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Prevalence of Menopausal Symptoms among Rural Bengalee Women of North Bengal, India

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KEYWORDS

Menopause, Menopausal symptom, Bengali women, Health status

ABSTRACT

Background: Menopause is an important part of a woman's reproductive life, most of them spend the last third of their life-time after their reproductive period ends, and can cause different awkward side effects. Conclusion: This study showed that the prevalence of menopause symptoms includes hot flashes, body ache, irritability, hypertension, difficulty in sleeping, joint pain and vaginal dryness were observed to be prominent symptoms.

Introduction

Menopause is an ordinary, yet one of the most important and major transitional periods in the life of every woman. It is defined as 'the permanent cessation of menstruation, recognized as having occurred after 12 months of amenorrhea, not attributed to hormone use or surgery for the removal of the uterus or ovaries' (Peacock and Ketvertis, 2021; Roy and Mondal, 2020; Roy *et al*., 2021; Sinha *et al*., 2021). Menopause occurs because the ovaries start to produce less estrogen and progesterone hormones which regulate menstruation (Rulu *et al*., 2021). Most of the women spend the last third of their lifetime after the reproductive year ends in menopause (Takahashi and Johnson, 2015; Thomas *et al*., 2021). Menopause can cause different awkward side effects such as vasomotor changes, urogenital atrophy and irregular menstruation, which began to occur around four years before their last period (Ilankoon *et al*., 2021; Thomas *et al*., 2021). Such changes occur in women because the estrogen level reduces at that time (Roy and Mondal, 2020; Ilankoon *et al*., 2021; Rulu *et al*., 2021), and menopausal side-effects are presumed to be biological, psychological and/or socio-cultural in origin (Peacock and Ketvertis, 2021; Thomas *et al*., 2021). It is estimated that 85% of the post-menopausal women reported to have certain menopause-related symptoms during their life-time (Thomas *et al*., 2021). Although, there are different type of symptoms which are related with menopause yet are not specific to this phenomenon, and the prevalence of vasomotor symptoms experienced in the form of hot flushes and night sweating in Indian women (Sharma *et al*., 2007; Dasgupta and Ray, 2009; Ganapathy and Furaikh, 2018; Roy *et al*., 2021; Rulu *et al*., 2021; Thomas *et al*., 2021), whereas, in the United States the prevalence of vasomotor symptoms alone is estimated to be 40 to 50 million women (Utian, 2005; Thomas *et al*., 2021).

Several researchers have reported that the frequently mentioned side effects are chronic migraine, backache, constant exhaustion, hypertension, gastritis/indigestion, weight gain or obesity, depression, irritability, palpitations, lack of energy, fluid retention, chronic diseases and difficulties in concentration

(Khan and Hallad, 2010; Sinha et al., 2018; Roy and Mondal, 2020; Ilankoon *et al*., 2021; Thomas *et al*., 2021). Several women have reported adverse health issues related to joint and muscle stiffness and pain, and memory problems or decreased cognition as they feel difficulties in thinking clearly among menopausal women (Khan and Hallad, 2010; Ilankoon *et al*., 2021). Vasomotor symptoms were more frequent in the peri-menopausal women (Sallam *et al*., 2006; El Khoudary *et al*., 2020). The experience of menopause varies from individual to individual, and the side effects can be more extreme if menopause occurs early or over a shorter period of time (Roy *et al*., 2021; Rulu *et al*., 2021). Several researchers have reported that there are differences in the prevalence and composition of menopausal symptoms between Caucasian and Asian women (Thomas *et al*., 2021). Studies have reported a higher prevalence of physical and psychological symptoms of menopause in Western countries (Singh *et al*., 2002; Thomas *et al*., 2021). Further, research investigations have also reported the severity of menopausal symptoms among Indian women (Shukla *et a*l., 2018; Roy *et al*., 2021; Thomas *et al*., 2021). The geographic and population-specific variations of menopausal symptoms are important in order to understand the possible associations of disease and health. The objectives of the present study are to determine the prevalence and severity of various menopausal symptoms among post-menopausal Bengalee women in North Bengal, India.

Material and Methods

North Bengal is the northern part of the state West Bengal comprises the districts of Malda, Uttar Dinajpur, Dakshin Dinajpur, Darjeeling, Cooch Behar, Kalimpong, Alipurduar and Jalpaiguri. A number of indigenous (e.g. Lepcha, Rabha, Meche, Toto and Rajbanshi) and caste groups (e.g. Bengalee) populations reside in this region (Sen *et al*., 2013; Sinha *et al*., 2018, 2021).The present community-based cross-sectional investigation was undertaken among 551 postmenopausal Bengalee Hindu caste women aged 40-55 years of Batasi village (26.5995˚N 88.1804˚E) in Kharibari Community Development block of Darjeeling district of West Bengal, India. Ethnically, Bengalee Hindus caste are an ethno-linguistic group and primarily belong to Indo-Aryan and Mongolo-Dravidian stock, and closely related to Austro-Asiatic, Dravidian, Assamese, Sinhalese, Munda and Tibeto-Burman linguistic/ethnic group/stocks (Sen *et al*., 2013). The research participants are mainly endogamous and homogeneous in nature and residing in rural areas incorporated utilizing stratified random sampling methods in the present investigation. A total of 585 research participants were approached, out of which 551 post-menopausal women research participants voluntarily participated in the present investigation and overall participation was 94.19%. Research participants with long-term chronic diseases and physical deformity were excluded to avoid the subject selection ambiguity. The detailed objectives, nature of participation and data collection procedures were explained and an informed consent was obtained before collection of data. The present study was conducted in accordance with the ethical guidelines and standard methods for human experiments as laid down in the Helsinki Declaration (Portaluppi *et al*., 2010). A structured interview was conducted in order to obtain relevant data utilizing the pre-structured and pre-tested interview schedule. The socio-economic, demographic and lifestyle variables, including education, occupation, family income, marital status, family size, reproductive history, contraceptives use, number of children, house condition, menopausal symptoms (e.g., hot flashes and vaginal dryness), memory problem, concentration problem, depression, irritability and physical symptoms (e.g., joint pain, body ache, weight gain, sleeping difficulty, hypertension and diabetes) were obtained. The research participants were inquired regarding their self-reported experiences of menopausal symptoms during the last month using a recalled method. The minimum number of participants required (i.e., N=385) for reliable assessment of the reproductive health-related outcomes was determined using the following standard sample size estimation method (Lwanga and Lemeshow, 1991).

Statistical Analysis

The data of the present study was statistically analyzed using the Statistical Package for Social Sciences

(SPSS, Version 16.0). The quantitative variables are depicted in terms of mean and standard deviations (±SD). Poisson distribution with 95% confidence interval (CI) is calculated for the average number of cases in different categorical variables for the time in the present investigation. A p-value of less than 0.05 was considered to be statistically significant.

Results

Frequency distribution with 95%CI of age at natural menopause, socio-economic and demographic variables among post-menopausal women are depicted in Table 1. The study population consists of 551 Bengalee post-menopausal women with mean age at menopause of 46.20±2.53 years. A total of 83.30% of the studied population had ≤8th standard level of education, and the majority of women were found to be unemployed or housewives (93.28%) and monthly earnings of Rs. ≥10000 (64.97%). The results showed that 75.50%, 53.90% and 54.45% were married, belonged to nuclear families and ≤4 members in the family, respectively. Fuhrer, a total of 60.07% of menopausal women have ≤3 number of children with mean menopausal age of 46.28±2.49 years. The results indicated that 64.79% and 6.90% participants had apparently good health conditions and used contraceptives, respectively. The results showed that 76.04% of research participants have attained their menarche at ≤14 years with a mean age at menopause of 46.17±2.56 years.

Prevalence of health-related issues and menopausal symptoms

The distributions of health-related issues among Bengalee post-menopausal women are depicted in Table 2. In terms of severity of menopausal symptoms and health related issues, the most critical vasomotor, psychosocial, physical, and sexual symptoms were including body ache (53.90%), hot flashes (38.84%), irritability (18.87%), feeling depressed (4.90%), hypertension (33.03%) and sleeping difficulty (26.68%). Further results indicated that 4.54% and 2.54% of the participants suffer from concentration problems and memory problems, respectively. The most reported physical symptoms among study participants were suffering weight gain (5.08%), joint pain (11.07%), diabetes (11.62%) and vaginal dryness (12.89%).

Discussion

Worldwide, the estimates for the median age at menopause range from 45-55 years, with women of developed countries having a significantly higher menopausal age compared to the other parts of the world (Singh *et al*., 2002; Syamala and Sivakami, 2005; Dasgupta and Ray, 2009; El Hajj *et al*., 2020). In India, women attained natural menopause at 44.3 years (Syamala and Sivakami, 2005) which corroborates with the findings of the present investigation (i.e., 46.20 years) (Table 1). Roy *et al*. (2021) found the mean age at menopause was 47.48 years. Similarly, El Hajj *et al*. (2020) reported the mean age at menopause was 47.9 years. Similarly, the comparisons of age at menopause were found to be significantly lower than Rajbanshi women (50 years) (Sinha *et al*., 2021), Nepali women (47 years) (Ghimire et al., 2015), American women (51 years) (Kato *et al*., 1998), Finish women (51 years) (Luoto et al. (1994), Aao Naga women (51.33 years) (Purnungla and Sengupta, 2002) and English women (52.1 years) (Hardy and Kuh, 2005) (Table 3). The reason for these inconsistencies concerning the beginning of the menopausal process from various ethnic populations are hard to interpret, but methodological viewpoints joined with geographic location, ethnic and genetic diversities around the world, as well as some memory inclination with regard to the specific-time of menopause are most presumably the primary variables of this dissimilarity across the populations (Melby *et al*., 2011; El Hajj *et al*., 2020; Thomas *et al*., 2021). It is expected that by 2030 the number of post-menopausal women worldwide will reach

1.2 billion (Ilankoon *et al*., 2021). According to the Indian National Family Health Survey (NFHS-3, 2005-06), the range of mean age at menopause in India reported in different studies appears to be young, between 41.9 and 49.4 years (NFHS-3, 2005-2006). Several researchers have reported that during menopause, women may experience various vasomotor, urogenital and psychological symptoms as well as sexual dysfunction and chronic problems are often attributed to hormonal changes during midlife and projected as health hazards (Singh *et al*., 2002; Dasgupta and Ray, 2009; El Hajj *et al*., 2020; Roy and Mondal, 2020; Thomas *et al*., 2021).

The present investigation showed a wide distribution of various menopausal symptoms among Bengalee women (Table 2). Several researchers have reported that these menopausal symptoms have been influenced due to hormonal adjustment and women have reported similar experiences in different ethnic populations (Chim *et al*., 2002; Dasgupta and Ray, 2009; Amira *et al*., 2020; Rulu *et al*., 2021). Several researchers have argued that differential presentation of physical or psychological symptoms are results of the social expectations of a particular socio-cultural group (Ilankoon *et al*., 2021; Rulu *et al*., 2021). A number of factors that are inherent within prevailing socio-cultural paradigms including cultural beliefs, values, and attitudes toward menopause influence women's menopausal experiences (Singh *et al*., 2002; Dasgupta and Ray, 2009; Ilankoon *et al*., 2021). Again, there exists a controversy among the researchers regarding the classical menopausal signs and symptoms (e.g., hot flush, atrophic vaginitis and osteoporosis) which might be estrogen dependent (Roy and Mondal, 2020; Ilankoon et al., 2021; Rulu et al., 2021). Studies on the Indian subcontinent and some other places have reported that the prevalence of hot flushes ranges from 51.1 to 78.2% (Sidhu *et al*., 2005; Sharma *et al*., 2007; Nusrat *et al*., 2008; Dasgupta and Ray, 2009). Thomas *et al*. (2021) have reported that 83.2% of the participants suffered from hot flash. In general, studies have suggested that the prevalence of hot flush is estimated to be the highest during peri-menopausal stage (Yisma *et al*., 2017; Rulu *et al*., 2021) and declines thereafter through the first two years and with the increase in post-menopausal years. The symbolic meanings and experience of menopause are culturally and socially contextual in different ethnic populations (Kowaleck *et al*., 2005; Dasgupta and Ray, 2009; Ilankoon *et al*., 2021).

Conclusion

To conclude, the present study has shown that the prevalence of menopausal symptoms like body ache, hot flash, irritability, hypertension, sleeping difficulty, joint pain and vaginal dryness were the most prominent symptoms among post-menopausal participants. The proportion and severity of the menopausal symptoms observed in the population proves that these symptoms are very common and cannot be ignored. Moreover, many women require necessary information and preferred advice about optimizing their health status, in place of pharmaceutical treatment with certain benefits and identifiable risks or complementary and alternative therapies of little proven benefits.

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Tables

Table 1: Descriptive analysis (mean and standard deviation) of socio-economic, demographic and lifestyle variables among Bengalee women.

Variables	N (95%CI)	Percentage (%)	Mean	SD	95% Confidence Interval for Mean	
					Lower Bound	Upper Bound
Total	551(506.00-598.94)	100.00	46.20	2.53	45.99	46.41
Age						
40-45 years	130 (108.62-154.37)	23.59	45.66	2.41	45.24	46.08
46-50 years	202 (175.10-231.86)	36.66	45.76	2.18	45.46	46.06
51-55 years	219 (190.96-250.01)	39.75	46.93	2.73	46.57	47.30
Age at menopause						
40-45 years	230 (201.24-261.73)	41.74	43.88	1.52	43.69	44.08
46-50 years	301 (267.97-337.02)	54.63	47.59	1.27	47.44	47.73
51-55 years	20 (12.22-30.89)	3.63	52.00	1.03	51.52	52.48
Family type						
Nuclear Family	297 (264.17-332.78)	53.90	46.06	2.47	45.78	46.35
Joint Family	254 (223.71-287.23)	46.10	46.36	2.60	46.04	46.68
Number of Children						
<=3 Children	331 (296.32-368.62)	60.07	46.28	2.49	46.01	46.55
>=4 Children	220 (191.89-251.06)	39.93	46.08	2.59	45.74	46.43
Age at menarche						
<=13 Years Menarche	132 (110.45-156.54)	23.96	46.30	2.41	45.88	46.71
>=14 Years Menarche	419 (379.87-461.07)	76.04	46.17	2.57	45.93	46.42
Family Size						
<=4 Family Size	300 (267.01-335.93)	54.45	46.18	2.49	45.90	46.46
>=5 Family Size	251 (220.92-284.03)	45.55	46.23	2.58	45.91	46.55
Occupation						
Housewife	514 (470.51-560.46)	93.28	46.22	2.53	46.00	46.44
Worker	37 (26.05-51.00)	6.72	45.89	2.53	45.05	46.73
Education						
<=8th Standard	459 (417.97-502.96)	83.30	46.22	2.54	45.99	46.45
>=9th Standard	92 (74.16-112.83)	16.70	46.11	2.50	45.59	46.63
Family Income						
<=Rs 10000	193 (116.73-222.23)	35.03	46.08	2.56	45.71	46.44
>=Rs 10000	358 (321.87-397.10)	64.97	46.27	2.51	46.01	46.53
Health Status						
Good	357 (320.93-396.05)	64.79	46.09	2.48	45.83	46.35
Poor	194 (167.66-223.30)	35.21	46.41	2.61	46.04	46.78
Marital Status						
Married	416 (376.99-457.94)	75.50	46.30	2.56	46.05	46.54
Widow or Separated	135 (113.19-159.79)	24.50	45.92	2.42	45.51	46.33
House Condition						
Bricked	466 (424.67-510.32)	84.57	46.26	2.54	46.03	46.49
Non-bricked	85 (67.89-105.10)	15.43	45.89	2.44	45.37	46.42
Use of oral contraceptive						
Yes	38 (26.89-52.16)	6.90	46.82	1.69	46.26	47.37
No	513 (469.56-559.41)	93.10	46.16	2.58	45.93	46.38

Table 2: Menopausal symptoms and health related issues face by Bengalee post-menopausal women

Symptoms (n=551)	Frequency (N) and 95% CI	Percentage (%)
Vasomotor Symptoms		
Hot flashes		
Yes	214 (186.29-244.68)	38.84
No	337 (301.97-374.96)	61.16
Psychosocial Symptoms		
Memory problem		
Yes	14 (7.65-23.49)	2.54
No	537 (492.54-584.40)	97.46
Concentration problem		
Yes	25 (16.18-36.90)	4.54
No	526 (481.99-572.88)	95.46
Feeling depressed		
Yes	27 (17.79-39.28)	4.90
No	524 (480.11-570.85)	95.10
Irritability		
Yes	104 (84.97-126.01)	18.87
No	447 (406.52-490.46)	81.13
Physical Symptoms		
Joint pain		
Yes	61 (46.66-78.36)	11.07
No	490 (447.56-535.38)	88.93
Body ache		
Yes	297 (264.17-332.78)	53.90
No	254 (223.71-287.23)	46.10
Weight gain		
Yes	28 (18.61-40.47)	5.08
No	523 (479.12-569.77)	94.92
Difficulty in sleeping		
Yes	147 (124.20-172.78)	26.68
No	404 (365.59-445.37)	73.32
Diabetes		
Yes	64 (49.29-81.73)	11.62
No	487 (444.71-532.25)	88.38
Hypertension		
Yes	182 (156.51-210.45)	33.03
No	369 (332.30-408.66)	66.97
Sexual Symptoms		
Vaginal dryness		
Yes	71 (55.45-89.56)	12.89
No	480 (438.01-524.90)	87.11