HEALTH STATUS, MENOPAUSAL KNOWLEDGE REGARDING CARE AND MANAGEMENT AMONG POSTMENOPAUSAL WOMEN IN RURAL AND URBAN AREA

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JUNE, 2016

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Thesis submitted to the
University of Agricultural Sciences, Dharwad
in partial fulfillment of the requirements for the
Degree of

MASTER OF HOME SCIENCE

IN

HUMAN DEVELOPMENT AND FAMILY STUDIES

BY

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CERTIFICATE

This is to certify that the thesis entitled "HEALTH STATUS, MENOPAUSAL KNOWLEDGE REGARDING CARE AND MANAGEMENT AMONG POSTMENOPAUSAL WOMEN IN RURAL AND URBAN AREA" submitted by Ms. DEEPA KANNUR, for the degree of MASTER OF HOME SCIENCE in HUMAN DEVELOPMENT AND FAMILY STUDIES to the University of Agricultural Sciences, Dharwad, is a record of research work carried out by her during the period of her study in this University, under my guidance and supervision, and the thesis has not previously formed the basis for the award of any degree, diploma, association, fellowship or other similar titles.

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ACKNOWLEDGEMENT

Praise be the god who is in the highest because He is worthy to be praised. Had it not been for Him, this thesis would have remained a dream. On this note, I extend my heartfelt gratitude and respect to all those from whom I have received sustained help, guidance and support throughout my study.

Words fall short to convey my sincere thankfulness and respect to Dr. SUNANDA ITAGI, Associate Professor, Department of Human Development and Family Studies, University of Agricultural Sciences, the esteemed chairperson of my advisory committee for her constant inspiration and encouragement, timely help and valuable advice for the successful completion of my research work.

I am very much grateful to Dr. PUSHPA KHADI, Professor and Head, Department of Human Development and Family Studies, for her moral support and needful help during my study period.

With immense pleasure I thank the members of my advisory committee, Dr. PUSHPA BHARATI, Professor, Department of Food Science and Nutrition, Dr. SUREKHA SANKANGOUDAR, Assistant Professor, Department of Extension Education and Communication Management, UAS, Dharwad, for their co-operation, constructive suggestions and timely review of my work during the course of the investigation.

I sincerely acknowledge the blessing by parents Shri.Shivanna Kannur and Smt. Sunanda kannur and support given by my sisters Devaki, Megha and brother Sangamesh.

I would like to convey my gratitude for the guidance and care of my Seniors, Juniors and Friends. Finally I thank GOD for bestowing me with divine spirit, essential strength and necessary succor to find my way towards a glorious career amidst several hurdles and struggles

DHARWAD
JUNE, 2016 **(DEEPA KANNUR)**

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1. INTRODUCTION

Middle age is one of the turning point in women's life as it brings many changes. It roughly starts in the early forties, when for most of the people it is the best period in their life when their achievement is at the highest point. Midway between the challenges of adulthood and despair of old age, comes the compulsory menopausal change in women. Middle age in women includes the gradual winding down of the reproductive system and ending of the child bearing years.

According to Indian menopause society research there are about 65 million Indian women over the age of 45. Average age of menopause in around 48 years but it strikes Indian women as young as 30-35 years. Menopausal health demand is a higher priority in Indian scenario. The goal of Indian menopause society is to enhance awareness about menopause and aging through public health and education activities. The year 2011 Indian menopause society is dedicated to peri and post menopausal women who had been suffering in silence; the theme is “Helping Her Breeze Through Menopause” (Sindhe, 2011).

Menopause is natural phenomenon which starts among women when they attained certain age of their life till death. Fletcher (2000) had pointed out that between the ages of 40 and 45 years or there about most women usually come face to face with the reality of the biological phenomenon known as menopause. In essence, most women experience these physiological changes early, while some other women experience menopause lately.

A French physician coined the term ‘menopause’ in 1821 (Singh *et al*., 2008), which is derived from Greek word ‘meno’ means ‘month’ and ‘pause’ means ‘to stop’ which refers to the ‘Final Menstrual Period’ (FMP). Menopause is derived from Latin words meno (month) and pausia (halt) and essentially marks the end of a woman’s period of natural fertility. Menopause as cessation of around the age of 50 years, sometimes this phrase brings the change of life and the word ‘climacteric’ are also simultaneously used to refer to the time at menstruation ceases. The transition when a women passes from the reproductive to the non-reproductive years of her life. Medical dictionary describes ‘climacteric’ as the symptom of endocrine, somatic and psychic changes occurring at the time of menopause in female. Bavadam (1999) stated that it is not merely the end of menstruation but also is an inevitable part of aging. The meaning of the word menopause in more recent times has been expanded to indicate the permanent but naturally occurring discontinuation of female fertility, menopause is defined as the day after a woman’s final period finishes.

According to WHO “Menopause as the permanent cessation of menstruation resulting from the less of ovarian follicular activity”. It is recognized to have after 12 consecutive months of amenorrhoea, for which there is no other obvious pathological cause. During menopause, women can go through different stages. Women in menopausal process can be classified as premenstrual, having a regular cycle with no symptoms accompanying it, perimenstrual, having irregular cycles and experiencing some symptoms, or postmenstrual, having no cycle for 12 months or more and experiencing menopausal symptoms. From the first menstrual period the ovaries release estrogen, a hormone responsible for development of breasts, the vagina and uterus. Estrogen also regulates the menstrual cycle and reproduction. As menopause nears, the ovaries gradually stop secreting estrogen. This transition will be smooth only if women are aware of the natural changes occurring

during which will help them to adopt self help behavior and to improve their physical and mental health implies loss of child bearing capacity and aging. Many women become adjusted to the menopausal symptoms over time by learning to live with them, however some women require intervention for symptom relief, especially if associated with moderate to severe distress of discomfort as menopausal symptoms become more dominant in their life

Early puberty usually means late menopause, and vice versa. Loss of the childbearing function is not an overnight phenomenon, any more than the development of this function at puberty. It takes several years for the reproductive apparatus to cease its normal functioning, the rate depending on the rate of decline of ovarian functioning. During the period when the endocrine interactional system is becoming adjusted to lessened ovarian functioning, certain physical system normally occur. These are the result of the estrogen deprivation which comes from the decline in the functioning of the ovaries. In addition, other symptoms are due partly to estrogen deprivation but are mainly the result of environmental stress and thus are psychological characteristics of the menopausal syndromes (Hurlock, 1981)

According to Indian Statistical Report (ISR, 2014) the average age of menopause in India is 47.5 years, just slightly lower than the average age of 51 for North American and European women. Premature menopause is on the rise in India due to a combination of environmental and genetic reasons. Indian women living in rural areas (72 per cent of the population) and urban areas both cite having urogenital symptoms and general body aches and pains. Interestingly, women in urban area complain more about having hot flushes, mood swings, psychological problems, and intercourse challenges.

Menopausal symptoms divided into somatic, psychological and urogenital symptoms which are commonly associated with menopause Sankh (2014). Most reported menopausal symptoms were joint and muscular pains, physical and mental exhaustion, lack of concentration, sleeping problems, hot flushes and night sweating, irritability, itching in private part, anxiety and depressive mood. For the effective management of menopausal symptoms, the women should aware of these symptoms. The knowledge regarding menopausal symptoms and care and management of these symptoms affected their reproductive life. It has been suggested that not only general characteristics but also living areas should be considered in developing interventions to manage the climacteric symptoms of middle aged women (Hwanget, 2010).

As menopausal health demand priority in Indian scenario due to increase in life expectancy and growing population of menopausal women, large efforts are required to educate and make these women aware of menopausal symptoms. This will help in early reorganization of symptoms, reduction of discomfort and fears and enable to seek appropriate medical care is necessary (Hiremath *et al.,* 2015). The fear and dread of menopause stem from being seen as no longer useful or productive in society. For the most part, life for Indian women centers on home and family while accepting secondary citizen status in this male dominated culture. Women's issues including health and menopause are almost never discussed. Although women always remain subservient to men, older women in India do enjoy a measure of respect as the senior member of the family. Unfortunately this enhanced status does not make it easier for women to talk about or seek help for menopause.

Hence targeting postmenopausal women at the time of middle age is an appropriate strategy since it is the time when most of them are interested about their new phase of life and also neglecting self-caring. During their formative years which reflect health status, quality of life and well being of middle aged women, care and management revolving the menopausal problems needs to be addressed and emphasis on healthcare is essential to shape their quality of life in the years to come. Thus, the present study was conducted to explore the knowledge regarding menopausal care, management, menopausal symptoms and health status of postmenopausal women among rural and urban area of two districts. With the following objectives:

- To assess the knowledge of rural and urban women regarding care and management of menopause
- To assess the health status and nutritional status of rural and urban women
- To study the relationship between health status and knowledge regarding care and management of menopause
- To know the relationship between selected variables and SES with health and knowledge of menopause of rural and urban women

2. REVIEW OF LITERATURE

A study on health status care and management of postmenopausal women among rural and urban areas. It's an essential step in any research to provide base for developing insight into the methodology and working out for interpretation of findings. Keeping in view the objectives of the study the literature related to concept are discussed are discussed under the following heading,

2.1 Concept and definitions on menopausal care and management

2.2 Age at natural menopause and chronological age

2.3 Influence of demographic variables on menopausal symptoms

2.4 Relationship of anthropometric with menopause and weight gain

2.5 Knowledge, perception and practices on menopausal care and management

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2.9 Education programs for reducing menopausal problems

2.1 Concept and definitions on menopause, care and management of menopause and health status

2.1.1 Menopause

Menopause is a natural event in the ageing process and signifies the end of reproductive years with cessation of cyclic ovarian functions as manifested by cyclic menstruation.

Menopause is a natural biologic process occurring in the body due to changing hormone levels. During menopause, the female hormonal output stops. The estrogen level eventually regulates and reaches a plateau, where it remains until age seventy. Menopause is the point that is defined after twelve months of amenorrhea following the final menstrual period. This is also the end of natural childbearing (Melissa, 2011)

Menopause is the time in a woman's life when she stops having menstrual periods. The years leading up to this point are called perimenopause, or "around menopause". Menopause marks the end of the reproductive years that began in puberty.

2.1.2 Care and Management

Management of menopausal symptoms is to assess each woman's individual needs, including her risk factors for cardiovascular disease (CVD). Lifestyle modifications such as a healthy diet, exercising regularly, maintaining a healthy body weight, limiting alcohol consumption and not smoking may be useful in relieving mild menopausal symptoms. There is some evidence that women who are more active tend to suffer less from the symptoms of the menopause, however not all types of activity lead to an improvement in symptoms. The best activity is aerobic, sustained, regular exercise; high-impact infrequent exercise may make symptoms worse (National Medicines Information Centre, 2003).

2.1.3 Health Status

World Health Organization's (WHO) definition “Health as a state of complete physical, mental and social wellbeing, and not merely the absence of disease”.

Health is the level of functional or metabolic efficiency of a living organism. In humans it is the ability of individuals or communities to adapt and self manage when facing physical, mental or social challenges.

The maintenance and promotion of health is achieved through different combination of physical, mental, and social wellbeing, together sometimes referred to as the "health triangle (WHO, 1986)

According to World Health Organization (WHO) mental health includes“ subjective wellbeing, perceived self efficacy, autonomy, competence, intergenerational dependence, and self actualization of one's intellectual and emotional potential, among others.

2.2 Age at natural menopause and chronological age

Gold and Bromberger (2009) studied on “Factors Associated with Age at Natural Menopause in a Multiethnic Sample of Midlife Women”. The participants in this study were 14,620 women of 40 to 55 years age groups. The results indicated that mean age at natural menopause was 51.4 years, women with lower BMI were more likely to be Premenopausal but women with higher BMI were more likely to be surgically amenorrheic. Lower educational attainment not being employed and having history of heart disease was all significantly independently associated with earlier natural menopause.

Kaulagekar (2011) studied on the age at menopause, reported symptoms of menopause and treatment-seeking behavior of women in Pune. The study comprised of 156 women from four different sites in Pune city between 40 to 55 years of aged women. The information was elicited by semi-structured interview schedule. The results indicated that mean age at menopause was 45.8 years. Most frequently reported symptoms were psychological (n=154), vasomotor (n=78), followed by urogenital (n=68). Nuclear family and income levels found to have significant with menopausal symptoms.

To investigate long-term use of oral contraceptives (OCs), in particular high-dose OCs, could postpone age at menopause carried out a study by Vries *et al*. (2011). The study comprised of 8701 women who participated in a breast cancer screening programme in Utrecht (DOM-3 cohort), and who did not use hormone replacement therapy (HRT) or OCs in the 4 years prior to their last menses. The results indicated that the use of high-dose OCs advanced the onset of menopause by 1.2 months for every year of OC-use compared with no OC-use. High-dose OC-use for ≥3 years, adjusted for confounding variables, increased the risk of earlier menopause compared with no OC-use. The use of lower dose OCs did not increase the risk of earlier menopause.

Nisar and Sohoo (2012) carried out a study on “age at natural menopause prevalence of menopausal symptoms and identify socio-demographic and reproductive factors that may influence the onset of menopause”. A cross sectional survey conducted among 1355 women with natural menopause in rural area of Sindh Pakistan. They were categorized into 3 groups Ist, IInd and IIIrd having menopause for 1-5, 6-10 and >10 years respectively. The results indicated that mean age of menopause was 46.2±6.4 years. The prevalence of menopause symptoms range from 26 per cent to 83 per cent. Frequency of somatic, psychological and urogenital symptoms was high in group IInd. No significant association was found between parity, socio-economic status and age at natural menopause.

Hesook and Hyun (2012) conducted study titled on “The age at menopause and related factors in Korean women”. A cross sectional survey was conducted in 7 metropolitan areas of Korea. The data collected by semi-structured questionnaire comprised of 2807 women of age 41 to 65 years. The results revealed that the mean menopausal age was the lowest in women whose BMI was less than 19 and the highest in those whose BMI was more than 25. The difference of age at menopause according to BMI was significant. Although the difference in age at menopause in relation to smoking was not significant. The mean age at menopause of smoking women was lower than that of non-smoking women. Age at menopause of alcohol users was earlier than non-alcohol users. Regular physical activity had a strong association with a later age at menopause and age at menopause and age at menopause of women who favor coffee regularly is earlier than that of women who dislike it.

Lin *et al.* (2013) attempted to investigate the factors associated with the age of natural menopause and menopausal symptoms in a large population of Chinese middle-aged women. A sample consists of 20,275 women aged between 40–65 years attending health screening in Jiangsu Province of China was enrolled. The results of the study revealed that median age at natural menopause was 50 years. Lower educational level, poor economic status, lower body mass index (BMI), age at menarche less than 14 years, nulliparity and smoking were associated with earlier onset of natural menopause. The most frequently symptoms in postmenopausal women were sexual problems (57.05 %), muscle/joint pain (53.29 %) and insomnia (51.02 %), while fatigue, insomnia and muscle/joint pain were predominant symptoms in pre- and peri-menopausal women. A women with poor educational background, low income, divorce, higher BMI, higher parity, smoking and chronic diseases presented higher scores.

A study on age at Menopause and Associated Bio-Social Factors of Health in Punjabi Women was conducted by Pathak *et al*. (2013). To study the average age at menopause and to evaluate the influence of certain bio-social factors on menopause and to find the menopausal symptoms experienced by Punjabi women. A cross-sectional study was conducted on 564 Punjabi women of Chandigarh, ranging in age between 40-60 years. Out of these, 288 women who had attained natural menopause. The results showed that the mean age at natural menopause was found to be 47.91(± 3.16) years. The mean ages at menopause among early and late menopausal groups were 41.04 and 51.05 years, respectively. Statistically significant differences were found for height, weight, and parity, while BMI, body fat, blood pressure, age at marriage, and age at first child birth, failed to reveal significant differences between early and late menopausal groups. The menopausal symptoms, such as, hot flashes and irritability occurred with greatest frequency during as well as after menopause among women.

Intra population variation in the age of natural menopause among Polish women and identifies the female reproductive characteristics associated with the menopause on 2147 women studied by Livetuvos *et al.* (2014). Results revealed that the mean recalled age of natural menopause among Polish women was 49.90 years and the median age obtained by probity estimate was 50.92 years. Women from small towns were likely to experience menopause earlier compared to women from the cities. The timing of menopause among rural women was very close to their counterparts from the cities. The positive education gradient of the age at menopause showed the 0.87 year

difference in median menopausal age between women having high and low levels of education. Moreover, rural women having the primary/vocational level of education were distinguished from their urban counterparts by a later age at menarche (13.96 and 13.44 years, respectively), earlier age at the first child-birth (21.45 years *vs.* 25.59 years) and earlier age at the last birth (28.96 years *vs.* 31.05 years). And also age at menarche and the length of menstrual cycle were significantly associated with the age at menopause. Along with these variables, age at first birth and the number of days of bleeding as well as the urbanization factor contributed to the variation of age at menopause.

2.3 Influence of demographic variables on menopausal symptoms

Socio-Demographic Characteristics of post menopausal women of rural area of Gujarat studied by Christian *et al.* (2012). A cross- sectional study conducted among 147 post menopausal women residing in Gujarat. The results indicated that a mean age of inception of menopause was 47.74 years. Labor work (n=72) was the most common occupation. Among all respondents 98.5 per cent belonged to social class 4 or below, 18.4 per cent were widow and 40 per cent were below poverty line (BPL), 74.8 per cent were not literate and 42.9 per cent were dependent on their children for daily living. This study concluded that rural postmenopausal women in India suffer many social disadvantages which could make them more vulnerable to experience more frequent and more sever of menopausal symptoms.

Strinic *et al.* (2012) carried out a study on Socio-Demographic Characteristics of Postmenopausal Estrogen Users on 717 postmenopausal estrogen users and 235 postmenopausal non users were gynecological examined, interweaved with a questionnaire including information on their health, socio-economic and demographic status. Women who had prescription on a hormone replacement minimally 6 months before interview were considered. The results showed that hormone replacement users were statistically significant more often smokers, they had better physical activity and better general health than non-users. Women with surgical menopause were more often hormone replacement users than nonusers. Women with better socio-economic status, higher education and urban population were more likely to use hormone replacement therapy. Single, divorced and widowed women were more likely, but married women were less likely to use hormone replacement therapy. However, more healthy profiles among hormone replacement users may inflate the apparent benefit of treatment.

Health-related and socio-demographic correlates of physical activity level amongst urban menopausal women in Nigeria studied by Omoyemi *et al.* (2012). Participants in this study were 547 women aged 40–60 years. The physical activity was assessed by International Physical Activity Questionnaire (IPAQ).The results of the study revealed that 184 (33.6 %) premenopausal, 129 (23.6 %) perimenopausal and 234 (42.8 %) postmenopausal women. Most of the women in the three menopausal groups reported moderate PA level. No significant association was observed between PA level and menopausal status, health problems or any of the menopausal symptoms and age-group of the women. PA level had a direct significant association with perceived health status and educational level.

Pimenta *et al.* (2012) conducted a study titled menopause symptoms' predictors the influence of lifestyle, health and menopause related and socio-demographic characteristics. The objective of the study was explores a causal model of menopausal symptoms in peri-menopausal and postmenopausal women. A study comprised of 710 women, who were assessed regarding menopausal symptoms, socio-demographic characteristics, health and lifestyle characteristics. It was found that age was significantly associated with cognitive impairment, aches/pain, urinary and also sexual symptoms. Several menopausal symptoms are predicted, not only by menopausal status, but also by age progression, among other variables; this should be considered in the context of a well-adapted menopausal transition.

Bouzari *et al.* (2013) studied on Menopausal Symptoms Can Be Influenced by Various Socio-demographic Factors and Quality of Life (QoL) decreases after the Menopause among 700 postmenopausal women living in north of Iran, aged 40–60 years. The data elicited using the menopause quality of life questionnaire (MENQOL) by interviewing. The results indicated that mean scores of QOL obtained for four domains were 3.33±1.1for vasomotor, 3.84±1.08 for psychosocial, 3.44±0.49 for physical and 3.98±0.97 for sexual domains. And age, household income, duration of menopause and education were associated with all domains of QOL. Married women had significantly lower scores on psychosocial, physical and sexual domains indicating better quality of life. Abortion, smoking and age at menarche were associated with psychosocial and sexual domains. Analysis determined that household income and education was an appropriate predictor of psychosocial, physical and sexual domains of QOL.

Hui *et al.* (2013) studied on “Depressive symptoms in Taiwanese women during the peri- and post-menopause years: Associations with demographic, health, and psychosocial characteristics”. A cross-sectional study conducted among 566 women between 45 and 60 years. The symptoms were assessed by Symptom Scale, Attitudes toward Menopause and Aging Scale, and Center for Epidemiological Studies-Depression Scale (CES-D). The results revealed that prevalence of depressive symptoms was 38.7 per cent in peri- and postmenopausal, higher CES-D scores were related to lower family income, younger age, smoking for a greater number of years, consuming more alcohol, having multiple chronic diseases, not exercising regularly, consulting with a specialist for stress management, having more severe menopausal symptoms, and more negative attitudes toward menopause and aging. 33.7 per cent of the variance, were menopausal symptoms, attitudes toward menopause and aging, family income, and chronic disease status.

Studzinska *et al.* (2014) carried out a study to evaluate the influence of selected socio-demographic factors on the kinds of symptoms occurring during menopause among 210 women aged 45 to 65 years. The information was elicited using own survey questionnaire and the Menopause Rating Scale (MRS). The results revealed that the most commonly occurring symptom were depressive mood, from the group of psychological symptoms, followed by physical and mental fatigue, and discomfort connected with muscle and joint pain. The greatest intensity of symptoms was observed in the group of women with the lowest level of education, reporting an average or bad material situation, and unemployed women.

Socio-demographic Characteristics and Quality-of-life of Greek Menopausal Women treated with Hormone Therapy with an aim to investigate the demographic characteristics and the quality-of-life of Greek postmenopausal women who were taking Menopausal Hormone Therapy (MHT) compared with those not taking the study was conducted by Vlachou *et al.* (2014). The study was conducted among 216 postmenopausal women aged 40 to 60 years old who were divided into two groups and evaluated at the beginning of the research, as well as six months later, in a period of 19 months is assessed by demographic data was used, as well the Greene Climacteric Scale (GC) and the Menopause- Specific Quality-of-life Questionnaire (MENQOL). The results indicated that 46.3 per cent of women were taking MHT, while the 53.7 per cent were not. By comparing the two groups, it became apparent that the MHT groups of women were more likely to have grown up in an urban area, have higher education, to have jobs of demanding responsibility and to have lower body weight. The non-MHT group was found to have statistically significant more severe symptoms in the GC scale from the MHT group in both assessments.

2.4 Relationship of anthropometric with menopause and weight gain

"The Effect of Body Mass Index on Bone Mineral Density in pre and post menopausal women of Western Rajasthan Population" studies by Kataria *et al.* (2012). The data were obtained from 100 women (50 pre and 50 post menopausal) aged between 25 to 65 years. BMD was measured by clinical bone sonometer. Results showed a significant relationship between the BMI and BMD of underweight, normal and overweight pre and post menopausal women while it is non-significant for the obese women of both groups.

"Impact of body mass index on bone density of menopausal women in Iran" conducted by Hojj *et al.* (2012) with an objective to clarify the effect of Body Mass Index on bone density in women population. Participants in this study were 325 women. Results revealed that the Body Mass Index in healthy women was significantly higher, with median of 28 versus 27, the Body Mass Index of 31.8 as the cutoff value for osteoporosis. Low Body Mass Index is a risk factor for osteoporosis.

Achie *et al*. (2013) studied on "The body mass index, waist circumference and blood pressure of postmenopausal women in Zaria, northern Ngeria". A sample of 165 among that 77 were premenopausal women while 88 were postmenopausal women with mean ages 25.51±0.60 and 53.59±0.65 years respectively. The results showed that menopausal women also had a higher waist circumference as compared with the premenopausal women and only 73.86 per cent of the postmenopausal women had a BMI 25 kg/m2 whereas the prevalence of central obesity was 79 per cent. However, there was a significant relationship between waist circumference and the body mass index. These findings suggest that obesity is prevalent among the menopausal women while the waist circumference was found to be a better measure in assessing obesity and thus cardiovascular risk among menopausal women in Zaria.

Parvatharani and Neelambikai (2013) aimed to find effect of body mass index and waist hip ratio on blood pressure in pre and post-menopausal women among 50 premenopausal women in the age group of 40 to 45 years and 50 post- menopausal women in the age group of 50 to 55 years. Findings revealed that Postmenopausal women had higher BMI, had a higher waist and hip circumference as compared with the pre-menopausal women. When compared with WHR, there is no significance difference between pre- menopausal and post-menopausal. Blood pressure is elevated among postmenopausal women when compared with Pre -menopausal women.

Makbule *et al*. (2014) studied on "The effect of physical activity and body mass index on menopausal symptoms in Turkish women". A cross-sectional study conducted among 350 women between 45-60 years. The MRS, International Physical Activity Questionnaire and a genetic medical and socio-demographic information questionnaire were used. The results indicated that women who were physically active had lower total menopausal and urogenital symptom scores than women who were less active. No differences in vasomotor symptoms were recorded related to physical activity level, significant differences were found for most menopausal symptoms, including sleeping problems, joint and muscular discomfort and vaginal dryness. BMI was not associated with total menopausal symptoms and with the subscales, excluding depressive mood. A significant increasing trend in the rate of depressive mood was observed from normal through overweight to obese participants. The mean scores of the total menopausal symptoms were lower among the participants who were well educated, currently working and without chronic disease.

Palma *et al.* (2014) studied on "correlation between body mass index and overactive bladder symptoms in post-menopausal women". The study comprised of 1,050 women aged 20-45 in the area of Campinas, Brazil. Results showed that women with BMI ≥30 presented a significantly higher score than women with a lower BMI. No significant differences were found regarding urinary frequency. Women with BMI ≥30 presented more nocturia than women with BMI ranging between 18.5 and 24.9. Women in the group of BMI 25 - 29.9 presented more urgency than women with BMI 18.5 - 24.9 and significant difference was also found regarding urge-incontinence; women with BMI 25 - 29.9 presented a higher score than women in the group 18.5 - 24.9.

Waist-to-Hip ratio is better at predicting sub clinical atherosclerosis than BMI and waist circumference in post-menopausal women by Lee *et al.* (2015). The study conducted total of 442 women were premenopausal and 233 post-menopausal women were prospectively enrolled from the health promotion center of Koria. The results show that, in the premenopausal stage of women all anthropometric parameters such as BMI, WC and WHR were positively correlated, WC and WHR were positively correlated with Carotid Intimae Media Thickness (CIMT). The normal weight (BMI<23kg/m^2) with higher WHR group had a significantly thicker CIMT when coopered to the normal weight group and even the overweight subjects with BMI≥23kg/m^2 in postmenopausal women

Weight gain

Kawaljit *et al.* (2010) attempt has been made to assess the prevalence of being overweight and obesity among working premenopausal and postmenopausal women. The sample consists of 595 women ranging in age from 30-60 years, working in various educational institutes of Jalandhar District, Punjab. Obesity was assessed according to Body Mass Index, Waist-Circumference and Waist-Hip-Ratio. The results showed that Body Mass Index, the prevalence was 70.30 and 75.09 per cent in pre- and postmenopausal women, respectively. Similarly the prevalence of central obesity according to Waist Circumference was 75.15 and 89.05 per cent in pre- and postmenopausal women, respectively whereas according to Waist-Hip Ratio this prevalence was 74.54 per cent in premenopausal women and 87.92 per cent in postmenopausal women.

Understanding weight gain at menopause studied by Davis *et al*. (2012) with an objective to find out impact of the menopause transition on body weight and body composition among 16000 women aged between 45 to 60 years. The findings revealed that the change in the hormonal milieu at menopause is associated with an increase in total body fat and an increase in abdominal fat. Weight excess at midlife is not only associated with a heightened risk of cardiovascular and metabolic disease, but also impacts adversely on health-related quality of life and sexual function, indicated that this tendency towards central abdominal fat accumulation is ameliorated by estrogen therapy. Studies indicated a reduction in overall fat mass with estrogen and estrogen-progestin therapy, improved insulin sensitivity and a lower rate of development of type 2 diabetes

Howard *et al.* (2014) undertook study on "Insulin resistance and weight gain in postmenopausal women of diverse ethnic groups". The study was conducted among 3389 women aged between 50 to 79 years. The glucose, insulin, and lipids were measured on fasting serum samples drawn at baseline and after 3 years of follow-up. Weight, height, waist circumference, and blood pressure were measured. Physical activity and energy intake were assessed via questionnaire. The results revealed that Average age was 62 years, average BMI (body mass index) was 27.4 kg/m2, and average weight change was a gain of 0.4 kg in 3 years. In a multivariate analysis, insulin resistance and insulin concentrations were independent predictors of increases in weight in White women and in the combined group. For the whole group, after adjustment for other covariates, those in the highest quartile of insulin resistance gained 0.4 kg in 3 year, whereas those in the lowest quartile lost 0.06 kg. Similar trends were found for insulin resistance and weight gain in Hispanic and Asian/Pacific Islander women, but they did not reach statistical significance. In Black women, no relation was seen between either insulin or insulin resistance and weight change. A significant interaction between obesity and insulin resistance was observed, so that there is weight gain with increasing insulin resistance in the leaner women, but weight loss with increasing insulin resistance in the most obese.

Changes in Body Weight and Health-Related Quality of Life: 2 Cohorts of US Women conducted by Ichiro *et al*. (2014). The data were obtained from 52,682 women aged between 40 to 55 years. Body weight was self-reported, HRQoL was measured by the Medical Outcomes Study's 36-Item Short Form Health Survey. The results relationship between changes in weight and HRQoL scores was evaluated at 4-year intervals by using a generalized linear regression model with multivariate adjustment for baseline age, ethnicity, menopausal status, and changes in co-morbidities and lifestyle factors. Weight gain of 15 lbs (1 lb = 0.45 kg) or more over a 4-year period was associated with 2.05-point lower (95% confidence interval: 2.14, 1.95) physical component scores, whereas weight loss of 15 lbs or more was associated with 0.89-point higher (95% confidence interval: 0.75, 1.03) physical component scores. Inverse associations were also found between weight change and physical function, role limitations due to physical problems, bodily pain, general health, and vitality. However, the relations of weight change with mental component scores, social functioning, mental health, and role limitations due to emotional problems were small.

2.5 Knowledge, perception and practices on menopausal care and management

Nusrat and Nishat (2006) conducted a study to determine the knowledge and attitude of women towards menopause and investigate the symptoms experienced by postmenopausal women. A cross-sectional survey conducted at outpatients department of Isra university hospital Pakistan from Janvary 2005 to December 2006. 863 women of aged 42 to 80 years were interviewed by semi structural questionnaire to elicit required intervention. The results indicated that mean age of menopause was 55.05 years, menopause was natural in 84.24 per cent women and 15.05 per cent had surgical menopause. 78.79 per cent women had little knowledge about menopause, while 15.8 per cent women knew about effects and symptoms of natural process, while 21.2 per cent perceived it as a disease 59.4 per cent were uneducated. Frequently reported symptoms were Backache in 75.66 per cent, Body aches 66.74 per cent and Insomnia in 63.44 per cent women, vasomotor symptoms were reported by 59.4 per cent, 36.36 per cent had consulted doctors, 75.20 per cent women were not taking Herbs, 1.15 per cent were on HRT and 22.71 per cent women were taking analgesics and Ca supplements. It was recommended that educational programmes and health care providers can increase the public awareness so that there is improvement in both life expectancy and quality of life of women in future.

Hwanget (2010) conducted study titled “Comparative study on Climacteric Symptoms, Knowledge of Menopause and Menopausal management of Middle Aged Women between urban and rural areas. The sample consists of 287 women aged 40-65 years. The information elicited by Climacteric Symptoms Scale and Knowledge of menopause and menopausal management scale. The results indicate that mean age of middle aged women living in urban areas was 47.9 years and that of women in rural areas was 48 years. The mean score of climacteric symptoms of middle- aged women living in urban and rural areas was 48.8 and 50.4 years respectively and was not significantly different. The mean score of knowledge of menopause of middle aged women living in urban areas was higher than that of women in rural areas. In addition the mean score of menopausal management of middle aged women living in rural areas was higher than that of women in urban areas. findings also suggests that not only general characteristics but also living areas should be considered in developing nursing interventions to manage the climacteric symptoms of middle aged women

Menopause knowledge and attitudes of English-Speaking Caribbean women: Implications for Health Education the study conducted by Thomas (2012). Among 74 menopausal women aged between 36-60 years. The results indicated that respondents lacked comprehensive understanding of the meaning of the term menopause and information about the risks of heart disease associated with menopause. In general, menopause health information was limited. The majority said they did not seek medical attention when symptoms were present. Among those who did seek care and those for whom treatment was prescribed, non-compliance was high, even with the support of a significant other. There was correlation between the reported level of education and knowledge of health risks associated with menopause.

Reader *et al.* (2012) carried out a study to "Assess knowledge regarding menopausal problems among urban women at Chhatisgarh". The sample consists of 60 menopausal women of 40 to 55 years by interview method. The results revealed that 50 per cent women had good knowledge while 50 per cent women had average knowledge, nobody had poor knowledge. Age, education, cessation of menses, occupation and source of knowledge have significant association with knowledge regarding menopausal problems. Monthly income and types of the family of women had no significant association with knowledge. Mean percentage score on various areas of knowledge like Physical problem, Psychological problem and, Social problem were 74.22 per cent, 82.03 per cent, 34.44 per cent, respectively.

Khokhar (2013) studied on "Knowledge, Attitude and Experience of Menopause". A cross-sectional study was conducted at Gynecology ward of Lyare General Hospital Karachi. A study comprised of 170 women aged 48 years. Findings revealed that 80 per cent women had prior knowledge of menopause they 46 per cent were aware about its effect on health, menopause was considered a normal event by 72 per cent women, only 13 per cent women knew about hormone replacement therapy 74 per cent were bothered by its symptoms and 36 per cent were happy and only 29 per cent had consulted a physician for relief of their symptoms and only 1 was on hormone replacement therapy.

Determinates of menopausal symptoms and attitude among middle aged town: the case of Dangila town, North West Ethiopia was conducted by Tsehay *et al.* (2014). The study conducted among 300 women aged 35 to 70 years. The results revealed that friends were the major source for menopause related information. There was significant differences in menopausal attitude, as well as there was significant differences in menopausal symptoms and attitude across menopausal status. Premenopausal women experienced the highest menopausal symptoms than the pre and post menopausal ones.

Hamid *et al.* (2014) studied on "Women's knowledge, attitude and practice towards menopause and hormone replacement therapy: a facility based study in Al-Ain, united Arab Emirates carried out among women of age 40 and above from four primary health care centers. The results indicated that 68 per cent of women had poor knowledge about menopause and 73 per cent of HRT. 60 per cent of women had positive attitude towards menopause, 53 per cent of women with symptoms, 35 per cent of them did not use any things to relive their symptoms. Knowledge about menopause varied significantly with the level of education and nationality. The association between reported symptoms and attitude towards menopause and HRT was found to be statistically significant.

"Menopause knowledge, attitude, symptoms and management among midlife employed women" was conducted by Eun *et al*. (2014). The study conducted among 231 peri and menopausal women aged from 40 to 59 years old. The results showed that menopausal women reported significantly higher physical symptoms than peri-menopausal women. The menopausal women showed significantly higher psychosomatic symptoms than peri-menopausal women. There was a significant correlation between the menopausal attitude and management.

Bhatia and Kaladio (2014) conducted study o “Assessment of knowledge on signs and symptoms of menopause among premenopausal women among 30 women aged between 35 to 45 years. The results revealed that 56 per cent women had inadequate knowledge, 37 per cent had moderate adequate knowledge and only 7 per cent women had adequate knowledge about menopause.

Veigas *et al.* (2014) studied on “Knowledge and Practice of Postmenopausal women on Health maintenance in a selected rural community of Mangalure district, Karnataka. Participants in this study were 80 post menopausal rural women using structured knowledge questionnaire. It was found that 75 per cent subjects had good knowledge on health maintenance, 1.25 per cent had very poor knowledge. There was no association observed between knowledge score and selected demographic variables. Practice score obtained were very poor (mean % 0.48). There was positive correlation between pre-test knowledge and practice of subjects.

Shakila (2014) carried out a study on “Assessment of women’s awareness and symptoms in Menopause”. The study conducted in Shrilankan academic women ranging from 45-60 years were interviewed to document of 10 symptoms divided into somatic, psychological and physiological symptoms which are commonly associated with menopause. The result shows that the mean age of menopause was 52 years. The most extensive symptoms reported were joint and muscular pains (76 %), physical and mental exhaustion (58 %) and concentration and sleeping problems (60 %) followed by symptoms of hot flashes and night sweating (66 %), irritability (64 %), itching private part (68 %), anxiety (92 %), depressive mood (80 %).

2.6 Menopausal Health status, wellbeing and quality of life after menopause

I) Related to Health status

Dilaramn *et al.* (2013) studied on “Health problems of women above 40 years of age in Rupandehi District of Nepal”. This was community based cross-sectional study carried out among 300 women above 40 years were interviewed by using semi-structured interviewed schedule. The results showed that the mean age at menopause was 46.81 years, general health problems were reported gastritis 38.3 per cent, headache 33.3 per cent, sleep disturbance 30.7 per cent and musculoskeletal problems 27.3 per cent followed by hypertension 19 per cent, diabetes 17.7 per cent. Hence the large efforts are required to educate and make these women and community aware of health problems.

“Predictors of mental health in post menopausal women: Results from the Australian health aging of women study conducted by Charrlotte *et al*. (2013). The aim of the study was to examine the extent to which socio-economic, modifiable lifestyle and physical health status influence the mental health of postmenopausal Australian women. The study conducted among 340 women aged between 60–70 years. The results indicated that average age at menopause was 46.9± 1.5 years, 25 per cent reported no exercise in the past month, 26.5 per cent were overweight and 41.3 per cent were obese. Overall 11 per cent reported 2 or more chronic illness and 68 per cent denied a history of chronic illness, 3 per cent major depression, 27 per cent reported mild depressive symptoms and 70 per cent few depressive symptoms.

Christian (2014) aimed to find out the health problems among rural post-menopausal women and to compare the results with few of the studies in the past with different settings. A study comprised of 147 post-menopausal women aged between 45 and above residing in Piparia village. The findings revealed that most of them suffered from physical symptoms of tiredness (88.4 %) and headache (74.8 %). This was followed by vasomotor symptoms like hot flushes (40.1 %), night sweats (40.8 %) and palpitations (37.4 %) as well as psychological symptoms like insomnia (57.1 %), anxiety (38.1 %) and lack of concentration in the work (33.3 %).

Sarkar *et al*. (2014) conducted study titled "Health profile of post-menopausal women in Jamanagar district, Gujarat. A cross-sectional study was conducted among 300 women, 100 each from urban, urban slum and rural areas of Gujarat aged between 40 and 65 years. Results showed that mean age at menarche and menopause were 14.73± 1.40 and 46.3± 5.29 years respectively. Which were higher in rural areas followed by urban and urban slum, whereas mean age at marriage and first pregnancy were found to by 17.71± 3.31 and 20.18 ± 3.27 years respectively, where were higher in urban areas followed by urban slums and rural areas. The most common symptoms associated with menopause were joint pain (64 %), backache (58 %), irritability (56.66 %), forgetfulness and sadness (48 %) and vasomotor symptoms like hot flashes and night sweats.

Symptoms

Alwi and Rehaman (2010) studied on Assessment of menopausal symptoms using modified Menopausal Rating Scale (MRS). Among 356 women aged 40-65 years in Malysia. The results indicated that mean age of menopause was joint and muscular discomfort (80.1 %), physical and mental exhaustion (67.1 %), and sleeping problems (52.2 %), followed by symptoms of hot flushes and sweating (41.6 %), irritability (37.9 %), dryness of vagina (37.9 %), anxiety (36.5 %), depressive mood (32.6%), other complaints noted were sexual problem (30.9 %), bladder problem (13.8 %), and heart discomfort (18.3 %), however urogenital symptoms occur in postmenopausal group women.

Sagdeo and Arora (2011) studied on "Menopausal symptoms" a cross sectional study conducted on 550 females from urban average age 40 to 60 years women at Nagpur. The information was collected on menopausal symptom women. The results indicated that the percentage of all menopausal symptoms found in urban women compared to rural cases. Commonly observed symptoms included hot flashes, joint and muscular discomfort and physical and mental exhaustion. However women did not come out with sexual problem much in rural and urban. The symptoms found to be peak during 45-55 years and after 55 years severity decreases. However the urinary symptoms and heart discomfort found more in >55 years in urban women, very less percentage of urban women consulted doctor while more of rural women consulted doctor for menopausal symptoms. Hence the study concluded that large efforts are required to educate and make the women aware of menopausal symptoms, so it will reduces discomfort and enable them to seek appropriate treatment

Hwanget 2010 "Comparative study on Climacteric Symptoms, Knowledge of Menopause and Menopausal management of Middle Aged Women between urban and rural areas. The study conducted in Koria of 2 cities among 287 women aged 40-65 years. The data collected by Climacteric Symptoms Scale and Knowledge of menopause and menopausal management scale. The results indicate that mean age of middle aged women living in urban areas was 47.9 years and that of

women in rural areas was 48 years. The mean score of climacteric symptoms of middle- aged women living in urban and rural areas was 48.8 and 50.4 years respectively and was not significantly different. The mean score of knowledge of menopause of middle aged women living in urban areas was higher than that of women in rural areas. In addition the mean score of menopausal management of middle aged women living in rural areas was higher than that of women in urban areas. This study suggests that not only general characteristics but also living areas should be considered in developing nursing interventions to manage the climacteric symptoms of middle aged women

Kaulagekar (2011) studied on the age at menopause, reported symptoms of menopause and treatment-seeking behavior of women in Pune. The study comprised of 156 women from four different sites in Pune city between 40 to 55 years of aged women. The data collected by semi- structured interview schedule. The results indicated that mean age at menopause was 45.8 years. Most frequently reported symptoms were psychological (n=154), vasomotor (n=78), followed by urogenital (n=68). Nuclear family and income levels found to have significant with menopausal symptoms. Less than half (43 %) patients used modern medicine, while 30 per cent did not seek any treatment. This study recommends that health care providers need to consider treating health issues from a lifestyle management perspective and a precaution should be taken not to anthologize menopause

Shakila (2010) studied on “Assessment of women’s awareness and symptoms in menopause”. The study conducted in Shrilankan academic women ranging from 45-60 years were interviewed to document of 10 symptoms divided into somatic, psychological and physiological symptoms which are commonly associated with menopause. The results showed that the mean age of menopause was 52 years. The most extensive symptoms reported were joint and muscular pains (76 %), physical and mental exhaustion (58 %) and concentration and sleeping problems (60 %) followed by symptoms of hot flashes and night sweating (66 %), irritability (64 %), itching private part (68 %), anxiety (92 %), depressive mood (80 %).

The study on to explore the midlife experience for women living in Australia and Japan by Debra *et al*. (2014) on 712 Australian and 1502 Japan women aged between 45 to 60 years. The results found that significant differences in menopausal symptoms related to psychological symptoms, including anxiety and depression, somatic symptoms, and vasomotor symptoms. The analysis, which excluded hormone replacement therapy (HRT) users, found that there were significant differences seen across menopausal status in the following symptoms: difficulty in sleeping, difficulty in concentrating, feeling dizzy or fain , loss of interest in most things and loss of feeling in hands or feet . In the postmenopausal stage specifically, significant differences were seen in the areas of feeling tense or nervous, feeling unhappy or depressed, parts of body feeling numb or tingling, headaches and sweating at night.

II) Related to QOL

Moutafa *et al.* (2012) studied on “impact of menopausal symptoms on quality of life among women's in Qena city”. The participants in this study were 250 women aged between 45 to 58 years of out patient's clinics of Qena University and general hospitals. The results indicated that mean age of women was (53.6± 6.5),more than half(67.2 %) was illiterate , majority of women (80.8 %) as a house wife more than three-fourth of women (77.8 %) had poor quality of life with sever menopausal rating syndrome,. found that the majority of women (84.4 % & 78.8 %) had physical effect & social effect on Quality of life respectively and there were positive strong correlation between menopausal symptoms and QoL there was statistical significance difference.

Greenblum *et al.* (2012) attempted to point out "Midlife women: symptoms associated with menopausal transition and early post-menopause and quality of life". A cross-sectional study on 150 community-dwelling women aged 45 to 60 years. The information elicited by clinically relevant checklist of common symptoms associated with the menopausal transition and early post-menopause adapted from the Kupperman Menopausal Index. The results of the study revealed that 60 per cent of the participants reported three or more symptoms. The symptom clusters that had the highest impact on quality of life were sleep disturbances and vaginal dryness, which accounted for 9.7 per cent of the variance in quality-of-life scores. A parsimonious model of individual symptoms, including sleep disturbances, fatigue, and anxiety, accounted for 16.7 per cent of the variance in quality of life and group of symptoms, not represented by a cluster, had the highest impact on quality of life.

Jinwei *et al.* (2014) carried out a study "whether menopause has a negative impact on HRQOF among middle aged women and explore other characteristics which may have impact on HRQOF in rural China" among 1351 women aged 40-59 years who was naturally menopause. The results indicated that postmenopausal women who had menopause for 2-5 years were more likely to suffer mobility problems after adjustment for age. The average age at menopause was 49.4 ± 3.7 years, 82.8 per cent of women did not have higher education, 1.6 per cent of women had history of stroke, 45 % coronary heart disease, 8.7 per cent diabetes and 30.7 per cent hypertension major health problems reported are unusual activity, pain and anxiety dimensions were not statistically different between premenopausal and postmenopausal women.

Eugenia *et al.* (2014) undertook a study on "Socio-demographic characteristics and quality of life of Greek menopausal women treated with Hormone Therapy". The study was on 216 postmenopausal women aged between 40 to 60 years. The aim of the study was to investigate the demographic characteristics and quality of life of Greek menopausal women who were taking Menopausal Hormone Therapy (MHT) compared with those not taking. The results revealed that 46.3 per cent of women who were taking MHT, while 53.7 per cent were not taking MHT, there was significant differences found in QOL between hormone users and non-users and women with higher education have a better QOL compared with non-MHT group. The study concluded that MHT seems to provide significant benefit in QOF during menopause.

III) Related to well being

Pranita *et al.* (2012) conducted study on "Psychological well being and obesity in peri-menopausal and post-menopausal women". The study comprised of 60 menopausal women aged between 40 to 60 years. The well being index was used to assess their quality of life and psychological well being. The findings indicated that mean age at menopause 45-49 years, 63 per cent women with poor well being in post-menopausal women. The study concluded that in post menopausal period had more stress and psychological problems compared to post-menopausal women.

Khan *et al.* (2012) made an attempt to determine bio-psychosocial well being and family support of menopausal women. A cross-sectional stay was conducted among 100 menopausal women aged between 45 to 58 years. The findings revealed that out of 100 menopausal women 24 per cent had high bio-psychosocial well being, 75 per cent had moderate and 1 per cent poor well

being and 50 per cent of the respondents received good family support, 42 per cent received moderate support. 75.5 per cent had biological well being, 69.2 per cent had psychological well being and 76.9 per cent had social well being. The overall findings revealed that there was a significant differences found between biological, psychological and social factors. And there was no significant relation found between family support and selected variables like age, marital status, type of family and socioeconomic status of family.

Sindhe *et al.* (2014) aimed at "stress and well being in menopausal and postmenopausal women and to compare stress and well being among working and non-working menopausal and postmenopausal women. A study comprised of 120 women aged between 45 to 55 years. The results showed that there is no significant difference between menopausal and postmenopausal women in stress and well being and comparatively even stress is less among menopausal non-working and they had low well being compared to menopausal working women. And there is no significant differences found between postmenopausal working and non-working women in stress and well being

Investigating how menopausal factors and self compassion shape well being: An exploratory path analysis conducted by Lydia *et al.* (2015) with an objective of relationship between menopausal factors and negative well being but less is known about positive well being and its correlates among midlife women. This was a cross-sectional study based on self-reported questionnaires from 206 women aged between 40 to 60 years currently experiencing hot flashes. The results revealed that menopausal stage and hot flashes frequency were independent of well being outcomes. Beliefs about perceived control over menopause was the strongest predictor of well being outcome as well as self-compassion was the strongest predictor of well being outcome followed by beliefs about control and interference rating of hot flashes.

"Validation and utility of attitude to aging questionnaire links to menopausal and well being trajectories" conducted by Brown *et al.* (2015). A cross-sectional group comparisons of the Attitude to Aging Questionnaire (AAC) factor structured between women aged 40–60 years among 517 women and this was 10 year change in subjective well being of responds were assessed. The results indicated that midlife women exhibited more negative attitudes to aging on psychological loss sub-scale compared to older women. Attitude to psychological loss was the strongest predictor of women's experience of menopause and women with a negative attitude to psychological loss did not experience gains in subjective well being with age that were characteristic of those with a positive attitude.

2.7 Work ability among menopausal women

Oosterhof *et al*. (2012) attempted to point out that "Increased menopausal symptoms are related to decreased work ability" with an objective of to know the Menopausal symptoms have a negative impact on quality of life. The measures used are work ability Work Ability Index (WAI), menopausal symptoms (Greene Climacteric Scale (GCS) and individual and lifestyle characteristics were collected from first time attendees of a menopause among 34 women aged between 45 and above The results revealed that women attending menopause have a higher GCS score the work ability index is significant lower compared to healthy women.

"The impact of menopausal symptoms on work ability" a study conducted by Geukes *et al.* (2012). Participants of the study were 208 healthy working Dutch women aged 44 to 60 years. Work ability was measured using the Work Ability Index, and menopausal symptoms were measured using the Greene Climacteric Scale. The findings revealed that there was a significant negative between total Greene Climacteric Scale score and Work Ability Index score. Total Greene Climacteric Scale score predicted 33.8 per cent of the total variance in the Work Ability Index score. Only the psychological and somatic subscales of the Greene Climacteric Scale were significant predictor, 36.5 per cent of total variance in Work Ability Index scores.

Badami *et al*. (2013) conducted study titled "Relationship between Physical Health and Stress Level of Urban and Rural Working and Non Working Post-Menopausal Women". The study conducted on 60 urban employed & non-employed and 60 rural employed & non-employed post-menopausal women with mean age of 44.5. The results indicated that 41.66 per cent urban women belonged to high SES group followed by 36.66 per cent in upper high SES group, while 33.34 per cent of rural women belonged to owner middle SES group followed by 28.34 per cent in upper middle SES group. Significant difference was found in the physical health status of urban employed and non employed postmenopausal women, whereas no such differences were observed between rural employed and non employed women. Significantly a higher percentage of urban employed women (63.34 %) were severely affected by different physical problems as compared to rural employed women (46.66 %). Higher percentage of the urban non employed women (90 %) found to have severely affected physical health status, whereas only 50 per cent of rural non employed women fell in this category. Though 73.34 per cent of urban employed & 45 per cent rural employed women belonged to high & upper middle socio economic group most of the post-menopausal women expressed about having severe physical health problems like backache, insomnia, dizziness, weakness, eye problem, sweating, uneasiness, irritability and loss of memory. It was found that, there is a significant relationship between physical health, stress and socio economic status of both urban and rural women.

2.8 Nutrition status and menopausal symptoms

Cultural practices and nutritional status among premenopausal women of urban setup in India studied by Rao *et al.* (2010) with an objective of elucidate the nutritional status of the women, classified by body mass index, according to the number of children born to among 120 women aged between 45 to 60 years. The results showed that Majority of adult urban women were in overweight category followed by normal category and obese category and very few remained in the underweight category. With the increase in number of children, there was a shift in BMI category from normal to obese with substantial prevalence of women noticed in overweight category. Maximum numbers of women were found in overweight category with two children. Normal weight category is also well represented with number of pregnancies. No woman with three children was reported in underweight category.

Goyal *et al.* (2012) studied on "Menopausal symptoms and nutritional status of peri-menopausal women" among 30 women. The Information on intake of food was collected by 24 hours recall method , anthropometric assessment was done by measuring height, weight, waist and hip

circumference and the subjects was classified based on BMI and WHR. The results revealed that normal majority of women belonged to high body mass index (BMI) and high WHR category. When the women were classified based on desirable lipid profile, most of the women belonged to risk category for total cholesterol and low density lipoprotein cholesterol (LDL-C) levels. Lesser number of women belonged to risk category of triglyceride (TG) and high density lipoprotein cholesterol (HDL-C) levels.

Rania *et al.* (2012) undertook study on "nutritional status of menopausal women in the rural area of Marrakech. The study comprised of 500 women aged between 52.19 ± 7.42 years. The findings revealed that mean value of BMI was found to be higher compared to the BMI of urban women of Marrakech area, 43.8 per cent of women were overweight and 32.2 per cent were obese, the rate of underweight women is 8 per cent. In addition, 22.8 per cent of women were in a normal state, no significant difference was observed between BMI and education level and the function of women who are illiterate and housewives and presents all a higher per cent of overweight and higher BMI was associated with lower social class measured in the present study by attainment educational. In addition to socioeconomic factors and physical activity of women, the nutritional status of women is also influenced by gynecological factors. The number of children and the frequent use of oral contraceptives, significantly increase the prevalence of overweight and obesity.

Karu and Chawla (2015) aimed to assess the impact of nutrition counseling on food intake and anthropometric measurements in postmenopausal women. A study was on 6o postmenopausal women were selected from two villages of Sangrur district and were divided into two groups—Group I (Control) and Group II (Experimental) containing 30 subjects each. The average daily nutrient intake of diets was calculated b using Diet Cal. Anthropometric parameters were calculated before and after counseling. The results indicated that significant decrease in energy, carbohydrate, fat and significant increase intake in iron, calcium, potassium, Vitamin C and *β*-carotene content was observed. A significant reduction was observed for weight, body mass index (BMI), mid upper arm circumference (MUAC), triceps skin fold thickness (TSFT) and waist hip ratio (WHR) by 4.9 per cent, 3.98 per cent, 2.9 per cent and 2.1 per cent respectively, while random blood sugar (RBS), systolic blood pressure (SBP) and diastolic blood pressure (DBP) decreased by 25.21 per cent, 13.74 per cent and 8.03 per cent after counseling. After nutrition counseling subjects adopted good nutritional practices and use of aloevera leaves in diets which improved their health status of postmenopausal women.

2.9 Education programs for reducing menopausal symptoms

Lifestyle intervention

Debra *et al.* (2015) studied on "Decreasing menopausal symptoms in women undertaking a web-based multi-modal lifestyle invention. The women's wellness program was delivered to 225 Australian women aged between 40 and 60 years through 3 modes like on-line independent, face-to-face with nurse consultations and on-line with virtual nurse consultation. All women were provided with a 12 week program on lifestyle behaviors while women in the consultation groups were setting for exercise, healthy eating, smoking and alcohol consumption and groups were supported by a registered nurse who provide tailored health education and assisted to intervention program. Pre and post-intervention data were collected on menopausal symptoms. The results revealed that differences

between intervention and control group and results also demonstrated reduced vasomotor symptoms and sexual dysfunction in all participants through women in face-to-face group reported greater reductions than women in other group.

Lewis *et al*. (2015) carried out a study on "Women's healthy lifestyle project: a randomized a clinical trial" among 275 premenopausal women into assessment only group and 260 women into intervention group aged between 45 to 60 years. The results showed that mean age of participants was 47 years, 92 per cent of women were white. By 54 months, 35 per cent of the women had become postmenopausal stage and there was 3.5 mg/dl increase in LDL cholesterol in the intervention group and an 8.9 mg/dl increase in assessment only group. Weight decreased 0.2 lb in the intervention and increased 5.2 lb in the assessment group. Waist circumference decreased 2.9 cm in the intervention compared with 0.5cm in assessment group

HRT intervention

The effect of hormone replacement therapy (HRT) on body mass index who women taking therapy for the first 6 months conducted by Hemşirelik *et al*. (2011) on the intervention study was done on 238 women who attend a menopause clinic the information was elicited at the beginning and in the 3rd and 6th months of therapy. The results indicated that 19.3 per cent of women were illiterate, 60.5 per cent were literate/primary school graduates, and 20.2 per cent were middle school or higher graduates. The mean BMI values of the women were 30.46 ± 4.77 at the beginning of the therapy. The 3rd month follow-up was completed with 217 and the 6th month follow-up with 206 women. The women's mean BMI did not change over time and it was found statistically significant.

Menopausal Hormone Therapy and health outcomes during the intervention and extended post-stopping phases of the women's health initiative randomized trials studies by JoAnn *et al.* (2014) with an objective of integrated overview of findings from the 2 women's health initiative hormone therapy trials with extended post-intervention follow-up. The study was conducted among 27,347 postmenopausal women aged between 50 to 70 years were enrolled at 4o US centers. The findings revealed that compare to CEE alone trail, CEE plus MPA had more risk increased stroke, pulmonary embolism, dementia, CHD, gallbladder disease and urinary incontinence. The hormone therapy had a complex pattern of risks findings from the intervention and extended post-intervention follow-up of the world health initiative hormone therapy trails do not support use of this therapy for chronic disease prevention.

Exercise intervention

Aiello *et al.* (2014) studied on Effect of a yearlong, moderate-intensity exercise intervention on the occurrence and severity of menopause symptoms in postmenopausal women. A study comprised of 173 overweight, postmenopausal women not taking hormone therapy in the previous 6 months given intervention a moderate-intensity exercise intervention (n = 87) versus stretching control group (n = 86) and comparing exercise with controls were calculated at 3, 6, 9, and 12 months for menopause symptoms and their severity. The result revealed that there was a significant increase in hot flash severity and decreased risk of memory problems in exercisers versus controls over 12 months, although the numbers affected were small. No other significant changes in symptoms were observed.

Effects of a six-month walking intervention on depression in inactive post-menopausal women: a randomized controlled trial conducted by Bernarda *et al.* (2015) with an objective of Physical inactivity and advanced age are associated with risk of depressive disorders. The study was conducted on 121 women aged between 55 to 75 years and inactivity was assessed using the Physical Activity Questionnaire for the Elderly, Depression levels were measured pre and post-intervention with the Beck depression Inventory (BDI). The results indicated that participants in the walking intervention showed a significant decrease in depression as compared with controls. Baseline cognitive-BDI sub score, subjective health status, body mass index and adherence were post-intervention BDI score predictors.

Education intervention

Rothert *et al*. (2009) carried out a study on title "an educational intervention as decision support for menopausal women". The aim of the study was to develop and test a decision support intervention (DSI) to assist women to make and act on informed decisions that are consistent with their values in the area of menopause and hormone replacement therapy (HRT) among 248 women aged between 50 to 65 years by an intervention three intervention formats: written information only, guided discussion, or personalized decision exercise. Data were collected over 12 months. Knowledge, decisional conflict, satisfaction with health care provider, and self-efficacy improved following intervention and were maintained for 12 months for all groups. The results showed that across all groups, knowledge increased from 62 per cent T1 to 87 per cent T4, with a pre intervention mean of 15 of 24 items at T1, to a post-intervention mean of 20.9 at T2. The *r*2 for change over time in knowledge was statistically significant. Knowledge level remained significantly greater than baseline with a mean of 20.5 in T3, and a mean of 20.8, *t*'s 5 29.48 and 30.97, respectively. Thus, the post intervention increase in knowledge was maintained over time.

The effect of education and awareness on the Quality of Life in postmenopausal women studied by Sedigheh *et al.* (2010) among 62 women aged between 45 to 55 years. The information was collected by using a modified Hildich questionnaire on quality of life in menopause stage and were evaluated prior to and 3 months after educational intervention. The results showed that Mean quality of life score in study and control groups, prior to education, was 81.7 and 74.8 changing to 75.3 and 75.8, respectively three months after intervention. The study group showed a significant improvement in their quality of life. A significant difference was seen between groups in terms of changing quality of life after intervention

Williams *et al*. (2013) attempted to test the feasibility and efficacy of a relatively low intensity intervention designed to achieve weight control in non-obese women about to enter the menopause transition among 51 women aged between 40-60 years. The intervention given is a parallel-group RCT consisting of 12 months of intervention (Phase 1) and 12 months of monitoring (Phase 2). Non-obese pre-menopausal healthy females 44–50 years of age were screened, stratified according to Body Mass Index (BMI) category (18.5-24.9 and 25–29.9 kg/m2) and randomly assigned to one of two groups: motivational interviewing (MI) intervention (n = 28), or a self-directed intervention (SDI) (control) (n = 26). The MI intervention consisted of five consultations with health professionals (four with a Dietitian and one with an Exercise Physiologist) who applied components of MI counseling to

consultations with the women over a 12 month period. The SDI was developed as a control and these participants received print materials only. Outcome measures were collected at baseline, three, 12, 18 and 24 months and included weight (primary outcome), waist circumference, body composition, blood pressure, plasma markers of metabolic syndrome risk, dietary intake, physical activity and quality of life. The results revealed that trial will significantly add to the body of literature on methods of obesity prevention at menopause.

Vruti *et al.* (2014) studied on 'Effectiveness of structured teaching programme on knowledge regarding menopausal symptoms and its management among women. The study was carried out on 60 menopausal women. The results found that in pretest 33.25 per cent of knowledge among women and 36.7 per cent with moderately adequate knowledge and 63.3 per cent with inadequate knowledge on menopausal symptoms. By post test 79.40 per cent in knowledge on menopausal symptoms and its management and 96.7 per cent with adequate knowledge and only 3.33 per cent with moderately adequate knowledge. Menopause symptoms and its effectiveness were found to be very highly significant knowledge.

Effect of systematic health education on peri-menopausal rural women's knowledge and practices regarding osteoporosis was conducted by Amal *et al.* (2015). The study was conducted among 400 peri-menopausal women aged between 40-43 years. The results revealed that there was a statistically significance difference between pre and post knowledge score regarding cause, gender risk, age risk, symptoms, food rich in calcium, RDA for adult, treatment and factors that assist prevention and also found that 9.7 per cent of women had good knowledge, knowledge during intervention as compared to 62.7 per cent during post-intervention phase.

Copping strategies

Parveen *et al.* (2012) conducted on "Evaluation of knowledge of perception and coping strategies of peri-menopausal women through self instruction module. On 100 women aged between 35-50 years. The study pointed that educational level was strongly associated with perception and coping strategies. There was a significant difference in coping strategy scores of the subjects before and after intervention.

A cross-sectional study examined the impact of knowledge and awareness regarding coping with menopause among 500 women aged between 40-60 years by Oyediji *et al*. (2011). The results pointed that knowledge of the concept of menopause help women to understand that menopause is a normal developmental process and increased awareness of hormonal variations and subsequent physical, physiological, psychological and sexual changes in the body prepare women for menopause.

To compare socio demographic profile, attitude, coping strategies and psychiatric morbidity among rural and urban menopausal women conducted by Singla *et al.* (2016) among 151 post-menopausal women aged between 45-65 years. The results revealed that statistically significant urban women show more depressive symptoms that rural women and statistically significant differences found between rural and urban women, urban and rural women had ore of anger hostility symptoms.

3. MATERIAL AND METHODS

The study on “Health status, menopausal knowledge regarding care and management of postmenopause among women in rural and urban area” was carried out during the year 2015-16 in rural and urban area of Dharwad and Bagalkote districts.

The materials and method used in the study are presented under the following heading.

3.1 Population and Samples

3.2 Research Design

3.3 Tools Used for Assessment

3.4 Procedure of data collection

3.5 Methods of Statistical Analysis

3.6 Operational Definitions

3.7 Hypothesis set for the study

3.1 Population and Sample

The population of the study comprised of two districts i.e. Dharwad and Bagalkote. In each district 2 taluks were selected randomly and in each taluk 2 villages were selected randomly for the study. Totally 8 villages were considered. The urban samples were taken randomly from Dharwad and Bagalkote cities as depicted in Fig 1.

Women in middle adulthood who have attained menopause at least one year were selected for the study. Information regarding her health status, knowledge and practice during postmenopausal period along with symptoms undergone during menopause was elicited through interviews.

3.2 Research Design

The differential design was used with the aim to compare the health status and knowledge regarding care and management of menopause between urban and rural women.

Correlation design was used to know the relationship between selected demographic variables such as age, occupation education and SES with health status and knowledge of menopause among rural and urban women.

3.2.1 Dependent Variables

In the study health status (Interms of physical distress and psychological distress), knowledge of menopause and care and management of menopause were selected as dependent variables.

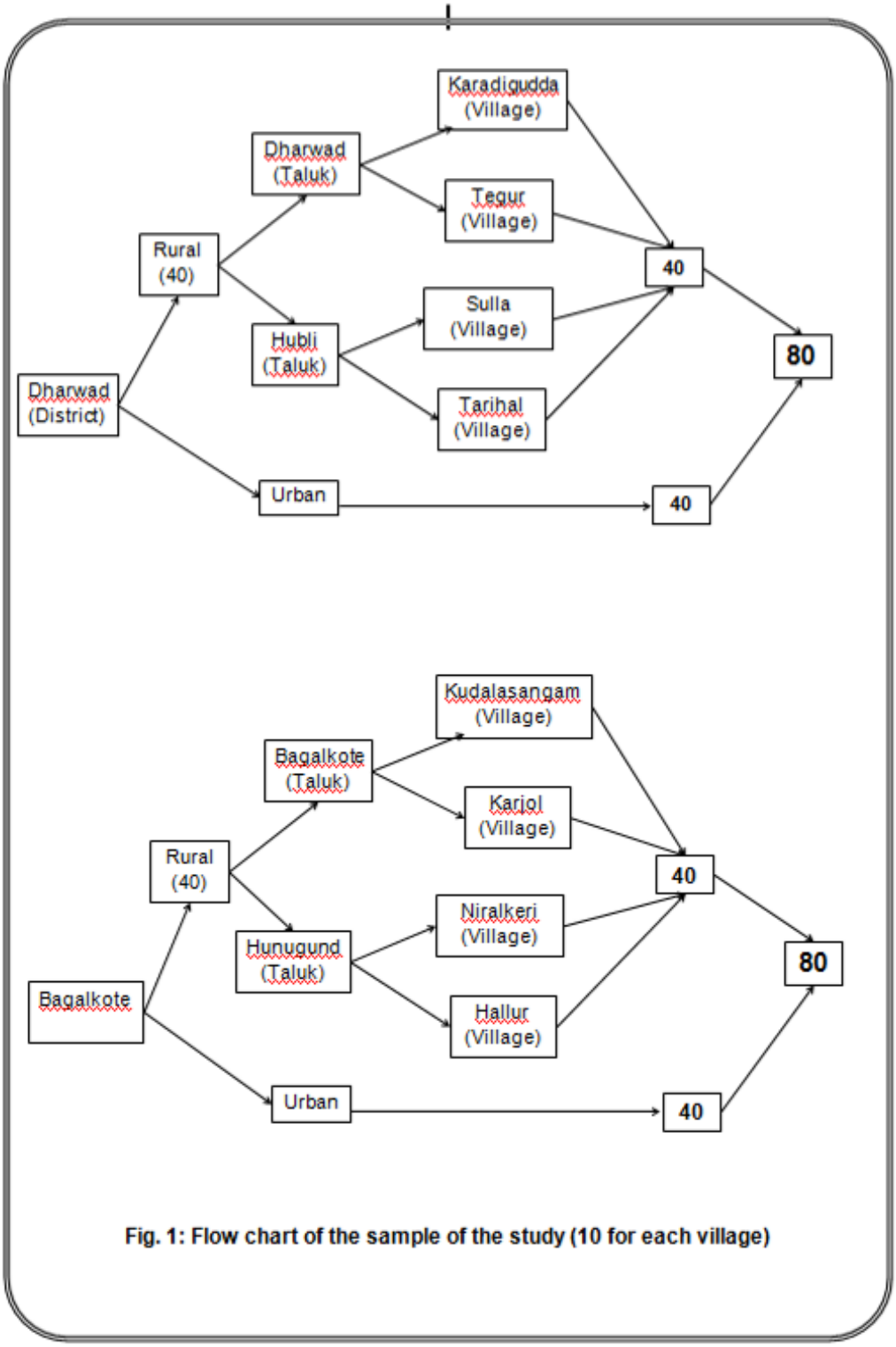

Fig. 1: Flow chart of the sample of the study (10 for each village)

Fig. 1: Flow chart of the sample of the study (10 for each village)

3.2.2 Independent Variables

The independent variables considered for the study were chronological age, age at menopause, education, size of the family, type of the family, health problems, Body Mass Index (BMI), occupation of respondents and SES of the family.

3.3 Tools used for Assessment

The following tools were used,

3.3.1 Structured interview schedule

3.3.2 Socio-economic status scale developed by Agarwal *et al.,* 2005

3.3.3 PGI-N_2 health questionnaire developed by Wig and Verma (1978)

3.3.4 Menopause rating scale developed by Berlin (1992)

3.3.5 Self-structured questionnaire regarding knowledge on care and management of menopause

3.3.6 WHO classification by Anon (2007) for adult women.

3.3.1 Structured Personal interview Schedule:

The structured interview schedule was used to collect personal information like name of the family members with their age, relationship with respondent.

3.3.2 Socio Economic Status (Agarwal *et al*., 2005)

The Socio- Economic Status scale consists of 22 statements which assess caste, education, occupation, and monthly per capita income from all sources, type of house and location, family possessions and possessions of earning members in the family, number of children and possessions of agricultural and nonagricultural land along with animals and social status of the family. One score was given for each item of different dimensions and added to obtain total score and classified as mentioned below (Appendix I).

Classification of Socio- Economic Status

Status	Total Score
Upper high	>76
High	61-75
Upper middle	46-60
Lower middle	31-45
Poor middle	16-30
Very poor	<15

3.3.3 Post Graduate Institute of Medical Education and Research (PGI) health questionnaire developed by Wig and Verma (1978)

To know the general health status of the respondents PGI scale was used to assess the status of wellness, fitness and underlying diseases or injuries.

This questionnaire has 50 statements. Score '1' is given for 'yes' and '0' given for 'no'. The number of right answers indicates the number of health problems, which can be added to get their total responses. If the respondents are illiterate the statements are read to them each question slowly, and responses are recorded. A high score indicates more number of health problems (Appendix II).

Classification of health status

Category of health status	Score ranges
Mildly affected	0-17
Moderately affected	18-34
Severally affected	35-50

3.3.4 Menopause Rating Scale (Berlin, 1992)

Menopause Rating Scale was used to know the age related decline of physical and mental capacity. It consists of 11 questions divided into 3 sub scale such as Psychological (4 to 7), Somatic (1, 2, 3 and 11) and Urogenital (8 to 10). Each symptom was scored as 0-4 where '0' for none and '4' for very severely affected. The total score is sum of the scores of three subscales and classified as follows (Appendix III).

Classification of Menopausal symptoms

Menopausal symptoms	Score Range
Mild	0-14
Moderate	15-29
Severe	30-44

3.3.5 Self-structured questionnaire regarding knowledge on care and management of menopause

This tool is designed to elicit the information regarding knowledge on care and management of menopause

It consists of 29 questions divided into five categories like general information, history of menopause, effects of menopause, care and management of menopause. The preference rating was given as scoring and total scores were divided into three categories as follows (Appendix IV).

Classification of knowledge scores

Knowledge	Score range
Low	1-12
Medium	13-24
High	25- 36

3.3.6 WHO classification (2007) of BMI

The height and weight of the respondents were noted from the self structured schedule

The Body Mass Index (BMI) was calculated using the formula,

$$BMI = \frac{\text{Weight (Kgs)}}{\text{Height } (m^2)}$$

The BMI of women age was compared with the WHO standards. The classification is as follows

Presumptive diagnosis	BMI classes
Under weight	<18.5
Ideal weight	18.5-22.9
Over weight	>23.0
Obese grade-I	>25.0
Obese grade-II	>30.0

3.4 Procedure of data collection

Under sample selection and population. Door to door survey was done with the help of anganwadi teacher. The sample also included mother and mothers-in-law who came with their daughter or daughters-in-law for antenatal checkup in the anganwadi. The criteria for sample selection were women who have completed at least one year after attainment of menopause. Each interview lasted 30-45 minutes.

3.5 Methods of statistical analysis

The collected data was analyzed by using the following the statistical techniques

- Frequency and percentages were calculated to interpret the demographic characteristics of women
- t-test : t-test was used for comparison between two locality i.e., rural and urban both in Dharwad and Bagalkote area

$$t = \frac{\left|\overline{x1} - \overline{x2}\right|}{\sqrt{S^2\left(1/n1 + 1/n2\right)}}$$

Where, $S^2 = \frac{s_1^2(n_1 - 1) + s_2^2(n_2 - 1)}{(n_1 + n_2 - 2)}$

$\overline{X_1}$ =mean of the first group

$\overline{X_2}$ = mean of the second group

n_1 = number of observation in the first group

n_2 = number of observation in the second group

s_1^2 = variance of the first group

s_2^2 = variance of the second group.

S^2 = Pooled variance of s_1 and s_2

Modified Chi-Square: A non parametric test of independence was applied to determine the association between dependent and independent variables, wherever the frequency was less than five using the formula by Lawal and Upton (1984) test of independence was applied to determine the association between dependent and independent variables using the formula.

Modified $\chi^2 = \left\{1 - 1/n\left(1 - d^{-\frac{1}{2}}\right)\right\} \times \chi^2 d, 0.05$ at 5% level

Where,

$\chi^2 d0.05$ = table χ^2 value at'd' degrees of freedom for 5% level of significance.

n = sample size.

Correlation: Karl Pearson's correlation coefficient analysis was carried out to assess the degree of relationship between menopause problems and socioeconomic status using the following formula

$$r = \frac{n\sum xy - \sum x \sum y}{\sqrt{\left\{n\sum x^2 - \left(\sum x\right)^2\right\}\left\{n\sum y^2 - \left(\sum y\right)^2\right\}}}$$

Where,

r = simple correlation coefficient

x = independent variables

y = dependent variable

$\sum x$ = sum of x values

$\sum y$ = sum of y values

$\sum x^2$ = sum of squares of x values

$\sum y^2$ = sum of squares of y values

$\sum xy$ = sum of squares of xy values

n = numbers of pairs of observations.

3.6 Operational definitions

Post menopause: The permanent absence of menstrual period for 12 consecutive months

Health status: As a state of complete physical, mental and social well being and not merely the absence of disease measured by PGI battery on physical distress.

3.7 Hypothesis set for the study

- There is no difference in menopausal symptoms, health status and menopausal knowledge among rural and urban women.
- There is no difference in menopausal symptoms, health status and menopausal knowledge among rural and urban women
- The characteristics such as age, education and occupation do not influence menopausal symptoms, health status and menopausal knowledge.


Plate 1A: Assessing nutritional status of the respondents


Plate 1B: Collecting qualitative information by the respondents

4. EXPERIMENTAL RESULTS

The study was conducted on “Health status, menopausal knowledge regarding care and management among postmenopausal women in rural and urban area” in the year 2015-16. Through random sampling technique 160 samples were selected from urban and rural areas of Dharwad and Bagalkote district. The results of the study are presented under the following sub-headings.

4.1 Demographic characteristics of postmenopausal women

4.2 Nutritional status of postmenopausal women

4.3 Menopausal symptoms among postmenopausal women

4.4 Knowledge on care and management of postmenopausal women

4.5 Health Status among postmenopausal women

4.6 Interrelation between health status and knowledge on care and management of menopause

4.7 Interrelation between menopausal symptoms and knowledge on care and management of menopause

4.8 Interrelation between menopausal symptoms and health status

4.9 Inter correlation between components

4.1 Demographic characteristics of postmenopausal women of Dharwad and Bagalkote

The demographic characteristics of the respondents included age, education, occupation, caste, number of children and socio-economic status of postmenopausal women are presented in Table 4.1. In the rural women of Dharwad 50 per cent belonged to 51-55 years, while 30 per cent belonged to 46-50 years and 20 per cent were to aged between 40-45 years. Among urban women of Dharwad district similar trend was observed i.e. majority (52.50 %) belonged to 51-55 years, while 25 per cent in 46-50 years and 22.50 per cent belonged to 40-45 years.

In case of rural women of Bagalkote, 45 per cent belonged to 51-55 years, while 42.50 per cent belonged to 46-50 years and 15 per cent in 40-45 years. In case of urban, 45 per cent, 42.50 per cent and 12.50 per cent women belonged to 51-55, 46-50 and 40-45 years respectively.

Totally 49.37 per cent belonged to 51-55 years, while 33.12 per cent of women aged between 46-50 years and 17.50 per cent in 40-45 years of aged.

With respect to occupation 80 per cent of rural women of Dharwad were found to be housewives, while 12.50 per cent of the women involved in farm activities, 5 per cent working in government jobs and only 2.50 per cent of women were working in private jobs. Whereas in urban area, 37.50 per cent women found to be housewife, while 52.50 per cent working in government employee and 12.50 per cent working in private employee.

In case of Bagalkote, 22.50 per cent, 27.50 per cent women were involved in household and farm activities respectively, and 50 per cent working in private sectors, whereas in urban women 60 per cent women were found to be housewife, while 30 per cent working in government sectors and 10 per cent of women working in private sectors.

Table 4.1: Demographic characteristics of postmenopausal women of Dharwad and Bagalkote

N=160

Sl No	Variables	Dharwad		Bagalkote		Total (N=160)
		Rural (n=40)	Urban (n=40)	Rural (n=40)	Urban (n=40)	
I	**Age (years)**					
	40 – 45	8 (20.00)	9 (22.00)	6 (15.00)	5 (12.50)	28 (17.50)
	46 – 50	12 (30.00)	10 (25.00)	14 (35.00)	17 (42.50)	53 (33.13)
	51 – 55	20 (50.00)	21 (52.00)	20 (50.00)	18 (45.00)	79 (49.37)
II	**Occupation of women**					
	Housewives	32 (80.00)	15 (37.50)	9 (22.50)	24 (60.00)	80 (80.00)
	Farm women	5 (12.50)	0 (0.00)	11 (27.50)	-	16 (10.00)
	Government employed (teachers, bank works)	2 (5.00)	21 (52.50)	-	12 (30.00)	34 (21.25)
	Private employed (hostel cooks, clerks)	1 (2.50)	5 (12.50)	20 (50.00)	4 (10.00)	30 (18.75)
III	**Education of women**					
	Illiterate	25 (62.50)	8 (20.00)	31 (77.50)	10 (25.00)	74 (46.25)
	Primary	11 (27.50)	5 (12.50)	8 (20.00)	12 (30.00)	36 (22.50)
	High school	2 (5.00)	3 (7.50)	1 (2.50)	6 (15.00)	12 (7.50)
	College	2 (5.00)	8 (20.00)	-	3 (7.50)	13 (8.13)
	>graduation and Post Graduate	-	16 (40.00)	-	9 (22.50)	25 (15.60)

Contd…

Sl No	Variables	Dharwad		Bagalkote		Total (N=160)
		Rural (n=40)	Urban (n=40)	Rural (n=40)	Urban (n=40)	
I	**Caste**					
	Upper caste	14 (35.00)	8 (20.00)	5 (12.50)	15 (37.50)	42 (26.25)
	OBC	18 (45.00)	29 (72.00)	20 (20.00)	21 (52.50)	88 (55.00)
	Dalits	5 (12.50)	2(5.00)	11 (27.00)	3 (7.50)	21 (13.12)
	Tribals	3 (7.50)	1 (1.25)	4 (10.00)	1 (2.50)	9 (5.65)
II	**No of Children**					
	1 – 2	6 (15.00)	19 (47.50)	3 (7.50)	14 (35.00	42 (26.25)
	3 – 4	21 (52.50)	14 (35.00)	19 (47.50)	16 (40.00)	70 (43.75)
	5 – 6	8 (20.00)	5 (12.50)	6 (15.00)	4 (10.00)	23 (14.38)
	> 6	5 (12.50)	2 (5.00)	12 (30.00)	6 (15.00)	25 (15.63)
III	**Socio-Economic Status**					
	High	1 (2.50)	7 (17.50)	-	4 (10.00)	12 (7.50)
	Middle	28 (70.00)	30 (75.00)	21 (52.40)	26 (65.00)	105 (65.62)
	Poor	11(27.50)	3 (7.50)	19 (47.50)	10 (25.00)	43 (26.88)

*Figures in the parenthesis indicates percentage

Totally 50 per cent women were housewife, 10 per cent involved in farm activities, 21.25 per cent were working in government sectors and 18.75 per cent were working in private sectors in Bagalkote district.

In case of respondent's education rural women of Dharwad, 62.50 per cent found to illiterate, 27.50 per cent respondents completed their primary level of education, 5 per cent high school as well as college education. Whereas 20 per cent of urban women were illiterate, 12.50 per cent of respondent completed primary school, 7.50 per cent had their high school, while 20 per cent of respondents completed their college and 40 per cent possessed graduation or post graduation

Whereas in Bagalk, 77.50 per cent of rural respondents found illiterate, while 20 per cent completed primary school and only 2.50 per cent the women had their high school level of education. Among urban women, 25 per cent found illiterate, 30 per cent of women were had primary school education, 15 per cent of respondents completed their high school, while 7.50 per cent college and 22.50 per cent of the women possessed degree or post graduation level of education.

Overall 46.25 per cent found illiterate, 22.50 per cent were had their primary school, 7.50 per cent college and 8.31 per cent were completed college level of education.

The respondents among Dharwad district, 35 per cent rural women belonged to upper caste, while 45 per cent belonged to OBC caste, 12.50 per cent dalits and 7.50 per cent tribals. Similarly in Dharwad district urban women, 72.50 per cent belonged to OBC caste, while 20 per cent belonged to upper caste, 5 per cent dalits and only 2,50 per cent tribal caste.

Incase of Bagalkote district, 50 per cent of rural women belonged to OBC caste followed by 27 per cent dalits caste, while 12.50 per cent belonged to upper caste and 10 per cent tribals caste. Similar trend was seen in urban women of Bagalkote

On the whole 55 per cent women belonged to OBC followed by 26.25 per cent in upper caste, 13 per cent in dalits and 5.65 per cent in tribals category.

It is clearly pointed out that 52.50 per cent of the Dharwad rural women possessed 3-4 children followed by 20 per cent with 5-6 children, 15 per cent had 1-2 children and 12.50 per cent possessed more than six children. Whereas in Dharwad urban, 47.50 per cent women possessed 1-2 children followed by 35 per cent with 3-4 children, 12.50 per cent with 5-6 children and only 5 per cent possessed more than 6 children

Incase of Bagalkote rural women, 47.50 per cent of the women possessed 3-4 children followed by 30 per cent with more than six children, 15 per cent with 5-6 children and 7.50 per cent of respondents possessed 1-2 children. Whereas in Bagalkote urban women, 40 per cent possessed 3-4 children followed by 35 per cent with 1-2 children, 15 per cent and 10 per cent possessed more than six and 5-6 children respectively.

Overall 43.75 per cent women possessed 3-4 children followed by 26.25 per cent had 1-2 children, 15.63 per cent with 5-6 children and 14.38 per cent possessed more than 6 children.

With respect to Socio-Economic Status in Dharwad district, 70 per cent of rural women belonged to middle class of SES followed by 27.50 per cent to poor and 2.50 per cent to high class of SES. Whereas among urban women, 75 per cent belonged to middle class SES category followed by 17.50 per cent to high SES and 7.50 per cent of them belonged to poor SES. In case of Bagalkote district, 52.40 per cent of rural postmenopausal women belonged to middle SES followed by 47.50 per cent belonged to poor SES and none of the respondents belonged to high SES category. Among urban women, 65 per cent belonged to middle SES category followed by 25 per cent and 10 per cent of women belonged poor and high SES category respectively.

4.2 Nutritional status of postmenopausal women

4.2.1 Percentage distribution of postmenopausal women by weight status of rural and urban women

Body Mass Index (BMI) stands for a numerical value of weight in relation to height. BMI's are good indicators of healthy weights for adult women, regardless of body frame size. Higher BMI's (25+) are associated with increased health risks.

Nutritional status of postmenopausal women interms of Body Mass Index (BMI) of rural and urban is indicated in Table 4.2.1. Among rural women, majority of them (42.50 %) in over weight category, followed by 40 per cent in ideal body weight category, only 10 per cent of the women found in obese category and 7.5 per cent underweight category.

In case of urban postmenopausal women, half of them (50 %) had overweight, followed by 26.25 per cent in ideal body weight category, 22.50 per cent in obese and only 1.25 per cent of women found in underweight category.

Totally 46.25 per cent fell in overweight category, followed by 33.13 per cent had ideal body weight, 16.26 per cent of women had obese and only 4.38 per cent of them having underweight category.

4.2.2 Relationship between age and weight status of postmenopausal women

The relationship and association of weight status of postmenopausal women belonging to different age group is indicated in Table 4.2.2. Among rural women in the age group of 40-45 years, 62.50 per cent of them found in ideal body weight, 37.50 per cent having overweight in Dharwad district. In 46-50 years age group, 33.33 per cent women having ideal body weight, 50 per cent in overweight category and 16.67 per cent of them in obese category. In 51-55 years age group, 35 per cent in ideal body weight, while 45 per cent found in overweight and 20 per cent of respondents were in obese category. Among urban in the age 40-45 years, only 11.11 per cent having ideal body weight and 55.56 per cent of them were belonged to overweight category. In 46-50 years of age group, 30 per cent of the women were found in ideal body weight category, while 50 per cent in overweight and 20 per cent in obese component. In 51-55 years age group, 28.57 per cent were found to have ideal body weight as well as found in obese category, while 42.86 per cent in overweight.

Table 4.2.1: Percentage distribution of postmenopausal women by weight status of rural and urban women

N = 160

Categories	Rural (n=80)	Urban (n=80)	Total (N=160)
Underweight (BMI<18.5)	6 (7.50)	1 (1.25)	7 (4.37)
Ideal body weight (18.5-22.9)	32 (40.00)	21 (26.25)	53 (33.13)
Overweight (BMI>23)	34 (42.50)	40 (50.00)	74 (46.25)
Obese (>25 BMI)	8 (10.00)	18 (22.50)	26 (16.25)

Figures in the parenthesis indicates percentage

Table 4.2.2: Correlation coefficient between age and weight status of postmenopausal women

N=160

Area	Locality	Age (Years)	n	Ideal body weight (18.5-22.9)	Overweight (BMI>23)	Obese (>25 BMI)	r –value
Dharwad (n=80)	**Rural (n=40)**	40 – 45	8	5 (62.50)	3 (37.50)	-	0.23*
		46 – 50	12	4 (33.33)	6 (50.00)	2 (16.67)	
		51 – 55	20	7 (35.00)	9 (45.00)	4 (20.00)	
	Urban (n=40)	40 – 45	9	1 (11.11)	5 (55.56)	3 (33.33)	0.29*
		46 – 50	10	3 (30.00)	5 (50.00)	2 (20.00)	
		51 – 55	21	6 (28.57)	9 (42.86)	6 (28.57)	
Bagalkote (n=80)	**Rural (n=40)**	40 – 45	6	3 (50.00)	3 (50.00)	-	0.19*
		46 – 50	14	9 (64.28)	4 (28.58)	1 (7.14)	
		51 – 55	20	7 (35.00)	9 (45.00)	1 (5.00)	
	Urban (n=40)	40 – 45	5	2 (40.00)	3 (60.00)	-	0.30*
		46 – 50	17	6 (35.29)	8 (47.86)	3 (17.65)	
		51 – 55	18	4 (22.22)	10 (55.56)	4 (22.22)	

Figures in the parenthesis indicates percentage
*significant at 0.05 level

In case of Bagalkote rural postmenopausal women, 50 per cent of them found in ideal as well as overweight category of BMI in 40-45 years of age group. In 46-50 years of age group, majority of them (64.28%) of women belonged to ideal body weight category, while 28.58 per cent in overweight and 7.14 per cent of women in obese category. In 51-55 years age group, 35 per cent in ideal weight, 45 per cent in overweight and only 5 per cent of them found to be obese. Whereas among urban women 40 per cent of them had ideal body weight, while 60 per cent of the women found in overweight category. In 46-50 years of age group, 35.29 per cent of women fell in ideal weight category, while 47.86 per cent in overweight and 17.65 per cent found in obese category. In 51-55 years of aged women, 22.22 per cent in ideal body weight, 55.56 per cent of them found in overweight and 22.22 per cent of women were in obese category.

There was significant positive relationship found between age and weight status of rural and urban women of Dharwad and Bagalkote districts.

4.3 Menopausal symptoms among postmenopausal women

4.3.1 Responses regarding history of menopause among women of Dharwad and Bagalkote

Responses regarding history of menopause among women of Dharwad and Bagalkote are shown in Table 4.3.1. In Dharwad, women's age at menarche was 12.7 years and 12.85 years for rural and urban women respectively. In Bagalkote district, it was found to be 12.63 years and 12.75 years for rural and urban women respectively.

With respect to age at attainment of menopause. In Dharwad rural women, age at attainment was 42.70 years of age, while in urban women 43.25 years of age. From Bagalkote, age of menopause found to be 44.72 years and 44.67 years for rural and urban women respectively.

In Dharwad, 100 per cent of rural women felt menopause as natural phenomenon. Whereas in urban women, 10 per cent of them reported menopause as disease. Whereas in Bagalkote, majority (97.50%) of rural expressed menopause as natural phenomenon and only 2.50 per cent of them perceived it as disease. Among urban 85 per cent of them perceived menopause as natural phenomenon and remaining 15 per cent as disease.

With respect to bleeding during menopause, majority of rural women (62.50 %) reported 3-5 days bleeding during menopause, while 22.50 per cent of them experienced 2-10 days and 15 per cent of the women reported they had 11-15 days of bleeding during menopause in Dharwad. Among urban women, 72.50 per cent of them reported 3-5 days of bleeding, while 17.50 per cent of them experienced 6-10 days and only 10 per cent of the women had 11-15 days of bleeding during menopause.

Whereas in Bagalkote, 60 per cent of rural women experienced 3-5 days of bleeding during menopause followed by 32.50 per cent of women had 6-10 days and 7.50 per cent of them faced 11-15 days of bleeding during menopause. Among urban women, 57.50 per cent of them had 3-5 days of bleeding, followed by 37.50 per cent of the women faced 6-10 days of bleeding and only 5 per cent of them experienced 11-15 days of bleeding.

Table 4.3.1: Responses regarding history of menopause among women of Dharwad and Bagalkote

N=160

Sl No	Particulars *Multiple responses	Dharwad		Bagalkote	
		Rural (n=40)	**Urban (n=40)**	**Rural (n=40)**	**Urban (n=40)**
a	**Age**				
	Age at menarche (years)	12.70	12.85	12.63	12.75
	Age at menopause (years)	42.70	43.25	44.72	44.67
b	**Perception menopause**				
	Natural phenomena	40 (100)	36 (90.00)	39 (97.50)	34 (85.00)
	Disease	-	4 (10.00)	1 (2.50)	6 (15.00)
c	**Duration of bleeding during menopause**				
	3 – 5 days	25 (62.50)	29 (72.50)	24 (60.00)	23 (57.50)
	6 – 10 days	9 (22.50)	7 (17.50)	13 (32.50)	15 (37.50)
	11 – 15 days	6 (15.00)	4 (10.00)	3 (7.50)	2 (5.00)
d	**Age at which menopausal symptoms experienced**				
	35 – 40 years	26 (65.00)	22 (55.00)	18 (45.00)	16 (40.00)
	45 – 50 years	14 (35.00)	12 (30.00)	13 (32.50)	13 (32.50)
	50 – 55 years	-	6 (15.00)	9 (22.50)	11 (27.00)

Figures in the parenthesis indicates percentage

In Dharwad, majority (65%) of rural women suffered from menopausal symptoms between 35-40 years of age, while 35 per cent of the women experienced these symptoms between 45-50 years of age. Whereas in urban women, 55 per cent of them suffered from menopausal symptoms between 35-40 years of age, while 30 per cent and 15 per cent of the women reported these symptoms aged between 45-50 years and 50-55 years of age respectively.

In case of Bagalkote, 45 per cent of women reported menopausal symptoms between 35-40 years, while 32.50 per cent and 22.50 per cent of them suffered from these symptoms between 45-50 years and 50-55 years of age respectively. Among urban women, 40 per cent of women reported symptoms between 35-40 years followed by 32.50 per cent of them experienced symptoms between 45-50 years and 27 per cent of them reported symptoms aged between 50-55 years of age.

4.3.2 Menopausal symptoms of postmenopausal women of Dharwad and Bagalkote

The response related to know the menopausal symptoms among women of Dharwad and Bagalkote district is shown in table 4.3.2. With respect to Dharwad rural women, in somatic problems, most of them (65%) reported joint pain followed by 32.50 per cent of them having sleeping discomfotness followed by 27.50 per cent reported hot flushes among rural women. In psychological subscale, 15 per cent of rural women reported irritability, followed by 12.50 per cent physical and mental exhaustion and 7.5 per cent of respondents reported depressive mood as well as anxiety. In case of urban women, 42.50 per cent of them sleeping problems, followed by 40 per cent of them had hot flushes, 37.50 per cent suffered from joint and muscular discomfort and only 2.5 per cent of the women were having heart discomfort. In psychological symptoms 10 per cent of them expressed irritability, followed by 7.50 per cent of them reported psychological and mental exhaustion. In Urogenital sub scale, 2.5 per cent of the women expressed bladder as well as dryness of vagine.

In case of Bagalkote rural women in somatic subscale, majority (77%) of them reported sleeping problem and 75 per cent of women had muscular discomfort followed by 62.50 per cent of them had hot flushes and sweating. In psychological subscale, 22.50 per cent of them reported physical and mental exhaustion, followed by 7.5 per cent the women suffered from irritability and 5 per cent of women showed depressive mood as well as anxiety. In Urogenital subscale, 2.50 per cent of women had bladder problems. Among urban women, 67.50 per cent of them reported joint pain followed by 50 per cent had sleeping problems and 45 per cent hot flushes and sweating. In psychological problems, 5 per cent of women reported psychological and mental exhaustion and 2.50 per cent of them showed irritability, depressive mood as well as anxiety. In Urogenital subscale, 7.50 per cent of the women reported 7.5 per cent had bladder problems followed by 2.5 per cent of them showed dryness of vagina.

4.3.3A Frequency distribution of menopausal symptoms of postmenopausal women

The menopausal symptoms were assessed on the basis of three subscales such as somatic, psychological and urogenital subscales. Further it divided into 3 categories such as, mild (0-14) indicator of mild menopausal symptoms. Moderate (15-29) was the indicator of moderate affected by menopausal symptoms and severe (30-44) was the indicator of severe menopausal symptoms.

Table 4.3.2: Menopausal symptoms of postmenopausal women of Dharwad and Bagalkote

N=160

Sl No	Menopausal symptoms (*Multiple responses)	Dharwad		Bagalkote	
		Rural (n=40)	Urban (n=40)	Rural (n=40)	Urban (n=40)
I	**Somatic Subscale**				
1	Hot flushes, sweating	11 (27.50)	16 (40.00)	25 (62.50)	18 (45.00)
2	Heart discomfort (unusual awareness of heart beat, heart skipping, heart racing, tightness)	-	1 (2.50)	-	-
3	Sleep problems (difficulty in falling asleep, difficulty in sleeping through, waking up early)	13 (32.50)	17 (42.50)	31 (77.50)	20 (50.00)
4	Joint and muscular discomfort (pain in the joints, rheumatoid complaints)	26 (65.00)	15 (37.50)	30 (75.00)	27 (67.50)
II	**Psychological Subscale**				
5	Irritability (feeling nervous, inner tension, feeling aggressive)	6 (15.00)	4 (10.00)	3 (7.50)	1 (2.50)
6	Depressive mood (feeling down, sad, mood swings)	-	3 (7.50)	2 (5.00)	1 (2.50)
7	Anxiety (inner restless, feeling panicky)	3 (7.50)	-	2 (5.00)	1 (2.50)
8	Physical and mental exhaustion (general decrease in performance and concentration, forgetfulness)	5 (12.50)	3 (7.50)	9 (22.50)	2 (5.00)
III	**Urogenital subscale**				
9	Bladder problems (difficulty in urinating, increased need to urinate, bladder incontinence)	-	1 (2.50)	1 (2.50)	3 (7.50)
10	Dryness of vagina (sensation of dryness or burning in the vagina)	-	1 (2.50)	-	2 (5.00-)
11	Sexual problems (change in sexual desire, in sexual activity and satisfaction)	-	-	-	-

Figures in the parenthesis indicates percentage

The results of menopausal symptoms among middle aged women according to residential area table 4.3.3A. In Dharwad district, 60 per cent of the women experienced moderate menopausal symptoms, 27.50 per cent reported severe and 12.50 per cent of them had mild symptoms of menopause. Among urban women, 50 per cent of the women reported moderate, while 37.50 per cent of them showed mild and 12.50 per cent were indicated severe symptoms of menopause.

Whereas in Bagalkote district, 50 per cent rural women experienced moderate symptoms, while 35 per cent of them reported severe and 15 per cent expressed mild symptoms of menopause. Whereas from urban women, 57.50 per cent, 27.50 per cent and 15 per cent of them were reported moderate, mild and severe menopausal symptoms respectively.

On the whole, 54.38 per cent of the women suffered moderate symptoms, while 23.13 per cent reported mild and 22.5 per cent of the women expressed severe symptoms of menopause. There was significant relationship and association observed between menopausal symptoms and locality of Dharwad. There was highly significant relationship and significant association reported between menopausal symptoms and locality of Bagalkote as shown in Fig 2.

4.3.3B Comparison of mean scores of menopausal symptom among postmenopausal women

The difference in menopausal symptoms between rural and urban women is given in Table 4.3.3B. The mean scores of menopausal symptoms of rural women were higher (16.50±6.17) than mean scores of urban women (13.62±8.35) in Dharwad. The't' value 2.92 was found to be significant hence there was significant difference in menopausal symptoms between rural and urban women of Dharwad.

In case of Bagalkote, there was significant difference in 't' value of 2.76 in menopausal symptoms of rural and urban women. The mean value of menopausal symptoms in rural women is higher (22.47±3.71) than mean value of (20.22±3.57) urban women

4.3.4 Relationship between menopausal symptoms and Socio-Economic Status among rural and urban women of Dharwad and Bagalkote

The relationship between menopausal symptoms of postmenopausal women belonging to different Socio-Economic Status (SES) category is indicated in Table 4.3.4. In case of Dharwad district rural women, 48.48 per cent of them expressed moderate menopausal symptoms, while 34.48 per cent and 17.24 per cent of the women reported mild and moderate menopausal symptoms respectively women belonged to middle SES category. While 45.46 per cent showed moderate, 36.26 per cent of them reported severe menopausal symptoms and only 18.18 per cent of the women exhibited mild menopausal symptoms belonged to poor SES category. There was negatively significant relationship found between SES and menopausal symptoms.

Whereas in Dharwad district urban women, 28.57 per cent of them showed mild, 57.14 per cent reported moderate and 14.29 per cent expressed severe menopausal symptoms belonged to high SES category. In case of middle SES group women, 10 per cent of them mild menopausal symptoms, 76.66 per cent showed moderate symptoms and 13.33 per cent expressed severe menopausal symptoms. In case of poor SES group women, 66.67 per cent of them reported severe menopausal symptoms, while 33.33 per cent of the women expressed moderate menopausal symptoms. There was negatively significant relationship found between SES status of respondents and menopausal symptoms.

Table 4.3.3A: Frequency distribution of menopausal symptoms of postmenopausal women

N = 160

Districts	Locality	Menopause symptoms			n	r- value	χ^2
		Mild	Moderate	Severe			
Dharwad	Ruarl	5 (12.50)	24 (60.00)	11 (27.50)	40 (100)	0.29*	26.07*
	Urban	15 (37.50)	20 (50.00)	5 (12.50)	40 (100)		
Bagalkote	Rural	6 (15.00)	20 (50.00)	14 (35.00)	40 (100)	0.75**	31.02*
	Urban	11 (27.50)	23 (57.50)	6 (15.00)	40 (100)		

Figures in the parenthesis indicates percentage
*significant at 0.05 level **significant at 0.01 level

Table 4.3.3B: Comparison of mean scores of menopausal symptom among postmenopausal women

Area	Locality	N	Mean	SD	t-value
Dharwad (n=80)	Rural	40	16.50	6.17	2.919*
	Urban	40	13.62	8.35	
Bagalkote (n=80)	Rural	40	22.47	3.71	2.76*
	Urban	40	20.22	3.57	

Figures in the parenthesis indicates percentage *significant at 0.05 level

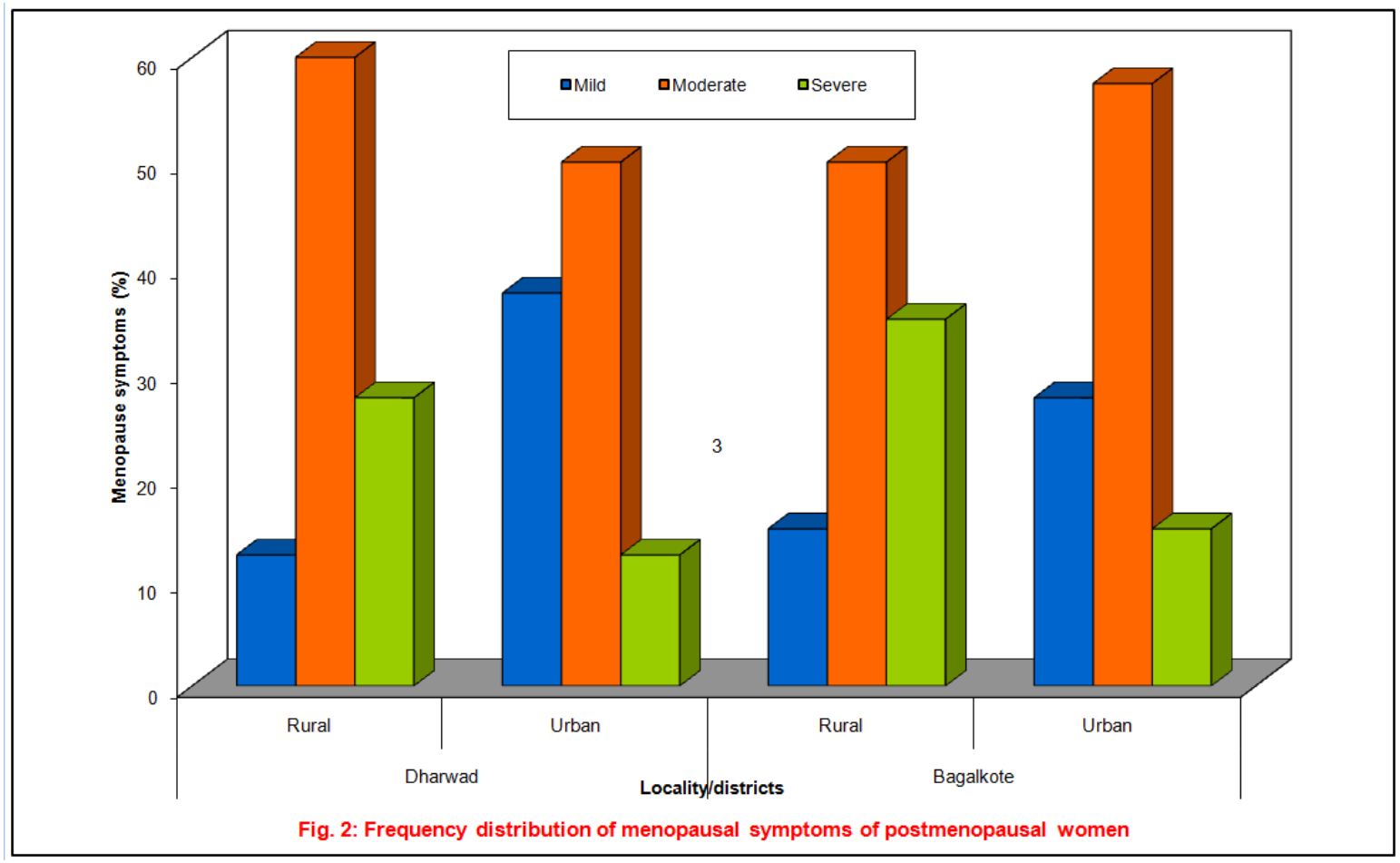

Fig. 2: Frequency distribution of menopausal symptoms of postmenopausal women

Fig. 2: Frequency distribution of menopausal symptoms of postmenopausal women

Table 4.3.4: Correlation coefficient between menopausal symptoms and Socio-Economic Status among rural and urban women of Dharwad and Bagalkote

N=160

Area	Locality	SES	n	Menopausal symptoms			Modified χ^2	r-value
				Mild	Moderate	Severe		
Dharwad (n=80)	**Rural (n=40)**	Middle	29	10 (34.48)	14 (48.28)	5 (17.24)	0.98^{NS}	-0.21*
		Poor	11	2 (18.18)	5 (45.46)	4 (36.36)		
	Urban (n=40)	High	7	2 (28.57)	4 (57.14)	1 (14.29)	2.13^{NS}	-0.34^{*}
		Middle	30	3(10.00)	23 (76.66)	4 (13.33)		
		Poor	3	-	1 (33.33)	2 (66.67)		
Bagalkote (n=80)	**Rural (n=40)**	Middle	21	8 (38.09)	11 (52.39)	2 (9.52)	0.65^{NS}	-0.35^{*}
		Poor	19	3 (15.79)	7 (36.85)	9 (47.36)		
	Urban (n=40)	High	4	2 (50.00)	1 (10.00)	1 (10.00)	1.71^{NS}	-0.27^{*}
		Middle	26	5 (19.23)	15 (57.69)	16 (23.88)		
		Poor	10	1 (10.00)	4 (40.00)	5 (50.00)		

Figures in the parenthesis indicates percentage *significant at 0.05 level NS - non significant

In case of Bagalkote district rural women, 38.09 per cent of women showed mild, while 52.39 per cent reported moderate and 9.52 per cent expressed severe status of menopausal symptoms belonged to middle SES category. Among poor SES category women, 15.79 per cent had mild symptoms, 36.85 per cent and 47.36 per cent of women reported moderate and severe menopausal symptoms respectively. There was negatively significant relationship observed between menopausal symptoms and SES.

Whereas Bagalkote district urban women, 50 per cent of urban women showed mild menopausal symptoms, while 10 per cent reported moderate as well as severe menopausal symptoms belonged to high SES category. In middle SES urban women group, 19.23 per cent, 57.69 per cent and 23.88 per cent of them reported mild, moderate and severe menopausal symptoms respectively. In poor SES category 10 per cent of women reported mild menopausal symptoms, 40 per cent and 50 per cent of women expressed moderate and severe menopausal symptoms respectively. There was negatively significant relationship found between SES categories and menopausal symptoms among urban women. There was non-significant association observed between socio-economic status and menopausal symptoms among rural and urban women of Dharwad and Bagalkote.

4.3.5 Relationship between menopausal symptoms and age among rural and urban women of Dharwad and Bagalkote

The relationship between menopausal symptoms of women and age is shown in Table 4.3.5. In case of Dharwad district, rural women belonged to 40-45 years age group, only 12.5 per cent had mild menopausal symptoms, while 50 per cent and 37.5 per cent showed moderate and severe menopausal symptoms respectively. Whereas 16.67 per cent of them reported mild as well as severe menopausal symptoms and 66.66 per cent of the women showed moderate menopausal symptoms from 46-50 years of age group. In 51-55 years age group, 65 per cent of the women reported mild menopausal symptoms, while 30 per cent the women had moderate and only 5 per cent of them expressed severe menopausal symptoms. There was negatively significant relationship and association found between menopausal symptoms and age.

Whereas in case of urban women, 11.11 per cent expressed mild menopausal symptoms, 55.56 per cent of respondents shown moderate and 33.33 per cent of them showed severe menopausal symptoms from 40-45 years age group. In 46-50 years of age group, 60 per cent of them showed mild, while 30 per cent moderate symptoms and 10 per cent of respondents expressed severe symptoms of menopause. Whereas in 51-55 years of age group, 80.95 per cent of women showed mild and 19.05 per cent of respondents were had moderate menopausal symptoms. There was highly negatively significant relationship found between age and menopausal symptoms.

In case of Bagalkote district rural women, 16.67 per cent of them showed mild menopausal symptoms, 33.33 per cent had moderate and 50 per cent of respondents expressed severe menopausal symptoms belonged to 40-45 years of age group. In 46-50 years of aged women, 35.72 per cent reported mild, 50 per cent and 14.28 per cent showed moderate and severe menopausal symptoms respectively. In 51-55 years of age group, 75 per cent, 20 per cent and 5 per cent of respondents reported mild, moderate and severe menopausal symptoms respectively. There was negatively significant relationship between age and status of menopausal symptoms.

Table 4.3.5: Association between menopausal symptoms and age among rural and urban women of Dharwad and Bagalkote districts

N=160

Area	Locality	Age group (years)	n	Menopausal symptoms			χ^2	r-value
				Mild	Moderate	Severe		
Dharwad (n=80)	Rural (n=40)	40-45	8	1 (12.50)	4 (50.00)	3 (37.50)	12.623*	-0.41*
		46-50	12	2 (16.67)	8 (66.66)	2 (16.67)		
		51-55	20	13 (65.00)	6 (30.00)	1 (5.00)		
	Urban (n=40)	40-45	9	1 (11.11)	5 (55.56)	3 (33.33)	14.92*	-0.596**
		46-50	10	6 (60.00)	3 (30.00)	1 (10.00)		
		51-55	21	17 (80.95)	4 (19.05)	-		
Bagalkote (n=80)	Rural (n=40)	40-45	6	1 (16.67)	2 (33.33)	3 (50.00)	11.13*	-0.487*
		46-50	14	5 (35.72)	7 (50.00)	2 (14.28)		
		51-55	20	15 (75.00)	4 (20.00)	1 (5.00)		
	Urban (n=40)	40-45	5	-	1 (20.00)	4 (80.00)	11.43*	-0.46*
		46-50	17	9 (52.55)	5 (29.41)	3 (17.64)		
		51-55	18	10 (55.56)	5 (27.77)	3 (16.67)		

Figures in the parenthesis indicates percentage *significant at 0.05 level ** significant at 0.01 level

In case of urban women, only 20 per cent of them reported moderate menopausal symptoms, while 80 per cent of the respondents expressed severe menopausal symptoms from 40-45 years age group. In 46-50 years of age group, 52.55 per cent of them showed mild, 29.41 per cent of them reported moderate and 17.64 per cent expressed severe menopausal symptoms. In 51-55 years of age group, 55.56 per cent of the women reported mild menopausal symptoms, while 27.77 per cent moderate and 16.67 per cent severe menopausal symptoms. There was negatively significant relationship observed between age and menopausal symptoms. There was significant association found between menopausal symptoms and age of the postmenopausal women in rural and urban locality of Dharwad and Bagalkote

4.3.6 Relationshipbetween menopausal symptoms and education among rural and urban women of Dharwad and Bagalkote

The relationship between menopausal symptoms and education is presented in Table 4.3.6. In Dharwad, among illiterate rural women, 36 per cent of them reported sever menopausal symptoms, while 56 per cent moderate and only 8 per cent of the women showed mild menopausal symptoms. Women who completed primary school education, 27.27 per cent had mild and 36.36 per cent of them reported moderate as well as severe menopausal symptoms. The women who educated till high school, 50 per cent of them indicated mild as well as moderate menopausal symptoms. Whereas among urban illiterate women, 62.50 per cent of them had severe menopausal symptoms, while 25 per cent and 12.50 per cent of the women showed moderate and mild symptoms respectively. Women who completed primary school, 40 per cent of them reported severe as well as mild menopausal symptoms and only 20 per cent of them showed moderate symptoms. Women who educated till high school, 66.67 per cent and 33.33 per cent of women indicated moderate and severe menopausal symptoms respectively. Among women completed college level of education, 50 per cent of them moderate, 25 per cent of them indicated severe as well as mild menopausal symptoms. Women who educated degree/PG education 56.23 per cent of them moderate menopausal symptoms, while 37.56 per cent mild and only 6.25 per cent of them indicated severe menopausal symptoms.

In case of Bagalkote, among illiterate rural women, 64.57 per cent of them reported moderate, while 29.03 per cent severe and only 6.45 per cent of the women showed mild menopausal symptoms. Women who educated till primary school, 50 per cent of them reported mild menopausal symptoms, while 37.50 per cent severe and only 12.50 per cent showed moderate menopausal symptoms. Whereas from illiterate urban women, 60 per cent of them indicated moderate menopausal symptoms followed by 40 per cent of them exhibited severe menopausal symptoms. While 66.66 per cent, 16.67per cent and only 8.33 per cent of women reported moderate, mild and severe menopausal symptoms respectively from women educated till primary school education. Among women who completed high school education, 50 per cent of them expressed mild as well as moderate menopausal symptoms. Whereas who educated till college education, 66.66 per cent of them reported mild menopausal symptoms followed by 33.33 per cent of the women exhibited moderate menopausal symptoms. Among women who educated till degree/PG, 55.56 per cent reported moderate, while 44.44 per cent of them expressed mild menopausal symptoms. There was positively significant relationship found between menopausal symptoms and education of respondents. There was significant association found between menopausal symptoms and education of the respondents among rural and urban women of Dharwad and Bagalkote.

Table 4.3.6: Correlation coefficient between menopausal symptoms and education among rural and urban women of Dharwad and Bagalkote

N=160

Area	Locality	Education	n	Menopausal symptoms			χ^2	r-value
				Mild	Moderate	Severe		
Dharwad (n=40)	**Rural (n=40)**	Illiterate	25	2(8.00)	14(56.00)	9 (36.00)	12.456*	-0.418*
		Primary	11	3(27.27)	4(36.36)	4(36.26)		
		High school	2	1(50.00)	1(50.00)	-		
		College	2	2 (100)	-	-		
	Urban (n=40)	Illiterate	8	1(12.50)	2(25.00)	5(62.50)	13.972*	-0.383*
		Primary	5	2(40.00)	1(20.00)	2(40.00)		
		High school	3	-	2(66.67)	1(33.33)		
		College	8	2(25.00)	4(50.00)	2(25.00)		
		>Degree/ PG	16	6(37.56)	9(56.23)	1(6.25)		
Bagalkote (n=40)	**Rural (n=40)**	Illiterate	31	2(6.45)	20(64.57)	9(29.03)	17.227*	-0.20*
		Primary	8	4(50.00)	1(12.50)	3(37.50)		
		High school	1	1(100)	-	-		
	Urban (n=40)	Illiterate	10	-	6(60.00)	4(40.00)	13.562*	-0.482*
		Primary	12	2(16.67)	8(66.66)	1(8.33)		
		High school	6	3(50.0)	3(50.00)	-		
		College	3	2(66.67)	1(33.33)	-		
		>Degree/ PG	9	4(44.44)	5(55.56)	-		

Figures in the parenthesis indicates percentage *significant at 0.05 level

4.3.7 Relationship between menopausal symptoms and occupation among rural and urban women of Dharwad and Bagalkote

The relationship between menopausal symptoms and occupation is represented in Table 4.3.7. In Dharwad, 50 per cent of working rural women reported moderate menopausal symptoms, while 37.50 per cent of them experienced mild and only 12.50 per cent of the women reported severe menopausal symptoms. Among non-working women, 50 per cent and 12.50 per cent of them exhibited moderate, severe and mild menopausal symptoms respectively.

Where as in urban, 52 per cent of the working women experienced moderate menopausal symptoms, while 40 per cent of them reported mild and only 8 per cent of them reported severe menopausal symptoms. Among non-working women, 46.67 per cent, 40 per cent and 13.33 per cent of them exhibited severe, moderate and mild menopausal symptoms respectively.

In Bagalkote, 70.96 per cent of working rural women reported moderate menopausal symptoms, while 19.35 per cent and 9.67 per cent of them expressed mild and severe menopausal symptoms respectively. Whereas among non-working women, 55.56 per cent of the women reported severe menopausal symptoms followed by 33.33 per cent and 11.11 per cent of them expressed moderate and mild menopausal symptoms respectively.

Whereas among urban women, 43.75 per cent of them reported mild as well as moderate menopausal symptoms and 12.50 per cent of them expressed severe menopausal symptoms who involved in professional activities. Among non-working women, 54.16 per cent of them had moderate and 29.16 per cent and 16.66 per cent of them reported severe menopausal symptoms. There was negatively significant relationship was reported between occupation and menopausal symptoms among rural and urban women of Dharwad and Bagalkote. There was significant association observed between occupation and menopausal symptoms among rural and urban women of Dharwad and Bagalkote districts.

4.3.8 Association between weight status and menopausal symptoms

The association of weight status of postmenopausal women with menopausal symptoms is presented in Table 4.3.8. Among rural women, majority of them (57.14%) had ideal body weight, 14.28 per cent of them had overweight and 28.57 per cent of the women belonged to obese category experienced mild menopausal symptoms. It was observed that 54.16 per cent of them had overweight, 33.33 per cent of women had ideal body weight and 12.50 per cent of them belonged to obese category expressed moderate level of menopausal symptoms. Women who reported severe menopausal symptoms among them, 44.44 per cent of them and 22.22 per cent of them belonged to obese and ideal body weight. There was significant association observed between menopausal symptoms and weight status of postmenopausal women.

Whereas in urban women, who experienced mild menopausal symptoms, 45.45 per cent of them belonged to overweight as well as ideal body weight category and 9.09 per cent of them belonged to obese category. Among women who reported moderate menopausal symptoms, 61.11 per cent belonged to overweight, 22.22 per cent possessed ideal body weight and 16.63 per cent of them belonged to obese category. Among women with severe menopausal symptoms, 54.54 per cent belonged to overweight, 27.27 per cent and 18.18 per cent of them belonged to ideal body weight and obsess category.

Table 4.3.7: Correlation coefficient between menopausal symptoms and occupation among rural and urban women of Dharwad and Bagalkote

N=160

Area	Locality	Occupation	n	Menopausal symptoms			Modified χ^2	r-value
				Mild	Moderate	Severe		
Dharwad (n=80)	**Rural (n=40)**	Working	8	3 (37.50)	4 (50.00)	1 (12.50)	8.040*	0.387*
		Non-working	32	4 (12.50)	16 (50.00)	12 (37.50)		
	Urban (n=40)	Working	25	10 (40.00)	13 (52.00)	2 (8.00)	10.528*	0.467*
		Non-working	15	2 (13.33)	6 (40.00)	7 (46.67)		
Bagalkote (n=80)	**Rural (n=40)**	Working	31	6 (19.35)	22 (70.96)	3 (9.67)	7.127*	0.323*
		Non-working	9	5 (55.55)	3 (33.33)	1 (11.11)		
	Urban (n=40)	Working	16	7 (43.75)	7 (43.75)	2 (12.50)	4.810*	0.338*
		Non-working	24	7 (29.16)	13 (54.16)	4 (16.67)		

Figures in the parenthesis indicates percentage *significant at 0.05 level

Table 4.3.8: Association between weight status and menopausal symptoms

N=160

Area	Locality	Menopausal symptoms	N	Ideal weight (18.5-22.9)	Overweight (BMI>23)	Obese (>25 BMI)	Modified χ^2
Dharwad (n=80)	**Rural (n=40)**	Mild	7	4(57.15)	1(14.28)	2(28.57)	5.73*
		Moderate	24	8(33.36)	13 (54.16)	3(12.50)	
		Severe	9	2(22.22)	4(44.45)	3(33.33)	
	Urban (n=40)	Mild	11	5(45.45)	5(45.45)	1(9.0)	0.96 NS
		Moderate	19	5(26.32)	11(57.89)	3 (15.79)	
		Severe	10	3(27.73)	5(54.54)	2(18.18)	
Bagalkote (n=80)	**Rural (n=40)**	Mild	7	4(57.14)	2(28.57)	1(14.28)	7.94*
		Moderate	15	1(6.67)	6(40.00)	8(53.33)	
		Severe	18	11 (61.12)	7 (38.88)		
	Urban (n=40)	Mild	12	7(58.33)	3(25.00)	2 (16.67)	0.69 NS
		Moderate	18	6(33.33)	8(44.45)	4(22.22)	
		Severe	10	1(10.00)	4(40.00)	5(50.00)	

Figures in the parenthesis indicates percentage *significant at 0.05 level NS - not significant

In case of Bagalkote, 57.14 per cent of rural women had ideal body weight, while 28.57 per cent and 14.28 per cent of them belonged to overweight and obese category respectively who reported moderate menopausal symptoms. Among women who reported moderate menopausal symptoms, 61.11 per cent of the women belonged to ideal body weight and 44.44 per cent of them belonged to overweight. 53.33 per cent, 40 per cent and 6.67 per cent of the women belonged to obese, overweight and ideal body weight category respectively who experienced severe menopausal symptoms.

Whereas among urban, 41.66 per cent of the women belonged to ideal body weight, 33.33 per cent and 16.67 per cent of them belonged to overweight and obese category respectively who reported mild menopausal symptoms. Among women who experienced moderate menopausal symptoms, 44.44 per cent, 33.33 per cent and 22.22 per cent of the women belonged to overweight, ideal body weight and obese category respectively. Among women who reported severe menopausal symptoms, 50 per cent of them belonged to obese category, followed by 40 per cent overweight and 10 per cent of them in ideal body weight category.

There was significant association found between menopausal symptoms and weight status of rural women of Dharwad and Bagalkote districts and there was non-significant association observed between menopausal symptoms and weight status among urban women of Dharwad and Bagalkote.

4.4 Knowledge on care and management of postmenopausal women

4.4.1 Knowledge regarding care and management of menopause among women of Dharwad and Bagalkote

Response regarding care and management of menopause among Dharwad and Bagalkote postmenopausal women are given in Table 4.4.1. In Dharwad, rural women's major source of information was found to be the friends (65%), followed by mother (17.50 %) and reported doctors (10 per cent) and relatives (7.5 per cent) were the source of information. Whereas in urban women, 57.50 per cent reported friends were major source of information followed by 25.50 per cent as mothers, 15 per cent doctors and only 2.5 per cent of the women reported relatives as primary source of information.

Whereas in Bagalkote rural women, half per cent of them indicated friends are primary source of information followed by 30 per cent as relatives and 15 per cent as doctors and 5 per cent of the women reported mothers as source of information. From urban women, 35 per cent showed friends as primary source of information followed by 25 per cent as mother as well as doctors were primary source of information followed by 15 per cent of them reported relatives as source of information.

According to physical exercise to overcome menopausal symptoms. In Dharwad rural women, majority (95%) of them not involved in physical exercise and only 5 per cent of women involving in physical exercise 5 per cent involved in exercise every day. Among urban women, 52.50 per cent of them showed practicing in physical activities daily and 47.50 per cent not involved in physical activities.

Whereas in Bagalkote, 100 per cent of rural women were not involved in physical exercise. In case of urban women, 67.50 per cent of them not involved in physical exercise, while 32.50 per cent of the women involved in physical exercise every day and only 10 per cent of them preferred preformed occasionally exercise. Whereas in Bagalkote, 35.50 per cent of urban women involved in walking as physical activity.

Table 4.4.1: Knowledge regarding care and management of menopause among women of Dharwad and Bagalkote district

N=160

Sl No	Particulars (* multiple responses)	Dharwad		Bagalkote	
		Rural (n=40)	Urban (n=40)	Rural (n=40)	Urban (n=40)
A	**Source of information**				
	Mother	7 (17.50)	10 (25.50)	2 (5.00)	10 (25.00)
	Friends	26 (65.00)	23 (57.50)	20 (50.00)	14 (35.00)
	Relatives	3 (7.50)	1 (2.50)	12 (30.00)	6 (15.00)
	Doctors	4 (10.00)	6 (15.00)	6 (15.00)	10 (25.00)
B	**Involvement of physical exercise**				
	Yes	2 (5.00)	21 (52.50)	-	13 (32.50)
	No	38 (95.00)	19 (47.50)	40 (100)	27 (67.50)
	Every day	2 (5.00)	21 (52.50)	-	9 (22.50)
C	**Frequency of physical exercise**				
	Weekly some days	-	-	-	4 (10.00)
	Occasionally	-	-	-	-
D	**Type of exercise**				
	Running/Jogging	-	-	-	-
	Walking	2 (5.00)	18 (45.00)	-	13 (32.50)
	Aerobics	-	-	-	-
	Meditation	-	3 (7.50)	-	-
E	**Consultation with experts**				
	Family doctors	9 (22.50)	10 (25.00)	5 (12.50)	11 (27.50)
	Gynecologist	4 (10.00)	12 (30.00)	3 (7.50)	4 (10.00)
	PHC doctors	6 (15.00)	3 (7.50)	8 (20.00)	7 (17.50)
	Not consulted	21 (52.50)	15 (37.50)	25 (62.50)	18 (45.00)

Figures in the parenthesis indicates percentage

With regard to consulting specialist or family doctor, in Dharwad, majority (52.50 %) of the women not consulted doctors followed by 22.50 per cent of them consulted doctors and 15 per cent consulted local doctors, while only 10 per cent of the women consulted specialist. From urban women, 45 per cent of them not consulted doctors for any problems faced during menopause, while 27.50 per cent of them consulted family doctors and 17.5 per cent consulted local doctors and only 10 per cent of the women consulted specialists.

4.4.2A Frequency distribution of knowledge regarding care and management during postmenopausal period

The knowledge on menopausal care and management of menopause was assessed by three categories like as, high (25-36) indicator of high menopausal knowledge, medium (13-24) indicator of medium menopausal knowledge and low (1-12) indicator of low knowledge on care and management of menopause among women. The knowledge of menopause among postmenopausal women indicated in Table 4.4.2A. In Dharwad, 50 per cent the rural women had medium knowledge on menopausal care and management followed by 14 per cent had low knowledge and 15 per cent of the women had high knowledge on care and management of menopause. Among 62.50 per cent of women were having medium knowledge, while 27 per cent of them expressed high knowledge and 10 per cent women reported low knowledge regarding care and management of menopause.

In case of Bagalkote, 47.50 per cent of rural women had low knowledge, while 42.50 per cent of them reported medium knowledge and only 7.50 per cent of the women reported high knowledge regarding care and management on menopause. From urban women, 65 per cent had medium knowledge followed by 17.50 per cent of them had low as well as high knowledge on care and management of menopause. There was highly significant relationship and association found between knowledge regarding care and management of menopause and locality in Dharwad and Bagalkote as depicted in Fig. 3.

4.4.2B Comparison of mean scores of menopausal knowledge among postmenopausal women

The difference in knowledge on care and management of menopause between rural and urban women is given in Table 4.4.2B. The mean scores of menopausal knowledge of urban women were higher (43.95±4.62) than mean scores of rural women (39.10±2.67). The ‘t’ value 2.75 was found to be significant hence there was significant difference in menopausal knowledge between rural and urban women of Dharwad.

In case of Bagalkote. There was significant difference in‘t’ value of 2.90 in menopausal knowledge of rural and urban women. The mean value of menopausal knowledge in urban women is higher (35.27±3.09) than mean value of (33.30±3.61) rural women.

Table 4.4.2A: Frequency distribution of knowledge regarding care and management during postmenopausal period

N = 160

Menopausal knowledge level	Dharwad		Total (n=80)	Bagalkote		Total (n=80)
	Rural (n=40)	Urban (n=40)		Rural (n=40)	Urban (n=40)	
High	6(15.00)	11(27.50)	17(21.25)	3(7.50)	7(17.50)	10(12.50)
Medium	20(50.00)	25(62.50)	45(56.25)	18(42.50)	26(65.00)	63(78.75)
Low	14(35.00)	4(10.00)	18(22.50)	19(47.50)	7(17.50)	26(32.50)
r-value	0.73**			0.69**		
X^2	29.04**			25.37**		

Figures in the parenthesis indicates percentage ** significant at 0.01 level

Table 4.4.2B: Comparison of mean scores of menopausal knowledge among postmenopausal women

Area	Locality	N	Mean	SD	t-value
Dharwad (n=80)	Rural	40	39.10	2.67	2.75*
	Urban	40	43.95	4.62	
Bagalkote (n=80)	Rural	40	33.30	3.61	2.904*
	Urban	40	35.27	3.09	

Figures in the parenthesis indicates percentage *significant at 0.05 level

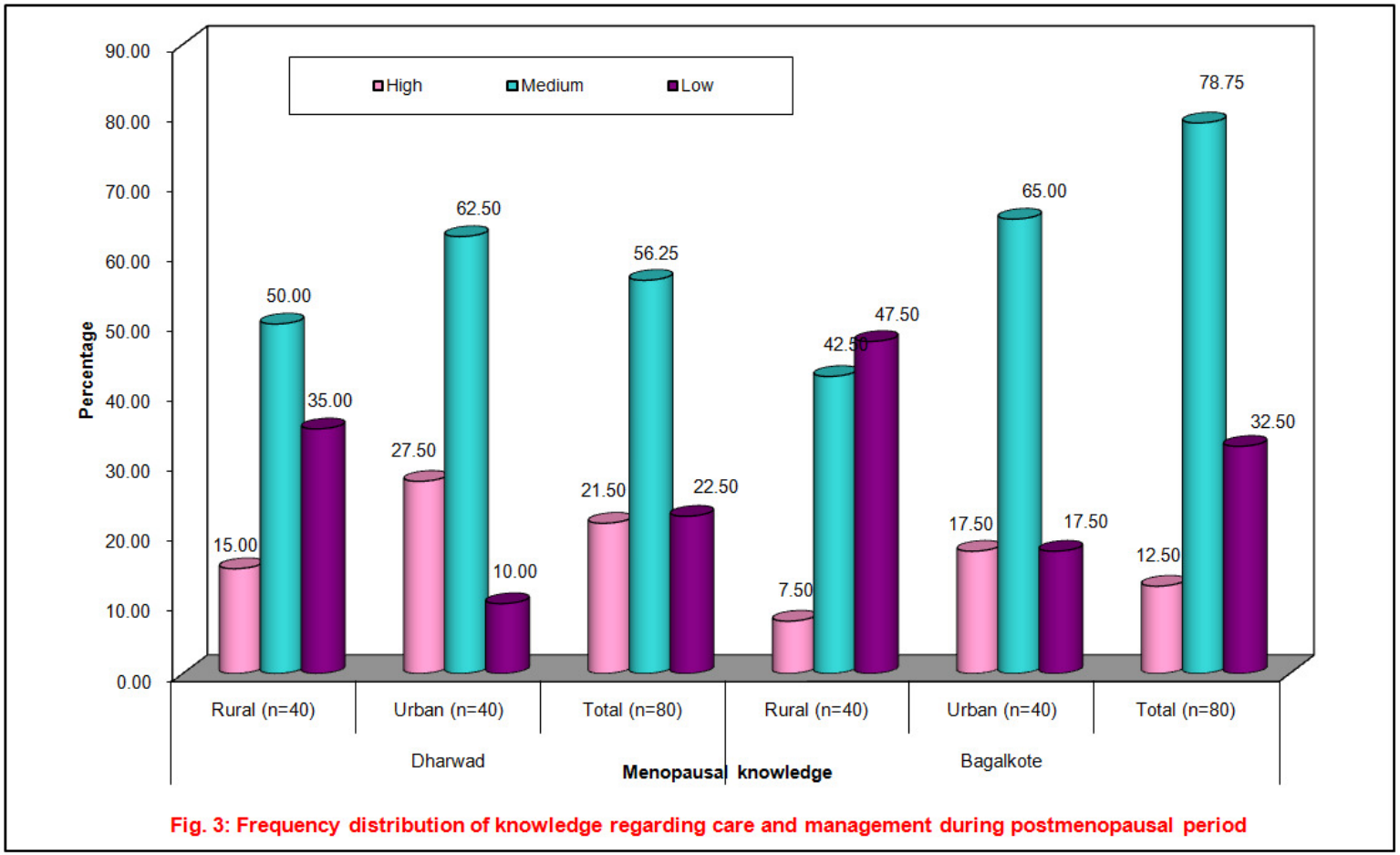

Fig. 3: Frequency distribution of knowledge regarding care and management during postmenopausal period

Fig. 3: Frequency distribution of knowledge regarding care and management during postmenopausal period

4.4.3 Relationship between knowledge on care and management of menopause and SES among rural and urban women of Dharwad and Bagalkote

Relationship between knowledge on care and management of menopause and SES is presented in Table 4.4.3. In Dharwad, among middle SES class, 58.62 per cent of rural women reported having medium knowledge, while 27.58 per cent showed low and 13.79 per cent of them had high knowledge on menopausal care and management. While 54.54 per cent, 27.27 per cent and 18.18 per cent of the women indicated low, medium and high knowledge on care and management belonged to poor SES category respectively. Whereas in urban women, 85.52 per cent of them had high knowledge followed by only 14.28 per cent reported medium knowledge on menopause belonged to high SES category respectively. Among middle SES class, 76.66 per cent of the women showed medium knowledge, while 16.67 per cent high and 6.67 per cent of them had low knowledge. 66.67 per cent and 33.33 per cent of the women expressed low and medium knowledge respectively belonged to poor class SES.

In case of Bagalkote, 61.90 per cent of rural respondents reported medium knowledge followed by 28.57 per cent had low and only 9.52 per cent showed high knowledge on menopause belonged to middle SES category. In poor SES category, 68.42 per cent, 26.31 per cent and 5.26 per cent of women reported low, medium and high knowledge respectively. Whereas from urban women, 50 per cent of them had high knowledge followed by 25 per cent of the women showed medium as well as medium knowledge belonged to high SES class. While 84.62 per cent of the women expressed medium knowledge followed by 7.69 per cent of them reported high as well as low knowledge on menopause belonged to middle SES category. Among poor SES category, 50 per cent, 30 per cent and 20 per cent of the women showed low, medium and high knowledge on care and management of menopause respectively.

There was significant relationship found between knowledge on care and management of menopause and SES among rural and urban area of Bagalkote and Dharwad district. There was highly significant association observed between knowledge and SES of urban women of Dharwad and Bagalkote. There was significant association was observed between SES and knowledge on care and management of menopause among rural women of Dharwad and Bagalkote.

4.4.4 Relationship between knowledge on care and management of menopause and age among rural and urban women of Dharwad and Bagalkote

Relationship between knowledge on care and management of menopause and age indicated in Table 4.4.4. In Dharwad, among 40-45 years age group, 50 per cent of rural women had medium knowledge, while 50 per cent of them showed medium knowledge and only 12.50 per cent of the women expressed low knowledge on care and management. 8.33 per cent of the women showed low knowledge, while 50 per cent of them had medium knowledge and 41.67 per cent of the women having high knowledge belonged to 46-50 years age group. From 51-55 years age group women, 15 per cent, 35 per cent and 50 per cent of them indicated low, medium and high knowledge respectively. There was highly significant relationship observed between knowledge on care and management of menopause and age of the respondents.

Table 4.4.3: Relationship and association between knowledge on care and management of menopause and SES among rural and urban women of Dharwad and Bagalkote

N=160

Area	Locality	SES	N	Menopausal knowledge levels			Modified χ^2	r-value
				High	Medium	Low		
Dharwad (n=80)	**Rural (n=40)**	Middle	29	4(13.79)	17(58.62)	8(27.58)	10.39*	0.31*
		Poor	11	2(18.18)	3 (27.27)	6(54.54)		
	Urban (n=40)	High	7	-	1(14.28)	6(85.52)	25.374**	0.635**
		Middle	30	2(6.67)	23(76.66)	5(16.67)		
		Poor	3	-	1(33.33)	2(66.67)		
Bagalkote (n=80)	**Rural (n=40)**	Middle	21	2(9.52)	13(61.90)	6(28.57)	6.384*	0.353*
		Poor	19	1(5.26)	5(26.31)	13(68.42)		
	Urban (n=40)	High	4	2(50.00)	1(25.00)	1(25.00)	21.595**	0.443*
		Middle	26	2(7.69)	22(84.62)	2(7.69)		
		Poor	10	5(50.00)	3(30.00)	2(20.00)		

Figures in the parenthesis indicates percentage *significant at 0.05 level ** significant at 0.01 level

Table 4.4.4: Correlation coefficient between knowledge on care and management of menopause and age among rural and urban women of Dharwad and Bagalkote

N=160

Area	Locality	Age (years)	N	Menopausal knowledge levels			Modified χ^2	r-value
				Low	Medium	High		
Dharwad (n=80)	**Rural (n=40)**	40-45	8	1 (12.50)	4 (50.00)	3 (37.50)	0.937^{NS}	0.820^{**}
		46-50	12	1 (8.33)	6 (50.00)	5 (41.67)		
		51-55	20	3 (15.00)	7 (35.00)	10 (50.00)		
	Urban (n=40)	40-45	9	3 (33.33)	5 (55.56)	1 (11.11)	8.256^{*}	0.251^{*}
		46-50	10	2 (20.00)	5 (50.00)	3 (30.00)		
		51-55	21	6 (28.57)	5 (23.80)	10 (47.63)		
Bagalkote (n=80)	**Rural (n=40)**	40-45	6	1 (16.67)	4 (66.66)	1 (16.67)	5.326^{*}	0.337^{*}
		46-50	14	3 (24.44)	9 (64.28)	2(14.28)		
		51-55	20	2 (10.00)	8 (40.00)	10 (50.00)		
	Urban (n=40)	40-45	5	2 (40.00)	3 (60.00)	-	2.336^{NS}	0.14^{*}
		46-50	17	4(23.52)	5 (29.41)	8 (47.05)		
		51-55	18	4 (22.22)	7 (38.88)	7 (38.88)		

Figures in the parenthesis indicates percentage *significant at 0.05 level ** significant at 0.01
NS - not significant

Whereas, in urban women aged between 40-46 years, 33.33 per cent of them expressed low knowledge followed by 55.56 per cent medium and only 11.11 per cent of the women indicated high knowledge. Among 46-50 years age group women, 50 per cent exhibited medium knowledge, while 20 per cent low and 30 per cent of the women expressed high knowledge. 23.80 per cent of the women had medium knowledge followed by 47.63 per cent of them indicated high and 28.57 per cent of them expressed low knowledge belonged to 51-55 years of age group. There was significant relationship observed between age and menopausal knowledge among urban women of Dharwad district.

In Bagalkote, among 40-45 years age group rural women, 66.67 per cent of them exhibited medium knowledge, while 16.67 per cent of the women reported high as well as low knowledge. 64.28 per cent of the women had medium knowledge regarding menopause followed by 24.44 per cent low and 14.28 per cent of them expressed high knowledge belonged to 46-50 years age group. Among 51-55 years age group women, 10 per cent, 40 per cent and 50 per cent of them reported low, moderate and high knowledge respectively. There was significant relationship and observed between age and menopausal knowledge among rural women of Bagalkote district.

Whereas in urban women, 60 per cent of them exhibited low knowledge followed by 40 per cent of the women showed medium knowledge regarding menopause belonged to 45-50 years of age group. Women aged between 46-50 years of age, 23.52 per cent, 29.43 per cent and 47.05 per cent of them indicated low, medium and high knowledge respectively. 38.88 per cent of the women showed high as well as knowledge followed by 22.22 per cent of them had low knowledge on care and management of menopause belonged to 51-55 years age group. There was significant relationship found between age and menopausal knowledge among urban women of Bagalkote district. There was significant association was found between knowledge on care and management of menopause among urban women of Dharwad and rural women of Bagalkote. There was non-significant association observed between rural women of Dharwad and urban women of Bagalkote.

4.4.5 Relationship between knowledge on care and management of menopause and education among rural and urban women of Dharwad and Bagalkote

Relationship between knowledge on care and management of menopause and respondents education of Dharwad and Bagalkote women is indicated in Table 4.4.5. In Dharwad, among rural illiterate women, 44 per cent of them reported low knowledge followed by 36 per cent of the women had medium knowledge and 20 per cent had high knowledge on care and management of menopause. 45.45 per cent, 36.36 per cent and 18.19 per cent of the women exhibited, medium, high and low knowledge respectively who completed primary school education. In high school educated rural women, 50 per cent of them exhibited medium as well as high knowledge of menopause. 50 per cent of women had high as well as low knowledge who attended college level of education. Whereas in urban illiterate women, 62.50 per cent, 25 per cent, and 12.50 per cent of them were having low, medium and high knowledge on care and management regarding menopause respectively. 40 per cent of the women had high as well as low knowledge, while 20 per cent of the women reported medium knowledge who possessed primary school education.

Table 4.4.5: Correlation coefficient between knowledge on care and management of menopause and education among rural and urban women of Dharwad and Bagalkote

N=160

Area	Locality	Education	n	Menopausal knowledge levels			Modified χ^2	r-value
				Low	Medium	High		
Dharwad (n=80)	**Rural (n=40)**	Illiterate	25	11 (44.00)	9 (36.00)	5 (20.00)	0.558 NS	0.173*
		Primary	11	2 (18.19)	5 (45.45)	4 (36.36)		
		High school	2	-	1 (50.00)	1 (50.00)		
		College	2	1 (50.00)	-	1 (50.00)		
	Urban (n=40)	Illiterate	8	5 (62.50)	2 (25.00)	1 (12.50)	0.409 NS	0.21*
		Primary	5	2 (40.00)	1 (20.00)	2 (40.00)		
		High school	3	-	2 (66.67)	1 (33.33)		
		College	8	1 (12.50)	3 (37.50)	4 (50.00)		
		>Degree/ PG	16	4 (25.00)	7 (43.75)	5 (31.25)		
Bagalkote (n=80)	**Rural (n=40)**	Illiterate	31	15 (48.39)	11 (35.48)	5 (16.13)	0.23 NS	0.28*
		Primary	8	3 (37.50)	4 (50.00)	2 (12.50)		
	Urban (n=40)	Illiterate	10	3 (30.00)	6 (60.00)	1 (10.00)	0.30 NS	0.37*
		Primary	12	5 (41.67)	4 (33.33)	3 (25.00)		
		High school	6	1 (16.67)	3 (50.00)	2 (33.33)		
		College	3		1 (33.33)	2 (66.67)		
		>degree/PG	9	2 (22.22)	3 (33.33)	4 (44.45)		

Figures in the parenthesis indicates percentage *significant at 0.05 level NS - non significant

Women completed high school education showed, 66.67 per cent medium and 33.33 per cent of them reported high knowledge. 50 per cent, 37.50 per cent and 12.50 per cent of the women indicated high, medium and low knowledge who possessed college level of education. The women who possessed degree/PG education, 43.75 per cent of women reported medium knowledge, while 31.25 per cent of women showed high knowledge and 25 per cent of women indicated low knowledge on care and management regarding menopause.

In case of Bagalkote, among illiterate rural women, 48.39 per cent of them showed low knowledge, while 35.48 per cent of the women had medium knowledge and 16.13 per cent of them exhibited high knowledge on menopause. The respondents who completed primary school, 50 per cent of them fell medium knowledge, 37.50 per cent reported low knowledge and only 12.50 per cent showed high knowledge on menopausal care and management. Whereas from urban illiterate women, 10 per cent of them had high knowledge, 60 per cent of the women exhibited medium and 30 per cent of them had low knowledge. 41.67 per cent of the women showed low, 33.33 per cent had medium and 25 per cent of the women reported high knowledge who educated till primary education. The women who completed till high school, 50 per cent having medium knowledge and 33.33 per cent of them reported high knowledge and 16.67 per cent of them expressed low knowledge of menopause. The women who educated till college, 66.67 per cent of them had high knowledge, while 33.33 per cent of the women showed medium knowledge. The women who possessed degree/PG education, 44.45 per cent of them indicated high knowledge followed by 33.33 per cent of them showed medium and 22.22 per cent had low knowledge on care and management menopause. There was significant relationship found between menopausal knowledge and education of the respondents among rural and urban women of Dharwad and Bagalkote. There was non-significant association found between knowledge on care and management of menopause and education of the rural and urban women of Dharwad and Bagalkote.

4.4.6 Relationship between knowledge on care and management of menopause and occupation among rural and urban women of Dharwad and Bagalkote

Relationship between knowledge on care and management of menopause and occupation among postmenopausal women is presented in Table 4.4.6. In Dharwad, 37.50 per cent of working rural women had high as well as medium knowledge, while 25 per cent of them exhibited low knowledge on care and management of menopause. Among non-working women, 46.87 per cent of the women had medium knowledge followed by 40.62 per cent of them expressed low knowledge and only 12.50 per cent of the women showed high knowledge. Whereas in Dharwad, 48 per cent of working women had medium knowledge, while 40 per cent of them expressed high knowledge and only 12 per cent of the women indicated low knowledge. Among non-working women, 60 per cent, 33.33 per cent 6.66 per cent of women showed low, medium and high knowledge on care and management of menopause.

Table 4.4.6: Correlation coefficient between knowledge on care and management of menopause and occupation among rural and urban women of Dharwad and Bagalkote

N=160

Area	Locality	Occupation	n	Menopausal knowledge levels			Modified χ^2	r-value
				Low	Medium	High		
Dharwad (n=80)	**Rural (n=40)**	Working	8	2 (25.00)	3 (37.50)	3 (37.50)	13.965*	0.21*
		Non-working	32	13 (40.62)	15 (46.87)	4 (12.50)		
	Urban (n=40)	Working	25	3 (12.00)	12 (48.00)	10 (40.00)	14.054*	0.54**
		Non-working	15	9 (60.00)	5 (33.33)	1 (6.66)		
Bagalkote (n=80)	**Rural (n=40)**	Working	31	5 (16.13)	13 (41.93)	13 (41.93)	5.309*	0.326*
		Non-working	9	4 (44.44)	3 (33.33)	2 (22.22)		
	Urban (n=40)	Working	16	2 (12.50)	8 (50.00)	6 (37.50)	6.434*	0.33*
		Non-working	24	8 (33.33)	11(45.84)	5 (20.83)		

Figures in the parenthesis indicates percentage *significant at 0.05 level ** significant at 0.01 level

In Bagalkote, 41.93 per cent of working rural women reported medium as well as high knowledge, while 16.31 per cent of them expressed low knowledge. Among non-working women, 44.44 per cent of them expressed low knowledge followed by 33.33 per cent of the women had medium knowledge and only 22.22 per cent of them showed high knowledge. Whereas in urban, 50 per cent of working women reported medium knowledge followed by 37.50 per cent of them had high knowledge and only 12.50 per cent of them indicated low knowledge. Among non-working women, 45.84 per cent of them expressed medium knowledge, while 33.33 per cent of the women had low knowledge and 20.83 per cent of them showed high knowledge. There was significant relationship observed between knowledge and occupation among rural women of Dharwad and rural and urban women of Bagalkote. There was highly significant relationship found in urban women of Dharwad in knowledge regarding care and management of menopause. There was significant association found between knowledge on care and management of menopause and occupation in rural and urban women of Dharwad and Bagalkote.

4.5 Health status among postmenopausal

4.5.1 Effects of menopause among women of Dharwad and Bagalkote

The response related to know the effect of menopause is presented in Table 4.5.1. With respect to health problems during menopause multiple responses were given by postmenopausal women. 47.50 per cent of rural women suffered from abdominal pain followed by 20 per cent constipation, while 15 per cent of them reported heavy weight and only 2.5 per cent women felt weakness during and after attainment of menopause. While in case of urban women, 32 per cent of them suffered from abdominal pain followed by 12.50 per cent of them had heavy weight, while 10 per cent constipation and only 2.50 per cent suffer from piles as well as white discharge.

Whereas from Bagalkote, 52.50 per cent of women suffered from abdominal pain followed by 32.50 per cent of them had constipation and 22.50 per cent had weakness, while 10 per cent of them indicated heavy weight and 7.50 per cent pointed out that they suffered from white discharge. While from urban women, 37.50 per cent of them had abdominal pain followed by 32.50 per cent heavy weight, while 12.50 per cent, 7.50 per cent of women suffered from constipation and piles respectively and only 2.50 per cent of women were pointed out having weakness as well as white discharge.

In Dharwad rural women, 52.50 per cent of them reported that they had no medical problems followed by 22.50 per cent showed having both BP and diabetics, while 17.50 per cent of them had high blood pressure. From urban women 47.50 per cent of them had no problems, while 25 per cent of women indicated having high blood pressure as well as both BP and diabetics and only 2.50 per cent had low blood pressure.

In Dharwad only 2.50 per cent of rural women had taken HRT and 97.50 per cent not had any treatment. Among urban women, 12.50 per cent of the women undergone HRT treatment. In case of Bagalkote, none of rural women had any treatment during menopause. In urban only2.5 per cent of the women taking HRT treatment, while majority (97.50 %) of them not taken any treatment.

When asked about feeling irritable or unhappy during menopause. In Dharwad, rural women 17.50 per cent of them felt irritable during menopause. In urban, 27.50 per cent of the women reported irritable mood, while 72.50 per cent of them reported no change in mood.

Table 4.5.1: Effects of menopause on health status of women and treatment

N=160

Sl No	Particulars of effects of menopause (*Multiple responses)	Dharwad		Bagalkote	
		Rural (n=40)	Urban (n=40)	Rural (n=40)	Urban (n=40)
A	**Health problems experienced**				
	Weakness	2 (5.00)	5 (12.50)	9 (22.50)	2 (5.00)
	Heaviness feeling	6 (15.00)	11(27.50)	4 (10.00)	13 (32.50)
	Constipation	8 (20.00)	4 (10.00)	13 (32.50)	5 (12.50)
	Piles	-	1 (2.50)	-	3 (7.50)
	White discharge	-	1 (2.50)	3 (7.50)	1 (2.50)
	Abdominal pain	19(47.50)	13 (32.50)	21(52.50)	15 (37.50)
B	**Metabolic Report**				
	High Blood Pressure (BP)	7 (17.50)	10 (25.00)	8 (20.00)	12 (30.00)
	Low Blood Pressure (BP)	3 (7.50)	1 (2.50)	9 (22.50)	4 (10.00)
	BP + Diabetics	9 (22.50)	10 (25.00)	7 (17.50)	9 (22.50)
	No BP and Diabetics	13 (32.50)	19 (47.50)	11 (40.00)	15 (37.50)
	Not diagnosed	8 (20.00)	-	5 (12.50)	2 (5.00)
C	**Treatment taken for menopausal problems**				
	Yes (HRT)	1 (2.50)	5 (12.50)	-	1 (2.50)
	No	39(97.50)	35 (87.50)	40 (100)	39 (95.50)
D	**Feeling irritable/ unhappy during menopause**				
	Yes	7 (17.50)	11 (27.50)	5 (12.50)	8 (20.00)
	No	33 (82.50)	29 (72.50)	35 (87.50)	32 (80.00)

Figures in the parenthesis indicates percentage

Whereas in Bagalkote, 12.50 per cent of them pointed out irritable mood during menopause. In urban women 80 per cent of them indicated no change in mood, while 20 per cent of them expressed irritable mood during menopause.

4.5.2A Frequency distribution of health status of postmenopausal women

Health status of middle aged women was categorized into three groups, mildly affected (0-17) indicator of mildly affected health status, moderately (18-34) indicator of moderately affected and severely (35-50) indicator of severely affected health status.

Health status of postmenopausal women of two districts is shown in Table 4.5.2A. In Dharwad, 60 per cent of rural women had moderately affected health status, while 25 per cent severely and 15 per cent of the women were having mildly affected health status. Among urban women, 47.50 per cent of them indicated moderately affected health status, while 37.50 per cent and 15 per cent of them shown mildly and severely affected health status respectively. Totally 53.75 per cent respondents shown moderately affected followed by 26.25 per cent mildly affected and 20 per cent of women indicated severely affected health status. There was significant difference and significant association found between rural and urban women in health status.

In case of Bagalkote district, 47.50 per cent rural women had moderately affected health status, while 40 per cent and 12.50 per cent indicated severely and mildly affected health status respectively. Whereas from urban area, 42.50 per cent of the women moderately affected, while 32.50 per cent of them showed severely affected and 22.50 per cent of the women mildly affected health status. Totally 45 per cent of women exhibited moderately affected and 32.50 per cent of women had severely affected and 22.50 per cent reported mildly affected health status. There was significant difference and association found between rural and urban women's health status of Bagalkote area as depicted in Fig 4.

4.5.2B Comparison of mean scores of health status among postmenopausal women

The difference in knowledge on care and management of menopause between rural and urban women is given in Table 4.5.2B. The mean scores of health status of rural women were higher (22.45±5.67) than mean scores of urban women (19.20±3.59). The 't' value 5.68 was found to be highly significant hence there was highly significant difference in menopausal knowledge between rural and urban women of Dharwad.

In case of Bagalkote. There was highly significant difference in't' value of 7.77 in health status of rural and urban women. The mean value of health status in rural women is higher (23.67±7.02) than mean value of (21.50±6.89) urban women.

4.5.3 Relationship between health status and socio economic status among rural and urban women of Dharwad and Bagalkote

Relationship of health status of postmenopausal women belonging to different SES category is indicated in Table 4.5.3. In case of Dharwad, 20.68 per cent of them found mildly affected, 55.17 per cent showed moderately affected and 24.13 per cent of women expressed severely affected health status belonged to middle SES category.

Table 4.5.2A: Frequency distribution of health status of postmenopausal women

N = 160

Health status	Dharwad			Bagalkote		
	Rural (n=40)	**Urban (n=40)**	**Total (n=80)**	**Rural (n=40)**	**Urban (n=40)**	**Total (n=80)**
Mildly affected	6(15.00)	15(37.50)	21(26.25)	5(12.50)	13(32.50)	18(22.50)
Moderately affected	24(60.00)	19(47.50)	43(53.75)	19(47.50)	17(42.50)	36(45.00)
Severely affected	10(25.00)	6(15.00)	16(20.00)	16(40.00)	10 (25.00)	26(32.50)
r-value	0.88**			0.96**		
X^2	25.67**			29.70**		

Figures in the parenthesis indicates percentage
** significant at 0.01 level

Table 4.5.2B: Comparison of mean scores of health status among postmenopausal women

Area	Locality	N	Mean	SD	t-value
Dharwad (n=80)	Rural	40	22.45	5.67	5.68**
	Urban	40	19.20	3.59	
Bagalkote (n=80)	Rural	40	23.67	7.02	7.77**
	Urban	40	21.50	6.89	

Figures in the parenthesis indicates percentage ** significant at 0.01 level

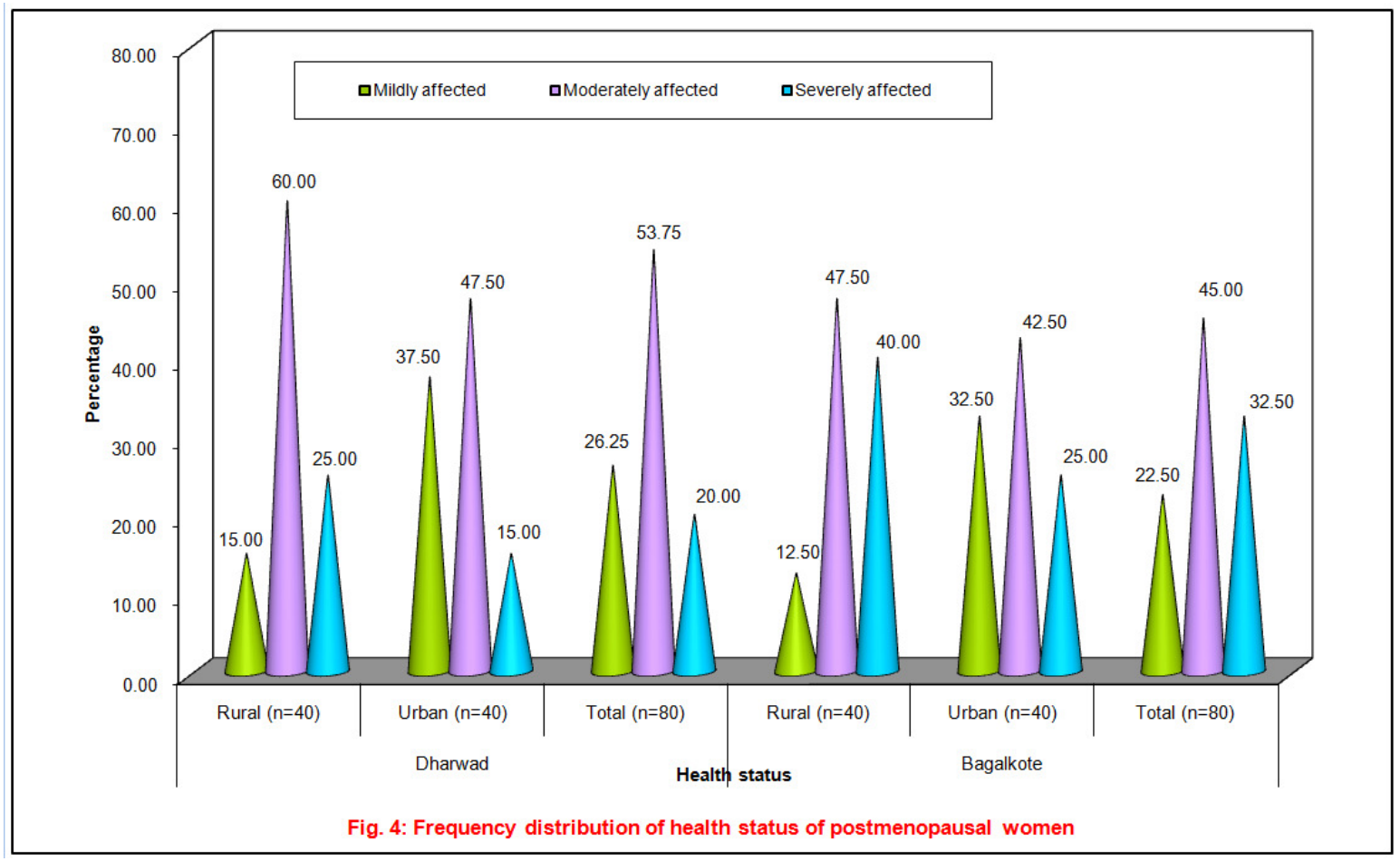

Fig. 4: Frequency distribution of health status of postmenopausal women

Fig. 4: Frequency distribution of health status of postmenopausal women

Table 4.5.3: Association between health status and socio economic status among rural and urban women of Dharwad and Bagalkote

N=160

Area	Locality	SES	n	Health status			Modified χ^2	r-value
				Mildly affected	Moderately affected	Severely affected		
Dharwad (n=80)	**Rural (n=40)**	Middle	29	6 (20.68)	16 (55.17)	7 (24.13)	7.708*	-0.27*
		Poor	11	2 (18.18)	3 (27.27)	6 (54.54)		
	Urban (n=40)	High	7	4 (57.14)	2 (28.57)	1 (14.28)	14.054*	-0.35*
		Middle	30	7 (23.33)	16 (53.34)	7 (23.33)		
		Poor	3	-	1 (33.33)	2 (66.67)		
Bagalkote (n=80)	**Rural (n=40)**	Middle	21	4(19.04)	14 (66.66)	3 (14.28)	6.984*	-0.31*
		Poor	19	1 (5.26)	10 (52.63)	8 (42.21)		
	Urban (n=40)	High	4	2 (50.00)	2 (50.00)	-	11.077*	-0.37*
		Middle	26	8 (30.76)	16 (61.55)	2 (7.69)		
		Poor	10	3 (30.00)	2 (20.00)	5 (50.00)		

Figures in the parenthesis indicates percentage *significant at 0.05 level

Among urban women, 57.14 per cent, 28.57 per cent and 14.28 per cent of the women were having mildly affected, moderately and severely affected health status belonged to high SES class respectively. While from middle SES category, 23.33 per cent of them reported mildly affected as well as severely affected, while 53.34 per cent had moderately affected. In poor SES category, 66.67 per cent and 33.33 per cent of the women had severely affected and moderately affected health status respectively.

In Bagalkote, 19.04 per cent rural women had mildly affected, while 66.66 per cent expressed moderately affected and 14.28 per cent of them reported severely affected health status belonged to middle SES category. In poor SES category, 5.26 per cent, 52.63 per cent and 42.21 per cent of the women were showed mildly affected, moderately affected and severely affected health status respectively. While from urban women, in high SES families, 50 per cent of women reported mildly as well as moderately affected health status. 30.76 per cent of women had mildly, while 61.55 per cent of them showed moderately affected and 7.69 per cent of the women were having severely affected health status belonged to middle SES group. In poor SES category, 30 per cent of women expressed mildly affected, while 20 per cent of them indicated moderately affected and 50 per cent of them reported severely affected health status health status. There was negatively significant relationship between SES and health status of the rural and urban women of Bagalkote as well as Dharwad district.

There was significant association found between SES and health status of rural and urban women of Bharwad as well as Bagalkote district.

4.5.4 Relationship between health status and age among rural and urban women of Dharwad and Bagalkote

Relationship between health status of postmenopausal women and age is shown in Table 4.5.4. In case of Dharwad, the respondents belonging to 40-45 years, 62.50 per cent of them had moderately affected health status followed by 37.50 per cent of them had mildly affected health status respectively. Majority of them (58.33%) reported moderately affected health status, while 25 per cent and 16.67 per cent of the women indicated mildly and severely affected health status belonged to 46-50 years. In 51-55 years age group, 50 per cent of the women exhibited moderately affected health status, while 30 per cent of the women reported severely affected and 20 per cent of the women were showed mildly affected health status. There was positively significant correlation found between age and health status.

In case of urban women 77.78 per cent expressed moderately affected health status, 11.11 per cent of the women exhibited mildly affected health status as well as severely affected health status, belonged to 40-45 age group. In 46-50 years age group 50 per cent showed moderately affected, while 30 per cent of them had severely affected and 20 per cent of women reported mildly affected health status. 28.57 per cent exhibited moderately affected, 19.04 per cent of them mildly affected and 52.38 per cent of women reported severely affected health status. There was a highly significant relationship found between age and health status.

Table 4.5.4: Correlation coefficient between health status and age among rural and urban women of Dharwad and Bagalkote

N=160

Area	Locality	Age (years)	n	Health Status			Modified χ^2	r-value
				Mildly affected	Moderately affected	Severely affected		
Dharwad (n=80)	**Rural (n=40)**	40-45	8	3 (37.50)	5 (62.50)	-	3.564*	-0.26*
		46-50	12	3 (25.00)	7 (58.33)	2 (16.67)		
		51-55	20	4 (20.00)	10 (50.00)	6 (30.00)		
	Urban (n=40)	40-45	9	1 (11.11)	7 (77.78)	1 (11.11)	5.057*	-0.73**
		46-50	10	2 (20.00)	5 (50.00)	3 (30.00)		
		51-55	21	4 (19.04)	6 (28.57)	11 (52.38)		
Bagalkote (n=80)	**Rural (n=40)**	40-45	6	1 (16.67)	5 (83.33)	-	5.326*	-0.33*
		46-50	14	4 (28.57)	8 (57.14)	2 (14.28)		
		51-55	20	3 (15.00)	11 (55.00)	6 (30.00)		
	Urban (n=40)	40-45	5	3 (60.00)	2 (40.00)	-	2.336NS	-0.56**
		46-50	17	5 (29.66)	9 (52.94)	3 (17.64)		
		51-55	18	3 (16.67)	10 (55.55)	5 (27.78)		

Figures in the parenthesis indicates percentage *significant at 0.05 level ** significant at 0.01 level
NS- non significant

In case of Bagalkote, 83.33 per cent of rural women showed moderately affected and 16.67 per cent exhibited mildly affected health status belonged to 40-45 years age group. In 46-50 years age group, 57.14 per cent of them showed moderately affected, 28.57 per cent mildly affected, while 14.28 per cent of the women reported severely affected health status. 55 per cent of women exhibited moderately affected, while 30 per cent severely and 15 per cent of them reported mildly affected health status belonged to 51-55 years age group. There was positively significant relationship between age and health status.

Among urban, 60 per cent of women showed mildly affected and 40 per cent of them reported moderately affected health status belonged to 40-45 years age group. In 46-50 years age group, 52.94 per cent of the women exhibited moderately affected, while 29.66 per cent showed mildly affected and 17.64 per cent of the women reported severely affected health status. 55 per cent, 27.78 per cent and 16.67 per cent of the women were reported moderately, severely and mildly affected health status respectively belonged to 51-55 years age group. There was highly significant relationship and found between age and health status of postmenopausal women. There was significant association found between age and health status in rural and urban women of Dharwad and rural women of Bagalkote but there was non-significant association observed between age and health status of urban women of Bagalkote.

4.5.5 Relationship between health status and education among rural and urban women of Dharwad and Bagalkote

The relationship between health status and education is shown in Table 4.5.5. In Dharwad, among rural illiterate women, 60 per cent of respondents having moderately affected health status, while 36 per cent severely affected and only 4 per cent of them had mildly affected health status. Women who completed primary school education, 36 per cent of them exhibited mildly as well as moderately affected health status. 50 per cent of respondents indicated mildly as well as severely affected health status who were studied till high school education. Women who completed college education, 100 per cent of them reported mildly affected health status. Whereas in urban illiterate women, 50 per cent of them severely affected health status followed by 37.50 per cent of women reported moderately affected and only 12.50 per cent had mildly affected health status. In case of women studied primary education, 40 per cent of them had severely as well as moderately affected health status followed by only 20 per cent of the women expressed mildly affected health status. Among women who educated till high school education, 66.67 per cent of them indicated moderately affected and only 33.33 per cent of them showed severely affected health status. Among women educated college level, 50 per cent of them reported moderately and 25 per cent showed mildly as well as severely affected health status. 56.25 per cent of respondents showed moderately affected followed by 37.50 per cent mildly affected and only 6.25 per cent of them had severely affected health status from women studied >degree/PG. There was negatively significant relationship observed between education and health status among rural and urban women of Dharwad.

Table 4.5.5: Correlation coefficient between health status and education among rural and urban women of Dharwad and Bagalkote

N=160

Area	Locality	Education	n	Health status			Modified χ^2	r-value
				Mildly affected	Moderately affected	Severely affected		
Dharwad (n=80)	Rural (n=40)	Illiterate	25	1(4.00)	15(60.00)	9(36.00)	16.07*	-0.48*
		Primary	11	4(36.36)	4(36.36)	3(27.28)		
		High school	2	1(50.00)	-	1(50.00)		
		College	2	2(100)	-	-		
	Urban (n=40)	Illiterate	8	1(12.50)	3(37.50)	4(50.00)	20.47*	-0.51**
		Primary	5	1(20.00)	2(40.00)	2(40.00)		
		High school	3	-	2(66.67)	1(33.33)		
		College	8	2 (25.00)	4(50.00)	2(25.00)		
		>Degree/ PG	16	6(37.50)	9(56.25)	1(6.25)		
Bagalkote (n=80)	Rural (n=40)	Illiterate	31	2(6.45)	21(67.74)	8(25.80)	10.87*	-0.33*
		Primary	8	2(25.00)	3(37.50)	3(37.50)		
		High school	1	1(100)	-	-		
	Urban (n=40)	Illiterate	10	1(10.00)	5(50.00)	4(40.00)	13.35*	-0.41*
		Primary	12	2(16.67)	6 (50.00)	4(33.33)		
		High school	6	3(50.00)	2(33.33)	1(16.67)		
		College	3	2(66.67)	1(33.33)	-		
		>Degree/ PG	9	5(55.56)	3(33.33)	1(11.11)		

Figures in the parenthesis indicates percentage *significant at 0.05 level ** significant at 0.01 level

In case of Bagalkote illiterate women, majority (67.74%) of them reported moderately affected health status, while 25.74 per cent of the women showed severely affected and only 6.45 per cent of them showed mildly affected health status. 37.50 per cent of women moderately affected as well as severely affected health status and 25 per cent of them mildly affected health status who educated primary school education. Women who educated till high school, 100 per cent of them showed mildly affected health status. Whereas among urban illiterate women, 50 per cent, 40 per cent and only 10 per cent of women reported moderately, severely and mildly affected health status. Women who educated till primary school, 50 per cent of them had moderately affected health status followed by 33.33 per cent of them reported severely and 16.67 per cent of the women mildly affected health status. While 50 per cent, 33.33 per cent and 16.67 per cent of the women indicated mildly affected, moderately and severely affected health status respectively belonged to high school education group. Among women educated till degree/PG, 55.56 per cent reported mildly affected health status, while 33.33 per cent had moderately and only 11.11 per cent of them showed severely affected health status. There was negatively significant relationship found between education and health status in rural and urban women of Bagalkote. There was significant association found between education and health status of rural and urban women of Bagalkote and Dharwad.

4.5.6 Relationship between health status and occupation among rural and urban women of Dharwad and Bagalkote

Relationship between health status and occupation of women is represented in Table 4.5.6. In Dharwad, 75 per cent of working women reported moderately affected health status followed by 25 per cent of them had mildly affected health status. Among non-working women, 56.25 per cent of them exhibited moderately affected health status, while 28.12 per cent of the women severely affected and 15 per cent of them mildly affected health status. Whereas in urban, 60 per cent of working women reported moderately affected health status followed by 28 per cent mildly affected and 12 per cent of them severely affected health status. Among non-working women 53.34 per cent of them reported moderately affected health status, while 33.33 per cent and 13.33 per cent of them had severely and mildly affected health status respectively. There was negatively significant relationship found between occupation and health status in rural and urban women of Dharwad.

In case of Bagalkote, 54.84 per cent of working women reported moderately affected health status followed by 25.81 per cent of them had mildly affected and 19.35 per cent of the women severely affected health status. Among non-working women, 55.56 per cent of them had moderately affected, while 33.33 per cent and 11.11 per cent of the women indicated severely and mildly affected health status respectively. Whereas in urban, 62.50 per cent of working women showed moderately affected health status followed by 18.75 per cent of them had mildly as well as severely affected health status. Among non-working women, 66.67 per cent of them reported moderately affected followed by 25 per cent of the women reported severely affected and only 8.33 per cent of them had mildly affected health status. There was negatively significant relationship was observed between occupation and health status among rural and urban women of Bagalkote. There was significant association found between health status and occupation among rural and urban women of Bagalkote and rural women of Dharwad. There was non-significant association observed in urban women of Dharwad.

Table 4.5.6: Correlation coefficient between health status and occupation among rural and urban women of Dharwad and Bagalkote

N=160

Area	Locality	Occupation	N	Health status			Modified χ^2	r-value
				Mildly affected	Moderately affected	Severely affected		
Dharwad (n=80)	**Rural (n=40)**	Working	8	2 (25.00)	6 (75.00)	-	10.889^{*}	-0.327^{*}
		Non-working	32	5 (15.62)	18 (56.25)	9 (28.12)		
	Urban (n=40)	Working	25	7 (28.00)	15 (60.00)	3 (12.00)	3.985^{NS}	-0.295^{*}
		Non-working	15	2 (13.33)	8 (53.34)	5 (33.33)		
Bagalkote (n=80)	**Rural (n=40)**	Working	31	8 (25.81)	17 (54.84)	6 (19.35)	11.089^{*}	-0.41^{*}
		Non-working	9	1 (11.11)	5 (55.56)	3(33.33)		
	Urban (n=40)	Working	16	3 (18.75)	10 (62.50)	3 (18.75)	6.154^{*}	-0.372^{*}
		Non-working	24	2 (8.33)	16 (66.67)	6 (25.00)		

Figures in the parenthesis indicates percentage *significant at 0.05 level NS – Non-significant

4.5.7 Association between health status and weight status among postmenopausal women

The association of weight status of postmenopausal women with health status is presented in Table 4.5.7. Among rural women, half of them (50 %) had ideal body weight, 33.33 per cent of them had over weight and 16.67 per cent of the women belonged to obese category experienced mildly affected health status. It was observed that 54.16 per cent of them had overweight, 37.50 per cent of the women had ideal body weight and 8.33 per cent of them belonged to obese category expressed moderately affected health status. Women who reported severely affected health status among them, 40 per cent of them had ideal body weight followed by 30 per cent of them belonged to overweight and obese category. There was significant association observed between health status and weight status of postmenopausal women.

Whereas in urban women, who experienced mildly affected health status, 46.66 per cent of them belonged to overweight and 33.33 ideal body weight category and 20 per cent of them belonged to obese category. Among women who reported moderately affected health status, 52.63 per cent belonged to overweight, 26.31 per cent of them belonged to obese category and 21.05 per cent possessed ideal body weight. Among women with severely affected health status, 5o per cent belonged to obese, 33.33 per cent and 16.67 per cent of them belonged to overweight and ideal body weight. There was non-significant association found between weight status and health status of urban women.

In case of Bagalkote, 33.33 per cent of rural women had ideal body weight, while 50 per cent and 16.67 per cent of them belonged to overweight and obese category respectively who reported moderately affected health status. Among women who reported moderately affected health status, 68.75 per cent of the women belonged to ideal body weight and 31.25 per cent of them belonged to overweight. 50 per cent, 27.77 per cent and 22.22 per cent of the women belonged to overweight, obese and ideal body weight category respectively who experienced severely affected health status.

Whereas among urban, 38.46 per cent of the women belonged to ideal body weight as well as overweight category and 23.07 per cent of them belonged to obese category who reported mildly affected health status. Among women who experienced moderately affected health status, 70.58 per cent, 23.52 per cent and 5.88 per cent of the women belonged to overweight, ideal body weight and obese category respectively. Among women who reported severely affected health status, 40 per cent of them belonged to overweight category, followed by 30 per cent belonged to obese as well as ideal body weight category. There was significant association found between health status and weight status.

4.6 Interrelationship between menopausal knowledge and menopausal symptoms

The interrelationship between knowledge on care and management of menopause and status of menopausal symptoms showed in Table 4.6. In Dharwad, 50 per cent of rural women had mild menopausal symptoms, while 33.33 per cent moderate and only 16.67 per cent of them reported severe menopausal symptoms possessed high knowledge on care and management of menopause. While 10 per cent, 75 per cent and 15 per cent of the women reported mild, moderate and severe menopausal symptoms respectively who possessed medium knowledge on menopause. In low knowledge category, 50 per cent of the women expressed severe menopausal symptoms followed by 35.36 of them had moderate and only 14.24 per cent of the women reported mild menopausal symptoms. Whereas among urban women, 54.55 per cent of them had mild menopausal symptoms, while 36.36 per cent indicated moderate and only 9.09 per cent showed severe menopausal symptoms possessed high knowledge group. Among medium knowledge group, 60 per cent of the women had moderate menopausal symptoms, followed by 32 per cent mild and 8 per cent of them had severe menopausal symptoms. While 75 per cent and 25 per cent of women reported severe and mild menopausal symptoms respectively belonged to low knowledge category.

In case of Bagalkote, 66.67 per cent of rural women reported mild menopausal symptoms followed by 33.33 per cent exhibited moderate menopausal symptoms possessed high knowledge on menopause, while 61.11 per cent, 22.22 per cent and 16.67 per cent of women showed moderate, severe and mild menopausal symptoms respectively belonged to middle knowledge category. Among low knowledge category, 52 per cent of them indicated severe menopausal symptoms, while 42.10 per cent of them indicated moderate and only 5.26 per cent of them showed mild menopausal symptoms and similar trend was seen among urban women. There was negatively significant interrelation between the knowledge on care and management of menopause and menopausal symptoms. There was also significant association observed between knowledge on menopause and menopausal symptoms among rural and urban women of Dharwad and Bagalkote.

4.7 Interrelationship between health status and menopausal symptoms

Interrelation between health status and menopausal symptoms is presented in Table 4.7. In Dharwad, among mildly affected rural women 50 per cent of them reported moderate and 33.33 per cent of the women expressed moderate and 16.67 per cent of them had severe menopausal symptoms. Among women who had moderately affected health status, 70.83 per cent of them showed moderate menopausal symptoms followed by 16.67 per cent of the women exhibited severe and only 12.50 per cent of them indicated mild menopausal symptoms. 40 per cent of the women moderate and 60 per cent of them reported moderate and severe menopausal symptoms respectively belonged to severely affected health status group women.

Table 4.6: Interrelationship between menopausal knowledge and menopausal symptoms

N=160

Area	Locality	Knowledge	n	Menopausal symptoms			χ^2	r-value
				Mild	Moderate	Severe		
Dharwad (n=80)	**Rural (n=40)**	High	6	3 (50.00)	2(33.33)	1(16.67)	13.734*	-0.346*
		Medium	20	2(10.00)	15(75.00)	3(15.00)		
		Low	14	2(14.24)	5(35.36)	7(50.00)		
	Urban (n=40)	High	11	6 (54.55)	4(36.36)	1(9.09)	18.046*	-0.403*
		Medium	25	8(32.00)	15(60.00)	2(8.00)		
		Low	4	1(25.00)	-	3(75.00)		
Bagalkote (n=80)	**Rural (n=40)**	High	3	2 (66.67)	1(33.33)	-	10.998*	-0.460*
		Medium	18	3(16.67)	11(61.11)	4(22.22)		
		Low	19	1(5.26)	8(42.10)	10(52.63)		
	Urban (n=40)	High	7	4(57.14)	2(28.57)	1(14.29)	17.130*	-0.323*
		Medium	26	6 (23.07)	18(69.23)	2(7.69)		
		Low	7	-	3(42.85)	4(57.14)		

Figures in the parenthesis indicates percentage *significant at 0.05level

Table 4.7: Interrelationship between health status and menopausal symptoms

N=160

Area	Locality	Health status	n	Menopausal symptoms			χ^2	r-value
				Mild	Moderate	Severe		
Dharwad (n=80)	**Rural (n=40)**	Mildly affected	6	2 (33.33)	3(50.00)	1(16.67)	8.71*	0.41*
		Moderately affected	24	3(12.50)	17(70.83)	4(16.67)		
		Severely affected	10	-	4(40.00)	6(60.00)		
	Urban (n=40)	Mildly affected	15	8(43.34)	9(60.00)	1(6.66)	14.90*	0.46*
		Moderately affected	19	5(26.33)	12 (63.15)	2(10.52)		
		Severely affected	6	1(16.67)	2(33.33)	3(50.00)		
Bagalkote (n=80)	**Rural (n=40)**	Mildly affected	5	3(60.00)	1(20.00)	1(20.00)	26.03**	0.62**
		Moderately affected	19	2(10.52)	13(68.43)	4(21.05)		
		Severely affected	16	3 (18.75)	6(37.50)	7(43.75)		
	Urban (n=40)	Mildly affected	13	(46.15)	7(53.85)	-	14.66*	0.45*
		Moderately affected	17	1(5.88)	14(82.36)	2 (11.76)		
		Severely affected	10	2(20.00)	3(30.00)	5(50.00)		

Figures in the parenthesis indicates percentage *significant at 0.05level ** significant at 0.01 level

Whereas among urban women with mildly affected health status, 43.34 per cent of them reported mild menopausal symptoms, while 60 per cent and only 6.66 per cent of women showed moderate and severe menopausal symptoms respectively. Among women who had moderately affected health status, 63 per cent of them exhibited moderate menopausal symptoms followed by 26.33 per cent of women showed mild and 10.52 per cent indicated severe menopausal symptoms. 50 per cent, 33.33 per cent and 16.67 per cent of women expressed severe, moderate and mild menopausal symptoms respectively belonged to severely affected health status group.

In Bagalkote, among rural women with mildly affected health status women, 60 per cent of them reported mild menopausal symptoms, while 20 per cent of the women showed moderate as well as severe menopausal symptoms respectively. Among women who had moderately affected health status, 68.43 per cent of them indicated moderate followed by 21.05 per cent severe menopausal symptoms and 10.52 per cent of the women showed mild menopausal symptoms. 43.75 per cent, 37.50 per cent and 18.75 per cent of the women expressed severe, moderate and mild menopausal symptoms belonged to women had severely affected health status.

In case of urban, the women who had mildly affected health status, 53.85 per cent of them indicated moderate followed by 46.15 per cent of the women showed mild menopausal symptoms. Among women having moderately affected health status, 82.36 per cent, 11.76 per cent and only 5.88 per cent of them indicated moderate, sever and mild menopausal symptoms respectively. 50 per cent of the women had severe menopausal symptoms, while 30 per cent and only 20 per cent of them had severe, moderate and mild menopausal symptoms respectively belonged to severely affected health status group. On the whole there was significant interrelationship found between health status and status of menopausal symptoms. There was significant association found between health status and menopausal symptoms among rural and urban women of Dharwad and urban women of Bagalkote. There was highly significant association observed between health status and menopausal symptoms.

4.8 Interrelationship between menopausal knowledge and health status

Interrelationship between knowledge on care and management and health status is presented in Table 4.8. In Dharwad, 83.33 per cent of rural women having mildly affected health status, while only 16.67 per cent of the women had moderately affected health status belonged to high category of knowledge group. In medium knowledge group women, 65 per cent of them had moderately affected health status followed by 25 per cent showed severely affected and 10 per cent indicated of mildly affected health status. Among low knowledge category, 57.14 per cent of them expressed severely affected followed by 35.72 per cent of them reported moderately affected health status and only 7.14 per cent of them had mildly affected health status. There was negatively highly significant relationship found between knowledge on care and management of menopause and health status.

Whereas urban postmenopausal women, 63.64 per cent of them had mild affected followed by 18.18 per cent moderately as well as severely affected health status possessed high knowledge regarding care and management of menopause. In medium knowledge group, 64 per cent of the women expressed moderately affected health status, while 20 per cent severely and 16 per cent mildly affected health status. Among low knowledge group, 75 per cent of them had severely affected health status followed by 25 per cent of the women had moderately affected health status. There was negatively significant relationship found between health status and knowledge on care and management of menopause.

Table 4.8: Interrelationship between menopausal knowledge and health status

N=160

Area	Locality	Knowledge	n	Health status			χ^2	r-value
				Mildly affected	Moderately affected	Severely affected		
Dharwad (n=80)	**Rural (n=40)**	High	6	5(83.33)	1(16.67)	-	22.02*	-0.568**
		Medium	20	2(10.00)	13(65.00)	5(25.00)		
		Low	14	1(7.14)	5(35.72)	8(57.14)		
	Urban (n=40)	High	11	7(63.64)	2(18.18)	2(18.18)	15.830*	-0.460*
		Medium	25	4(16.00)	16(64.00)	5(20.00)		
		Low	4	-	1(25.00)	3(75.00)		
Bagalkote (n=80)	**Rural (n=40)**	High	3	2(66.67)	1(33.33)	-	10.960*	-0.411*
		Medium	18	2(11.11)	13(72.22)	3(16.67)		
		Low	19	2 (10.53)	10(52.63)	7(36.84)		
	Urban (n=40)	High	7	4(57.14)	2(28.57)	1(14.28)	12.483*	-0.374*
		Medium	26	7(26.92)	17(65.38)	2(7.69)		
		Low	7	1(14.28)	2(28.57)	4(57.14)		

Figures in the parenthesis indicates percentage *significant at 0.05 level ** significant at 0.01 level

In case of Bagalkote, among high knowledge rural women, 66.67 per cent of them mildly affected, while 33.33 per cent of them had moderately affected health status. 72.22 per cent of women exhibited moderately affected followed by 16.67 per cent showed severely affected and only 11.11 per cent of them reported mildly affected health status belonged to medium knowledge category. Women from low knowledge category, 52.63 per cent of them had moderately affected, while 36.84 per cent of women reported severely affected and only 10.53 per cent exhibited mildly affected health status. There was negatively significant relationship and association observed between knowledge on menopause care and management of menopause and health status among postmenopausal women.

Whereas from urban women, 57.14 per cent of them mild affected followed by 28.57 per cent moderately and only 14.28 per cent of them had severely affected health status belonged to high knowledge category. Among medium knowledge category group, 65.38 per cent of them showed moderately affected, while 26.92 per cent of them belonged mildly affected and only 7.69 per cent found in severely affected health status. 57.14 per cent of women were reported severely affected followed by 28.57 per cent moderately affected and only 14.28 per cent of them had mildly affected health status belonged to low knowledge group. There was negatively significant relationship found between menopausal knowledge and health status. There was significant association observed between knowledge and health status among rural and urban women of Dharwad and Bagalkote.

4.9 Inter correlation between components

The intra correlation between components such as, SES, health status, menopausal symptoms, menopausal knowledge and age are presented in Table 4.9. In case of SES component, it was observed that SES was negatively highly significantly related with health status, negatively significantly related with menopausal knowledge and positively significantly related with menopausal knowledge and non-significantly related with age. Health status was found negatively highly significantly related with menopausal knowledge and positively highly significant with menopausal symptoms and significantly related with age of the women. With respect to menopausal symptoms, menopausal symptoms negatively significantly related with age.

Table 4.9: Inter correlation between components

N=160

	Socio-Economic Status	**Health Status**	**Menopausal Knowledge**	**Menopausal Symptoms**	**Age**
Socio-Economic Status	1	-0.53**	0.37**	-0.21*	0.12^{NS}
Health Status		1	- 0.47**	0.45**	0.24*
Menopausal Knowledge			1	- 0.79**	0.20*
Menopausal Symptoms				1	-0.31*
Age					1

Figures in the parenthesis indicates percentage
*significant at 0.05 level ** significant at 0.01 level ^{NS} non significant

5. DISCUSSION

Menopausal period is new phase of middle aged women and in this period the women under go physiological changes due to hormonal imbalance. It leads to many menopausal symptoms such as hot flushes, irritability, heart discomfort, mood swinging, forgetfulness and urogenital symptoms, which affects health status of the middle aged women. Hence proper care and effective management during menopausal period is essential. Menopausal care and management is influenced by number of factors. Hence the attempt is made under the present study, to know care, management and health status of rural and urban postmenopausal women.

5.1 Demographic characteristics of middle aged women

5.2 Nutritional status of postmenopausal women

5.3 Menopausal symptoms among postmenopausal women

5.4 Knowledge on care and management of postmenopausal women

5.5 Health status of menopausal women

5.6 Inter correlation between SES, menopausal knowledge, menopausal symptoms, health status and age

5.1 Demographic characteristics of middle aged women

Majority of women (49.37%) aged between 51-55 years and remaining of them fell between 40-50 years of age group as shown in (Table 4.1). Half of the respondents were housewives, while 40 per cent of them working in government and private sectors and only 10 per cent of them involved in farm activities. With regard to education, majority (46.25 %) of women were illiterate, 22.50 per cent of them had attended school, while 15.60 per cent possessed degree and PG education.

Majority of women (55%) belonged to other backward caste (OBC), followed by upper caste, dalits and tribes. It was observed that 70 per cent and 30 per cent of women had 3-4 and 1-2 children and only 30 per cent families with 5 children.

Socio Economic Status (SES) of postmenopausal women indicated that, in Dharwad 72.5 per cent of women belonged to middle SES followed by poor (17.50%) and in Bagalkote, 58.75 per cent of women belonged to middle SES followed by 36.25 per cent in poor SES category. It was observed that in Bagalkote district double number of respondents belonged to poor SES category.

5.2 Nutritional status of rural and urban postmenopausal women

Nearly half of the rural respondents possessed ideal body weight, while 35 per cent found to be overweight and 7.50 per cent of them in underweight category (Table 4.2.1). It was interesting to note that nearly half of the urban respondents found to be overweight and only 28.75 per cent of them possessed ideal body weight. There was significant difference between rural and urban women in BMI. It was observed that nearly 50 per cent of urban women belonged to overweight category as against, 35 per cent of rural women.

In Dharwad, it was observed that 42 per cent of women found to be overweight both in rural and urban area belonged to 51-55 years age group. Similar trend was also observed in Bagalkote district (Table 4.2.2). The research reports indicated that increases in age increases accumulation of fat around abdominal and result in abdominal obesity which is more prevalent among middle aged

women. A study supported by Farzanehet *et al.* (2014) revealed that there was significant association between age and BMI. In addition a direct association was observed between weight and BMI. Kavayit *et at.* (2011) reported that abdominal obesity occur while aging and weight gaining was found significant association with age. A study conducted by Rathi *et al.* 2014 stated that Obesity is a growing problem even in developing regions like India and is more common in females and in urban population.

5.3 Menopausal symptoms of middle aged women

Postmenopause means complete cessation of menstrual cycle after one year of attainment of menopause. After menopause the ovaries stops releasing estrogen and progesterone hormone. Due to decrease in hormonal secretion are experienced by middle aged women, menopausal symptoms such as hot flushes, sleeplessness, joint pain and other discomforts (Kavita *et al.* 2012). Hence the results attempted to reveal that factors related and associated for menopausal symptoms. The respondents were categorized into mild, moderate and severe menopausal symptoms depending upon their total scores obtained in Menopause Rating Scale (MRS).

The mean age at attainment of menarche was 12.7 to 12.65 years and mean age at menopause was 42.7 to 44.67 years. Most of Dharwad and Bagalkote respondents (>85%) perceived menopause as natural phenomena. It was observed that 50 per cent of women experienced 3-5 days of bleeding during cessation of menstruation. Majority of respondents (40-65%) reported that they experienced menopausal symptoms between 35-40 years of age followed by 45-50 years of age (Table 4.3.1). Kaulagekar (2011) indicated that mean age at menopause was 45.8 years in Pune. Another study conducted by *Karim et al.* (2013) revealed that 89.50 per cent of women perceived menopause as natural phenomenon and only 20.50 per cent perceived it as diseases because of attainment of menopause due to surgery. Karu and Chawla (2015) pointed out that 52 per cent of women reported severe menopausal symptoms. Whereas women who attained menopause >50 years of age suffered from more mild menopausal symptoms (65%) than women who attained menopause between 40 – 45 years women.

Many research studies have pointed out that during menopause women usually suffer from somatic, psychological and urogenital symptoms. In this study, it was interesting to know that 30-75 per cent of women experienced somatic problems followed by psychological and urogenital symptoms. The rural women suffered more from menopausal symptoms than urban women in both districts (Table 4.3.2) because in middle age more of physiological changes and physical changes occur. Majority of women suffered from hot flushes, sweating, sleep disturbance, joint pain and muscular discomforts. A study supported by Salmalian and sayed (2013) showed the higher prevalence of somatic (67.3%) and psychological (53%) symptoms compared to urogenital symptoms in postmenopausal women. In a study by Avanie *et al.* (2013) reported that after onset of menopause, postmenopausal women experienced higher prevalence of somatic problems (44.66 %) followed by 34.44 per cent psychological and only 10 per cent of them reported urogenital symptoms. The study conducted by Mahammad (2014) pointed out that 62 per cent of postmenopausal women reported somatic problems in Indonesia.

It was observed that more number of women suffered from severe menopausal symptoms in Bagalkote than Dharwad. Almost equal number of women suffered (50%) from moderate menopausal symptoms both Dharwad and Bagalkote district (Table 4.3.3A). As compared to mean values it was noted that the score from rural women higher than (16.50±6.27) urban women (13.62±13.62) in Dharwad which showed that rural women experienced more menopausal symptoms than urban women the similar trend was observed in Bagalkote (Table 4.3.3B). Martinez *et al.* (2013) found that there was a greater frequency of menopausal symptoms in rural women than urban women. The women experienced symptoms included hot flushes, depression, joint pain and tingling. A study conducted by Alwi *et al.* (2010) reported that rural women were experienced more menopausal problems than urban women. The influencing factors such as SES, age, education and lifestyle of middle aged women. Kadam and Jubilet (2014) stated that urban women have less menopausal disorder compared to semi-urban and rural middle aged women.

A majority of rural women of Dharwad district belonged to middle SES class reported moderate menopausal symptoms (Table 4.3.4). A similar trend was seen in urban women as well as Bagalkote rural and urban indicating that higher the SES lesser menopausal symptoms. There was negatively significant relationship and significant association between SES and menopausal symptoms. Manisa *et al.* (2010) results revealed that the menopausal symptoms correlated with socio-economic status and it was negatively affected most domain during menopause. A study conducted by Hui *et al.* (2013) found that higher the menopausal symptoms were significantly related with lower SES family which also leads negative attitude towards menopause. Nisar and Sohoo (2012) observed that there was significant association of symptoms found with menopausal status ($p<0.05$). A study conducted by Ali *et al.* (2013) reported that socio-economic status of women and income level of family and reproductive factors are negatively influencing and correlated with menopausal symptoms.

The women between 50-55 years of age experienced more mild menopausal symptoms than 46-50 years and 40-45 years age group women in rural and urban areas of Dharwad as well as Bagalkote. There was negatively significant relationship and association observed between age and menopausal symptoms Indicating that as age increases menopausal symptoms decreases (Table 4.3.5). This probably due to increase in age increases pain threshold among women and they also learn better care and management techniques to handle menopausal symptoms. Koulagekar (2012) revealed that age and income was negatively significantly associated with menopausal symptoms. Another study by Madhusudhan and Sadvimani (2014) pointed out that there was negatively significant association between demographic factors such as age, education and monthly income and menopausal symptoms. Vareeckan (2012) reported that menopausal problems negatively significantly associated with aging.

There was significant association and negatively significant relationship found between education and status of menopausal symptoms (Table 4.3.6). It indicated that higher the education of the respondents lesser the experience of menopausal symptoms.

A significant association and negatively significant relationship observed between occupation of the respondents and menopausal symptoms which indicated that women who involved in professional activities suffered from mild menopausal symptoms (Table 4.3.7). This highlighted that higher educated women and women who involved in government and private sectors exposed more to media and they had prior knowledge on care and management of menopause. A study supported by Bouzari *et al.* (2013) revealed that age, household income and education were associated with all menopausal symptoms. Education level and occupation of women was appropriate predictor of menopausal symptoms. The study conducted by Remona and Anila (2015) pointed out that working women experienced lesser menopausal symptoms than housewives. Women with lower level of education had experienced more menopausal symptoms than women with high education. Fabio (2012) reported that education and occupation are associated and negatively related with climacteric symptoms. Severe and moderate hot flushes were lower in more educated women as well as women who are working. A study by Alakananda *et al.* (2015) found that education, occupation, lifestyle and income had statistically significantly associated and negatively related with menopausal problems.

A significant association was found between menopausal symptoms and weight status of respondents (Table 4.3.8). It indicated that women who belonged to overweight and obese group suffered more from menopausal symptoms than women belonged to ideal weight category. The study supported by Rao *et al.* (2010) found that women weight status was significantly associated with menopausal symptoms.

5.4 Knowledge on Care and Management of Menopause

Most of the menopausal women (35-65%) reported that their friends were primary source of information followed by mothers and relatives (Table 4.4.1). It was interesting to note that 52.5 per cent of urban women of Dharwad involved in physical exercise by walking every day. In Bagalkote none of the women performed any sort of physical exercises. In rural areas of Dharwad and Bagalkote districts women not consulted specialist because they perceived menopause is natural phenomena. While among urban women, most of them consulted family doctors as they are comfortable with them. A study conducted by Teshay *et al.* (2014) reported that, 70.83 per cent of the women expressed friends were primary source of information followed by medical care providers and mass media. Another study conducted by Safaa *et al.* (2013) reported that 44.6 per cent of women reported relatives and friends were primary source of information followed by mass media (36.1 %). A study supported by Kaulagekar (2012) observed that more than 50 per cent of women did not seek treatment where as only 30 per cent of women consulted family doctors.

The women who had better knowledge regarding menopause and positive attitude towards menopause were found to have experienced less severe extent of menopausal symptoms. Appropriate understanding by women with regard to physical, physiological, mental and social change occur during and after menopause helps them with greater readiness to cope with menopausal changes. Hence the results attempted to reveal the factors influencing the menopausal knowledge and assessing knowledge difference between rural and urban women.

The respondents were categorized into high, medium and low level of knowledge depending upon their total scores obtained in self structured questionnaire on care and management of menopause. Majority of women had medium level of knowledge followed by low knowledge in Dharwad as well as Bagalkote district as indicating in Table 4.4.2A and 4.4.2B. The mean score of urban women's knowledge found to be higher (43.95±39.10) than rural women (39.10±2.67) in Dharwad and similar trend was seen Bagalkote means urban women had better knowledge than rural women. This is because of better education level and easy availability of medical facilities and mass media exposure regarding menopause. There was significant difference between rural and urban women's knowledge level. A study conducted by Strinic *et al.* (2012) reported that better socio-economic status, higher education associated with knowledge and urban population were more aware of HRT treatment and they likely to use HRT therapy.

In rural women of middle SES category, majority of them possessed medium level knowledge followed by low and high level knowledge (Table 4.4.3). While among poor SES, majority of them had low level knowledge followed by medium and high level. In urban women, majority of them had high knowledge followed by medium knowledge belonged to high SES class. There was significant association found between SES and menopausal knowledge, indicating that higher the SES higher the menopausal knowledge. A study supported by Madhusudhan and Sadvimani (2014) pointed out that there was statistical significant association between level of knowledge and monthly income and SES of the family. Tauqueer *et al.* (2015) reported that good SES and demographic variables were significantly related with menopausal knowledge, it indicating that women belonged to high SES family opt for better medical facilities.

There was significant relationship between age and knowledge on care and management of menopause in both Dharwad and Bagalkote district (Table 4.4.4). The results pointed out that menopausal knowledge of women increased with increased in age. The women in age group of 51-55 years had comparatively high knowledge on care and management of menopause than women in the age group of 46-50 years and 40-45 years, which may be due to increased in experience of menopausal knowledge through socialization. Hue *et al.* (2013) study reported that age was significantly influenced on menopausal knowledge. The younger women comparatively had poor knowledge than older women. Hesook *et al.* (2012) reported the significant correlation was found between age and knowledge. It also highlighted that women who attained <45 years had less knowledge compared to women who attained >45-50 years.

The respondent's education and occupation was significantly related with menopausal knowledge (Table 4.4.5and Table 4.4.6). It was observed that higher educated women had good knowledge and women with better profession had high level knowledge compared with housewives and illiterates. Because the educated and professional women had interest to read literature regarding menopause and exposure to mass media enrich the knowledge regarding menopause. A study supported by Reader *et al*. (2012) revealed that 60 per cent of women had good knowledge. Age, education and occupation of women had significant association with knowledge regarding menopausal problems. A study by Thomas (2011) revealed that majority of them said they did not seek medical helps when the symptoms were present. There was lack of comprehensive

understanding regarding menopausal transition. There was significant correlation between the reported level of education and knowledge of health risks associated with menopause. Fetemeh *et al.* (2015) pointed out that women's knowledge about signs and symptoms during and after menopause was significantly correlated with job, education and income of the family. Vaghela and Bhalani (2012) found that 29.9 per cent of illiterate women were aware about menopausal transition and symptoms, while 89.3 per cent of educated women were having prior knowledge regarding menopause. It indicated that education level increased awareness towards menopause and menopause related problems.

5.5 Health status of the postmenopausal women

Menopausal and postmenopausal women's health status has emerged as an important public health concern in India owing to improve economic conditions, rapid lifestyle changes and increased longevity. The onset of this physiological development not only makes the end of women reproductive function but also makes vulnerable to a new set of health problems (Mishra, 2012). Hence the results attempted to reveal that factors influencing and factors related to health status. The respondents were categorized into mildly, moderately and severely affected health status depending upon their total scores obtained in physical and psychological distress using PGI health questionnaire N-2

It was interesting to note that among health problems faced by menopausal women, 33-53 per cent of them suffered from abdominal pain followed by feeling of heaviness and constipation. Most of women reported not having any serious health problems after attainment of menopause. Very few urban women (12.5%) knew about HRT treatment (Table 4.5.1). It was important to note that most of them (73-83%) reported no change in their mood during menopausal process. A study conducted by Hamid *et al.* (2014) reported that there was poor knowledge about HRT among rural and urban women. *Davis et al.* (2015) results revealed that abdominal obesity and feeling heaviness were found more among postmenopausal women compared to pre and perimenopausal women. Silambuselvi and Valavan (2016) results highlighted that prevalence of hypertension and diabetics was more among urban postmenopausal women than their rural counterpart.

The frequency distribution of health status of postmenopausal women (Table 4.5.2A), indicated that most of urban women belonged to moderately affected health status. Rural women belonged to moderately affected followed by severely affected health status. There was significant difference between rural and urban women's health status (4.5.2B) because of lack of medical facilities in rural areas and women less bothered about themselves suffered from various health problems. The study conducted by Jyotsana (2015) pointed out that accessibility of health services, class and social participation contributed for better health of urban women compared to rural women. Another study conducted by Donald *et al.* (2012) reported that rural postmenopausal women suffer from variety of health problems than urban women.

The relationship between the health status and SES (Table 4.5.3) of the postmenopausal rural women indicated that women who belonged to middle suffered from moderately affected health status, followed by poor SES class with severely affected health status. Similar trend was observed in urban women of Dharwad and Bagalkote area. Knowledge regarding to nutritious food, availability of medical facilities and awareness regarding health might be reasons which contributed for better

health of women belonged to higher SES group. It may be because of the higher SES women have opportunity to consume quality products and easy availability of medical facilities improve health status than poor SES women. A study supported by Jennifer *et al.* (2013) majority of women belonged to higher SES reported better health status than lower SES women and SES found significantly modified the effect of both general and mental health in favor of higher women. Another study indicated that low SES environments are stressful and reduce individual's reserve capacity to manage physical and mental status (Lina and Karen, 2013). A study conducted by Esra (2014) stated that lower SES might limit adequate consumption of dietary intake which subsequently contributes to poor health. Badami *et al.* (2013) observed that negatively significant relationship between health, stress and socio-economic status of both rural and urban women.

Health status by age in Bagalkote and Dharwad areas indicated that women belonged to age group of 45-45 years were found to be in mildly affected health status group, while women from 51-55 years were in more severely affected health status group (Table 4.5.4). It showed that health status deteriorated with increase in age because advance in aging initiate decline in bodily functions and women become easily susceptible to health problems. There was significant association and relationship found between age and health status. A study supported by Esra and Sylvia (2008) reported that the degree of general health status severity was significantly associated with age. In another study the women <45 years of age group experienced less severe health problems than >45 years aged women and age was significantly associated with health status among postmenopausal women (Stepaniak *et al*., 2013)

A negatively significant relationship and significant association observed between women's education and occupation with health status both in rural and urban Dharwad and Bagalkote district (Table 4.5.5 and Table 4.5.6). The results pointed out that higher the education and occupation of respondents better is the health status. A study conducted by Omoyemi *et al.* (2012) results revealed that education level was having direct negatively significant association with perceived health status. The study supported by Keramat *et al*. (2014) found strong association of literacy and occupation with osteoporosis among menopausal women.

There was significant association observed between weight status and health status among rural and urban women of Bagalkote and rural women of Dharwad indicated in Table 4.5.7. Indicated that women belonged to overweight and obese category faced by more menopausal symptoms that women belonged to ideal body weight. A study in line with Goyal *et al.* (2012) reported that weight gaining among menopausal women significantly related with health problems faced.

5.6 Correlation between SES, menopausal knowledge, menopausal symptoms, health status and age

There was negatively significant relationship and association between menopausal knowledge and menopausal symptoms (Table 4.6), health status and menopausal symptoms (Table 4.7) and Knowledge and health status (Table 4.8). It indicated that women who had good knowledge had better health status and managed menopausal symptoms effectively. Menopausal knowledge directly influencing the health status of menopausal women.

It was interesting to note that SES, health status, menopausal knowledge and age was inter related to each other (Table 4.9). There was highly significant relationship between SES and menopausal knowledge and negatively significant relationship found between SES, health status and menopausal symptoms. It indicated that women who belonged to higher SES suffer from few health problems and had better knowledge on menopause and vice versa. A study conducted by Karyo *et al.* (2016) revealed that women with sufficient knowledge on menopause, SES of family and heath status of women inter related to each other. Women with sufficient knowledge cope up in better manner with menopausal symptoms. Another study by Elizabelth (2010) reported that age found to be statistically correlated risk factors with general health problems, menopausal symptoms and knowledge gained by experience. A study by Remona and Anile (2015) reported that women with less knowledge, low SES experienced more menopausal symptoms and health problems. Sengupta *et al.* (2010) pointed out that optimal health positively influenced the menopausal symptoms. Jennifer *et al*. (2013) stated that women experiencing menopausal symptoms reported significantly lower level of health status, while depression, anxiety and joint stiffness were symptoms with the strongest association with health outcomes.

6. SUMMARY AND CONCLUSIONS

The study on “care, management and health status of postmenopausal women among rural and urban women” was conducted during the year 2015-16 in Bagalkote and Dharwad area. The present study was conducted to explore the knowledge regarding care and management on menopause among middle age women. It also included assessment of health status and to know the relationship between health status and knowledge regarding menopausal care and management among postmenopausal women.

The correlation design was used with aim to know the relationship between rural and urban postmenopausal women. The sample comprised of 160 women age ranged from 40-55 years were selected from rural and urban area of Dharwad and Bagalkote distric. The criteria that they should have attained menopause before one year for assessing their menopausal knowledge. the structured personal schedule was used to collected personal schedule was used to collect personal information like name., age, family members with age, relationship with the respondents education, occupation and their family income. The socio-economic status scale developed by Agarwadl *et al* (2005). Which assess education, occupation, monthly per capita income from all sources, family possessions, number of children, domestic servants in home, possession of agricultural land and non agricultural land along with animals and social status of the family. The PGI health questionnaire, N-2 developed by Wig and Verma (1978) which measures the status of wellness, fitness and underlying diseases or injuries. The respondents were categorized into mildly affected, moderately affected and severely affected health status. The menopause rating scale developed by Berlin (1992) to assess age related decline of physical and mental capacity, divided into 3 subscale such as physiological, somatic and urogenital symptoms further it categorized as mild, moderate and severe menopausal symptoms. The self-structured questionnaire was used to elicit the information of know and management of menopause depending upon their responses they were categorized into low, medium high. The salient features of the study were summarized as follows.

In case of 40-55 years aged women 46.25 per cent of them illiterate, whereas 22.50 per cent who completed primary school, 50 per cent of women housewives, 21.25 per cent of them working in government sectors and 18.75 per cent of women engaged in private jobs (Table 4.1). Major per centage (55) of women belonged to other backward castes (OBC), followed by upper caste, dalits and tribes.

Nutrition status of postmenopausal women

- Majority of (48.75%) urban women were in ideal body weight category, while 47.50 per cent of women belonged to overweight.
- In 40-45 years age group women belonged to overweight and ideal body weight category, while 51-55 years age group women were found in overweight and obese category in rural and urban area.

Menopause symptoms among postmenopausal women

- The mean scores of rural women (19.48±5.88) were higher compared to urban women (17.70±7.81). Overall there was significant difference found between menopausal symptoms of rural and urban women. It indicated that urban women experienced less menopausal symptoms than rural women.
- The women belonged to high and middle SES category had mild and moderate menopausal symptoms, while women belonged to poor SES category had severe menopausal symptoms. There was negatively significant relationship and association observed women between SES and menopausal symptoms
- The women belonged to age group of 45-45 years, had severe and moderate menopausal symptoms, while women belonged to 50-55 years had mild menopausal symptoms. There was negative significant relationship and significant association observed between age and menopausal symptoms.
- The illiterate women experienced more number of menopausal problems than women educated till college and > degree, education was found negative significant relationship and significant association with menopausal symptoms.
- The housewives reported severe as well as moderate menopausal symptoms but women working in private and government sectors experienced mild and moderate menopausal symptoms. Occupation of women found negative significant relationship and significant association with menopausal symptoms.

Menopausal knowledge

- In Dharwad, urban women with respect to menopausal knowledge higher mean scores (43.95±4.62) compared to rural women (39±2.67). There was significant difference and highly significant association found between rural and urban women of Dharwad in knowledge. Similar trend was observed in Bagalkote
- Majority of respondents had low knowledge on menopausal belonged to poor SES category. Women belonged to high SES category they reported high as well as medium knowledge on menopause.
- Compared to women aged between 40-45 years had less knowledge than women aged between 50-55 years. It indicated that age was significantly related and associated with menopausal knowledge.
- Education and occupation of women positively significantly related and associated with menopausal knowledge among postmenopausal women.

Health status

- The mean scores of rural (23.06±6.07) was higher compared to urban women (21.85±6.61). It indicated rural women reported more health problems than urban women and there was significant difference found between rural and urban area as well as Dharwad and Bagalkote district.

- 30 per cent of women had severely affected health status aged between 50-55 years, while women aged between 40-45 years belonged mildly affected and moderately affected health status. It was observed that age was significantly associated and related with health status.
- Majority of women (40%) had moderately affected health status, while 50 per cent of them had severely affected health status belonged to poor SES. There was negatively significant relationship and significant association between health status and SES.
- Educated women had mildly affected health status compared to illiterate women and women in professionals perceived good health status compared to housewives. It was indicated that education and occupation of women was negatively significantly related with perceived health status and positively significantly associated.
- The women with high knowledge experienced mild menopausal symptoms, while women who had low knowledge on menopause reported severe menopausal symptoms. It indicated that knowledge was found negatively significant interrelated with menopausal symptoms.
- The majority (32.50%) of women had moderate menopausal symptoms belonged to moderately affected health status, while women who reported 15 per cent of severe menopausal symptoms belonged to severely affected health status and women who have mild menopausal symptoms belonged to mildly affected health status. There was significant relationship and association found between health status and menopausal symptoms.
- The women who had high knowledge on menopause reported mildly affected health status, while women who have low knowledge on care and management of menopause experienced severely affected health status. There was negatively significant interrelationship found between knowledge and health status.
- It was interesting to note that menopausal knowledge, health status, menopausal symptoms, SES and age was highly significantly inter related with each other, which indicated that a women who had good knowledge got better health and suffer from mild menopausal symptoms. SES and age related to be in good health status, less menopausal symptoms and better knowledge on care and management of menopause.

Implications and Recommendations

- There was significant difference between the rural and urban women of Dharwad and Bagalkote in knowledge and health status. However there is a need to improve knowledge regarding care and management of menopause and health status of rural women.
- Rural women experienced more severe menopausal symptoms than urban women. Hence, rural women should be made aware with appropriate knowledge on care and management of menopause and physiological changes during and after menopause.

- Friends are the main source of informant regarding care and management of menopause. Hence empower the women with necessary information regarding menopausal symptoms through their friends.
- It is noted that half the postmenopausal middle aged women belonged to overweight and obese category of BMI in rural and urban area. Therefore the women should be educated with regard to healthy and nutritious diet during menopause to avoid the further complications of overweight.
- Health status of the postmenopausal women indicated that 25-40 per cent of rural women of Dharwad and Bagalkote areas were belonged to moderately affected health status indicating few physiologically distresses. There is a need to empower the women to handle and take care of minor health problems during menopausal period.
- A comparison between urban and rural women indicated that urban women had better health status than rural women. Hence the self care and awareness programme regarding regularization of the health during menopause is required.

Suggestions for future research

- Educational interventions for women to enhance their knowledge on care and management of menopause.
- Assessing and prevalence of abdominal obesity among postmenopausal women and its complications on physical and mental health.
- Longitudinal study on menopausal symptoms, quality of life and well being between pre , peri and postmenopausal women.

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APPENDIX I

Socio-economic status scale

1. Monthly income from all sources ಎಲ್ಲಾ ಮೂಲಗಳಿಂದ ತಿಂಗಳಿಗೆ ಬರುವ ಆದಾಯ - Rs.

2. Education of father and mother ತಂದೆ ಮತ್ತು ತಾಯಿಯ ಶಿಕ್ಷಣದ ಮಟ್ಟ

3. Occupation of father and mother ತಂದೆ ಮತ್ತು ತಾಯಿಯ ಉದ್ಯೋಗ

4. Family possession ಕುಟುಂಬದ ಒಡೆತನ/ಸ್ವಾಧೀನ/ಐಶ್ವರ್ಯ

   1. Refrigerator ಫ್ರೀಜ್ Yes/No

   2. TV ಟಿ.ವಿ. Yes/No

   3. Radio/Transistor/Music System Yes/No
      ರೆಡಿಯೋ/ಟೆಪ್/ಸಂಗೀತ ಮಾಧ್ಯಮಗಳು

   4. AC ಎ.ಸಿ. Yes/No

   5. Washing Machine ವಾಷಿಂಗ್ ಮಶಿನ್ Yes/No

   6. Telephone ಫೋನ್ Yes/No

   7. Mobile ಮೊಬೈಲ್ Yes/No

   8. Credit card ಕ್ರೆಡಿಟ್ ಕಾರ್ಡ Yes/No

   9. Sanitary latrine ಪಾಯಖಾನೆ Yes/No

   10. Which newspaper subscribed? ಯಾವ ದಿನಪತ್ರಿಕೆ ತರಿಸುತ್ತಿರಾ?

5. Type of house (Choose one of the following) ವಾಸಿಸುತ್ತಿರುವ ಮನೆಯ ವಿಧ

   1. Own house with 5 or more rooms ಅಥವಾ ಹೆಚ್ಚಿನ ಕೋಣೆಯುಳ್ಳ ಸ್ವಂತ ಮನೆ

   2. Own house with 3-4 rooms 3-4 ಕೋಣೆಯುಳ್ಳ ಸ್ವಂತ ಮನೆ

   3. Rented/GOvt. house with 5 or more rooms 5 ಅಥವಾ ಹೆಚ್ಚಿನ ಕೋಣೆಯುಳ್ಳ ಸರಕಾರಿ/ಬಾಡಿಗೆ ಮನೆ

   4. Own house with 1-2 rooms 1–2 ಕೋಣೆಯುಳ್ಳ ಸ್ವಂತ ಮನೆ

   5. Rented/Govt. house with 3-4 rooms 3-4 ಕೋಣೆಯುಳ್ಳ ಬಾಡಿಗೆ ಅಥವಾ ಸರಕಾರಿ ಮನೆ

   6. Rented/Govt. house with 1-2 rooms 1-2 ಕೋಣೆಯುಳ್ಳ ಬಾಡಿಗೆ ಅಥವಾ ಸರಕಾರಿ ಮನೆ

   7. Own jhuggi ಸ್ವಂತ ಗುಡಿಸಲು

   8. Rented jhuggi ಬಾಡಿಗೆ ಗುಡಿಸಲು

   9. No place to live, pavement, mobile cart ವಾಸಿಸಲು ಮನೆ ಇಲ್ಲ

6. Possession of a vehicle ವಾಹನದ ಒಡೆತನ

1. 2 or more cars/tractors/trucks ಎರಡು ಅಥವಾ 2ಕ್ಕಿಂತ ಹೆಚ್ಚಿನ ಕಾರು/ಟ್ರಾಕ್ಟರ್/ಲಾರಿ

2. 1 car/tractor/truck ಒಂದು ಕಾರು/ಟ್ರಾಕ್ಟರ್/ಲಾರಿ

3. 1 or more scooter(s)/bullock cart(s) ಒಂದು ಅಥವಾ 1 ಕ್ಕಿಂತ ಹೆಚ್ಚಿನ ಸ್ಕೂಟರ್

4. 1 or more cycles (not baby cycle) ಒಂದು ಅಥವಾ 1 ಕ್ಕಿಂತ ಹೆಚ್ಚಿನ ಸೈಕಲ್

5. None of the above ಯಾವುದು ಇಲ್ಲ

7. No. of earning members in the family ಆದಾಯ ಗಳಿಸುವ ಕುಟುಂಬದ ಸದಸ್ಯರ ಸಂಖ್ಯೆ

1. 3 or more members earning and income pooled ಮೂರು/ಹೆಚ್ಚಿನ ಸದಸ್ಯರು ಆದಾಯಕ್ಕೆ ಆಧಾರ

2. 2 or both husband and wife earning ಎರಡು ಅಥವಾ ಗಂಡ ಹೆಂಡತಿ ಇಬ್ಬರ ಆದಾಯ/ಗಳಿಕೆ

3. Only 1 family member earning Husband/wife ಒಬ್ಬ ಕುಟುಂಬದ ಸದಸ್ಯನ ಆದಾಯ

4. No earning member ಯಾರು ಇಲ್ಲ

8. No. of children living in family ಮನೆಯಲ್ಲಿರುವ ಮಕ್ಕಳ ಸಂಖ್ಯೆ

1) 0-1 2) 2 3) 3 4) 4 5) 5 6) >6

9. Facilities of some essentials in the family (Choose one) ಕುಟುಂಬದ ಅವಶ್ಯಕತೆಗಳು

1. Both tap water supply and electricity ನೀರಿನ ಹಾಗೂ ಕರೆಂಟಿನ ಸೌಲಭ್ಯ

2. Only electricity ಕರೆಂಟಿನ ಸೌಲಭ್ಯ

3. Only tap water ನೀರಿನ ಸೌಲಭ್ಯ ಮಾತ್ರ

4. None is present ಯಾವುದು ಇಲ್ಲ

10. Education of children

Note: Exclude 5 children (under 5 years of age) for this item, Children here are the ones who are 5 years or above

ಮಕ್ಕಳ ವಿದ್ಯಾಭ್ಯಾಸ (ಐದು ವರ್ಷಜದ ಕೆಳಗಿನ ಮಗುವನ್ನು ಬಿಟ್ಟು)

1. All children going/ever gone to school/college ಎಲ್ಲಾ ಮಕ್ಕಳು ಶಾಲೆಗೆ ಹೋಗುತ್ತಾರೆ/ಯಾವಾಗಲೂ ಹೋಗುತ್ತಾರೆ

2. More than 50% children ever gone/going to school/college 50% ಹೆಚ್ಚಿನ ಮಕ್ಕಳು ಶಾಲೆಗೆ ಹೋಗುತ್ತಾರೆ/ಯಾವಾಗಲೂ ಹೋಗುತ್ತಾರೆ

3. Less than 50% children ever gone/going to school/college 5೦% ಕಡಿಮೆ ಮಕ್ಕಳು ಶಾಲೆಗೆ ಹೋಗುತ್ತಾರೆ

4. No child ever gone/going to school/college ಯಾವ ಮಗುವು ಶಾಲೆಗೆ ಹೋಗುವುದಿಲ್ಲ

11. Employment of a domestic servant at home ಮನೆಯಲ್ಲಿನ ಆಳಿನ ಕೆಲಸ

1. Employed more than 2 full time servants 2 ಹೊತ್ತಿಗಿಂತ ಹೆಚ್ಚು ಕೆಲಸ ಮಾಡುವ ಆಳುಗಳು

2. Employed only 1 full time servant1 ಹೊತ್ತು ಕೆಲಸ ಮಾಡುವ ಆಳು

3. Employed more than 3 part time servants ಮೂರು ಕೆಲಸಗಳಿಗೆ (ಬಟ್ಟೆ, ಕಸಗುಡಿಸುವುದು, ಅಡಿಗೆ)

4. Employed 1-2 part time servants 1–2 ಸಾರಿ

5. Employed no servants for domestic work ಮನೆಗೆಲಸಕ್ಕಾಗಿ ಯಾವ ಆಳೂ ಇಲ್ಲ

12. Type of locality the family is residing ಕುಟುಂಬವಿರುವ ಜಾಗ

1. Living in urban locality ಪಟ್ಟಣ

2. Living in rural locality ಹಳ್ಳಿ

3. Living in resettlement colony ಕಾಲೋನಿ

4. Living in slums/jhuggis ್ಲಮ್/ಕೊಳಗೇರಿ/ಗುಡಿಸಲು

5. No fixed living and mobile ಯಾವುದೇ ಮನೆಯಿಲ್ಲ/ವಲಸೆಗಾರರು

13. Caste of the family ಕುಟುಂಬದ ಜಾತಿ

1. Upper caste ಹೆಬ್ಬನ ಜಾತಿ

2. OBC ಹಿಂದುಳಿದ ಜಾತಿಗಳು

3. Dalits ದಲಿತ

4. Tribals ಬುಡಕಟ್ಟು ಜನಾಂಗ

14. Members of family gone abroad in last three year (official or personal)

ಮೂರು ವರ್ಷದಲ್ಲಿಪರದೇಶಕ್ಕೆ ಹೋದ ಕುಟುಂಬದ ಸದಸ್ಯರ ಸಂಖ್ಯೆ (ಆಫೀಸ್ ಕೆಲಸಕ್ಕಾಗಿ ಅಥವಾ ಸ್ವಂತಕ್ಕಾಗಿ)

1. Whole family ಪೂರ್ತಿ ಕುಟುಂಬ

2. Only father and mother ತಂದೆ ಮತ್ತು ತಾಯಿ ಮಾತ್ರ

3. Only 1 family member ಒಬ್ಬ ಕುಟುಂಬದ ಸದಸ್ಯ ಮಾತ್ರ

4. None ಯಾರು ಇಲ್ಲ

15. How many acres of Agricultural land is used for cultivation ಎಷ್ಟು ಎಕರೆ ಕೃಷಿ ಭೂಮಿಯನ್ನು ಬೇಸಾಯಕ್ಕಾಗಿ ಉಪಯೋಗಿಸುತ್ತೀರಾ

16. How many sites does your family have ಮನೆ ಕಟ್ಟಲು ಇರುವ ಜಾಗ ಇದೇಯೇ ಹೌದು/ಇಲ್ಲ ಹೌದಾದರೆ ಎಷಂಜಿ

1. 30/40 _____

2. 40/60 _____

3._____ _____

4. _____ _____

17. (a) Presence of milch cattles in the family for business or non-business purposes ವ್ಯವಹಾರಕ್ಕಾಗಿ ಉಪಯೋಗಿಸುವ ಹಾಲು ಕೊಡುವ ದನಕರುಗಳ ಸಂಖ್ಯೆ

(b) Presence of milch cattles in the family for non-business ವ್ಯವಹಾರಕ್ಕಾಗಿ ಉಪಯೋಗಬಾರದ ಹಾಲು ಕೊಡುವ ದನಕರುಗಳ ಸಂಖ್ಯೆ

18. Presence of non-milch cattles or pet animals in the family ಹಾಲು ಕೊಡದೆ ಇರುವ ಅಥವಾ ಸಾಕುವ ಪ್ರಾಣಿಗಳ ಸಂಖ್ಯೆ

19. Do you have any rented houses/shops/sheds excluding your staying?

ನೀವು ವಾಸಿಸುವ ಸ್ವಂತ ಮನೆಯನ್ನು ಬಿಟ್ಟು ಬಾಡಿಗೆಗೆ ನೀಡಿರುವ ಮನೆ, 1ಅಂಗಡಿ, ಶೆಡ್ಗಳೆಷ್ಟು

1) 3 ಅಥವಾ ಹೆಚ್ಚು

2) 2 ಅಥವಾ ಹೆಚ್ಚು

3) 1 ಯಾವುದು ಇರುವುದಿಲ್ಲ

20. Positions held (besides the positions as employee) by any one member in the family

ಕುಟುಂಬದಲ್ಲಿ ಇರುವ ಸದಸ್ಯರ ತಮ್ಮ ಅಧಿಕಾರವನ್ನು ಹೊರತುಪಡಿಸಿ ಬೇರೆ ಅಧಿಕಾರವನ್ನು ಹೊಂದಿದ್ದಾರೇಯೇ?

1. ಮೂರು ಅಥವಾ ಹೆಚ್ಚಿನ ಸರಕಾರೇತರ ಸಂಘ ಸಂಸ್ಥೆಗಳಲ್ಲಿ ಅಥವಾ ಖಾಸಿಗಿ ಸಂಘಸಂಸ್ಥೆಗಳಲ್ಲಿ ಅಧ್ಯಕ್ಷೆ/ಉಪಧ್ಯಕ್ಷೆ/ಸೆಕ್ರೆಟರಿ ರಿ

2. ಒಂದರಿಂದ ಎರಡು ಅಧ್ಯಕ್ಷೆ ಸದಸ್ಯ

3. ಸರಕಾರಿ/ಖಾಸಗಿ ಸಂಘ ಸಂಸ್ಥೆಗಳಲ್ಲಿ ಸದಸ್ಯ

4. ಯಾವುದೇ ಅಧಿಕಾರವಿಲ್ಲ

21. Total amount of income tax paid by the family (include all the earning members IT) ತೆರಿಗೆ ಕೊಡುವ ಒಟ್ಟು ಮೊತ್ತ

1)> 10 lakhs

2) 1-10 lakhs

3) >50000 but <1 lakhs

4) >20000 - <50000

5) >10000-<20000

6) >5000-<10000

7) <5000

8) Nil

Total scores of this family: _____

APPENDIX II

P. G. I. Health Questionnaire N- 2

(P.G.I ಆರೋಗ್ಯ ಪ್ರಶ್ನಾವಳಿ N-2)

Wig and Verma (1978)

Diretion: Below are given some statements regarding your Physical and mental well being, read them carefully and tick ( ) only those item which refer to you

ಸೂಚನೆಗಳು

ನಿಮ್ಮ ದೈಹಿಕ ಮತ್ತು ಮಾನಸಿಕ ಯೋಗ್ಯ ಸ್ಥಿತಿಯ ಕುರಿತು ಕೆಲವು ವಾಕ್ಯಗಳನ್ನು ಕೊಡಲಾಗಿದೆ. ಅವುಗಳನ್ನು ಗಮನವಿಟ್ಟು ಓದಿ ಮತ್ತು ನಿಮಗೆ ಅನ್ವಯಿಸುವ ವಾಕ್ಯಗಳಿಗೆ ಮಾತ್ರ ಈ ( ) ಗುರುತನ್ನು ಮಾಡಿರಿ.

1…… I often get watering of eyes (ನನಗೆ ಆಗಾಗ್ಗೆ ಕಣ್ಣಲ್ಲಿ ನೀರು ಬರುತ್ತದೆ)

2…… I feel heaviness of the eyes (ಕಣ್ಣುಗಳು ಭಾರವಾದಂತೆ ಅನಿಸುತ್ತದೆ)

3…… I feel burning sensation in the eyes (ಕಣ್ಣು ಉರಿದಂತೆ ಅನಿಸುತ್ತದೆ)

4…… My apatite is not good (ನನಗೆ ಚೆನ್ನಾಗಿ ಹಸಿವು ಆಗುವುದಿಲ್ಲ)

5…….. My digestion is poor (ನನಗೆ ಆಹಾರ ಪಚನವಾಗುವುದಿಲ್ಲ)

6……. I get belching (ನನಗೆ ತೇಗು/ ಡರಿಕೆ ಬರುತ್ತದೆ)

7…….. My taste remains bad (ನನಗೆ ಊಟ ರುಚಿಸುವುದಿಲ್ಲ)

8…..... I often get wide formation in stomach (ನನಗೆ ಹೊಟ್ಟೆಯಲ್ಲಿ ಗ್ಯಾಸ್ ಹಿಡಿದಂತೆ ಅನಿಸುತ್ತದೆ)

9……. I feel heaviness of stomach and often it bets distended (ಆಗಾಗ್ಗೆ ನನಗೆ ಹೊಟ್ಟೆ ಭಾರವಾಗಿ ಬಿರಿದಂತೆ ಅನಿಸುತ್ತದೆ)

10…… I have to go toilet straight after meals (ಊಟ ಮಾಡಿದ ಕೂಡಲೆ ನನಗೆ ಮಲವಿಸರ್ಜನೆಗೆ ಹೋಗಬೇಕಾಗುತ್ತದೆ)

11…… I feel sick in stomach (ನನಗೆ ಹೊಟ್ಟೆಯಲ್ಲಿ ಆರಾಮವಿಲ್ಲದಂತೆ ಅನಿಸುತ್ತದೆ)

12……. I got vomiting (ನನಗೆ ವಾಂತಿ ಆಗುತ್ತದೆ)

13……. I always feel thirsty (ನನಗೆ ಯಾವಾಗಲೂ ಬಾಯಾರಿಕೆ ಆಗುತ್ತದೆ)

14…….. I have got fears like-fear of dark, crowds, closed, etc (ನನಗೆ ಕತ್ತಲೆ, ಗದ್ದಲು, ಗೊಂದಲ,ಮುಚ್ಚಿದ ಕೋಣೆಗಳು ಮುಂತಾದವುಗಳಿಂದ ಭಯ ಉಂಟಾಗುತ್ತದೆ)

15……I find trouble in getting off to sleep or staying asleep (ನನಗೆ ಚೆನ್ನಾಗಿ ನಿದ್ದೆ ಮಾಡಲಾಗುವುದಿಲ್ಲ)

16…… I feel fun down (ನನಗೆ ಸೋತಂತೆ ಆಗುತ್ತವೆ)

17…… I get shakes of hands or body (ನನ್ನ ಕೈ ಕಾಲುಗಳು ನಡುಗುತ್ತವೆ)

18…… I suffer from backache (ನಾನು ಬೆನ್ನು ನೋವಿನಿಂದ ಬಳಲುತ್ತಿದ್ದೇನೆ)

19……. I feel tired all the time (ನನಗೆ ಯಾವಾಗಲೂ ಸುಸ್ತು ಆಗುತ್ತದೆ)

20……. I wish to do everything but can't (ನನಗೆ ಎಲ್ಲವನ್ನು ಮಾಡುವ ಆಸೆ ಇದೆ ಆದರೂ ಆಗುವುದಿಲ್ಲ)

21…..I don't feel like doing anything (ನನಗೆ ಯಾವ ಕೆಲಸದಲ್ಲೂ ಮನಸಾಗುವುದಿಲ್ಲ)

22…… I feel heaviness in the head (ನನಗೆ ತಲೆ ಭಾರವಾದಂತೆ ಅನಿಸುತ್ತದೆ)

23……. I feel as if head is going to explode (ನನಗೆ ತಲೆ ಸಿಡಿದು ಹೋಗುತ್ತದೆ ಎಂದೆನಿಸುತ್ತದೆ)

24……. I often get headache (ನನಗೆ ಮೇಲಿಂದ ಮೇಲೆ ತಲೆನೋವು ಬರುತ್ತದೆ)

25……. I feel heat coming out of the body (ನನ್ನ ದೇಹದಿಂದ ಉರಿ ಬಂದಂತೆ ಅನಿಸುತ್ತದೆ)

26…. I get pessimistic ideas (ನನಗೆ ನಿರಾಶಾವಾದಿ ಯೋಚನೆಗಳು ಬರುತ್ತದೆ)

27…… I get sinking sensation (ನನಗೆ ನೆಲ ಕುಸಿದಂತೆ ಅನಿಸುತ್ತದೆ)

28……. I get palpitation of heart (ನನ್ನ ಹೃದಯ ಕಂಪಿಸುತ್ತದೆ)

29….. I feel empty headedness (ನನ್ನ ತಲೆ ಖಾಲಿ ಆದಂತೆಅನಿಸುತ್ತದೆ)

30…..I find difficulty in passing water (ನನಗೆ ಮೂತ್ರ ವಿಸರ್ಜನೆಗೆ ತೊಂದರೆಯಾಗುತ್ತದೆ)

31….. I get panic or fainting attacks (ನನಗೆ ಮೂರ್ಛೆ ಬಂದಂತೆ ಅನಿಸುತ್ತದೆ)

32….I feel edgy (ನನಗೆ ತುದಿಗಾಲ ಮೇಲೆ ನಿಂತಂತೆ ಅನಿಸುತ್ತದೆ)

33….I feel my "brain is getting weak" (ನನ್ನ ಮೆದುಳು ಅಶಕ್ತವಾದಂತೆ ಅನಿಸುತ್ತದೆ)

34….. I am becoming forgetful (ನಾನು ಬಹಳ ಮರೆಯುತ್ತಿದ್ದೇನೆ)

35….. I feel scared if someone speak loud (ಯಾರಾದರೂ ಜೋರಾಗಿ ಮಾತನಾಡಿದರೆ ನನಗೆ ಭಯವಾಗುತ್ತದೆ)

36….. I remain frightened all the time; not sure what will happen next (ಹೆದರಿಕೆಯಾಗಿ ಮುಂದಿನ ಘಳಿಗೆಯಲ್ಲಿ ಏನಾಗುತ್ತದೋ ಎಂಬ ಸಂಶಯವಾಗುತ್ತದೆ)

37……I feel mixed up when I talk to others (ಇನ್ನೊಬ್ಬರ ಜೊತೆಗೆ ಮಾತನಾಡುವಾಗ ನನಗೆ ಗೊಂದಲವಾಗುತ್ತದೆ)

38……. I can't tolerate noises (ನಾನು ಗಲಾಟೆಯನ್ನು ತಾಳಲಾರೆ)

39….. I get easily irritated (ನಾನು ಸುಲಭವಾಗಿ ಕಿರಿಕಿರಿಗೊಳ್ಳುತ್ತೇನೆ)

40…… I have become superstition (ನಾನು ಮೂಢನಂಬಿಕೆಗಳಲ್ಲಿ ವಿಶ್ವಾಸವಿಡುತ್ತೇನೆ)

41….. Many silly ideas come into my head (ನನ್ನ ತಲೆಯಲ್ಲಿ ಅನೇಕ ಹುಚ್ಚು ಯೋಚನೆಗಳು ಬರುತ್ತವೆ)

42….. I can't forget the past happening (ನನಗೆ ಹಿಂದಿನ ಘಟನೆಗಳನ್ನು ಮರೆಯಲು ಆಗುವುದಿಲ್ಲ)

43…… I don't feel like talking and mixing with other (ನನಗೆ ಬೇರೆಯಲು ಇಷ್ಟವಾಗುವುದಿಲ್ಲ)

44….. I feel like crying (ನನಗೆ ಅಳಬೇಕು ಅನಿಸುತ್ತದೆ)

45….. I don't feel happy (ನನಗೆ ಸಂತೋಷವಾಗುವುದಿಲ್ಲ)

46….. I don't feel interested enough in the family (ನನಗೆ ಕಟುಂಬದಲ್ಲಿ ಅಷ್ಟೊಂದು ಆಸಕ್ತಿ ಬರುತ್ತಿಲ್ಲ)

47…… I feel like going away somewhere (ನನಗೆ ಎಲ್ಲಾದರೂ ದೂರ ಹೋದರೆ ಚೆನ್ನಾಗಿರುತ್ತದೆ ಅನಿಸುತ್ತದೆ)

48….. Many times I wish I was dead (ನನಗೆ ಬಹಳ ಸಲ ಸತ್ತು ಹೋದರೆ ಚೆನ್ನಾಗಿರುತ್ತದೆ ಅನಿಸುತ್ತದೆ)

49….. I am afraid that I may or have become the victim of some incurable(ನಾನು ವಾಸಿಯಾಗದ ರೋಗಕ್ಕೆ ತುತ್ತಾಗಿದ್ದೇನೆ/ ತುತ್ತಾಗಬಹುದು ಎಂಬ ಭಯವಿದೆ)

50…… I find no relief even after consulting many doctors (ಬಹಳಷ್ಟು ವೈದ್ಯರಿಗೆ ತೋರಿಸಿದರೂ ಯಾವುದೇ ಸಮಾಧಾನ ಸಿಕ್ಕಿಲ್ಲ)

Appendix III

Which of the following symptoms apply to you at this time? Please, mark the appropriate box for each symptom. For symptoms that do not apply, please mark 'none'.

Sl No.	Symptoms	None	mild	moderate	severe	Very severe
1	Hot flushes, sweating (episodes of sweating)					
2	Heart discomfort (unusual awareness of heart beat, heart skipping, heart racing, tightness)					
3	Joint and muscular discomfort (pain in the joints, rheumatoid complaints)					
4	Sleep problems (difficulty in falling asleep, difficulty in sleeping through, waking up early)					
5	Depressive mood (feeling down, sad, on the verge of tears, lack of drive, mood swings)					
6	Irritability (feeling nervous, inner tension, feeling aggressive)					
7	Anxiety (inner restlessness, feeling panicky)					
8	Physical and mental exhaustion (general decrease in performance, impaired memory, decrease in concentration, forgetfulness)					
9	Sexual problems (change in sexual desire, in sexual activity and satisfaction)					
10	Bladder problems (difficulty in urinating, increased need to urinate, bladder incontinence)					
11	Dryness of vagina (sensation of dryness or burning in the vagina, difficulty with sexual intercourse)					

ಋತುಬಂಧದ ಮಾಪನ ಪಟ್ಟಿ

ಈ ಸಮಯದಲ್ಲಿ ನಿಮಗೆ ಕೆಳಗಿನ ಯಾವ ಲಕ್ಷಣಗಳು ಅನ್ವಯಿಸುತ್ತವೆ ದಯವವಿಟ್ಟು ಪ್ರತಿಯೊಂದು ಲಕ್ಷಣದ ಸೂಕ್ತ ಚೌಕದಲ್ಲಿ ಗುರುತು ಮಾಡಿ ಯಾವ ಲಕ್ಷಣಗಳು ಅನ್ವಯಿಸುವುದಿಲ್ಲ ಅದಕ್ಕೆ 'ಯಾವುದು ಇಲ್ಲ ' ಎಂಬುದಕ್ಕೆ ಗುರುತು ಮಾಡಿ

ಕ್ರ.ಸಂ	ಲಕ್ಷಣಗಳು	ಯಾವುದು ಇಲ್ಲ	ಸ್ವಲ್ಪ	ಮಾಧ್ಯಮ	ತ್ರೀವ್ರ	ತುಂಬಾ ತೀವ್ರ
1	ಬಿಸಿ ಹೊಳೆಗಳು, ಬೆವರು (ಬೆವರಿನ ಕಂತುಗಳು) ಪದೇ ಪದೇ ಬೆವರುವಿಕೆ					
2	ಹೃದಯದ ತೊಂದರೆಗಳು,(ಹೃದಯ ಬಿಗಿತ, ಹೃದಯ ಅಸ್ವಸ್ಥತೆ)					
3	ಕೀಲು ಮತ್ತು ಸ್ನಾಯುಗಳು ಅಸ್ವಸ್ಥತೆ (ಕೀಲುನೋವು, ಸಂಧಿವಾತ ದೂರುಗಳು					
4	ನಿದ್ರೆಯ ಸಮಸ್ಯೆಗಳು, (ನಿದ್ರೆ ತೊಂದರೆ ನಿದ್ರೆ ಹತ್ತುವಲ್ಲಿ ತೊಂದರೆ, ಪದೇ ಪದೇ ಎಚ್ಚರಗೊಳ್ಳುವುದು, ಸರಿಯಾಗಿ ನಿದ್ರೆ ಬರದದಿರುವುದು)					
5	ಖಿನ್ನತೆ ಚಿತ್ತ (ಕೀಳು ಭಾವನೆ, ಅಸಂತೊಷ, ಕಣಣೀರು ಅಂಚಿನಲ್ಲಿರುವುದು, ಚಲನೆ ಕೊರತೆ, ಚಿತ್ತಬೇದ)					
6	ಕಿರಿ ಕಿರಿ (ಸಂಕೋಚ ಭಾವವನೆ ಬಿಳಿ ಒತ್ತಡದ ಭಾವನೆ ಆಕ್ರಮಣಕಾರಿ ಭಾವನೆ)					
7	ಆತಂಕ (ಚಡಪಡಿಸುವಿಕೆ, ಕಂಗಾಲಾಗುವಂತ ಭಾವನೆ)					
8	ದೈಹಿಕ ಮತ್ತು ಮಾನಸಿಕ ಬಳಲಿಕೆ (ಸಾಮಾನ್ಯ ಇಳಿಕೆ, ದುರ್ಬಲ ಜ್ಞಾಪಕಶಕ್ತಿ, ಏಕಾಗ್ರತೆ ಇಳಿಕೆ, ಮರೆವು)					
9	ಮೂತ್ರಕೋಷ ತೊಂದರೆ (ಮೂತ್ರವಿಸರ್ಜನೆ ತೊಂದರೆ, ಸತತ ಮೂತ್ರವಿಸರ್ಜನೆ, ಮೂತ್ರಕೋಶ ಅಸಯಮತೆ					
10	ಲೈಂಗಿಕ ತೊಂದರೆಗಳು (ಲೈಂಗಿಕ ಆಸಕ್ತಿಯಲ್ಲಿ, ಕಾರ್ಯದಲ್ಲಿ, ಹಾಗೂ ಸಂತೃಪ್ತಿಯಲ್ಲಿ ಬದಲಾವಣೆ)					
11	ಯೋನಿಯ ಶುಷ್ಕತೆ (ಯೋನಿಯ ಉರಿಯುವಿಕೆ, ಲೈಂಗಿಕ ಸಂಭೋಗದಲ್ಲಿ ತೊಂದರೆ)					

Appendix IV

Question related to Care and Management Regarding Menopause

1) Name**:**

2) Age**:**

3) Education**:**

4) Occupation**:**

5) Income**:**

6) Family Information**:**

Sl No	Family members Name	Male/ Female	Relation with respondent	Education	Occupation	Income

7) Body weight (kg) _____ height (feet) _____

8) At what age you attainded your menarche _____

9) Are your menses regular / every month? Yes / No

10) At what age you attainded your menopause _____

11) Have you undergone tobactomy? Yes/no

12) According to you menopause is a natural phenomena or curse?_____

13) At what age you experienced menopause symptoms?

a) 35-40 years b)45-50years c)50-55years d)after 55 years

14) How many days does your bleeding last during menopause?

Menopause Problems

15) Do you consume any traditional medicine to prevent menopause problems? Yes/no

Then which are there 1.

2.

16) Did you take any treatment for menopause? Yes/no

17) Do you feel irritable/ unhappy during menopause?

18) Do you have medical Problems?

a) Blood pressure b) Diabetics c)any other

19) Does if you faced any health related problems as mentioned bellow?

Problems	How many times			Span	
	Always	Occasionally	Never	Little	Often
Weakness					
Heavy weight					
Constipation					
Piles					
White discharge					
Abdominal pain					

Care and Management of Menopause

20) Source of information?

a) Mother b) Friends c) Relatives d) Mass media

21) Do you following any physical exercise to overcome menopausal symptoms? Yes/No. If yes

a) Every day b) weekly……..days c) Occasionally

22) Which type of exercise

a) Running b) Walking c) Aerobics d) Meditation

23) Do you meet any specialist / family doctor every time if you have any health related problems?

24) Do you talk about menopause without any hesitation? Yes / No

25) Do you face any problems during menopause while doing household activities? Yes / No

If Yes what are the problem

26) Do you notice any difference before and after attainment of menopause? Yes/No If Yes how…….

Diet pattern/ Health

27) Do you avoid to take any special food during menopause? Yes / No

28) Did you take any special foods during menopause? Yes / No

If yes 1.

2.

29) How many time you drink tea/ coffee per day?

a) Never b) 1-2 time c) 3-4 times d)>4 times

30) Do you consume vegetables every day? Yes / No

If yes mention 1.

2.

Appendix V

Menopausal Symptom Checklist

Do you experience any of the following symptoms and associate them with menopause?

Sl No	Symptoms Never	Never Experienced	Rarely	Occasionally Experienced	Frequently Experienced	The time Most ofExperienced
1	Headaches					
2	Dry skin					
3	Dry eyes					
4	Irregular menses					
5	Heavy bleeding					
6	Light bleeding					
7	spotting					
8	Hair loss					
9	Facial hair					
10	Heavy body weight					

11. Do you experience any other symptoms that are not listed? _____

ಋತುಬಂಧ ಸಮಯದಲ್ಲಿ ಈ ಕೆಲಗಿನ ಯಾವ ಲಕ್ಷಣಗಳನ್ನು ನೀವು ಅನುಭವಿಸಿದ್ದಿರಾ?

ಕ್ರ.ಸಂ	ಲಕ್ಷಣಗಳು	ಎಂದಿಗೂ ಅನುಭವಿಸಿಲ್ಲ	ವಿರಳಗಿ ಅನುಭವಿಸಿದ್ದೆನೆ	ಆಗಾಗ್ಗೆ ಅನುಭವಿಸಿದ್ದೆನೆ	ದಿನನಿತ್ಯ ಅನುಭವಿಸಿದ್ದೆನೆ	ಅನೇಕವೇಳೆ
1	ತಲೆನೋವು					
2	ಒಣ ಚರ್ಮ					
3	ಕಣ್ಣಿನ ಒಣಗುವಿಕೆ					
4	ಅನಿಯಮಿತ ಋತುಚಕ್ರ					
5	ಹೆಚ್ಚಿನ ರಕ್ತಸ್ರಾವ					
6	ಅತೀ ಕಡಿಮೆ ರಕ್ತಸ್ರಾವ					
7	ಕೂದಲು ಉದರುವಿಕೆ					
8	ಮೂಖದ ಮೇಲಿನ ಕುದಲು					
9	ಮೊಡವೆ					
10	ತೂಕ ಹೆಚ್ಚುವಿಕೆ					

1) ಮೇಲೆ ಪಟ್ಟಿ ಮಾಡಿದಲ್ಲದೆ ನೀವು ಯಾವುದಾದರೂ ಲಕ್ಷಣಗಳನ್ನು ಅನುಭವಿಸಿದ್ದಿರಾ? ಹೌದು/ಇಲ್ಲ

ಹೌದುಯಂದಾದರೆ ಯಾವುದು

ಋತುಬಂಧದ ಬಗೆಗಿನ ಕಾಳಜಿ ಮತ್ತು ನಿರ್ವಹಣೆಗೆ ಸಬಂಧಿಸಿದ ಪ್ರಶ್ನಾವಳಿ

ಋತುಬಂಧದ ಬಗ್ಗೆ ಅರಿವು, ನಿಭಾಯಿಸುವ ಕ್ರಮ ಮತ್ತು ಆರೋಗ್ಯ ಕ್ರಮಗಳ ಕುರಿತು ಮಾಹಿತಿ ತಿಳಿದುಕೊಳ್ಳಲು ಈ ಪ್ರಶ್ನಾವಳಿಯನ್ನು ತಮಗೆ ಕೊಡಲಾಗಿದೆ. ಯಾವುದೇ ಸುಳ್ಳಾಂಶವಿಲ್ಲದೆ ಸರಿಯಾದ ಉತ್ತರವನ್ನು ಆರಿಸಿ ಗುರುತು (✓) ಮಾಡಿರಿ ನಿಮ್ಮ ವಯಕ್ತಿಕ ಮಾಹಿತಿಯನ್ನು ಯಾವುದೇ ಕಾರಣಕ್ಕೂ ಬಹಿರಂಗ ಪಡಿಸುವುದಿಲ್ಲ ಹಾಗೂ ಇದನ್ನು ಕೇವಲ ಸಂಶೋಧನೆಗಾಗಿ ಮಾತ್ರ ವಿನಿಯೋಗಿಸಿಕೊಳ್ಳಲಾಗುವುದು.

1) ಹೆಸರು

2) ವಯಸ್ಸು

3) ಉದ್ಯೋಗ

4) ತಿಂಗಳ ಆದಾಯ

5) ಕುಟುಂಬದ ವಿವರ

ಕ್ರ.ಸಂ	ಕುಟುಂಬದ ಸದಸ್ಯರ ಹೆಸರು	ಗಂಡು/ಹೆಣ್ಣು	ಉತ್ತರಿಸುವವರಿಗೆ ಸಂಬಂಧ	ವಿದ್ಯಾಬ್ಯಾಸ	ವೃತ್ತಿ	ಆದಾಯ

ಋತುಬಂಧದ ಇತಿಹಾಸ

6) ದೇಹದ ತೂಕ(ಕೆ.ಜಿ) ___ಎತ್ತರ___ _____

7) ನಿಮಗೆ ಮುಟ್ಟು ಯಾವ ವಯಸ್ಸಿಗೆ ಪ್ರಾರಂಭವಾಯಿತು? _____

8) ನಿಮಗೆ ಋತುಸ್ರಾವ ನಿಯಮಿತವಾಗುತಿತ್ತೇ? ಹೌದು/ಇಲ್ಲ

೯) ನಿಮಗೆ ಋತುಬಂಧವಾಗಿದೆಯೇ? ಹೌದು/ಇಲ್ಲ, ಹಾಗಾದರೆ ಯಾವ ವಯಸ್ಸಿಗೆ _____

೧೦) ಗರ್ಭಕೋಶದ ಶಸ್ತ್ರಚಿಕಿತ್ಸೆಗೆ ಒಳಗಾಗಿದ್ದೀರಾ? ಹೌದು/ಇಲ್ಲ

೧೧) ಋತುಬಂಧದ ಕ್ರಿಯೆಯು ನಿಮ್ಮ ಪ್ರಕಾರ ನೈಸರ್ಗಿಕ ಕ್ರಿಯೆಯೇ ಅಥವಾ ಕಾಯಿಲೆ?

೧೨) ನಿಮಗೆ ಋತುಬಂಧದ ಲಕ್ಷಣಗಳು ಯಾವ ವಯಸ್ಸಿಗೆ ಪ್ರಾರಂಭವಾದವು?

ಅ) ೩೫-೪೦ ವರ್ಷ ಬ)೪೫-೫೦ ವರ್ಷ ಸಿ)೫೦-೫೫ ವರ್ಷ ಡಿ) ೫೫ ವರ್ಷದ ನಂತರ

೧೩) ಋತುಬಂಧದ ಸಮಯದಲ್ಲಿ ಎಷ್ಟು ದಿನಗಳವರೆಗೆ ರಕ್ತಸ್ರಾವವಾಗುತಿತ್ತು?

ಅ) ೩-೫ದಿನಗಳವರೆಗೆ ಆ) ೬-೧೦ದಿನಗಳವರೆಗೆ ಇ)೧೧-೧೫ದಿನಗಳವರೆಗೆ

<u>ಋತುಭಂದದ ತೊಂದರೆಗಳು</u>

೧೪) ಋತುಬಂಧದ ತೊಂದರೆಯನ್ನು ನಿವಾರಿಸಿಕೊಳ್ಳಲು ಯಾವುದಾದರು ಮನೆಯ ಮದ್ದನ್ನು ತೆಗೆದುಕೊಂಡಿದ್ದಿರಾ?

ಹೌದು/ಇಲ್ಲ,

ಹೌದುಯಂದಾದರೆ ಯಾವುವು ೧

೨

೧೫) ಋತುಬಂಧದ ಸಮಸ್ಯೆಯನ್ನು ನಿವಾರಿಸಿಕೊಳ್ಳಲು ನೀವು ಯಾವುದೇ ತರಹದ ಚಿಕಿತ್ಸೆಯನ್ನು ಪಡೆದಿದ್ದಿರಾ?ಹೌದು/ಇಲ್ಲ, ಹೌದುಯಂದಾದರೆ ಅವು ಯಾವುವು? _____

೧೬) ಋತುಬಂಧದ ಅವಧಿಯಲ್ಲಿ ಸಿಡುಕು/ಮುಂಗೋಪಿತನದಂತಹ ತೊಂದರೆಯನ್ನು ಅನುಭವಿಸಿದ್ದಿರಾ?

೧೭) ಚಿಕಿತ್ಸೆಯ ವಿವರ

ಅ)ರಕ್ತದ ಒತ್ತಡ ಆ)ಸಕ್ಕರೆ ಕಾಯಿಲೆ ಇ)ಇತರೆ

೧೮) ಋತುಬಂಧದ ಸಮಯದಲ್ಲಿ ಆರೋಗ್ಯಕ್ಕೆ ಸಂಬಂಧಿಸಿದ ಈ ಕೆಳಗೆ ಸ್ರಚಿಸಿದ ತೊಂದರೆಗಳನ್ನು ಅನುಭವಿಸಿದ್ದಿರಾ?

ಸಮಸ್ಯೆಗಳು	**ಎಷ್ಟು ಸಲ**			**ಅವದಿ**	
	ಯಾವಾಗಲು	**ಕೆಲವೊಂದುಸಲ**	**ಇಲ್ಲವೆಇಲ್ಲ**	**ಸ್ವಲ್ಪ**	**ಧೀರ್ಘಕಾಲ**
ಅಶಕ್ತರಾಗುವುದು					
ದೇಹ ಭಾರವಾದಂತಾಗುವುದು					
ಮಲಬದ್ದತೆ					
ಮೂಲವ್ಯಾದಿ					
ಬಿಳಿರಕ್ತಸ್ರಾವ					
ಸೊಂಟನೋವು					

ಋತುಬಂಧದ ಬಗ್ಗೆ ಕಾಳಜಿ ಹಾಗೂ ನಿರ್ವಹಣೆ

೧೯) ಋತುಬಂಧದ ಲಕ್ಷಣಗಳನ್ನು ನೀವು ಯಾರಿಂದ ತಿಳಿದುಕೊಂಡಿದ್ದಿರಿ?

ಅ) ತಾಯಿಯಿಂದ ಆ)ಸ್ನೇಹಿತೆಯರಿಂದ ಇ)ಸಂಬಂಧಿಕರಿಂದ ಈ)ಸಮೂಹ ಮಾದ್ಯಮದಿಂದ

೨೦) ನಿಮಗೆ ಋತುಬಂಧದ ಲಕ್ಷಣಗಳನ್ನು ನಿವಾರಿಸಿಕೊಳ್ಳಲು ದೈಹಿಕ ವ್ಯಾಯಮಗಳನ್ನು ಅಳವಡಿಸಿಕೊಂಡಿದ್ದಿರಾ? ಹೌದು/ಇಲ್ಲ,

ಹೌದುಯಂದಾದಲ್ಲಿ

ಅ) ಪ್ರತಿದಿನ ಆ) ವಾರದಲ್ಲಿ ದಿನಗಳು___ ಇ) ಕೆಲವೊಮ್ಮೆ

೨೧) ಯಾವ ತರಹದ ವ್ಯಾಯಮಗಳನ್ನು ಅಳವಡಿಸಿಕೊಂಡಿದ್ದೀರಿ?

ಅ) ಬಿರಿಸಿನ ನಡೆದಾಡುವಿಕೆ ಆ)ಓಡುವುದು ಇ)ಯೋಗಬ್ಯಾಸ ಈ)ಧ್ಯಾನ ಮಾಡುವುದು

೨೨) ಪ್ರತಿ ಸಲ ಆರೋಗ್ಯದಲ್ಲಿ ಏರುಪೆರಾದಾಗ ನಿಮ್ಮ ಕುಟುಂಬದ ವೈದ್ಯರ ಬಳಿ ಹೋಗುತ್ತಿರಾ/ಸ್ಪೆಷಲಿಸ್ಟಗಳನ್ನು ಕಾಣುತ್ತಿರಾ?

೨೩) ಋತುಬಂಧದ ಕುರಿತು ಯಾವುದೇ ಮುಜೂಗರವಿಲ್ಲದೆ ಚರ್ಚಿಸುತ್ತೀರಾ? ಹೌದು/ಇಲ್ಲ

೨೪) ಮನೆಕೆಲಸ ಮಾಡುವಾಗ ನೀವು ತೊಂದರೆಯನ್ನು ಅನುಭವಿಸಿದ್ದಿರಾ?ಹೌದು/ಇಲ್ಲ

ಹೌದು ಎಂದಾದರೆ ಯಾವ ತರಹದ ತೊಂದರೆ

೨೫) ಋತುಬಂಧದ ಪೂರ್ವದ ದೈನಂದಿನ ಚಟುವಟಿಕೆಗೂ ಹಾಗೂ ಋತುಬಂಧ ಪ್ರಾರಂಭವಾದ ಮೇಲೆ ನಿಮ್ಮ ದೈನಂದಿನ ವ್ಯತ್ಯಾಸವಿದೆಯೇ?ಹೌದು/ಇಲ್ಲ

ಆಹಾರ ಕ್ರಮ ಮತ್ತು ಆರೋಗ್ಯ

೨೬) ಋತುಬಂಧದ ಸಮಯದಲ್ಲಿ ಯಾವುದಾದರು ವಿಶೇಷ ಆಹಾರವನ್ನು ತ್ಯೆಜಿಸಿದ್ದಿರಾ? ಹೌದು/ಇಲ್ಲ, ಹೌದುಯಂದಾದರೆ,

ಏಣ್ಣೆಯ/ಸಿಹಿಪದಾರ್ಥ/ಇತರೆ

೨೭) ಋತುಬಂಧದ ಸಮಯದಲ್ಲಿ ಯಾವುದಾದರು ಫಿಶೇಷ ಆಹಾರವನ್ನು ಸೇವಿಸಿದ್ದೀರಾ? ಹೌದು/ಇಲ್ಲ, ಹೌದುಯಂದಾದರೆ

೨೮) ದಿನಕ್ಕೆ ಎಷ್ಟು ಬಾರಿ ಟೀ/ಕಾಫೀ ಸೇವಿಸುತ್ತಿರಾ?

ಅ)ಇಲ್ಲವೇ ಇಲ್ಲ ಆ) ೧-೨ ಸಲ ಇ)೩-೪ ಸಲ ಈ)೪ಕ್ಕಿಂತ ಹೆಚ್ಚು

೨೯) ಪ್ರತಿದಿನ ಆಹಾರದ ಜೊತೆಗೆ ಹಸಿ ತರಕಾರಿ ಸೇವಿಸುತ್ತಿದ್ದಿರಾ? ಹೌದು/ಇಲ್ಲ,

ಹೌದುಯಂದಾದರೆ ಯಾವುವು?

HEALTH STATUS, KNOWLEDGE REGARDING CARE AND MANAGEMENT OF MENOPAUSE AMONG RURAL AND URBAN POSTMENOPAUSAL WOMEN

DEEPA KANNUR **2016** **DR. SUNANDA ITAGI**
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ABSTRACT

The present study was conducted during 2015-16 on 80 rural and 80 urban women of Dhrwad and Bagalkote districts. Menopause rating scale was used to assess age related physical and psychological decline. PGI health questionnaire was used to assess the health status of the respondents. Self structured questionnaire was used to elicit information regarding care and management of menopause. The results revealed that 50 per cent of urban women belonged to overweight category and 40 per cent of rural women had ideal body weight. 37 per cent of urban women had mild menopausal symptoms, while 35 per cent of rural was significant difference between rural and urban women in menopausal symptoms. SES, age, education and occupation was negatively significantly related with menopausal symptoms. It was observed that 8-15 per cent of rural women and 18-28 per cent of urban women had high knowledge regarding care and management of menopause. There was significant difference between rural and urban women of both the districts in menopausal knowledge. SES, age, education and occupation was significantly related and associated with menopausal knowledge. In case of rural women 25-40 per cent of suffered from more severely affected health status, while 15-25 per cent of urban women reported severely affected health status. There was significant difference between rural and urban women in health status. There was negatively significant relationship observed between health status withSES, education, occupation. There was negatively significant interrelationship between knowledge regarding care and management of menopause and menopausal symptoms and health status.