RESEARCH ARTICLE

Sociodemographic Characteristics and Quality-of-life of Greek Menopausal Women treated with Hormone Therapy

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Abstract

Background: Menopause, a significant and unavoidable change of the normal female biological process, has attracted science's attention since ancient times. In recent decades, women claim the right to social production and better quality of their remaining life. The aim of this descriptive, comparative and prospective study was to investigate the demographic characteristics and the quality-of-life of Greek postmenopausal women who were taking Menopausal Hormone Therapy (MHT) compared with those not taking.

Method and Material: The sample consisted of 216 postmenopausal women aged 40 to 60 years old who were divided into two groups and evaluated at the beginning of the research, as well as six months later, in a period of 19 months. The MHT group consisted of 100 women who were taking MHT and the non-MHT group consisted of 116 women who were not. A questionnaire for demographic data was used, as well the Greene Climacteric Scale (GC) and the Menopause-Specific Quality-of-life Questionnaire (MENQOL).

Results: 46.3% of women were taking MHT, while the 53.7% were not. By comparing the two groups, it became apparent that the MHT group of women were more likely to have grown up in an urban area ($p = 0.04$), to have higher education ($p < 0.001$), to have jobs of demanding responsibility ($p = 0.008$) and to have lower body weight ($p=0.002$). The non-MHT group was found to have statistically significant more severe symptoms in the GC scale from the MHT group in both assessments ($p<0.001$). Multiple linear regression analysis showed that factors of the model explain 49.4% of the GC scale. Evaluating the quality-of-life using the MENQOL questionnaire, a statistically significant difference was found in both assessments ($p<0.001$), with the non-MHT group showing a lower quality-of-life compared to the MHT group, in both assessments. Multiple linear regression analysis showed that the factors of the model explain 54.8% of the MENQOL, meaning that women with higher education have a better quality-of-life compared with the non-MHT group. In correlating the two scales with the Pearson coefficient, it was found a statistically significant positive correlation ($r=0.845$ and $p<0.001$).

Conclusions: MHT seems to provide significant benefit in improving quality-of-life during menopause. However, the administration of this treatment should always be individualized and used with caution. The nurse's advisory role is of high value to the women's decision-making on MHT.

Keywords: Menopause, hormone therapy, women's health, quality-of-life, anxiety, depression

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Introduction

In the western society where beauty and healthy lifestyle are of great importance, menopause can be considered as another negative sign of ageing, and Menopausal Hormone Therapy (MHT) could help women remain attractive and energetic in their aspects of life.[1]

In the literature, adolescence, pregnancy and menopause are reported as difficult transition periods with emotional upheaval. In Western societies, as well as in Eastern societies, menstruation is of high value in woman's life.[2] Thus, menopause is not simply the cessation of menstruation but it is an indicator of "aging" in an "aging society". The usual stereotype of the menopausal woman is that of a frail, emotionally unstable woman who has lost her reproductive capacity, the significant usefulness and has no longer the desired appearance. Given this negative stereotype, the body changes in middle age, combined with the negative experiences that usually overwhelm the period (loss of loved ones, removal of children) create a truly difficult and uncomfortable time for today's woman and establish the prerequisites for creating embarrassing and excruciating symptoms of anxiety, depression, insecurity and phobias.[3]

The quality-of-life as a concept reflects psychological, social, physical and self-esteem parameters of the individual. In this sense, the quality-of-life is subjective because it can be defined in many ways. In particular, the quality-of-life of postmenopausal women is an important indicator of well-being and the MHT seems to offer improvement in many aspects of this.[4]

The controversial results from the Women's Health Initiative[5] published a decade ago have limited the use of MHT. As a result, in menopausal women, severe symptoms are causing loss of health and loss of quality-of-life.[6] Thus, a great number of women who were not using MHT developed psychosomatic symptoms and generally a variety of symptoms.[7] It has been supported that menopause affects women's lives negatively, no matter the age and other socio-demographic factors.[8] Another study showed that women with occupations that cause psychological distress were using MHT more often and reported significant help from this treatment. It was shown that women with menopausal symptoms were more likely to have poorer quality-of-life.[9] In a cross-sectional study in India, 250 post menopausal women were examined for their quality-of-life. The results showed the bigger duration of postmenopausal years, the less quality-of-life.[10]

Greene [11], in a study of menopausal women in Scotland, found that there was a strong correlation between the severity of various stressful situations in the women's life and the psychological symptoms they had had. From this observation, Greene developed the theory of climacteric vulnerability, meaning that women who experience a high level of everyday psychological stress are less able to cope with similar situations when they reach menopause. This situation appears in the form of psychological symptom stress and depression.[11] In another study, women with more menopausal symptoms were those with less social support and lack of stable interpersonal and marital relationships.[12]

However, there are researchers who support that estrogens do not have a direct positive effect on psychological symptoms, but the observed positive effect is a secondary benefit from the reduction of vasomotor symptoms, hot flushes, sweating, insomnia, and all the symptoms which often accompany menopause.[13] It was further argued that estrogen therapy did not seem to improve the quality-of-life and to decrease the psychological symptoms in postmenopausal women who had not any vasomotor symptoms.[14] Strickler et al.,[15] who administered raloxifene,

estrogen, and placebo in respective groups, had similar findings. Most parameters of quality-of-life were unaffected by the treatment with estrogen or raloxifene, other than the relief provided by the estrogen for vasomotor symptoms. In a study of asymptomatic postmenopausal women (without vasomotor and somatic symptoms) showed that treatment with conjugated estrogens had a clear positive result in improving the quality-of-life. In this way it was shown that estrogens act directly on the psychological processes.[16]

Purpose

The aim of this descriptive, comparative and prospective study was to investigate the demographic characteristics and quality-of-life of Greek postmenopausal women who were taking MHT compared with those not taking.

Methods

The sample consisted of 216 women (missing 84), who were followed at the Menopause Outpatient Clinic at University Obstetrics and Gynecology Hospital of Athens. For a more representative study sample, advertising for participants was not allowed. Every effort was made to involve all the socioeconomic classes. Women were evaluated at the beginning of the research, as well as six months later, in order to examine the effect of taking MHT.

Inclusion/exclusion criteria

Eligible participants were women aged 40 to 60 years being in (natural) menopause for at least six months. Participants who had undergone total hysterectomy (surgical menopause) were excluded from the sample. Women with a history of major depressive disorder, schizophrenia and generally psychiatric conditions, were also excluded.

The sample was divided into two groups. The MHT group consisted of 100 women (46.3%) who were taking MHT for at least 3 months. The formulations used were combinations of estrogen and progestin (conjugated estrogens with medroxyprogesterone acetate, 17-beta estradiol with dehydroprogesterone, 17-beta estradiol with norethisterone and finally tibolone). The non-MHT group consisted of 116 women (53.7%) who were not taking MHT. It is important to note that no woman had ever used before such formulations. MHT formulations are fully covered by the national health-insurance, so women taking the drugs weren't paying for them.

Data collection was collected by the completion of anonymous questionnaires, consisting of three subsections. The first section included the socio-demographic characteristics of the participants (age, marital status, education level, birthplace, occupation). The second section consisted of The Greene Climacteric Scale (GC).[17] This scale consists of 21 questions, involving four domains: psychological anxiety (1-6), depression (7-11), somatic (physical) (12-18), vasomotor (19-20) and sexual dysfunction (21). The GC scale scored on a Likert 4-point scale (0=not at all, 1=a little, 2=quite a bit and 3= extremely). The range of the scale was 0-63, while higher values indicating more severe symptoms. This scale can be used for identification of possible or severe clinically anxious and/or depressed menopausal women. In this case, the recommended cut-off points are: Clinically Anxious: Anxiety Score of 10 or more and Clinically Depressed: Depression Score of 10 or more. In this study, the Cronbach's alpha coefficient ranged from 0.72 to 0.97 for individual items. This tool was chosen as it is internationally recognized, reliable, valid and useful.[18]

The third section consisted of The Menopause-Specific Quality-of-life Questionnaire (MENQOL).[19] This tool consists of 29 questions, involving four domains: vasomotor (1- 3), psychosocial (4-10), physical (11-26) and sexual aspects (27-29) and scored on 7-point rating scale Likert, ranging from 0 ("not at all bothered"), 1 or 2 ("somewhat"), 3 or 4 ("pretty") to 5 or 6 ("extremely bothered"). All

questions follow the same format and women were asked if they had experienced the symptom in the previous month. If the answer is "yes", they are requested to indicate how bothered they had been. The total score of MENQOL could be from 29 to 174. Although there is no overall score for this questionnaire due to unknown contribution of each domain, it is accepted that the more the scores decreased, the better quality-of-life the women experienced. In this study, the Cronbach's alpha coefficient ranged from 0.72 to 0.97 for several items. This tool was chosen, as it is internationally recognized and widely used.[20]

For both tools, permission from the authors was secured. Moreover, they were translated from English into Greek by an independent researcher and translator, and then it was backward translated by two independent translators, without changes and amendments. Completion of questionnaires took place at the Menopause Outpatient Clinic of a Maternity Hospital. The duration of each assessment was from 20 to 30 minutes. Each woman participated in two assessments at 6 months apart. Permission for the administration of questionnaires was requested and approved by the Scientific Council of the hospital and the Professor, Director of Obstetrics and Gynecology University Clinic, as well. Study protocol was developed according to the principles of the Declaration of Helsinki. Informed consent of the participants was also completed.

Statistical analysis

Data are shown as mean and standard deviation (SD) for continuous variables and as percentages for categorical data. The Kolmogorov-Smirnov test was utilized for normality analysis of the parameters. Chi-square test was used for determining the differences among demographic status between groups and the quality-of-life measures in relation to age, the mean age at menopause, occupation and level of education. The comparison of mean scores (total score for quality-of-life) within groups for both assessments were performed using the independent samples t-test and paired samples t-test respectively or the Mann-Whitney test and Wilcoxon test in case of violation of normality. Correlation between quantitative variables so as for GC scale and MENQOL was examined using the Pearson's correlation coefficient. Multiple linear regression analysis was performed using as dependent variables the GC scale and MENQOL scores and as independent all demographic factors. All assumptions of linear regression analysis {homoscedasticity, linearity, normality and independence of error terms respectively and multicollinearity of independent variables using VIF (variance inflation factor) of Tolerance} were also examined**.** All tests were two-sided, statistical significance was set at $p<0.05$. All analyses were carried out using the statistical package SPSS vr 13.00 (Statistical Package for the Social Sciences, SPSS Inc., Chicago, Ill., USA).

Results

Overall, a 46.3% (N=100) of 216 postmenopausal women (MHT group) reported receiving hormonal therapy, while a 53.7% (N=116) (MHT group) did not.

The sample consisted of women who grew up mostly in urban centers, with an average age of menopause around 50 years, married with one to two children, and were mainly secondary school graduates with a usual occupation as housewives. The women were mostly non-smokers, with an average body weight 66 kg, mean height 162 cm, mean age 51.5 years, without serious financial problems, no special relationship problems with spouses and no serious grievances from deaths of loved ones **(Table 1).**

Comparing the demographic characteristics between the two groups of women it was found that there was a statistically significant difference

depending on the area they had grown up. In the MHT group, more women had grown up in an urban area compared to the non-MHT group ($p \leq 0.05$). Regarding the educational level, it was found that the MHT group included, a greater number of women who had a degree of higher education ($p<0.001$). The non-MHT group of women included more secondary graduates ($p<0.001$). On the contrary, the MHT group included a greater number of women who had demanding jobs (officials, businessmen, etc.) compared to the non-MHT group (more housewives) ($p=0.008$) **(Table 1)**. Comparing the mean scores of demographic characteristics between the two groups of women, such as number of children, age, menopausal age and height were not statistically significant differences. On the contrary**,** a statistically significant difference was found between the two groups in terms of body weight, with women of the non-MHT group being more overweighed than the first ($p<0.001$).

During the comparison based on menopausal symptoms scale (The Greene Climacteric Scale) and MENQOL, it was found that the MHT group of women appeared to have no statistically significant difference ($p<0.001$) between the first and second assessment concerning the symptoms of anxiety, depression, somatic, vasomotor and sexual dysfunction problems, but the symptoms were more severe in the first assessment than the second one **(Table 3).** In contrast, in the non-MHT group these symptoms became more pronounced during the second assessment ($p<0,001$). Apart from vasomotor symptoms, no statistically significance was found in both assessments **(Table 4, 5).**

A comparison of the mean scores of Greene Scale between the two groups, showed that women in the non-MHT group had statistically significantly higher values than the MHT group in both assessments (mean score of the MHT group 13.21 ± 9.61 vs 25.33 ± 12.25 of the non-MHT group in the first measurement, $p<0,001$ and a mean score of MHT group 9.17 ± 6.93 vs 28.65 ± 13.25 during the second measurement, $p<0.001$).

Multiple linear regression analysis in GC scale showed that demographic variables such as the level of education, the occupation and the group explain 49.4% of the Greene scale variance. Women with higher education level showed lower scores in the overall rating, while the non-MHT group of women with demanding professions showed higher scores in the overall rating of this scale (Table 4).

During the rating on the quality-of-life (MENQOL), it was found that in the MHT group, there was no statistically significant difference between the two assessments (p <0,001). More specifically, substantial improvement in most aspects of quality-of-life (vasomotor, psycho-social, physical and sexual) had appeared in the second assessment (**Table 5).** Observing the mean scores of the MENQOL scale in **Table 3** it is obvious that the total score was significantly higher in the first assessment, indicating that the symptoms were more severe than in the second one, in the group which received MHT.

When comparing the measurements in the non-MHT group which did not receive MHT, a statistically significant difference was found between the two assessments ($p<0.001$), while the total score is clearly higher in the second assessment **(Table 5).** Therefore there is a worsening of most parameters in quality-of-life in the second assessment **(Table 5).** The comparison between the two groups showed that the non-MHT group had significantly worse quality-of-life than the MHT group, (mean value in the MHT group 41.11 ± 26,96 versus 76.82 ± 31.67 in the non-MHT group, $p< 0.001$), and in the second assessment (mean value in the MHT group 31.63 ± 20.25 versus 86.33 ± 32.55 in the non-MHT group, $p<0.001$).

Multiple linear regression analysis for the quality-of-life showed that demographic variables

(age, educational level, occupation, weight, age at menopause and the group of women) explain 54.8% of the variance. Women with higher education level had lower mean values in the overall rating of the MENQOL, while women in the non-MHT group showed higher mean values in the overall rating.

Finally, to determine whether GC and MENQOL scales are correlated with each other, Pearson correlation coefficient was used. In correlating the scales with the Pearson coefficient during the first and second assessment a statistically significant positive correlation was found in both assessments (r=0.796 and p<0.001 and r=0.845 and p<0.001 respectively)**.**

Subsequently, it was found that among the scales in the MHT group during the first assessment there was a strong positive correlation in a statistically significant level (r=0.702 and p<0.001), moderately positive correlation in a statistically significant level for the MHT group during the second assessment (r=0.624 and p<0.001), strong positive correlation in the non-MHT group during the first assessment in a statistically significant level (r=0.747 and p<0.001) and finally there was also a strong positive correlation in a statistically significant level in the non-MHT group during the second assessment (r=0.732, p<0.001). Therefore, when the total score values are increasing in one scale, they also tend to increase in the second one.

Discussion

The results of this study are consistent with the international literature. It was found that menopause for Greek women is characterized by the occurrence of multiple symptoms, as well. It became also apparent that there is a significant benefit in relieving the vasomotor symptoms of menopause (hot flashes, sweating), insomnia and specific physical symptoms (vaginal dryness, skin dryness, urinary frequency) with the use of MHT.[21, 22]

The literature also suggests that there is a greater loss of sexual desire in women not receiving hormonal therapy, and a greater impairment on some cognitive functions (memory, concentration).[21] In the present study, a statistically significant difference was found between the two groups of women, concerning their birthplace they grew up. Most women in the treated group had grown up in an urban area, while most women not receiving therapy were raised in a rural area. Most women probably, who were raised in urban areas have been open-minded and have different way of thinking in well-being. Women grown in rural places still adopt old stereotypes such as that menopause is a natural procedure so they do not need further treatment. A statistically significant difference was found between the two groups of women regarding the level of education. The group of women receiving hormonal therapy had a higher level of education compared with women who were not. In a research study in the USA, one of the major finding was that women with higher educational level, had the general sense of controlling the situation and had easier adaptation to menopause.[21] In a study by Donnerstein et al.,[23] fewer symptoms were found in menopausal women with a higher education level, absence of chronic health conditions, low level of interpersonal stress, and positive attitudes to ageing and menopause. In the MHT group more women had demanding jobs in relation to the non-MHT group.

Multiple Regression Analysis showed that the high level of education correlates with better quality-of-life in the group of women who were taking MHT. In an Italian study of postmenopausal women, the education level was also found to correlate with more frequent use of MHT.[24] Notably, Gold et al.,[25] found that increased age, lower educational level, difficulty in paying for

basics and employment were related to the prevalence of most symptoms.

It was also found that taking MHT correlated statistically significantly with fewer symptoms of anxiety and depression and better quality-of-life in menopause. These findings are entirely consistent with another study.[19] Hlatky et al.,[26] argued that the effects of hormone therapy depend on the presence of menopausal symptoms. Women without flushes had greater decline in the physical measures, while women with flushes had improvements in emotional measures of quality of life. In a study of women with major depressive disorder, Kornstein et al.,[16] evaluated depressive characteristics between postmenopausal women taking and not taking hormone treatment. Postmenopausal women who were taking hormone treatment had better physical functioning, fewer depression features and less sympathetic arousal than women not taking hormone treatment. Generally, treatment with estrogens and progestins resulted in significant improvement in symptoms of anxiety and depression and subsequently in the quality-of-life.[27] In menopause research, there is considerable criticism concerning the possible "medicalization" of a normal process of the female body.[27] It was argued by some researchers that women approaching the Menopause Clinics differ from women of the same age and menopausal stage without symptoms and do not come for examination.[28]

In this respect there is a strong argument in the sense that in recent years there is much better overall awareness of health issues, menopause and potential positive effects and side effects from taking hormone therapy. The media make frequent references to these issues. Many women now come to learn about menopause, for screening, for osteoporosis and clarification of doubts and on referral from nurses and doctors (orthopedists, cardiologists, pathologists, dermatologists, etc.)

Following the results of the Women's Health Initiative (WHI),[5] there was a sharp decline in postmenopausal hormone therapy use. At the same time there was a decline in oral formulation and increase in vaginal formulations, a decline in standard and high-dose and an increase in low-dose oral formulations.[29,30] In the meanwhile, guidelines continued to evolve and now recommend limiting the use of MHT to low-dose short-term treatment for menopausal symptoms as well as for the prevention of osteoporosis in women.[31] Nurses should take into account women's attitudes, health, lifestyle, knowledge and symptom experience.[32]

Conclusion

In a great number of studies, MHT seems to provide significant benefit in improving the quality-of-life during the menopause. Given the risk of complications from hormone therapy (breast cancer, coronary cardiovascular disease, stroke) the administration of this treatment should always be individualized and given with caution. Nurses can inform women what is appropriate for them, or to whom they can address. The nurse's advisory role is of high value to the women's decision-making on MHT.

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ANNEX

Table 1. Comparison of the rates of demographic characteristics on two groups of women

		MHT group		non-MHT group		
Variable	**Category**	**N**	**%**	**N**	**%**	***p***
Region of birth	**Urban** **Suburban** **Rural**	**33** **34** **33**	**33** **34** **33**	**31** **32** **53**	**26,7** **27,6** **45,7**	**0,165**
Region of growing	**Urban** **Suburban** **Rural**	**46** **31** **23**	**46** **31** **23**	**43** **28** **45**	**37,1** **24,1** **38,8**	**0,045**
Education	**Primary education** **Middle / High School** **Higher education**	**12** **39** **49**	**12** **39** **49**	**41** **48** **27**	**35,3** **41,4** **23,3**	**0,000**
Occupation	**Housewives** **Limited responsibility** **Increased responsibility**	**44** **37** **19**	**44** **37** **19**	**73** **34** **9**	**62,9** **29,3** **7,8**	**0,008**
Marital status	**Married** **Unmarried**	**67** **10**	**67** **10**	**88** **07**	**75,9** **6,0**	**0,318**

	Divorced / Widow	23	23	21	18,1	
Smoking habits	Smokers	39	40,2	42	36,5	
	Non smokers	58	59,8	73	63,5	0,671
With serious financial problems	Yes	7	7,2	7	6,2	
	No	90	92,8	106	93,8	0,788
Serious relationship problem with children	Yes	4	4,1	2	1,8	
	No	93	95,9	111	98,2	0,418
Serious relationship problem with spouse	Yes	8	8,2	8	7	
	No	89	91,8	106	93	0,798
Death of a beloved person	Yes	15	15,5	11	9,6	
	No	82	84,5	103	90,4	0,214

Table 2. Comparison of mean scores and standard deviations of the two groups during the first and second assessment

		MHT group		non-MHT group		
	Scale	$\bar{x}$	SD	$\bar{x}$	SD	*p*
1st interview	G C scale	13,21	9,61	25,33	12,25	0,000

	MENQOL scale	41,11	26,96	76,82	31,67	0,000
2nd interview	G C scale	9,17	6,93	28,65	13,25	0,000
	MENQOL scale	31,63	20,25	86,33	32,55	0,000

Table 3. Regression analysis of the total score in the GC scale (n=216).

Independent Variables	B	Standard Error	Beta	t	*p*	95% confidence limits of the coefficient B
Age	0,106	0,204	0,034	0,519	0,604	-0,296-0,506
Level of Education	-4,563	1,180	-0,243	-3,865	0,000	(-6,890)-(-2,235)
Occupation	2,953	1,252	0,144	2,359	0,019	0,485-5,421
Weight	3,155	0,078	0,021	0,404	0,687	-0,122-0,458
Mean Age at menopause	3,16	0,216	0,010	0,146	0,884	-0,395-0,458
Non MHT Group	18,171	1,568	0,625	11,590	0,000	15,080-21,263

R^2=0,494

Table 4. Comparison of the MHT group with the non-MHT group during the first and second assessment in the MENQOL

	1st assessment					2nd assessment				
	MHT group		non-MHT group			MHT group		non-MHT group		
Symptoms	$\bar{x}$	SD	$\bar{x}$	SD	*P*	$\bar{x}$	SD	$\bar{x}$	SD	*p*
1.Flushes	1,01	1,83	3,76	2,36	0,000	0,23	0,80	3,62	2,41	0,000
2.Night sweats	0,98	1,71	3,42	2,53	0,000	0,24	0,81	3,37	2,49	0,000
3. Day sweats	1,14	1,90	3,52	2,46	0,000	0,26	0,92	3,38	2,44	0,000
4.Unhappy	1,32	1,67	2,28	2,20	0,000	1,15	1,46	2,47	2,26	0,000
5.Anxiety or nervousness	1,84	1,89	3,53	2,21	0,000	0,97	1,20	3,90	2,03	0,000
6.Easy loss of memory	1,83	1,82	2,38	1,97	0,035	1,90	1,76	2,74	1,80	0,001
7.Less successful	1,19	1,53	2,17	1,91	0,000	0,94	1,27	2,50	1,87	0,000
8. Bad-tempered	1,31	1,54	2,77	2,28	0,000	0,79	1,17	3,18	2,25	0,000
9.Impatient with others	2,18	1,76	2,75	2,18	0,032	2,10	1,71	2,94	2,16	0,000
10.Need of living alone	2,31	1,82	2,72	1,17	0,135	1,99	1,86	3,16	2,01	0,000

11. Pain in abdomen	**1,45**	**1,98**	**2,86**	**2,17**	**0,000**	**1,31**	**1,62**	**3,14**	**2,20**	**0,000**
12.Pain in muscles, joints	**1,23**	**1,56**	**2,76**	**2,19**	**0,000**	**0,98**	**1,32**	**3,15**	**2,14**	**0,000**
13.Fatigue	**1,96**	**2,04**	**3,61**	**2,08**	**0,000**	**1,75**	**1,67**	**3,86**	**1,99**	**0,000**
14.Sleeping difficulties	**1,63**	**1,95**	**2,96**	**2,32**	**0,000**	**1,18**	**1,48**	**3,10**	**2,38**	**0,000**
15. Pain in back, neck or head	**1,29**	**1,72**	**2,27**	**2,06**	**0,000**	**1,01**	**1,50**	**2,46**	**2,06**	**0,000**
16.Reduced strength	**1,54**	**1,68**	**2,99**	**2,07**	**0,000**	**1,28**	**1,35**	**3,19**	**2,06**	**0,000**
17.Reduced stamina	**1,61**	**1,76**	**3,00**	**2,06**	**0,000**	**1,31**	**1,40**	**3,18**	**2,00**	**0,000**
18.Reduced energy	**1,47**	**1,83**	**2,87**	**2,06**	**0,000**	**1,36**	**1,42**	**2,97**	**2,07**	**0,000**
19.Dry skin	**1,78**	**1,99**	**2,05**	**2,18**	**0,000**	**1,03**	**1,49**	**2,08**	**2,18**	**0,000**
20.Gain weight	**1,75**	**1,73**	**2,99**	**2,29**	**0,000**	**1,29**	**1,45**	**3,04**	**2,23**	**0,000**
21. Hair growth	**1,04**	**1,57**	**1,49**	**2,06**	**0,075**	**0,56**	**1,04**	**1,59**	**2,05**	**0,000**
22. Skin changes	**0,75**	**1,55**	**1,52**	**2,02**	**0,002**	**0,60**	**1,32**	**1,73**	**2,16**	**0,000**
23.Feeling of	**1,02**	**1,60**	**2,40**	**2,20**	**0,00**	**0,92**	**1,43**	**2,45**	**2,20**	**0,00**

"fed up"					0					0
24.Backache	1,13	1,66	1,98	2,13	0,001	1,11	1,54	2,03	2,03	0,000
25.Urinary frequency	1,09	1,81	1,89	2,17	0,003	0,93	1,61	2,19	2,20	0,000
26. Urine when laugh or cough	1,01	1,75	1,66	2,04	0,012	0,69	1,27	1,85	2,07	0,000
27. Sexual dysfunction	2,48	2,32	4,44	1,93	0,000	1,90	2,04	4,70	1,23	0,000
28. Vaginal dryness	1,77	2,31	3,72	2,37	0,000	0,71	1,33	4,11	2,12	0,000
29.Avoiding sexual activity	1,18	1,99	3,07	2,64	0,000	0,96	1,79	4,17	2,18	0,000

Table 5. Regression analysis of the total score in the MENQOL (n=216)

Independent Variables	B	Standard Error	Beta	t	*p*	95% confidence limits of the coefficient B
Age	0,785	0,515	0,096	1,525	0,129	-0,230-1,800
Education	-9,384	2,984	-0,187	-3,145	0,002	(-15,269)-(-3,500)
Profession	-0,346	3,165	-0,006	-0,109	0,913	-6,586-5,894
Weight	5,12	0,197	0,013	0,260	0,795	-0,338-0,440
Age at menopause	-0,250	0,547	-0,029	-0,458	0,648	-1,328-0,828
Non MHT Group	50,782	3,964	0,653	12,811	0,000	42,966-58,596

R^2 = 0,548