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Psychosocial aspect determines quality of life in postmenopausal women

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ABSTRACT

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The postmenopausal period plays an important role in women's life and gives rise to many physical and mental problems. A cross-sectional was conducted to determine the quality of life and its determinants, namely pyschosocial and lifestyle factors in postmenopausal women. One hundred and seventy-six post-menopausal women meeting the inclusion criteria were recruited. The menopause rating scale (MRS) questionnaire was used for the assessment of quality of life. One hundred and thirty-one (74.4%) subjects had complaints related to menopausal symptoms in 3 degrees of severity: mild (38.6%), moderate (30.7%) and severe (5.1%). Urogenital symptoms were the most frequent complaints reported by the subjects (71.6%). The correlation between quality of life of postmenopausal women and several psychosocial and lifestyle factors, namely marital status, education, occupation, knowledge and attitude towards menopause, exercise, smoking and consumption of caffeine and alcohol was statistically not significant ($p>0.05$). By multiple logistic regression analysis, some of the determinants, such as the subjects' attitude towards menopause (PR = 2.863; 95% CI: 0.578 – 14.185) and support from the husband and/or family (PR = 2.124; 95% CI: 0.979 – 4.610) did not reach statistical significance, but were still the most influencing factors on their quality of life. Quality of life is worst in postmenopausal women and therefore counseling and support from husband and/or family are needed by the postmenopausal women in order to improve their quality of life.

Keywords: Psychosocial, quality of life, postmenopause

INTRODUCTION

According to the Population Census of the year 2000, the number of Indonesian women more than 50 years of age and presumably having entered menopausal age was 15.5 million and in the year 2020 it is estimated that the number of women at menopausal age will be 30.3 million or around 11.5% of the total population of Indonesia.[1] Apart from the increasing number of menopausal women as part of the group of elderly people among the Indonesian as well as the world population, there are several other factors that cause the

menopausal problem to be in need of special concern.

The declining steroidal hormone levels, especially estrogen, in the female body in the perimenopausal period, not only alters the menstrual pattern but also affects general health, such as is apparent in wrinkled skin, dry vagina (leading to dyspareunia), dysuria, palpitations, migraine, hot flushes and insomnia, collectively known as the climacteric syndrome. The prevalence of the climacteric syndrome in European and American women ranges from 74 to 87.2%,[2] while in China and other Asian nations the incidence is 10%.[3] The prevalence of hot flushes varies widely across populations and is strongly influenced by culture and ethnicity. In the United States, the Study of Women's Health Across the Nation (SWAN) surveyed more than 16,000 women and found that the prevalence of hot flushes was highest among African Americans (46%), followed by Hispanics (34%), whites (31%), Chinese (21%), and Japanese (18%).[4] Several factors strongly suspected of playing a role in the menopausal experience and quality of life in this period are culture-bound behaviors, such as diet, smoking, and exercise.[5-7] Preventive measures for proactive maintenance of health and vitality that may be taken by women in facing the menopause, as recommended by the International Menopause Society (IMS), relate to healthy behavior and lifestyle, such as exercise, decreased consumption of caffeine, salt, and sugar, reduction or cessation of smoking and alcohol consumption, taking certain vitamins and/or minerals, adequate rest and sleep, consumption of a balanced diet (low in fat) and undergoing regular health checkups.[8] Several longitudinal studies conducted with sufficiently large samples in populations of menopausal women revealed a substantially strong relevance between psychosocial factors and biomedical aspects. With the support of healthy behavior and lifestyle, social support of friends and family, the symptoms of menopause may be adequately managed such that medical intervention is unnecessary.[6,7]

Quality of life (QOL) does not only relate to problems of physical health or absence of disease, and currently there is no universally accepted definition of "quality of life". The definition of "quality of life" according to the WHO is the perception of an individual 'of his/her position in life in the context of the culture and value systems in which he/she lives, and in relation to his/her goals, expectations, standards and concerns'.[9] In the health context, QOL that is related to the impact of illness or health disturbance has a number of situational and conditional aspects in the life of an individual. The menopause rating scale (MRS) is a health-related scale that was developed in response to the lack of standardized scales for measuring the severity of aging symptoms and their impact on the HRQOL in the early 1990s. Actually, the first version of the MRS was to be filled out by the treating physician but methodological critics led to a new scale which can easily be completed by the women themselves, not by their physician.[10] The aims of the MRS were to enable comparisons of the symptoms of aging between groups of women under different conditions, to compare severity of symptoms over time, and to measure changes pre- and post-treatment.[11-13]

In many developed countries the menopausal problem and its symptoms or the climacteric syndrome have become a national health problem. Currently in Indonesia many studies and investigations have started to be conducted on the menopausal problem, but are still limited to the biomedical aspects, such the climacteric syndrome, and lipid profile and osteoporosis in menopausal women.[14-15]

The present study was done in order to study the degree of QOL of postmenopausal women and to determine the presence of an association between psycho-social aspects and lifestyle on the one hand and QOL on the other.

METHODS

Research design

This was a cross-sectional study to determine the presence of an association between psycho-social aspects and lifestyle of Indonesian postmenopausal women and their QOL. The study was performed at the Cilandak District Health Center – South Jakarta from 23 March to 25 April 2009.

Subjects of study

A total of 176 subjects were recruited by non-probability (or consecutive) sampling in all service units of the Cilandak District Health Center – South Jakarta. All women in the age range of 45-59 years having entered menopause (with cessation of menstruation of minimally one year) and meeting the inclusion criteria were involved in this study. The inclusion criteria were: literate and healthy women (capable of independently performing daily activities of life and engaging in verbal communication), not on menopause-related hormonal drugs within the previous three months, willing to participate in the study until completion after receiving the necessary information, and willing to sign an informed consent. The exclusion criteria were prior bilateral oophorectomy and/or hysterectomy and non-compliance with the study protocol.

Data collection

The data collectors conducted interviews by means of a questionnaire comprising questions on sociodemography and economy, knowledge about and attitude towards the menopause, use of hormone replacement therapy and family support, and a number of habits or lifestyles such as exercise, dietary composition, habitual consumption of phytoestrogen-containing foods, smoking, consumption of caffeine and alcohol. The HRQOL of the menopausal women were assessed by means of the Indonesian version of the MRS, that had been tested on its validity and reliability in Indonesia, comprising three dimensions or subscales of menopausal symptoms, viz. psychological, somato-vegetative and urogenital.[16,17]

This instrument consists of questions on 11 menopausal symptoms, the degree of which is expressed as a number from 0 (no symptoms) up to 4 (extremely severe symptoms), as stated by the subject in question based on her own perception.[14,15] The subject was considered to have no QOL abnormalities if the abnormality was "absent/slight" or if the subject had a total score of 0–4 by MRS assessment criteria. The subject was considered to have QOL abnormalities if the abnormality was "moderate/severe" or if the subject had a total score of $\geq$5 by MRS assessment criteria.

Data analysis

The study data were analyzed with SPSS (Statistical Package for Social Sciences) version 15.0. Bivariate chi-square tests were used for comparative analysis of each of the independent variables (psychosocial and lifestyle) and the dependent variable (quality of life of menopausal women), both of which were categorical data. The relationships between several independent variables and the dependent variable were analyzed in a multiple logistic regression model. p-value < 0.05 was taken as a cut-off for statistical significance and all tests were 2-sided.

RESULTS

The subjects recruited into this study totaled 176 women in the age range of 45-59 years, where the youngest subject was 45 years of age and the oldest 59 years, and the mean subject age was 53 ± 3.46 years. The assessment results on the degree of QOL of the subjects conducted by means of the MRS questionnaire showed that 131 (74.4%) of the subjects had QOL abnormalities, comprising mild (38.6%), moderate (30.7%) and severe degrees (5.1%).

Table 1. Assessment criteria of the menopause rating scale [16]

Quality of life abnormality	Assessment score			
	Psychological subscale	Somato-vegetative subscale	Urogenital subscale	Total
Absent/Slight	0 – 1	0 – 2	0	0 – 4
Mild	2 – 3	3 – 4	1	5 – 8
Moderate	4 – 6	5 – 8	2 – 3	9 – 16
Severe	≥ 7	≥ 9	≥ 4	≥ 17

Viewed from the aspects of the abnormalities experienced by the subjects, the urogenital abnormalities were the most frequently suffered by the subjects (126 women or 71.6%), i.e. abnormalities connected with sexual and urinary (voiding) activities, and more than 50% among them had the abnormalities in moderate and severe degrees. Another aspect of the abnormalities that was also experienced by more than half of the subjects related to psychological abnormalities (114 women or 64.7%) and somatovegetative abnormalities (106 women or 60.2%) (Table 2).

In this investigation, a study was performed on the relationship of marital status, level of education, occupational status, activities of the subjects outside their occupation, and sources of household finance and health funds on the one hand and QOL on the other.

There was no significant difference in the prevalence of QOL abnormalities ($p>0.05$) between the groups of subjects in marital status, occupational status, activities outside occupation, and household finance and health funds (Table 3). Therefore it may be stated that in this study these socio-economic and demographic factors had no relationship with QOL abnormalities in postmenopausal women. In this study there was also no significant difference in the prevalence of QOL abnormalities ($p>0.05$) in respect to: (i) knowledge of the subjects about menopause: between the group of subjects who considered menopause to be an illness, those who viewed menopause as a normal/natural process not needing special attention, and those for whom menopause was a natural process with a risk of negative impacts; (ii) attitude of the subjects towards menopause: between the group of subjects with a positive and those with a negative attitude towards menopause (Table 4).

As may be seen from Table 5, in this study there was also no significant difference in the prevalence of QOL abnormalities between the various groups of subjects with respect to adequacy of information on the menopause, knowledge of the husband/partner about the menopause and family support in facing the menopause ($p>0.05$).

Table 2. Aspect and degree of quality of life abnormality of postmenopausal women

Aspect of abnormality	Degree of quality of life abnormality							
	Absent		Mild		Moderate		Severe	
	n	%	n	%	n	%	n	%
Psychological	62	35.2	70	39.8	31	17.6	13	7.4
Somato-vegetative	70	39.8	74	42.0	26	14.8	6	3.4
Urogenital	50	28.4	35	19.9	69	39.2	22	12.5

Table 3. Relationship between several sociodemographic and economic factors and quality of life abnormalities in postmenopausal women

Psychosocial aspect	Degree of quality of life abnormality				p*	Prevalence ratio
	Yes		No			
	n	%	n	%		
Marital status						
Single	26	76.5	8	23.5	0.933	0.873
Married	105	73.1	37	26.9		(95% CI: 0.363 –2.098)
Level of education						
Low	42	79.2	11	20.8	0.440	0.686
High	89	72.4	34	27.6		(95% CI: 0.317 –1.484)
Occupational status						
Unemployed	62	73.8	22	26.2	0.994	1.065
Employed	69	75.0	23	25.0		(95% CI: 0.541 –2.096)
Activities outside occupation						
Absent	57	77.0	20	23.0	0.547	0.764
Present	64	71.9	25	28.1		(95% CI: 0.387 –1.509)
Source of household finance						
Own/husband's salary	92	76.7	28	23.2	0.418	0.698
Retirement funds/other	39	69.6	92	30.4		(95% CI: 0.343 –1.419)
Source of health funds						
Insurance/employer support	55	71.4	22	28.6	0.528	1.322
Own funds	76	76.8	23	23.2		(95% CI: 0.670 –2.608)

* Chi-square test

There was no significant difference in the prevalence of QOL abnormalities between groups of subjects with various habits/ lifestyles, such as exercise, consumption of phytoestrogen-containing foods, smoking, and consumption of caffeine and alcohol ($p > 0.05$).

In this study there was a significant difference ($p<0.05$) in the prevalence of QOL abnormalities between groups of subjects who were always, occasionally, and not at all concerned about a balanced composition (carbohydrate, fat and protein) of their daily diet. In the group of subjects who never were concerned about balanced dietary patterns there were more QOL abnormalities compared with the other groups.

Table 4. Relationship between knowledge and attitude of subjects on menopause and quality of life abnormalities in postmenopausal women

Psychosocial aspect	Quality of life abnormality				p*	Prevalence ratio
	Yes		No			
	n	%	n	%		
Knowledge about menopause						
Abnormality/illness	3	75.0	1	25.0	0.945	
Normal/natural process	38	25.2	113	74.8		
Natural process with risk of negative impact	15	71.4	6	28.6		
Attitude towards menopause						
Positive	117	73.1	43	26.9	0.339	2.573
Negative	14	87.5	2	12.5		(95% CI: 0.561 – 11.789)

* Chi-square test

Table 5. Relationship between family factors and quality of life abnormalities in postmenopausal women

Family factors	Quality of life abnormality				p*
	Yes		No		
	n	%	n	%	
Adequacy of information on menopause					
Inadequate	46	80.7	11	19.3	0.096
Adequate	77	74.0	27	26.0	
More than adequate	8	53.3	7	46.7	
Knowledge of husband/partner about menopause					
Abnormality/illness	4	80.0	1	20.0	0.453
Normal/natural process	92	72.4	35	27.6	
Natural process with risk of negative impact	9	90.0	1	10.0	
Family support					
None	99	79.2	28	20.8	0,075
Poor	2	66.7	1	33.3	
Adequate	30	62.5	18	37.5	

* Chi-square test

Table 6. Relationship between lifestyle and quality of life abnormalities in postmenopausal women

Lifestyle	Quality of life abnormality				p*
	Yes		No		
	n	%	n	%	
Exercise					
Yes, almost daily	23	74.2	8	25.8	0.43
Yes, occasionally	79	71.8	31	28.2	
None at all	29	82.9	6	17.1	
Balanced dietary composition					
Yes, always	16	62.8	27	37.2	0.04
Yes, occasionally	23	25.8	66	74.2	
None at all	38	86.4	6	13.6	
Consumption of phytoestrogen/isoflavone					
Yes, daily	95	72.5	36	27.5	0.54
Yes, occasionally	35	79.5	9	20.5	
None at all	1	100.0	0	0	
Smoking					
Never	121	73.8	43	26.2	0.69
In the past, but not now	7	87.5	1	12.5	
Yes	3	75.0	1	25.0	
Caffeine					
Yes, daily	50	83.3	10	16.7	0.07
Yes, occasionally	64	72.7	24	27.3	
None at all	17	60.7	11	39.3	
Alcohol					
Yes, daily	1	100.0	0	0	0.48
Yes, occasionally	4	57.1	3	42.9	
None at all	126	75.0	42	25.0	

* Chi-square test

Table 7. Results of multivariate logistic regression of quality of life by psychosocial aspects and lifestyle in postmenopausal women

Independent variable	Quality of life abnormalities				p*	Prevalence ratio
	Yes		No			
	n	%	n	%		
Knowledge about menopause						
Abnormality/illness	3	75.0	1	25.0	0.767	
Normal/natural process	38	25.2	113	74.8	0.879	1.087 (95% CI: 0.372-3.177)
Natural process with risk of negative impact	15	71.4	6	28.6	0.536	0.433 (95% CI: 0.031-6.140)
Attitude towards menopause						
Positive	43	26.9	117	73.1	0.198	2.863 (95% CI: 0.578-14.185)
Negative	2	12.5	14	87.5		
Environmental support						
None	99	79.2	28	20.8	0.159	
Poor	2	66.7	1	33.3	0.057	2.124 (95% CI: 0.979-4.610)
Adequate	30	62.5	18	37.5	0.854	1.291 (95% CI: 0.085-19.728)
Balanced dietary composition						
Yes, always	27	62.8	16	37.2	0.301	
Yes, occasionally	66	74.2	23	25.8	0.124	0.407 (95% CI: 0.130-1.278)
None at all	38	86.4	6	13.6	0.328	0.595 (95% CI: 0.210-1.684)
Caffeinated beverages						
Yes, daily	50	83.3	10	16.7	0.254	
Yes, occasionally	64	72.7	24	27.3	0.313	0.635 (95% CI: 0.263-1.535)
None at all	17	60.7	11	17.0	0.099	0.390 (95% CI: 0.127-1.193)

* Chi-square test

Among the 17 variables included in the bivariate selection, there were five with $p < 0.25$ and meeting the criteria for inclusion in the multivariate analysis, viz. attitude of subjects towards the menopause, adequacy of information on the menopause, famlity support, balanced dietary composition and consumption of caffeinated beverages. The variable "knowledge of subject about menopause" was also included in the bivariate modeling in spite of $p>0.25$, because it was considered to be very important.

Multivariate analysis was performed on several independent variables (psychosocial factors and habit/lifestyle) against the dependent variable (QOL). Prior to this, bivariate selection was done and it was determined that the independent variables with $p < 0.25$ were to be included in the multivariate logistic regression analysis.

In the multivariate analysis, as shown on Table 7, the subjects' attitude towards the menopause and family support for them in facing the menopausal changes played an important role in their QOL.

In the relationship between the subjects' attitude towards the menopause and QOL abnormalities, a prevalence ratio of 2.863 was found (95% CI: 0.578 – 14.185) between the group of subjects with a negative and those with a positive attitude towards menopause. This means that the subjects with a positive attitude towards menopause had a 2.8-fold greater probability of being free from QOL abnormalities, in comparison with the subjects with a negative attitude towards menopause.
In the relationship between family support for the subjects in facing the menopausal changes and the prevalence of QOL abnormalities, prevalence ratios of respectively 2.124 (95%

CI: 0.979 – 4.610) and 1.291 (95% CI: 0.085 – 19.728) were found between the group of subjects who felt unsupported by their family and those who found to be poorly and adequately supported. In spite of that, in this study it could not be proven that the factors of no support and poor support constituted risk factors for QOL abnormalities in postmenopausal women.

DISCUSSION

Based on the QOL assessments conducted in the study subjects by means of the MRS questionnaire, a total of 131 (74.4%) subjects were found to have QOL abnormalities in mild, moderate and severe degrees. The majority of the subjects had QOL abnormalities of mild (38.6%) and moderate degrees (30.7%). Although the prevalence of QOL abnormalities in postmenopausal women as found in this study cannot be generalized and cannot be considered to reflect the overall picture of Indonesian postmenopausal women, the prevalence rates obtained may presumably increase our alertness to the problems of menopause and may provide the basis for further studies on a larger population. The investigators were unable to find reports of other studies on QOL in postmenopausal Indonesian women, particularly those using the MRS as the measuring instrument of QOL of postmenopausal women.

Viewed from the aspect of abnormalities experienced by the subjects, urogenital abnormalities were the most frequent (71.6%), namely abnormalities related to sexual and urinary (voiding) activities. More than 50% of the subjects had urogenital abnormalities in moderate and severe degrees. The majority of subjects (80.7%) were married and some of them were still engaged in sexual activities with their husbands/partners, such that abnormalities of sexual activities at menopause may affect their QOL. A Turkish study yielded lower fugures, i.e. 10.8% of postmenopausal women had sexual problems, 15.0% urinary problems, and 7.8% vaginal dryness.[18] Results similar to the Turkish study were obtained by Boekitwetan et al. in the elderly, where 19.5% har urinary tract infections.[19]

From the psychological aspect most of the subjects (64.8%) also had psychological abnormalities. More than 60% of the subjects involved in the present study had somato-vegetative abnormalities. Hot flushes and night sweats were the most frequently experienced symptoms in postmenopausal women, in association with sleep disturbances, sensory abnormalities and decreased cognitive functions. The Turkish study yielded similar figures for somato-vegetative abnormalities, where hot flushes and sweating amounted to 50.7%, heart problems 22.9%, sleep problems 24.3%, feeling unhappy 22.6% and anxiety 30.7%.[18] These abnormalities may lead to social and work-related problems, with significantly lowered QOL. The somato-vegetative symptoms frequently cause the menopausal women suffering from them to visit their doctor and be prescribed drugs for treating the complaints, so that ultimately health expenditures may constitute a socioeconomic burden.

In the present study the variables marital status, level of education, occupational status, accessory activities outside work, source of family finance and source of funds for health expenditures were not associated with QOL abnormalities in postmenopausal women. The study results did not reveal the presence of a significant association between marital status and QOL in postmenopausal women. However, a number of studies showed different results, where sociocultural features influence the presence and severity of menopausal symptoms and are not influenced by sociodemographic factors.[20,21] Married subjects still needed sexual functions, such that abnormalities in sexual functions may be uncomfortable to them and disturb their relationship with their husbands. Several prior studies indicated that

vasomotor symptoms and urogenital abnormalities were less frequently found in single (unmarried or widowed) women in comparison with married women.[17]

In this study no association was also found between level of education and QOL of postmenopausal women. Most of the subjects (69.9%) had a high level of education (high school and university), and several studies have shown that vasomotor symptoms and palpitations were found more commonly in less-educated women.[4] The outcomes being evaluated in this study comprised not only vasomotor abnormalities, but also QOL involving other abnormalities, so that they cannot indeed be compared with the results of other studies.

In this study no significant difference in QOL was found with regard to: (i) knowledge of the subjects about the menopause, i.e. between the group of subjects who regarded menopause as an illness, menopause as a normal/natural process not needing special attention, and menopause as a natural process with a risk of negative impacts, and (ii) attitude of the subjects towards menopause: between the group of subjects with a positive and those with a negative attitude towards menopause. The menopause is an event in the life of a woman when the menstrual cycle comes to an end, marked by physiological and psychosocial changes in her life. Although the menopause is a normal event in a woman's life, the individual perceptions are variable and some women need medical assistance to manage the symptoms of menopause. The transition into the menopause is a complex physiological process that is frequently accompanied by accessory effects of the aging process and social adaptation.[22] A number of women experience the climacteric syndrome, in the form of vasomotor, somatic and psychic complaints in the transition period towards menopause or the perimenopausal period. Subsequently there will be an increased risk of degenerative diseases or chronic disorders such as osteoporosis, cardiovascular disease, colorectal cancer and lowered cognitive functions. The menopausal experience is strongly influenced by the perception of the women about the bodily changes and about how the immediate community around her perceives the menopause. The biomedical model of menopause is focused more on the biological aspects of decreased hormonal levels and on identification of climacteric symptoms. The menopause is considered to be characteristically a deficiency disorder that requires treatment in the form of replacement hormonal therapy, thus transforming the woman into a sick patient, because the climacteric symptoms are believed to be associated with estrogen deficiency. This points out the need for dissemination of more accurate and comprehensive information to premenopausal women regarding all aspects of the menopause.

The menopausal woman needs support from her neighbourhood in facing the changes taking place in the peri- and post-menopausal periods. In this study it is apparent that the majority (72.2%) of the subjects' husbands/ partners also consider the menopause to be a normal and natural process that will be experienced by every woman, without realizing the risk of negative impacts due to the lowered estrogen levels, arising in the short term as well as in the long term. Only 5.7% of the subjects' husbands realized the risk of negative impacts of the menopause that may be experienced by their wife.

Although approximately half of the subjects (59.1%) mentioned the adequacy of sources of information about the menopause, the abovementioned data indicate that most women or their partners did not know about the true nature of the menopause as a natural process with a risk of negative impacts. The majority of the subjects (59.1%) stated that they had adequate information about the menopause, which they obtained from their friends (35.8%) and health personnel (30.7%),

and for the remainder from popular science books, the printed/electronic media and others. Lack of initial information and correct knowledge of the subjects, their partners or their neighborhood (including health personnel and mass media) about the problems of menopause was one of the causes of the subjects' low need for more adequate information regarding the menopause and its future impacts. The majority of the subjects (71%) also did not feel that they received special support from the neigborhood when facing physical and non-physical changes due to the menopause. The community, particularly the women, need to be better informed about the all of the problems of menopause. Doctors and health personnel in general should be able to provide good support and counseling to women regarding the menopause, starting from menopausal symptoms and complaints and their short term as well as long term impacts, the steps that may be taken for managing those complaints and for preventing problems that might occur in the long term as a result of the menopause. Most menopausal women need education, information about the menopause and support from an individual who is willing to listen to them about their experiences.[23]

Regular exercise, nutritionally balanced daily diets, and lesser or no consumption of caffeinare important for maintaining a high QOL in menopausal women. Women who exercise regularly and are non-smokers have a better score for positive mood in facing the changes that they experience. Studies have found that physically less active women complain more of postmenopausal neurovegetative symptoms than do women who exercise regularly.[7] Women who exercise regularly have a better mood profile, fewer somatic symptoms and fewer difficulties in concentration in comparison with less physically active women. Physical excercise is known to be capable of increasing the levels of â-endorphins, which are neurotransmitters capable of influencing the regulation of body temperature, and it is the levels of â-endorphins that are lowered as a result of reduced estrogen concentrations in menopausal women. In this study no significant difference was found in QOL abnormalities between the groups of subjects who exercise almost daily, exercise occasionally or never exercise (Table 6). In this study habitual exercise was only quantitatively assessed, based on interviews or self-report by the subjects, making it difficult to measure the differences in biological effect of excercise done almost daily, occasionally, or not at all.

Phytoestrogens, which are commonly found in the daily food of the Indonesian community, are substances whose structure mimick that of estrogens and are thus capable of binding estrogen estrogen receptors and functioning as selective estrogen receptor modulators (SERM). Several randomized double-blind studies that have been conducted on the influence of phytoestrogen supplementation reported a statistically significant reduction in the prevalence of hot flushes in the group of subjects receiving supplemental phytoestrogens.[24,25]

With regard to the dietary composition of the subjects, as viewed from the balance between carbohydrate, fat and protein, the important role of dietary fat in the development of menopausal symptoms was indicated by the association between low fat intake and low prevalence of menopausal symptoms in Asian populations, such as Japanese and Chinese women. A high intake of fat is associated with higher serum levels of estrone and dehydroepiandrosterone sulfate (DHEAS) in postmenopausal Japanese women.[26] Differing results were obtained in an interventional trial indicating that a low-fat diet had no effect on serum DHEAS among postmenopausal Australian women.[27]

The statistically non-significant difference obtained in the present study may indeed indicate no association between various

abovementioned habits/lifestyles and QOL abnormalities, or may also be due to shortcomings of the instrument used in this study, e.g. the qualitative assessment on the independent and dependent variables. The presence or absence of a statistically significant difference is not always identical to a clinically significant difference. It is well-known that the probability of obtaining a statistically significant difference is proportional to the sample size, such that with a larger sample size even extremely small or clinically irrelevant differences may become statistically significant.

The results of multivariate analysis showed that the subjects' attitude towards the menopause and family/neighborhood support for them in facing menopausal changes play an important role in their QOL. QOL abnormalities were found with a 2.8-fold greater frequency in subjects with a negative attitude towards menopause, compared with those with a positive attitude. QOL abnormalities in postmenopausal women were also more frequent in the group of subjects who felt totally unsupported by their neighborhood/family in facing menopausal changes, in comparison with those subjects who felt themselves to be poorly supported. In this study both abovementioned factors (negative attitude towards the menopause and lack of neighborhood support) cannot yet be considered risk factors for QOL abnormalities in postmenopausal women.

CONCLUSIONS

In this study the majority of postmenopausal women had QOL abnormalities and the most commonly experienced symptoms were hot flushes, sweating, heart problems, sleep problems and anxiety. The high percentage of QOL abnormalities among postmenopausal women necessitates adequacy of information and counseling by health personnel on the problems of menopause using a biopsychosocial approach.

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