JOURNAL OF WOMEN'S HEALTH
Volume 21, Number 5, 2012

DOI: 10.1089/jwh.2011.3180

Role Stress, Role Reward, and Mental Health in a Multiethnic Sample of Midlife Women: Results from the Study of Women's Health Across the Nation (SWAN)

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Abstract

Background: Little is known about the independent associations of reward and stress within specific roles with multiple measures of mental health in an ethnically diverse community sample of midlife women. The objective of this study is to examine if (1) role reward (within each role and across roles) contributes directly to mental health and buffers the negative impact of role stress and (2) associations among role occupancy, role stress, and role reward and mental health vary by race/ethnicity.

Methods: With separate logistic regression analysis, we investigated cross-sectional relationships between role stress and role reward with presence/absence of high depressive symptoms (Center for Epidemiologic Studies Depression Scale [CES-D ≥ 16]), anxiety symptoms (feeling tense or nervous, irritable or grouchy, fearful for no reason, and heart pounding or racing total score ≥ 4), or low social functioning (bottom 25th percentile of the Short-Form-36 [SF-36] social functioning subscale) in 2549 women participating in the third visit of the Study of Women's Health Across the Nation (SWAN), a longitudinal population-based study of menopause.

Results: High reward across roles attenuated the negative impact of role stress on social functioning but not on anxiety or depression. High reward marriage buffered the impact of marital stress on depression, and high reward mothering buffered the effect of maternal stress on depression and social functioning. Compared to Caucasians, Hispanics and Chinese with high stress across roles had better social functioning, and African American mothers had lower odds of high depressive symptoms.

Conclusions: Role reward buffers the negative impact of stress on social functioning and depression, but not on anxiety. Minorities may respond to role stress by seeking social support.

Introduction

In past few decades, a growing percentage of midlife women in Europe and North America are simultaneously involved in paid employment and family roles.[1,2] For example, between 1975 and 1985, the labor force participation rate of women 45–54 years old with children under the age of 18 increased from 49% to 60%. The participation rate was 76% in 1996, when this prospective study commenced. Moreover, given the increased life expectancy of elders,[3] midlife women may also serve as caregivers to their older or disabled family members.[4–6]

Early theories on the relationship between multiple roles and mental health focused only on the number of roles a person occupied, with the assumption that more roles were associated with worse (stress hypothesis)[7] or better mental health (enhancement hypothesis).[8,9] However, cross-sectional and longitudinal population-based studies on young and midlife adults established the primacy of the subjective role experience (role quality) over the role quantity.[10–16] Midlife is a time of changes in roles (e.g., children grow and leave home, elderly parents are less able to care for themselves) that may have an impact on mental health and social functioning.

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An extensive body of research has focused on evaluating the interactive nature of roles, whereby a rewarding experience within one role can buffer the negative mental health effect of another stressful role (interrole buffering effect). For example, positive maternal and marital relationships can buffer employed mothers from the detrimental effect of unrewarding jobs.[17,18] However, little empirical data are available on the extent to which the negative effect of stress in a given role can be modified by the rewarding aspects of the same role (within role buffering effect).

Previous population-based studies of midlife women have examined the impact of roles on mental health with respect to depression and anxiety disorders,[14,15] depressive symptoms alone,[11] general health measures,[15] psychologic distress,[19] or general measures of psychologic well-being[20] but have not addressed the impact of roles on both psychologic symptoms and social functioning in the same sample. Furthermore, previous studies have not accounted for the potential impact of female midlife-specific factors, such as vasomotor symptoms that are experienced by the majority of U.S. midlife women[21] and influence well-being.[21–23]

We chose mental health symptoms and social functioning as outcomes based on the literature showing their prevalence and clinical significance in nonclinical samples of midlife women. For example, the prevalence of clinically relevant depressive symptoms (Centers for Epidemiologic Studies Depression Scale [CES-D ≥ 16]) was 22.4% in the Harvard Study of Moods and Cycles, 24% in the Study of Women's Health Across the Nation (SWAN),[23–25] and 26%–28% in the Seattle Midlife Women's Health Study.[26] Longitudinal studies have shown that depressive symptoms may develop into major depression.[27] The prevalence of anxiety symptoms among SWAN perimenopausal participants ranged from 14.9% to 18.4%.[23] Previous studies pointed to the importance of measuring social functioning as an outcome itself,[28] as it is a key component of quality of life, an index of treatment success in psychiatric disorders,[28–30] and when compromised, is an independent risk factor for subsequent major depression.[31]

Although the association between role responsibilities and mental health has been well documented for Caucasians, data on the experience of Hispanics and nonwhites are scant despite the increasing diversity of the U.S. population.[32] Only one study included an ethnically diverse population of midlife women, and that study examined depressive symptoms only in a comparison of Caucasians vs. non-Causasians.[11] The majority of studies have focused on racial/ethnic differences in the impact of the caregiver role only.[33] For example, a study of parents caring for children with emotional and behavioral difficulties showed that African Americans report lower caregiver strain compared to non-Hispanic whites, whereas Latinos and Asians do not differ significantly from non-Hispanic whites.[34] Results of a meta-analysis of 116 studies showed that African American caregivers have lower levels of caregiver burden and depression than white caregivers, whereas Hispanics and Asians are more depressed than their white non-Hispanic counterparts.[13] It has been proposed that ethnic differences in caregiver burden are influenced by structural (e.g., socioeconomic status) as well as culturally mediated factors (e.g., perception of caregiving, filial obligation beliefs).[35]

No study to date has examined the independent associations of reward and stress across all occupied roles or within specific roles with multiple measures of mental health in an ethnically diverse community sample of midlife women. Also, no studies have considered the potential buffering effect of the rewards of a given role on the associations of the stress within the same role with negative mood or functioning. The current analyses used cross-sectional data from the SWAN and examined the association of role quality within four roles (employed, married, mother, caregiver) with three aspects of self-reported mental health: depressive symptoms, anxiety symptoms, and social functioning. Specifically, we aimed to evaluate (1) if role reward within specific roles and across all occupied roles would (a) contribute to mental health beyond the effect of stress (main effect) or (b) modify the negative impact of role stress on mental health (buffering effect) and (2) if the association of specific role occupancy, role stress, and role reward (across role and within specific roles) with mental health would vary by race/ethnicity. We hypothesized that (1) role reward within specific roles and across all roles would have a main and buffering effect on depressive symptoms, anxiety symptoms, and social functioning, and (2) among African Americans, Hispanics, Chinese, and Japanese, the buffering effect of role rewards would be greater than among Caucasians. All aims were evaluated adjusting for the effects of vasomotor symptoms and perceived overall health based on previously documented association with the outcomes.[22–24]

Materials and Methods

Study sample and procedure

This study was conducted among 2615 women aged 45–55 years who participated in the third follow-up visit for SWAN, an ongoing multisite, multiethnic, community-based longitudinal study designed to characterize the physiologic and psychologic changes during the menopausal transition and their impact on health.

Details of the SWAN design and sampling procedures have been described previously.[36] Briefly, SWAN eligibility criteria included (1) 42–52 years of age, (2) having an intact uterus and at least one ovary, (3) not being pregnant or breastfeeding, (4) having menstruated in the previous 3 months, and (5) not having used reproductive hormones in the past 3 months. Race/ethnicity was self-identified based on the participant's response to the question: What is your primary racial or ethnic group? Each of seven sites recruited Caucasians and women from one specified minority group (African Americans in Pittsburgh, Pennsylvania, Boston, Massachusetts, the area of Detroit, Michigan, and Chicago, Illinois; Japanese in Los Angeles, California; Chinese in the region of Oakland, California; and Hispanics in Newark, New Jersey).

Assessments were conducted at baseline from 1995 to 1997 and annually thereafter. In this article, we report on data collected at follow-up visit 3 as the multiple roles questionnaire was completed as part of this annual assessment. To be part of the analytic sample, participants had to have complete data on roles (presence/absence, stress, and reward) and outcomes and occupy at least one role. Of the 2615 women at follow-up visit 3, 48 had incomplete data on roles and an additional 18 women reported having no roles. Thus, the final analytic sample consisted of 2549 women.

Outcome variables

Mental health was measured by self-report depressive symptoms, anxiety symptoms, and social functioning.

Depressive symptoms. The CES-D[37] was used to assess the presence of high depressive symptoms defined by a CES-D score ≥ 16. The CES-D is a 20-item self-administered scale that asks about the frequency of occurrence of each symptom in the week before the interview, ranging from 0 (rarely or none of the time) to 3 (most or all of the time). Total scores range from 0 to 60, and a score of ≥16 is often used as the cutoff for potentially significant depressive symptoms.[37] The scale was designed to measure severity of depressive symptoms in community samples and has been used extensively for research purposes in nonpsychiatric populations with varying ethnic groups.[38,39] The CES-D has good reliability and correlates well with other self-administered and interviewer-administered measures of depression.[40]

Anxiety symptoms. Anxiety was assessed by four symptoms (feeling tense or nervous, irritable or grouchy, fearful for no reason, and heart pounding or racing) that were included in a self-administered symptoms checklist similar to those used in many studies on midlife women.[41–43] The checklist measures 15 somatic, vasomotor, and mood symptoms with a 5-level response set indicating frequency of each of these in the 2 weeks before the interview: not at all (coded 0), 1–5 days (coded 1), 6–8 days (coded 2), 9–13 days (coded 3), and daily (coded 4). The ratings for frequency of the anxiety symptoms were totaled to create a summary score ranging from 0 to 16, with the upper 20% (≥4) defined as presence of anxiety.[23]

Low social functioning. The Short Form-36 (SF-36) social functioning subscale was used to assess the presence of low social functioning. The SF-36 is a self-administered questionnaire with eight subscales that assess the impact of physical and mental health on functioning.[44] This measure has been used throughout the world in surveys of general and specific populations to evaluate health benefits of different treatments and to compare the relative burden of chronic diseases. The subscales have good reliability and construct validity (alpha coefficients ranging from 0.68 to 0.96). The SF-36 social functioning is based on the summed scores of two questions that ask (1) to what extent (ranging from not at all to extremely) and (2) how much of the time (ranging from none of the time to all of the time) have physical health or emotional problems interfered with the normal social activities with family, friends, neighbors, or groups in the 4 weeks before the interview. The SF-36 social functioning subscale score was dichotomized using the 25th percentile of the sample as the cutoff point between high and low social function, as recommended by Rose et al.[45]

Independent variables

Role stress and role reward (across roles and within roles). An adaptation of the Multiple Role Questionnaire[46] was used to assess role occupancy, role stress, and role reward. Participants were asked to indicate current occupancy (yes/no) of four social roles: (1) employed for pay, (2) caring for an older/disabled family member, (3) married/in a committed relationship, (4) having children/stepchildren, hereafter referred to as employed, caregiver, married, and mother. Participants rated the degree of stress and reward within each role; responses ranged from 1 (not at all) to 5 (extremely). Role stress and role reward were assessed separately for each of the four roles (within roles). Role stress and role reward across all roles were represented by the average amount of stress (or reward) experienced in each role. Average stress and average reward were calculated as follows: for each woman, ratings of stress and reward for each role were summed separately and then divided by the number of roles she was engaged in. A higher score indicated higher stress (or reward).

Covariates

Demographic variables. Self-reported demographic data included age, race/ethnicity (African American, Caucasian, Chinese, Hispanic, Japanese) and educational attainment (≤ completed high school, some college or vocational school, ≥ completed college). Age was derived from the third annual visit; ethnicity and educational attainment were obtained from the baseline interview.

Perceived physical health. Self-reported health status was assessed with the question: Would you say your health in general is excellent, very good, good, fair or poor?[47] Participants were categorized as perceiving fair or poor and excellent, very good, or good physical health.

Vasomotor symptoms. The checklist of symptoms asked women to indicate the frequency of hot flashes or flushes, cold sweats, night sweats in the 2 weeks before the interview (ranging from not at all to daily). For the current study, we used a dichotomized variable indicating presence/absence of hot flashes or night sweats.

Data analyses

Categorical variables were created for social functioning and anxiety symptoms, as these distributions were highly skewed (as described). We used analysis of variance (ANOVA) for continuous variables and chi-square tests for categorical variables to examine racial/ethnic differences. Before creating the interaction terms, role stress and role reward (overall and within specific roles) were centered (i.e., the mean was subtracted from all scores) to avoid collinearity issues and facilitate interpretation.[48] Correlations between outcomes were moderate, indicating that they can be considered separate but related constructs: depression and anxiety, $r = 0.60$; depression and social functioning, $r = -0.57$; anxiety and social functioning, $r = -0.50$. Because stress and reward (across roles and within roles) correlated only weakly to moderately (r ranged from 0.02 to -0.52), they were examined as separate constructs.

We ran separate analyses for each role (within-roles main effect) and for the total role experience (across-roles main effect). To determine if role reward contributes to mental health beyond the effect of stress (aim 1a), we ran multivariable logistic regression analyses for each outcome, including role reward and role stress, site, age, race/ethnicity, number of occupied roles, education, perceived health, and presence of vasomotor symptoms (model 1).

To determine if role reward modifies the negative effect of role stress on mental health (aim 1b), the main effects of role

stress and role reward and their interaction were included in the model, as well as site, age, race/ethnicity, number of occupied roles, education, perceived health, and presence of vasomotor symptoms (model 2). Beyond age, site, and ethnicity, which were forced into the models, the selection of potential covariates was based on an association with the outcomes at $p \leq 0.1$. A backward stepwise model selection procedure was used in the multivariables regression analyes.

To determine if the association between roles and mental health varied by ethnicity (aim 2), we tested for the interaction between ethnicity and specific role occupancy, role stress, and reward. Each interaction was tested in separate regression analyses (across roles and for each role).

Statistical analyses were performed with PASW Statistics 17.0.3 (SPSS, Inc., Chicago, IL). For all analyses, p values ≤ 0.05 (two-tailed) were considered significant.

Results

Description of the sample

Approximately 34% ($n = 857$) and 50% ($n = 1267$) of the sample engaged in two or three roles respectively, whereas 6.6% ($n = 170$) occupied four roles, and 10% ($n = 255$) engaged in only one role (Table 1). Examination of specific role distributions showed that only 12.1% ($n = 308$) of the sample engaged in the caregiver role, and the employed, married, and mother roles were occupied by a large majority of the sample (81.4%, 75.7%, and 83.9%, respectively). To provide a context for our findings, note that number of roles and types of role were not significantly associated with the three outcome variables, with the exception of the caregiver role, which was associated with presence of poor social functioning (odds ratio [OR] 1.47, confidence interval [CI] 1.08-1.97). Overall p value for number of roles for all outcomes, $p > 0.05$.

Main and buffering effect of role stress and role reward on mental health

Across roles. Average role stress and average role reward were independently related to all outcomes, such that high stress increased and high reward decreased the odds of depressive symptoms, anxiety symptoms, and low social functioning (Table 2). The interaction between average role reward and stress was significantly associated with low social functioning ($p = 0.03$), such that high reward in the roles overall attenuated the negative effect of high stress on social functioning (Fig. 1, top). High reward did not buffer the effect of high stress on depression or anxiety.

Within-roles main effect (model 1). Stress within the mother, employed, and married roles and reward within the employed and mother roles were independently related to all outcomes, such that high stress increased the odds and high reward decreased the odds. Stress in the caregiver role significantly increased the odds of high depressive symptoms and low social functioning, whereas reward in the same role was not related to the outcomes.

Within roles interaction (model 2). Testing for the interactive effect of stress and reward yielded two significant results with respect to the family roles (Fig. 1): (1) high reward in the married role attenuated the negative effect of high stress on depression ($p = 0.01$); (2) high reward in the mother role attenuated the negative effect of high stress on social functioning ($p = 0.01$) and depression ($p = 0.05$).

Table 1. Characteristics of Analytic Sample ($n = 2549$)

	Mean	*SD*
Age	*48.96*	*2.69*
	Number	*%*
Education (total = 2530)		
≥ College	1168	45.8
Some college/vocational	840	33
≤ High school	522	20.5
Menopausal status (total = 2539)		
Premenopausal	290	11.4
Early perimenopausal	1341	52.6
Late perimenopausal	222	8.7
postmenopausal	321	12.6
Oophorectomy	81	3.2
Taking hormones	284	11.1
Ethnicity		
African American	686	26.2
Caucasian	1278	48.9
Hispanic	162	6.2
Japanese	257	9.8
Chinese	232	8.9
Number of roles and specific Roles		
1 role	255	10
2 roles	857	33.6
3 roles	1267	49.7
4 roles	170	6.6
Employed	2074	81.4
Married	1929	75.7
Mother	2139	83.9
Caregiver	308	12.1
Fair/poor overall physical health	325	12.8
Hot flashes or night sweats	1290	50.6
Outcomes		
High depressive symptoms[a]	491	19.3
Anxiety symptoms[b]	503	19.7
Low social functioning[c]	603	23.7
	Mean	*SD*
Role stress[d]	2.77	0.87
Role reward[e]	3.84	0.74

[a]Center for Epidemiologic Studies Depression Scale (CES-D) ≥ 16.
[b](Irritability + fearful + tense/nervous + heart pounding) total score ≥ 4.
[c]25th percentile of sample was used as cutoff point between high and low social functioning.
[d]Average role stress (sum rating across stress within each role divided by number of roles occupied).
[e]Average role reward (sum rating across reward within each role divided by number of roles occupied).
SD, standard deviation.

Ethnic differences

As shown in Table 3, there was a significant racial/ethnic difference in the proportion of women engaged in each type of role, with African Americans having the highest proportion of caregivers (15.2%), Chinese the highest proportion of employed (86.7%), Hispanics the highest proportion of mothers (92.9%), and Japanese the highest proportion of married women (85.2%). The one-way ANOVA showed a significant effect of ethnicity on average role stress and average role

Table 2. Odds Ratio (95% Confidence Interval) from Logistic Regression Models of Main Effects (Model 1) and Interaction Effects (Model 2) of Role Stress and Role Reward on Mental Health (Across Roles and Within Specific Roles)

	High depressive symptoms				*Anxiety symptoms*				*Low social functioning*			
	Model 1[a]		*Model 2*[b]		*Model 1*		*Model 2*		*Model 1*		*Model 2*	
	OR	*95% CI*	*OR*	*95% CI*	*OR*	*95% CI*	*OR*	*95% CI*	*OR*	*95% CI*	*OR*	*95% CI*
					Across roles							
Average role stress	1.7*	1.6-2.1	1.6*	1.4-1.9	1.8*	1.6-2.0	1.8*	1.6-2.1	1.5*	1.3-1.7	1.5*	1.3-1.6
Average role reward	0.5*	0.5-0.6	0.5*	0.4-0.6	0.8*	0.7-0.9	0.8*	0.7-0.9	0.7*	0.7-0.9	0.7*	0.6-0.8
Average stress × Average reward		-	0.9	0.8-1.0		-	0.9	0.8-1.0		-	0.8**	0.7-0.96
Employed												
Stress	1.3*	1.2-1.5	1.5*	1.2-2.0	1.4*	1.3-1.6	1.4*	1.3-1.6	1.3*	1.2-1.4	1.7*	1.1-1.4
Reward	0.6*	0.6-0.7	0.6*	0.56-0.73	0.7*	0.7-0.8	0.8*	0.7-0.9	0.8*	0.7-0.9	0.8*	0.7-0.9
Stress × reward		-	1.0	0.9-1.1		-	1.0	0.9-1.1		-	1.0	0.9-1.1
Caregiver												
Stress	1.4^	1.02-1.8	1.3	1.0-1.8	1.2	0.9-1.6	1.2	0.9-1.7	1.3^	1.1-1.7	1.3	1.0-1.7
Reward	0.8	0.6-1.0	0.7	0.5-1.0	1.0	0.8-1.3	1.0	0.7-1.4	0.9	0.7-1.1	0.8	0.6-1.1
Stress × reward		-	1.0	0.8-1.3		-	1.0	0.8-1.2		-	1.0	0.8-1.1
Married/in a committed relationship												
Stress	1.7*	1.6-2.0	1.6*	1.4-1.8	1.7*	1.5-1.9	1.6*	1.4-1.8	1.5*	1.4-1.7	1.5*	1.3-1.7
Reward	0.9^	0.7-0.99	0.9	0.8-1.1	1.0	0.9-1.1	1.0	0.9-1.2	1.0	0.9-1.2	1.0	0.9-1.17
Stress × reward		-	0.9^	0.8-0.97		-	1.0	0.9-1.1		-	1.0	0.9-1.1
Mother												
Stress	1.5*	1.4-1.7	1.4*	1.3-1.6	1.4*	1.3-1.6	1.4*	1.3-1.6	1.3*	1.2-1.5	1.3*	1.2-1.4
Reward	0.7*	0.6-0.8	0.7^	0.6-0.8	0.9*	0.7-0.9	0.9	0.8-1.0	0.8*	0.7-0.9	0.9	0.8-1.1
Stress × reward		-	0.9^	0.8-0.99		-	0.9	0.8-1.0		-	0.8*	0.7-0.9

^$p \le 0.05$; **$p < 0.01$; *$p < 0.001$.

[a]Model 1 included age, site, ethnicity, education, presence of hot flashes or night sweats, overall health, role stress, role reward (average and within specific roles), and number of roles (in analyses of specific roles).

[b]Model 2 included variables of model 1 in addition to the interaction between role stress and role reward (average and within specific roles).

CI, confidence interval; OR, odds ratio.

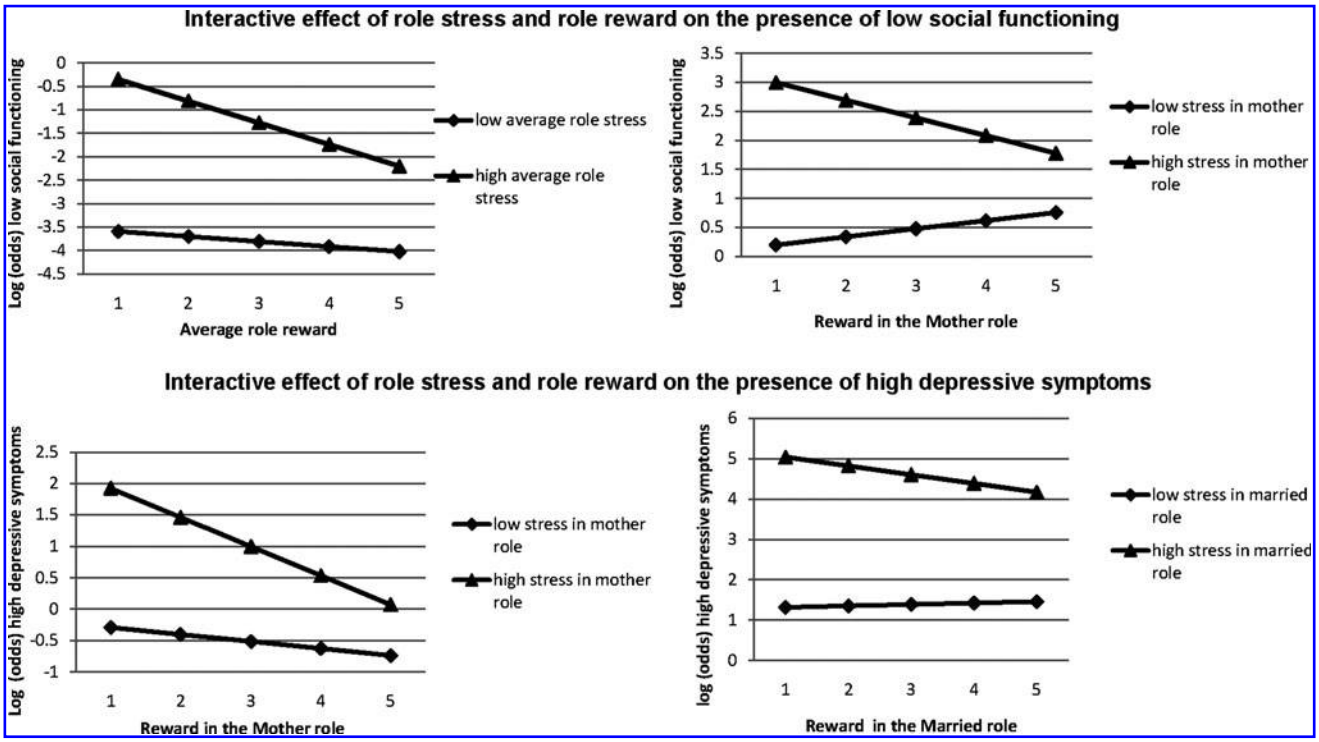

FIG. 1. Interactive effect of role stress and role reward on mental health (significant results). 1 = low reward; 2 = high reward.

Table 3. Number of Roles and Specific Roles, by Ethnicity

	African American	*Caucasian*	*Chinese*	*Hispanic*	*Japanese*	p *value*
Number of roles *n, column %*						
1	64 (9.6%)	121 (9.6%)	19 (8.7%)	28 (18.1%)	23 (8.9%)	<0.0001
2	226 (34%)	407 (32.4%)	58 (26.6%)	81 (52.3%)	85 (33.1%)	
3	324 (48.8%)	643 (51.2%)	120 (55%)	43 (27.7%)	137 (53.3%)	
4	50 (7.5%)	84 (6.7%)	21 (9.6%)	3 (1.9%)	12 (4.7%)	
Specific roles *n, column %*						
Currently employed for pay	539 (81.2%)	1079 (86%)	189 (86.7%)	76 (49%)	191 (74.3%)	<0.0001
Currently caregiver for older/ disabled family member	101 (15.2%)	140 (11.2%)	31 (14.2%)	9 (5.8%)	27 (10.5%)	0.006
Currently married/ in a committed relationship	436 (65.7%)	995 (79.3%)	177 (81.2%)	102 (65.8%)	219 (85.2%)	<0.0001
Have children/stepchildren	612 (92.2%)	986 (78.6%)	182 (83.5%)	144 (92.9%)	215 (83.7%)	<0.0001

reward: stress, F (4, 2492) = 11.26, $p = 0.0001$; reward, F (4, 2490) = 7.87, $p = 0.0001$. *Post-hoc* comparisons using the Tukey HSD test indicated that Caucasians (mean 2.86 standard deviation [SD] 0.83) reported higher average role stress compared to African American (mean 2.71, SD 0.95, $p = 0.007$), Japanese (mean 2.59, SD = 0.82, $p = 0.0001$), and Chinese women (mean 2.52, SD 0.76, $p = 0.0001$). Also, Caucasians reported higher average role reward (mean 3.92, SD 0.74) compared to African American (mean 3.78, SD 0.77, $p = 0.002$), Hispanic (mean 3.66, SD 0.67, $p = 0.001$), and Chinese women (mean 3.72, SD 0.71, $p = 0.005$).

Analyses of interactions between ethnicity and occupancy of specific roles and role stress and reward (across roles and within roles) yielded two significant results: (1) African American mothers were less likely to report high depressive symptoms compared with Caucasian mothers (OR 0.46, 95% CI 0.23-0.88) (Fig. 2); (2) Hispanic and Chinese women with high stress across roles had lower odds of low social functioning compared to their Caucasian counterparts with high stress (Hispanic: OR 0.67, 95% CI 0.45-0.96; Chinese: OR 0.58, 95% CI 0.35-0.93) (Fig. 3).

Discussion

This is the first empirical study examining whether role reward modifies the impact of role-related stress on mental health in an ethnically diverse community sample of midlife women, taking into account menopausal status and symptoms. We also used a comprehensive approach by looking at the impact on mental health of stress and reward (and their interaction) across roles. Results showed that role reward was beneficial for three measures of mental health but buffered the impact of role stress only on social functioning. We extended previous findings limited to rewarding aspects of specific roles[46] and underscored the importance of the subjective experience of the woman's total role experience, especially with respect to social functioning, a key aspect of mature adulthood.[28]

This study extended earlier findings by Stephens et al.[46] by showing that reward in the *employed* or *mother* role was beneficial for social functioning and depressive and anxiety symptoms regardless of the influence of stress in these roles. We also found that reward in the married role was beneficial for depressive symptoms, regardless of the effect of role stress. Consistent with a previous community-based study of midlife women,[49] 12% of our sample cared for an older or disabled family member. Not surprisingly, occupying the caregiver role was associated with a higher likelihood to report high depressive symptoms or low social functioning. Caregiving is time consuming and has been associated with restricted social activity across ethnic groups[33–35,50] and with psychologic distress.[51]

With respect to the *within-roles buffering effect*, we found interesting results for family roles. High reward in the married role was associated with a decrease in the detrimental

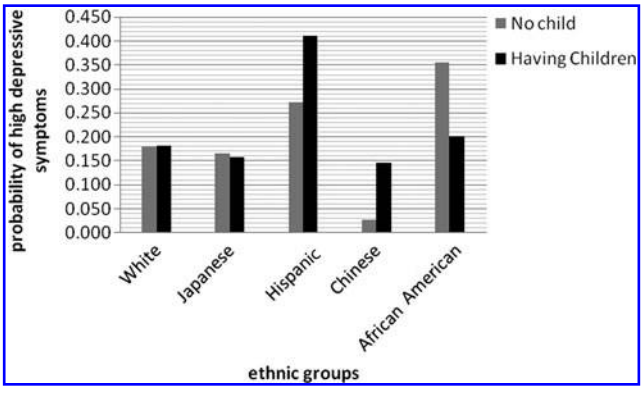

FIG. 2. Interactive effect of race/ethnicity and occupancy of mother role on presence of depressive symptoms.

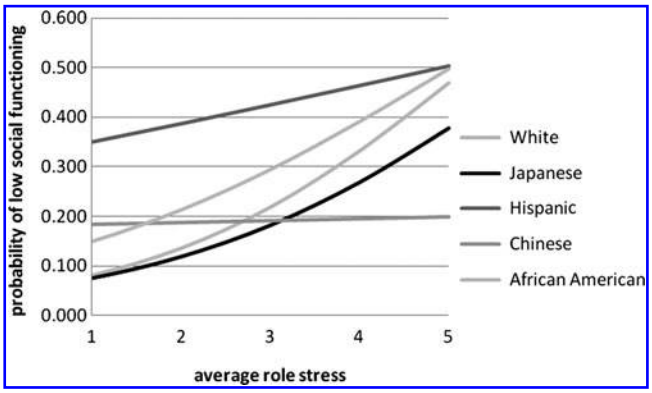

FIG. 3. Interactive effect of race/ethnicity and average role stress on presence of low social functioning. 1 = low reward; 2 = high reward.

effect of stress in this role on depressive symptoms. For *mothers*, high reward reduced the effect of high stress on depression and social functioning. We speculate that those midlife women experiencing high stress in their family roles may feel highly rewarded from successfully managing the challenges and thus, obtain mental health benefits.

The Maintenance Model Theory[52] posits that difficulties within a role allow one to understand its importance, which is a necessary condition for commitment in that role. Empirical support for this theory has been provided by some studies. For example, older adults who experienced adversity within a role they ranked as the most important (relative to other roles) were less likely to devalue the relative ranking of that role over a 4-year period.[53] When high stress was experienced in completing a task, individuals judging the task as important felt more committed to this task compared to those who did not consider it important.[52]

Although speculative, we argue that for some women the recognition of time limitation typical of middle age may be a positive developmental stimulus, prompting a reappraisal of relationships and priorities considered truly important and valuable.[54]

Race/ethnicity

Compared to Caucasians, the social functioning of Hispanics and Chinese was less affected by overall high role stress. Perhaps minority women are more likely to respond to stress in their roles by seeking contact with people who can provide social support and in turn help them to deal with burdening circumstances (e.g., financial strain).[55] This coping resource may be shaped by cultural factors such as familism (i.e., strong attachment, reciprocity, and loyalty to family members), suggested as a core value of the Hispanic community and described as key in the Chinese and African American cultures.[35,46,51,56]

Previous SWAN findings showed that compared to Caucasians, African American midlife women had a greater sense of identity and security[55] and, overall, no significant difference in depressive symptoms after accounting for their greater financial strain, poorer general health, and more stressful life events.[56] In the current analyses, however, African American mothers were less likely to report depressive symptoms than were Caucasian mothers, suggesting that African American mothers may emphasize the positive aspects of family and be less likely to report poor mental health than their Caucasian counterparts.

A number of limitations in the present study should be considered. First, the analyses were cross-sectional and, thus, do not address the direction of the relationship between roles and mental health. Second, we did not consider all variables previously shown to be important in the path leading from roles to mental health (copying styles, social support, working conditions),[35,46,51,56] and we did not control for specific role combinations.

Despite its limitations, the present study provides unique contributions. First, it is based on a large multiethnic cohort of midlife women that included five different ethnic groups. Second, we assessed mental health as a multifaceted phenomenon using psychologic symptoms (depression, anxiety) and social functioning and, thus, expanded findings of earlier community-based studies of midlife women. Previous studies pointed to the importance of measuring social functioning as an outcome itself,[28] as it is a key component of quality of life, an index of treatment success in psychiatric disorders,[28–30] and, when compromised, is an independent risk factor for subsequent major depression.[31] Third, we included factors specific to midlife (menopausal status and presence of vasomotor symptoms) along with sociodemographic and health covariates that have been associated with roles in earlier studies (education and self-rated physical health).

Conclusions

Previous population-based studies have established that number of roles *per se* does not have a significant effect on mental health.[11,14] However, whether or not the quality of roles serves as a risk or protective factor for mental health has long been debated. Although evaluating factors associated with worse mental health provides critical information, evaluating the protective effect of reward can increase insight into the complexity of the woman's role experience and ultimately inform preventive strategies. The positive impact of role reward found in this study has clinical implications, especially for primary care providers, who are often the first point of contact for nonclinical populations.

Understanding how race/ethnicity shapes women's role experience is an essential goal, given the increasing ethnic diversity in the U.S. population. Findings from this study represent an initial step in examining prospectively how role quality changes during midlife and to what extent it is associated with women's health among different ethnic groups.

Acknowledgments

The Study of Women's Health Across the Nation (SWAN) has grant support from the National Institutes of Health (NIH), DHHS, through the National Institute on Aging (NIA), the National Institute of Nursing Research (NINR), and the NIH Office of Research on Women's Health (ORWH) (grants NR004061, AG012505, AG012535, AG012531, AG012539, AG012546, AG012553, AG012554, AG012495). The content of this article is solely the responsibility of the authors and does not necessarily represent the official views of the NIA, NINR, ORWH, or NIH.

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Steering Committee. Susan Johnson, Current Chair; Chris Gallagher, Former Chair.

We thank the study staff at each site and all the women who participated in SWAN.

Disclosure Statement

No competing financial interests exist.

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