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Menopausal Problems Among Rural and Urban Women From Eastern India

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The present study sought to examine variations in menopausal characteristics between rural and urban women and the ways in which these characteristics could be predicted from differential sociodemographic variables related to the residential status. Data on sociodemographic variables, reproductive history, and menopausal symptoms were collected from 180 postmenopausal women (rural 110; urban 70) belonging to the Bengali-speaking Hindu ethnic group of eastern India. Bivariate analyses confirmed rural-urban differences in menopausal age and in the reporting of menopausal problems (e.g., vasomotor, psychosomatic, psychological, and urinary problems). Multivariate analyses revealed that rural-urban residential status and duration of breastfeeding of child were significant predictors of age at menopause. Residential and literacy status, duration of breast feeding of child, and husband's awareness about the menopausal status of spouse were significant predictors of some of the menopausal symptoms.

Keywords: *Eastern India, menopause, rural-urban*

Introduction

Menopause is the permanent cessation of menstruation resulting from the loss of follicular activity of the ovaries. It is a stage when the menstrual cycle stops for longer than 12 months and there is a drop in the levels of estrogen and progesterone, the two most important hormones in the female body (World Health Organization [WHO], 1996). The onset of this physiological development not only marks the end of women's reproductive function but also introduces them to a new phase of life.

Although menopause is a universal phenomenon, there is a considerable variation among women regarding the age of attaining menopause and the manifestation of menopausal signs and symptoms. Worldwide, the estimates for the median age at menopause range from 45 to 55 years (Biri, Bakar, Maral, Karabacak, & Bumin, 2005; Kaufert & Syrotuik, 1981; Kaw, Khunnu, & Vasishta, 1994; Ku et al., 2004; Meschia et al., 2000; Mohammadm, Sadat Hashemi, & Farahani, 2004; Sidhu & Sidhu, 1987; Syamala & Sivakami, 2005), with women from Western countries having a higher menopausal age compared to women from other parts of the world (Beard, 1976; Holte, 1991; Wright, 1981). A number of studies have shown that biological (e.g., genetic, nutritional, and reproductive history); sociocultural (e.g., educational, occupational, smoking habit and rural-urban residence); and lifestyle (e.g., smoking and use of tobacco and dietary habits) factors affect the age of menopause (Bernis & Reher, 2007; Brambilla & McKinaly,1989; Kaw et al., 1994; Luoto, Kaprio, & Uutela, 1994; Nagel, Altenburg,

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Nieters, Boffetta, & Linseisen, 2005; Parazzini, 2007; Whelan, Sandler, McConnaughey, & Weinberg, 1990).

During the transition to menopause, women may experience vasomotor, urogenital, psychosomatic, and psychological symptoms, as well as sexual dysfunction. The prevalence of each of these symptoms related to menopause varies across ethnic and socioeconomic groups, and between rural and urban women (Bernis & Reher, 2007; Damodaran, Subramaniam, Omar, Nadkarni, & Paramsothy, 2000; Dennerstein, Guthric, Birkhauser, & Sherman, 2002; Frackiewicz & Cutler, 2000; Gelfand, 2000; Malacara et al., 2002). Some researchers have observed socioeconomic (e.g., working status and income); lifestyle (e.g., smoking and dietary practices); and biological variables (e.g., body weight and parity) as predictors of menopausal symptoms (Greendale & Gold, 2005; Ho, Gaen, Bing, Yee, & Sham, 2003; Progetto Menopausa Italia Study Group, 2005).

It appears from the aforementioned studies that women have a complex phase of middle age that varies across ethnic and sociocultural groups. From India, some scattered studies have focused on estimating age at menopause and menopausal symptoms, but there has been no published literature on this topic from eastern India. Few Indian studies have attempted to determine the rural-urban difference in menopausal age and symptoms. Thus, the present study sought to examine the variations in menopausal characteristics between rural and urban women and how these characteristics can be predicted from differential sociodemographic variables related to residential status.

Methods

For the purpose of the present study, West Bengal was selected as the site of the study. This state is located in the eastern part of India and is mostly dominated by the Bengali-speaking Hindu ethnic group. This ethnic group also has the longest history of colonial influence and shares certain cultural and biological similarities with the people of other neighboring states (e.g., Orissa & Assam) of eastern India.

Data were collected from 180 postmenopausal women belonging to the Bengali-speaking Hindu ethnic group from the rural and urban areas (rural 110; urban 70). Data on rural women were collected from villages that are under the village *panchayat* (council) Chakda, District of Nadia, and on urban women from municipal wards 23 and 24 of the city of Howrah, under the Howrah Municipal Corporation (adjacent to the city of Kolkata, the state capital). The city of Howrah is one of the oldest urban centers of this state, and the district of Nadia is about 100 km north of Howrah and Kolkata. The selection of the study areas was made on the basis of operational convenience. The participants were selected following certain criteria: women who were still in wedlock, had given birth to at least one child, had attained natural menopause rather than because of any medical reason at least 1 year prior to the date of study, and had volunteered to participate in the study.

A structured schedule was prepared by the researchers to collect data on sociodemographic variables (age, educational status, household types, number of family members, employment status, income level, and awareness of husbands about the menopausal status of their spouses); menstrual (regularity in menstrual cycle, bleeding length, and menstrual problems); and reproductive history (age at menarche, age at marriage, parity, use of oral contraceptives, duration of breastfeeding, and experience of fetal loss) of the participants. Age at marriage has been considered one of the important variables in women's reproductive history because this event marks the beginning of their active reproductive life (i.e., childbirth, contraceptive use, and breastfeeding). Data on menopausal symptoms were collected with a recall period of 15 days preceding the date of the survey. The listing of menopausal symptoms was done with little modification, following ones used in some studies conducted in Southeast Asia (Chirawatkul & Manderson, 1994; Chompootweep, Tankeyoon, Yamarat, Poomsuwan, & Dusitsin, 1993). Prior to data collection, these schedules were canvassed on a small group of women who had

fulfilled the research criteria to test its aptness for this study. The researchers classified the menopausal symptoms into six categories: Vasomotor, Vaginal, Psychosomatic, Psychological, Urinary, and "Other." The vasomotor symptoms include hot flushes and night sweats; the vaginal symptoms include uterine prolapse and vaginal atrophy; the psychosomatic symptoms include dizziness, rapid heartbeat, numbness of extremities, irritability, tiredness, headache, sleep disturbance, pressure and tightness in head and body, muscle and joint pain, fainting and breast pain; the psychological symptoms include depression, tension, forgetfulness, and poor concentration; the urinary symptoms include dysuria, increased urine frequency, and urine leak during coughing and laughing; "Other" includes postmenopausal bleeding, fractures, and loss of sexual desire. All of the data were collected by one of the researchers from January 2007 to June 2007.

The nature of research was explained to all of the participants, and verbal consent was taken from each of them before the data were collected. Statistical analysis of the data was done using SPSS V. 7.5. The researchers used nonparametric tests (chi-square and odds ratio) to determine the association between the prevalence of menopausal symptoms and rural-urban residence. A linear regression analysis was used to determine the predictor(s) of age at menopause (rural-urban combined). Binary logistic regression was carried out to understand the significant predictor(s) of vasomotor and vaginal symptoms, psychological (depression) and urinary (dysuria) symptoms, and the problem of loss in sexual desire.

Results

The mean age of the participants for both rural and urban areas was 53.9 ± 4.37 (range 40-60 years) and 51.39 ± 4.6 (range 41-59 years) years, respectively. Table 1 shows that more than half of the urban women were employed and that an overwhelming majority of the rural women were homemakers. The employed urban women were engaged in professions such as teaching and office jobs, whereas the employed rural women were mostly engaged as skilled or unskilled laborers. A significant rural-urban difference was observed in the literacy status of the study participants ($\chi^2 = 44.301$, $df = 1$). The house types varied widely between the rural and urban groups. All of the participants from the urban area lived in concrete houses, but most of the rural participants lived in mud built houses. The number of extended family members in most of the households of both the groups varied between one and four. The monthly household income of half of the women of the rural and urban areas was less than Rs. 1,700 and Rs. 10,000, respectively. There was a significant rural-urban difference regarding awareness of the husbands about the menopausal status of their wives ($\chi^2 = 6.492$, $df = 1$).

The mean age at menarche of the rural women was higher than that of the urban group (see Table 2). However, these two groups differed significantly in mean age at marriage (t = 3.988, $df = 178$) and mean age at menopause (t = 3.012, $df = 1$). In general, the mean age at menopause of the study sample (rural and urban combined) was 46.14 ± 4.47 years, with 4% of the women attaining menopause before the age of 40. The mean number of live births of the rural women was significantly higher than that of the urban women (t = 5.44, $df = 178$). With respect to family planning practices, more than 85% of the women from both groups did not use oral contraceptive pills. Twice the number of women from the rural areas experienced fetal loss as compared to their urban counterparts. A large section of the women from both groups had breastfed their last child for more than 1 year, and the frequency of adopting such a practice was significantly more pronounced among the rural women than the urban women ($\chi^2 = 8.388$, $df = 1$). More than half of the women from the rural areas had a parity of more than two children, as compared to those of the urban areas. Regarding the menstrual history of the participants, more than 85% of the women from both groups experienced a regular menstrual cycle, and half of them reported menstrual pain at the time of menstrual discharge. The frequency of reporting a heavy discharge was higher among the rural women than their urban counterparts. More than half of the women from groups experienced menstrual bleeding periods of ≤ 5 days.

Table 1: *Sociodemographic Features of Participants*

General Characteristics of Participants	Rural		Urban	
	No.	%	No.	%
Age Distribution of Participants (Years)				
< 45	2	1.81	6	8.57
45–50	17	15.45	20	28.57
51–55	47	47.72	33	47.14
56–60	44	40.0	11	15.71
Employment Status				
Employed	15	13.6	32	45.7
Homemaker	95	86.4	38	54.3
Educational Status[****]				
Literate	46	41.8	64	91.4
Nonliterate	64	58.20	6	8.6
House Type				
Concrete	9	8.2	70	100.00
Mud	101	91.80	–	–
Family Members†				
1–4	74	67.2	51	72.9
5–8	28	25.4	17	24.3
9+	8	7.2	2	2.8
Awareness of Husband About Menopausal Status of Spouse[**]				
Yes	61	55.45	52	74.28
No	49	44.54	18	25.71

Note: [**]$p < .01$; [****]$p < .0001$; † Extended family members

Table 3 shows that the rural women were significantly 2.5 times more likely to be affected by hot flushes and night sweats than their urban counterparts. With respect to the problem of uterine prolapse (vaginal symptom), twice as many rural women as urban women were affected. Psychosomatic symptoms such as dizziness, rapid heartbeat, numbness of the extremities, feeling of tiredness, headache, and breast pain were significantly two to three times higher among the rural women than the urban women. On the other hand, the rural women reported psychological symptoms such as depression, tension, forgetfulness, and a lack of concentration more frequently than the urban women did. However, only the problem of depression seemed to be significantly four times higher among the rural women than the urban women. Except for dysuria, reports of problems related to the urinary system and function were similar between the groups. This problem was significantly 2.1 times higher among the rural women than the urban women. In the category of "Other" problems, a small segment of women from both groups experienced postmenopausal bleeding, and an overwhelming majority has lost their sexual desire.

Table 2: *Reproductive and Menstrual Histories of Participants*

	Rural		Urban	
	M	*SD*	*M*	*SD*
Reproductive History				
Age at menarche (years)	13.55	1.75	13.01	1.38
Age at marriage (years)****	17.59	5.71	20.84	5.51
Mean no. of live births**	3.58	1.99	2.11	1.08
Age at menopause (years)**	46.94	4.64	44.92	3.93
	No.	%	No.	%
Use of oral contraceptive pills				
Yes	76	69.1	61	87.1
No	99	90.0	60	85.7
Experienced fetal loss				
Yes	34	30.9	9	12.8
No	76	69.1	61	87.1
*Duration of breast feeding** (last child)*				
1 year	17	15.45	30	42.85
More than 1 year	93	84.54	40	57.14
Parity				
1	9	8.2	22	31.4
2	37	33.6	31	31.4
3	19	17.3	9	12.9
4	14	13.6	5	7.1
5	10	9.1	1	1.4
6	5	4.5	2	2.9
7	8	7.3	–	–
8 and above	7	6.4	–	–
Menstrual History				
Menstrual regularity				
Regular	97	88.2	60	85.70
Irregular	10	9.1	10	14.30
Bleeding length (days)				
≤ 5 days	73	66.36	39	55.71
> 5 days	37	33.63	31	44.28
Problem during menstruation				
Pain	63	57.3	38	54.20
Heavy discharge	57	51.8	25	35.7
Scanty discharge	22	20.0	12	17.1
Others†	–	–	3	4.3

Note: ****$p < .0001$; ***$p < .001$; **$p < .01$; † Others: Pain in leg and fever

Table 3: *Menopausal Symptoms of Participants (for Last 15-Day Period)*

Menopausal symptoms	Rural		Urban		Chi²	OR with 95% C.I.
	No.	%	No.	%		
Vasomotor Symptoms						
Hot flushes	86	78.2	40	57.1	9.017**	2.6875 (1.3962–5.1730)
Night sweats	69	62.7	28	40.0	8.182**	2.428 (1.3147–4.4861)
Vaginal Symptoms						
Uterine prolapse	26	23.7	9	12.8	3.173	
Vaginal atrophy	87	79.2	49	70.0	1.914	
Psychosomatic Symptoms						
Dizziness	85	77.3	39	55.7	9.277**	2.7026 (1.4122–5.1720)
Rapid heart beat	97	88.2	49	70.0	9.230**	3.194 (1.4771–6.9215)
Numbness of extremities	91	82.7	41	58.5	12.764***	3.3877 (1.7060–6.7269)
Irritability	82	74.6	54	77.2	0.0156	
Tiredness	98	89.1	52	74.3	6.751**	2.8267 (1.2649–6.3170)
Headache	70	63.6	31	44.3	6.504*	2.2016 (1.1950–4.0560)
Sleep disturbance	77	70.0	45	64.2	0.640	
Pressure or tightness in head or body	50	45.5	39	55.7	1.801	
Muscle or joint pain	82	74.6	60	85.7	3.204	
Faint	40	30.0	12	17.2	3.771	
Breast pain	33	30.0	8	11.5	8.388*	3.3213 (1.4314–7.7063)
Psychological Symptoms						
Depression	96	87.3	42	60.0	17.787***	4.5714 (2.1878–9.5520)
Tension	102	92.7	61	87.1	1.560	
Forgetfulness	90	81.7	54	77.2	0.584	
Poor concentration	75	68.2	42	60.0	1.259	
Urinary Symptoms						
Dysuria	51	46.3	20	28.6	5.669*	0.4627* (0.2441–0.8774)
Increased urine frequency	63	57.2	37	52.9	0.338	
Urine leak during laugh and cough	66	60.0	45	64.3	0.332	
Other Problems						
Postmenopausal bleeding	22	20.0	21	29.9	2.353	
Fracture	33	30.0	9	12.9	7.028**	0.1531 (0.7739–0.3443)
Loss of sexual desire	100	90.8	66	94.3	0.680	

Note: *** $p < .001$; ** $p < .01$; * $p < .05$

Multivariate Analyses

A linear regression analysis (see Table 4) was done to predict the age at menopause of these women, taking into account some independent variables such as age at marriage, age at menarche, residential status, monthly household income, duration of breastfeeding of last child (in months), and parity. Independently, each of these variables was tested for predictors of age at menopause. The results showed that variables such as age at menarche, residential status of the women, duration of breastfeeding of last child (in months), and parity could independently predict the age at menopause. A linear regression (stepwise) was further conducted with these significant predictors. The result revealed that the residential status of the women and duration of breastfeeding (in months) of last child (second model) could significantly explain 7.1% ($R^2 = 0.071$) of the variance in age at menopause.

Table 4: *Determinants of Age at Menopause*

	Unstandardized Coefficients		Standardized Coefficients		
	B	*SE*	β	*t*	Sig.
Model 1					
(Constant)	42.91169	1.12715		38.07098	7.01E-20
Residential status	2.016883	0.669627	0.220213	3.011952	0.002974
Model 2					
(Constant)	42.66362	1.123199		37.98403	7.19E-20
Residential status	1.541067	0.701982	0.168261	2.195308	0.029443
Months of breast-feeding (last child)	0.032337	0.015581	0.159076	2.075466	0.039389

Binary logistic regression analyses (see Table 5) showed that the nonliterate postmenopausal women were significantly 3.8 and 3.5 times more likely to have any of the vasomotor and vaginal symptoms, respectively, compared to the literate women. The same table also revealed that the frequency of the problem of depression (psychological symptom) decreased significantly with an increase in age and duration of breastfeeding (in case of last child). The problem of depression was significantly more among the rural women (7.36) and among the women whose husbands were unaware of the menopausal status of their spouses (2.9) compared to their respective reference categories. The rural women were 2.6 times more likely to be affected by dysuria (urinary symptom) than the urban women. The postmenopausal women who breastfed their child for a longer duration were significantly less likely to lose their sexual desire than those who breastfed for a shorter duration. For the rest of the symptoms related to menopausal problems (i.e., psychological, psychosomatic, and urinary), none of the variables seemed to be predictors and were subsequently not presented.

Table 5: *Logistic Regression*

	Presence of				
Predictor	Any Vasomotor Symptoms	Any Vaginal Symptoms	Depression	Dysuria	Loss of Sexual Desire
Age (in years)	0.9461	0.9885	0.9026*	1.0405	1.0847
	(0.8728– 1.0256)	(0.9115– 1.0721)	(0.8165– 0.9978)	(0.9693– 1.1169)	(0.9590– 1.2270)
Age at menarche (in years)	0.9635	0.8498	1.0992	0.8776	0.8732
	(0.7724– 1.2019)	(0.6865– 1.0518)	(0.8680– 1.3290)	(0.7244– 1.0632)	(0.6875– 1.1091)
Age at marriage (in years)	1.0167	1.0513	0.9857	1.0136	0.9179
	(0.9420– 1.0974)	(0.9646– 1.1458)	(0.9223– 1.0535)	(0.9529– 1.0783)	(0.7768– 1.0846)
Age at menopause (in years)	1.0957	1.0463	0.9700	0.9958	0.8799
	(0.9985– 1.2024)	(0.9477– 1.1552)	(0.8808– 1.0682)	(0.9186– 1.0796)	(0.7391– 1.0474)
Menstrual bleeding length (in days)	1.0808	1.0130	0.9715	0.9743	1.0143
	(0.9379– 1.2454)	(0.9056– 1.1332)	(0.4832– 6.9611)	(0.8875– 1.0695)	(0.8308– 1.2382)
Parity	0.8700	1.0481	1.2778	0.8673	1.0259
	(0.6869– 1.1020)	(0.8164– 1.3455)	(0.9059– 1.6325)	(0.7055– 1.0662)	(0.6926– 1.5196)
Duration of breastfeeding, in case of last child (in months)	0.9961	0.9992	0.9775*	0.9935	0.9552*
	(0.9777– 1.0148)	(0.9801– 1.0188)	(0.9576– 0.9977)	(0.9776– 1.0097)	(0.9149– 0.9972)
Use of any hormonal contraceptive					
Yes (ref)	1.0	1.0	1.0	1.0	1.0
No	2.1944	0.6654	1.9065	1.230	2983.2586
	(0.7931– 6.0719)	(0.1902– 2.3283)	(0.5886– 1.6758)	7 (0.4330– 3.4982)	(0.0000– 5.274E+31)
Regularity in menstrual periods					
Yes (ref)	1.0	1.0	1.0	1.0	1.0
No	1.5083	0.322	1.8340	1.5317	3138.3280
	(0.4320– 5.2665)	4 (0.1117– 1.9303)	(0.4832– 6.9611)	(0.5531– 4.2419)	(0.0000– 6.509E+29)
Heavy discharge					
Present (ref)	1.0	1.0	1.0	1.0	1.0
Absent	1.4312	0.8426	1.1026	1.0871	0.3720
	(0.6761– 3.0297)	(0.3842– 1.8481)	(0.4452– 2.3112)	(0.5606– 2.1082)	(0.1015– 1.3681)
Awareness of husband about spouse's menopausal status					
Yes (ref)	1.0	1.0	1.0	1.0	1.0
No	1.8313	0.5135	2.9516*	0.8720	0.5522
	(0.7942– 4.2226)	(0.2215– 1.1906)	(1.1455– 7.6053)	(0.4313– 1.7632)	(0.1407– 2.1665)
Occupation					
Unemployed (ref)	1.0	1.0	1.0	1.0	1.0
Employed	0.8431 (0.354 – 2.0039)	0.6854 (0.2832– 1.6592)	0.7816 (0.3231– 1.8910)	1.2080 (0.5450– 2.6774)	0.8685 (0.1679– 4.8243)
Residential status					
Rural (ref)	1.0	1.0	1.0	1.0	1.0

Urban	0.8226	1.8854	0.1358***	0.3710*	4.1909
	(0.3045–2.2225)	(0.6690–5.3135)	(0.0460–0.4011)	(0.1585–0.8683)	(0.1846–4.0870)
Educational status					
Literate (ref)	1.0	1.0	1.0	1.0	1.0
Nonliterate	3.8199***	3.5538*	0.9449	1.4452	1.0159
	(1.3795–10.5772)	(1.2799–9.8678)	(0.3325–2.6858)	(0.6447–3.2396)	(0.2249–4.6096)

Note: The figures in the parenthesis indicate CI at 95%

Discussion

The study confirmed rural-urban differences in both menopausal age and reporting of menopausal problems (e.g., vasomotor, psychosomatic, psychological, and urinary problems). The linear regression (stepwise) result showed that rural-urban residence and duration of breastfeeding (in months) were the significant predictors of age at menopause. The results from the binary logistic regression revealed that literacy status was the significant predictor of vasomotor and vaginal symptoms. Age of the women, duration of breast feeding, husband's awareness of the menopausal status of their spouses and rural-urban residential status were significant predictors of depression (psychological symptom). Only rural-urban residential status was the significant predictor of dysuria (urinary symptom), and duration of breastfeeding (in months) was the significant predictor of loss in sexual desire.

From the National Family and Health Survey-2 (1998-99) data, Syamala and Sivakami (2005) found that the mean age at menopause of Indian women is 44.3 years and that 11% of women attain menopause before the age of 40. This frequency has increased slightly (0.5%) in subsequent years (Indian Institute of Population Sciences & ORC Macro, 2007). In comparison with the national average (Syamala & Sivakami, 2005), the women (rural and urban combined) of this study group had a higher age at menopause, with 4.4% of them reaching menopause before the age of 40. However, in the present research, the rural-urban difference in menopausal age corroborated findings from Mexico and Spain (Bernis & Reher, 2007; Malacara et al., 2002). Some previous studies have shown that other than the rural-urban residential status, other variables such as parity, educational level, occupational types, and smoking habits were significant predictors of the age at menopause (Bernis & Reher, 2007; Brambilla & McKinaly, 1989; Luoto et al., 1994; Malacara et al., 2002; Syamala & Sivakami, 2005; Whelan et al., 1990). However, the present research did identify duration of breastfeeding and rural-urban residential status of the women as predictors of menopausal age. The duration of breastfeeding was found to vary significantly between the rural women and the urban women. An increase in duration of breastfeeding might have prolonged the period of lactating amenorrhea, resulting in a probable delay in reaching menopause.

A review of the literature revealed that in general, women suffering from hot flushes ranges between 15.1% and 61% (Fuh, Wang, Lu, Juang, & Chiu, 2001; Obermeyer, Schulein, Hajji, & Azelmat, 2002). The frequency of hot flushes among the urban women of this study group was found to be close to the upper limit of the global range and to the findings of some previous Indian studies (Bagga, 2004; Sharma, Tandon, & Mahajan, 2007). On the other hand, the frequency of hot flushes among their rural counterparts has been found to be higher than the global range but similar to that of women in Tanzania (Moore & Kombe, 1991) and Turkey (Neslihan, Bilge, Ozturk, Oya, Ece, & Hamiyet, 1998). The pattern of rural-urban difference in the prevalence of hot flushes of this study group conformed to the studies conducted in Madrid and Mexico (Bernis & Reher, 2007; Malacara et al., 2002).

Because the rural women of this study group were mostly nonliterate, they were less likely than the urban women to be aware of managing and/or preventing the vasomotor problems. This could have

been a probable explanation for the higher prevalence of hot flushes among the rural women than their urban counterparts. Some research has shown that Asian women (Japanese) do not experience the intense hot flushes that women from North America, Europe, and Africa do (Avis et al., 2001; Lock, 1993, 1998; Melby, 2005). It has been reported that the diet of the Japanese is rich in soybeans (a source of phytoestrogen), a factor that may contribute to lower reports of hot flashes (Lock, 1993).

It is intuitively known that the Bengalees (the study sample) do not consume soybeans regularly, and this could be a probable reason why these study participants reported hot flushes in high frequency. However, the finding needs to be tested because some other studies have shown that room temperature, duration of breastfeeding of last child, recalled weight at age 18 years, intake of coffee, and so on, are predictors of the prevalence of hot flashes (Sievert et al., 2002). With regard to the reporting of psychosomatic (palpitation, tiredness, irritability, and headache); psychological (depression and lack of concentration); and vaginal (vaginal atrophy) symptoms, as well as loss of sexual desire, the present study participants were more affected by these problems than postmenopausal women of other social groups of this subcontinent (Nagar & Dave, 2005; Sidhu, Kaur, & Sidhu, 2005; Qazi, 2006).

There are a number of competing etiological theories, biological and sociocultural, regarding the occurrence of psychological symptoms in some menopausal women (Campbell, 1976; Charney, 1996; Deutsch, 1945; Leidy, 1994; Lock, 1986; McKinlay, McKinlay, & Brambilla, 1987; Sherwin, 1991). Obermeyer and Leidy (2007) noted, "There is a set of core menopausal symptoms but that the nuances of those symptoms seem to be culture-specific" (p. 663). For example, studies on Mayan and Greek rural women have reflected that they enjoy their sex life more after attaining menopause because they do not have the fear of becoming pregnant again (Beyene, 1986; Martin, Block, Sanchez, Amaud, & Beyene, 1993). This could be a plausible explanation why Greek and Mayan women have fewer psychosomatic and psychological problems during midlife. In the present study, the women from the rural areas in particular did not disclose their menopausal status to their husbands, probably because they felt apprehensive about losing their husbands' attention during the midlife period. A high reporting of psychosomatic and psychological problems by the rural women during the midlife period could have been because of this reason. At this point, it would be interesting to look into the perceptions of midlife men toward menopause and its consequences.

Generally, women from developing countries, including those of the present study, tend to view menopause and its symptoms as a natural process that does not require medical care, so they are less aware about the health-related issues of menopause (Defey, Storch, Cardozo, & Fernandez, 1996; Mashiloane, Bagratee, & Moodley, 2001; Wasti, Robinson, Akhtar, Khan, & Badaruddin, 1993). Moreover, a culture of silence prevents them from seeking health care. However, recent studies have shown that educated women from developing countries are now seeking treatment for menopausal problems (Obermeyer et al., 2002; Taechakraichana et al., 2003). The prevalence of high frequency of vasomotor symptoms among the nonliterate women of this study was a probable indication that they had less access to the resources to manage these problems. However, at present, there are no data in support of this assumption.

Globally, including the country of India, elderly women are increasing in numbers (World Health Report, 1998; WHO, 2000). In India, along with the numerical increase of this group, a recent trend of advancement in the menopausal age of Indian women has been observed (Syamala & Sivakami, 2005). If this trend continues, a large number of Indian women in the future may experience a longer period of menopause and be burdened with menopausal health problems. Unfortunately, since the implementation of the proposals laid down in the Cairo conference (United Nations, 1995), the Indian government has done little to improve the reproductive health of postmenopausal women.

Conclusion

To the best of the researchers' knowledge, the present study was a maiden attempt to explore the health problems of menopausal women and the predictor variables in the eastern part of India. The researchers were cognizant of the limitations of this study. A larger sample size covering a large area, and additional information on the participants' lifestyle variables, nutritional status, and perceptions of menopause would have yielded a precise estimate of the menopausal condition of these women. However, the trend that emerged from this exploration served as a starting point to conduct intensive research on the predictors of the menopausal problems of Indian women.

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