Impact of the Resilience to Menopausal and Depressive Symptoms among Middle-aged Women

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ABSTRACT

<Background> Middle-aged women sometimes experience physical or psychological discomfort. Declining hormonal levels, especially estrogen, cause menopausal symptoms in the middle age such as flash, sweat, palpitation, fatigue and depressive mood. Recently a concept of resilience has been paid a lot of attention among researchers. It means the capacity to cope with stressful situations and adversity which prevent becoming ill. It is also considered to suppress depression. I investigated the relation of resilience to menopausal and depressive symptoms in middle-aged women.

<Methods> I administered questionnaires to 300 healthy women and 92 female outpatients diagnosed as depression. Questionnaires for healthy women were given through the Internet while patients had them handed out at a clinic. The types of questionnaires used were the Kupperman Kounenki Shougai Index (KKSI), the Patient Health Questionnaire-9 (PHQ-9), and the Bi-dimensional Resilience Scale (BRS).

<Results> The average scores of scales in patient and healthy groups were compared using the t-test method. The patient group has significantly higher physical menopausal and depressive symptoms than the healthy group. The healthy group has significantly higher resilience than the patient group. Next, the multiple regression analysis showed that physical menopausal symptoms gave positive influence on depressive symptoms. On the other hand, the age and resilience gave negative influence on depressive symptoms in the 2 groups. However, there was no correlation between resilience and physical menopausal symptoms.

<Conclusions> Resilience influenced depressive symptoms which were related to physical menopausal symptoms. Therefore, resilience may indirectly give a negative influence to physical menopausal symptoms. Further research is needed.

Key words : resilience, depression, menopause, middle age, women

INTRODUCTION

The menopause transition is a period of important physical and emotional changes which are in general determined by biological, cultural, social and psychological aspect within the aging process (Chedraul et al., 2012). Menopause transition is approximately a 10 year period from premenopause to postmenopause. Biologically, menopause is defined as the permanent cessation of menstruation resulting from loss of ovarian hormone activity. The average age of menopause is 50 years old (Nakazawa, 2003). Psychologically, menopause transition is also the process which every woman deals with. Decreasing ovarian hormone levels, especially estrogen, from premenopause to postmenopause often causes various physical and/or psychological symptoms referred to “menopausal symptoms”. They include flash, palpitation, physical limitations, vaginal dryness, sleep disturbance, fatigue, depressive mood, anxiety, irritability and so on. The severity of menopausal symptoms is varied. When a woman suffers from menopausal symptoms and her daily life is impaired due to these symptoms, it is defined as climacteric disorder (Miyaoka, 2010). It is also well known that women with climacteric disorder often suffer from depression (Miyaoka, 2014).

A large number of researches have shown psychological distress during the menopause transition. But less is known about the experience of positive well-being (Brown et al., 2015). It includes resilience. Resilience refers positive adaptation in the context of risk or adversity (Cutuli and Masten, 2009). In other words, it is the capacity to cope with stressful situations and adversity which prevent becoming ill (Chedraui et al., 2012). It is one of the protective factors of depression. Middle age seems to be a troublesome period. Middle-aged women may come across physical, psychological, social distress which are associated to unhealthiness, negative feelings, depressive mood, loneliness, economic or family problems and low life satisfaction (Coronado, 2015). Hence, women with high resilience could better cope with adversity. However, little is known about the relation between resilience and menopause transition. This study aimed to investigate resilience among middle aged women and reveal the association between resilience, depression and menopausal symptoms.

METHODS

Study design and subjects

A cross-sectional study was administrated from October 2014 to February 2015. The aim of this study was to compare women without depression who were named as the healthy group and women with depression. As for the healthy group, an Internet research company gathered 300

monitors who were married women in their 40's and 50's. I ruled out 5 women who had treatment for depression in the past and/or present. The remaining subjects (295) were analyzed as the healthy group. For collecting data of depressive women, my colleague psychiatrists and I handed out the same questionnaires to outpatients at the clinic. They were 40's and 50's women who were diagnosed as depressive disorders. As a result, 51 of 92 patients responded. The ethics committees of Tokyo Women's Medical University and Atomi University approved the conduct of this study.

Procedure

A self-administrated questionnaire consisted of items on demographics and psychological scales which is as follows.

1. Demographics

Demographic information such as marital status, children and jobs were obtained. I also asked information about menstruation or menopause. The healthy women were asked whether they had taken and/or took treatment for depression. These women were excluded from the healthy group.

2. The Kupperman Kounenki Shougai Index (KKSI)

Abe and Morizuka (1996) developed the Japanese revised version of Kupperman's scale (Kupperman et al., 1953) adding items which were common in Japanese women. It consists of 17 items about physical and psychological symptoms such as 1.flash, 2.sweat, 3.cold, 4.palpitation, 5.short of breath, **6.**numbness, 7.hypoesthesia, 8.vertigo or nausea, 9.fatigue, 10.arthralgia or myalgia, 11.headache, 12.formication, 13.insomnia about difficulty in getting sleep, 14.insomnia about nocturnal awakening, 15.irritability, 16.nervousness and 17.depressive mood. I changed the grading system from the original method in which some parts are scored more severely than others. I scored from 0 to 3 (no, slight, moderate, and severe complaints) for all. Then I used items about typical menopausal physical symptoms such as flash, numbness or headache. It included vascular motor (flash, sweat, cold, short of breath or palpitation), dysesthesia (numbness or formication), pain (head, shoulders, low back or joints) and dizziness (see Table 1). The total score of these items were summed and named as physical menopausal symptoms.

3. The Patient Health Questionnaire (PHQ-9)

It is a screening tool for depression (Kroenke, et al., 2001; Kroenke, et al., 2002). It is based on the Primary Care Evaluation of Mental Disorders (PRIME-MD) which measures mental disorders (Spitzer, et al., 1994). It consists of 9 items about depressive mood, low energy, feeling

of self-accusation, low concentration, having difficulties in their jobs, house work or personal relations, and slow movement or irritation. The Japanese version was developed by Muramatsu et al. (Muramatsu, et al.,2008).

4. The Bi-dimensional Resilience Scale (BRS)

This scale measured resilience. It consists of the innate resilience score (12 items) and the acquired resilience score (9 items) (Hirano, 2010). In this study, I used the total score which were both added (21 items).

Table 1
Physical menopausal symptoms by KKSI

1. Vascular motor・・flash, sweat, cold, short of breath or palpitation
2. Dysesthesia・・・・numbress or formication
3. Pain ・・・・・・・・・・head, shoulders, low back or joints
4. Dizziness

KKSI: Kupperman Kounenki Shougai Index

Statistical analysis

Statistical analysis was conducted using the Statistical Package for Social Science Software (SPSS) version 16. The t-test and $\chi 2$ test were used to compare the demographic variables and average scores between the patient and healthy groups. Significance tests were two tailed. The multiple regression analysis was used to investigate influence on physical menopausal symptoms and depressive symptoms. Physical menopausal symptoms and depressive symptoms were determined as the dependent variables. A p value of less than 0.05 was considered statistically significant.

RESULTS

I compared 295 healthy women and 51 female patients in their 40's and 50's. The healthy women were not suffering from depressive disorder and did not have a history of it. The patients were diagnosed as depressive disorders and had a treatment for it. Their ages ranged from 40 to 59 years.

Table 2 showed the background of the two groups. The average age of the patient group (49.7± 5.10) was significantly higher than that of the healthy group (47.3±5.31). The healthy group

consisted of only married women. The patient group was almost equally divided into married and unmarried. The percentage of having children was 74% in the healthy group and 67% in the patient group. Sixty percent of the healthy women didn't have any job, while the patients showed 31%.

Table2

Background

	Healthy group	Patient group	p value
No.	295	51	
Average Age (SD)	47.3 (5.31)	49.7 (5.10)	***
Marriage			
Yes	295 (100%)	26 (51%)	***
No	0	25 (49%)	
Children			
Yes	217 (74%)	34 (67%)	ns
No	78 (26%)	17 (33%)	
Job			
Full-time	39 (13%)	12 (24%)	
Part-time	77 (26%)	21 (41%)	***
No (housewives or un-employed)	178 (60%)	16 (31%)	
Others	1(0.3%)	2 (4%)	
Menstruation			
Premenopause	209 (71%)	27(53%)	
Perimenopause	11 (4%)	5 (10%)	*
Postmenopause	75 (25%)	19 (37%)	

age : t test other variables : X^2 test SD: standard deviation

ns: not significant *p＜0.05 **p＜0.01 ***p＜0.001

Then I asked about menstruation. When a woman answered she had a regular or almost regular menstruation cycle, I categorized them in the premenopausal stage. When a woman didn't have menstruation for more than 3 months to less than 1 year, she was considered being in the perimenopausal stage. When a woman didn't have any menstruation for more than 1 year, I grouped her in the postmenopausal stage. The percentage of the premenopausal stage was 71% in the healthy group and 53% in the patient group. The percentage of the perimenopausal stage was 4% in the healthy group and 10% in the patient group. The percentage of the postmenopausal stage was 25% in the healthy group and 37% in the patient group. There is a significant difference in the both groups.

I compared the average scores between the healthy and patients groups using the t-test (see Table 3). The patient group scored higher than the healthy group in the scores for physical menopausal symptoms, vascular motor, dysesthesia, pain and dizziness (using KKSI) and depressive symptoms (using PHQ-9). On the other hand, the resilience score was higher in the

healthy group than in the patient group.

Table 3

Comparison of the average scores in the 2 groups

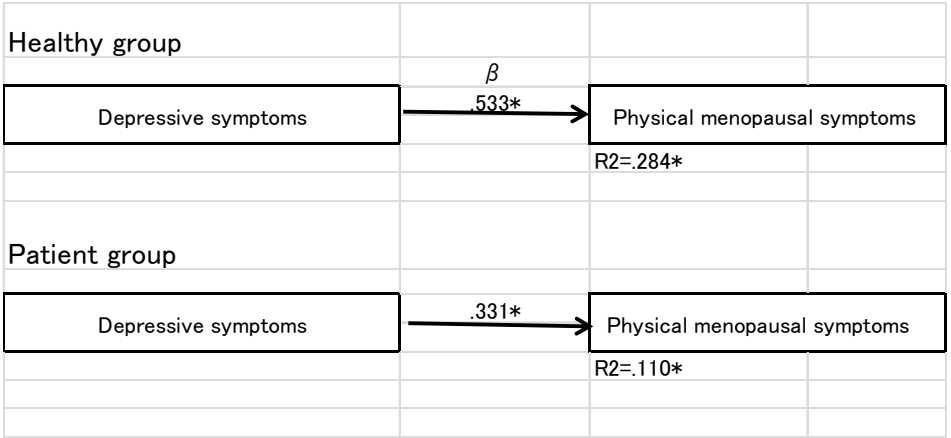
		Healthy group (N=295)	Patient group (N=51)	p value
Physical menopausal symptoms (KKSI) (total)		2.47	4.38	***
1	Vascular motor (flash, sweat, cold feet and hands, short breath or palpitation)	0.69	1.24	***
2	Dysesthesia (numbness or formication)	0.31	0.56	*
3	Pain (head, shoulders, low back or joints)	1.21	2.01	***
4	Dizziness	0.26	0.57	***
Depressive symptoms (PHQ-9)		3.97	12.55	***
Strength of Resilience (BRS)		51.41	45.04	***

t test　ns: not significant　*p＜0.05　**p＜0.01　***p＜0.001

KKSI: Kupperman Kounenki Shougai Index　PHQ-9: Patient Health Questionnaire

BRS: Bi-dimensional Resilience Scale

I further investigated the factors which influenced the physical menopausal and depressive symptoms by the multiple regression analysis (see Figure 1, 2). Physical menopausal symptoms were positively influenced by depressive symptoms in both groups. However, there was no correlation between resilience and physical menopausal symptoms (Figure 1). The depressive symptoms were positively influenced by physical menopausal symptoms and negatively influenced by the age and resilience in the both groups (Figure 2).



Multiple regression analysis

The independent variable is depressive symptoms (the significant variable is only shown). The dependent variable is physical menopausal symptoms.

* P<.05,

Figure 1　Influence on physical menopausal symptoms

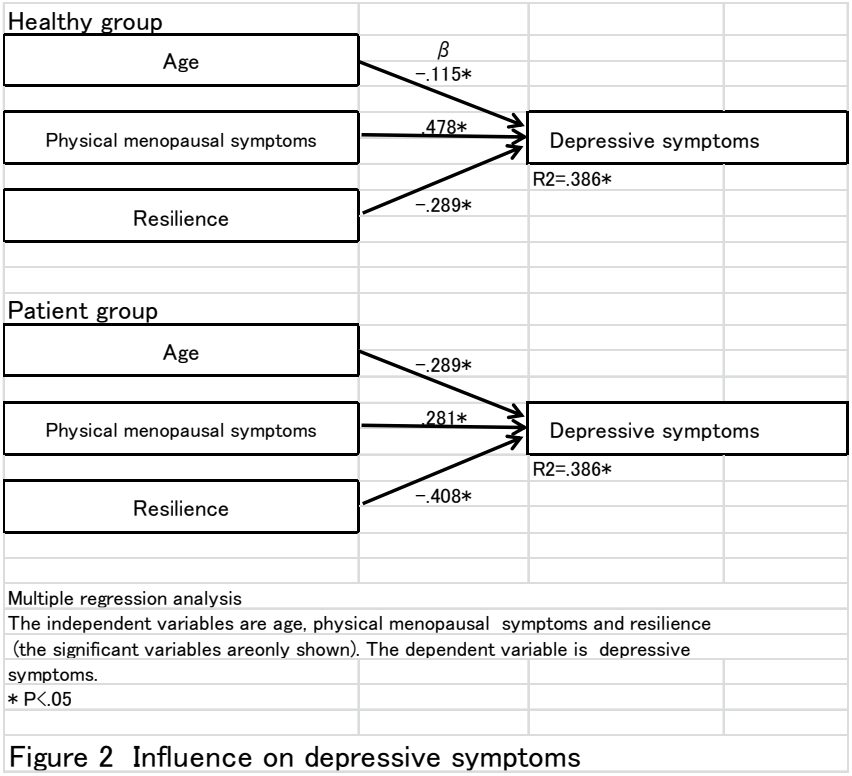


Figure 2 Influence on depressive symptoms

DISCUSSION

The current study focused on resilience in the psychological aspect. There are a few researches on relation between resilience and menopausal symptoms. Resilience may make women feel less bothered by menopausal symptoms. Duffy et al. (2012) reported women having high resilience tend not to regard their menopausal symptoms as high consequences on their lives during menopausal transition. In the Study of Women's Health Across the Nation (SWAN), women who reported frequent hot flashes and low levels of bother in their lives were more likely to be married and less likely to have negative affect than those reporting a similar frequency of hot flashes and high levels of bother (Thurston, et al., 2008). Chedraui et al. (2012) investigated resilience and related factors among middle aged women. They reported that less resilience was correlated with severe hot flush, sedentary life style, fatness, and discomfort in the relationship with women's partners. Brown et al. (2014) considered self-compassion as one factor of resilience and revealed that self-compassion might reduce hot flush and depressive symptoms. On the other hand, Pérez-López et al. (2014) showed that there was no correlation between the resilience scale and menopausal symptom scores among woman aged 48-68 on liner regression analysis. Their

results were correspondent with my current study. They also reported resilience was inversely associated with depressed mood and positively associated with regular exercise among them. In conclusion, it revealed that resilience influenced depressive symptoms which were related to physical menopausal symptoms. Resilience may indirectly give a negative influence to physical menopausal symptoms.

In a previous study, resilience showed positive correlation with general life satisfaction and self-esteem and negative correlation with depression (Beutel et al., 2009). Predictive factors of resilience were lower age, a higher household income in the German study. Beutel et al.(2009) also showed the level of resilience across the life span of women. Unfortunately, there was the significant reduction of resilience among women over 60's. Middle age may signify the decline of resilience. Women in the middle age have to find a way to keep high resilience to cope with their aging lives. Therefore further study is needed.

Limitations

There were several methodological limitations in this study. The patients responded to a questionnaire on paper. On the other hand, women in the healthy group answered it through the internet. These different methods may influence the results.

The sample size of subjects was small and the patients attended only one clinic. They could not represent all female patients with depression and healthy women in the middle age. As showed in the background data on table 2, there were significant differences in demographic data among two groups such as ages, marital status, jobs, and menstrual stages. These differences might influence the results.

Competing Interests

I declare no competing interests.

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