

Comparative Study of Menopausal Symptoms and Perceptions about Menopause among Women at a Rural and Urban Community in Kerala, India

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Abstract: Menopause is one such midlife stage which might be overcome easily or make a lady miserable depending on her luck. Early recognition of symptoms can help in reduction of discomfort and fears among the women. In the present study mainly focused on the menopausal symptoms among Urban and Rural women in Kerala, to know the average age of menopause, to be familiar with perception about menopause among women and to calculate the relation between age and menopausal symptoms by statistical analysis using R software.

Keywords: Kerala, Menopause, Rural, Urban, Survey

1. Introduction

As defined by the World Health Organization, menopause is the permanent cessation of menstruation due to the loss of ovarian follicular activity. Menopause is the time that marks the end of your menstrual cycles. It's diagnosed after you've gone 12 months without a menstrual period. Menopause can happen in your 40s or 50s, but the average age is 51. This is a transition from pre to post reproductive life, the last menstrual period is an event that occurs within the transition from a pre - reproductive to a post -reproductive stage of life. In most countries this transition period is called climacteric, but United States researchers speak more commonly of the perimenopause. In general climacteric or perimenopausal begins when menstrual period become irregular and ends one year after the last menstrual period. The increasing irregularity of menstrual periods is an external display of an internal process of hormonal change that precedes and continues throughout the menopause transition.

Menopause is an unspoken, unattended reality of life. So menopausal health demands priority in the Indian scenario due to increase in life expectancy and growing population of menopausal women. Menopause is one such a midlife stage which might be overcome by easily or make a lady miserable depending on her luck. This phase of life shrouded with lots of myths and taboos (Kulshreshtha and *et al.*, 2008). Early recognition of symptoms can help in reduction of discomfort and fears among the women. World health organization (WHO) defined post - menopausal women as those women who have stopped menstrual bleeding one year ago or stopped having periods as a result of medical or surgical intervention (Hysterectomy/ Oophorectomy) or both. With increasing life expectancy, women spend 1/3rd of life in this phase. It is estimated that by the end of 2015 there will be 130 million elderly women in India, necessitating a substantial amount of care). Menopausal symptoms, though well tolerated by some women, may be particularly troublesome in others. Severe symptoms compromise overall quality of life for those experiencing them. (Mishra *et al.*, 2011). There is under reporting of symptoms among

Indian women due to socio - cultural factors. According to literature, at least 60% of ladies suffer from mild symptoms and 20% suffer severe symptoms and 20% from no symptoms.

2. Materials and Methods

The present study was conducted in April 2022. The period of the survey was between April 2 - May 30. It was a cross - sectional study conducted among menopausal women living in both urban and rural areas in Kerala, especially in places like Alanallur (latitude; 11.0113° N, longitude; 76.3493°E), Yatheemkhana (latitude; 11.0466°N, longitude; 76.3279°E), Kottappalla (latitude; 11.0593°N, longitude; 76.3496°E), Kondotty (latitude; 11.1457°N, longitude; 75.9643°E), Musliyarangadi (latitude; 11.1292°N, 76.0029°E), Pulikkal (latitude; 11.1777°N, longitude; 75.9189°E), Feroke (latitude; 11.1735°N, longitude; 75.8352°E) and Karuvanthiruthy (latitude; 11.1689°N, longitude; 75.8214°E). Alanallur, Kottappalla, Kondotty, Feroke are included in urban areas. Yatheemkhana, Musliyarangadi, Karuvanthiruthy and Pulikkal were taken as rural areas. This study was conducted to know the symptomatology of menopause and the perception of menopause among rural and urban women. This study included 459 cases, 234 from urban areas and 225 from rural areas. Women from urban areas - 50 women from Alanallur, 30 from Kottappalla, 66 from Kondotty and 54 from Feroke. Women from rural areas - 65 from Yatheemkhana, 48 from Musliyarangadi, 28 from Karuvanthiruthy and 59 from Pulikkal. The age of the study group was between 40 - 60 years. In the beginning of the study, I have contacted firstly with Asha workers of different wards of my study sites and collected information regarding the number of menopausal women residing in their wards and also to know whether they were provided any medical assistance by the government.

This study was with the help of a pre - prepared questionnaire and also through a questionnaire prepared in survey administration software offered by Google, by using Google forms.

Inclusion criteria

Inclusion criteria is defined as the attributes of the particular subject that are to be included in the study

All post - menopausal ladies (menopause for >1 year)

Exclusion criteria

- 1) Lady with un-natural menopause, e. g., surgical or radiotherapy for cervix cancer.
- 2) Ladies on medications such as anxiolytics, anti-depressants, to avoid treatment- related effects.
- 3) Ladies having serious disease or mental retardation.
- 4) Ladies not giving consent for the data collection due to their own reasons (The response rate in the current study was 80%. Non-response was primarily due to shy attitude, no interest, or lack of time).

The selection bias was minimized by following the inclusion and exclusion criteria strictly.

The symptoms as told by the subjects were recorded and analyzed. The symptoms studied were broadly classified into following categories lethargy, forgetfulness, Headache, musculoskeletal problems (joint pain, muscle pain), sexual problems (decreased libido), dysuria, genital problems, emotional problems (crying spells, depression, irritability, sleep disturbances), change in voice, etc.

The ladies were asked what was the cause of the symptoms according to them, whether they felt the need to visit the doctor for the symptoms and how they should clean their external genitalia. The lady was thought to know the correct cause of menopause if she knew that it is due to some physiological or a hormonal change that happens in their body. If a women was unable to give a scientific explanation, her knowledge about these symptoms considered to be inappropriate.

3. Data Collection

The data were collected from women, using a self - reporting questionnaire format of data collection. The participants were given liberal verbal explanations about the topic and the aim of the study. Participation was voluntary and no participant was enforced to answer the questionnaire. The participants were told that the information obtained from them will be kept with complete confidentiality and no attempt of abusing their information. For confidentiality purposes the names and addresses of the participants were not mentioned in the questionnaire. Before answering the questions, they were explained thoroughly about the study and questionnaires. Participants took approximately 10 - 15 minutes to finish a self - reported questionnaire. The Respondents involved were all given their consent to participate in this study. Liberal explanations about the questionnaires and different parts in the questionnaire were given each time before they filled it. A structured questionnaire was designed after thorough literature searches, questions were adapted and modified from previously published studies as per the requirement, and questions were added which were considered relevant. The questionnaire was prepared in two languages, in English and in Malayalam. some of the individuals who are above 40 didn't know English and weren't capable to recognize the

phrases used in the questionnaire as they are not able to complete their primary education. The participant has been allowed to ask any doubts or to clarify terms. Out of 459 women, 59 are under the exclusion criteria. They were eliminated out of the study, because some of them had removed their uterus for some reasons. The questionnaire was thoroughly reviewed by the guide of this project. The questionnaire consisted of 5 sections. . . The first section included questions on demographic data, e. g., age, residence, BMI, marital status, education, lifestyle factors such as; alcohol consumption, smoking, coffee consumption, junk food intake and exercise habits. The second part consisted of a series of questions inquiring data regarding medical history. The third section about the menopausal symptoms. And the fourth section consists of questions to know different perceptions among rural and urban women and the final section consists of the treatment they take to cure.

The data from the survey was recorded in Microsoft excel spreadsheet and coded properly. The coded data were descriptively using R software. R software is an open source programming language that is widely used as and data analysis tool. **R** is a programming language and free software developed by Ross Ihaka and Robert Gentleman in 1993. R possesses an extensive catalog of statistical and graphical methods. It includes machine learning algorithms, linear regression and time series (metacran, 2020). The tools like correlation and chi square test are used to analyze the data. Percentage of symptoms among rural and urban women and average age of menopause also calculated from the data.

4. Statistical Analysis

The data were entered in M S Excel spread sheet. Data were analysed by using appropriate statistical method. Descriptive Statistics, including mean, Standard deviation or percentage were used when appropriate for reporting demographic data, menopausal symptoms, perceptions among menopausal women and treatments they choose to relieve from the symptoms also found out. The data analysed using R software (4.2 version). R denotes the starting letter of the inventor of the software Ross Ihaka and Robert Gentleman. R software is an open source programming language that is widely used as and data analysis tool. **R** is a programming language and free software developed by Ross Ihaka and Robert Gentleman in 1993. R possesses an extensive catalog of statistical and graphical methods. It includes machine learning algorithms, linear regression and time series etc. Results for quantitative variable were presented as frequencies and percentages. Tables, graphs charts were used for descriptive purpose. chi square test and correlation tests were used to assess the association of age and menopausal symptoms. Here the statistical significance was set at $P \leq 0.05$ means that test hypothesis is false or should be rejected.

First we set the null hypothesis as

$H_0 =$ There is no association between age and symptoms.

$H_1 =$ There is association between age and symptoms.

The test conducted here was Pearson’s chi - squared test for statistical significance. Pearson’s chi - squared test is a statistical test applied to sets of categorical data to evaluate how likely it is that any observed difference between the sets arose by chance. It is the most widely used of many chi - squared tests (e. g., Yates, likelihood ratio, portmanteau test in time series, etc.) – statistical procedures whose results are evaluated by reference to the chi - squared distribution. Its properties were first investigated by Karl Pearson in 1900 (Pearson, karl, 1900. In the contexts where it is important to improve a distinction between the test statistic and its distribution, names similar to Pearson χ - squared test or statistic are used. It tests a null hypothesis stating that the frequency distribution of certain events observed in a sample is consistent with a particular theoretical distribution. The events considered must be mutually exclusive and have total probability 1.

$$\chi^2 = \sum \frac{(O_{ij} - E_{ij})^2}{E_{ij}}$$

5. Findings

The current study aimed to understand the menopausal symptoms among women in rural and urban areas and also to be familiar with the perceptions of women about menopause in Kerala. A total of 459 women from both urban and rural areas participated in this study. 59 women were undergone artificial menopause due to surgical removal of ovaries and uterus. They are excluded from this study. The women between 40 - 60 ages were selected for the study.

Analysing the result obtained from questionnaire. Like the socio - demographic data, marital status and corresponding percentage are shown in Table 1. Medical history of women participated in the study was given in table 2. Percentage of

symptoms were expressed both in multiple bar diagram, pie diagram and in tables.

Conducted Pearson’s chi - squared test for statistical significance. Here the statistical significance was set at $P \leq 0.05$ means that test hypothesis is false or should be rejected.

χ - squared value for urban= 32.27

χ - squared value for rural =30.455

P value obtained for urban data is 0.9926

P value obtained for rural data is 0.9856

As P value > than alpha (α)

Here α is the level of significance and $\alpha=0.05$

\therefore we accept the H_0 that there is no association between age and menopausal symptoms.

No statistical significance was found between the occurrence of menopausal symptoms and age.

The percentage of symptoms of both rural and urban women are calculated from raw data and compared. Percentage of symptoms were given in table 3 and table 4 for urban women and rural women respectively.

Table 1: Data showing socio - demographic characteristics of menopausal women urban and rural

Variables	Subgroup	No. of Women	Percentage
Age	40 - 50	34	8.5%
	50 - 60	247	61.75%
	60+	119	29.75%
Marital Status	Single	12	3%
	Married	205	51.25%
	Divorced	33	8.25%
	Widow	150	37.5%

The majority of participants were under 50 - 60 age group (61.75%) and majority of them were married (51.25%)

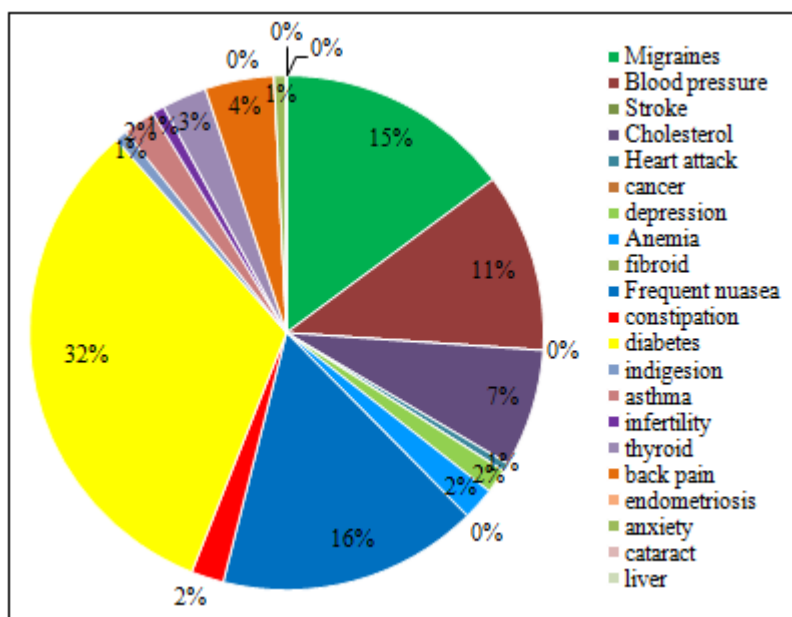


Figure 1: Pie Diagram Showing Medical History of Menopausal Women

Most of the women participated in the study were suffering from number diseases in addition to the menopausal symptoms. The majority of women suffering from diabetes

(32%), frequent nausea (16%) and depressed (15%). No women were found to be cancer patient or subjected to stroke.

Table 2: Total women suffering from different symptoms and the percentage of symptoms in urban

S No	Symptoms	Number of Women	Percentage
1	Hot flashes	176	88%
2	Night Sweat	186	93%
3	Difficulty getting sleep	188	94%
4	Difficulty staying asleep	194	97%
5	Sensation of butterflies in stomach or chest	105	52.5%
6	Skin is crawling or itching	158	79%
7	Tired than usual	161	80.5%
8	Difficulty in concentrating	169	84.5%
9	Memory is poor	175	87.5%
10	More irritable than usual	156	78%
11	More depressed moods	105	52.5%
12	Mood swings	165	82.5%
13	Crying spells	160	80%
14	Headaches	186	93%
15	Urinate more often	191	95.5%
16	Leak urine	161	80.5%
17	Pain or burning when urinating	77	38.5%
18	Bladder infection	174	87%
19	Uncontrollable loss of stool or gas	61	30.5%
20	Vagina is dry	161	80.5%
21	Vaginal itching	159	79.5%
22	Breast tenderness	171	85.5%
23	Joint pains	173	86.5%
24	Stomach feels like bloated	186	93%
25	Gained weight	179	89.5%
26	Pain during sexual intercourse	196	98%
27	Lack desire in sexual activity	195	97.5%

Mean average age of menopause of urban women was found to be 56.7%.

Table 3: Total women suffering from different symptoms and the percentage of symptoms rural area

S No	Symptoms	Number of Women	Percentage
1	Hot flashes	196	98%
2	Night Sweat	192	96%
3	Difficulty getting sleep	194	97%
4	Difficulty staying asleep	199	99.5%
5	Sensation Of Butterflies In Stomach Or Chest	127	63.5%
6	Skin Is Crawling Or Itching	198	99%
7	Tired Than Usual	197	98.5%
8	Difficulty In Concentrating	182	91%
9	Memory Is Poor	190	95%
10	More Irritable Than Usual	189	94.5%
11	More Depressed Moods	190	95%
12	Mood Swings	190	95.5%
13	Crying Spells	193	96.5%
14	Headaches	196	98%
15	Urinate More Often	196	98%
16	Leak Urine	189	94.5%
17	Pain Or Burning When Urinating	91	45.5%
18	Bladder Infection	191	95.5%
19	Uncontrollable Loss Of Stool Or Gas	49	24.5%
20	Vagina Is Dry	198	99%
21	Vaginal Itching	198	99%
22	Breast Tenderness	168	84%
23	Joint Pains	194	97%
24	Stomach Feels Like Bloated	195	97.5%

25	Gained Weight	186	93%
26	Pain During Sexual Intercourse	174	87%
27	Lack Desire In Sexual Activity	174	87%

Mean average age of menopause of rural women was found to be 56.8%

From the above pie chart it is clearly understood about the perceptions among women about menopause.53% of them are believing that this menopausal symptoms are age related. But from this study it's clear that menopausal symptoms and age is not related each other.47% women believing that symptoms were not age related.52% of women considered it as non curable. only 48% consider it as curable. But up to an extend it can be cured. There is no specific medicines for climactic symptoms. Many doctors are prescribing medicines for common symptoms like body pain, joint pain, headaches etc.

Majority of women about 66% were taking treatment for their symptoms. But remaining 33% were not aware about such treatment.

6. Discussion

Menopause is unspoken reality in the life of women. It was unattended thing. But menopausal women needs at most care and support from society and family members. Majority of women are suffering from menopausal symptoms. But many were unaware about the symptoms they were subjected to. The major symptoms associated with the menopause found to be Hot flash, night sweat, irritable and dry vagina, depressed moods, mood swings, lack of interest in sexual intercourse, pain when urinating, bloated stomach, leakurine, more tired than usual, and joint pain etc.

Majority of women in both rural and urban areas were under this worse conditions of menopause.95% menopausal women were suffering mild to severe menopausal symptoms. Only a few percentage were escaping from these symptoms. The findings of present study showed high percentage of women is suffering from menopausal symptoms. The percentages of symptoms vary in both urban and rural areas. Rural women were suffering much of the symptoms, as they were not taking any treatment and due to th lack of knowledge about menopause and its symptoms. The mean age of menopause in urban women is found to be 56.7 years. and of rural women was found to be 56.8 years. Similar mean age of menopause also reported by Borker *et al.*, (2009) were among menopausal women in Anjarakandy Village in Kannur district. Many prevalent studies have been done in the world regarding this topic. The few ones are as follows. It conducted a cross-sectional survey in Australia among 197 Arabic women aged 45-65 years. The median age at menopause in this study was 49 years. Out of 29 symptoms, the most frequent symptom reported was "feeling tired or worn out" (86%), followed by "aching in muscles and joints" (85%) Sadgo *et al.*, (2011) were conducted a survey among 270 women aged 45-65 years attended the gynaecological and menopause clinic, Songklanagarind Hospital, Thailand. The average age at menopause of the post-menopausal women was 48.7 years (range 40-57 years). The prevalence of the classical

menopausal symptoms—hot flushes, night sweats, and vaginal dryness in the women aged 45-65 years were 36.8%, 20.8%, and 55.3%, respectively. Mahajan *et al.*, (2012), were conducted a study in North India regarding health issues of menopausal women and found that mean number of symptoms was found to be increasing linearly with rising age of the study subjects. They have also mentioned about a report by WHO, which states that hot flushes are prevalent more in European and North American populations as compared to Asians.

The current study undertaken to know the symptomatology of menopause and perception of women about menopause. A Total of 98% (n=196) rural cases complained of Hot flashes as compared to urban cases 88% (n=176), 96% (n=192) rural cases suffering from night sweat as compared to 93% (n=186) rural cases. 97% (n=194) rural cases suffered from sleep problems as compared to 94% (n=188) rural cases. A total of 99% (n=198) rural women experienced skin itching or crawling as compared to 79% (n=158) urban cases. 98.5% (n=197) rural women are more tired than usual as compared to 80.5% (n=161) urban women. 91% (n=182) rural women found to be difficulty in concentrating in their work as compared to 84.5% (n=169) urban cases. 95% (190) rural women has poor memory as compared to 87.5% (n=175) urban women. A total of 94.5% (n=189) rural women more irritable than 78% (n=156) urban women. Great variation in number of women suffering from depression 95% (n=190) as compared to 52.5% (n=105) urban women. Mood swings are more common among rural women 95.5% (n=190) than urban women 82.5% (n=165). Common symptoms that the subjects suffered were emotional problems like crying spells. 96.5% (n=193) of rural women experiences crying spells as compared to 80% (n=160) urban cases. 98% (n=196) rural women suffering from headaches as compared to 93% (n=183) urban women. 94.5% (n=189) rural women leak urine regularly as compared to 80.5% (n=161) urban women. only 45.5% (n=91) rural women felt pain when urinating as compared to 38.5% (n=77) urban women. Bladder infection is more common among rural women 95.5% (n=191) as regard to urban women 87% (174). The percentage of women experiencing uncontrollable loss of stool is very less as compared to other symptoms. 99% (n=198) rural women experiences vaginal itching and dry vagina as regard to 80.5% (n=161) urban women. joint pain is more common among rural women 97% (n=194) than urban women 86.5% (n=173). 93% (n=186) rural women gained weight during their menopausal stage as compared to urban women 89.5% (n=179). Both rural and urban women experiences pain during sexual intercourse and lack desire in intercourse.

All the symptoms of menopause were observed significantly more in rural women in comparison to rural women. At menopause, women may have many myths associated with menopause like menopause is natural and it has no clinical consequences and no treatment available, has no effect on their mental wellbeing and hormone replacement therapy considered as harmful. Joint & muscular discomfort was highest in menopausal women that was followed by hot flushes, night sweat & sleep problems both in urban & rural areas. Hormonal therapy is known to be a standard line of treatment for vasomotor symptoms of moderate to severe

degree, vaginal atrophy, and osteoporosis. Recently, it is found that there is a chance of development of cardiovascular disease and Alzheimer's disease due to hormonal replacement (Sagdeo, 2011).

The 50 - 60 year old women complained more about emotional problems, skin itching and lack of interest in sexual intercourse. the subject > 60 complained about skin itching, joint pain and headache. the percentage of symptoms in both urban and rural women greatly vary due to many reasons like their education, awareness about menopause, medical treatments and taking many supplements like calcium and iron. None of the ladies of rural areas had ever heard about HRT (Hormone Replacement Therapy). 50% of women in urban areas are taking calcium supplements. 52.5% did not know any specific reason for menopause. The current study has found that 66.75% did not feel any need to visit a doctor for these complaints. They thought that the symptoms would subside on its' own by passage of time. but remaining percentage of women knew that the exact reason was due to the physiological and Hormonal changes that occur in female which leads to menopause. Hot flushes and night sweat are considered as most common menopausal symptoms. Conducted Pearson's chi - squared test for statistical significance. There exist no correlation between age and menopausal symptoms. There were no particular symptoms at particular age. But menopausal symptoms reach in peak at 50 - 60 years. more symptoms are shown by those women between 50 - 60 - year - old.

In this study, 459 menopausal women were taken. 59 undergone surgical removals of ovaries and uterus 25 from rural areas undergone surgical menopause. 34 women from urban areas undergone surgical removal of uterus. But the increased prevalence of surgical menopause in urban women could be due to more awareness in menopausal women and regular gynaecological consultations with doctors, whereas rural females usually don't report the problem as it was social taboo to discuss the topics like reproductive & sexual health. The sexual problems like lack of sexual desire, pain during sexual intercourse, and reproductive health awareness is very poor in rural women as compared to urban women, as they are more educated. In one of the studies, urban female leads in all menopausal symptoms as compared to rural women (Sagdeo, 2007). Similar were done the Urban females have more menopausal symptoms as compared to rural women. But in this study, it was found that Rural women lead in all menopausal symptoms as compared to urban women it was due to some reasons like lack of awareness among women, lack of taking treatments and ignorance of the symptoms. Most of the women in urban areas were well awarded about the symptoms and their literacy helped them to escape somewhat from the climacteric symptoms.

Most of the diseases associated with menopause are greatly due to the sudden decrease in the estrogen level. Thermoregulatory centre situated in the hypothalamus is under the control of neurotransmitter like catecholamine and catechol oestrogens. There are oestrogens receptors present in these thermoregulatory centres. The oestrogen present in blood combines with catecholamines to produce catechol

oestrogen. Whenever there is oestrogen lack, an imbalance is created between catecholamines and catechol oestrogen. This results in hot flushes. This activates the mechanism of heat loss (vasodilatation, sweating & behavioural adjustments) at the onset of hot flush with (vasoconstriction, behavioural changes & shivering) heat conservation and its termination. The episodes of hot flush will start from the beginning of menopause. Other common symptoms found during the peri - menopausal period include mood swings, insomnia, fatigue & memory problems. Sleep disturbance at menopause results from night sweats. Also the common frequent problems examined during post menopause were osteoporosis, coronary heart diseases, diabetes, arthritis and urinary symptoms.

In our society many women lack awareness about menopause and its treatments. Some women perceive menopause positively as a great relief from monthly periods they are facing, no contraception required for preventing conception and no pregnancy worries. And another set of women considered it as a symbol of fear, ageing, isolation and loneliness. All these symptoms can be greatly reduced by making women of both urban and rural women more aware of these symptoms, to rule out the myths that it has no clinical consequence & does not need treatment. Rather female need doctor consultation & treatment to reduce the symptoms for better quality of life in women more in rural group as compared to urban women. The prevalence of heart discomfort, sleep problems and joint and muscle discomfort found to be 28.4%, 66.7%, 91.4% respectively. Based on this study, symptoms of heart discomfort (50.0%), hot flushes (40.9%), sleep problems (34.5%) and joint and muscular discomfort (34.5%) were experienced by postmenopausal women and they graded at severe intensity. However, about 65.5% of women did not experience sexual problem. (Abdul Rahman *et al.* 2010). The severity of symptoms varied from one person to another.

Sarsyed Alwi *et al.*, (2021) were directed a study on the perception of menopause among women of Sarawak, Malaysia in 2021. 324 women aged were 40–65 to determine the mean age of menopause and perceptions and experiences of menopause among these women. The mean age \pm standard deviation of the women was 51.37 ± 5.91 years. Ninety (27.8%) participants were premenopausal, 124 (38.5%) perimenopausal and 110 (33.7%) postmenopausal. The majority of these women (228; 70.4%) were local indigenous inhabitants of Sarawak. The findings show that 22.5% of the participants agreed that problems during menopause are a natural process. While 21.9% of the participants suggested that menopause should be treated medically, 32.3% argued that natural approaches for menopause symptoms are better than hormonal treatments. Seventy - five per cent of the women agreed that the absence of menses after menopause is a relief; meanwhile, 61.2% stated that menopause causes unpleasant symptoms. Notably, 51.7% were not sure whether women become less sexually attractive after menopause, and 51.1% were uncertain as to whether they feel less of a woman following menopause. Finally, 81.7% of participants were unsure if sexual activity is more enjoyable after menopause, and 71.9% were uncertain whether changes in life during menopause are more stressful.

Majority of women about 66% were taking treatment for their symptoms. But remaining 33% were not aware about such treatment.

7. Conclusion

The present study conducted with 459 menopausal women, 225 from rural areas like Yatheemkhana, Musliyarangadi, Karuvanthiruthy and Pulikkal at Malappuram district Kerala. 234 respondents from urban areas like Alanallur, Kottappalla, Kondotty and Feroke Malappuram and Calicut district Kerala. The age of the study group was between 40 - 60 years. The symptoms vary greatly in each age group. In this 59 women undergone surgical menopause. 25 women from rural areas and 34 from urban women. This study was conducted to know the symptomatology of menopause and the perception of menopause among rural and urban women. It was found out that the age and symptoms were not correlated each other. No particular symptoms at particular age. Symptoms reach at peak during 50 - 60 year old. The 50 - 60 year old women complained more about emotional problems skin itching and lack of interest in sexual intercourse. The subject > 60 complained about skin itching, joint pain and headache. Most common symptoms associated with menopause were hot flushes and night sweat. The percentage of symptoms in both urban and rural women greatly vary due to many reasons like their education, awareness about menopause, medical treatments and taking many supplements like calcium and iron. All the symptoms of menopause were observed significantly more in rural women in comparison to rural women. Most common symptoms associated with menopause were hot flushes and night sweat then joint pain. Many of the respondents at least had one symptom.

There are many myths associated with menopause like it was natural and have no consequences and no particular treatments were available for treating menopause and there are many perceptions among women about the menopause. Many rural women were not taking treatments due to the lack of education and low house - hold income. Only 34.25% were taking treatments like iron and calcium tablets etc. in our study, there exist no statistical significance between age and symptoms.

Large efforts should be required to educate and make the women in urban and rural women aware of menopausal symptoms including rural women. This will help in early recognition of symptoms, reduction of discomfort and enable them to seek appropriate treatment. The mean of menopause in rural women found to be 56.8 years. Mean average age of menopause of urban women was found to be 56.7 years. Mean age of menopause is similar in both rural and urban areas. This study at least made the women in both urban and rural areas more awarded about the menopausal symptoms.

As it was survey study conducted in small group of subjects, it may not represent the symptoms of entire population. The result of the study may vary in different countries, mean age of the menopause also vary in different countries. Hence the mean age of menopause was not stable.

References

- [1] Borker, S. A., Venugopalan, P. P., &Bhat, S. N. (2013). Study of menopausal symptoms, and perceptions about menopause among women at a rural community in Kerala. *Journal of mid - life health*, 4 (3), 182.
- [2] Dennerstein L, Lehert P, Guthrie JR, Burger HG (2007). Modelling women's health during the menopausal transition: a longitudinal analysis. *Menopause* 2007; 14: 53 - 62
- [3] Kulshreshtha B, Ammini A. A (2008). Textbook of geriatrics and gerontology, (3rd ed) New Delhi: Viva Books Publishers; 2008, 647 - 50 pp
- [4] Mahajan N, Aggarwal M, Bagga A (2012). Health issues of menopausal women in North India. *J Midlife Health* 2012; 3: 84 - 7.
- [5] Mishra N, Mishra VN, Devanshi (2011). Exercise beyond menopause: Dos and don'ts. *J Midlife Health* (2011), 2nd edition, 51pp
- [6] Sagdeo, M. M., & Arora, D. (2011). Menopausal symptoms: A comparative study in rural and urban women. *Jk science*, 13 (1), 23.
- [7] Syed Alwi, S. A. R., Brohi, I. B., &Awi, I. (2021). Perception of menopause among women of Sarawak, Malaysia. *BMC women's health*, 21 (1), 1 - 10.