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Prevalence of perimenopausal symptoms in women: a community based study

Talisetty Bharathi[1,*], Nellore Gopal Reddy[1,*], Kadainti Venkata S. Sarma[2], T.S.R. Sai[3]
[1]Department of Obstetrics & Gynecology and *Pharmacology, Sri Venkateswara Medical College, Tirupati, Andhra Pradesh;
[2]Department of Statistics, Sri Venkateswara University, Tirupati;
[3]Department of Community Medicine, NRI Medical College, Chinna Kakani, Guntur District, Andhra Pradesh

*bharathi_md2002@yahoo.co.in

Abstract

The present study is a community based cross sectional study in which prevalence of menopausal symptoms were recorder in 970 women in and around Tirupati. Women with different socio-economic data, age, occupation, physical work etc. were included in the study and the effect of the same on perimenopausal symptoms were discussed. Menopause is a physiological change which has experienced by women around 40-55 years of age. The mean age of menopause was recorded as 46.5±4.4 mean and 88.24% of women were symptomatic. Stepwise binary logistic regression analysis revealed obesity as a predominant factor accounting for majority of menopausal symptoms followed by vasomotor, anxiety, depression and somatic symptoms. Additionally lack of physical activity was also accounted for vasomotor symptoms. After careful evaluation of all parameters it is suggested that daily exercise and measures to maintain body mass index within normal range would help in alleviating the distressing symptoms (since obesity was found to be predominated factor).

Keywords: Menopause, hormones, perimenopausal symptoms, women, obesity

Introduction

Menopause is a physiological change which has to be experienced by every woman around 45 to 50 years of age. Average life expectancy in India is 64.7 years, 63.2 years for males and 66.4 years for females (1). As life expectancy for women is higher one third of their life has to be spent in menopausal age. At present 6 to 7% females in the world are in menopausal age while in India the figures rise to 7 to 8%. According to sensus the world's elderly population will be more than double by 2025 (2) leads to many social problems. Few systematic studies are available the prevalence of menopausal symptoms among women in India (3-5) in particular to middle-income group. In view of the paucity of data available on this subject and the peculiar socio-economic conditions of urban women in India, the present study was designed to establish the frequency of occurrence of different perimenopausal symptoms in women in and around Tirupati. It is often associated with many unpleasant, disturbing symptoms which affect quality of life and productivity too. In India, the mean age for menopause is estimated to be 47 years (6) while it is 51 years in developed countries.

Methods

The present study was a community based cross sectional observation conducted at Tirupati, a city in Andhra Pradesh in South India. The total population in Tirupati (2010) was 2,28,202; nearly 15% of women were reported to be above 45 years (7). Out of 20 wards in Tirupati, four were selected randomly for the study.

Study population

Health awareness camps were conducted in the four wards and 250 women from each ward aged 40-55 years were selected by cluster sampling who gave verbal consent to participate in the study. The demographic, socio-economic details, a thorough and detailed medical, surgical and gynecological history, dietary habits, daily physical activity, presence or absence of perimenopausal symptoms or any treatment taken for the relief of the perimenopausal symptoms were recorded in a structured proforma. The study was approved by the Institutional Ethical Committee.

According to the occupation, the women were classified into unskilled workers, housewives and skilled workers. Depending on the monthly family per-capita income, the socio-economic status (SES) of the women was recorded (Table 1) as high (above rupees 800), middle (201 to 799 rupees) and low (less than 200 rupees) (8). The women were categorized as sedentary (not doing much physical work), moderately working (at least 6-8 hours of physical work per day).

Menstrual history was obtained about the regularity of menstruation and about the nature of the menopause (surgical or natural). In the women who have already attained menopause, the age at menopause was recorded in completed years. The physical activity at present and during childhood was taken into consideration both in illiterate and educated women to know its influence on perimenopausal symptoms. The dietary habits were noted as vegetarian or mixed diet. Habit of taking two or more cups of coffee, tea or tobacco chewing also was noted.

The perimenopausal symptoms were listed and each woman was asked whether they suffered none, one or more of the symptoms with yes or no responses. Whether they were taking any treatment for relief of the symptoms by consulting a doctor or were using over-the-counter medications was noted. A body mass index (BMI: kg/m^2) of 19-25 was considered as normal, below 19 indicated under-weight, 25-29 as overweight and BMI above 30 as obesity. In addition, general and clinical examination was done. Women who had problems were treated or referred to concerned specialists. The data were analyzed by dividing subjects into three age groups 40-45, 46-50 and 51-55 years. Cross-tabulation was done among different age groups and menopausal symptoms. Factors affec-

ting various perimenopausal symptoms were analyzed by step-wise logistic regression and statistical significance of the model was tested using chi-square test. Analyses were undertaken using SPSS 13.0 statistical software.

Results

A Total of 970 women of different socio-economic data, age, with other parameters formed the material for the study. The results obtained were analyzed meticulously as follows. Among total 970 66.4% (645) were within 45-50 years, 19% (184) were within 40-45 years and 14.5% (141) were within 50-55 years. Educational status reports as per table 2 showed 58.2% (565) were illiterates. 28.8 (279) higher education and 13% (526) with primary education. The socio-economic status (Table 2) revealed 50.1% were middle class group followed by lower (42.8%) and higher status (0.07%) study compared of 681% housewife following daily workers (19.2%), skilled workers (12.5%) professionals. 60.3% the people had menopause, 24.8% women had regular cycles, 14.8% had irregular cycles. 57.6% women had natural menopause where as 42.6% women showed surgical menopausal. Life style habits of women under study revealed 61.3% with sedentary and 38.7% with moderate lifestyle. Highest percentage (86.7%) subjects had mixed diet habit, whereas 13.1% were vegetarian childhood activity was reported is 38.2% of women under report. Body mass index analysis of women under study revealed that 38.8% women normal, 33.9% were our report, 18.8% were 8.6 were under weight.

Out of the total women under study 241 (24.8%) were regularly menstruating, 144 (14.5%) were having irregular periods and 585 (60.3%) had attained menopause. Among these 585 women, 249 women had undergone hysterectomy. The average age of menopause in those who had natural menopause was 46.5±4.4 years. The demographic characteristics of the women of different age groups studied is shown in Table 3. Palpitations (53.1%) were the most common symptoms followed by sleep disorders (50.5%), while panic attacks (15.3%) and breathing difficulty (13.1%) were the least common symptoms as shown in table 3. Prevalence of menopausal symptoms is more with increase of age though statistically not significant (Table 4). Overall, menopasual symptoms were documented in 856 (88.24%) of the women. Only 114 (11.4%) of women were free from any symptoms. Selected factors' (Table-5) influence on menopausal symptoms were analyzed by step-wise binary logistic regression and revealed that these factors could influence the incidence of menopause symptoms.

Vasomotor symptoms were less in women with good exercise and more in women with high BMI, habituated to taking caffeine, tea, tobacco etc. had surgical hysterectomy and middle aged stress factors. Anxiety symptoms were more in women who underwent hysterectomy, with less childhood activity, had medical disorders and who were habituated to caffeine, tea, tobacco etc. Women who underwent hysterectomy and those with medical disorders and marital problems had more depressive symptoms. Women taking caffeine, tea, tobacco, etc. had less depressive symptoms. Urogenital symptoms were more in women with surgical menopause (hysterectomy), habituated to caffeine like products, had marital problems, medical disorders and in advanced age. Muscle and joint pains were more in women with high BMI, had marital problems and with advanced age.

The overall influencing factors on menopausal symptoms were analyzed by logistic regression method and observed that obesity is a predominant factor that could influence all groups of menopausal symptoms (Table 3). Obese women have 2.22 times more risk for having vasomotor, 1.99 times more risk for having anxiety symptoms, 1.733 times more risk for having depression symptoms and 2.12 times more risk for having somatic symptoms than women with normal weight. Those women with no physical activity have 1.66 times more risk to have vasomotor symptoms. Though women who were obese and those who underwent hysterectomy have statistically significant risk to have urogenital symptoms the influence is not much as per odds ratio. The extent of influence of categorical factors

on menopausal symptoms was represented by fish-bone chart (Figure 1)

Discussion

There are a few systematic studies in the past on the prevalence of perimenopausal symptoms among Indian women (3-5). The present study was conducted through a survey in 970 women of different socio-economic strata to establish the prevalence of perimenopausal symptoms (Table 2). Though 1000 women were initially selected for the study data and analysis were conducted on 970 only since 30 patients did not participate later. Hence results obtained based on were 970 women only.

The average age of menopause observed was 46.5±4.4 years. The average age of menopause in Indian women has been reported to be 44 to 48 years (3,5) and in the developed countries it is 51 years. The difference might be due to genetic, socio-economic, nutrition, health and attitude variations, although misstatement of age cannot be excluded. Adverse socio-economic circumstances in childhood and adulthood might be associated with the early onset of menopause in India. Childhood diet might affect linear growth and age at menopause (9).

Among various symptoms observed in the present study (Table 3) majority patients showed palpitation (53.14%) and the least common symptoms was breathing difficulties (13.08%) on the contrary other reports and as common groups from India, fatigue, loss of interest in most things and pressure and tightness in body, muscle and joint pains were common and forgetfulness, dizziness and urogenital symptoms were least common symptoms respectively (3-5). In the present study, it was observed that 88.24% of women in the age group of 40-55 years (Table 4) were suffering more from perimenopausal symptoms The differences between the studies might be due to selection of women of different age groups, between 40-55 years of age belonging to different socio-economic groups with diversified occupations. The large sample of the present study represented frequency of different symptoms arise from the size and nature of samples studied.

The overall influence of different important factors on perimenopausal symptorm is shown in table 5. It was reported that exercise, reduce intensity and frequency of vasomotor symptoms (3) which could be due to increase in endorphins released in brain during exercise (10) which inhibit gonadotropin secretion by suppressing the hypothalamic release of gonadotropin releasing hormone (GnRH). This in turn reduce leutinising hormone (LH) pulse frequency and thereby reduces vasomotor symptoms (11). As the BMI increase, the menopause symptoms exhibited were more. This might be due to high core body temperature due to increased body fat. Women, who were habituated to caffeine, tea or tobacco regularly, suffered more hot flushes (12). Caffeine products inhibit cyclic nucleotide phosphodiesterase, the enzyme which converts cyclic adenosine monophosphate (AMP) to 5 AMP. Along with catecholamines, caffeine increases cyclic AMP levels which enhance nor epinephrine secretion and increased neural activity in hypothalamus and other areas of brain. As a result respiratory, vagal and vasomotor centers were stimulated. Caffeine increase intra cellular calcium (13). Further adenosine induce sedative effect would be competitively antagonized by caffeine. Women who underwent hysterectomy, especially hysterectomy with bilateral salpingo oophorectomy were reported to show more vasomotor symptoms.

Removal of uterus and ovaries leads to sudden decrease in peptide and steroidal hormones (50%) like inhibin, activin, estrogen and progesterone (14). This results in the removal of normal steroid hormones induced negative feedback on hypothalamus and pituitary gland. Hence GnRH, follicle stimulating hormone (FSH) and LH are secreted unopposed with a consequent change in neurotransmitters and neuromodulators. Estrogens have inhibitory effect on noradrenaline. Plasma concentrations of 3-methoxy, 4-hydroxy phenyl glycol, main metabolite of norepinephrine is increased before hot flushes. When levels of estrogen are decreased, the balance

between noradrenergic neurons and opioid containing neurons is lost which influence thermoregulation (15). Because of psychosomatic relation, women with middle aged stress factors and marital problems reported higher frequency of perimenopausal symptoms including vasomotor symptoms. Stress induces increase in cortisol which stimulates catecholamines in brain. Serotonin levels are reduced in stress conditions.

Women who underwent hysterectomy had more anxiety symptoms probably due to early age of menopause and early onset of vasomotor symptoms (16). Perimenopausal symptoms are interrelated and not independent. Hot flushes may be associated with sleep disturbances in 72% of women. Sweating occurs with rise in skin temperature and is disproportionately greater than the subjective sensation of heat which leads to sleep disturbance. Slow wave sleep is less in symptomatic women, especially in warm condition (17). In sleep deprived women, cortisol is raised; melatonin levels are lowered (18). Estrogen deficiency also induces increase in proinflammatory cytokines (19). Sleep deprivation once triggered, may itself induce activation of hypothalamopituitary axis which could further perpetuate insomnia – stress vicious cycle. Women with certain medical disorders had more perimenopausal symptoms. In women with hyperthyroidism increased metabolism leads to heat intolerance and excessive sweating. In pheochromocytoma catecholamines are increased, in carcinoid syndrome, serotonin, histamine and catecholmines are raised. Women with diabetes mellitus had increased vasomotor and anxiety symptoms. Most of these medical disorders are common in perimenopausal age. Hence before treating the women symptomatically other medical disorders must be excluded.

Women who underwent hysterectomy were having more depression symptoms due to lack of estrogen leading to reduction in 5-hydroxytryptamine synthesis (20). Impaired 5-hydroxyl tryptamine may lead to depression. Women with good childhood physical activity and regular exercise had less depression symptoms. Exercise induced mood elevation effect by stimulating ß endorphin and catecholamine levels. Women habituated to caffeine, tea and tobacco had less depression symptoms as the active components in coffee, tea and tobacco are well known central nervous system stimulants. Women with marital problems and life stresses often exhibit mood and psychological changes (21). Psychological symptoms might be less in women who were well supported, well adjusted and well placed in life but more in women who are less well supported and less able to adjust and who faced life stresses (21). Various theories were proposed to explain possible associations between menopause and mood (i) symptom or domino hypothesis (dysphonia caused by vasomotor symptoms) (ii) Biochemical hypothesis (estrogen – decline induced dysregulation of neuromodulatory systems in brain), (iii) psycho analytic view (loss of reproductive capacity causing emotional disturbance) (iv) social circumstances view (midlife crisis hypothesis) (22). Women with medical disorders had more depressive symptoms. It might be due to endocrinological and biochemical changes in the body due to various diseases or due to effect of drugs used for treatment of the diseases.

Women who had hysterectomy had more urogenital symptoms due to early vaginal and urethral atrophy caused by estrogen deficiency (23). In women with marital problems the sexual relation is disrupted due to their culture and attitudes than by nature and physiology (or hormones) (24). The two most important influences on older sexual interaction are the strength of a relationship and the physical condition of each partner (24). Women who take caffeine, tea, tobacco etc had more frequency of micturition and vaginitis. Irritability of bladder is more with smoking, alcohol and or caffeine due to enhanced adrenergic activity as a result of estrogen deficiency. Loss of sexual interest was seen after advanced menopause age due to decreased vaginal lubrication, decreased libido, dyspereunia and vaginismus.

Women with weight gain had more menopause symptoms. Menopause associated weight gain might be related to aging and lifestyle. Lean body

mass decreased with age, and this loss seems to accelerate after menopause especially in women with sedentary life style. Menopause is associated with increased fat in the abdominal region. Women with marital problems like bereavement, divorce, lack of partner's adjustment etc had more somatic symptoms due to psychological stress (25). Women who take caffeine and tobacco had less somatic symptoms as they are central nervous system stimulants. With advanced age, somatic symptoms increased due to loss of collagen from ligaments and other soft tissues. Approximately 30% of collagen is lost during first 5years of menopause (26). This being a cross sectional study, the cause- effect relationship is predicted with various factors. To confirm it a prospective follow-up study is needed during the transition period of perimenopause for a better understanding of the relationship and to reassure the women regarding this physiological process.

see "Table 1"

see "Table 2"

see "Table 3"

see "Table 4"

see "Table 5"

References

1. Average life expectancy in India. Available at URL: http://en.wikipedia.org/wiki//list of countries 2010.Accessed on April 20, 2011.
2. Speroff L and Fritz MA. Menopause and the perimenopausal transition, chapter17, Clinical gynecologic Endocrinology and infertility,seventh edition, Lippincott Williams and Wilkins, Indian edition,Jaypee publishers 2005; 621-688.
3. Shah R, Kalgutker S, Savardekar L, Chitlange S, Iddya U, Balaiah D. Menopausal symptoms in urban Indian women Obstet and Gynecol today 2004;9:667-675.
4. Indira SN, Murthy VN. Complaints of menopausal women and their implications. Indian J Psychol Med 1981; 29-32.
5. Bagga A. Age and symptomatology of menopause: a case study. Obstet Gynecol Today 2004; 9:660-666.
6. Padubidri VG, Shirish ND. Shaw's text book of gynecology. Fourteenth edition. New Delhi: Elsevier; 2008.
7. Basic data sheet. Chittoor District, Andhra Pradesh. Census of India 2001. Available at URL: http://www.censusindia.net. Accessed on June 26, 2010.
8. Kulkarni, AP, Baride JP. Modified method of Kuppuswamy for social classification of family (urban) sociology. Chapter 2. In: Text book of Community medicine, First edition, Mumbai, Vora Medical publications;1998.p.14 .
9. Debbie AL, Shah E. The association of socioeconomic position, across the life course and age at menopause. The British Womens Heart and Health Study. BJOG 2003; 110:1078-1087.
10. Schiff I. Alternative medicine for menopause: 1999;1-7.
11. Jones KP. Menopause and cognitive function: estrogens and alternative therapies. Clin Obstet Gynecol 2000;43:198-206.
12. Kass-Annese B. Alternative therapies for Menopause. Clin Obstet Gynecol 2000; 43:162-183.
13. Satoskar RS,Bhandarker SD, Nirmala N Rege. Central nervous system stimulants, chapter 12, Pharmacology and pharmacotherapeutics: Twenty first edition,Popular prakasan; 2009.
14. Hughes CLJr, Wall LL, Creasman WT. Reproductive hormone levels in gynecologic oncology patients undergoing surgical castration after spontaneous menopause. Gynecol Oncol 1991;40:42-45.
15. Freedman RR. Biochemical, metabolic and vascular mechanisms in menopausal hot flushes. Fertil Steril 1998; 70 : 1-6.
16. Oldenhave A, Jaszman LJB, Haspels AA, Everaerd WTAM. Impact of Climacteric on well being. Am J Obstet Gynecol 1993; 168 : 772-780.
17. Woodward S, Freedman RR. The thermoregulatory effects of menopausal hot flushes on sleep. Sleep 1994;17:497-501.
18. Blaicher W, Spek E, Imhof MH. Melatonin in postmenopausal females. Arch Obstet Gynecol 2000;263:116-118.
19. Red wine L, Hauger RL, Gillin CJ. Effects of sleep and sleep deprivation on interleukin- 6, growth hormone, cortisol and melatonin levels in humans. J Clin Endocrinol Metab 2000;85:3597-3603.
20. Coppen A. Total and free plasma tryptophan concentration in the plasma of depressive patients. Lancet 1972;2:1415-1416.
21. Davey DA. The Menopause and the postmenopausal women, chapter 41. In: Keith Edmonds D: Dewhurst's text book of obstetrics and gynecology; Seventh edition. London. Blackwell Science Limited; 2007.p.479-495.
22. Avis NE, Brambilla D, Mc Kinlay S. A longitudinal analysis of the association between menopause and depression, results from the Massachusett's Women's health study. Ann Epidemiology 1994;4:214-220.
23. Hurd WW. Urogenital symptoms in hysterectomised women. In: Berk JS, Adashi EY, Hillard PA. Menopause. Chapter 29. Novak's Gynecology. Twelfth edition. Pennsylvania: Williams and Wilkins publishers; 1996.
24. Greendale GA, Hugan P, Shumaker S. for the Postmenopausal Estrogen /Progestin Interventions Trial (PEPI) Investigators. Sexual functioning in postmenopausal women: the post menopausal Estrogen /Progestin Interventions (PEPI) Trial. J Womens Health 1996;5:445-458.
25. Avis NE, Mc Kinlay SM. A longitudinal analysis of women's attitudes towards the menopause: results from the Massachusetts Women's Health Study. Maturitas 1991;13: 65-79.
26. Nachtigall LE. The symptoms of perimenopause Clin Obstet Gynecol 1998; 41: 921-927.

Factor	Reference group	Comparative groups (in the given order)
Occupation	Coolie	House wife, Semi skilled, Skilled, Professional
Hysterectomy	No	Yes
Diet	Vegetarian	Non-Vegetarian
Exercise	Regular	No, Minimal
Age Group	51-55 Yrs	46-50 Yrs, 40-45 yrs
Childhood sports activity	Yes	Nil
Physical work	Moderate	Sedentary
Body mass Index	Normal	Underweight , Over weight , Obese

Table 1: Selected categorical factors for analysis

Sl.No	Symptoms	Number	Percentage
1	Hot flushes	431	44.39
2	Sweating	475	48.92
3	Palpitation	516	53.14
4	Tense & Nervousness	432	44.49
5	Sleep disorders	490	50.47
6	Excitable	404	41.61
7	Panic attacks	149	15.34
8	Difficulty in concentrating	168	17.30
9	Tiredness & lacking energy	304	31.31
10	Loss of interest in most things	250	25.75
11	Unhappy & depression	223	22.96
12	Crying spells	198	20.39
13	Irritability	384	39.55
14	Urinary frequency	213	21.93
15	Vaginitis	199	20.49
16	Loss of interest in sex	151	15.55
17	Dyspereunia	162	16.68
18	Feeling dizzy or faint	240	24.72
19	Pressure of tightness in head or body	159	16.37
20	Head ache	405	41.71
21	Muscle & joint pains	463	47.68
22	Tingling & Numbness	357	36.77
23	Loss of feeling in hands and feet	176	18.12
24	Breathing difficulties	127	13.08

Table 3: Frequency of menopause symptoms (all percentage values were corrected to the nearest round figure)

Age distribution (years)	No. (%)
40-45	184 (19)
45-50	645(66.4)
50-55	141(14.5)
Education status	
Illiterates	565(58.2)
Primary education	126(13)
Higher education	279(28.8)
Socio economic status	
Lower	416(42.8)
Middle	486(50.1)
Higher	68 (0.07)
Occupation	
Daily wagers	186 (19.2)
Housewives	661 (68.1)
Skilled workers	121 (12.5)
Professionals	02 (0.2)
Menstrual status	
Regular cycles	241 (24.8)
Irregular cycles	144 (14.8)
Menopause	585 (60.3)
Natural menopause	336 (57.6)
Surgical menopause	249 (42.6)
Life style habits	
Sedentary	595 (61.3)
Moderate	375 (38.7)
Dietary habits	
Vegetarian	129 (13.1)
Mixed diet	841 (86.7)
Childhood activity	
Yes	371 (38.2)
No	599 (61.8)
Body mass index	
Underweight	83 (8.6)
Normal	376 (38.8)
Overweight	329 (33.9)
Obese	182 (18.8)

Table 2: Demographic socio economic characteristics of 970 women surveyed (all percentage values were corrected to the nearest round figure)

Menopause symptoms	Age group (years)			Total (n=970)
	40-45 (n=184)	45-50 (n=645)	50-55 (n=141)	
Hot flush [No. (%)]	89 (56)	272 (47.6)	70 (55.6)	431
Sweating [No. (%)]	96 (60.4)	304 (53.2)	75 (59.5)	475
Palpitations[No. (%)]	97 (61)	339 (59.4%)	80(63.5)	516
Tense[No. (%)]	82 (51.6)	287 (50.3)	63 (50)	432
Sleep difficulty [No. (%)]	89 (56)	315 (55.2%)	86 (68.3)	490
Excitability [No. (%)]	65 (40.9)	281 (49.2%)	58 (46)	404
Tiredness [No. (%)]	56 (35.2)	201 (35.2)	47 (37.3)	304
Panic attacks [No. (%)]	24 (15.1)	102 (17.9)	23 (18.3)	149
Lack of interest [No. (%)]	42 (26.4)	175 (30.6)	33 (26.2)	250
Unhappiness [No. (%)]	43 (27)	147 (27.7)	33 (26.2)	223
Crying spells [No. (%)]	48(30.2)	127 (22.2)	23 (18.3)	198
Irritability [No. (%)]	67 (42.1)	256 (44.8)	61 (48.4)	384
Increased urinary frequency [No. (%)]	43 (27)	133 (23.3)	37 (29.4)	213
Vaginitis [No. (%)]	31 (19.5)	141 (24.7)	27 (21.4)	199
Lack of sexual interest [No. (%)]	20(12.6)	117 (20.5)	14 (11.1)	151
Dysperunia [No. (%)]	21(13.2)	124 (21.7)	17(13.5)	162
Faintness [No. (%)]	41 (21.8)	162 (28.4)	37(29.4)	240
Difficulty in concentration [No. (%)]	34 (21.4)	102 (17.9)	32(25.4)	168
Pressure on body[No. (%)]	27 (17)	103 (18)	29 (23)	159
Headache [No. (%)]	78 (49.1)	268 (46.9)	59 (46.8)	405
Muscle pain [No. (%)]	83 (52.2)	302 (52.9)	78(61.9)	463
Numbness [No. (%)]	67 (42.1)	235 (41.2)	55 (43.7)	357
Loss of feeling [No. (%)]	30 (18.9)	118(20.7)	28 (22.2)	176
Breathing difficulty [No. (%)]	26 (16.4)	74(13)	27 (21.4)	127
Total [No. (%)]	**159 (86.4)**	**571 (88.5)**	**126 (89.4)**	**856 (88.3)**

Table 4: Influence of age group on menopause symptoms (all percentage values were corrected to the nearest round figure)

Sl.No.	Symptoms	Influencing factor	Odds ratio	95% Confidence interval	p-Value
1	Vasomotor	Obesity No Exercise	2.220 1.669	1.72 to 2.866 1.23 to 2.258	0.003 0.001
2	Anxiety	Obesity	1.99	1.557 to 2.542	0.002
3	Depression	Obesity	1.733	1.363 to 2.204	0.009
4	Uro genital	Obesity Hysterectomy	0.734 0.634	0.569 to 0.935 0.478 to 0.84	0.013 0.002
5	Somatic	Obesity	2.12	1.654 to 2.716	0.02

Table 5: The overall influence of factors on perimenopausal symptoms

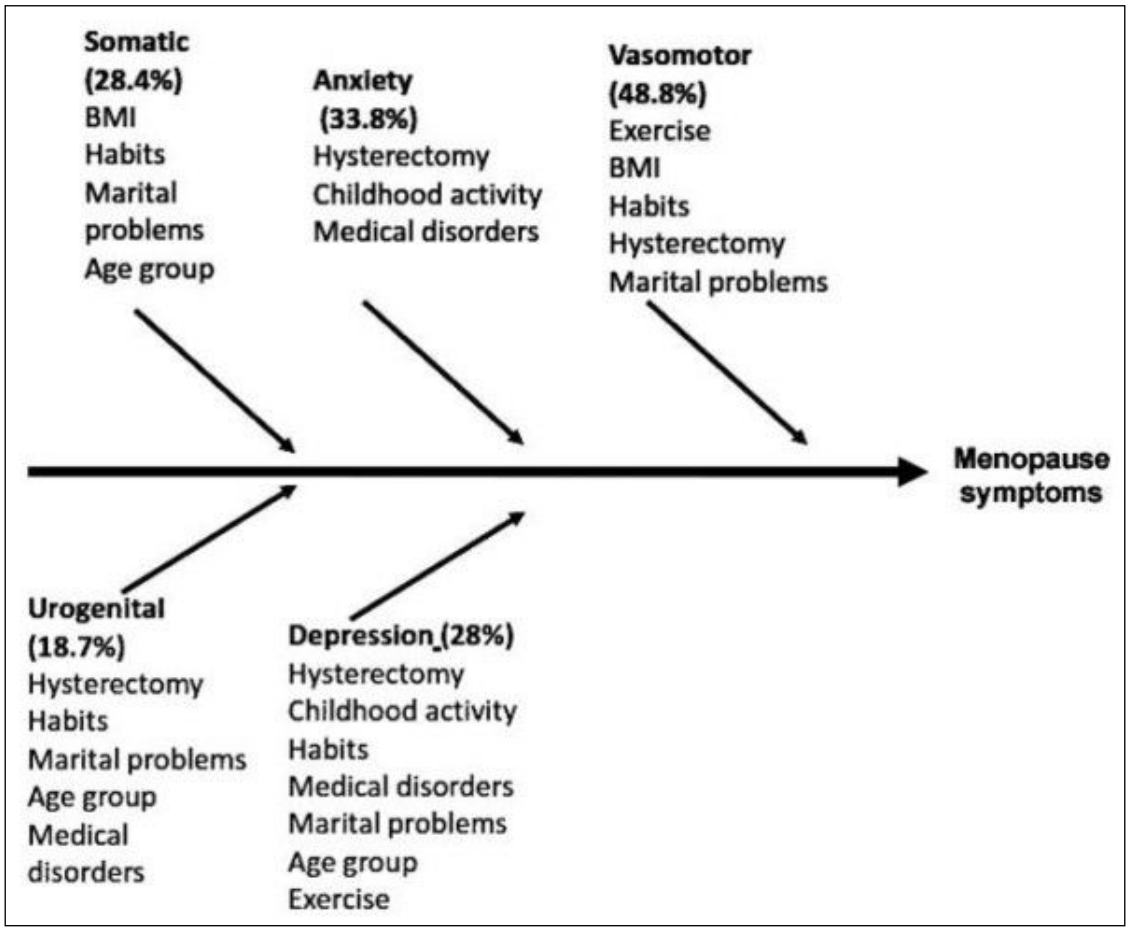

Figure 1: Factors influencing menopause symptoms