

Depression in Post Menopausal Women

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Purpose. This cross-sectional survey research was undertaken to examine the degree of depression in postmenopausal women and to analyze the factors affecting that depression.

Method. 325 people from public health center in Incheon were surveyed as the subject of this study. Data collection was conducted through the use of questionnaires.

Results. The above half of these sampled people were in depressed state (64.0%) and the mean score of depression was 12.71. There were significant differences in the depression state according to presence of spouse, economic level, exercise, and smoking. A positive correlation was found between depression and climacteric symptoms. Stepwise multiple regression analysis revealed that the most powerful predictor was climacteric symptom. Climacteric symptom, presence of spouse, smoking, and exercise accounted for 45% of the variance in postmenopausal women's depression.

Conclusion. Nurses are able to use these results to plan and implement nursing interventions for decreasing depression and consequent the improved quality of life in Korean postmenopausal women. Also, the nurses have to be more aware of the following groups; solitary women, low-income group and smokers, that they have higher mean score of depression.

Key Words: Postmenopausal Women; Depression; Climacteric Symptoms; Smoking; Exercise; Alcohol

INTRODUCTION

Statement of the problem

The development of both economy and medical science has extended the average life span of Korean women. As a result, the health and the quality of life after menopause are considered as a more serious nursing problem compared to the past (Yoo, Kim, & Kim, 1999). Physiologically, women have two different transition periods in their entire lives. The first period is menarche and the other one is menopause. Menopause is normally occurred when ovary function is degenerated during the middle age. During this time, above 50% of middle aged

women experience a dramatic change in their emotion as well as change in physical states because of alteration in their hormone levels (Bobak, Jensen & Zalar, 1990). Namely, through menopause and gradual decline the estrogen hormone, they may experience hot flushes, fainting, headache, palpitation and insomnia. These symptoms are generally disappeared when menopause is completely formed (Choi et al, 1999). However, the psychological symptoms such as depression, loneliness, and despair can still be present even after the termination of menstruation, if women have personal problems, experiencing environmental stress or feel that they have lost their role as women through termination of menstruation (kwon et. al., 1996). Practically, women's depres-

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sion is occurred by regression, which is different from general mental depression. Also, it was found that depression occurs more often after menopause (Oh, 2000).

Not only the changes in hormone affects mentality of the women, but other factors can also affects depression. For instance, a spouse's high achievement in the society and less contact with her children can cause psychological deprivation and it even accelerates the women's depression (Wilson & Kneisl, 1988). Nervousness and anxiety are the main part of this depression and it has some psychological symptoms that are hypochondria, unrealism, and delusion. These affective disorders can lead them to feel meaningless about both present and future life; hence they may decide to commit suicide (Holland, Detels, Knox, Fitzsimons, & Gardner, 1991; Henderson, & Pollard, 1992; Choi et al, 1999). Therefore, it is necessary to develop the nursing intervention to decrease the postmenopausal women's depression.

Although it has not shown the consistent results, the reports of socio-demographic factors suggest that sex, economic status, and educational level are associated with depression (Holland, Detels, Knox, Fitzsimons, & Gardner, 1991). Especially for women, it was found that divorce, low educational level (Zung, Broadhead, & Roth, 1993; Rajala, Uusimaki, Keinanen-Kiukaanniemi, & Kivela, 1994), and low religion belief are associating factors. Also, the depression relates with the climacteric symptoms (Yoo, Kim, & Kim, 1999; Sung, 2000; Shin, 2001), alcohol (Bakaroglu, Uluutku, Tanriover, & Kirpinar, 1991), smoking and exercise (Klein et al., 1984). There has been a report that estrogen hormone therapy shows significant improvement of the postmenopausal women's depression (Oh, 2000).

As a result, this research was attempted to examine the associating factors to depression, which was based on the past researches that were partially identified. Thus it would like to provide the basic information for intervention development of postmenopausal women's depression.

Purpose of the Study

The purpose of this study is to provide the information, which contributes to the postmenopausal women's health maintenance, and to promote their quality of life.

Specific research purpose were:

- 1) To examine the degree of depression in subjects.
- 2) To examine the differences of depression according to the general characteristics.

- 3) To examine the differences of depression according to the health related characteristics

- 4) To identify the variables which influence depression

Definition of terms

1) Post menopausal women means the women who have stopped their menstruation. (Choi et al. 1999). For this study, it means that women who had experienced their last bleeding more than 1 year earlier.

2) Depression is an abnormal emotional state characterized by exaggerated feelings of sadness, melancholy, worthlessness, emptiness and hopelessness that are results of negative cognition toward self (Beck, 1967), For this study, the operational definition of depression was a subject's rating of Beck Depression Inventory that is standardized in Korean culture by Han et al. (1986).

3) Climacteric symptoms appear during transitional phase between end of reproductive ability and the beginning of the non-reproductive phase, and influenced by composition of endocrinologic and psychological factors (Morse, 1980), For this study, the operational definition of climacteric symptoms was a subject's rating of climacteric symptom scale which was developed by researcher.

METHODS

Research design

This study is a cross sectional descriptive survey, which identifies the influencing, factors to the depression in postmenopausal women.

Subjects and data collection method

The study was conducted using a convenient sampling method from one of the public health center in Incheon. The subjects were recruited with participation of the women's health promoting program, which held by public health center. Each participant gave consent to the research. Total sample of 352 postmenopausal women aged 40 to 65 years was obtained for the study, of which 325 women completed the questionnaires used for the analysis. Data collection was done by cooperation public health center personnel. The questionnaires were completed before the management of climacteric symptoms education was provided, from July 2000 to Nov. 2000.

Instruments

Depression

Beck Depression Index was used for measure of subject's degree of depression. It was developed to measure for cognitive-behavioral phenomenon in depression. The Cronbach's alpha coefficient was .86 as high as reliability in the first development (Beck, Ward, Mendelson, Mock, & Erbaugh, 1961). Han & et al.(1986) were standardized this inventory for Korean culture and the split-half coefficient was .996 by Spearman-Brown prophecy formula. This index was composed of 21 items according to the symptoms and attitudes of depression and each items score range were 0 to 3, 4 point Likert scale. Total score range was 0 to 63 and it was divided to four categories which means that 0-9points is without depressed state, 10 - 15points is mild depressed state, 16 - 23 points is moderate depressed state and 24 - 63 points is severe depressed state. Cronbach's alpha coefficient was .89 in this research.

Climacteric symptoms

As it was for measuring the climacteric symptoms, it was developed that based on the literature. One medical doctor and one nursing professor examined the content validity. It was composed of 13 items and included the 11 items of climacteric physical symptoms (face flushing, numbness and tingling, insomnia, vertigo and fainting, fatigue, pain in muscle and joint, headache, palpitation, diaphoresis, vaginal dryness, dyspareunia) and 2 items of psycho emotional symptoms(nervousness, mood change). The each items score range were 0 to 3, 4 points Likert scale and total score range was 0 to 39. The higher score of this scale means the higher experience of climacteric symptoms in subject. Cronbach's alpha coefficient was .86.

Data Analysis

Data was analyzed using SPSS program. The general characteristics, health related characteristics and the degree of depression were analyzed using descriptive statistics. The difference in depression according to general characteristics and health related characteristics were analyzed by t-test and ANOVA. Pearson Product Moment Correlation analyzed the relationship between the depression and climacteric symptoms. The linear relationship between depression and these related factors were examined using Stepwise Multiple Regression Analysis. Cronbach's alpha coefficients were calculated for instru-

ment's reliability.

RESULTS

Depression in subjects

The mean score of depression in this sample was 12.71 and minimum and maximum scores are 0.00 and 50.00 each. Table 1 shows the frequency of depression in sample. Only 36.0% was not in state of depression and the above half of the total revealed that they were having mild depressed state to severe depressed state. 8.0% of total subjects were belonged to severe depressed state group and they may need to special intervention.

Depression and General characteristics in subjects

The mean age of the sample was 48.28years and the mean duration of post menopause was 7.82 years and these had no statistically significant correlation with depression (mean age: $r = 0.038$, $p = 0.492$; duration of menopause: $r = -.064$, $p = 0.260$). The majority of this sample has a spouse (80.6%) and children (96.9%). Seventy eight percent of this sample has religion. Nearly half of this sample had a below middle school level of education, and about 5% had above college education level. Around a half of the sample had below 1 million Korean won of monthly house income.

Table 2 shows the difference of depression according to general characteristics such as presence of the religion, spouse, or child, their educational level and economic status. According to the analysis, there were significant difference in depression between sample, by presence of spouse ($t = 3.834$, $p = .000$) and their economic status ($F = 5.965$, $p = .003$). i.e., The depression mean score of sample who has spouse was 14.87 and those sample who has no spouse had the depression mean score of 19.22. Hence those samples with spouse show lower depression mean score than those without the spouse. For economic status, those with monthly income level of 3million Korean won or more had the depression mean score of 14.13, which was the lowest of all. However, for those with monthly income level of 1 million Korean won or less, the depression mean score was the highest, 17.38.

Depression and Life style and Health related characteristics

Subjects were asked if they had regular exercise more than 3 times per week. 42.5% of sample has answered

‘yes’ to this question (Table 3). 96.3% of the sample was not smoking at all and 82.5% of the sample was not drinking any alcohols. 6.2% of the sample was having a alcohol, once a week. Also 21.5% of the sample had past history of hormone therapy due to depression or menopausal symptoms. Lastly, menopausal symptoms of the sample scored average out of 39.

From the results of the analysis of the difference between depression and life style and health related characteristics, it showed that there were significant difference between depression and exercise ($t = 2.870, p = .004$) and smoking ($t = -3.379, p = .001$). And there was significant positive relationship between depression and climacteric symptoms ($r = .632, p = .000$).

Predicting factors of depression

Table 4 revealed the result of stepwise multiple regres-

Table 1. The degree of depression in subjects (N = 325)

Items (total score)	Frequency (%)
Without depressed state (0 - 9)	117 (36.0)
Mild depressed state (10 - 15)	107 (32.9)
Moderate depressed state (16 - 23)	75 (23.1)
Severe depressed state (24 - 63)	26 (8.0)

Table 2. The difference of depression according to the general characteristics in subjects (N = 325)

Characteristics	Frequency (%)	Mean (S.D.)	t or F value(p value)
Religion	Yes	252 (77.5)	t = 0.564 (.573)
	No	73 (22.5)	
Spouse	Yes	262 (80.6)	t = 3.834 (.000)
	No	63 (19.4)	
Child	Yes	315 (96.9)	t = 1.436 (.152)
	No	10 (3.1)	
Educational level	middle school	185 (56.9)	F = 0.790 (.455)
	high school	125 (38.5)	
	college	15 (4.6)	
Economic level (monthly income : thousand won)	300	47 (14.5)	F = 5.965 (.003)
	< 100 - > 300	127 (39.1)	
	100	151 (46.5)	

Table 3. The difference of depression according to the life style and health related characteristics in subjects (N = 325)

Characteristics	Frequency(%)	Mean(S.D.)	t or F value(p value)
Exercise (3times/wk)	Yes	138 (42.5)	t = 2.870 (.004)
	No	187 (57.5)	
Smoking	Yes	12 (3.7)	t = -3.379 (.001)
	No	313 (96.3)	
Alcohol	No	268 (82.5)	F = 2.363 (.096)
	2 - 3 times/mos	37 (11.4)	
	1time/wk	20 (6.2)	
Hormone therapy	Yes	70 (21.5)	t = -.151 (.880)
	No	255 (78.5)	

sion analysis to identify the predicting variables to depression. Dependent variable was depression and independent variables included climacteric symptoms, presence of the spouse, economic status, exercise, and smoking. The result showed that the most powerful predictor was climacteric symptoms. Climacteric symptoms, presence of spouse, smoking, and exercise accounted for 45% of the variance in postmenopausal women’s depression.

DISCUSSION

In average, 12% of men and 24% women show the

Table 4. Stepwise Multiple Regression Analysis on influencing factors of depression (N = 325)

Independent Variables	Cum R ²	F	p
Intercept 9.139			
Climacteric symptoms	0.801	0.399	211.138
spouse (no)		0.422	0.002
smoking (no)	2.822	0.437	115.958
exercise (no)		0.445	0.033
		-	81.742
		5.084	63.148
		1.520	

prevalence of depression. It shows that the prevalence of depression of women is twice as much as than men (Holland et al., 1991). Depression, one of the main health problems, especially takes place among middle-aged women who have experienced menopause.

When the study identified the different degree of depression that each postmenopausal woman has, there was 64% of the women who have depression and among them about 8.0% had a severe depression state. Therefore it is necessary to develop the proper intervention to decrease the depression and to improve the quality of life of postmenopausal women. Conversely, these results were different compare to research carried out by Yoo, Kim & Kim (1999) and Chang (2000). According to their research, those who were experiencing the depression were 50% of whole sample. This difference in the result may be due to difference in sample. Economic status is one of the associating factors to depression (Holland et al., 1991). In this research the subjects were mainly from relatively low-income level, i.e., about 50% of this research subject's monthly income was below 1 million won. However, in research carried out by Yoo, Kim & Kim (1999), only 38.9% of sample were earning less than 2 million won per month, and even in research carried out Chang (2000), only 18.2% of sample were earning less than 1 million won. Also, in this research, sample was taken from menopause women, with considering the depression is developed after menopause. Practically this research showed the subject's mean age agreed with the Korean women's mean menopause age of 48 (Korean Academy of Menopause, 1994). However, research carried out by Yoo, Kim & Kim (1999) and Chang (2000) have selected sample of Korean middle-aged women of age 30 to 50. Hence it showed lower proportion of people who are experiencing the depression compare to those after the menopause.

From the result of analyzing relationship between general characteristic and depression, it has been realized that relationship between presence of spouse and economic status with depression state were statistically significant. In case of middle-aged women, spouse acts as primary supporter, and helps to overcome empty nest situation after their child gets independent. In addition, there were statistically significant negative correlation between depression and good relationship with spouse. (Kim, 2000; Chang, 2000). Economic status was found to be major factor affecting the depression state, and factors such as unemployment, low-income level, or

physically hard labour jobs are likely to cause depression. (Hauensteinm & Boyd, 1994; Woo et al, 1994; Rajala et al., 1994). Hence, when nurses implement the program related to depression, they should pay more attention to the solitary women's group and low-income group whom are experienced the depression more easily.

According to research carried out by Sung (2000) and Lee & Choi (1999), there were no significant relationship between depression and economic status, and hence more research is needed to confirm this relationship.

From the analysis of the result for difference between depression and life style and health related characteristics of sample, it was found that regular exercise and smoking had statistically significant associate with the depression and there was in significant positive correlation with climacteric symptoms. Many researches suggest that main reason for depression in middle age women is due to lower secretion of estrogen after the menopause. (Wood & Mitchell, 1995; Sung, 2000). Also in this research, it was identified that climacteric symptom was the most explainable variable that influence depression, and factors such as smoking and exercise also were influencing variable to depression.

Thus to reduce depression state, it is necessary to control climacteric symptoms first than any other thing else. Gannon (1988) and Kim (2000) have reported that climacteric symptoms and depression may be reduced through exercise, and Klein et al (1984) have shown that, many other illnesses along with depression may be prevented through exercise. Therefore exercise is essential component that could be recommended by nurses to post menopausal women, and further research is vital to know how post menopausal women could carry out exercise on a regular basis and what kind of exercise is more effective to them. Also community center and hospital may require having postmenopausal symptom control classes, to reduce postmenopausal disorders and increase understanding about symptoms and control of postmenopausal state through education.

For the results concerning the hormone therapy, it was found that those with hormone therapy had little higher depression mean score than those who had no hormone therapy. However, these were not statistically significant. Palinkas and Barrett-Connor (1992) have reported that those who had not received hormone therapy, average depression mean score have increased every year after the menopause, and they have recommended hormone therapy for post menopause women. Nevertheless, from

the report concerning the hormone therapy to post menopausal women by Oh (2000), it was found that there were no significant relationship between depression and lack of female hormone, and researcher mentioned that use of female hormone may be effective to post menopausal women's depression, but there are cases of ineffectiveness. Also, there has been a research concluding that hormone therapy increase risk of breast cancer (North American Menopause Society, 2000). Hence, use of hormone therapy to treat depression may have to be considered through further research.

Limitations of the study

This study utilized a convenient sampling method and subjects were recruited only one area of west side in Korea. Data collection was taken place in a catholic church. Also, equal weights have been given to each composition of climacteric symptom scale. These factors may be influenced the results so, it limited the ability to generalize the results of this study should be interpreted with caution.

CONCLUSION

This research was undertaken to examine the degree of depression and to analyze the factors affecting those depression in postmenopausal women.

From the study, climacteric symptom was the most powerful predictor and it was associated with the presence of spouse, economic status, smoking, and exercise. However there has been reports concerning risk of hormone therapy. Hence exercise is suggested as the one of the best way to solve in post menopausal women's depression. To decrease depression, therefore, nurses should consider using the intervention related to exercise and they should also help improving the quality of life in postmenopausal women as well. Lastly, the nurses have to be more aware of the following groups; solitary women, low-income group and smokers, that they have higher mean score of depression.

Researchers would like to make a few suggestions on the basis of the research results.

1. In this study, the result showed the most powerful predictor to depression was climacteric symptoms. Thus, it is necessary to develop the intervention for the climacteric symptom alleviation.

2. It is necessary to develop the exercise-promoting program for postmenopausal women.

3. The variables such as has or has not the child, alcohol and smoking were not showed consistent results associated with depression. Therefore, it is necessary to study repeatedly for association identification.

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