Well-being of Japanese women in midlife: An investigation of work engagement, purpose in life, and psychosomatic health

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Abstract
Cross-sectional associations among work engagement, purpose in life, and psychosomatic health of Japanese women in midlife were investigated. A web-based survey was conducted with married women aged 40–60 years (n=756). Sociodemographic variables, marital satisfaction, work engagement, purpose in life, and psychosomatic health (which is indicated by anxiety, depressive mood, autonomic symptoms, and fatigue) were assessed. Results indicated that age, household income, communal/social activities, and marital satisfaction significantly predicted work engagement. Women in their 50’s showed higher work engagement than those in their 40’s, and mothers reported higher work engagement than childless women. Moreover, women managers demonstrated higher work engagement than non-managerial employees and part-time employees. Structural equation modeling indicated that work engagement predicted purpose in life, which, in turn, was negatively associated with psychosomatic ill-being. In conclusion, women in midlife who have higher work engagement are more likely to be older, have children, be happier in marriage, be more socially active, and be in managerial positions. Further, higher work engagement might promote higher purpose in life and potentially lead to preventing psychosomatic ill-being.

Key words: midlife women, work engagement, purpose in life, eudaimonic well-being, psychosomatic ill-being

Introduction
Today, midlife has been described as a prime period for connections across earlier and later periods of the life course, and a dynamic period of development in which many complex changes occur (Fogel & Woods, 1995; Lachman, Teshale, & Agrigoroaei, 2015). Although there is no clear demarcation of midlife, it is most commonly considered to be age 40 to 60 (Lachman et al., 2015).

Early research on midlife focused on professional men, yet more recent research has begun to include women (Gordon, Beaty, & Whelan-Berry, 2002). Definitions of midlife for women have often been based on menopause, which marks the end of the reproductive phase of a woman’s life (Mishra & Kuh, 2012). Whereas others have defined it as a time of upheaval as women change, add, or let go of roles (Brody, 2004). Midlife women go through a process of life review, i.e. an intensive self-evaluation of numerous aspects of their lives (Etaugh, 2008). For many women, the need to rewrite their life story at midlife is related to reducing the dependence and restrictions associated with marriage and motherhood, as their children grow older (Helson, 1992). This illumination of the self may cause many women unease, and researchers report that fear, anxiety and depression are issues of concern at this time (Dziegielewski, Heymann, Green, & Gichia, 2002). With increased life expectancy, how women experience this period has important implications, as well-being in midlife is an important determinant of a healthy and fully functional life in older adulthood (Harlow & Derby, 2015).
Well-being at midlife

Well-being has received an increased amount of attention in recent years, and research on well-being tends to focus on either the hedonic or eudaimonic well-being. Hedonic well-being is defined as the subjective experience of pleasure, happiness and satisfaction. In contrast, eudaimonic well-being refers to evaluative judgments about people’s lives such as their sense of purpose, meaning and a feeling of growth (Keyes, Shmotkin, & Ryff, 2002). In many countries including Japan, life satisfaction is known to reach its nadir at midlife (Blanchflower & Oswald, 2008; Kurokawa & Ohtake, 2013). This may be because midlife adults often suffer high levels of stress from juggling multiple responsibilities and dealing with physical and cognitive decline (Lachman, 2015). In the domain of eudaimonic well-being, Karasawa et al. (2011) reported, within the limits of cross-sectional inference, that purpose in life, a key component of eudaimonic well-being, showed significantly lower scores with age among Japanese adults. A growing body of literature suggests that purpose in life is important in predicting health and longevity (Ryff, 2013). Taken together, influencing factors of purpose in life for midlife women warrant further investigation.

Work as a source of eudaimonic well-being

Work is central to well-being in adulthood because it offers numerous benefits beyond income, and is a major source of meaning and purpose in life (Wethington, Kessler, & Pixley, 2004). Kopperud and Vitterso (2008) reported that eudaimonic well-being is experienced more frequently in work situations than in leisure situations. Also, in recent years, work engagement, i.e. a positive side of the work experience, was shown to increase positive health and decrease ill-health (Shimazu, 2010).

Whilst there has been scarce research on work experiences of midlife women (Austen & Ong, 2010), paid work is reported to be a significant predictor of psychosomatic well-being for midlife women (Klumb & Lampert, 2004), and being involved in a new career or career development leads to better psychosomatic health than maintaining or reducing career involvement (Etaugh, 2008). Matsuda (2010) found that Japanese midlife women (aged 40–60) in full-time employment showed significantly higher levels of organization-based self-esteem and work engagement, and in turn, reported less psychosomatic ill-being than younger women (aged 20–39).

The current study

To date, little is known about well-being of Japanese midlife women from the perspective of work experience and purpose in life, and their relationships to psychosomatic health. For Japanese women with the world’s second longest life expectancy of 87.05 years (in 2015), to increase their well-being by realising their full potential primarily through work, is an existential necessity given that they have another 30 to 40 years of life ahead of them. The aims of the current study were twofold: (a) to identify sociodemographic factors contributing to work engagement of midlife women; and (b) to investigate the cross-sectional relationships among work engagement, purpose in life, and psychosomatic health of midlife women. In this study, work experience of midlife women was assessed by work engagement. Work engagement is a positive, fulfilling, work-related state of mind that is characterized by vigor, dedication, and absorption (Schaufeli, Salanova, González-Romá, & Bakker, 2002), and also work-related eudaimonic well-being (Kopperud, 2012). We assume that work engagement can be a source of purpose in life.

Specifically, the following hypotheses were tested:

H1. Work Engagement is positively associated with purpose in life.
H2. Purpose in life is negatively associated with psychosomatic ill-being.
H3. Work Engagement is also negatively associated with psychosomatic ill-being.

Methods

Participants and procedure

In February 2016, we recruited participants by using Cross Marketing, Inc., an online research firm with a research panel of approximately two million members nationwide. Criteria for selecting participants were: 1)
married women aged between 40 and 60 years old and 2) part-time or full-time employees working in corporations of various size. An e-mail message was sent to those who met the criteria, asking them to complete a web-based questionnaire. The questionnaire consisted of work engagement, purpose in life, psychosomatic health, and sociodemographic variables [age, education, # of children, household income, type of employment, position at work, # of hours spent on work, marital satisfaction, communal/social activities, and caregiving]. A statement describing the purpose of the study, along with a confidentiality and anonymity of the data statement were presented on the first page of the web form. Those who agreed to participate were instructed to proceed and completed the questionnaire. The study procedures were reviewed and approved by the Research Ethics Committee of the lead author’s university.

The respondents (n=756) were married women with a mean age of 48.64 (SD=5.40), and 25% had no children. They worked on average 6.37 hours a day (SD=2.10) with most working part-time (73%), and 7% held full-time employment with a managerial position. Over half (51%) graduated from university or higher and 45.2% had household income of 5-8 million yen. One-tenth (10.8%) spent on average one hour on communal/social activities per day, and 8.5% were family caregivers.

Measures

Work engagement

Work engagement was measured with the nine-item Japanese version (Shimazu et al., 2007) of the Utrecht work Engagement Scale (Schaufeli et al., 2002). Although the original version measures three factors (i.e., Vigor, Dedication and Absorption), Shimazu et al. (2007) found a single factor solution in their Japanese samples. A principal component analysis conducted in the current study also confirmed a single factor solution. A 7-point Likert scale (0=never and 6=always) was used where a higher score indicates a higher level of work engagement.

Purpose in life

Purpose in life was measured using a subscale, the eight-item Purpose in Life, from the Japanese version (Nishita, 2000) of Psychological Well-Being Scales (Ryff, 1989; Ryff & Keyes, 1995). A 6-point Likert scale (1=strongly disagree and 6=strongly agree) was used where a higher score indicates a higher level of purpose in life.

Marital satisfaction

Marital satisfaction was assessed with the Japanese version (Moroi, 1996) of the six-item Quality Marriage Index (Norton, 1983) rated on a 4-point Likert scale (1=disagree and 4=strongly agree) where a higher score indicates more satisfaction with marriage.

Psychosomatic health (ill-being)

Psychosomatic health (ill-being) was measured using 24-item Public Health Research Foundation Stress Check List Short Form [PHRF-SCL(SF)] (Imazu et al., 2006). PHRF-SCL (SF) consists of four subscales: depressive mood, anxiety/uncertainty, autonomic symptoms, and fatigue/physical response. A 3-point Likert scale (0=none, 1=occasionally, 2=frequently) was used, and each subscale has six items with a higher score on the combined items of each subscale representing greater ill-being.

Statistical analysis

Descriptive analyses were performed for all variables and bivariate analyses were conducted using a series of Pearson correlations, analysis of covariance (ANCOVA), and independent t-tests with SPSS 21.0. A hierarchical multiple regression analysis was used to determine sociodemographic factors that potentially predict work engagement. Finally, structural equation modeling using AMOS 21.0 was performed to test the hypotheses. We used the comparative fit index (CFI), the Tucker-Lewis index (TLI), the root mean square error of approximation (RMSEA), and the standardized root mean square residual (SRMR) to test the model fit, as recommended by Hu and Bentler (1999). Values of .95 or higher for CFI and TLI indicate good fit. Values smaller than .08 for SRMR...
and RMSEA indicate adequate model fit, RMSEA values less than .05 suggest good model fit, and RMSEA values higher than 0.1 should lead to model rejection (Browne & Cudeck, 1993).

Results

Descriptive analyses

Table 1 presents means, standard deviations, reliabilities, and correlations for sociodemographic variables and work engagement. Marital satisfaction ($\alpha=.96$) and work engagement ($\alpha=.95$) had high levels of reliability. All sociodemographic variables except for hours spent on work were positively correlated with work engagement ($r=.08$, $p<.05$, $r=.11$ to .21, $p<.01$)

T-tests and ANCOVA

Independent-samples $t$-tests revealed that women in their 50’s showed significantly higher work engagement than those in their 40’s ($t(754)=-2.67$, $p<.01$), and women who are actively involved in communal/social activities had significantly higher work engagement than those who are inactive; [$t(754)=-5.95$, $p<.001$]. A one-way ANCOVA with adjustment for age was used to test for work engagement differences among three levels of position at work. Work engagement differed significantly across the three levels of position at work [$F(2,753)=10.89$, $p<.001$]. Turkey post-hoc comparisons indicated that full-time managers reported significantly higher work engagement.

<table>
<thead>
<tr>
<th>Table 1</th>
<th>Descriptive statistics, $\alpha$ scores, and correlation matrix for sociodemographic variables and work engagement ($n=756$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Variables</td>
<td>Mean</td>
</tr>
<tr>
<td>1. Age</td>
<td>48.64</td>
</tr>
<tr>
<td>2. Education</td>
<td></td>
</tr>
<tr>
<td>3. Position at work</td>
<td></td>
</tr>
<tr>
<td>4. Household income</td>
<td></td>
</tr>
<tr>
<td>5. Children</td>
<td></td>
</tr>
<tr>
<td>6. Communal/social activities</td>
<td></td>
</tr>
<tr>
<td>7. Caregiving</td>
<td></td>
</tr>
<tr>
<td>8. Hours on work</td>
<td>6.37</td>
</tr>
<tr>
<td>9. Marital satisfaction</td>
<td></td>
</tr>
<tr>
<td>10. Work engagement</td>
<td>2.72</td>
</tr>
</tbody>
</table>

SD=standard deviations. *$p<.05$, **$p<.01$

<table>
<thead>
<tr>
<th>Table 2</th>
<th>Means and standard deviations of work engagement according to demographic variables ($n=756$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Variables</td>
<td>$n$</td>
</tr>
<tr>
<td>Age</td>
<td></td>
</tr>
<tr>
<td>40’s</td>
<td>406</td>
</tr>
<tr>
<td>50’s</td>
<td>350</td>
</tr>
<tr>
<td>Children</td>
<td></td>
</tr>
<tr>
<td>Non-parents</td>
<td>189</td>
</tr>
<tr>
<td>Parents</td>
<td>567</td>
</tr>
<tr>
<td>Position at work</td>
<td></td>
</tr>
<tr>
<td>Part-time employees</td>
<td>552</td>
</tr>
<tr>
<td>Full-time employees</td>
<td>151</td>
</tr>
<tr>
<td>Full-time managers</td>
<td>53</td>
</tr>
<tr>
<td>Communal/social activities</td>
<td></td>
</tr>
<tr>
<td>Inactive</td>
<td>674</td>
</tr>
<tr>
<td>Active</td>
<td>82</td>
</tr>
</tbody>
</table>

Note: $a$=age adjusted mean. **$p<.01$, ***$p<.001$
engagement than part-time and full-time employees, whereas the difference between part-time and full-time employees did not reach a significant level at p < 0.05. ANCOVA with adjustment for age also revealed that mothers reported higher work engagement than childless women [F(1, 753) = 11.29, p < 0.001]. Results are shown in Table 2.

**Regression analysis**
Hierarchical multiple regression was used to determine sociodemographic variables that potentially predict work engagement. In a three-step hierarchical regression, sociodemographic variables such as age, education, and household income were entered in step 1, followed by # of hours spent on work, involvement in caregiving, and communal/social activities in step 2. Finally, marital satisfaction was added in step 3. Regression analyses indicated a significant model [F(9, 720) = 12.78, p < 0.001]. On the first step, age (β = .12, p < .01), household income (β = .13, p < .01), children (β = .10, p < .01), and position at work (β = .13, p < .001) were significantly associated with work engagement. Whilst caregiving (β = .07, p < .05) showed a slight relationship, communal/social activities (β = .17, p < .001) realised a more significant relationship on the second step. Marital satisfaction (β = .13, p < .001) was also significant on the final step. Whereas level of education and # of hours spent on work failed to predict work engagement. The results are shown in Table 3.

**Hypothesis testing**
Table 4 presents means, standard deviations, reliabilities, and correlations for work engagement, purpose in life, and psychosomatic ill-being. All of the variables used in hypothesis testing had acceptable levels of reliability, ranging from α = .75 for autonomic symptoms to α = .91 for purpose in life. Work engagement was significantly associated with purpose in life and psychosomatic ill-being (r = –.11 to .39, p < .01). Purpose in life correlated negatively with all four variables indicating psychosomatic ill-being (r = –.18 to –.36, p < .01)

Structural equation modeling (SEM) was used to test the hypotheses (Figure 1). The SEM model indicated an adequate fit to the data (χ² = 122.14, df = 50, CFI = .99, TLI = .99, SRMR = .022, RMSEA = .044). Work engagement demonstrated significant and positive relationships with purpose in life (β = .42, p < .001), supporting H1. Purpose in life was associated with all dimensions of psychosomatic ill-being (anxiety: β = –.42, fatigue: β = –.19, autonomic symptoms: β = –.24, depressive mode: β = –.34, p < .001). Hence H2 was supported. Work engagement showed no direct effects on any psychosomatic ill-being dimensions (anxiety: β = –.07, fatigue: β = –.07, autonomic symptoms: β = –.03, depressive mode: β = –.08, n.s.), H3 therefore was not supported.
Discussions

The present cross-sectional study investigated the association of sociodemographic factors with work engagement, and the relationships among work engagement, purpose in life, and psychosomatic health in a Japanese sample of midlife married women aged between 40 and 60.

Sociodemographic variables and work engagement

Our findings showed that age, household income, motherhood, position at work, marital satisfaction, and involvement in communal/social activities were the potential predictors of work engagement, and altogether 14% of the variability in work engagement was accounted for by those sociodemographic factors.

Women in their 50’s reported higher levels of work engagement than those in their 40’s. This is in line with other empirical studies. Matsuda (2010) reported that Japanese women in their 50’s showed a higher level of work engagement than younger age groups in an organizational context. Bezuidenhout and Cilliers (2011) also found

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Table 4 Descriptive statistics, α scores, and correlation matrix for work engagement, purpose in life, and psychosomatic ill-being (n=756)

<table>
<thead>
<tr>
<th>Variables</th>
<th>Mean</th>
<th>SD</th>
<th>α</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Work engagement</td>
<td>2.72</td>
<td>1.11</td>
<td>.95</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Purpose in life</td>
<td>3.77</td>
<td>0.86</td>
<td>.91</td>
<td>.39*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anxiety</td>
<td>3.58</td>
<td>2.90</td>
<td>.87</td>
<td>-.21*</td>
<td>-.36*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fatigue</td>
<td>6.01</td>
<td>3.01</td>
<td>.82</td>
<td>-.11*</td>
<td>-.18*</td>
<td>.44*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Autonomic symptoms</td>
<td>3.73</td>
<td>1.70</td>
<td>.75</td>
<td>-.11*</td>
<td>-.21*</td>
<td>.45*</td>
<td>.53*</td>
<td></td>
</tr>
<tr>
<td>Depressive mood</td>
<td>4.76</td>
<td>2.95</td>
<td>.83</td>
<td>-.20*</td>
<td>-.34*</td>
<td>.68*</td>
<td>.61*</td>
<td>.51*</td>
</tr>
</tbody>
</table>

SD= standard deviations. **p<.01

Figure 1. Structural relationships between latent variables of work engagement, purpose in life and psychosomatic ill-being (n=756)
that older South African female academics were more engaged with their work than younger women. Although the reasons behind this trend are unclear, older women may have more resources such as support and autonomy available to them, or feel more confident as they can bring a wealth of life experience.

Mothers showed higher levels of work engagement than childless women. Whilst no similar evidence in the literature can be found, this may be explained by the role enhancement theory, i.e. greater role involvement is associated with positive outcomes (Ahrens & Ryff, 2006). Such interpretation can be extended to another relationship found in this study. Women who are actively involved in communal/social activities reported higher levels of work engagement. We also found a significant correlation between communal/social activities and motherhood ($r =.12, p<.01$), which may imply that parenting provides greater role involvement.

Controlling for age as a confounding factor, managerial position rather than employment status (part-time vs. full-time) was associated with higher levels of work engagement. No differences were found between part-time and full-time employees, whereas full-time managers were more engaged with their work. Work engagement is found to be positively associated with job resources such as autonomy, task variety, and training opportunities (Bakker & Demerouti, 2008). Managers are likely to have more resources than non-managerial employees, leading to higher work engagement.

Women who were more satisfied with their marriage had higher levels of work engagement. Whilst causal direction is unknown, this result is in line with other findings (e.g., Ito, Sagara, & Ikeda, 2004, 2006) reporting the positive relationships between marital satisfaction and work-related outcomes such as work commitment and job satisfaction.

Hypothesis testing

Structural equation modeling (SEM) revealed that work engagement was positively related to purpose in life, supporting H1. According to Seligman (2002) there are three primary paths to happiness. One of three, engagement (also called the engaged life), is a life that pursues engagement, involvement, and absorption in work, love, and leisure (Rashid, 2009). Pursuing a purpose involves becoming deeply involved in activities that are fulfilling, and using one’s strengths (Bronk, Hill, Lapsley, Talib, & Finch, 2009). This suggests that being engaged, that is, feeling vigorous, dedicated and absorbed at work can be a source of purpose in life, and our findings resonate with this view.

The SEM analysis indicated that purpose in life was negatively associated with all dimensions of psychosomatic ill-being. This provided support for H2. As stated earlier, purpose in life is associated with a variety of positive health indicators. In particular, a higher level of purpose in life is related to lower stress hormone (cortisol) levels that are associated with a wide range of negative health effects, including anxiety, depression, and physical responses (Ryff, Singer, & Love, 2004). Our findings support the literature.

Although literature suggests that work engagement is related to both positive and negative health outcomes (Shimazu, 2010), the relationship between work engagement and psychosomatic ill-being did not reach a significant level in this study, rejecting H3. We found that work engagement mediated the relationship between purpose in life and psychosomatic ill-being. These results may be because work engagement is well-being specific to the work domain, whereas purpose in life involves all domains of life such as work, family, community and self, hence having a stronger overall influence on women’s health.

Limitations of the study and future research

There are several limitations in this study that warrant discussion. First, the use of a cross-sectional design does not allow us to determine causal relationships between the variables examined. Future longitudinal research should uncover the causality, strength, and duration of relationships between work engagement, purpose in life, and psychosomatic ill-being. Second, only sociodemographic variables were used to explain work engagement in this study. Future research should include personal resources (e.g., self-efficacy and organization-based self-esteem), and job resources (e.g., supervisor support, autonomy, and performance feedback) as they are reportedly the antecedents of work engagement (Bakker & Demerouti, 2008). Third, this study focused only on married women. However, the proportion of unmarried middle-aged women has been steadily growing in Japan, and their work experiences are likely to differ from those of married women. Future studies should therefore include all

marital statuses. Forth, this study used survey data with self-report measures, and consequently, common methods variance needs to be addressed as a limitation. The addition of qualitative data that support the relationships among the variables can alleviate this issue in further studies. Finally, our data were collected from an online research panel, which requires caution about the generalizability of our findings as the representativeness of the sample may be challenged.

Despite the limitations discussed above, the present study adds to aggregate research on midlife women, which remains scarce, and indicates that midlife women are likely to be more engaged with their work than their counterparts when they have children, are in later midlife, are happier in marriage, socially more active, and in a managerial position. Our findings also suggest that work engagement can be a source of purpose in life for midlife women, and purpose in life can alleviate negative health effects from demanding responsibilities.

Self-Declaration of Conflict of Interest

The authors declare that they had no conflicts of interest with respect to their authorship or the publication of this article.

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