

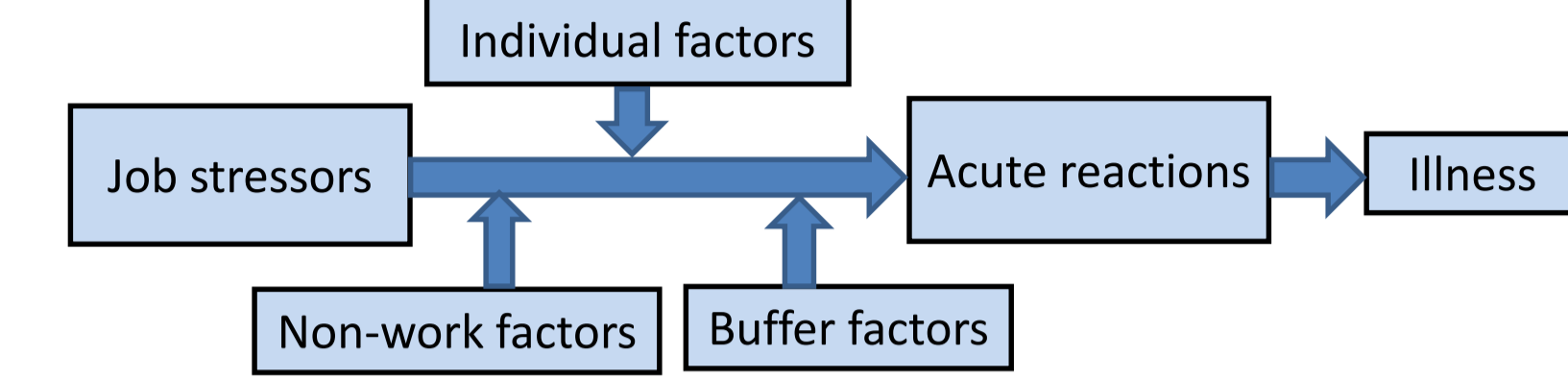
Can multiple roles at work and home improve the mental health of female nurses?

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Background

NIOSH model of Job Stress (Hurrell & McLaney,1988)



- There are many reports showing that nurses' mental health levels are low. →Nursing is one of the most stressful occupations.
- Current status of Japanese nurses
 - Top reasons for leaving full-time nursing over about 20 years: marriage, childbirth, parenting (Japan Nursing Association)
 - Top reasons 77.6% of potential nurses want to work again: parenting, difficulty balancing work and housework (Japan Ministry of Health, Labor and Welfare,2011)

But on the other hand...

- **Work Engagement:** Positive and fulfilling psychological state related to work(Schaufeli,W.B.)
- **Married nurses > Unmarried nurses** (Matsumoto et al,2010)
- **Nurses with multiple work and home roles > Without multiple roles** (Okada et al,2019)
- **Achievement at work and difficulty with burnout**
- **Nurse with children > Nurse without children** (Fukushima et al,2004)

→ **In Japan, taking on multiple roles in work and home has hindered living and working (reason for leaving the job, preventing reemployment, etc.).**
But on the other hand... Isn't taking on multiple roles at work and home a strength for living and working?

Job-Demands-Resources(J-DR)Model(Shimazu, Sato et al,2012) added "Spillover"

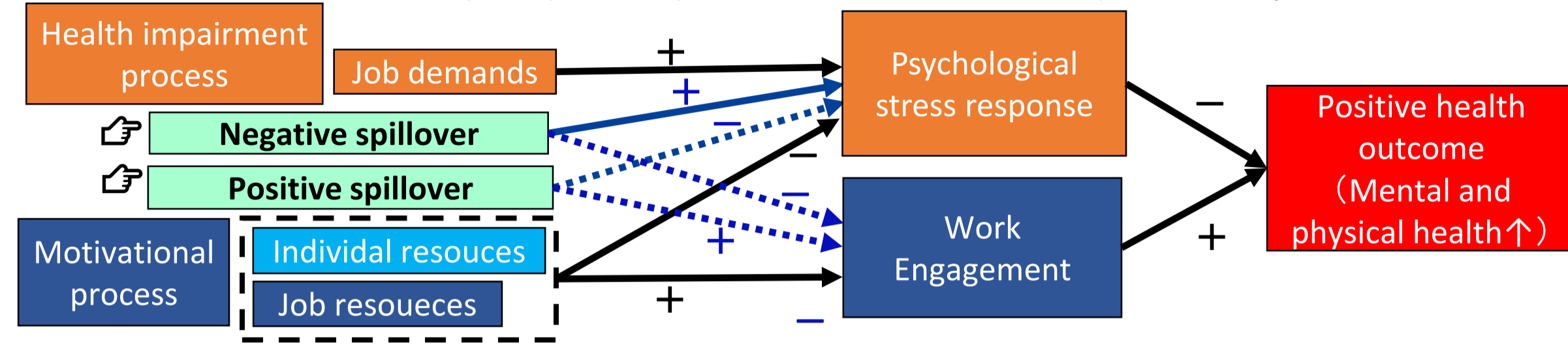


Fig1. Women's employment rate by age in each country

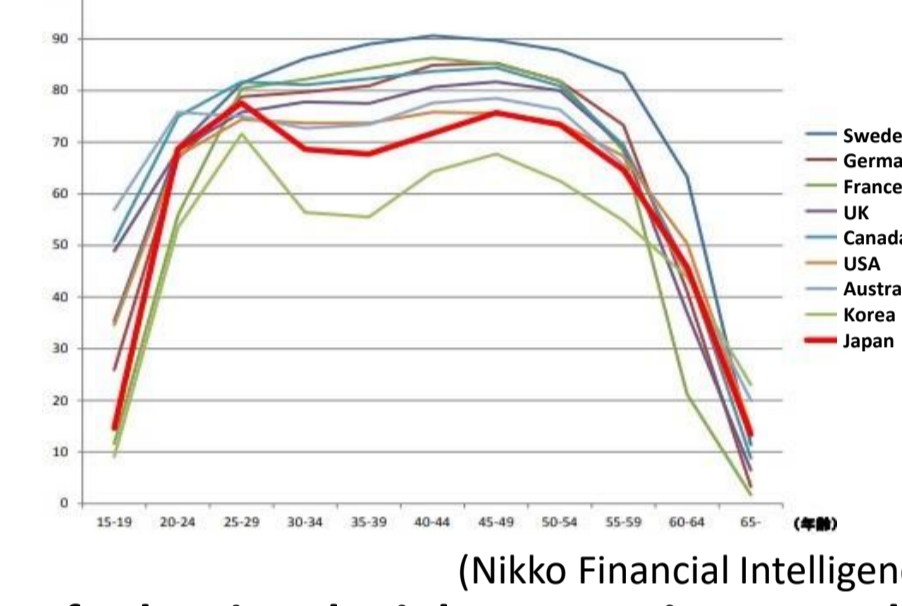
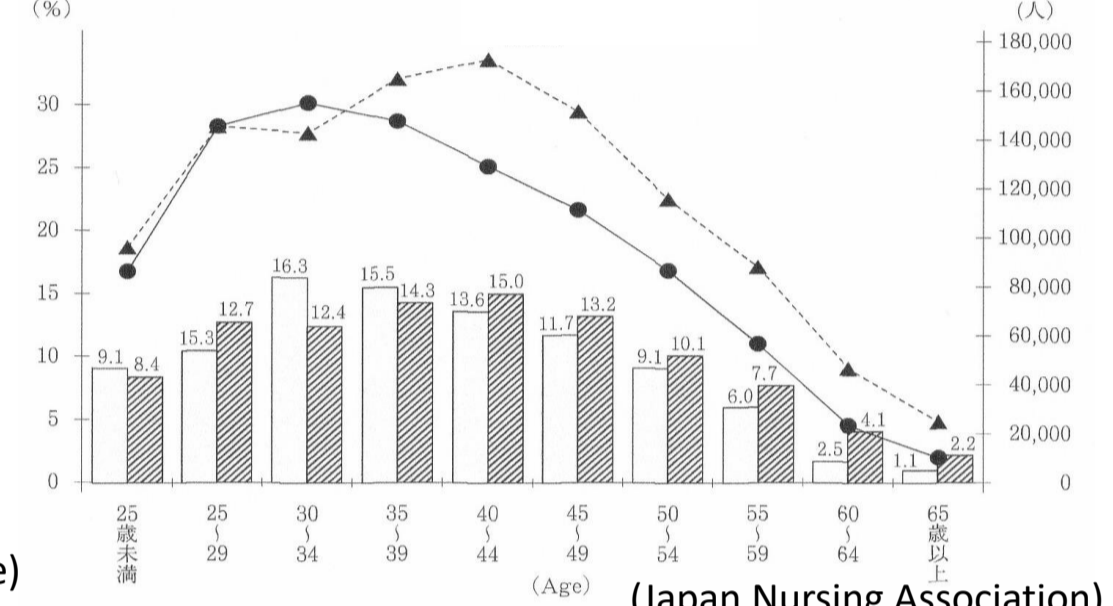


Fig2. Percentage of Japanese nurses by age group (2018年)



Purpose

The purpose of this study is to examine mental health and related factors in working female nurses, focusing especially on whether or not they play multiple roles in life.

Research design and Method

- ◆ A cross-sectional survey by providing anonymous self-administered questionnaires
- ◆ Subjects : 1,225 female nurses working in general hospitals of 200 or more beds in Prefecture A
- ◆ "Multiple roles" in this study were defined as work roles and family roles (wife role and /or mother role).
- ◆ The contents of the survey (scale) :
 - Attributes
 - Work Engagement (The Japanese version Utrecht Work Engagement Scale)
 - Coping characteristics (The Brief Scales for Coping Profile(BSCP)) : (6subscales, 18items, 4-point scales)
 - Problem-focused coping ; [Active solution for problem][Seeking help for solution]
 - Emotion-focused coping ; [Changing mood][Changing a point of view][Emotional expression involving others][Avoidance and suppression]
 - Job demands, Job resources (The new Brief Job Stress Questionnaire)
 - Job demands ; Question items that make up the "work burden" (14items, 4pointscales)
 - Job resources ; Question items that make up the "Job resources" (25items, 4pointscales)
 - Spillover (Japanese version of the Survey Work–Home Interaction – NijmeGen, the SWING (SWING-J))(4subscales,22items ,4pointscales)
 - Spillover is effect between work and family; this means that any event or situation arising in a role in either the "work domain" or the "family domain" affects circumstances of the roles in the other domain. (Fukumaru,2003)
 - Negative spillover ; [Work to Family Negative Spillover: WFNS] [Family to Work Negative Spillover: FWNS]
 - Positive spillover ; [Work to Family Positive Spillover: WFPS] [Family to Work Positive Spillover: FWPS]
 - Mental health (The Center for Epidemiologic Studies Depression Scale(CES-D)).
 - A lower score indicates a higher mental health level.
- ◆ An ethical consideration : Approval was received from the University of Occupational and Environmental Health Ethics Committee (Approval No. H28-156)
- ◆ Analysis : We carried out the analysis by first grouping the participants into two groups according to whether or not they have multiple roles at work and at home , a multiple role group (N = 262) and a no multiple role group (N = 350), followed by a formulation of Mann-Whitney U-Test comparisons between the two groups in terms of participant attributes and scores for each scale. Next, using the entire analysis population, we carried out a single regression analysis with mental health (CES-D) as the objective variable and each variable as the corresponding explanatory variable. After this, the significantly correlated variables were used as the explanatory variable to carry out hierarchical multiple regression analysis.

Result

We recovered responses from 650 people (recovery rate: 53.1%), and the number of effective responses came from 620 people (effective response rate: 50.6%).

Table1. Comparisons of Variables based on the Presence or Absence of Multiple Roles

Variable	All subjects (N = 612)			Subjects with multiple roles (N = 262)				Subjects without multiple roles (N = 350)				p				
	Median	Range		Median	Range		Percentile		Median	Range			Percentile			
Individual factors	Age(year)	34.0	22	63	39.5	24	63	33.0	46.0	28.0	22	59	25.0	38.0	<0.001	
Personal resource (coping)	BSCP ^a															
	Active solution for problems	Range3~12	9.0	3.0	12.0	9.0	3.0	12.0	8.0	11.0	9.0	3.0	12.0	7.0	10.0	<0.001
	Seeking help for solution	Range3~12	9.0	3.0	12.0	9.0	3.0	12.0	7.0	10.0	9.0	3.0	12.0	7.0	10.0	0.073
	Changing mood	Range3~12	8.0	3.0	12.0	8.0	3.0	12.0	6.0	10.0	9.0	3.0	12.0	6.0	10.0	0.002
	Changing a point of view	Range3~12	7.0	3.0	12.0	7.0	3.0	12.0	6.0	9.0	7.0	3.0	12.0	6.0	8.0	0.206
	Emotional expression involving others	Range3~12	6.0	3.0	11.0	6.0	3.0	11.0	5.0	7.0	6.0	3.0	11.0	5.0	7.0	0.842
Work domain	Job demands	Range1~4	3.0	1.0	4.0	3.0	1.0	4.0	3.0	3.0	3.0	2.0	4.0	3.0	3.0	0.001
	Job resources	Range1~4	3.0	1.0	4.0	2.0	1.0	3.0	2.0	3.0	3.0	1.0	4.0	2.0	3.0	0.422
Work and family domain (Spillover)	SWING-J ^b															
	WFNS ^c	Range0~3	0.9	0.0	3.0	0.9	0.0	3.0	0.5	1.3	0.9	0.0	2.9	0.4	1.1	0.003
	FWNS ^d	Range0~3	0.0	0.0	2.3	0.0	0.0	2.0	0.0	0.3	0.0	0.0	2.3	0.0	0.0	0.088
	WFPS ^e	Range0~3	1.0	0.0	3.0	1.2	0.0	3.0	1.0	1.6	1.0	0.0	3.0	0.8	1.4	<0.001
	FWPS ^f	Range0~3	1.2	0.0	3.0	1.4	0.0	3.0	1.0	2.0	1.0	0.0	3.0	0.6	1.6	<0.001
Work Engagement	UWES-J ^g															
	Total score	Range0~6	2.6	0.0	6.0	3.2	0.0	6.0	2.0	4.2	2.2	0.0	6.0	1.2	3.3	<0.001
	Vigor	Range0~6	2.5	0.0	6.0	3.0	0.0	6.0	1.7	4.3	2.0	0.0	6.0	0.7	3.1	<0.001
	Dedication	Range0~6	3.3	0.0	6.0	4.0	0.0	6.0	2.7	5.0	3.0	0.0	6.0	2.0	4.3	<0.001
Mental Health	Absorption	Range0~6	2.1	0.0	6.0	2.3	0.0	6.0	1.0	3.7	1.7	0.0	6.0	0.3	3.0	<0.001
	CES-D ^h	range0~60	12.0	0.0	54.0	11.0	0.0	54.0	7.0	16.0	14.0	0.0	54.0	9.0	18.8	<0.001

^a Brief Scales for Coping Profile , ^b Japanese version of the Survey Work–Home Interaction – NijmeGen, ^c Work to Family Negative Spillover, ^d Family to Work Negative Spillover, ^e Work to Family Positive Spillover, ^f Family to Work Positive Spillover

^g The Japanese version of the Utrecht Work Engagement , ^h The Center for Epidemiologic Studies Depression Scale, P: Comparison of subjects with and without multiple roles using Mann-Whitney U-test

Table2.Factors associated with Mental Health in the hierarchical multiple regression analyses (N = 612)

Variable	β	95%CI		P	
		Min	Max		
Individual factors	Years of experience	0.044	-0.003	0.013	0.222
	Frequency of night shifts per month	-0.003	-0.034	0.032	0.942
	Type of employment (0: non-regular member of staff, 1: Regular member of staff)	-0.047	-0.431	0.076	0.169
Personal resource (coping)	Active solution for problem	-0.019	-0.046	0.027	0.621
	Seeking help for solution	-0.011	-0.039	0.029	0.775
	Changing mood	-0.157	-0.091	-0.036	P<0.001
	Changing a point of view	-0.111	-0.088	-0.019	0.002
	Emotional expression involving others	0.057	-0.006	0.079	0.095
Work domain	Avoidance and suppression	0.170	0.051	0.126	P<0.001
	Job demands	0.043	-0.051	0.255	0.190
Work and family domain (Spillover)	Job resources	-0.114	-0.341	-0.093	0.001
	WFNS	0.277	0.342	0.573	P<0.001
	FWNS	0.142	0.181	0.501	P<0.001
Outcome of Work domain	FWPS	-0.015	-0.123	0.080	0.677
	UWES-J Work Engagement Total score	-0.176	-0.167	-0.068	P<0.001
Presence or absence of multiple roles (0: without multiple roles, 1: with multiple roles)	-0.212	-0.573	-0.278	P<0.001	
Adjusted R2 coefficient and variation for each model and standardized regression coefficient				0.434	
Adjusted R2 variation				0.448	
F value				30.224	
Significance probability of analysis of variance				P<0.001	

Discussion

The analysis population had lower mental health levels than healthy women of the same age group¹, and nurses with multiple roles were shown to have better mental health than nurses without. Furthermore, the fact that deterioration of the mental health of female nurses is related to work resources and WE corresponded with the JD-R model (Job-Demand Resource model)^{2, 3} and also with previous research in terms of the fact that it is related to "change of pace", "change in viewpoint", and "avoidance and suppression" as coping characteristics and WFNS as spillover^{4,5}. In addition, this study shows anew that there is a relationship between mental health and family to work negative spillover (FWNS). The study also shows that negative influences from both work and home deteriorate the mental health of female nurses. In addition, while the multiple role group had a higher WFNS than the no multiple role group, they tended to have higher WE, a regulatory factor raising the mental health level, and cope with stress more effectively. Therefore, while having multiple roles makes a nurse vulnerable to transferring negative influences from work to family, it could also serve as a source of strength to improve mental health.

Conclusion

Although the mental health level of working female nurses was low, we have shown that having multiple roles may be a source of strength for nurses to maintain and improve their mental health levels. For this reason, to assist female nurses in maintaining a healthy mental state while working, we believe that it is important not only to enhance the work resources but also to provide support for nurses in order to gain satisfaction in their family and home life.

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Funding

This study was funded by an FY 2016 UOEH Research Grant for Promotion of Occupational Health and a Grant-in-Aid for Scientific Research (C).