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The medical management of menopause: A four country comparison of urban care

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Abstract

Objective—To compare the medical management of menopause across urban areas in four countries which differ by level of income and degree of medicalization.

Methods—Surveys of health providers who advise women on the menopausal transition were carried out in Beirut, Lebanon (n=100), Madrid, Spain (n=60), Worcester, Massachusetts, U.S. (n=59), and Rabat, Morocco (n=50) from 2002 to 2004. Physician characteristics, hormone therapy (HT) prescribing practices, and concerns about the management of menopause were compared across countries using chi-square and logistic regression analyses.

Results—After controlling for physician specialty and sex, physicians in Madrid (OR 3.228) and Massachusetts (OR 7.641) were more likely to write >5 prescriptions for HT per month compared with physicians in Beirut. Physicians in Massachusetts (OR 3.961) were most likely to recommend HT for 10 years or more. Physicians in Madrid were significantly less likely to talk with patients about menopause for ≥ 15 minutes (OR 0.160), and were less likely to say that the benefit of HT was “very high” for symptom alleviation (OR 0.253) or osteoporosis prevention (OR 0.146). Physicians in Beirut were most likely to obtain a mammogram and an endometrial biopsy prior to treating symptoms. Physicians in Massachusetts (OR 0.298) and Rabat (OR 0.399) were significantly less apt to describe their concern about breast cancer as “serious.”

Conclusions—Prescription patterns and perceived benefits of HT appear to reflect local medical culture rather than simply physician characteristics. The impact of the WHI study was seen in prescribing patterns and concerns about HT. Physicians in all 4 countries were generally well informed.

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Introduction

Menopause is a medicalized condition; a normal life course event that comes under the sphere of medical supervision and influence [1]. Vicki Meyer [2] argues that the medicalization of menopause began in the U.S., spread across Europe, and then to the rest of the world. The same process may now be happening to the so called “male menopause,” previously understood to be social issue, but now refashioned into a medical problem [3]. The extent to which menopause is medicalized differs across countries, and even across regions within the same country [4]. Medicalization occurs in response to the concerns and demands of patients, physician education and socialization, and commercial and market interests [5–12].

The use of estrogen replacement therapy (ERT) after menopause was popularized in the 1960s and 1970s as a means to reduce hot flashes and improve skin tone [13]. The popularity of ERT declined at the end of the 1970s because of its association with endometrial cancer [14]. Progestogen was added to the regimen to protect the uterus from cancer and, in the 1980s, Hormone Replacement Therapy (HRT) was reconfigured as a preventative for osteoporosis [12]. HRT was recommended for use by all women in 1992 [15], and by the end of the 1990's, Hormone Therapy (HT) was portrayed as a preventative for coronary heart disease and dementia in addition to its FDA approved role as a treatment for vasomotor symptoms and osteoporosis.

The use of HT was dramatically called into question in 2002 when the Women's Health Initiative (WHI) was stopped due to a demonstrated increase in risk of venous thrombosis, ischemic stroke, breast cancer, and dementia among women taking HT compared to women taking placebo [16–19]. While researchers and clinicians continue to debate the details of the WHI [20–23], women around the world responded to the findings of the WHI by stopping the use of HT [24–28].

Treatment of vasomotor symptoms (i.e., hot flashes and night sweats) is the primary indication for HT. HT products are also FDA approved for treating vaginal atrophy and for preventing osteoporosis [29]. The use of HT varied across countries prior to the WHI study [30–32] and use continues to vary across countries in the wake of the WHI results. The purpose of this study was to compare the medical management of menopause, with particular emphasis on the use of HT, across four urban areas in Lebanon, Spain, the United States, and Morocco.

These four countries differ in terms of income, cost of health care delivery, risk of chronic diseases associated post-menopausal declines in levels of estrogen (e.g., cardiovascular disease) and risk of cancers associated with ERT (endometrial cancer) and HT (breast cancer) (Table 1). Of the four countries, the U.S. has the highest per capita income and the highest per capita total expenditure for health, Morocco has the lowest income and health care expenditure. In the U.S. 55% of health care expenditure comes from non-governmental sources (e.g., private insurance and out-of-pocket). This is lower than the percentage of non-governmental health care expenditure in Lebanon (73%) and Morocco (66%) but higher than non-governmental health care expenditure in Spain. Morocco has begun to implement a universal health insurance plan, but the system in place when this survey was carried out was a mixture of separate mutual insurers (e.g., for civil servants), private health insurance, and a compulsory social security system [33]. Spain, on the other hand, has had a comprehensive, single-payer national health service since 1978 (<http://www.euro.who.int>).

The studies presented here were carried out in the capital cities of Beirut, Lebanon; Madrid, Spain; and Rabat, Morocco; and in the urban area of Worcester, Massachusetts (population 172,648, 2000 census), U.S. This sampling limits the generalization of results to rural areas; however, the sampling of these urban centers increases the comparability of the studies because all four areas share a high degree of access to resources including at least one medical school.

Methods

The Decisions At Menopause Study (DAMES) was designed as a multisite study of women's experience of menopause and the role of health providers who advise women on the menopausal transition. Women aged 45 to 55 were drawn from the general population in Beirut, Lebanon; Madrid, Spain; central Massachusetts, U.S.; and Rabat, Morocco [34–38]. At about the same time, surveys were administered to health care providers in the same four locations. Results from the health care provider surveys are presented here.

In Beirut, an official list of registered physicians provided the sampling frame for the study. Physicians were selected from the specialties most frequently consulted for symptoms associated with menopause, namely gynecology (two thirds of the sample), internal medicine, and family practice. A randomly selected sample of 130 physicians was contacted by phone. Face to face interviews were carried out in 2003 with 100 physicians. The interviews took approximately one half hour.

In Madrid, physicians were recruited from one public and two private medical centers. The mailed questionnaires were self-administered, with follow up by a nurse to help each physician fully complete or clarify answers to every question. In total, 46 gynecologists and 14 general practitioners participated in the study in 2003.

Physicians from the Fallon Clinic in Worcester, Massachusetts, were contacted through a letter about the study and invited to participate by completing a survey. Letters were sent to all primary care physicians (n=54), physician assistants (n=5), and the one nurse practitioner working in eight Fallon Clinic Internal Medicine sites, and to all of the Fallon Clinic gynecologists (n=12). The surveys were conducted from February through October, 2002, during monthly staff meetings at each site. The Ob/Gyn staff participated during their October meeting. The final sample consisted of 46 primary care physicians, 8 gynecologists, 4 physician assistants, and the one nurse practitioner.

In Rabat, gynecologist/obstetricians and general practitioners were selected from a list drawn up by the national Council of the Order of doctors. This list included doctors practicing in both the public and private sectors. A sample of 66 physicians (2/3 of whom were gynecologist/obstetricians) were contacted by telephone and 50 ultimately participated in hour-long, face to face interviews carried out by two public health physicians. The interviews were carried out in 2004.

The same semi-structured questionnaires were used in face-to-face interviews in Beirut and Rabat, and were self-administered in Madrid and Worcester. In Madrid and Worcester follow up was carried out to clarify and complete the self-administered questionnaires, so methods of instrument administration were relatively comparable. The questionnaire administered in Rabat was slightly shorter, resulting in some missing data. The missing data for Rabat included whether physicians performed BMD tests and endometrial biopsies prior to treating menopausal symptoms, how physicians would rate women's knowledge of the risks and benefits of HT, and the amount of time spent with patients discussing the medical management of menopause.

The questionnaires included general background information to determine physician characteristics (sex, specialty, year of graduation from medical school, teaching or training responsibilities). Physicians were asked to indicate from a list of nine choices the primary concerns of their patients. They were then asked the proportion of patients aged 45–55 who consulted with them specifically about menopause (almost half, about half, about a third, about a quarter, and few patients). Physicians were asked how many prescriptions a month they write specifically for HT, for how long women should continue HT, the relative importance of

symptom alleviation and disease prevention when prescribing HT, and tests that they would obtain (mammograms, bone mineral density (BMD), and endometrial biopsy) prior to treating menopausal symptoms. Physicians were also asked to rate the benefits of HT and selective estrogen receptor modulators (SERMs) in relation to symptom alleviation, osteoporosis, the prevention of cardiovascular disease (CVD), Alzheimer's disease, sleep problems, cognitive function, depressed mood, and appearance/skin tone. Health care practitioners were asked about their level of concern (none, minimal, moderate, serious) related to the use of HT and breast cancer, endometrial cancer, and irregular/heavy bleeding. In an open-ended question they were asked, "In your clinical experience, what are the three most common side effects that women experience while on HT?" Physicians were also asked to rate most women's knowledge about the use of HT (not informed, moderately informed, well informed), whether they have difficulty making decisions about the management of menopause, and why they encounter difficulty in counseling women about HT (insufficient time, insufficient information about alternatives, concerns about risks, difficulty assessing risks and benefits, and difficulty in initiating discussion with patients). Finally, physicians were asked how long they spend discussing the medical management of menopause with patients.

Physician characteristics were compared across research sites using χ^2 analyses. How physicians described women's main concerns, the four most common side effects of HT as volunteered by clinicians, and how physicians rated women's knowledge of the risks and benefits of HT were also examined by χ^2 analyses. Logistic regression was used to determine whether or not country-level differences in physician prescribing patterns and concerns about the use of HT persisted after controlling for the effect of physician sex and specialty. Year of graduation from medical school was also examined as a possible determinant of clinical decision making using a backwards stepwise method of logistic regression analyses. Because of the intercorrelation between physician sex and year of graduation from medical school in Beirut and central Massachusetts¹, and because it was not a significant predictor in any model, year of graduation was ultimately dropped and direct entry of country, physician specialty, and physician sex was carried out and is reported here.

Results

Physician characteristics

Physician characteristics are shown in Table 2. The proportion of male and female physicians sampled did not differ significantly across Madrid, Massachusetts, and Rabat; however, in Beirut significantly more males were sampled. In Massachusetts, the majority of physicians described their practice as internal medicine, whereas the majority of physicians in Beirut, Madrid, and Rabat were gynecologists. In Madrid and Rabat, physicians graduated from medical school more recently compared with central Massachusetts where 78% graduated from medical school prior to 1991. In Beirut, Madrid, and Massachusetts the majority of physicians had teaching or training responsibilities.

Physician's report of patient concerns

Across all research sites, hot flashes were reported by physicians to be the most common patient concern. This was followed by osteoporosis prevention and menstrual cycle disruption in Beirut and Madrid, by depression and problems with sleep in central Massachusetts, and by depression and menstrual cycle disruptions in Rabat. Depression and prevention of cardiovascular risks were reported by U.S. physicians significantly more often compared with

¹In Beirut, among physicians who graduated in 1980 or before, 4.3% were women, compared with 23% of those from 1981–1990 and 44% of those from 1991 to the present ($p<0.01$). In central Massachusetts, among physicians who graduated in 1980 or before, 15% were women, compared with 44% of those from 1981–1990 and 92% of those from 1991 to the present ($p<0.01$).

the other research sites ($p<0.01$). Overall, physicians in the U.S. reported the highest frequency of four concerns (menstrual cycle disruptions, problems with sleep, depression, cardiovascular prevention). Spain reported the highest frequency of concern with appearance: skin/weight gain (Table 3).

Percentage of patients consulting about menopause

More physicians in Madrid (40%) reported that almost all of their patients aged 45–55 consulted with them about menopause, compared with 25% in Massachusetts, 16% in Rabat, and 15% in Beirut. In Beirut and Rabat about 25% said that few women consulted with them about menopause. Logistic regression analysis showed that, after controlling for physician specialty and sex, physicians in Madrid (OR 2.930, 95% CI 1.309–6.558) and central Massachusetts (OR 2.892, 95% CI 1.029–8.129) were still significantly more likely to report that almost all of their patients consulted with them about menopause compared to physicians in Beirut, the reference category. Compared to gynecologists, family physicians (OR 0.347, CI 0.137–0.878) were significantly less likely to report that almost all of their patients consulted with them about menopause. Finally, female physicians (OR 2.151, CI 1.154–4.009) were significantly more likely to report that almost all of their patients consulted with them about menopause (Table 4).

Prescription patterns

Sixty-five percent of physicians in Madrid were likely to write more than 5 prescriptions for HT per month compared with 47% in Worcester, 32% in Beirut, and 30% in Rabat. Using logistic regression analysis to control for physician characteristics, physicians in both Madrid (OR 3.228, 95% CI 1.548–6.731) and central Massachusetts (OR 7.641, CI 2.600–22.455) were significantly more likely to write more than 5 prescriptions compared with physicians from Beirut (the reference group). Internal medicine (OR 0.120, CI 0.040–0.360), family (OR 0.328, CI 0.152–0.707), and other (OR 0.042, CI 0.004–0.487) physicians were significantly less likely to write more than 5 prescriptions compared to gynecologists. Physician sex was not a significant predictor of the number of HT prescriptions written (Table 4).

When asked if they would prescribe unopposed estrogen to women with intact uteri, there were no differences across Beirut, Madrid, or central Massachusetts. There was a difference, however, when physicians were asked for how long they would recommend that a woman continue HT. Twenty-eight percent of the physicians in the U.S. said more than 10 years compared to physicians in Lebanon (8%), Spain (2%), or Morocco (0%). Using logistic regression analysis to control for physician characteristics, physicians in Worcester, Massachusetts were significantly more likely to recommend that a woman continue HT for more than 10 years (OR 3.961, 95% CI 1.163–13.485) compared with physicians from Beirut (the reference group). Physician sex and specialty were not significant predictors of the number of HT prescriptions written (Table 4).

When asked about the relative importance of symptom alleviation and disease prevention when prescribing HT, the majority of physicians across all research sites said that both were equally important. Physicians in central Massachusetts (39%) were more likely to say that symptom alleviation was most important. Physicians in Rabat (30%) were more likely to say that disease prevention was most important (Table 3).

Physicians in Madrid and Beirut were asked directly whether or not they changed their prescribing patterns following the publication of the WHI results. In Beirut 15% of health care providers said that they had not changed their prescribing practices, compared with 47% of Spanish physicians in Madrid. In Beirut, 46% said that they now prescribe HT less frequently, and 49% reported that they prescribe HT for a shorter duration, compared with 37% and just

3% of physicians making the same changes in frequency and duration in Madrid. Among physicians who shifted to other medications, the alternative medications prescribed most often in Beirut were Raloxifene (64%), Tibolone (49%), and Biphosphonate (19%). The alternative medications prescribed most often in Madrid were Raloxifene (42%), Phytoestrogen (38%), and Biphosphonate (17%).

Tests done prior to prescribing HT

Prior to treating menopausal symptoms, physicians in Beirut were most likely to obtain a mammogram (97%) compared with physicians in Madrid (87%), Massachusetts (70%), and Rabat (86%). In a logistic regression analysis, after controlling for physician characteristics, physicians in Spain (OR 0.139, 95% CI 0.029–0.661), the U.S. (OR 0.143, CI 0.036–0.574), and Morocco (OR 0.158, CI 0.032–0.777) were significantly less likely to obtain a mammogram compared with physicians in Beirut. Internal medicine (OR 0.156, CI 0.036–0.674) and family physicians (OR 0.162, CI 0.057–0.458) were significantly less likely to obtain a mammogram compared with gynecologists. Physician sex was not a significant predictor of whether or not a physician would obtain a mammogram prior to treating menopausal symptoms (Table 5).

There was no difference across countries in relation to the likelihood of obtaining a BMD report prior to treating menopausal symptoms (about 52% of physicians in Beirut, Madrid, and Worcester, Massachusetts). However, logistic regression results indicate that internal medicine physicians (OR 4.230, 95% CI 1.771–10.107) were more likely to obtain a BMD compared with gynecologists. There was no difference in relation to physician sex (Table 5).

Prior to treating menopausal symptoms, physicians in Beirut were more likely to obtain an endometrial biopsy (17%) compared with physicians in Madrid (7%) and central Massachusetts (3%). In logistic regression, after controlling for physician characteristics, physicians in Madrid (OR 0.254, 95% CI 0.072–0.898) and central Massachusetts (OR 0.141, CI 0.027–0.739) were significantly less likely to obtain an endometrial biopsy compared with physicians in Beirut. Female physicians (OR 3.302, CI 1.259–8.661) were significantly more likely to obtain a biopsy compared with male physicians. Specialty was not a significant predictor of whether or not a physician would obtain a biopsy prior to treating menopausal symptoms (Table 5).

Rating the benefits of HT

When physicians were asked to rate the benefits of HT on a scale of none, small, moderate, good, very high, and (in Beirut and Rabat) unclear, symptom alleviation was the benefit marked “very high” most often in Beirut (65%), Madrid (35%), central Massachusetts (54%), and Rabat (56%). After controlling for physician characteristics, physicians in Madrid (OR 0.253, 95% CI 0.121–0.531) were less likely to say that the benefit of HT for symptom alleviation was “very high” compared with physicians in Beirut (Table 6).

Osteoporosis prevention received “very high” marks as a benefit of HT in Beirut (32%), central Massachusetts (31%), and Rabat (28%), but received relatively low marks in Madrid (only 7% said “very high”). After controlling for physician characteristics, physicians in Madrid (OR 0.146, 95% CI 0.047–0.452) were less likely to say that the benefit of HT for osteoporosis prevention was “very high” compared with physicians in Beirut (Table 6).

After controlling for physician characteristics, physicians in Madrid were less likely to rank the benefit of HT as “very high” for depressed mood (OR 0.250, 95% CI 0.066–0.951) and physicians in Rabat were more likely to rank the benefit of HT as “very high” for depressed mood (OR 3.123, CI 1.300–7.502) compared with physicians in Beirut. Physicians in Rabat were also significantly more likely to rank HT as being of “very high” benefit for appearance/

skin tone (OR 2.491, 95% CI 1.003–6.188) compared with physicians in Beirut. Physicians in central Massachusetts were less likely to rank the benefit of HT as “very high” for the primary prevention of CVD (OR 0.094, CI 0.010–0.866) compared with physicians in Beirut (Table 6). Finally, physicians in Madrid were less likely to rank the benefit of HT as “very high” for sleep problems (OR 0.195, CI 0.041–0.938) compared with physicians in Beirut (not shown).

In no country did more than 12% of physicians rank as “very high” the benefit of HT in relation to prevention of CVD, Alzheimer’s disease, or cognitive function. Moroccan physicians frequently chose the option of “unclear” to describe the benefits of HT in relation to Alzheimer’s disease (52%), cognitive function (52%), and primary prevention of CVD (38%). Lebanese physicians were most likely to use the “unclear” option to describe the benefits of Alzheimer’s disease (39%). In general, internal medicine and family practice physicians were less likely to rank HT as “very high” for any health condition compared with gynecologists (Table 6). There was no difference by physician sex in ranking the benefit of HT as “very high” in relation to any health condition.

The benefit of SERMs was ranked “very high” with respect to osteoporosis by 38% of physicians in Beirut, but by only 15% of physicians in Madrid and Massachusetts. After controlling for physician characteristics, physicians in Spain (OR 0.283, CI 0.113–0.706) and Massachusetts (OR 0.267, CI 0.091–0.784) were still less likely to rank the benefit of SERMs as “very high” with respect to osteoporosis. There was no difference by physician specialty or sex. With regard to symptom alleviation, SERMs were ranked “very high” by only 3% of physicians in Beirut, 6% in Madrid, and by no physicians in Massachusetts. In logistic regressions, there were no significant differences by country, specialty, or sex (not shown).

Physician concern about risks associated with HT

When physicians were asked to indicate how concerned they were about breast cancer, endometrial cancer, and irregular/heavy bleeding in relation to HT, physicians in all countries were most seriously concerned about breast cancer. There were differences across countries, however, in that more physicians in Beirut and Madrid said that their concern about breast cancer was serious (65% and 63%, respectively) compared with physicians in central Massachusetts and Rabat (41% and 42%). A logistic regression analysis was carried out to compare no to moderate breast cancer concern with serious concern. After controlling for physician characteristics, physicians in central Massachusetts (OR 0.298, 95% CI 0.129–0.685) and Rabat (OR 0.399, CI 0.190–0.839) were significantly less apt to describe their concern about breast cancer as serious compared with physicians in Beirut (the reference group) (Table 7). Physician sex and specialty were not significant predictors of concern about breast cancer.

The percentage of physicians who described their concern about endometrial cancer as “serious” was 40% in Beirut, 33% in Madrid, 19% in central Massachusetts, and 24% in Rabat. Logistic regression analysis showed that physicians in central Massachusetts (OR 0.144, 95% CI 0.052–0.401) were significantly less likely to be concerned about the risk of endometrial cancer compared with physicians in Beirut. In addition, internal medicine physicians (OR 4.253, CI 1.666–10.861) were significantly more likely to be concerned about endometrial cancer compared with gynecologists. Physician sex was not a significant predictor of concern about endometrial cancer (Table 7).

Physicians in Beirut were more likely to be seriously concerned about irregular/heavy bleeding (27%) compared with physicians in Madrid (18%), central Massachusetts (7%), and Rabat (14%). In a logistic regression analysis comparing no to moderate concern with serious concern, after controlling for physician characteristics, physicians in central Massachusetts (OR 0.145, 95% CI 0.041–0.508) were significantly less likely to describe their concern about irregular/heavy bleeding as serious compared with physicians in Beirut (the reference group.).

Physician characteristics were not significant predictors of concern about irregular/heavy bleeding (Table 7).

In answer to an open-ended query about the side effects of HT, weight gain and fluid retention were the top concerns in Beirut and Madrid. Irregular bleeding/spotting was the top concern in central Massachusetts and Rabat (Table 3).

Concerns related to counseling patients

Physicians in Beirut were more likely to rate women's knowledge of HT as "well informed" (88%) compared with physicians in Madrid (0%) or central Massachusetts (10%). After controlling for physician characteristics, physicians in central Massachusetts were significantly less likely to describe women as "well informed" compared with women in Beirut (OR 0.032, 95% CI 0.010–0.108). Physician specialty and sex were not predictors of the description of patients as well informed (not shown).

Physicians in Beirut were less likely to say that they found decisions regarding the management of menopause to be difficult (50%) compared with physicians in Madrid (78%), Massachusetts (76%), and Rabat (54%). After controlling for physician characteristics, physicians in Spain (OR 3.085, 95% CI 1.416–6.721) and Massachusetts (OR 3.124, CI 1.297–7.523) were more likely to say that they found decisions related to the management of menopause to be difficult. When asked to indicate reasons for difficulty counseling women about HT, the top reason voiced by 43% of physicians in Beirut, by 74% of health care personnel in Massachusetts, and by 72% of physicians in Rabat was "concerns about risk." In Madrid the top reason voiced by 66% of physicians was "insufficient time".

After controlling for physician characteristics, physicians in Madrid (OR 15.560, 95% CI 4.982–48.596) and Massachusetts (OR 9.656, CI 2.575–36.209) were more likely to say that they had insufficient time compared with physicians in Beirut. Physicians in Massachusetts were more likely to say that they had insufficient information about alternatives (OR 5.666, 95% CI 1.632–19.675), and difficulty assessing risks and benefits (OR 3.697, CI 1.292–10.582) compared with physicians in Beirut. Physicians in Madrid (OR 7.748, CI 1.330–45.135) were more likely to say that they had difficulty initiating discussion with patients compared with physicians in Beirut. Finally, physicians in Massachusetts (OR 4.840, CI 1.613–14.523) and Rabat (OR 3.119, CI 1.347–7.221) were more likely to say that they had concerns about risks compared with physicians in Beirut. With the exception of family practice physicians (OR 4.852, CI 1.945–12.108) who said that they were more likely to have insufficient time to talk with patients about HT compared with gynecologists, neither physician specialty nor sex were predictive for the reasons physicians gave for difficulty counseling women about HT (results not shown).

In open-ended responses, thirteen physicians in Beirut described difficult cases having to do with breast masses or cancers appearing after women took HT. They also described the problem of severe symptoms appearing with the cessation of HT. Said one physician, "After the WHI study, I had to discontinue two patients on HT upon their request. They had severe hot flashes and had to be put back on it and weaned off." Among physicians in Madrid, 48% said that they now have to explain more to patients, and 37% stated that they prescribe HT less frequently. Physicians in central Massachusetts cited counseling difficulties due to concern over cardiovascular risk, the general lack of clarity associated with understanding the risks and benefits of HT, and patients' fear of HT.

About half of physicians in Madrid (53%) and central Massachusetts (48%) said that they had 5 or fewer minutes to discuss the medical management of menopause with patients, compared to 24% in Beirut. After controlling for physician characteristics physicians in Madrid (OR

0.160 CI 0.061–0.420) were less likely to say that they spent ≥ 15 minutes discussing the medical management of menopause with their patients compared with physicians in Rabat. Internal medicine (OR 0.339, CI 0.139–0.828) and family practice physicians (OR 0.195, CI 0.053–0.716) were less likely to say that they spent ≥ 15 minutes compared with gynecologists. Physician sex was not a significant predictor of time spent talking about the medical management of menopause (not shown).

Discussion

In any cross-cultural study there is concern about the comparability of the questionnaires administered and the samples achieved. In the study reported here, the same semi-structured questionnaire was used in face-to-face interviews in Beirut and Rabat, and was self-administered in Madrid and Worcester, Massachusetts. It is important to point out that although the surveys were self-administered in Madrid and Worcester, extensive follow up was carried out to clarify and complete the questionnaires after they were received from the health care practitioner. The questionnaire administered in Rabat was slightly shorter, resulting in some missing data. In general, the questions were asked in the same order and in the same way in all four countries.

Sampling differed across sites in that health care practitioners were randomly drawn from a list of physicians in Beirut and Rabat, but recruited from places of employment in Madrid and Worcester. Also, the proportion of specialties differed across sites, so that in Madrid about 75% were gynecologists, in Beirut and Rabat about 67% were gynecologists, and in Worcester only 14% were gynecologists. Although there were differences across the sites, it was felt that in each city a representative sample of physicians who provided care for women during the menopausal transition was achieved.

The number of male and female physicians sampled was not significantly different in any country except Lebanon, where 76% of the sample was male. The proportion of male physicians sampled in Beirut is similar to the proportion of males surveyed in other recent studies of health service providers (84% male) [39] and obstetrician/gynecologists (76% male) [40] carried out in Lebanon. This similarity suggests that the sample achieved here is not biased, but representative of physicians in Beirut.

In addition to differences among physicians, there are differences across the populations they treat. The DAMES study found that among women aged 45–55, women in Spain were more likely to be single (19%), women in Massachusetts were more likely to be divorced (17%), and women in Beirut (10%) and Rabat (15%) were more likely to be widowed. Women in Madrid (23%) and Massachusetts (21%) were more likely to not have children, while women in Beirut (36%) and Rabat (46%) were more likely to have five children or more. Women in Beirut and Rabat were less likely to have schooling beyond intermediate grades, whereas 28% of women in Spain and 41% of women in Massachusetts had some college education or higher. Women in Massachusetts were more likely to be employed (86%), women in Beirut were most likely to smoke (57%), women in Madrid were most likely to drink at least once per week (48%), and women in both Madrid and Massachusetts were more likely to exercise compared with women in Beirut and Rabat [34].

More physicians in Madrid (40%) reported that almost all of their patients aged 45–55 consulted with them about menopause, and physicians in Madrid were more likely to write more than 5 prescriptions for HT per month compared with the other three research sites. These findings are consistent with the results of the DAMES survey, where about two-thirds of the participants in Madrid reported consulting a physician for menopausal symptoms [35].

Physicians in Beirut and Rabat, on the other hand, were most likely to say that “few” patients consulted with them about menopause, and they were less likely to write more than 5 prescriptions for HT per month. Correspondingly, fewer participants in the DAMES study in Beirut said that they sought medical help for symptoms (39%) [38] and only 5% of the women in Rabat were taking hormone therapy [37].

In general, differences in prescription patterns appear to reflect local medical culture rather than simply physician characteristics. In addition to country-specific differences, logistic regression analyses also showed that gynecologists were more likely to be consulted about menopause when compared with family physicians, and were more likely to write more than 5 prescriptions per month for HT. Other studies have also shown that gynecologists are more likely to prescribe HT compared to general practitioners in Quebec and France [31], Finland and Estonia [41], Morocco [42], and Spain [43]. In the study presented here, gynecologists were more likely to obtain a mammogram prior to treating menopausal symptoms. Gynecologists were not, however, more likely to obtain a BMD report or an endometrial biopsy and were significantly less likely to be concerned about endometrial cancer compared with internal medicine physicians.

Female physicians were significantly more likely to report that almost all of their patients consulted with them about menopause; however, female physicians were not more likely to write more prescriptions per month for HT. This differs from many, but not all [43,44] other studies, carried out pre-WHI, in which female physicians were more likely to write prescriptions for HT compared with male physicians [45–48]. There were no differences between the sexes with regard to concerns about risk for breast or endometrial cancer, similar to the findings of Rolnick et al. [49], although female physicians were significantly more likely to obtain an endometrial biopsy compared with male physicians.

Hot flashes were reported by physicians to be the most common patient concern in all four countries; however, a comparison of survey results among women at all four sites showed that hot flashes were not the most common symptom concern. Instead, sleep disturbance and headaches were more commonly reported in Beirut, Madrid, and central Massachusetts; impatience/nervousness and memory loss were more commonly reported in Beirut and Madrid; and fatigue/weakness was more commonly reported in Beirut and Rabat compared to hot flashes [34]. This discrepancy between physician’s and women’s perception results in a continued medical focus on hot flashes when other symptoms may actually be more common or more bothersome to women at midlife (see, for example, the dismissal of skeletal/muscular concerns in Turkey by Carda et al. [50]). The importance of appearance and weight gain in Madrid is consistent with other studies carried out in Spain that showed weight gain to be a concern among women at midlife [4].

The finding that 24% of physicians in Massachusetts reported prevention of cardiovascular risk as a common patient concern – a higher frequency than in Beirut or Madrid (Table 3) – may reflect the year the study was conducted in central Massachusetts. The study was carried out during 2002, the year the WHI results were made public. Later in the questionnaire, when physicians were asked to rank the perceived benefits of HT, physicians in Massachusetts were less likely to rank as “very high” the benefit of HT in relation to the prevention of CVD compared to physicians in Beirut (Table 6). In pre-WHI studies more than 80% of physicians in Mexico [44], Canada [51], and the U.S. [49] said that the prevention of CVD was an important reason to prescribe HT.

Physicians in urban Massachusetts were significantly more likely to prescribe HT for >10 years (OR 7.641) compared to physicians in Lebanon, Spain, or Morocco. The July, 2002, publication of WHI results may have also affected this comparison across countries.

Also, with regard to the effect of the WHI results, in no country did more than 12% of physicians rank as “very high” the benefit of HT in relation to CVD, Alzheimer’s disease, or cognitive function. Moroccan physicians frequently chose the option of “unclear” to describe the benefits of HT in relation to these three concerns. Lebanese physicians were most likely to use the “unclear” option to describe the benefits of Alzheimer’s disease. These findings can probably be attributed to the WHI results, as the surveys discussed here were carried out in 2004 in Rabat and 2003 in Beirut. In all sites it appears that physicians are well informed and keep up with international research results.

Currently, the North American Menopause Society recommends that, prior to treating menopausal symptoms, a mammogram should be obtained [29]. After controlling for physician characteristics, physicians in Beirut were still most likely to obtain a mammogram compared to physicians in Madrid, Massachusetts, and Rabat. This finding is consistent with the relatively high death rates from breast cancer in Lebanon shown in Table 1. Physicians in Beirut were also most likely to obtain an endometrial biopsy prior to treating menopausal symptoms compared to physicians in Madrid and Massachusetts. Deaths rates from uterine cancer are lower in Lebanon than in the U.S. or Spain (Table 1), therefore the tendency to get more endometrial biopsies in Beirut is not a response to relatively high death rates, but suggests either a shared philosophy of more comprehensive care, or a health care system that is, in general, more supportive of comprehensive care. An alternative explanation is that in Lebanon physicians are mainly treating women who can afford care for menopause and that is why they can be quite liberal with the tests they recommend.

The concern expressed by physicians about endometrial cancer is difficult to interpret because the vast majority of physicians interviewed do not prescribe unopposed estrogen to women with intact uteri. Therefore, they have minimal concern (e.g., in the U.S.) because of this prescribing habit or they have this prescribing practice because of their serious concern (e.g., Lebanon). Postmenopausal women with an intact uterus should be prescribed progestogen [29].

Regarding the difficulty of counseling women or managing menopause, the NAMS position statement [29, page175] noted that “a woman’s willingness to accept certain risks of [HT] will vary, depending on her individual situation.... An individual risk profile is essential for every woman contemplating any [HT]. Women should be informed of known risks.” Certainly, women’s knowledge affects the difficulty of counseling with respect to the management of menopause. Physicians in Beirut were significantly more likely to rate women’s knowledge of HT as “well informed,” and they were also less likely to say that they found decisions regarding the medical management of menopause to be difficult. The top reason given for difficulty in counseling women about HT in Beirut, central Massachusetts, and Rabat was concern about risks. In open-ended responses physicians in central Massachusetts cited counseling difficulties due to concern over cardiovascular risk and patients’ fear of HT, both concerns associated with the WHI results. Physicians in Madrid stated that they now have to explain more to patients, but at the same time said that they have “insufficient time” to do so. Physicians in Madrid were significantly less likely to discuss menopause for 15 minutes or more compared with physicians in Beirut.

In summary, the DAMES project represents one of the only studies to compare therapeutic decision making around menopause in four very different countries. Prescribing practices and factors associated with the prescription of HT seem to depend more on physicians’ country of residence than on their sex, specialty, or year of graduation from medical school. As Nassar et al. [52, page:20] observed in their study of Lebanese physicians, changes brought about by the results of the WHI study “occurred irrespective of the gender, age or place of specialty training of these physicians.” The widely publicized results of the WHI study affected the use of HT

across the world, and this can be seen in the results reported here. In the absence of clear guidelines about the use of HT, physicians must balance risks, assess individual profiles, and involve patients to a greater degree in decision making. The discrepancies between physicians' perceptions of women's main concerns, and the actual concerns of women surveyed in the same research sites, suggest that less than fifteen minutes is not enough time for physicians to spend with patients when they discuss the management of menopause. In light of the WHI results, continuing cross-country differences in prescribing patterns and concerns related to the use of HT may reflect differences in the aggressiveness of medicine within particular cultures [11,53,54], culture-specific aspects of medical training [55], or differences in access to health care through managed, private, or national health care systems [56]. Further study could also be carried out on the effects of pharmaceutical advertising [5] in each country, including direct visits to physicians, direct to consumer advertising, and digital advertising in pharmacies (just instituted in Rabat), as well as the amount of time and the content devoted to menopause and HT in medical schools in each country.

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Table 1

Comparison of income, cost of health care, physician density and female cause specific death rates, 2002, by country

	Lebanon	Spain	U.S.	Morocco
Per capita income(2005) ^a	6180	25360	43740	1730
Per capita total expenditure on health (2004) ^b	670	1971	6096	82
Total expenditure on health as a percentage of gross domestic product (2004) ^b	11.6	8.1	15.4	5.1
Private expenditure on health as percentage of total expenditure on health (2004) ^b	72.6	29.1	55.3	65.7
Physician density per 1,000 population ^b	3.25 (2001)	3.30 (2003)	2.56 (2000)	0.51 (2004)
Deaths rates from cardiovascular disease ^c	415	109	151	371
Deaths rates from cancer ^c	72	84	114	52
Deaths rates from corpus uteri cancer ^c	0.7	1.7	1.7	0.3
Deaths rates from breast cancer ^c	11.3	9.3	11.2	6.1

^a World bank; US Dollars^b WHO Statistical Information System (WHOSIS)^c age adjusted rates per 100,000, WHO Statistical Information System (WHOSIS)

Table 2

Characteristics of providers by study site (percentages)

	Beirut (n=100)	Madrid (n=60)	Mass. U.S. (n=59)	Rabat (n=50)	P-value across all countries
Sex					
Male	76	45	56	44	p<0.01
Female	24	55	44	56	
Specialty					p<0.01
Gynecologist	67	77	14	68	
Internal medicine	22	0	68	0	
Family medicine	11	23	10	32	
Others	0	0	9	0	
Year of graduation from medical school					p<0.05
1980 and before	23	18	35	16	
1981–1990	52	35	43	48	
1991 and after	25	47	22	36	
Teaching or training responsibilities					n.s.
Yes	63	61	75	--	
No	37	39	25	--	

n.s. = Not significant

-- = not asked

Table 3

The percentage of physicians' reporting women's main concerns, the importance of symptom alleviation and disease prevention when prescribing HT, and side effects of HT.

	Beirut (n=100)	Madrid (n=60)	Mass. U.S. (n=59)	Rabat (n=50)	P-value across all countries
Women's main concerns as reported by physicians					
Hot flashes	95	92	95	100	n.s. ^a
Osteoporosis prevention	81	75	71	12	p<0.01
Menstrual cycle disruptions	74	67	80	34	p<0.01
Problems with sleep/night sweats	54	63	90	18	p<0.01
Depression, mood swings, emotional problems	47	27	92	44	p<0.01
Appearance: skin, weight gain	29	32	19	6	p<0.01 ^b
Prevention of cardiovascular risks	7	8	24	--	p<0.01
Percentage of physicians who indicated the relative importance of symptom alleviation and disease prevention when prescribing HT					
Symptoms most important	12	20	39	22	p<0.01
Prevention most important	18	7	9	30	
Both equally important	70	73	53	48	
The four most common side effects of HT volunteered by clinicians, based on clinical experience					
Weight gain, fluid retention	30	28	20	11	p<0.01
Bleeding, spotting, irregularity	23	28	31	41	
Breast problems, engorgement	18	19	27	34	
Headache	7	6	3	14	

n.s. = Not significant,

-- = not asked

^a 2 cells with observations less than 5

^b 1 cell with observations less than 5

Table 4

Results of logistic regression analyses for doctors reporting the proportion of patients ages 45–55 who consult specifically about menopause, the percentage of physicians who write more than 5 prescriptions for HT per month, and the percentage of physicians who recommend the continuation of HT for >10 years

	Almost all patients consult about menopause (95% confidence intervals)	Write more than 5 prescriptions for HT per month (95% confidence intervals)	Recommend the continuation of HT for > 10 years (95% confidence intervals)
City	2.930 (1.309–6.558)	3.228 (1.548–6.731)	0.199 (0.023–1.717)
Beirut (ref)	2.892 (1.029–8.129)	7.641 (2.600–22.455)	3.961 (1.163–13.485)
Madrid	0.862 (0.322–2.308)	0.757 (0.344–1.662)	0.000
Worcester			
Rabat			
Specialty	0.397 (0.138–1.143)	0.120 (0.040–0.360)	0.897 (0.246–3.272)
Gynecology (ref)	0.347 (0.137–0.878)	0.328 (0.152–0.707)	1.275 (0.272–5.983)
Internal medicine	0.285 (0.025–3.231)	0.042 (0.004–0.487)	4.702 (0.531–41.648)
Family practice			
Other			
Sex	2.151 (1.154–4.009)	1.190 (0.678–2.088)	1.247 (0.471–3.302)
Male (ref)			
Female			

Table 5

Results of logistic regression analyses for likelihood of doctors obtaining a mammogram, BMD test, or endometrial biopsy prior to treating menopausal symptoms.

	Physicians would obtain a mammogram prior to treating symptoms	Physicians would obtain a BMD test prior to treating symptoms	Physicians would obtain an endometrial biopsy prior to treating symptoms
City Beirut (ref) Madrid Worcester Rabat	0.139 (0.029–0.661) 0.143 (0.036–0.574) 0.158 (0.032–0.777)	1.296 (0.648–2.588) 0.481 (0.201–1.150)	0.254 (0.072–0.898) 0.141 (0.027–0.739)
Specialty Gynecology (ref) Internal medicine Family practice Other	0.156 (0.036–0.674) 0.162 (0.057–0.458) 0.116 (0.012–1.133)	4.230 (1.771–10.107) 1.192 (0.529–2.685) 0.660 (0.062–7.050)	1.006 (0.309–3.278) 0.240 (0.029–1.953) 0.000
Sex Male (ref) Female	1.135 (0.514–2.508)	0.860 (0.477–1.552)	3.302 (1.259–8.661)

Table 6

Percentage of physicians who ranked the benefits of HT as “very high” in relation to various health concerns.

	Percentage of physicians who ranked the benefit of HT as “very high” for symptom alleviation	Percentage of physicians who ranked the benefit of HT as “very high” for osteoporosis	Percentage of physicians who ranked the benefit of HT as “very high” for depressed mood	Percentage of physicians who ranked the benefit of HT as “very high” for appearance/skin tone	Percentage of physicians who ranked the benefit of HT as “very high” for primary prevention of CVD
City					
Beirut (ref)	0.253 (0.121–0.531)	0.146 (0.047–0.452)	0.250 (0.066–0.951)	0.397 (0.120–1.318)	0.254 (0.027–2.421)
Madrid	1.167 (0.519–2.623)	1.244 (0.538–2.876)	1.146 (0.316–4.151)	0.543 (0.098–3.013)	0.094 (0.010–0.866)
Worcester	0.719 (0.331–1.559)	0.806 (0.361–1.774)	3.123 (1.300–7.502)	2.491 (1.003–6.188)	1.964 (0.485–7.948)
Rabat					
Specialty					
Gynecology (ref)	0.347 (0.155–0.778)	0.762 (0.332–1.753)	0.271 (0.070–1.046)	0.195 (0.036–1.049)	4.033 (0.920–17.675)
Internal medicine	0.265 (0.127–0.554)	0.795 (0.343–1.840)	0.325 (0.109–0.969)	0.156 (0.034–0.709)	0.985 (0.231–4.200)
Family practice	0.210 (0.029–1.527)	0.000	0.000	0.000	0.000
Other					
Sex					
Male (ref)	0.909 (0.530–1.560)	1.065 (0.575–1.973)	1.409 (0.693–3.199)	0.804 (0.349–1.853)	2.230 (0.735–6.768)
Female					

Table 7

Results of logistic regression analyses for doctors describing “serious” concern about breast cancer, endometrial cancer, and irregular/heavy bleeding

	Physicians describing their concern about breast cancer as “serious”	Physicians describing their concern about endometrial cancer as “serious”	Physicians describing their concern about irregular/heavy bleeding as “serious”
City	0.980 (0.482–1.990)	0.975 (0.468–2.033)	0.578 (0.243–1.375)
Beirut (ref)	0.298 (0.129–0.685)	0.144 (0.052–0.401)	0.145 (0.041–0.508)
Madrid	0.399 (0.190–0.839)	0.596 (0.260–1.368)	0.417 (0.154–1.126)
Worcester			
Rabat			
Specialty	1.473 (0.643–3.375)	4.253 (1.666–10.861)	1.712 (0.646–4.537)
Gynecology (ref)	1.341 (0.667–2.694)	1.417 (0.678–2.961)	0.976 (0.401–2.377)
Internal medicine	1.365 (0.188–9.902)	3.696 (0.319–42.823)	0.000
Family practice			
Other			
Sex	0.890 (0.524–1.513)	0.980 (0.549–1.752)	1.629 (0.818–3.243)
Male (ref)			
Female			