer, women described the surgeries (such as a partial or radial vulvectomy) as embarrassing, disfiguring and mutilating (Senn et al., 2011). After treatment for gynaecological cancer, women report feeling restricted in their ability to participate in activities, decreased quality of life (Akyuz, Guvenc, Ustunsoz, & Kaya, 2008), feeling invisible (Jefferies & Clifford, 2012), and avoiding discussion about their physical and psychological experience due to embarrassment and fear of stigmatisation. Additionally, some women report fear of gynaecological conditions being associated with promiscuous behaviour (Senn et al., 2011). Little is known about how their perceived societal pressures to participate in idealised activities, or the activities associated with the roles of a working-age woman, could potentially contribute to restricting their participation in activity and their feelings of invisibility. The activities that women feel they could be or should be doing may differ from those of older adults due to differences between the expectations of working-age women and older adults. Because of this, we felt that items relevant to the experiences of working-age women needed to be added, and the original PActS adapted and re-evaluated. We included measures of health-related quality of life (Patient Reported Outcome Measure System (PROMIS)) in conjunction with the PActS-W to understand how activity expectations relate to other phenomena and to further test convergent validity. Researchers have found, regardless of health status, people with lower social positions rate their health-related quality of life lower than more advantaged counterparts (Delpierre et al., 2012). Because of this we hypothesised the PActS-W would be correlated to health-related quality of life (HRQOL) but be measuring a different construct. This paper aims to describe the (1) development of new items specifically for women, (2) testing of convergent and structural validity, and (3) internal consistency reliability.

Methods

Study Design

Classical test theory guided this scale adaptation (Robert F. DeVellis, 2006; Robert F DeVellis, 2012). To adapt this scale, we had a three-step process: (1) literature review to select and add new items to scale appropriate to population, then (2) testing of convergent and structural validity through administering the tool and testing its correlation with a HRQOL measure to a sample of women, and testing its correlation with a related HRQOL measure then lastly, (3) testing of internal consistency reliability through administering the tool to the same sample of women.

Literature review to develop new items.—In order to determine the additional items/activities that could be considered for PActS- W, we completed a literature review to find evidence behind potential activities women may perceive they *should be* or *could be* doing. As a study team, we examined literature regarding women's expectations for specific

activities to discern what types of activities should be included. We then discussed each item and added terms we agreed to as a team.

Participants

Participants were recruited through a longitudinal cohort study examining health-related quality of life and surgical outcomes of women undergoing gynaecologic cancer surgery (Doll, Barber, Bensen, Snavely, & Gehrig, 2016). Women were recruited within the outpatient gynaecologic oncology clinics. Inclusion criteria for the parent study included: women who were 18 years of age and older, spoke English or Spanish, and had newly diagnosed or suspected gynaecologic cancer with scheduled surgical management. All women in the study had suspected gynaecologic cancer and received surgery, however some of the women had benign final pathology upon analysis. Based on the negative impact of stigma on women who experience surgical treatment for gynaecological cancers (Akyuz et al., 2008; Senn et al., 2011) the physical and psychological changes involved with surgery, and the focus of the PActS-W being on participation, rather than medical outcomes, the authors decided that it was appropriate to include women with benign pathology. All the women shared the experience of an initial cancer diagnosis and surgical treatment, and therefore may have similar feelings about participation in their activities.

Tools

Testing new items.—The structure of the scale remained the same as the original PActS with two subscales representing what women feel like they *should be* (activity expectations) and *could be* (activity self-efficacy) doing (Pergolotti & Cutchin, 2015). The original scale was scored as a sum score for both subscales to stay consistent with the theorised unidimensional construct of occupational possibilities, representing both activity expectations and self-efficacy. The original PActS demonstrated internal consistency reliability (stratified coefficient $\alpha = .77$) and construct-related ($r = .58$; $p < .0001$), structural (chi-square = 61.57; CFI = .97; RMSEA = .05; TLI = .96; NFI = .91) and known-groups validity (Pergolotti et al., 2015).

All activities from the original development of the PActS were retained for full analysis of all potential activities. The original activities were: *creative activities*, *spiritual activities*, *getting around town*, *communicating with others*, *doing physical exercise*, *keeping up with traditional media*, and *doing service activities*. The item stems from the original PActS were preserved: “How much do you believe a person of your age and diagnosis should be...?” representing activity expectation; and “How much confidence do you have that you could...?” representing activity self-efficacy. Response options also remained the same and ranged from 1, signifying “very little”, to 5, signifying “quite a lot”. We added the following three items to the original scale: *engaging in sexual activity*, *taking care of others*, and *working and/or doing household activities*. These items were added to reflect literature stating potential activities that working-age women may feel like they should be or could be doing; we put the activity working and or doing household activities together to not single out women who just work out of the home, versus those who work doing household activities. (Askari, Liss, Erchull, Staebell, & Axelson, 2010; Haywood, 2013; Smith-DiJulio, Windsor, & Anderson, 2010).

Procedure

This project was reviewed and approved by the Human Research Protections Program, Institutional Review Board (IRB) (IRB Number: 09–0605) and procedures followed were in accordance with the ethical standards of IRB board and consistent with the revised (2000) Helsinki Declaration. All participants signed an informed consent.

Data Collection

For this study, women at 1-month post-surgery were administered the PActS-W and the Patient-Reported Outcomes Measurement Information System® (PROMIS) Global-10. PROMIS Global-10 has been validated in both cancer and general populations and contains ten items total (Cella et al., 2010; Hays, Bjorner, Revicki, Spritzer, & Cella, 2009; Reeve et al., 2007). We determined sample size as ten participants per scale item as recommended to perform the analysis to test the dimensionality of the scale, and before initial testing, the PActS- W contained 18 items, needing 180 participants at minimum (Robert F DeVellis, 2012).

Data Analysis

Testing Validity.—We tested validity in two ways: (1) structural validity using a confirmatory factor analysis (CFA) (Levine, 2005), and (2) convergent validity. CFA was chosen for this model because it is a more powerful way (as opposed to exploratory factor analysis) to examine alignment between empirical data and the theoretical model (Kline, 2011). In this case, we tested the original theoretical model developed for the PActS (Pergolotti et al., 2015) with the additional questions added. Then modification indices were examined in order to see which items were not performing well and modifications were made by removing poorly performing items. Good model fit was assessed through tests of model fit and criteria including the following: comparative fit index (CFI; $> .95$), root mean square error of approximation (RMSEA; $< .06$); Incremental fit Index (IFI; $> .90$); model chi-square ($p < .05$); and the normed fit index (NFI; $> .95$) (Bentler, 2007; Sivo, Fan, Witta, & Willse, 2006).

Convergent validity is the degree to which two scales are related to one another. In this case, the PActS- W is hypothesised to be related to measures of quality of life. PROMIS Global-10, used for convergent validity, has two summary quality of life scores, Global Physical Health (GPH) and Global Mental Health (GMH). Scores for each subscale are determined through a raw score that is transformed into a T-score and on a continuous scale with a mean score of 50 (standard deviation of 10). This measure of quality of life has been shown to be related to participation in meaningful activity in a variety of populations, and HRQOL has been shown to be a similar construct, but not the same as social position (Bize, Johnson, & Plotnikoff, 2007; Delpierre et al., 2012; Eakman, Carlson, & Clark, 2010; Mayo, Wood-Dauphinee, Côté, Durcan, & Carlton, 2002; Svidén et al., 2010). In addition, participation in activity rated as personally meaningful was strongly associated with the original PActS (Pergolotti et al., 2015). Furthermore, in other studies examining self-efficacy and women with cancer, self-efficacy was related to quality of life (Akin, Can, Durna, & Aydiner, 2008; Northouse et al., 2002). Therefore, quality of life was hypothesised as a related but separate construct than the perception of activity expectations and self-efficacy as

measured in the PActS- W. The expected Pearson correlation coefficients of 0.3– 0.7 (Sink & Stroh, 2006) demonstrating a positive and moderate relative correlation with PROMIS scores demonstrating the PActS-W and PROMIS global are related, but not the same construct.

Testing Reliability.—We used stratified coefficient alpha test for the internal consistency reliability of the adapted instrument. This test was chosen because the PActS- W consisted of two subtests (activity expectations, and activity self-efficacy). We computed alpha by taking the variance and Cronbach's alpha for each subtest to calculate the stratified composite score (Huysamen, 2006; Osburn, 2000; Rae, 2007). We also report Cronbach's alpha for reference (Rae, 2007).

Findings

Scale Adaptation

Gill (2008) and Lazar (2009) highlighted two activities that were most prominent in popular discourses about women 1) maintaining sexual relationships, and 2) being a care taker through consistent activity, and were considered idealised in popular discourse for women of working age (Farvid & Braun, 2014; Gill, 2009; Tyler, 2004). For example, in order to maintain their quality of life, discourse in popular media detailed how women were not only expected to maintain their relationships alone, but to maintain a sense of the man's needs at all times and 'fix' themselves by focusing inwards to determine the problem when things go wrong in relationships (Gupta, Zimmerman, & Fruhauf, 2008; Haywood, 2013). These activities are considered heteronormative, and thus some women might not feel this is applicable to them.

Researchers found women's perception of activities that involved taking care of themselves, including physical activities, were considered secondary to taking care of others (Farvid & Braun, 2006; Smith-DiJulio et al., 2010). Askari et al. (2010) found women expected and sought an 'ideal' relationship where they were in charge of significantly more than half of the responsibility of family and household activities. The ability to perform these activities is not only expected of women, but valued by women as well (Perrone, Webb, & Blalock, 2005). These studies demonstrate the undertone of societal pressure that women face on a daily basis, to take care of others, complete household or other work, and participate in sexual activities. In dealing with illness, especially when taking care of others may become difficult, women may face increased challenge to maintain their daily roles, potentially reducing their quality of life (Carr, Gibson, & Robinson, 2001). Because societal pressures on women are linked in part to sexual capacities, women with suspected gynaecologic cancers may feel that their efficacy to perform expected activities is threatened, and those pressures may become more apparent following this diagnosis.

Sample Characteristics

For this study, only the women who responded at the 1-month interview and filled out most of the scale (>50%) were included ($n = 186$). There was minimal missing data (< 1 %) overall and so maximum likelihood estimation was used to impute missing values. (Kline,

2011; Larsen, 2011). All women had surgery and most (72 %) of the women were eventually diagnosed with gynaecologic cancer. The mean age was 57 years (range: 22–93), 77% were White, 58% were married, and 26% reported having a high school education or less. A majority of the participants were diagnosed with endometrial cancer (58%), and almost half, 46%, were Stage I. See Table 1 for more demographic details. Health-related quality of life scores for GPH ranged from 23–68, with mean of 45 (SD 8), and GMH ranged from 25–68, with a mean score of 51 (SD 8). The PActS- W mean score was 39 (range: 12–60, SD 12).

Validity and Reliability

Structural validity.—The initial model, including all items from the original PActS and the additional activity items specific to working-age women, did not fit well (CFI, .65; RMSEA, .18; IFI, .66 NFI, .62). After attention to the construct, and discussion with the team, we removed the poorly fitting items: spiritual and creative activities. These items were from the original PActS, and it was hypothesised these items were a potentially better fit for older adults, and not women in this sample. Once items were removed, and we re-tested, our final model demonstrated relatively good fit (CFI, .96; RMSEA, .10; IFI, .96, NFI, .94), see Figure 1 with included standardised factor loadings and table 2 for more details on model indices. Appendix 2 provides the unstandardised factor loadings and the standard errors.

Convergent validity.—The GPH and GMH scores were positively and significantly correlated with the final model summary PActS- W score (GPH $r = .40$, GMH $r = .30$, $p < .01$). This correlation suggests the concepts are positively related, but measuring different concepts (Sink & Stroh, 2006).

Internal consistency reliability.—The stratified coefficient alpha reliability on the final model produced satisfactory results (stratified coefficient $\alpha = .90$, $p < .01$). For reference, the Cronbach's alpha for the PActS- W score was also satisfactory, $\alpha = .91$, $p < .01$.

Discussion

As an adaptation of the original PActS designed for older adults with cancer, the PActS- W has new population specific items, has promising convergent and structural validity, and reliability. With the addition of the new items, the adapted PActS-W, incorporates the societal pressures on women, specifically in regard to occupations of caretaking of others, household/work and sexual activities to create a more holistic and specific measure of the activity possibilities for women experiencing cancer.

Compared to other diagnoses such as brain injury, stroke, or orthopaedic injuries where rehabilitation services such as occupational therapy are part of standard care, individuals with cancer are largely underserved by these services (National Research Council, 2006). The unique role of occupational therapy in this setting is to look beyond the more obvious physical impairments or decline that an individual may have as a result of cancer and cancer treatment, and to understand how the experience as a whole: the physical, social, emotional, psychological, and spiritual aspects affect the individual's participation in meaningful activities. This understanding, and evaluation can include the obvious basic self-care tasks, but also work, playing with their children, being intimate with a partner, and being involved

with a community. Occupational therapy treatment could impact women's HRQOL after cancer by finding or creating solutions that would promote engagement in meaningful activity. For example, this could include strategies to engage in sexual activities despite potential physical changes following surgery.

Both the PActS and the PActS-W are suggested as additional tools to help occupational therapists to better understand the impact that the cancer experience has on an individual's occupational possibilities, or the meaningful activities that they believe they *could be* or *should be* doing. Although gender roles may not seem as strict as they once were, there still remains an expectation for women to participate in certain activities (Ahn et al., 2017). The PActS-W incorporates these activities: sexual activities, caretaking, and household care/work, to improve the relevancy of the measure to the population of working-age women. As opposed to occupational therapy assessments which capture an individual's occupational history which look at current or past participation in certain activities, this scale could help therapist to capture and better understand the pressure that women feel from themselves or society to participate in certain activities, not just the activities in which they are currently or were previously participating. Furthermore, women may not feel comfortable speaking to physicians about their concerns or limitations they are experiencing as a result of treatment (Akyuz et al., 2008), and the PActS-W may provide an opportunity to discuss topics that may otherwise go unmentioned. Use of this scale in both research and clinical settings could shed light on the restriction of participation in activity that women feel after being treated for cancer (Akyuz et al., 2008). This scale has promising uses in the clinic, the evaluation of which is beyond the scope of this paper. However, the authors consider this tool as a starting point for deeper discussions about a women's possibilities for activities and perceptions regarding participation in activity after cancer surgery, especially considering the fear of disclosure and stigmatisation, self-image issues, and embarrassment some women may have regarding their condition (Senn et al., 2011). In addition, addressing a women's expectation and self-efficacy regarding certain activities (e.g. sexual, or taking care of other), may allow her to recognise and discuss societal pressures associated with those activities that may be the cause of stress.

PActS was the first of its kind to examine not only the activity self-efficacy, but also the activity expectations as a whole. This study reports on psychometrically adapting and testing the PActS for a new population. Future research could provide further evidence of its validity and reliability. Longitudinal testing to examine how possibilities for activity may change over time would be valuable for research as an outcome measure in healthcare. Testing with other measures of activity expectations and participation, performing additional qualitative studies, and studying test-re-test reliability and how answers change over time could strengthen the psychometric properties of this scale. Further research could also examine other populations, such as other cancer types, ages (e.g. young adults and adolescents with cancer) and other chronic and potentially life-threatening conditions (e.g. chronic heart failure, congestive obstructive pulmonary disease). This could broaden the scope of this measure and the understanding of societal pressures as it compares across populations.

There were a few limitations to this study. Although an extensive literature search was completed, and we used topical qualitative analyses completed by multiple researchers in multiple fields of study (Farvid & Braun, 2006, 2014; Gill, 2008, 2009; Tyler, 2004), there is always the possibility another activity could be included. Future research using the scale with different populations may shed light on new activities. By including women who had benign tumours, we may have improved the generalisability but decreased the specificity of our findings. However, women who were fortunate enough to not have cancer, still underwent potentially life changing surgeries which typically require the removal of reproductive organs under the suspicion of cancer. This traumatic experience would be similar throughout our sample. Furthermore, this study was limited to women with gynaecologic cancers because of the fact that it is unique to women and the direct impact that gynaecological cancer treatment, including surgical removal or alteration of female reproductive organs and/or genitalia, can have physically and psychologically on a woman's ability to participate in meaningful activities, especially sexual activities or childrearing. Future studies examining a wider range of cancer types and gathering normative data could improve generalisability. Although, the psychometric properties for this scale were sufficient and promising for women with gynaecologic cancers, it needs continued testing in a new sample to continue to improve upon the model fit and the applicability of the scale. Lastly, this scale may not be representative of all women with cancer at large and will need to be re-tested in a larger sample of women with mixed cancer types.

Conclusion

The PActS- W operationalises and measures the perception of occupational possibilities for women who have encountered cancer. The PActS- W has promising convergent-related and structural validity, and internal consistency reliability. For women who have encountered and been treated for cancer, participation in activities may become restricted (Akyuz et al., 2008) and their quality of life could suffer. This scale is the first of its kind, adapted specifically for this population and it has the potential to improve communication between occupational therapists and women with cancer by directly asking about the activities in which they believe they should and could participate. This can shape clinical practice by expanding the traditional measures of participation (e.g. physical ability), to include measurement of perceived social pressures. In research, this tool can be used to examine the impact of activity expectations and self-efficacy over time on outcomes such as enhancing participation, quality of life, and leisure activity.

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Appendix 1

Activity Expectations

Instructions:

The following items ask you to consider someone your age and with your particular cancer diagnosis, and determine whether **you believe** that they **should be** doing certain types of activities. These activity types are groupings of activities presented in the MAPA questionnaire you just completed. To help you understand each type of activity, there are specific examples listed in parentheses.

Please **circle** the number that corresponds to how much you BELIEVE (1 =Very Little, 5=Quite A Lot) that a person of your age and diagnosis SHOULD be involved with each type of activity.

How much do you BELIEVE that a person of your age and diagnosis SHOULD BE...					
	Very Little ↔ Quite A Lot				
Doing creative activities (e.g. crafts/hobbies, cultural activities)	1	2	3	4	5
Doing spiritual activities (e.g. prayer/meditation, religious activities)	1	2	3	4	5
Getting around town (e.g. driving, using public transportation)	1	2	3	4	5
Communicating with others (e.g. writing letters/cards, talking on the telephone, computer use for email)	1	2	3	4	5
Doing physical exercise	1	2	3	4	5
Keeping up with traditional media (e.g. listening to the radio, watching TV, reading newspapers and magazines)	1	2	3	4	5
Doing service activities (e.g. volunteer activities, community organization activities)	1	2	3	4	5

Activity Self-Efficacy

Instructions:

The items below ask you to rate how much confidence you have doing types of activities. These activity types are groupings of activities presented in the MAPA questionnaire you just completed. To help you understand each type of activity, there are specific examples listed in parentheses. These items are not about what you are supposed to do, but how much confidence you have that you **can do** them, regardless of whether you actually do the activities. For example, even though you may not be involved in creative activities at this time, we would like to know how much confidence you have that you can do them.

Please **circle** the number that corresponds to your level of CONFIDENCE (1=Very Little, 5=Quite A Lot) with each one.

How much CONFIDENCE do you have...					
	Very Little ↔ Quite A Lot				
Doing creative activities (<i>e.g. crafts/hobbies, cultural activities</i>)	1	2	3	4	5
Doing spiritual activities (<i>e.g. prayer/meditation, religious activities</i>)	1	2	3	4	5
Getting around town (<i>e.g. driving, using public transportation</i>)	1	2	3	4	5
Doing physical exercise	1	2	3	4	5
Doing service activities (<i>e.g. volunteer activities, community organization activities</i>)	1	2	3	4	5

Appendix 2

The Possibilities for Activity Scale – Women (PActS-W)

Instructions:

The following items ask you to consider someone your age and with your particular cancer diagnosis, and determine whether **you believe** that they **should be** doing certain types of activities. To help you understand each type of activity, there are specific examples listed in parentheses.

Please **circle** the number that corresponds to how much you BELIEVE (1=Very Little, 5=Quite A Lot) that a person of your age and diagnosis SHOULD be involved with each type of activity.

Activity Expectations

How much do you BELIEVE that a person of your age and diagnosis SHOULD BE...					
	Very Little ↔ Quite A Lot				
Getting around town (<i>e.g. driving, using public transportation</i>)	1	2	3	4	5
Doing physical exercise	1	2	3	4	5
Doing service activities (<i>e.g. volunteer activities, community organization activities</i>)	1	2	3	4	5
Engaging in sexual activities	1	2	3	4	5
Working and/or doing household activities	1	2	3	4	5
Taking care of others	1	2	3	4	5

The Possibilities for Activity Scale – Women (PActS-W)

Instructions:

The items below ask you to rate how much confidence you have doing types of activities. These items are not about what you are supposed to do, but how much confidence you have that you **can do** them, regardless of whether you actually do the activities. For example, even though you may not be involved in creative activities at this time, we would like to know how much confidence you have that you can do them.

Please **circle** the number that corresponds to your level of CONFIDENCE (1=Very Little, 5=Quite A Lot) with each one.

Activity Self-Efficacy

How much CONFIDENCE do you have...					
	Very Little ↔ Quite A Lot				
Getting around town (<i>e.g. driving, using public transportation</i>)	1	2	3	4	5
Doing physical exercise	1	2	3	4	5
Doing service activities (<i>e.g. volunteer activities, community organization activities</i>)	1	2	3	4	5
Engaging in sexual activities	1	2	3	4	5
Working and/or doing household activities	1	2	3	4	5
Taking care of others	1	2	3	4	5

References

- Ahn JN, Haines EL, & Mason MF (2017). Gender stereotypes and the coordination of mnemonic work within heterosexual couples: Romantic partners manage their daily to-dos. *Sex Roles*, 1–18.
- Akin S, Can G, Durna Z, & Aydinler A (2008). The quality of life and self-efficacy of Turkish breast cancer patients undergoing chemotherapy. *European Journal of Oncology Nursing*, 12(5), 449–456. doi:10.1016/j.ejon.2008.07.006 [PubMed: 18842460]
- Akyuz A, Guvenc G, Ustunsoz A, & Kaya T (2008). Living with gynecologic cancer: experience of women and their partners. *J Nurs Scholarsh*, 40(3), 241–247. doi:10.1111/j.1547-5069.2008.00232.x [PubMed: 18840207]
- Askari SF, Liss M, Erchull MJ, Staebell SE, & Axelson SJ (2010). Men want equality, but women don't expect it: Young adults' expectations for participation in household and child care chores. *Psychology of Women Quarterly*, 34(2), 243–252.
- Baxter MF, Newman R, Longpré SM, & Polo KM (2017). Occupational therapy's role in cancer survivorship as a chronic condition. *American Journal of Occupational Therapy*, 71(3), 7103090010P7103090011–7103090010P7103090017.
- Bentler PM (2007). On tests and indices for evaluating structural models. *Personality and Individual Differences*, 42(5), 825–829. doi:10.1016/j.paid.2006.09.024
- Bize R, Johnson JA, & Plotnikoff RC (2007). Physical activity level and health-related quality of life in the general adult population: A systematic review. *Preventive Medicine*, 45(6), 401–415. doi:10.1016/j.ypmed.2007.07.017 [PubMed: 17707498]
- Carr AJ, Gibson B, & Robinson PG (2001). Is quality of life determined by expectations or experience? *BMJ: British Medical Journal*, 322(7296), 1240. [PubMed: 11358783]
- Centers for Disease Control and Prevention. (2017, 3 7, 2017). Gynecologic Cancers. Gynecologic Cancers Retrieved from <https://www.cdc.gov/cancer/gynecologic/>
- Delpierre C, Kelly-Irving M, Munch-Petersen M, Lauwers-Cances V, Datta GD, Lepage B, & Lang T (2012). SRH and HrQOL: does social position impact differently on their link with health status? *BMC Public Health*, 12(1), 19. doi:10.1186/1471-2458-12-19 [PubMed: 22233446]
- DeVellis RF (2006). Classical Test Theory. *Medical Care*, 44(11), S50–S59. [PubMed: 17060836]
- DeVellis RF (2012). Scale development: Theory and applications (Vol. 26): Sage publications.
- Doll KM, Barber EL, Bensen JT, Snaveley AC, & Gehrig PA (2016). The health-related quality of life journey of gynecologic oncology surgical patients: Implications for the incorporation of patient-reported outcomes into surgical quality metrics. *Gynecol Oncol*, 141(2), 329–335. doi:10.1016/j.ygyno.2016.03.003 [PubMed: 26957479]

- Eakman AM, Carlson ME, & Clark FA (2010). The meaningful activity participation assessment: A measure of engagement in personally valued activities. *The International Journal of Aging and Human Development*, 70(4), 299–317. doi:10.2190/AG.70.4.b [PubMed: 20649161]
- Farvid P, & Braun V (2006). 'Most of Us Guys are Raring to Go Anytime, Anyplace, Anywhere': Male and Female Sexuality in Cleo and Cosmo. *Sex Roles*, 55(5), 295–310. doi:10.1007/s11199-006-9084-1
- Farvid P, & Braun V (2014). The “Sassy Woman” and the “Performing Man”: Heterosexual casual sex advice and the (re) constitution of gendered subjectivities. *Feminist Media Studies*, 14(1), 118–134.
- Gill R (2008). Empowerment/sexism: Figuring female sexual agency in contemporary advertising. *Feminism & Psychology*, 18(1), 35–60.
- Gill R (2009). Mediated intimacy and postfeminism: a discourse analytic examination of sex and relationships advice in a women's magazine. *Discourse & Communication*, 3(4), 345–369. doi:10.1177/1750481309343870
- Gupta AE, Zimmerman TS, & Fruhauf CA (2008). Relationship Advice in the Top Selling Women's Magazine, *Cosmopolitan*: A Content Analysis. *Journal of Couple & Relationship Therapy*, 7(3), 248–266. doi:10.1080/15332690802237987
- Haywood E (2013). The liquid woman: A discourse analysis concerning women's sexual (in) abilities in women's lifestyle magazines. Manchester Metropolitan University, MMU Psychology Journal.
- Huysamen G (2006). Coefficient alpha: Unnecessarily ambiguous; unduly ubiquitous. *SA Journal of Industrial Psychology*, 32(4), p. 34–40.
- Jefferies H, & Clifford C (2012). Invisibility: the lived experience of women with cancer of the vulva. *Cancer Nurs*, 35(5), 382–389. doi:10.1097/NCC.0b013e31823335a1 [PubMed: 22067693]
- Kline RB (2011). *Principles and practice of structural equation modeling*: Guilford press.
- Laliberte Rudman D (2010). Occupational terminology: Occupational possibilities. *Journal of Occupational Science*, 17(1), 55–59. doi:10.1080/14427591.2010.9686673
- Larsen R (2011). Missing data imputation versus full information maximum likelihood with second-level dependencies. *Structural Equation Modeling: A Multidisciplinary Journal*, 18(4), 649–662. doi:10.1080/10705511.2011.607721
- Levine TR (2005). Confirmatory factor analysis and scale validation in communication research. *Communication Research Reports*, 22(4), 335–338. doi:10.1080/00036810500317730
- Mayo NE, Wood-Dauphinee S, Côté R, Durcan L, & Carlton J (2002). Activity, participation, and quality of life 6 months poststroke. *Archives of Physical Medicine and Rehabilitation*, 83(8), 1035–1042. doi:10.1053/apmr.2002.33984 [PubMed: 12161823]
- National Research Council. (2006). *From cancer patient to cancer survivor: lost in transition*: National Academies Press.
- Northouse LL, Mood D, Kershaw T, Schafenacker A, Mellon S, Walker J, ... Decker V (2002). Quality of Life of Women With Recurrent Breast Cancer and Their Family Members. *Journal of Clinical Oncology*, 20(19), 4050–4064. doi:10.1200/jco.2002.02.054 [PubMed: 12351603]
- Osburn HG (2000). Coefficient alpha and related internal consistency reliability coefficients. *Psychological Methods*, 5(3), 343–355. doi:10.1037/1082-989X.5.3.343 [PubMed: 11004872]
- Pergolotti M, Cutchin MP, & Muss HB (2015). Predicting participation in meaningful activity for older adults with cancer. *Qual Life Res*, 24(5), 1217–1222. doi:10.1007/s11136-014-0849-7 [PubMed: 25381123]
- Perrone KM, Webb LK, & Blalock RH (2005). The Effects of Role Congruence and Role Conflict on Work, Marital, and Life Satisfaction. *Journal of Career Development*, 31(4), 225–238. doi:10.1177/089484530503100401
- Rae G (2007). A note on using stratified alpha to estimate the composite reliability of a test composed of interrelated nonhomogeneous items. *Psychol Methods*, 12(2), 177–184. doi:10.1037/1082-989X.12.2.177 [PubMed: 17563171]
- Senn B, Gafner D, Happ MB, Eicher M, Mueller MD, Engberg S, & Spirig R (2011). The unspoken disease: symptom experience in women with vulval neoplasia and surgical treatment: a qualitative study. *Eur J Cancer Care (Engl)*, 20(6), 747–758. doi:10.1111/j.1365-2354.2011.01267.x [PubMed: 21771133]

- Sink C, & Stroh H (2006). Practical significance: The use of effect sizes in school counseling research. *Professional School Counseling*, 9(4), 401–411.
- Sivo SA, Fan X, Witta EL, & Willse JT (2006). The search for” optimal” cutoff properties: Fit index criteria in structural equation modeling. *The Journal of Experimental Education*, 74(3), 267–288. doi:10.3200/JEXE.74.3.267-288
- Smith-DiJulio K, Windsor C, & Anderson D (2010). The shaping of midlife women’s views of health and health behaviors. *Qualitative Health Research*.
- Svidén GA, Tham K, & Borell L (2010). Involvement in everyday life for people with a life threatening illness. *Palliative & supportive care*, 8(3), 345. [PubMed: 20875178]
- Tyler M (2004). Managing between the Sheets: Lifestyle Magazines and the Management of Sexuality in Everyday Life. *Sexualities*, 7(1), 81–106. doi:10.1177/1363460704040144

Key Messages for Occupational Therapy

- Women with cancer may feel pressure of activity expectations and self-efficacy. The PActS-W is the first scale of its kind to measure these possibilities for activity.
- The PActS-W examines participation in activity from a broader perspective, furthering our understandings of the changes in participation in activity after a major diagnosis.
- This study reports sufficient psychometric properties of the PActS-W.

FIGURE 1:
Final model for PActS-W shown with standardized factor loadings.

Table 1.

Sample Demographics (N = 186)

Characteristic	n (%)
Mean Age	57 years (Range 22–93, SD 13.28)
Race	
White	143 (77)
Black	41 (22)
Other *	2 (1)
Marital Status	
Married	107 (58)
Education	
High School Degree or less	48 (26)
Some college	58 (31)
Bachelor's Degree or higher	80 (43)
Type of Cancer	
Benign	52 (28)
Uterine/endometrial	108 (58)
Cervical	19 (10)
Vulvar	4 (2)
Other **	3 (2)
Stage ^	
Stage 0	58 (31)
Stage I	85 (46)
Stage II	10 (5)
Stage III-IV	25 (13)

* Note. Other = can include American Indian/ Native American, Asian, or Latin American.

** Other cancers= Colon, Breast diagnosed.

^ n= 4 no stage reported.

Table 2.

Model Fit of the Model of PActS-W

	Chi-Squared (<i>df, p</i>)	CFI	RMSEA	IFI	NFI
Model 1	1169 (169, .000)	.65	.18	.70	.62
Model 2	111 (45, .000)	.96	.10	.96	.94

Note. CFI= Comparative Fit Index. RMSEA=Root Mean Square Error of Approximation. IFI = Incremental Fit Index. NFI=Normed Fit Index.