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"Awareness And Understanding Of Menopause Among Post-Menopausal Women In Tea Garden Tribal Communities Of Siliguri, West Bengal: A Preliminary Study"

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ABSTRACT

Background:
Menopause is the period when menstrual periods permanently cease, signalling the end of a woman's reproductive years. It typically occurs between the ages of 45 and 55, though the exact timing can vary. Menopause is usually a natural transition, driven by a decrease in the ovaries' production of the hormones estrogen and progesterone. Women undergoing menopause commonly experience physical, psychological, and social changes that may affect their quality of life and overall wellbeing. Awareness and understanding regarding menopause are essential for recognizing menopausal symptoms, adopting healthy coping measures, and seeking appropriate healthcare support. However, women residing in rural and socioeconomically disadvantaged communities, particularly tea garden tribal communities, often possess limited knowledge regarding menopausal health.

Objective:
To assess the awareness and understanding regarding menopause among post-menopausal women in selected tea garden tribal communities of Siliguri, West Bengal, and to determine the association between awareness and selected demographic variables.

Methods:
A quantitative research approach with a descriptive cross-sectional design was adopted for the study. The study was conducted among 100 post-menopausal women residing in Marion Barrie Tea Estate under St. Mary's III Gram Panchayat, Dudhia, Darjeeling District, West Bengal. Participants were selected using a non-probability purposive sampling technique. Data were collected through a structured interview schedule consisting of demographic variables and a structured knowledge questionnaire related to menopause. Descriptive and inferential statistics were used for data analysis.

Results:
The findings revealed that the majority of participants (56%) had average awareness and understanding regarding menopause, while 28% had poor awareness and only 16% had good awareness. The mean awareness and understanding score was 15.4 ± 4.2, indicating a moderate level of awareness among the participants. No statistically significant association was found between awareness and understanding regarding menopause and selected demographic variables at $p<0.05$ level.

Conclusion:
The study concluded that post-menopausal women in tea garden tribal communities had moderate awareness and understanding regarding menopause. The findings highlight the need for culturally appropriate health education programmes, counselling services, and community-based awareness interventions to improve menopausal health knowledge and promote healthy ageing among women.

Keywords:
Menopause; awareness; understanding; post-menopausal women; tea garden tribal communities; health education; women's health.

CHAPTER I

INTRODUCTION

Background

Menopause is the period when menstrual periods permanently cease, signalling the end of a woman's reproductive years. It typically occurs between the ages of 45 and 55, though the exact timing can vary. Menopause is usually a natural transition, driven by a decrease in the ovaries' production of the hormones estrogen and progesterone. It typically occurs between 45 and 55 years of age and is preceded by a transitional phase known as perimenopause. This period is characterized by complex hormonal fluctuations that influence physical, psychological, and social wellbeing.[1]

Globally, women are living longer, and a substantial portion of their lives is spent in the postmenopausal phase. According to the World Health Organization, the global population of women aged over 50 years is steadily increasing, emphasizing the importance of addressing menopausal health concerns as a public health priority.[2]

The menopausal transition is commonly associated with vasomotor symptoms such as hot flashes and night sweats, sleep disturbances, mood changes, irritability, anxiety, depressive symptoms, cognitive difficulties, and reduced sexual wellbeing. These symptoms can significantly affect a woman's quality of life and daily functioning.[3]

It was estimated that there were 467 million post-menopausal women worldwide in 1990, with an average age of roughly 60. Approximately 25 million women go through menopause each year. The number of menopausal and postmenopausal women worldwide is expected to reach 1.2 billion by 2030, with 47 million new arrivals annually.[4]

The prevalence of menopausal symptoms varies by region and nation. I n Europe, 74% of women have these symptoms, compared to 36–50% in North America, 45–69% in Latin America, and 22–63% in Asia. In Europe, menopause often begins between the ages of 50 and 53. Menopause begins

in North America between the ages of 50 and 51. In Latin America, menopause often begins between the ages of 44 and 53. In Asia, menopause often begins between the ages of 42 and 49.[5]

According to the Census of India 2011, tribal communities constitute 8.6% of the total population of India, comprising approximately 104 million people. India recognizes 705 Scheduled Tribe communities. The Scheduled Tribe sex ratio is 990 compared to the national average of 933. In West Bengal, Scheduled Tribes constitute approximately 5.8% of the total state population. The states with the highest Scheduled Tribe populations include Maharashtra, Odisha, Gujarat, Rajasthan, Chhattisgarh, Jharkhand, Andhra Pradesh, Karnataka, West Bengal, and Madhya Pradesh. According to the 2001 Census, these states collectively account for 83.2% of the total Scheduled Tribe population of the country.[6]

Among these groups, the tea garden tribal communities, predominantly found in the north-eastern states of India like Assam and West Bengal, constitute a distinct demographic. These communities, which include a significant number of women, were originally relocated from different regions to work in tea plantations during the colonial period. The socio-economic conditions of these women often reflect a blend of traditional tribal culture and the specific challenges linked to their roles within the tea industry.[7]

There is no separate official census data for tea garden tribes in India, as they are not classified as a distinct demographic category. However, available literature estimates the tea garden community population in India to be approximately 7 million, with the majority concentrated in Assam. According to ST Population Data (Census 2011 – WB), the total number of Scheduled Tribes (ST) in West Bengal is 5,296,953 constituting approximately 5.8% of the total state population.[8] The ST population of Darjeeling District is 397389 (census 2011).

Over half of all workers in India's tea gardens are women, making up a sizable component of the labour force. Women make up roughly 50–52% of the population in tea gardens, according to research; certain plantation-based studies show significantly greater percentages, such as 76% female workers.[9, 10]

Women in tea garden communities typically have low levels of education; a sizable percentage is illiterate or has only completed elementary school. High dropout rates among girls have also been documented in studies, mostly as a result of early involvement in plantation labour and financial limitations. [9, 10]

Under-nutrition, anaemia, reproductive health problems, musculoskeletal disorders, infectious diseases, and occupational hazards are just a few of the many health challenges that impact women in tea garden communities. Poor socioeconomic circumstances, limited access to healthcare, and the physically taxing nature of plantation labour all have a significant impact on these issues. [9, 10]

Despite experiencing numerous reproductive and occupational health challenges, menopausal health among tea garden tribal women remains an underexplored area. Menopause is often perceived as a natural and inevitable process rather than an important health issue requiring medical attention. Consequently, many women neither seek professional healthcare nor receive adequate information regarding menopausal changes and their management. Cultural beliefs, social taboos, and limited communication about reproductive health further contribute to poor awareness and understanding among these women.[10]

Awareness regarding menopause plays a crucial role in enabling women to recognize normal physiological changes, identify symptoms, and adopt appropriate coping measures. Adequate knowledge helps reduce anxiety, dispel misconceptions, and encourages timely utilization of healthcare services. Conversely, lack of awareness may lead to unnecessary distress, poor symptom management, and reduced quality of life. Studies conducted in various parts of India have consistently reported inadequate knowledge and limited awareness regarding menopause among rural and tribal women.[11,12]

Tea garden tribal women are particularly vulnerable due to their unique socioeconomic circumstances, limited educational attainment, occupational burden, and restricted access to healthcare facilities. Their understanding of menopause is often influenced by traditional beliefs, family experiences, and informal community knowledge rather than scientific information. This highlights the urgent need to assess their awareness and understanding of menopause in order to identify knowledge gaps and design culturally appropriate educational interventions.[10]

Although several studies have examined menopausal symptoms among urban and rural populations, studies focusing specifically on awareness and understanding regarding menopause among tea garden tribal women in West Bengal are limited. The absence of such evidence limits the development of targeted community health programmes for this underserved population. Generating baseline data in this area is therefore essential for planning effective nursing interventions and promoting healthy aging.[11]

In view of the above, the present study was undertaken to assess the awareness and understanding of menopause among post-menopausal women in selected tea garden communities of Siliguri, West Bengal. The findings are expected to contribute valuable insights for nursing practice, community health education, and future research aimed at improving menopausal health among tea garden tribal women.

Need for the Study

Menopause is a universal physiological event, however, women's awareness and understanding of menopausal changes vary considerably across different populations. Several studies have reported inadequate knowledge regarding menopause, particularly among women residing in rural and socioeconomically disadvantaged communities. Poor awareness often leads to misconceptions, delayed health-seeking behaviour, and inadequate management of menopausal symptoms.

Kaur S, Kamlesh, Kalia R, Saggi M (2019) conducted a study in selected areas to assess the knowledge and attitude regarding menopause among urban and rural married women. A quantitative research approach with a descriptive comparative design was used and has selected 200 menopausal women through purposive sampling, including 100 rural and 100 urban participants. Structured interview schedules and a five-point Likert scale were used for data collection. The findings revealed that rural women had only fair knowledge regarding menopause, although the overall attitude toward menopause was positive among the participants. A statistically significant difference was observed between the mean knowledge and attitude scores ($p<0.005$), and a significant correlation was found between knowledge and attitude levels. The study emphasized the importance of creating greater awareness regarding menopause among women, particularly in rural communities.[11]

Similarly, Borker SA, Venugopalan PP, Bhat SN (**2013**) conducted a study to explore menopausal symptoms and perceptions regarding menopause among women in a rural community. The study included 106 postmenopausal women residing in a rural community. Data were collected through a pretested questionnaire administered during house-to-house visits. The findings revealed that all women experienced one or more menopausal symptoms. Emotional problems such as crying spells, depression, and irritability were the most common symptoms (90.7%), followed by headache (72.9%), lethargy (65.4%), dysuria (58.9%), forgetfulness (57%), and musculoskeletal problems (53.3%). The study also found poor awareness regarding menopause, with only 22.4% of women knowing the correct cause of menopause. The authors concluded that menopausal women require greater awareness regarding menopausal symptoms, their causes, and available treatment options to improve their quality of life..[12]

Kirubamani NH (2019) conducted a comparative study to assessed knowledge, awareness, and attitudes regarding menopausal symptoms and menopausal hormone therapy among urban and rural women. A prospective cross-sectional quasi-experimental design was adopted and included 770 women aged 40–65 years from both urban and rural communities. Data were collected using a

validated structured questionnaire after obtaining ethical approval and informed consent. The findings revealed that the mean age of menopause in both groups was 48.5 years and that knowledge regarding menopausal symptoms was generally low among the participants. Following health education, a significant improvement in knowledge and attitude was observed among both urban and rural women. Although most women showed a positive attitude toward menopause, awareness regarding long-term complications and menopausal hormone therapy was limited, and only 9.35% of women had used MHT. [13]

Jindal P et al. **(2025)** conducted a cross-sectional study to assess the knowledge, attitude, and practices regarding menopausal symptoms among rural women in North India. The study included 307 postmenopausal women aged above 40 years from rural areas of Northern Haryana. Data were collected using a structured questionnaire and the Greene Climacteric Scale. The findings revealed that nearly half of the participants had poor knowledge regarding menopausal symptoms, while only a small proportion demonstrated good awareness. Commonly reported symptoms included fatigue, muscle and joint pain, and reduced sexual interest. The study highlighted inadequate awareness and poor treatment-seeking behavior among rural women and emphasized the need for health education and awareness programmes to improve menopausal health and quality of life among women in rural communities..[14]

Tea garden tribal women constitute a particularly vulnerable and underserved population. Low educational attainment, demanding occupational responsibilities, poor socioeconomic conditions, and limited access to healthcare services may further compromise their understanding of menopause and its management. Cultural beliefs and traditional practices often influence their perceptions, resulting in inadequate health-seeking behaviour.

Despite the growing body of literature on menopausal health, studies specifically focusing on awareness and understanding of menopause among tea garden tribal women in West Bengal are scarce. The absence of such evidence limits the development of culturally sensitive and need-based health education programmes for this marginalized population.

Assessing the level of awareness and understanding among post-menopausal women in tea garden communities is therefore essential for identifying knowledge gaps, misconceptions, and educational needs. The findings of the present study will provide baseline information for planning targeted nursing interventions, developing culturally appropriate educational strategies, and promoting healthy aging among tea garden tribal women.

Hence, the investigator felt a strong need to undertake the present study to assess the awareness and understanding of menopause among post-menopausal women in selected tea garden communities of Siliguri, West Bengal.

Statement of the Problem

"Awareness and Understanding of Menopause among Post-Menopausal Women in Tea Garden Tribal Communities of Siliguri, West Bengal: A Preliminary Study"

Objectives of the Study

1. To assess the level of awareness and understanding regarding menopause among post-menopausal women in selected tea garden communities.
2. To determine the association between awareness and understanding of menopause and selected demographic variables.

Research Hypothesis

H_1: There will be a significant association between the level of awareness and understanding regarding menopause and selected demographic variables among post-menopausal women.

Null Hypothesis

H_{01}: There will be no significant association between the level of awareness and understanding regarding menopause and selected demographic variables among post-menopausal women.

Operational Definitions

Awareness: In this study, awareness refers to the extent of knowledge possessed by post-menopausal women regarding menopause, its symptoms, physiological changes, health implications, and management, as measured by the structured knowledge questionnaire.

Understanding: Understanding refers to the ability of post-menopausal women to correctly comprehend and interpret menopausal changes, associated symptoms, and available management strategies.

Menopause: Menopause refers to the permanent cessation of menstruation for twelve consecutive months due to the natural decline in ovarian function.

Post-Menopausal Women: Women who have experienced natural menopause and have not had menstrual periods for at least twelve consecutive months.

Tea Garden Tribal communities: Tea garden tribal communities refer to the tribal populations residing and working in tea plantation areas of Marion Barie Tea Estate, Siliguri, West Bengal.

Assumptions

1. Post-menopausal women may have varying levels of awareness regarding menopause.
2. Awareness and understanding regarding menopause may be influenced by educational status, age, and previous exposure to health information.
3. Tea garden tribal women may have unmet educational needs related to menopausal health.

Delimitations

1. The study will be limited to post-menopausal women residing in selected tea garden communities of Siliguri, West Bengal.
2. Only women who are willing to participate will be included.
3. The study will assess awareness and understanding at a single point in time.

CONCEPTUAL FRAMEWORK

Conceptual framework refers to the interrelated concepts or abstractions that are assembled together in a rational scheme by virtue of their relevance to a common theme.

The present study was intended to assess the awareness and understanding regarding menopause among post-menopausal women in tea garden tribal communities of Siliguri, West Bengal. The conceptual framework adopted for the present study is based on **Betty Neuman's Systems Model**.

Betty Neuman developed the Systems Model in 1970 with the aim of providing a comprehensive holistic and system-based approach to nursing practice. The model views the client as an open system interacting continuously with internal and external environmental stressors. The main goal of nursing is to help the individual maintain system stability through appropriate interventions.

According to Betty Neuman's Systems Model, the client system consists of physiological, psychological, sociocultural, developmental, and spiritual variables that interact dynamically with environmental stressors. Stressors may disturb the stability of the system, and nursing interventions help individuals adapt and maintain wellness.

The major components of the model are:

•**Stressors:** Stressors are forces that produce tension and may affect the stability of the client system. These are classified as intrapersonal, interpersonal, and extra personal stressors.

•**Lines of Defence and Resistance:** The flexible line of defence and normal line of defence protect the individual from stressors. When stressors penetrate these defences, lines of resistance become activated to restore stability and wellbeing.

•**Nursing Interventions:** Nursing interventions are activities aimed at reducing stressors, strengthening defences, promoting adaptation, and maintaining wellness.

•**System Stability and Wellness:** Stability refers to the state of balance and wellbeing achieved after successful adaptation to stressors.

Application of Betty Neuman's systems model to the present study

1. Stressors

Intrapersonal Stressors

These include:

- Age
- Educational status
- Lack of knowledge regarding menopause
- Physical and psychological symptoms
- Previous health problems

Interpersonal Stressors

These include:

- Family support
- Community interaction
- Cultural beliefs and practices
- Social attitudes regarding menopause

Extra personal Stressors

These include:

- Socioeconomic status
- Accessibility of healthcare services
- Availability of health information
- Environmental and community factors

2. Client System / Basic Structure

In the present study, the client system refers to women experiencing menopausal transition in the rural community. Their physical, psychological, social, cultural, and emotional wellbeing are influenced by various stressors related to menopause.

The flexible line of defence, normal line of defence, and lines of resistance help women cope with menopausal changes and maintain balance.

3. Nursing Interventions

The nursing interventions in the present study include:

- Health education regarding menopause
- Improving awareness and understanding
- Counselling and emotional support
- Promoting healthy lifestyle practices
- Encouraging family and community support
- Facilitating access to healthcare services

4. Outcomes / System Stability

The expected outcomes of the study are:

- Increased awareness and understanding regarding menopause
- Better coping with menopausal symptoms
- Improved quality of life
- Enhanced physical and psychological wellbeing
- Achievement of system stability and adaptation during menopausal transition

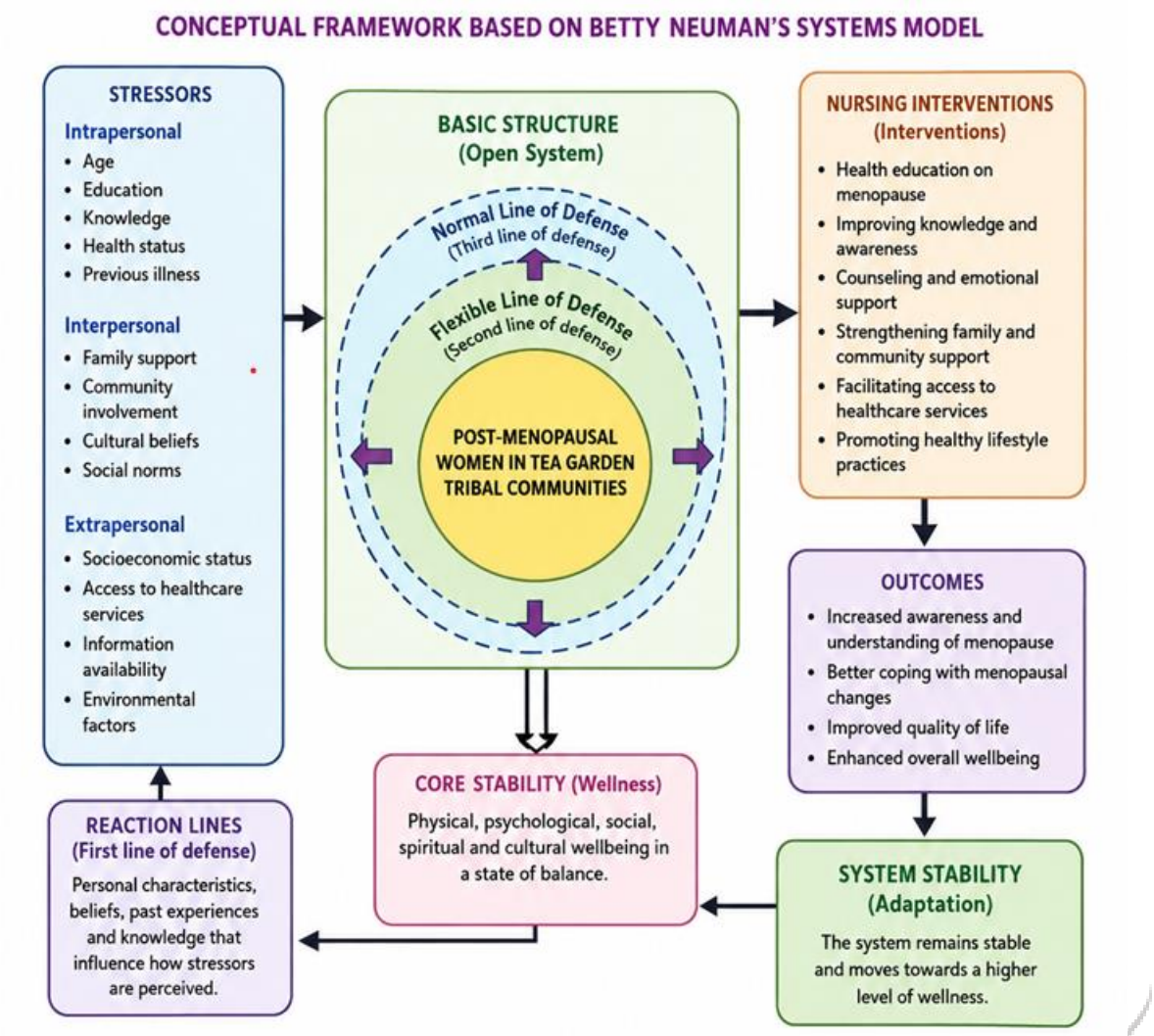

Figure 1: MODIFIED CONCEPTUAL FRAMEWORK MODEL BASED ON BETTY NEUMAN'S SYSTEM MODEL

CHAPTER II

REVIEW OF LITERATURE

Menopause is a universal physiological transition experienced by all women. A substantial body of literature has explored the biological, psychological, and social dimensions of menopause. Awareness and understanding of menopause are influenced by multiple factors, including education, culture, socioeconomic status, and access to healthcare. The following review examines relevant literature pertaining to menopause, menopausal awareness, rural and tribal women's experiences, and the health profile of tea garden tribal communities.

Mandal D, Bhattacherjee S, Biswas AK, Samanta S (2023) conducted a cross-sectional study among tea garden workers in the Darjeeling district of West Bengal to assess the prevalence and determinants of malnutrition. A total of 200 tea garden workers from 10 tea gardens were selected using cluster sampling. Data were collected using a structured questionnaire, and anthropometric measurements such as height and weight were recorded to calculate Body Mass Index (BMI). The findings revealed that the prevalence of undernutrition and obesity was 25% and 20.5%, respectively. The study further identified that age, gender, employment status, educational level, and household food security significantly influenced nutritional status among tea garden workers. The researchers concluded that malnutrition among tea garden workers is strongly associated with socioeconomic and demographic factors and emphasized the need for comprehensive strategies to improve food security and health conditions in tea garden communities.[15]

S. Yasmin, Sau M, Patra M, Sinha N, and Baur B (2022) conducted a community-based cross-sectional study among tea garden workers in Alipurduar district, West Bengal. The study aimed to assess poverty, undernutrition, and morbidity among tea garden workers. A total of 463 adult workers were selected using multistage cluster sampling. Data were collected through household interviews, anthropometric assessment, and clinical examination. The findings revealed high levels of undernutrition, anemia, and chronic morbidity, highlighting the vulnerable health status of tea garden communities.[10]

D. Nagaraj et al. (2021) conducted a hospital-based cross-sectional study among rural women in South Karnataka to explore their experiences and perceptions regarding menopause. The study included 212 women selected through consecutive sampling from a tertiary care hospital. Data were collected using a semi-structured interview schedule. The findings revealed that myths, misconceptions, and inadequate knowledge regarding menopause were highly prevalent. Many participants reported untreated menopausal symptoms and poor healthcare-seeking behavior.[16]

Das R, Barman P, and Roy S. (2020) conducted a review study on menopausal health issues among tribal women in Eastern India. The review analyzed published literature related to menopausal symptoms, awareness, cultural beliefs, and healthcare utilization among tribal populations. The findings indicated that tribal women commonly experienced untreated menopausal symptoms and had limited access to healthcare services. Cultural misconceptions and low educational status were identified as major barriers to effective menopausal health management.[17]

Singh A, Pradhan SK, and Kumari S. (2019) conducted a community-based study among rural women in India to assess awareness regarding menopause and related health problems. The study included women from selected rural communities and utilized structured interviews for data collection. The findings showed that a large proportion of participants had inadequate knowledge regarding menopausal symptoms, hormonal changes, and available healthcare services. The authors highlighted the need for health education programmes to improve menopausal awareness among rural women.[18]

P. C. Ruma Devi (2017) conducted a descriptive study among tribal women in Andhra Pradesh to assess menopausal problems and coping strategies. A sample of 180 tribal women aged 40–65 years was selected through purposive sampling from selected tribal villages. Data were collected using a structured interview schedule and menopausal symptom checklist. The study found that tribal women experienced multiple menopausal symptoms, particularly joint pain, fatigue, and vasomotor complaints. Limited awareness and strong cultural beliefs influenced symptom perception and management.[19]

Nancy E. Avis, Crawford SL, Greendale G, et al. (2015) conducted a longitudinal cohort study under the Study of Women's Health Across the Nation to determine the duration and pattern of vasomotor symptoms during the menopausal transition. The study aimed to assess the prevalence, duration, and associated factors of hot flashes and night sweats. A total of 1,449 women aged 42–52 years were recruited from multiple community settings across the United States. Data were collected annually using standardized questionnaires and clinical assessments over several years. The findings revealed that vasomotor symptoms persisted for a median duration of 7.4 years, with women experiencing symptoms earlier in the transition reporting longer durations. Ethnicity, psychological stress, and overall health status significantly influenced symptom persistence. The study underscored the prolonged nature of menopausal symptoms and the need for long-term supportive care.[20]

Dasgupta D, Karar P, Ray S, and Ganguly N (2015) conducted a cross-sectional comparative study among tribal and caste post-menopausal women in West Bengal, India, to assess menopausal symptoms and their correlates. A total of 313 post-menopausal women, including Lodha tribal women and Bengali caste women, were selected from five villages using multistage random sampling. Data were collected using a pretested structured questionnaire that included sociodemographic variables, menstrual and reproductive history, and menopausal symptoms. The findings revealed significant differences in menopausal symptoms between the two groups. Urinary problems such as inability to hold urine and urine leakage were more common among caste women,

whereas vaginal problems including vaginal dryness, discharge, and bad smell were more prevalent among tribal women. The study further identified that sociodemographic factors, reproductive history, menstrual characteristics, and lifestyle practices were significantly associated with menopausal symptoms. The researchers concluded that menopausal experiences vary across ethnic groups and emphasized the need for culturally appropriate healthcare interventions for tribal women.[21]

Sharma S, Tandon VR, and Mahajan A. (2013) conducted a cross-sectional study among urban women in Jammu to assess the prevalence and pattern of menopausal symptoms. The study included middle-aged women attending outpatient departments and community settings. Data were collected using a structured menopausal symptom questionnaire. The findings revealed that a majority of women experienced vasomotor symptoms, joint pain, fatigue, irritability, and sleep disturbances during the menopausal transition. The study emphasized the importance of increasing awareness and providing appropriate healthcare support for menopausal women.[22]

Mishra N, Mishra VN, and Devanshi. (2011) conducted a study among post-menopausal women residing in rural areas to assess depression, anxiety, and stress during menopause. Data were collected using standardized psychological assessment scales. The findings revealed that a considerable proportion of women experienced psychological distress, including anxiety, mood disturbances, and depressive symptoms during the menopausal period. The study emphasized the importance of psychological support and counselling services for post-menopausal women.[23]

Kaulagekar A. (2011) conducted a study among urban women in Pune, Maharashtra to determine the age at menopause and common menopausal symptoms experienced by women. The study found that vasomotor symptoms, body aches, sleep disturbances, and psychological symptoms were highly prevalent among post-menopausal women. The findings highlighted the need for awareness programmes and early intervention strategies to improve women's quality of life during menopause.[24]

Hilda D. Nelson (2008) published a comprehensive review to examine the clinical features, health implications, and management of menopause. The objective was to provide an evidence-based overview of menopausal symptoms and their impact on women's health. The review synthesized findings from multiple national and international studies involving middle-aged women undergoing the menopausal transition. Using a systematic review methodology, the author analyzed published literature on menopausal physiology, symptom prevalence, and treatment approaches. The review found that nearly three-fourths of women experience vasomotor symptoms such as hot flashes and night sweats, while many also report sleep disturbances, mood changes, sexual dysfunction, and cognitive complaints. The study further highlighted that estrogen deficiency during menopause contributes to long-term health risks, including osteoporosis and cardiovascular disease, emphasizing the importance of timely recognition and management.[25]

CHAPTER III

RESEARCH METHODOLOGY

Research Approach

A quantitative research approach was adopted for the present study to assess the awareness and understanding regarding menopause among post-menopausal women.

Research Design

A descriptive cross-sectional research design was used to assess awareness and understanding regarding menopause among post-menopausal women at a single point in time.

Research Setting

The study was conducted at Marion Barrie Tea Estate, located under St. Mary's III Gram Panchayat in Dudhia, Darjeeling District, near Siliguri. The tea estate is predominantly inhabited by tea garden tribal communities and was considered an appropriate setting for assessing awareness and understanding regarding menopause among post-menopausal women. The accessibility of the area and the cooperation of local authorities facilitated the smooth conduct of the study.

Population

Target Population

The target population comprised all post-menopausal women residing in Marion Barrie Tea Estate under St. Mary's III Gram Panchayat, Dudhia, Darjeeling District.

Accessible Population

The accessible population consisted of all eligible post-menopausal women available at the time of data collection in Marion Barrie Tea Estate.

Sample

The sample comprised post-menopausal women residing in Marion Barrie Tea Estate who fulfilled the inclusion criteria and consented to participate in the study.

Sample Size

A total of 100 post-menopausal women were included in the study.

Sampling Technique

A non-probability purposive sampling technique was employed to select 100 post-menopausal women who met the predetermined inclusion criteria and were available during the period of data collection at Marion Barrie Tea Estate. This sampling method was considered appropriate for identifying participants with the specific characteristics required for the study.

Criteria for Sample Selection

Inclusion Criteria

The study included:

i. post-menopausal women who had attained natural menopause, defined as the absence of menstruation for at least 12 consecutive months
ii. post-menopausal women who were aged between 45 and 65 years
iii. post-menopausal women who resided in Marion Barie Tea Estate
iv. post-menopausal women were willing to participate in the study and
v. Post-menopausal women who were able to understand and communicate in Bengali, Hindi, or Nepali.

Exclusion Criteria

The study excluded:

i. women who had undergone surgical menopause
ii. women who were seriously ill at the time of data collection
iii. women who had diagnosed psychiatric illness or cognitive impairment
iv. women who were unwilling to participate in the study.

Development and Description of the Tool

Data were collected using a structured interview schedule developed by the researcher after an extensive review of literature, consultation with subject experts, and consideration of the objectives of the study. The tool was designed to assess awareness and understanding regarding menopause among post-menopausal women.

The instrument consisted of two sections:

Section A: Demographic Variables

This section included items related to age, religion, age at menarche, age at menopause, marital status, educational level, occupation, household income, number of children, previous illness, community involvement, and access to healthcare services. These variables were selected to obtain baseline information about the participants and to determine their association with awareness and understanding regarding menopause.

Section B: Structured Knowledge Questionnaire

This section comprised a structured multiple-choice questionnaire consisting of 28 items designed to assess the awareness and understanding regarding menopause among post-menopausal women. The questionnaire covered the following areas:

• Meaning and concept of menopause
• Age and physiological changes associated with menopause
• Signs and symptoms of menopause
• Emotional and mental health during menopause
• Coping strategies and health practices during menopause
• Cultural beliefs related to menopause
• Health risks associated with menopause and their prevention

Each item had four alternative responses, of which one was the correct answer. Each correct response was awarded one mark, while each incorrect response received zero marks. Higher scores indicated better awareness and understanding regarding menopause. The tool was administered through a face-to-face interview to ensure clarity, comprehension, and accuracy of responses.

Scoring Procedure

The structured knowledge questionnaire consisted of 28 multiple-choice items. Each correct response was awarded one mark and each incorrect response was assigned zero marks. No negative marking was applied. The maximum obtainable score was 28 and the minimum score was 0. The total score was calculated by summing the scores obtained on all items. Higher scores indicated greater awareness and understanding regarding menopause.

Based on the percentage of the total score obtained, the level of awareness and understanding was categorized as follows:

• Poor Knowledge: Less than 50% of the total score (<14)
• Average Knowledge: 50%–75% of the total score (14–21)
• Good Knowledge: More than 75% of the total score (>21).

Validity of the Tool

Content validity of the structured interview schedule was established by submitting the tool to a panel of experts from the fields of Obstetrics and Gynecological Nursing, Community Health Nursing. The experts evaluated the relevance, clarity, adequacy, and appropriateness of each item in relation to the objectives of the study.

Based on their valuable suggestions and recommendations, necessary modifications were incorporated to improve the content, language, and overall suitability of the tool. The finalized instrument was then prepared for pilot testing and subsequent data collection.

Reliability of the Tool

The reliability of the structured knowledge questionnaire was established using the test-retest method among 10 post-menopausal women who were not included in the main study. The questionnaire was administered twice with an appropriate interval between the two administrations. The obtained test-retest reliability coefficient, calculated using Pearson's correlation coefficient, was $r = 0.768$, indicating good stability and reliability of the instrument. Therefore, the tool was considered reliable and suitable for use in the main study.

Pilot Study

A pilot study was conducted to assess the feasibility, practicability, and clarity of the research tool and data collection procedure. The pilot study was carried out among five post-menopausal women residing in the community of Tinline Gulma Tea Estate, which was different from the area selected for the main study. The participants fulfilled the inclusion criteria but were excluded from the final study sample.

The pilot study helped the researcher to determine the feasibility of the study, suitability of the tool, and time required for data collection. Necessary modifications were made based on the findings of the pilot study before conducting the final study.

Data were collected using the structured interview schedule following the same procedure planned for the main study. The pilot study confirmed that the tool was clear, understandable, and feasible for administration. No major difficulties were encountered during data collection. The findings of the pilot study indicated that the study was practicable and that the tool was appropriate for the main investigation.

Data Collection Procedure

Prior to data collection, formal administrative permission was obtained from the concerned authorities of Marion Barrie Tea Estate and the local governing body under St. Mary's III Gram Panchayat. Ethical clearance was obtained from the Institutional Ethics Committee.

The data were collected over a period of four weeks. Eligible post-menopausal women were identified with the assistance of local health workers such as Anganwadi workers and ASHA workers and village Pradhan. The purpose of the study was explained to each participant, and written informed consent was obtained prior to data collection.

Data were collected through face-to-face interviews using the structured interview schedule in a private and comfortable setting. Each interview took approximately 20 to 30 minutes to complete. Confidentiality and anonymity were assured throughout the study. Participants were informed of their right to withdraw from the study at any stage without any consequences. After completion of the interview, participants were thanked for their cooperation and participation.

Plan for Data Analysis

The collected data were organized, coded, tabulated, and analysed using appropriate descriptive and inferential statistics.

Descriptive Statistics

- Frequency and percentage were used to describe the demographic characteristics of the participants.
- Mean, median, standard deviation, and range were calculated to assess the level of awareness and understanding regarding menopause.

Inferential Statistics

- The Chi-square test was used to determine the association between the level of awareness and understanding regarding menopause and selected demographic variables.

The level of statistical significance was set at $p < 0.05$ for all inferential analyses. Statistical analysis was performed using appropriate statistical software.

Ethical Considerations

Ethical clearance for the study was obtained from the Institutional Ethics Committee prior to the commencement of data collection. Formal administrative permission was secured from the authorities of Marion Barrie Tea Estate and St. Mary's III Gram Panchayat.

Written informed consent was obtained from each participant after explaining the purpose, nature, and benefits of the study. Participation was entirely voluntary, and participants were informed of their right to withdraw from the study at any time without any penalty.

Confidentiality and anonymity of the participants were strictly maintained throughout the study. No identifying information was disclosed in any report or publication arising from the study. The collected data were used solely for research purposes and were stored securely. Respect for the dignity, privacy, and cultural values of all participants were ensured during the entire research process.

CHAPTER IV

ANALYSIS AND INTERPRETATION OF DATA

Introduction

This chapter presents the analysis and interpretation of data collected from 100 post-menopausal women residing in Marion Barrie Tea Estate under St. Mary's III Gram Panchayat. The data were analysed using descriptive and inferential statistics in accordance with the objectives of the study.

The findings are presented under the following sections:

- **Section A:** Distribution of participants according to demographic variables
- **Section B:** Assessment of level of awareness and understanding regarding menopause
- **Section C:** Association between awareness and selected demographic variables

Section A: Demographic Characteristics of Participants

This section deals with the distribution of post-menopausal women according to their demographic variables such as age, religion, age at menarche, age at menopause, marital status, educational level, occupation, household income, number of children, previous illness, community involvement, and access to healthcare services.

Table 4.1: Frequency and Percentage Distribution of Post-Menopausal Women According to Their Demographic Characteristics

N = 100

Demographic Variables	Characteristics	Frequency (f)	Percentage (%)
Age (in years)	45–50 years	42	42
	51–55 years	46	46
	56–60 years	8	8
	Above 60 years	4	4
Religion	Hindu	80	80.0
	Christian	15	15.0
	Buddhist	5	5.0
	Others	0	0.0
Age at Menarche	<12 years	0	0.0
	12–14 years	62	62.0
	>14 years	38	38.0
Age at Menopause	40–45 years	9	9.0
	46–50 years	61	61.0
	Above 50 years	30	30.0
Demographic Variables	**Characteristics**	**Frequency (f)**	**Percentage (%)**
Marital Status	Single	0	0.0
	Married	65	65.0
	Divorced	0	0.0
	Widowed	35	35.0
Educational Level	No formal education	78	78.0
	Primary	22	22.0
	Secondary	0	0.0
	Higher Secondary and above	0	0.0
Occupation	Unemployed	0	0.0
	Homemaker	30	30.0
	Self-employed	0	0.0
	Full time	36	36.0
	Part time	34	34.0
	Others	0	0.0
Household Income (Annual)	0–1.5 lacs	0	0.0
	1.6–2 lacs	32	32.0
	2.1–2.5 lacs	37	37.0
	2.5 lacs above	31	31.0
Number of Children	None	0	0.0
	1	30	30.0
	2	20	20.0
	3	26	26.0

	4 or more	24	24.0
Previous Illness	Hypertension	29	29.0
	Diabetes	1	1.0
	Heart disease	0	0.0
	Osteoporosis	23	23.0
	Cancer	0	0.0
	Respiratory conditions	0	0.0
	Mental health conditions	0	0.0
	Thyroid disorders	27	27.0
	Other	20	20.0
Community Involvement	No involvement	23	23.0
	Occasionally involved	29	29.0
	Regularly involved	19	19.0
	Actively leading or organizing activities	29	29.0
Access to healthcare services	Excellent	0	0.0
	Good	100	100.0
	Fair	0	0.0
	Poor	0	0.0
	No access	0	0.0

Table 4.1 presents the demographic characteristics of the post-menopausal women included in the study (N = 100).

The findings revealed that the majority of the participants belonged to the age group of 51–55 years (46.0%), followed by 45–50 years (42.0%). A smaller proportion belonged to the age group of 56–60 years (8.0%) and above 60 years (4.0%).

Regarding religion, the majority of the participants were Hindus (80.0%), followed by Christians (15.0%) and Buddhists (5.0%). None of the participants belonged to other religious categories.

With regard to age at menarche, the majority of the women attained menarche between 12–14 years (62.0%), followed by above 14 years (38.0%), while none reported menarche below 12 years.

Regarding age at menopause, most of the participants experienced menopause between 46–50 years (61.0%), followed by above 50 years (30.0%) and 40–45 years (9.0%).

In relation to marital status, the majority of the participants were married (65.0%), while 35.0% were widowed. None of the participants were single or divorced.

Regarding educational level, the majority of the participants had no formal education (78.0%), while 22.0% had primary education. None of the participants had secondary or higher secondary education.

With respect to occupation, 36.0% of the participants were employed full time, followed by homemakers (30.0%) and part-time workers (34.0%).

Regarding annual household income, the majority belonged to the income group of 2.1–2.5 lacs (37.0%), followed by 1.6–2 lacs (32.0%) and above 2.5 lacs (31.0%). None of the participants belonged to the income category of 0–1.5 lacs.

In terms of number of children, the majority of the participants had one child (30.0%), followed by three children (26.0%), four or more children (24.0%), and two children (20.0%). None of the participants had no children.

Regarding previous illness, hypertension was reported by 29.0% of the participants, followed by thyroid disorders (27.0%), osteoporosis (23.0%), and other illnesses (20.0%). Diabetes was reported by only 1.0% of the participants, while none reported heart disease, cancer, respiratory conditions, or mental health conditions.

With regard to community involvement, 29.0% of the participants were occasionally involved and actively involved in organizing activities, while 23.0% had no involvement and 19.0% were regularly involved.

Regarding access to healthcare services, all participants (100.0%) reported having good access to healthcare services, while none reported excellent, fair, poor, or no access.

Overall, the findings indicate that the majority of the post-menopausal women in the selected community had low educational status, moderate socioeconomic background, and varying levels of community participation and health conditions.

This findings are depicted in figure 3,4,5,6,7,8.

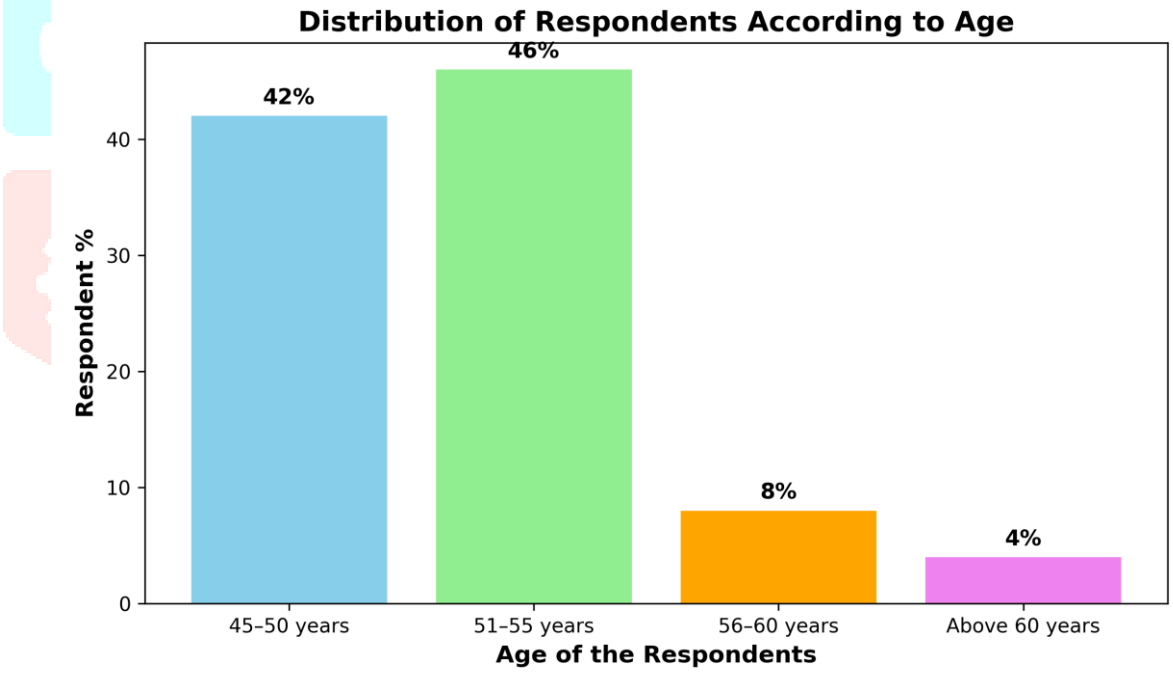

Figure 3: Classification of women by age

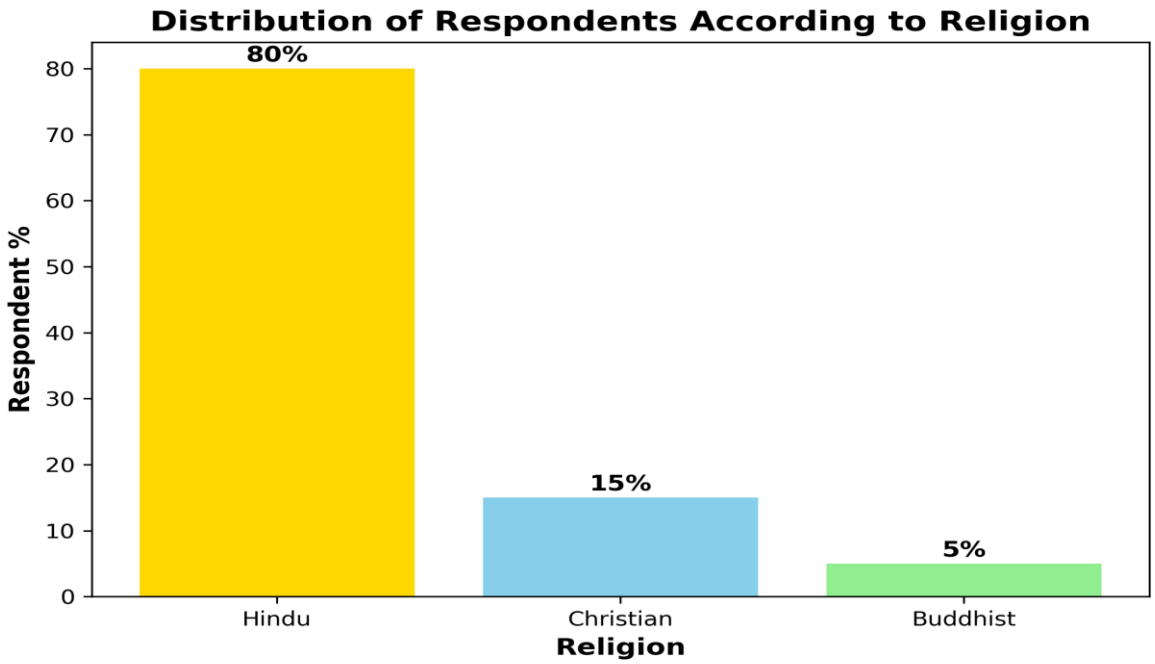

Figure 4: Classification of women by Religion

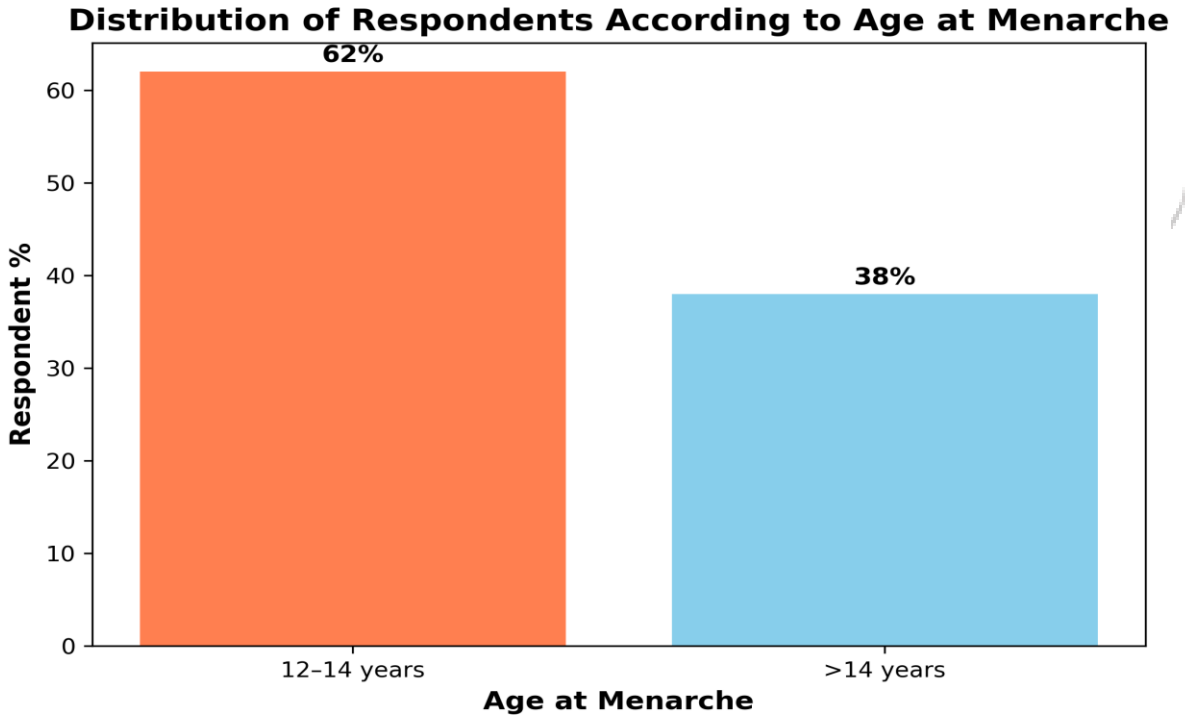

Figure 5: Classification of women by age at menarche

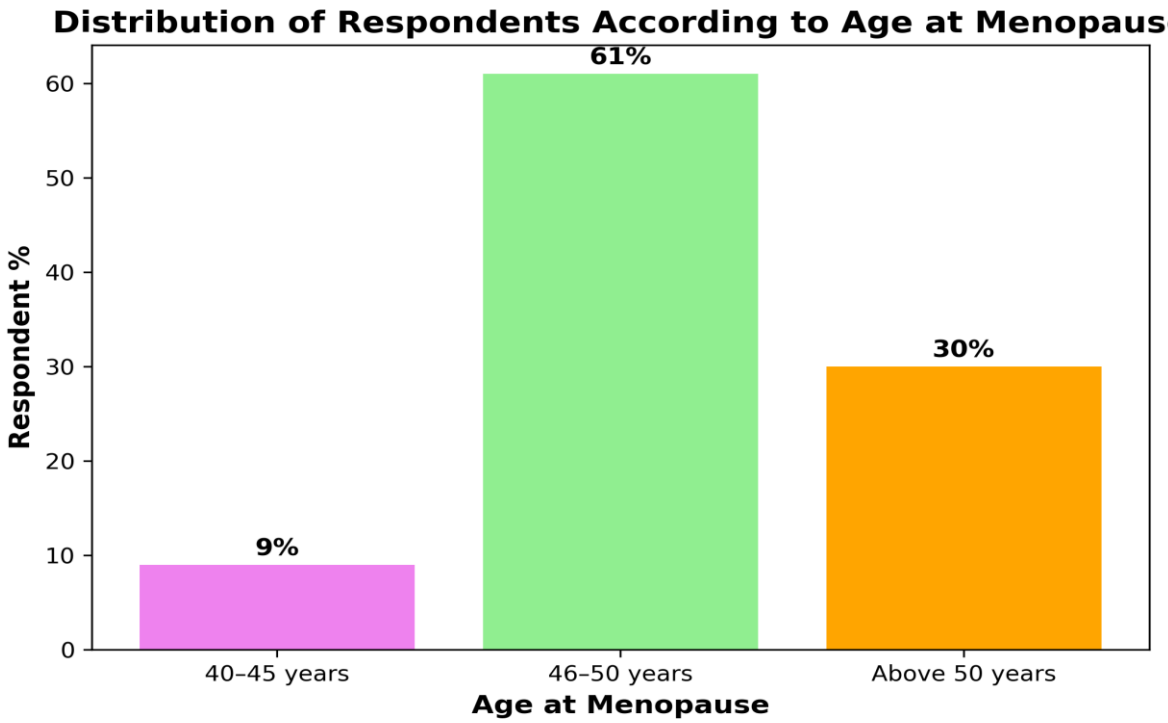

Figure 6: Classification of women by age at menopause

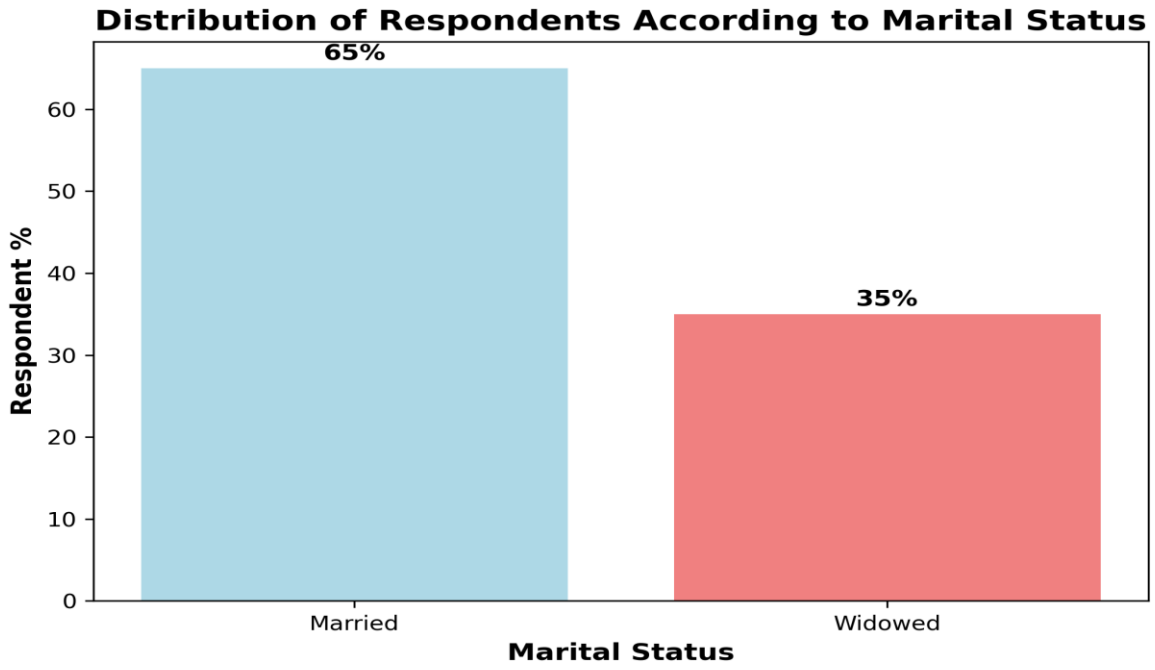

Figure 7: Classification of women by Marital status

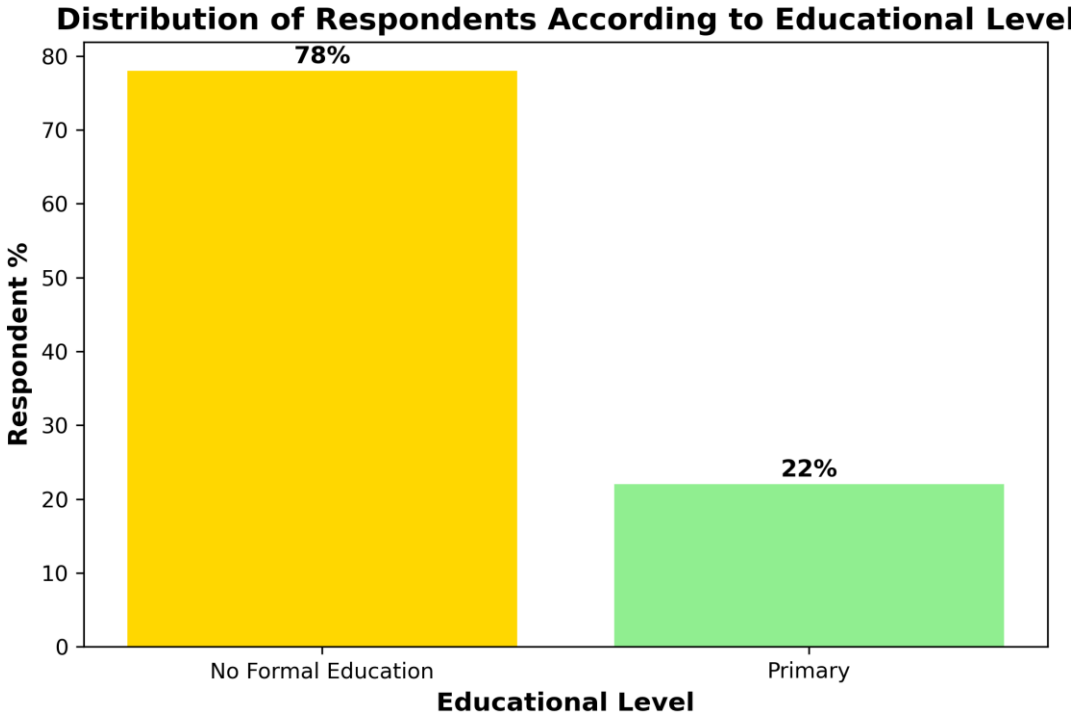

Figure 8: Classification of women by Education level

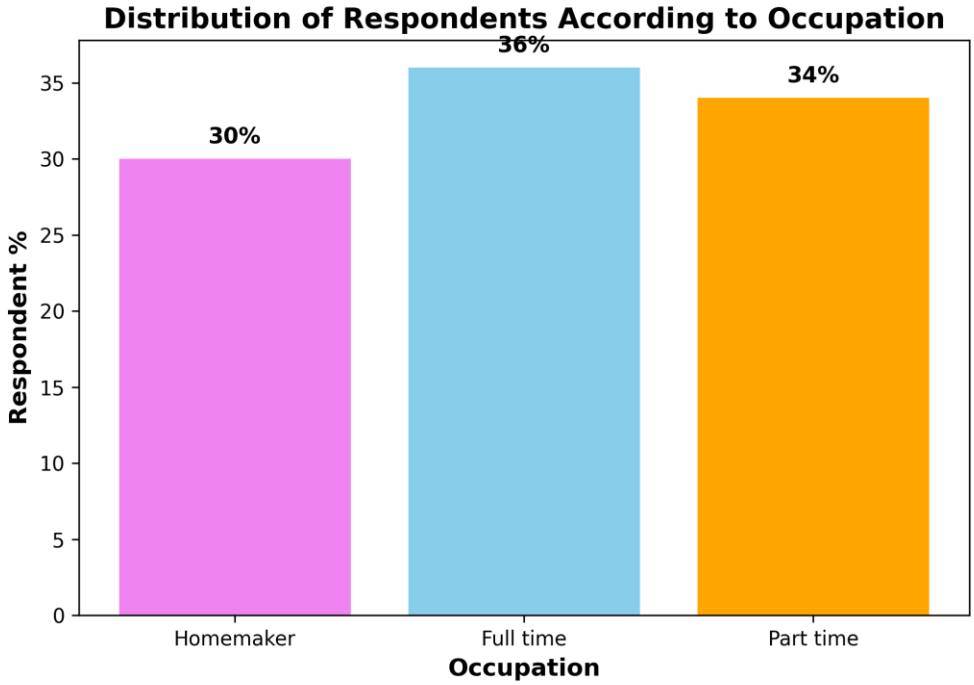

Figure 9: Classification of women by Occupation

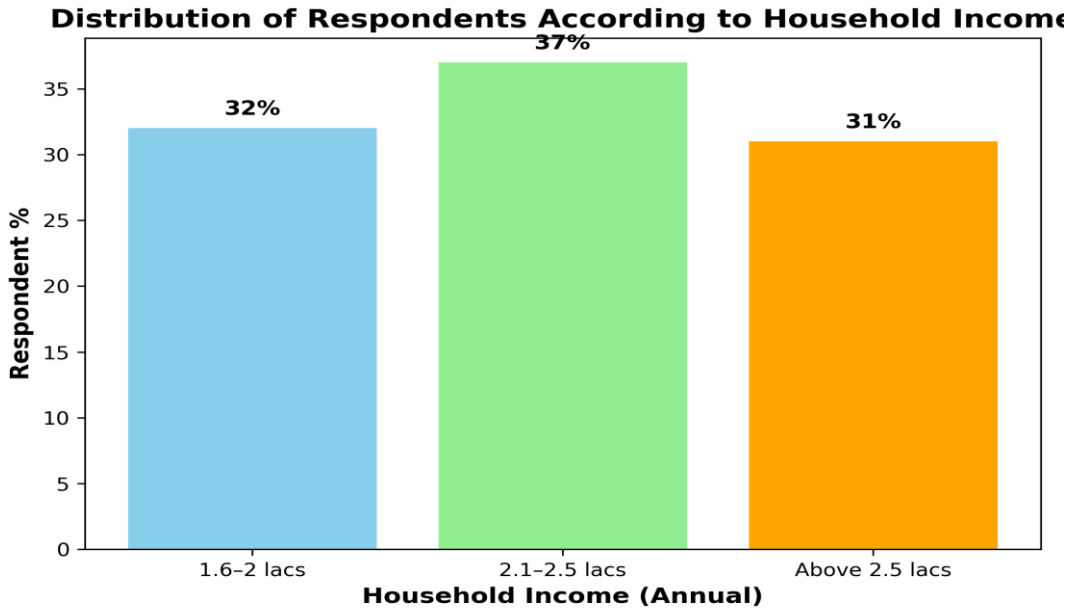

Figure 10: Classification of women by Household income

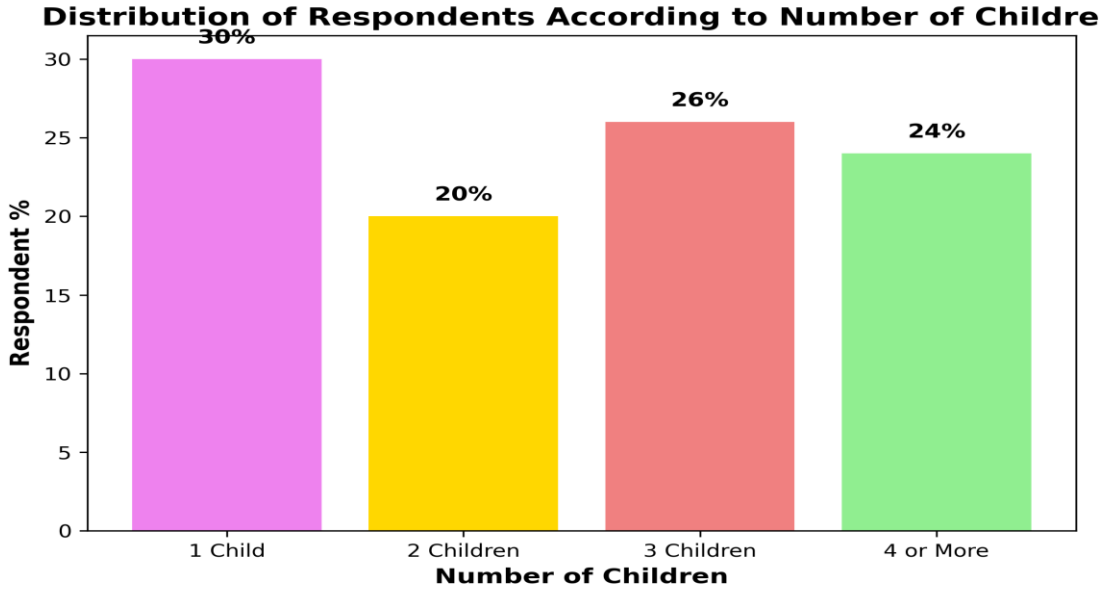

Figure 11: Classification of women by Number of Children

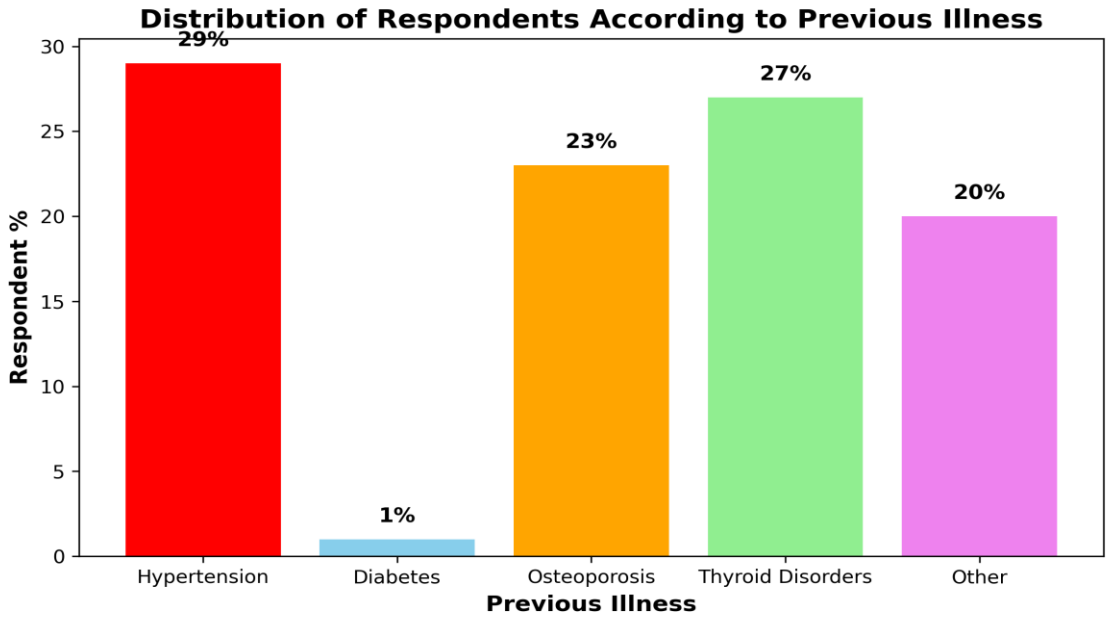

Figure 12: Classification of women by previous illness

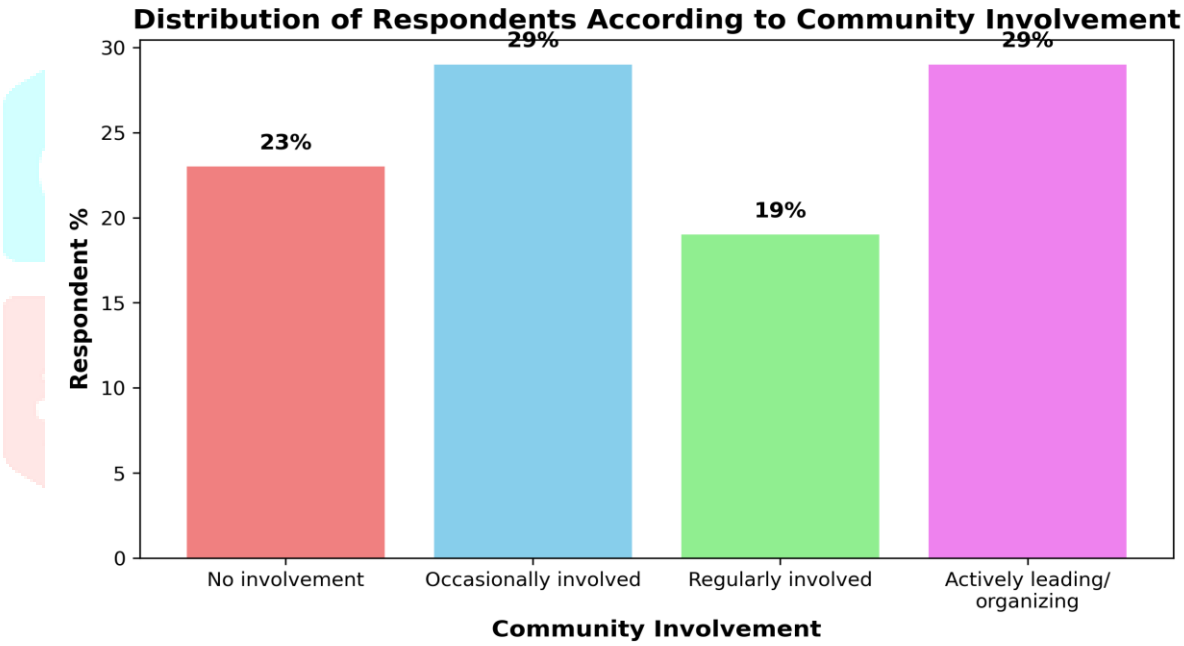

Figure 13: Classification of women by level of community involvement

Section B: Assessment of Awareness and Understanding Regarding Menopause

This section deals with the assessment of awareness and understanding regarding menopause among post-menopausal women in selected tea garden communities. The level of awareness was categorized into poor, average, and good based on the obtained scores.

Table 4.2

Distribution of Participants According to Level of Awareness and Understanding Regarding Menopause

(N = 100)

Level of Awareness	Frequency (f)	Percentage (%)
Poor	28	28.0
Average	56	56.0
Good	16	16.0

The findings revealed that the majority of the participants had average awareness and understanding regarding menopause (56.0%), while 28.0% had poor awareness and understanding. Only 16.0% of the participants had good awareness and understanding regarding menopause.

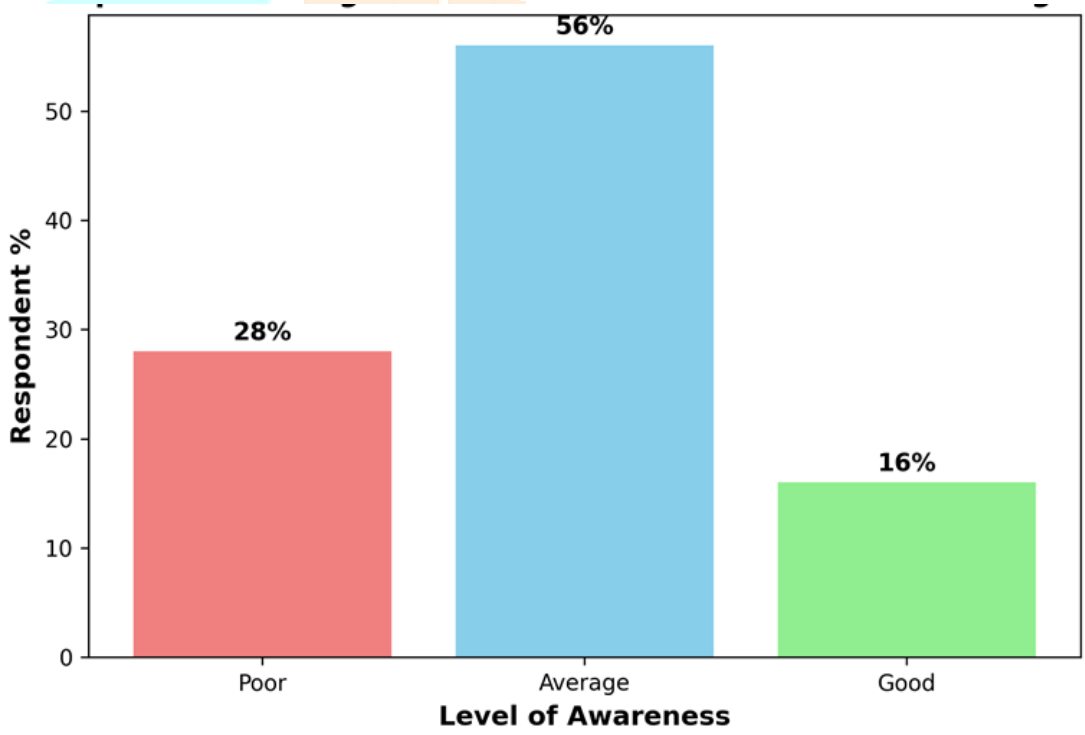

Figure 14: classification of level of awareness

TABLE 4.3

Mean and Standard Deviation of Awareness and Understanding Scores regarding Menopause

(N = 100)

Sl. No	Variable	No. of Statements	Max. Score	Mean	Mean (%)	SD
1	Awareness and Understanding Score	28	28	15.4	55.0	4.2

Table 4.3 depicts the mean and standard deviation of awareness and understanding scores regarding menopause among post-menopausal women.

The findings revealed that the mean awareness and understanding score of the participants was 15.4 out of a maximum score of 28, with a standard deviation of 4.2. The mean percentage score was 55.0%, indicating that the participants had a moderate level of awareness and understanding regarding menopause.

Section C: Association between Awareness and Selected Demographic Variables

Association between Awareness and Understanding Regarding Menopause and Selected Demographic Variables

Sl. No	Demographic Variables	Sample	Poor n(%)	Average n(%)	Good n(%)	χ^2 value	p Value	Remarks
1	Age (in years)							
	45–50 years	42	15 (35.7)	20 (47.6)	7 (16.7)	2.62	>0.05	NS
	51–55 years	46	11 (23.9)	28 (60.9)	7 (15.2)			
	56–60 years	8	2 (25.0)	5 (62.5)	1 (12.5)			
	Above 60 years	4	0 (0.0)	3 (75.0)	1 (25.0)			
2	Religion							
	Hindu	80	22 (27.5)	45 (56.3)	13 (16.2)	3.11	>0.05	NS
	Christian	15	4 (26.7)	9 (60.0)	2 (13.3)			
	Buddhist	5	2 (40.0)	2 (40.0)	1 (20.0)			
	Others	0	0 (0.0)	0 (0.0)	0 (0.0)			
3	Age at Menarche							
	<12 years	0	0 (0.0)	0 (0.0)	0 (0.0)	2.04	>0.05	NS
	12–14 years	62	17 (27.4)	35 (56.5)	10 (16.1)			
	>14 years	38	11 (28.9)	21 (55.3)	6 (15.8)			
4	Age at Menopause							
	40–45 years	9	3 (33.3)	5 (55.6)	1 (11.1)	2.72	>0.05	NS
	46–50 years	61	17 (27.9)	34 (55.7)	10 (16.4)			
	Above 50	30	8 (26.7)	17 (56.7)	5 (16.6)			

	years							
5	Marital Status Single Married Divorced Widowed	0 65 0 35	0 (0.0) 18 (27.7) 0 (0.0) 10 (28.6)	0 (0.0) 37 (56.9) 0 (0.0) 19 (54.3)	0 (0.0) 10 (15.4) 0 (0.0) 6 (17.1)	1.98	>0.05	NS
6	Educational Level No formal education Primary Secondary Higher Secondary and above	78 22 0 0	23 (29.5) 5 (22.7) 0 (0.0) 0 (0.0)	43 (55.1) 13 (59.1) 0 (0.0) 0 (0.0)	12 (15.4) 4 (18.2) 0 (0.0) 0 (0.0)	4.18	>0.05	NS
7	Occupation Unemployed Homemaker Tea garden worker Self-employed Full time Part time Others	0 30 0 0 36 34 0	0 (0.0) 9 (30.0) 0 (0.0) 0 (0.0) 9 (25.0) 10 (29.4) 0 (0.0)	0 (0.0) 17 (56.7) 0 (0.0) 0 (0.0) 21 (58.3) 18 (52.9) 0 (0.0)	0 (0.0) 4 (13.3) 0 (0.0) 0 (0.0) 6 (16.7) 6 (17.7) 0 (0.0)	3.26	>0.05	NS
8	Household Income (Annual) 0–1.5 lacs 1.6–2 lacs 2.1–2.5 lacs 2.5 lacs above	0 32 37 31	0 (0.0) 9 (28.1) 10 (27.0) 9 (29.0)	0 (0.0) 18 (56.3) 21 (56.8) 17 (54.8)	0 (0.0) 5 (15.6) 6 (16.2) 5 (16.2)	2.84	>0.05	NS
9	Number of Children None 1 2 3 4 or more	0 30 20 26 24	0 (0.0) 8 (26.7) 6 (30.0) 7 (26.9) 7 (29.2)	0 (0.0) 17 (56.6) 11 (55.0) 15 (57.7) 13 (54.1)	0 (0.0) 5 (16.7) 3 (15.0) 4 (15.4) 4 (16.7)	3.01	>0.05	NS
10	Previous Illness Hypertension Diabetes Heart disease Osteoporosis Cancer Respiratory conditions Mental health conditions Thyroid disorders Other	29 1 0 23 0 0 0 27 20	8 (27.6) 0 (0.0) 0 (0.0) 7 (30.4) 0 (0.0) 0 (0.0) 0 (0.0) 7 (25.9) 6 (30.0)	16 (55.2) 1 (100.0) 0 (0.0) 13 (56.5) 0 (0.0) 0 (0.0) 0 (0.0) 16 (59.3) 11 (55.0)	5 (17.2) 0 (0.0) 0 (0.0) 3 (13.1) 0 (0.0) 0 (0.0) 0 (0.0) 4 (14.8) 3 (15.0)	2.93	>0.05	NS
11	Community	23	7 (30.4)	13 (56.5)	3 (13.1)	2.65	>0.05	NS

	Involvement No involvement Occasionally involved Regularly involved Actively leading or organizing activities	29 19 29	8 (27.6) 5 (26.3) 8 (27.6)	17 (58.6) 11 (57.9) 15 (51.7)	4 (13.8) 3 (15.8) 6 (20.7)			
12	Access to Healthcare Services Excellent Good Fair Poor No access	0 100 0 0 0	0 (0.0) 28 (28.0) 0 (0.0) 0 (0.0) 0 (0.0)	0 (0.0) 56 (56.0) 0 (0.0) 0 (0.0) 0 (0.0)	0 (0.0) 16 (16.0) 0 (0.0) 0 (0.0) 0 (0.0)	0.00	>0.05	NS

(N = 100)

Table 4.4 depicts the association between awareness and understanding regarding menopause and selected demographic variables among post-menopausal women.

The findings revealed that the association between age, religion, age at menarche, age at menopause, marital status, educational level, occupation, household income, number of children, previous illness, community involvement, and access to healthcare services with awareness and understanding regarding menopause among post-menopausal women was statistically non-significant at $p<0.05$ level.

The calculated χ^2 values for all selected demographic variables were found to be non-significant. Hence, there was no significant association between awareness and understanding regarding menopause and selected demographic variables among post-menopausal women.

Therefore, the research hypothesis (H_1) is rejected and the null hypothesis (H_{01}) is accepted.

CHAPTER 5

SUMMARY, CONCLUSION, IMPLICATIONS, LIMITATIONS AND RECOMMENDATIONS

"Awareness is the first step towards positive health behaviour."

This chapter deals with the summary of the study, conclusion, and implications in nursing, limitations, and recommendations for future studies.

The present study was conducted to assess the level of awareness and understanding regarding menopause among post-menopausal women in selected tea garden communities.

The study aimed to assess awareness and understanding regarding menopause and determine the association between awareness and selected demographic variables among post-menopausal women.

The study findings revealed that the majority of the participants had average awareness and understanding regarding menopause, while some participants had poor awareness and only a few had good awareness regarding menopause.

The overall mean awareness and understanding score of the participants was 15.4 with a standard deviation of 4.2, indicating moderate awareness regarding menopause among post-menopausal women.

The study findings also revealed that there was no statistically significant association between awareness regarding menopause and selected demographic variables at $p<0.05$ level.

During data collection, the researcher observed that most of the post-menopausal women had limited knowledge regarding menopausal changes, symptoms, management, and healthy coping measures. Many participants considered menopausal symptoms as a normal part of aging and lacked adequate health information regarding menopause.

Overall observation showed that awareness and understanding regarding menopause among post-menopausal women in selected tea garden communities was moderate and there is a need for health education and awareness programmes to improve women's knowledge regarding menopause and related health issues.

CONCLUSION

The study concluded that the majority of post-menopausal women had average awareness and understanding regarding menopause. The findings indicate that women in tea garden communities require more information regarding menopausal symptoms, management, lifestyle modification, and available healthcare services.

The study also concluded that there was no statistically significant association between awareness regarding menopause and selected demographic variables among post-menopausal women.

Hence, health education programmes, counselling services, and community awareness activities are essential to improve women's understanding regarding menopause and promote healthy ageing among post-menopausal women.

IMPLICATIONS OF THE STUDY

The findings of the study have implications in the following areas of nursing profession.

1. Nursing Practice

- Nurses working in community settings can organize awareness programmes regarding menopause and menopausal health problems among women.
- Community health nurses can provide counselling and guidance regarding management of menopausal symptoms and healthy lifestyle practices.
- Nurses can identify women with inadequate awareness and encourage them to utilize available healthcare services.

2. Nursing Education

- Nursing curriculum should include adequate information regarding menopausal health and women's reproductive health.
- Nursing students should be trained to provide health education and counseling regarding menopause in community settings.
- Educational programmes can be conducted for nursing personnel regarding recent advances in menopausal care.

3. Nursing Administration

- Nurse administrators can organize community awareness programmes regarding menopause in rural and tea garden communities.
- Nursing administrators should encourage nurses to participate in women's health promotion activities.
- Health education materials such as pamphlets, posters, and booklets regarding menopause should be made available in community health centers.

4. Nursing Research

- Similar studies can be conducted on larger samples to generalize the findings.
- Comparative studies can be conducted between rural and urban women regarding awareness of menopause.
- Experimental studies can be conducted to evaluate the effectiveness of educational interventions on menopausal awareness.
- Further studies can be conducted regarding coping strategies and quality of life among post-menopausal women.

LIMITATIONS OF THE STUDY

- The study was limited to selected tea garden communities only.
- The study included only post-menopausal women.
- The study assessed only awareness and understanding regarding menopause.
- The sample size was limited to 100 participants.
- Some demographic categories contained small or zero frequencies, which may have affected the statistical power of the Chi-square analysis

RECOMMENDATIONS

Based on the findings of the study, the following recommendations are made:

- A similar study can be conducted on a larger sample for better generalization.
- Comparative studies can be conducted between rural and urban communities.
- Educational intervention studies can be conducted to improve awareness regarding menopause.
- Similar studies can be conducted including attitude and practice aspects related to menopause.
- Awareness programmes regarding menopause can be organized regularly in community settings.

SUMMARY

This chapter dealt with the summary, conclusion, implications, limitations, and recommendations of the study conducted among post-menopausal women regarding awareness and understanding of menopause. The findings revealed moderate awareness among women and highlighted the need for health education and community awareness programmes regarding menopausal health.

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