

Psychological factors which are associated with the onset of depression in middle aged women

Yoshiko Miyaoka¹⁾, Toshiko Kamo²⁾

1) Atomi University

2) Institute of Women's Health, Tokyo Women's Medical University

ABSTRACT

Perimenopausal period ranges from 45 to 55 years old, with 50 being the average age of menopause. Hormonal changes, especially estrogen deficiency causes menopause. The onset of depression among women in perimenopausal period is associated with hormonal changes. Women in their forties and fifties often encounter various changes in social circumstances. These psychological factors are also related to the onset of depression. We investigated psychological factors which were related to the onset of depression in 19 married women of middle age and compared them to 7 married, middle aged women suffering from neurotic disorder. Women in depression were worried significantly more about the relationship with their husbands rather than women in neurotic disorder. Other concerns of the depressive women were problems with their children, caring for their parents and bereavements. Only one case in depression was suffering from empty nest syndrome that describes loneliness after children have left home. The result implies that empty nest syndrome may not be strongly related to depression in middle aged women, although it is a well-known theory. Other problems with their husbands and their children, rather than empty nest syndrome, such as the behavior of children still living at home, negative feelings toward their husbands and infidelity of their husbands were far more influential in the onset of depression.

INTRODUCTION

Menopause seems to be a time of loss. Menopause occurs at the time of a woman's last menstrual period. The WHO defines it as 'the permanent cessation of menstruation resulting from loss of ovarian follicular activity'. Menopause is determined after a period of 12 months of spontaneous amenorrhea has been observed. Irregular menstruation can occur for some years preceding menopause, as production of estrogen and progesterone decreases. Levels of FSH (follicle-stimulating hormone) and LH (luteinizing hormone) rise as the result of negative

feedback. Low levels of estrogen and high levels of FSH are key indicators of menopause. The average age of menopause is 51.5 years old in North American and European women¹⁾ and 50.5 for Japanese women.²⁾

Perimenopause is defined as the period before menopause and it ranges from 45 to 55 years old. Many women experience physical and/or psychiatric symptoms due to hormonal changes during perimenopausal period. Vasomotor symptoms, including hot flushes, flushes and sweating, and vaginal dryness are symptoms which are clearly associated with the hormonal changes, in particular the decreasing of estrogen secretion. Other symptoms which are attributed to hormonal changes include physical and psychiatric symptoms; headaches, lumbago, paresthesia, insomnia, fatigue, problems of concentration and memory, loss of interest and libido, irritability, depression and anxiety. Lock et al.³⁾ investigated physical and psychiatric symptoms in 1141 Japanese women aged 45–55. They reported having shoulder stiffness (51.7%), headaches (27.7%), chilliness (16.3%), hot flushes (9.5%), sudden sweats (4.2%), irritability (11.9%), insomnia (11.4%) and depressive mood (3.9%).

The rate of depression rises in middle age. Women encounter many hardships, problems and changes of circumstances and roles in middle age. These psychological factors can be a trigger of the onset of depression as well as hormonal changes at menopause. As for empty nest syndrome, it is known as a state in middle aged married women which seems to be associated with depression or anxiety disorder. Empty nest syndrome is described as the loss of mothering role and lonely feelings when children leave home. It is quite a stereotypical theory. Contrary to the theory, some researchers have shown that women are relieved when their children become independent.^{4, 5, 6)}

We investigated the relationships between depression, menopause and psychological factors in middle aged women.

SUBJECTS AND METHODS

The Subjects were 26 women who had attended a mental care clinic in Tokyo on Tuesday afternoons from December 2004 to November 2006. The women were selected according to the following; from 45 to 55 years old, housewives with or without jobs, having children and suffering from depressive disorders or neurotic disorders diagnosed with the ICD-10.⁷⁾ Depressive disorders include recurrent depressive disorder and dysthymia. Neurotic disorders include anxiety disorder and adjustment disorder. We investigated their medical charts retrospectively.

Student's t test was used to compare ages, number of children and number of adverse

events between the women in depression and the women in neurosis. The differences in the other variables between the two groups were analyzed by using χ^2 test.

RESULTS

Table 1 describes the demographic characteristics of the subjects. There were 19 subjects in the depression group and 7 in the neurosis group. The total number of subjects was 26. The total average age was 49.9 years old. There was no difference in the average age between the two groups. Total number of the divorced women was 4 out of 26. There was a significant difference between the depression group (1 out of 19) and neurosis group (3 out of 7, $p < 0.05$). Total number of employed women was 9 out of 26. There was no significant difference between the two groups (8 in depression vs. 1 in neurotic disorder). Total average number of their children was 2.0. There was no significant difference between the two groups (1.8 in depression vs. 2.7 in neurotic disorder). The total average age of their children was 19.9 years old. The average age of their children in the depression group (18.8 years old) was significantly lower than in the neurosis group (22.1 years old, $p < 0.05$).

We grouped the subjects into three by menstrual status; premenopause, perimenopause and postmenopause. Premenopause is defined as having regular menstrual cycles. Perimenopause is defined as menstrual cycles becoming irregular. Postmenopause is defined as

Table 1 Characteristics of Subjects

Variable	Total	Depression group	Neurosis group	P
Number of subjects	26	19	7	
Average age (years)	49.9	49.4	51.4	ns
Divorced	4	1	3	<0.05
Employed	9	8	1	ns
Average number of children	2.0	1.8	2.7	ns
Average age of children (years)	19.9	18.8	22.1	<0.05
Menopausal status				
Premenopause	2	2	0	} ns
Perimenopause	12	9	3	
Postmenopause	12	8	4	
Vasomotor symptoms	10	6	4	ns
Therapy for perimenopausal symptoms	8	6	2	ns
Hystory of hysterectomy	1	1	0	ns

Depression group: subjects diagnosed as having depressive disorders

Neurosis group: subjects diagnosed as having neurotic disorders

Student's t test was used for ages and number of children.

χ^2 test was used for other variables.

continuing a secession of menstruation for more one than year after the last menstruation. In total, 2 were in premenopause, 12 were in perimenopause and 12 were in postmenopause. In the depression group 2 were in premenopause, 9 were in perimenopause and 8 were in postmenopause. In the neurosis group 3 were in perimenopause and 4 were in postmenopause. No one was in premenopause in the neurosis group. There was no difference between the depression group and the neurosis group in menopause status.

Ten women out of 26 showed vasomotor symptoms such as hot flushes or sweating. Vasomotor symptoms are chief perimenopausal symptoms. There is no significant difference between the depression group (6 out of 19) and the neurosis group (4 out of 7). We confirmed whether patients were treated for perimenopausal symptoms. Eight women were under treatment for perimenopausal symptoms. There is no significant difference in the treatment between the depression group (6 out of 19) and the neurosis group (2 out of 7). One in the depression group had undergone a hysterectomy which caused surgical menopause.

Table 2 shows adverse life events which occurred within 1 year before the onset of psychiatric disorders. All women had encountered at least one adverse life event. The total number of adverse events was 1.5. There is no significant difference between the depression group (1.6) and the neurosis group (1.4) .

Problems with their children (14 cases) and their husbands (14 cases) were the most frequent events in the total number of the two groups. There was no significant difference in problems with children between the depression group (9 cases) and neurosis group (5 cases). Problems with children included 2 cases (one in the depression group and the other in the neu-

Table 2 Adverse events at the onset

Variable	Total	Depression group	Neurosis group	P
Number of subjects	26	19	7	
Average number of adverse events	1.5	1.6	1.4	ns
Problems with children (empty nest syndrome)	14 (2)	9 (1)	5 (1)	ns ns
Problems with husband	14	13	1	<0.05
Problems with parents	7	5	2	ns
Physical health problems	3	2	1	ns
Financial problems	2	1	1	ns

Depression group: subjects diagnosed as having depressive disorders

Neurosis group: subjects diagnosed as having neurotic disorders

Student's t test was used for average number of adverse events.

χ^2 test was used for other variables.

rosis group) of empty nest syndrome. These cases complained as follows. Case 1 was diagnosed as having depressive disorder. Case 2 was diagnosed as having neurotic disorder.

<Case 1> My sons have already grown up. It doesn't take a lot of time to care for them. I have shifted my life focus from my children to my husband.

<Case 2> My kids used to fight fiercely. I was concerned but the quarreling has stopped. They come home late from regular school or cram school. My time with them is decreasing. I feel lonely.

They complained of loneliness as their children didn't need their care. But their chief complaint was problems with their husband, not empty nest. In other cases problems with their children were social withdrawal, truancy, mental disease, acting out and child care fatigue.

Problems with their husbands in the depression group (13 cases) were significantly higher than the neurosis group (1 case). Problems with their husbands included infidelity of their husband, negative feelings toward their husband, working away from home, lack of cooperation regarding children's problems and their husband's health problems. Marital discord such as infidelity and negative feelings was the most frequent problems (9 cases). Two women who were worried about problems with their children's social withdrawal or truancy felt resentment at lack of their husband's cooperation.

Other problems included problems with parents (nursing of one's or spouse's parents and death of parents), physical health problems (endometriosis, chronic hepatitis and rheumatoid arthritis) and financial problems. Problems with parents were shown in 7 cases (5 cases in depression vs. 2 cases in neurosis), physical health problems in 3 cases (2 cases in depression vs. 1 case in neurosis) and financial problems in 2 cases (1 case in depression vs. 1 case in neurosis). There was no significant difference between the depression group and the neurosis group regarding problem category. One case who had financial problems in the depression group was caused by a problem with her husband who couldn't work enough because of his illness.

DISCUSSION

Perimenopausal period is an entrance toward aging. Many perimenopausal women begin to notice some physical changes such as their appearance and health problems. They also encounter environmental changes such as children leaving home, their husband's promotion and retirement, parents' aging or death and their own job situation changing. Women in middle age are called "sandwich generation", who are responsible simultaneously for child rearing and for

the care of aging patients¹⁾. Therefore, some women become distressed physically and/or psychologically.

Our data showed the menstrual status which was grouped into premenopause, perimenopause and postmenopause is not significantly different between the depression group and the neurosis group. Kaufert et al.⁴⁾ assessed the relationship between menopause and depression in 477 women who were 40–59 years old. The results showed that the likelihood of becoming depressed was not significantly altered by a menopausal status which was categorized into premenopause, perimenopause and postmenopause. Dennerstein et al.⁸⁾ demonstrated that menopause transition had no direct effect on negative moods such as depressive moods in 345 Australian middle aged women. Mckinlay et al.⁹⁾ found that life events in mid-life that were related to menopause had strong associations with depressed mood, but the timing of menopause did not.

The most frequent events in the depression group were problems with their husbands and their children. In particular, the number of problems with their husbands in the depression group was significantly higher than in the neurosis group. It implies that having problems with a husband is a predictive factor in the occurrence of depression. Kaufert et al.⁴⁾ also revealed that the likelihood of depression was increased for women with current problems in their lives, particularly if their problems lay in their relationships with their husbands and children. Donnerstein et al.⁸⁾ showed that moods were significantly affected by negative feelings for their husbands, daily hassles and high stress. Our results back up these findings.

Although problems with children are a burden to women, empty nest syndrome was shown in only two cases in our study (one in the depression group and the other in the neurosis group). Their chief complaints are not empty nest. They are problems concerned with their husbands. Huerta et al.¹⁰⁾ reported that the frequency of empty nest syndrome was 38.6% of 151 women in perimenopausal or menopausal periods in Mexico. Ushiroyama et al.¹¹⁾ reported 9.6% of women who had attended a climacteric clinic suffered from empty nest syndrome and that depressive symptoms were shown in 54.5% of those measured by a self-rating depression scale. But some studies indicate that empty nest syndrome is not a striking factor for the onset of depression or anxiety. Kaufert et al.⁴⁾ showed that the relative odds for depression were not affected by children leaving home. Hunter⁵⁾ reported that there is no strong evidence to support the theory of the menopausal woman being stressed by her children leaving home. Family problems, such as health and relationships between family members, caring for sick relatives, dealing with difficult adolescent children, rather than children leaving home are more common

concerns for middle aged women. Donnerstein et al.⁶⁾ documented that an improvement was shown in women's positive mood and total well-being in the first year after the last child departed. The findings confirm that the event of the last child leaving home and creating an empty nest does not adversely affect women's quality of life. Our results support these findings.

Other factors associated with the onset of depression were problems with parents, physical health problems and financial problems. Problems with parents included nursing of one's or spouse's parents and death of parents. Caring for sick relatives may especially burden women at risk for depressive and anxiety symptoms.¹⁾ Loss of significant others is also reported as a factor implicated in depression in perimenopausal phase.¹²⁾ Donnerstein et al.⁸⁾ revealed the magnitude of negative moods was significantly related to poor self-rated health. Deeks¹³⁾ reported that physical inactivity and low socio-economical class were considered to be predictive factors for depression in menopausal stage.

Most women in depression in our study had problems with their husband or children which were associated with the onset of depression. Other factors, rather than empty nest syndrome, such as the behavior of children still living at home and marital discord (in particular, negative feelings and infidelity) were far more influential in the onset of depression.

Some women had two combined problems such as problems with their children and their husbands, or problems with their husband and a financial problem. One problem sometimes induces other problems in a family and circumstances at their home become complicated. The consequences may increase the risk of depression.

The life time prevalence of depression in women is approximately twice that of men.¹⁴⁾ Prevention of depression in women is an important issue. In this point of view, more consideration regarding depression and psychological aspects in middle aged women is needed.

REFERENCES

- 1) Stewart DE, Khalid MJ. Menopause and mental health. In Romans SE and Seeman MV eds. Women's mental health. Philadelphia: Lippincott Williams & Wilkins, 2006; 311-317.
- 2) Tamada T, Iwasaki H. Age at natural menopause in Japanese women. *Acta Obst Gynaec Jpn* 1995; 47: 947-952 (in Japanese).
- 3) Lock M, Kaufert P and Gilbert P. Cultural construction of the menopausal syndrome: the Japanese case. *Maturitas* 1988; 10: 317-332.
- 4) Kaufert PA, Gilbert P and Tate R. The Manitoba Project: a re-examination of the link between menopause and depression. *Maturitas* 1992; 14: 143-155.

- 5) Hunter MS. Predictors of menopausal symptoms: psychosocial aspects. *Baillière's Clinical Endocrinology and Metabolism* 1993; 7: 33-45.
- 6) Dennerstein L, Dudley E and Guthrie J. Empty nest or revolving door? A prospective study of women's quality of life in midlife during the phase of children leaving and re-entering the home. *Psychol Med* 2002; 32: 545-550.
- 7) World Health Organization. The ICD-10 Classification of mental and behavioural disorders: Diagnostic criteria for research. Geneva: World Health Organization, 1993.
- 8) Dennerstein L, Lehert P, Burger H et al. Mood and the menopausal transition. *J Nerv Ment Dis* 1999; 187: 685-691.
- 9) McKinlay SM, Brambilla DJ, Posner JG. The normal menopause transition. *Maturitas* 1992; 14: 103-115.
- 10) Huerta R, Mena A, Malacara JM et al. Symptoms at the menopausal and premenopausal years: their relationship with insulin, glucose, cortisol, FSH, prolactin, obesity and attitudes towards sexuality. *Psychoneuroendocrinology* 1995; 20: 851-864.
- 11) Ushiroyama N, Ikeda A, Sakuma K et al. Clinical position of empty nest syndrome with undefined symptoms in the climacteric medicine. *Advances in Obstetrics and Gynecology* 2005; 57: 82-87 (in Japanese).
- 12) Burt VK and Hendrick VC. *Clinical manual of women's mental health*. Arlington: American Psychiatric Publishing, 2005.
- 13) Deeks AA. Psychological aspects of menopause management. *Best Practice & Research Clinical Endocrinology & Metabolism* 2003; 17: 17-31.
- 14) Steiner M, Dunn E, Born L. Hormones and mood: from menarche to menopause and beyond. *J Affective Disord* 2003; 74: 67-83.