Medico-social dimensions of menopause: A cross-sectional study from rural south India

RITA AARON, JAYAPRAKASH MULIYIL, SULOCHANA ABRAHAM

ABSTRACT

Background. The quality of life of the increasing ageing population is becoming an important issue in India. There are very little data on the effect of menopause on women, especially from rural India.

Method. A population-based cross-sectional study was conducted on perceptions regarding menopause, prevalence of menopausal symptoms and association of family environmental factors with menopausal symptoms among 100 postmenopausal and 100 premenopausal rural women in south India.

Results. Fifty-seven per cent of postmenopausal women perceived menopause as convenient. Sixty-nine per cent of them complained of diminishing abilities after menopause. Twenty-three per cent felt that sexual life ends with the onset of menopause. Sixteen per cent reported that their husbands had become disinterested in them after menopause and 11% were apprehensive about the loss of femininity. A higher proportion of postmenopausal women reported hot flushes, night sweats, urge incontinence and other somatic symptoms as compared to premenopausal women. Fifty-four per cent of postmenopausal and 32% of premenopausal women were currently not sexually active. Fifty-nine per cent of postmenopausal and 38% of premenopausal women expressed loss of sexual desire and this difference was statistically significant. There was no significant association between menopause and depression. A poor perceived relationship within the family was shown to have a significant association with depression. There was a significant association between multiple somatic symptoms and menopause.

Conclusion. A significantly higher proportion of postmenopausal women suffer from vasomotor symptoms, urge incontinence, loss of sexual desire and multiple somatic symptoms. They do not link these symptoms with menopause. Poor family environmental factors have a stronger association with depression than menopause. In view of these findings, it is important to determine the feasibility and impact of hormone replacement therapy in preventive health care in rural India.


INTRODUCTION

Menopause has become an important subject in recent years. It is generally believed that menopause is welcomed as a favourable event among rural women in India unlike in the West. This is attributed to the many perceived benefits of menopause such as freedom from cultural restrictions imposed on younger women and the burden of childbirth as well as the discomforts associated with menstruation. Postmenopausal women in India are said to enjoy a higher social status assigned to ageing women. However, medical opinion has always projected menopause as a malady because of its association with a variety of acute and chronic conditions, both physical and psychological, ranging from hot flushes to more severe cardiovascular and bone diseases. Therefore, in most developed countries hormone replacement therapy (HRT) is often recommended to prevent the distressing symptoms associated with menopause. Studies on issues relating to menopause, especially among rural women, are lacking in India. Without a clear understanding of the actual consequences of menopause among rural women of India, it may be inadvisable to promote HRT in the preventive health care system in rural India.

We aimed to study the perceptions regarding menopause and the prevalence of menopausal symptoms among women in rural south India. Are these symptoms attributable solely to menopause or are they age-related or perhaps both? Can they be associated with the poor perceived relationships within the family?

SUBJECTS AND METHODS

This population-based cross-sectional study was carried out in the Kaniambadi rural development block of Vellore district in Tamil Nadu, south India; an entirely rural area with about 106,000 people living in 85 villages. The community health department of the Christian Medical College and Hospital, Vellore (CHAD) has been providing comprehensive integrated health services in this development block for more than two decades. This traditionally agrarian population has been going through changes in health and socioeconomic status due to income generation and developmental activities as well as improved healthcare.

A pilot study done on 50 postmenopausal women in one of the villages had shown that the median age at menopause was 45.5 years. Therefore, we decided to study currently married women between 40 and 49 years of age from among the permanent residents of Kaniambadi block. Women who had had a hysterectomy were excluded from the study. The sample size was calculated based on an anticipated prevalence rate of menopausal symptoms of 60% among postmenopausal women and 40% among premenopausal women. Seven villages were selected for the study, in view of the already known fact that lifestyles, economic status, educational status, social and cultural background of the women in all the villages of the development block are similar. All women in the defined age group in these 7 villages were identified through the CHAD census records. A sample of 100 postmenopausal women was then selected. For every eligible
woman who had attained menopause, an age-matched control
who had not attained menopause was chosen from the population.
Postmenopausal was defined as the period after permanent cess-
tion of menstruation and a period of 12 months of spontaneous
amenorrhoea has been observed, while premenopause referred to
the whole reproductive period prior to menopause.

Development of the research tool
Care was taken to frame a valid questionnaire. An initial question-
naire was developed and circulated among experts in epidemiol-
yogy, gynaecology, sociology and psychiatry to obtain their opin-
ion. The questionnaire was then refined. Subsequently, the experts
were asked to independently evaluate earlier responses and send
a feedback. The modified questionnaire sought the following
information.

1. Socio-demographic data
2. Factors that could possibly affect the menopausal symptoms
3. Current sexual life
4. Prevalence of symptoms such as vasomotor, psychiatric, uri-
nary and other somatic symptoms usually attributed to meno-

5. Attitudes and beliefs regarding menopause (postmenopausal
women only)

The questionnaire had both structured and semi-structured
questions. We were particularly interested in whether women’s
perceptions regarding relationships within the family played a role
in shaping psychosomatic symptomatology. The husband–wife
relationship was the most important factor studied. The questions
had pre-coded responses on a 5-point scale and the responses were
obtained after fairly long discussions with the respondents.

Screening for depression questionnaire-9 (SDQ-9) constructed
by Sen and Williams for a study in Kolkata was used for screening
depression. SDQ-9 consists of 9 questions designed to elicit
symptoms commonly found in almost any variety of depression by
means of simple Yes/No answers. ‘Yes’ was scored as 1 and ‘No’
got a score of 0. A cut-off score of 5 had a sensitivity of 87% and
a specificity of 51%. Interviews were conducted at the respond-
ents’ homes after ensuring adequate privacy.

An insight into the respondents’ current sexual life was ob-
tained by assessing two aspects of sexual function: frequency of
intercourse and satisfaction experienced during the sexual act.
The reasons for reduced frequency of intercourse were obtained by
using a semi-structured interview schedule.

Analysis of data
The association between symptoms and menopausal status was
examined by a comparison of prevalence of symptoms among
postmenopausal and premenopausal women using the Chi-square
test. The Mantel–Haenszel technique was used to calculate age-
adjusted odds ratio to eliminate any possible bias due to age. To
determine the strength of association between the exposure and
outcome variables, the prevalence ratio and 95% confidence limits
was calculated. The logistic regression model (unconditional)
was used to control for the potential confounding effect of other
factors on menopausal symptoms. Logistic regression analysis
was performed, using EGRET software [Epidemiological Graph-
ics, Estimation and Testing package, Analysis Module (Pecan),
version 0.25.1 SERC].

RESULTS
Description of the population studied
A sample of 100 postmenopausal and 100 premenopausal women
between 40 and 49 years of age was interviewed. The mean age of
postmenopausal women was 46.6 (SD 2.2) years and that of
premenopausal women was 45.4 (SD 2.3) years. Premenopausal
women were slightly younger and more educated than postmeno-
pausal women. However, both groups were similar with respect to
their occupation, husband’s occupation and type of residence.

The results are presented under the main headings of percep-
tions regarding menopause, prevalence of menopausal symptoms,
current sexual life, association of symptoms with menopause and
effect of perceived relationships within the family on depression
and multiple somatic symptoms.

Perceptions regarding menopause
Fifty-seven per cent of postmenopausal women felt menopause
was convenient though 69% complained of a diminishing ability
and competence with the onset of menopause (Table I).

Prevalence of menopausal symptoms
A significantly higher proportion of postmenopausal women
reported hot flushes, night sweats, urge incontinence and other
somatic symptoms compared to premenopausal women (Table
II).

Current sexual life
We found that 59% of postmenopausal women and 38% of
premenopausal women expressed a loss of sexual desire and the
difference was statistically significant (Table II). Fifty-four per
cent of postmenopausal and 32% of premenopausal women were
currently not sexually active and 34% of postmenopausal
women and 24% of premenopausal women did not enjoy sex and some
even found it intolerable. The majority of women felt that lack of
privacy and presence of adolescent children at home forced them
to suppress their sexual desire and this led to a reduced frequency
of intercourse.

Association of symptoms with menopause
While there was a significant association between multiple so-
matic symptoms and menopausal status, the association between
depression and menopause was not statistically significant (Table
III).

Perceived family relations and depression and multiple
somatic symptoms
The prevalence of depression among the women who considered
their husbands to be not affectionate was three times more than
among women who reported having affectionate husbands. The
prevalence of depression was twice as much among those women
who were not involved in decision-making at home, whose hus-

| Table I. Perceptions regarding menopause in postmenopausal women |
|---------------------------------|------------------|
| Perception                      | Frequency(%)     |
| Very convenient                 | 57               |
| Social status is increased      | 0                |
| Apprehensive about loss of femininity | 11            |
| Diminishing abilities and competence | 69            |
| End of sexual life              | 23               |
| Husbands become disinterested in them | 16            |
The reasons postulated for this apparent vulnerability to menopause are not as infrequent as previously thought to be among the rural women in India. A clinic-based study from Mumbai reported that 25% of urban women between 40 and 60 years of age complained of vasomotor symptoms. Declining ovarian function has also been reported to cause frequency of micturition, urge incontinence, dysuria and recurrent urinary tract infections. Urgine incontinence was the only statistically significant urinary symptom associated with menopause in our study.

Women are disproportionately affected by depression and the prevalence is as high as 20%-25% in women in the community and up to 40% in adult primary care populations. Though there were studies to show an association of depression with economic deprivation, Patel et al. demonstrated a consistently higher risk of depression in women even after adjustment for a range of other socioeconomic factors through a recent collation of 5 studies from 4 low- and middle-income countries. The reasons postulated for this apparent vulnerability range from biological changes associated with reproduction to stress and adverse environmental factors. In our study, though the prevalence of depression was higher among post-

### TABLE II. Prevalence of menopausal symptoms among postmenopausal (n=100) and premenopausal (n=100) women

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Postmenopausal</th>
<th>Premenopausal</th>
<th>Chi-square (p value)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vasomotor</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hot flushes</td>
<td>42</td>
<td>27</td>
<td>4.3 (0.04)</td>
</tr>
<tr>
<td>Night sweats</td>
<td>38</td>
<td>16</td>
<td>12.3 (0.001)</td>
</tr>
<tr>
<td>Headache</td>
<td>35</td>
<td>28</td>
<td>1.1 (0.29)</td>
</tr>
<tr>
<td>Waking up at night</td>
<td>34</td>
<td>25</td>
<td>1.95 (0.16)</td>
</tr>
<tr>
<td>Psychiatric</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Depression</td>
<td>29</td>
<td>18</td>
<td>3.4 (0.06)</td>
</tr>
<tr>
<td>Irritability</td>
<td>28</td>
<td>21</td>
<td>2.8 (0.09)</td>
</tr>
<tr>
<td>Fatigue</td>
<td>42</td>
<td>31</td>
<td>2.6 (0.11)</td>
</tr>
<tr>
<td>Sleeplessness</td>
<td>34</td>
<td>23</td>
<td>2.97 (0.08)</td>
</tr>
<tr>
<td>Urinary</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Frequency</td>
<td>17</td>
<td>11</td>
<td>1.5 (0.22)</td>
</tr>
<tr>
<td>Urgency</td>
<td>18</td>
<td>8</td>
<td>4.4 (0.04)</td>
</tr>
<tr>
<td>Dysuria</td>
<td>8</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>Urinary tract infection</td>
<td>3</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Stress incontinence</td>
<td>22</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>Other somatic</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aches and pains</td>
<td>52</td>
<td>16</td>
<td>28.8 (0.001)</td>
</tr>
<tr>
<td>Lack of energy</td>
<td>19</td>
<td>4</td>
<td>9.3 (0.002)</td>
</tr>
<tr>
<td>Backache</td>
<td>46</td>
<td>26</td>
<td>8.7 (0.003)</td>
</tr>
<tr>
<td>Lack of concentration</td>
<td>7</td>
<td>2</td>
<td>11.06 (0.001)</td>
</tr>
<tr>
<td>Dizzy spells</td>
<td>9</td>
<td>3</td>
<td>15.06 (0.0001)</td>
</tr>
<tr>
<td>Forgetfulness</td>
<td>11</td>
<td>5</td>
<td>1.7 (0.17)</td>
</tr>
<tr>
<td>Sexual life</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not sexually active</td>
<td>54</td>
<td>32</td>
<td>9.002 (0.002)</td>
</tr>
<tr>
<td>Did not enjoy sex</td>
<td>34</td>
<td>24</td>
<td>1.97 (0.16)</td>
</tr>
<tr>
<td>Reduced sexual desire</td>
<td>59</td>
<td>38</td>
<td>5.44 (0.02)</td>
</tr>
</tbody>
</table>

### TABLE III. Association between depression and multiple somatic symptoms with menopause

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Odds ratio (95% confidence interval)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depression</td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td></td>
</tr>
<tr>
<td>40–45 years</td>
<td>1.18 (0.51–2.77)</td>
</tr>
<tr>
<td>46–50 years</td>
<td>1.98 (0.96–4.08)</td>
</tr>
<tr>
<td>Crude</td>
<td>1.86 (0.91–3.8)</td>
</tr>
<tr>
<td>Age-adjusted</td>
<td>1.86</td>
</tr>
<tr>
<td>Multiple somatic</td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td></td>
</tr>
<tr>
<td>40–45 years</td>
<td>1.68 (0.59–4.8)</td>
</tr>
<tr>
<td>46–49 years</td>
<td>4.15 (1.8–9.72)</td>
</tr>
<tr>
<td>Crude</td>
<td>3.07 (1.65–5.74)</td>
</tr>
<tr>
<td>Age-adjusted</td>
<td>2.9</td>
</tr>
</tbody>
</table>

### Analysis stratified by age

bands did not provide for them adequately and who were not kind and loving fathers to their children. There was no strong association between perceived relationships within the family and multiple somatic symptoms (Table IV). However, after adjusting for the effect of perceived relationships within the family using unconditional logistic regression analysis, the risk of depression was twice as much among postmenopausal women as in premenopausal women (Table V).

### DISCUSSION

Most studies on menopause, especially those from western countries, have reported a higher prevalence of physical and psychological symptoms around the time of menopause. Most of the literature on menopause is dominated by details of physiological and endocrine changes. However, there is a growing interest in the environmental factors that may influence a woman’s mental and physical health around menopause. We assessed the prevalence of menopausal symptoms, perceptions regarding menopause and the association of poor perceived relationships within the family with menopausal symptoms. The factors considered were the perceived degree of affection women received from their husbands, how well they were provided for by their husbands, their involvement in decision-making at home and the kind of fathers their husbands were for their children.

We found that a significantly higher proportion of postmenopausal women complained of hot flushes and night sweats compared to premenopausal women and 50% of those who experienced hot flushes among postmenopausal women gave a history of recent onset of irregular periods and thus were likely to be perimenopausal. This is consistent with the fact that vasomotor symptoms are experienced even before the actual cessation of menstruation as a result of hypothalamic–pituitary dysfunction in response to ovarian hormonal failure. Thus, vasomotor symptoms are not as infrequent as previously thought to be among the rural women in India. A clinic-based study from Mumbai reported that 25% of urban women between 40 and 60 years of age complained of vasomotor symptoms.

Declining ovarian function has also been reported to cause frequency of micturition, urge incontinence, dysuria and recurrent urinary tract infections. Urgine incontinence was the only statistically significant urinary symptom associated with menopause in our study.

Women are disproportionately affected by depression and the prevalence is as high as 20%-25% in women in the community and up to 40% in adult primary care populations. Though there were studies to show an association of depression with economic deprivation, Patel et al. demonstrated a consistently higher risk of depression in women even after adjustment for a range of other socioeconomic factors through a recent collation of 5 studies from 4 low- and middle-income countries. The reasons postulated for this apparent vulnerability range from biological changes associated with reproduction to stress and adverse environmental factors. In our study, though the prevalence of depression was higher among post-

### TABLE IV. Effect of perceived family relationships on depression and multiple somatic symptoms

<table>
<thead>
<tr>
<th>Factor</th>
<th>Prevalence ratio (95% confidence interval)</th>
<th>Depression multiple somatic symptoms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unaffectionate husband</td>
<td>3.26 (2.01–5.3)</td>
<td>2.06 (1.55–2.7)</td>
</tr>
<tr>
<td>No partnership in decision-making</td>
<td>2 (1.22–3.29)</td>
<td>1.69 (1.26–2.27)</td>
</tr>
<tr>
<td>Not provided for adequately by husband</td>
<td>2.2 (1.35–3.6)</td>
<td>1.51 (1.09–2)</td>
</tr>
<tr>
<td>Husband is not a loving father</td>
<td>2.4 (1.34–4.14)</td>
<td>1.46 (0.96–2.2)</td>
</tr>
</tbody>
</table>

### TABLE V. Factors associated with prevalence of depression (unconditional logistic regression model)

<table>
<thead>
<tr>
<th>Factor</th>
<th>Odds ratio (95% confidence interval)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>0.92 (0.43–2)</td>
</tr>
<tr>
<td>Menopause</td>
<td>2.004 (0.96–4.2)</td>
</tr>
<tr>
<td>Unaffectionate husband</td>
<td>3.61 (1.5–8.4)</td>
</tr>
<tr>
<td>No partnership in decision-making</td>
<td>1.72 (0.72–4.09)</td>
</tr>
<tr>
<td>Not provided for adequately by husband</td>
<td>1.87 (0.65–5.4)</td>
</tr>
<tr>
<td>Husband is not a loving father</td>
<td>1.06 (0.28–3.97)</td>
</tr>
</tbody>
</table>
Acknowledgements

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References