

Quality of life and climacteric complaints amongst women seeking medical advice in Taiwan: assessment using the WHOQOL-BREF questionnaire

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ABSTRACT

Objective To determine the impact of the climacteric transition on health-related quality of life amongst women, between the ages of 45 and 55 years, seeking medical advice in Taiwan.

Method A total of 203 women seeking medical advice (SMA) were drawn from a special integrated clinic, with a further 349 healthy referents of the same age, range and gender, with no history of hormone replacement therapy and living in the same municipality, also being recruited from a national health survey sample for comparison. Each one was asked to fill out the brief questionnaire of the Taiwan version of the World Health Organization Quality of Life (WHOQOL-BREF), assessing quality of life on 26 items in four domains (physical, psychological, social and environmental). SMA subjects were also questioned about the 21 most frequent symptoms. Multiple regression analyses were conducted to control variables such as age, marital status, religion and educational attainment.

Results The mean scores for the physical, psychological and social domains were significantly lower than those of the healthy referents, as was the overall quality of life for SMA women. Although usual vasomotor symptoms did not significantly predict quality of life in the SMA subjects, after controlling for demographic factors, insomnia and emotional disturbance were found to be major determinants of the scores in the different domains.

Conclusion Insomnia and emotional disturbance should be taken into consideration in the management of climacteric women seeking medical advice.

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INTRODUCTION

The climacteric experience involves a complex interaction between sociocultural, psychological and environmental factors, as well as the biological changes relating to altered ovarian hormone status or deficiency¹⁻⁴. It is reported that 40–80% of women around climacteric age present with climacteric complaints, which can be categorized as vasomotor, genitourinary, neurological, psychosocial or musculoskeletal^{1,5}. These hormone- and age-related symptoms usually result in mid-life women becoming the most frequent visitors to gynecological clinics in Taiwan⁶. Many of these women shuttle between traditional Chinese medicine and Western gynecological clinics in order to seek medical advice, which represents some of the extremes of this difficult transition⁷.

Over recent decades, the development of various assessment tools for quality of life has varied from subjective measures of well-being, and symptoms and other indicators of health status, to measures of functional status⁸⁻¹⁰. However, there still appears to be a lack of consensus amongst researchers on the definition of quality of life, which is often reflected in the choice of items for these instruments. Our current knowledge of quality of life in climacteric women has been mainly directed by measurement items within physical and psychological domains¹⁰⁻¹³, whilst relatively little research has been conducted into items relating more to social and environmental domains. Clearly, however, such a limitation could potentially result in a misguided therapeutic regimen for climacteric complaints.

The World Health Organization (WHO) defines quality of life as 'an individual's perception of their position in life, in the context of the culture and value systems in which they live, and in relation to their goals, expectations, standards and concerns'¹⁴. In measuring quality of life, the WHOQOL Group therefore takes the view that it is important to determine how satisfied, or indeed troubled, people are by the important aspects of their life; thus, this interpretation is a matter which is highly dependent upon each individual. The WHOQOL-BREF is one specific, enriched type of health-related quality-of-life instrument developed by the WHOQOL Group, which, as compared to earlier generic or disease-specific questionnaires, includes other important issues, such as environmental resources and personal beliefs¹⁵⁻¹⁷.

This particular measurement instrument may help in the construction of a comprehensive health profile of climacteric women seeking medical

advice during their transitional period. As the climacteric experiences of Asian women are culturally different from those of Western populations⁵, this paper aims to address the question of whether various climacteric complaints are associated with quality of life and, if so, which quality-of-life domain/item is actually affected by different symptoms amongst women seeking medical advice between their late forties and early fifties.

SUBJECTS AND METHODOLOGY

This cross-sectional survey was conducted amongst women between the ages of 45 and 55 years who, as a result of climacteric or menopause-related symptoms, had sought medical advice (SMA) at the Taipei Municipal Chinese Medicine Hospital (TMCMH). Our study excludes those with a history of cancer, stroke and heart failure, and any serious disabilities or diseases that might significantly affect their quality of life. The TMCMH caters for the needs of women with climacteric complaints through a special integrated clinic providing a combination of Chinese medicine and western gynecological consultations.

After excluding from the sample those who had undergone hormone replacement therapy during the previous 3 months, a physical examination was conducted on each of the subjects, who were then requested to fill out questionnaires on demographic characteristics, previous history of chronic diseases and duration of climacteric, the symptoms, a quality-of-life questionnaire entitled the WHOQOL-BREF Taiwan version, and a list of the 21 most frequent complaints based upon a previous qualitative study¹⁸. We collected data on a total of 203 SMA patients who met the study criteria from the integrated clinic of the TMCMH during 2002.

A national systematic stratified sample survey, carried out in 2001 by the National Health Interview Survey and the Bureau of Health Promotion at the Department of Health in Taiwan, succeeded in collecting data on a total of 15 425 subjects aged between 20 and 65 years, from which the WHOQOL-BREF and basic demographic data were obtained^{19,20}. From these data, a total of 1426 female subjects were identified between the ages of 45 and 55 years. After limiting the sample to those living in the Taipei metropolitan area, and after excluding those subjects receiving hormone replacement therapy, those seeking alternative medical help, or those

with a prior history of stroke, diabetes, hypertension, epilepsy, cancer, lung, liver, renal disease, and other heart diseases, we were left with only 349 healthy referents for comparison in this study.

The Taiwanese Version of the WHOQOL-BREF

Similar to the WHOQOL-BREF questionnaire, the Taiwan version was simplified from the original WHOQOL-100 Taiwan questionnaire. The WHOQOL-BREF comprises four domains containing 24 aspects, plus two national items on overall quality of life and general health^{15,21}. There are a total of seven items in the physical domain (pain and discomfort, energy and fatigue, sleep and rest, mobility, daily living activities, dependence on medication and working capacity), six in the psychological domain (positive feeling, thinking and concentration, self-esteem, bodily image and appearance, negative feelings and spiritual/religious/personal beliefs), three in the social domain (personal relationships, social support and sexual activity), and eight in the environmental domain (physical safety and security, home environment, financial resources, availability of health and social care, opportunities for acquiring new information and skills, participation in recreation and leisure, physical environment and transport).

Each item was scored on a Likert scale ranging from 1 to 5, with a higher score indicating a favorable condition after reversing the direction of several items for which the questions were posed in a negative way. In order to standardize the domain scores for comparison, the average score of each domain was calculated and then multiplied by 4, as recommended by the WHOQOL^{14,15}. Thus, the domain scores ranged from 4 to 20, with a higher score indicating a better quality of life on the corresponding domain.

In accordance with the design of the original WHOQOL-BREF, subjects were asked to personally complete the WHOQOL-BREF Taiwan questionnaire after evaluating their quality of life during the previous 2-week period¹⁶. Details on sociodemographic characteristics were completed prior to answering the 26 items of the WHOQOL-BREF. Each item used a 5-point Likert scale corresponding to '0%', '25%', '50%', '75%' and '100%' satisfaction with their current quality of life. The Taiwan version also follows the recommended procedures for descriptor selection²². Since each domain contains a different

number of items, the domain scores were calculated by multiplying the average of the scores for all items in the domain by the same factor of 4. The discriminative item validity was high for all subscales and, with the exception of two subscales, all remaining Cronbach's α reliabilities were above the 0.70 criterion²³. The construct of the four domains was also verified through confirmatory factor analysis amongst five different diseases in the national samples²⁴.

Measure of climacteric symptoms

The development of the climacteric symptom list was based upon a literature review¹¹⁻¹³, with subsequent modification being based upon our qualitative study undertaken in 1999¹⁸. Briefly, the qualitative study organized two patient focus groups and an expert focus group, with the former comprising nine women who had visited the integrated clinic seeking medical advice, whilst the latter comprised one gynecologist, two traditional Chinese medicine practitioners, a qualitative study expert (whose background is in nursing), and a quality-of-life expert.

Following transcription of all the discussions which had taken place in the two patient focus group sessions, we analyzed the cultural meanings and frequency of the major complaints affecting perceived quality of life, which were later summarized by the expert focus group into the 21 most frequent climacteric complaints. The symptom list for these complaints included vasomotor symptoms (hot flushes and night sweating), common climacteric symptoms (emotional disturbance, insomnia, palpitations, listlessness, headaches, arthralgia and bone soreness, frequent urination, reduced libido, experiencing poor memory) and other somatization symptoms (numbness of the extremities, tightness and pains in the chest, tinnitus, abdominal fullness, anorexia, bitter sensation of the mouth, dry eyes, dry mouth, cold feeling of the extremities and dropsy (edema) of the face or body).

Statistical analysis

Our analysis begins by summarizing the WHOQOL-BREF assessment as a four-domain construct of physical health, psychological health, social relationship and environment, in accordance with the WHOQOL-BREF guidelines. The characteristics of the subjects were summarized as the mean \pm standard deviation (for continuous variables) and as proportions (for categorical

variables). The Student *t* test and χ^2 test were used, as appropriate, to ascertain the significance of the differences between the mean values and the two continuous variables.

Multiple linear regression analysis was used to construct the model for the outcome variables (overall quality of life, general health and each domain score of the WHOQOL-BREF) as a function of determinants, including age, marriage, education, religion and each climacteric symptom. The mean scores (ranging between 4 and 20) of the four quality-of-life domains were then calculated. All data was analyzed using SPSS for Windows Version 10.0, with a two-tailed *p* value of <0.05 being considered statistically significant.

RESULTS

The basic characteristics of the two groups of climacteric women are summarized in Table 1, where it is shown that the SMA subjects were slightly older than the healthy referents (50.5 years vs. 49.0 years). The SMA group included a higher proportion of Buddhists and a higher proportion with an educational level of college or above; these subjects were also more likely to be unmarried or separated/divorced.

The group of healthy referents was generally found to have significantly higher scores in the physical, psychological and social domains, but lower scores in the environmental domain.

Table 2 presents the results of the multiple regression analyses, indicating different determinants for the scores of the four domains, overall quality of life and general health. The model constructions for overall quality of life and each of the four domains indicated that SMA significantly and independently contributed to the variance in the final model. Education was also a determinant predicting the general health and environmental domains.

Of the 203 SMA subjects, the self-reported prevalence rates for different symptoms were as follows: arthralgia and bone soreness (86.7%), dry eyes (67.5%), night sweating (66.0%), emotional disturbance (64.0%), headaches (61.1%), dry mouth (61.1%), poor memory (60.1%), palpitations (60.1%), tightness of the chest (58.1%), insomnia (52.7%), bitter sensation of the mouth (47.3%), numbness of the extremities (42.4%), reduced libido (40.9%), abdominal fullness (39.4%), tinnitus (38.4%), hot flushes (35.4%), cold feeling of the extremities (27.1%), frequent urination (16.7%), dropsy (edema) of the face or body (14.8%), listlessness (12.3%) and anorexia

Table 1 Comparison of background characteristics and mean WHOQOL-BREF scores

Definition	SMA	HR	<i>p</i> Value
Number of subjects	203	349	
Age in years (mean \pm SD)	50.5 \pm 4.7	49.0 \pm 3.0	$<0.0001^{***}$
Religion (%)			0.25
None	16.2	22.6	
Buddhism	76.9	71.1	
Christian/Catholic	6.4	6.3	
Marital status (%)			0.78
Unmarried/single	7.4	6.3	
Married	81.8	85.4	
Divorced/widowed/separated	10.4	8.3	
Level of education (%)			0.13
Junior high or below	37.9	46.1	
High school	34.0	31.8	
College or above	28.1	22.1	
WHOQOL-BREF Domain scores (mean \pm SD)			
Physiological	13.3 \pm 2.3	15.2 \pm 2.0	$<0.0001^{***}$
Psychological	12.6 \pm 2.2	13.5 \pm 2.3	$<0.0001^{***}$
Social	13.9 \pm 2.3	14.3 \pm 2.1	0.02*
Environmental	13.6 \pm 2.0	13.1 \pm 2.1	0.002**

SMA, climacteric women seeking medical advice; HR, healthy referents

p* < 0.05 ; *p* < 0.01 ; ****p* < 0.001

Table 2 Multiple regression coefficients (Coeff) and standard errors (SE) of different variables

Variable definitions	WHOQOL Domain											
	Physical		Psychological		Social		Environmental		Overall QOL (WHOQOL Q1)		General health (WHOQOL Q2)	
	Coeff	SE	Coeff	SE	Coeff	SE	Coeff	SE	Coeff	SE	Coeff	SE
Climacteric women (SMA/HR)	-2.01	0.19***	-0.94	0.21***	-0.47	0.20*	0.42	0.18*	-0.21	0.06***	-0.66	0.07***
Age (≥ 50 vs. < 50 years)	0.29	0.18	0.13	0.20	0.05	0.19	0.30	0.17	0.11	0.06	0.07	0.07
<i>Marital status</i>												
Single/married	0.62	0.37	0.55	0.40	0.21	0.38	0.41	0.35	0.21	0.12	0.32	0.13*
Widowed/separated/divorced/married	-0.24	0.31	-0.60	0.34	-0.15	0.33	-0.42	0.30	-0.06	0.10	-0.13	0.11
<i>Education</i>												
College/below Junior High	0.35	0.24	0.26	0.26	0.14	0.25	0.89	0.23***	0.22	0.08**	0.10	0.09
Middle High/below Junior High	0.43	0.21*	0.12	0.23	0.12	0.22	0.60	0.20**	0.14	0.07*	-0.05	0.08
<i>Religion</i>												
None/Eastern religion	-0.20	0.23	-0.14	0.25	-0.28	0.24	-0.28	0.22	-0.06	0.07	-0.09	0.08
Western religion/Eastern religion	-0.21	0.39	0.45	0.42	0.55	0.40	0.24	0.37	-0.21	0.12	-0.18	0.14

SMA, women seeking medical advice; HR, healthy referents
 * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

(6.9%). Half of the SMA women with insomnia reported more than seven climacteric complaints, whilst almost two-thirds of SMA women with tightness of the chest perceived some level of emotional disturbance, indicating a high correlation.

The results of the multiple linear regression analysis show that vasomotor symptoms, such as hot flushes and night sweating, were not significantly associated with any particular item in the WHOQOL-BREF. After controlling for other potential confounders, of the 21 most frequent complaints, only insomnia and tightness or pain in the chest affected the physical, psychological, social and environmental domains of WHOQOL.

Further multivariate analyses, using the scores of each of the 26 items as the dependent variable, showed a significant association between women with insomnia and low scores for the following items: energy, negative feelings, ability to get around, leisure time, financial resources, accessibility to new information, safety in daily life, living conditions, and social support. Emotional disturbance was found to have a significant association with low scores on items referring to the enjoyment of life and negative feelings, as summarized in Table 3.

There was also a correlation with somatization symptoms, such as tightness of the chest, frequent urination and numbness of the extremities, which are determinants of different domains within the WHOQOL-BREF. If tightness of the chest was not included in the multivariate model, on the basis that it was not a common climacteric complaint, then emotional disturbance became a significant determinant in most domains.

DISCUSSION

To the best of our knowledge, this study has been the first of its kind to compare quality of life between subjects seeking medical advice and the group of healthy referents, as measured by WHOQOL. We find those who sought help for climacteric symptoms through traditional Chinese medicine reported more physical and psychological problems than the reference group, but none of the 21 most frequent complaints were related to the items on general health in the WHOQOL. Following adjustment for the major determinants, none of the existing vasomotor symptoms, including hot flushes and night sweating, were related to quality of life, which is largely consistent with the findings of a number of prior studies^{4,25}, including clinical trials²⁶⁻³⁰.

Given that over 90% of Taiwanese women considered climacteric transition as a part of

natural biological progression³¹, they seemed more tolerant towards these vasomotor symptoms, although, clearly, many of them were seeking medical advice. Furthermore, even where significant improvements were discernible in patients suffering from hot flushes or night sweating, as demonstrated in the results of one of our previous clinical trials, these were not associated with any significant change in quality-of-life measurement²⁶.

The results of this study highlight the importance of insomnia with regard to the quality of life for women seeking medical advice during the climacteric age. We find that, after controlling for demographic determinants, including educational level, marital status, religion and age, insomnia was associated with lower quality-of-life scores in the physical, psychological, social and environmental domains, as shown in Table 3.

Further analysis of the individual items in the environmental domain revealed that insomnia was independently associated with a lack of leisure time, financial resources, accessibility to daily information, safety in daily life, and living conditions. Since insomnia symptoms would not, by themselves, usually result in changes in subjective feelings on the above items in the environmental domain, we hypothesize a potential reversed causal link. Furthermore, after controlling for demographic determinants, the score for social support in the social domain was also found to be associated with insomnia. Thus, women at the climacteric age are generally faced with a tremendous transition within their everyday lives and social roles in Taiwanese culture, which, in the above items within the environmental and social domains, might well produce lower scores, and thereby result in insomnia.

The current social security system in Taiwan, for example, is based on the labor insurance system, which does not provide any retirement benefits for wives or female housekeepers^{32,33}. Therefore, the potential lack of financial resources may lead to growing anxiety amongst women of climacteric age, which also has the potential of leading to insomnia. In addition, whilst the current National Health Insurance system in Taiwan was supposed to provide comprehensive medical care for all of the island's citizens³⁴, the average time spent per patient visit was generally very brief, say, 2-5 min³⁵. However, since around half of the knowledge on climacteric symptoms amongst Taiwanese women comes from newspapers and magazines⁶, a very brief discussion with a family doctors or gynecologist is unlikely to

Table 3 Regression coefficients (Coeff) and standard errors (SE) of most frequent complaints, adjusted for age, marriage, religion and education

Variable definitions	WHOQOL Domain																
	Physical			Psychological			Social			Environmental			Over all QOL (WHOQOL Q1)			General health (WHOQOL Q2)	
	Coeff	SE		Coeff	SE		Coeff	SE		Coeff	SE		Coeff	SE	Coeff	SE	
Hot flushes (yes/no)	-0.08	0.37		0.10	0.36		0.18	0.40		-0.23	0.33		-0.03	0.12	-0.08	0.37	
Night sweating (yes/no)	0.33	0.36		0.27	0.35		0.11	0.38		0.23	0.32		0.01	0.12	0.33	0.36	
Emotional disturbance (yes/no)	-0.24	0.40		-0.62	0.39		-0.11	0.43		-0.05	0.36		-0.34	0.13*	-0.24	0.40	
Arthralgia and bone soreness (yes/no)	0.41	0.49		0.07	0.48		-0.20	0.53		-0.07	0.44		0.00	0.16	0.41	0.49	
Insomnia (yes/no)	-0.98	0.33**		-0.76	0.32*		-0.72	0.35*		-0.69	0.29*		-0.08	0.11	-0.98	0.33**	
Palpitations (yes/no)	0.01	0.35		0.23	0.34		0.16	0.38		0.33	0.32		0.30	0.11*	0.01	0.35	
Headaches (yes/no)	-0.58	0.42		-0.45	0.42		0.04	0.45		-0.41	0.38		-0.07	0.14	0.05	0.15	
Numbness of extremities (yes/no)	-0.59	0.67		-0.43	0.68		-0.61	0.73		-0.31	0.62		0.36	0.23	-0.15	0.24	
Poor memory (yes/no)	0.26	0.32		0.08	0.32		0.24	0.35		0.25	0.30		0.02	0.11	-0.06	0.11	
Frequent urination (yes/no)	-0.76	0.42		-0.17	0.42		-0.05	0.45		-0.49	0.38		-0.11	0.14	0.09	0.15	
Reduced libido (yes/no)	0.23	0.33		0.10	0.33		-0.63	0.36		0.08	0.31		0.10	0.11	0.00	0.12	
Dry eyes (yes/no)	-0.07	0.37		0.01	0.37		0.23	0.40		0.46	0.34		0.03	0.12	0.02	0.13	
Tinnitus (yes/no)	-0.47	0.33		-0.41	0.33		-0.41	0.36		-0.51	0.30		-0.14	0.11	-0.06	0.12	
Abdominal fullness (yes/no)	-0.50	0.34		-0.46	0.34		-0.43	0.36		-0.28	0.31		-0.08	0.11	-0.24	0.12*	
Dry mouth (yes/no)	0.00	0.35		-0.36	0.35		-0.20	0.38		-0.12	0.33		0.26	0.12*	0.01	0.12	
Cold feeling of extremities (yes/no)	-0.75	0.37*		0.05	0.36		-0.02	0.40		-0.30	0.33		-0.23	0.12	-0.75	0.37*	
Dropsy (edema) of face or body (yes/no)	-0.41	0.46		-0.68	0.45		-0.12	0.49		-0.20	0.41		-0.11	0.15	-0.41	0.46	
Listlessness (yes/no)	-0.82	0.56		-1.07	0.54		0.30	0.59		-0.71	0.50		0.01	0.18	-0.82	0.56	
Bitter sensation in mouth (yes/no)	0.25	0.38		0.43	0.37		0.36	0.40		0.07	0.34		-0.12	0.12	0.25	0.38	
Anorexia (yes/no)	0.79	0.63		0.94	0.62		-0.57	0.68		1.15	0.57*		0.20	0.21	0.79	0.63	
Tightness or pain in chest (yes/no)	-0.62	0.36		-0.85	0.35*		-0.82	0.39*		-0.82	0.33*		-0.23	0.12	-0.62	0.36	
R ²	0.25			0.24			0.16			0.22			0.24		0.25		

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

alleviate their feelings of anxiety. Since it seems that such feelings of uneasiness are probably more evident amongst women who had sought help from both western and traditional Chinese medicine, this might well result in insomnia.

We also observe not only a high mutual correlation between insomnia and emotional disturbance, but also that these symptoms exhibited partial correlations with quality of life for women, particularly within the psychological domain. After taking into account demographic determinants, we found that SMA subjects with complaints of insomnia had rather poorer scores on negative feelings (moodiness, despair, anxiety and depression) than those subjects who did not have any sleep complaints. It is possible, of course, that emotional disturbance or psychological distress can lead to the development of insomnia^{36,37}.

Further exploration in this study disclosed that half of the women with insomnia who were seeking medical advice reported more than seven climacteric complaints, which may imply that sleep disturbance can often coexist with many somatization symptoms, as reported amongst a French cohort³⁸. This finding corroborates the findings of some of the prior studies that, in an independent or synergistic way, insomnia could act with physical, social and environmental factors to predispose to psychological symptoms^{39,40}, and thereby have an overall affect on quality of life. Thus, an understanding of insomnia amongst Taiwanese climacteric women represents just part of a very complex interplay between physical and psychological illnesses, functioning both as cause and consequence³³. There is little wonder, therefore, that insomnia emerges as a symptom demonstrating particular inconsistency with the factor analysis of the same clusters in some of the prior studies⁴¹.

A major limitation of our study is its cross-sectional nature, which has therefore precluded any possibility of determining causality amongst the various climacteric symptoms. Furthermore, many of the acute complaints would also have been missed, particularly if some of the subjects recovered quickly from their climacteric

symptoms, with no lasting signs or symptoms of the event. We were also concerned that the content of the WHOQOL-BREF did not cover certain specific symptoms for climacteric women, largely because of its generic nature.

It was, however, interesting to note that the WHOQOL-BREF could differentiate between SMA and healthy referents, as well as between those SMA subjects with and without symptoms. Finally, given that our SMA subjects were women who had visited an integrated clinic providing both conventional and traditional Chinese medicine, we should remain cautious with regard to any attempt to generalize these findings to climacteric women in other settings.

In conclusion, insomnia and emotional disturbance were, on the one hand, major problems relating to the quality of life for climacteric women seeking medical advice in Taiwan; on the other hand, however, none of the existing vasomotor symptoms were found to have any significant association with overall quality of life. The present study raises the important issues of insomnia and emotional disturbance as proposals for the improvement of quality of life amongst women seeking medical advice during the climacteric age. The generic nature of the WHOQOL-BREF may also prove to be useful in future climacteric studies.

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Conflict of Interest Nil.

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