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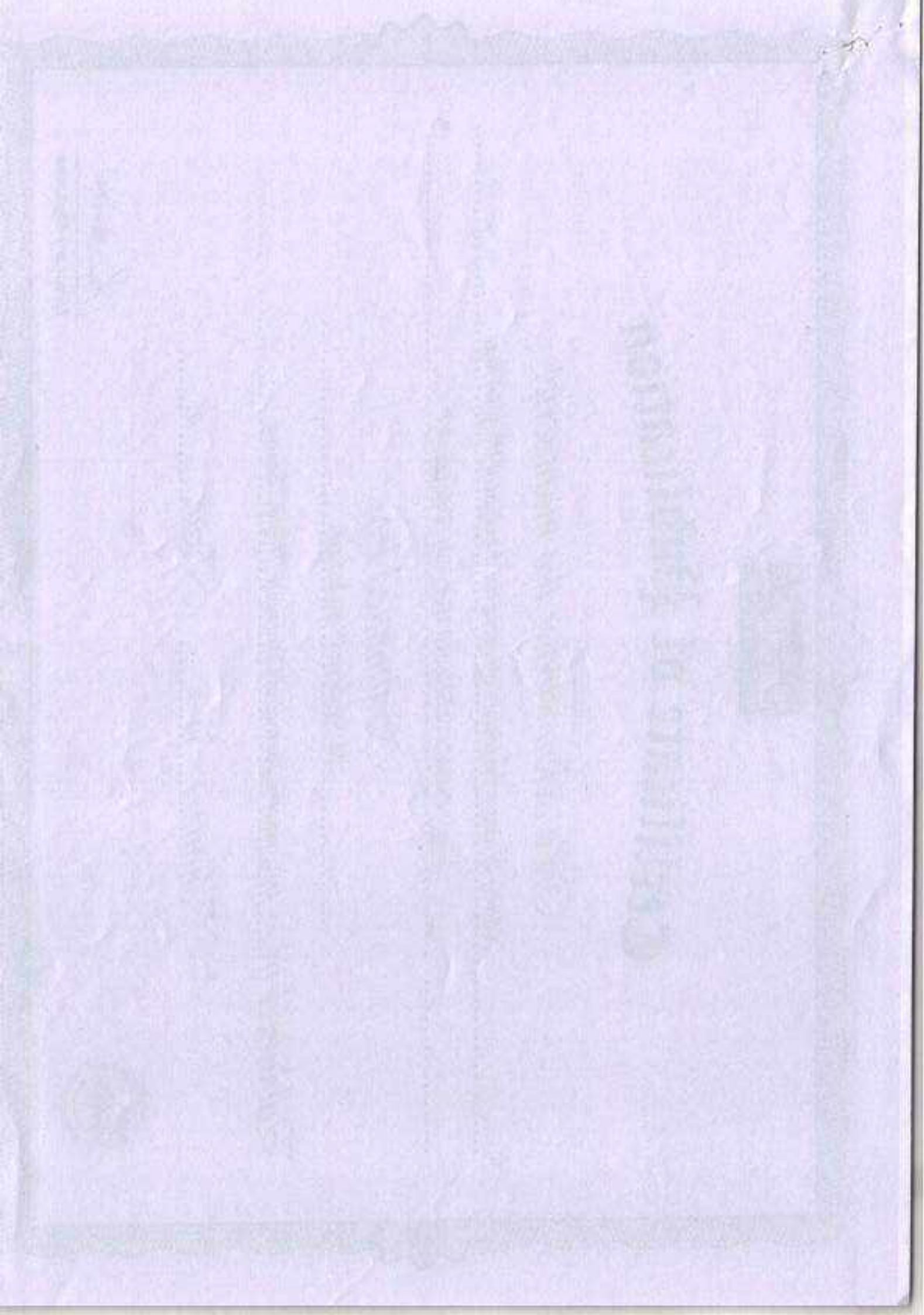*Submitted by*

M. Sandhya Priya Darsini

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A Study to "Assess the Factors Affecting the Duration of Hospital Stay Among Patients at Selected Hospitals, Tirupati, AP"

S. Anuradha*, T. Nazma Sanjeed, M. Sandhya Priya Darsini, P.G. Rekha, P. Sumithra
Sree Vidyanikethan College of Nursing, A. Rangampet, Tirupati, AP, India

ABSTRACT

The study aimed to assess the factors affecting the duration of hospital stay and to find out the association between factors with selected demographic variables, conducted in Ramadevi, Sri Sai Sudha and Sri Maruthi Multi Specialty hospitals, Tirupati. 150 samples were selected by using convenience sampling technique. Results revealed that the average LOS (days) for acute 3.7 ± 1.9, subacute 5.2 ± 2.0 and for chronic conditions 26.3 ± 87.3. Hospital stay and its relation with nurses work-behavior and nurse-patient satisfaction were analyzed using multiple correlation i.e., $R=0.3$, indicating lower border positive correlation. Associations of factors with selected demographic variables were analyzed by chi-square test, a significant association between factors affecting LOS with age (>50 years), married patients, illiterates, dependents, income between Rs. 5,001–10,000 and patients belonging to joint family.

Keywords: duration of hospital stay, factors, patients

*Corresponding Author
E-mail: svcnp@vidyanikethan.edu

INTRODUCTION

Nowadays, the growing demands in health services and the limitation of resources require an effective hospital management. It is well known that differences in the management of patients with the same disease may affect efficiency, safety and quality of care [1]. Length of stay (LOS) is the time interval between date of admission and date of discharge and is used as an indicator to evaluate the hospital resource utilization rate, efficiency, and quality of healthcare services [2, 3].

Healthcare providers have been under much political and managerial pressure to keep LOS in a desirable minimum level to reduce costs without compromising patients' outcome. The LOS reduction level is restricted by factors such as quality and effectiveness considerations and it is important to know more about the factors that play a significant role in decreasing the patients' LOS [4, 5].

REVIEW OF LITERATURE

Freitas et al. (2012), University of Porto conducted a study using hospital administrative data from inpatient episodes in public acute care hospitals in the Portuguese National Health Service (NHS), with releases among years 2000 and 2009, organized with some hospital features. In near nine million inpatient episodes analyzed a proportion of 3.9% high LOS outliers, accounting for 19.2% of total inpatient days. The number of hospital enduring releases amplified between years 2000 and 2005 and somewhat reduced after that. The proportion of outliers ranged between the lowest value of 3.6% (in years 2001 and 2002) and the highest value of 4.3% in

2009. Teaching infirmaries with over 1,000 beds have meaningfully more outliers than other infirmaries, even afterward change to readmissions and numerous patient features. As high LOS outliers represent an important proportion in the total inpatient days, this should be seen as an important alert for the management of hospitals and for national health policies. As expected, age, type of admission, and hospital type were significantly associated with high LOS outliers. The proportion of high outliers does not seem to be related to their financial coverage; they should be studied in order to highlight areas for further investigation [6].

Gruenberg and Shelton (2006) conducted a study at Albany Medical Center, Albany, NY to identify and categorize the factors associated with prolonged stays in the intensive care unit and to describe briefly the nonmedical interventions to date designed to reduce length of stay. Results showed that the emerging consensus is that length of stay in the intensive care unit is exacerbated by several increasingly discernible medical, social, psychological, and institutional factors. At the equivalent time, numerous nonmedical, untried involvements have been calculated to decrease span of break. Interventions involving palliative care, ethics consultations, and other methods to increase communication between healthcare personnel, patients, and patients' families may be helpful in decreasing length of stay in the intensive care unit [7].

Objectives
- To assess the factors affecting the duration of hospital stay
- To find out the association between factors with the selected demographic variables

METHODOLOGY
A descriptive research design was adopted to assess the Factors affecting the duration

of hospital stay among 150 patients at selected hospitals, Tirupati, AP. The study was conducted at Ramadevi, Sri Sai Sudha and Sri Maruthi Multi Specialty Hospitals, Tirupathi. Formal permission was obtained from the concerned authorities for conducting the study by convenience sampling technique.

Data Analysis and Interpretation
It was planned to analyze the data by using descriptive and inferential statistics.

Frequency and Percentage Distribution for Demographic Variables
Majority of samples were males 92 (61%), majority were in the age group of 50 and above years 67 (45%), married patients 116 (77%), illiterates were 53 (35%), were daily wage workers 47 (31%) and Government employees were 41 (27%), monthly income was between 5001 and 10000 for 62 (41%), 76 (51%) belongs to joint family, 108 (72%) were residing at urban area, and most of the samples were Hindus 131 (87%).

Table 1 shows the average LOS (days) for acute 3.7 ± 1.9, subacute 5.2 ± 2.0 and for chronic conditions 26.3 ± 87.3.

Table 1. *The mean and SD for factors affecting length of stay.*

Type of disease	Mean	SD
Acute	3.76	1.92
Subacute	5.22	2.04
Chronic	26.39	87.36

- Hospital stay and its relation with nurses work-behavior and nurse-patient satisfaction were analyzed by using multiple correlation i.e., R=0.3, indicating lower border positive correlation.

- The study results showed a significant association between factors affecting LOS with age (>50 years), married patients, illiterates, dependents, income between Rs. 5,001–10,000 and patients belonging to joint family.

DISCUSSION

In the present study the average LOS (days) for acute 3.7 ± 1.9, subacute 5.2 ± 2.0 and for chronic conditions 26.3 ± 87.3, and showed a significant association between factors affecting LOS (days) with age (>50 years), married patients, illiterates, dependents, income between Rs. 5,001 and 10,000 and patients belonging to joint family. Supporting the study by Saxena et al. (2016) revealed that the mean age was 58.4 + 12 years; ranging from 23 to 86 years. Of the total 55 stroke patients, 32 (58.2%) were males and 23 (41.8%) were females. Twenty-three (41.8%) of 55 stroke patients had length of stay (LOS) in hospital ≥7 days [8, 9]. As per the study done by Amritha and Badgal (2015) supports the present study, results revealed that the mean age was 56.15 years, 62 (62%) were males, 38 (38%) were females, 55 (55%) from rural area, 45 (45%) were from urban areas, 12 (12%) were single, 78 (78%) were married, and 10 (10%) were widowed [10].

Hospital stay and its relation with nurses work-behavior and nurse-patient satisfaction were analyzed by using multiple correlation i.e., R=0.3, indicating lower border positive correlation, which shows nurses work behavior and nurse patient satisfaction is influencing on duration of hospital stay among patients.

Recommendations
- Further studies can be conducted with larger sample.
- Longitudinal study can be conducted for better generalization of the findings.

CONCLUSION

Length of stay is one of the most important indicators of various factors of the factors. This study concluded that LOS is prolonged in age group of patients i.e. >50 years due to associated co morbidities, and were mostly married, illiterate patients have prolonged LOS in view of lack of insight into the graveness of illness and

more likely to fail to adhere to their dosage schedule, patients with income between Rs. 5,001 and 10,000 had more stay as they were insured by Government schemes and patients belonging to joint family were supported by other family members.

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A Study to Assess the Menopausal Symptoms among Women in selected Villages at Chandragiri Mandal, Andhra Pradesh

S. Anuradha[1,], M. Sandhya Priyadarsini[2], P. Sumithra[2]*
[1]Principal, Sree Vidyanikethan College of Nursing, A. Rangampet, Tirupati, Chandragiri Mandal, Chittoor District, Andhra Pradesh, India
[2]Assistant Professor, Sree Vidyanikethan College of Nursing, A. Rangampet, Tirupati, Chandragiri Mandal, Chittoor District, Andhra Pradesh, India

ABSTRACT
This is a descriptive study conducted in the month of June 2019 at selected villages of Chandragiri Mandal, Andhra Pradesh. A total of 200 women between age of 40 years and above 56 years, who attained menopause, were taken from the selected villages and analyzed. Menopausal manifestations were surveyed utilizing altered menopause rating scale. The results uncovered that majority of ladies achieved menopause at the age of 40–45 years and the determined mean age was 42.5 years. The most prevalent menopausal symptoms in the present study was joint and muscular discomfort 181 (90.5%), irritability 133 (66.5%), sleep problems 115 (57.5%), dryness of vagina 108 (54%), and bladder problems 102 (51%). Other symptoms in decreasing order were anxiety 89 (44.5%), depressive mood 86 (43%), physical and mental exhaustion 80 (40%), heart discomfort 70 (35%), hot flushes 33 (16.5%), and sexual problems 9 (4.5%). The women with unemployment, birth spacing between 6 months and 1 year, no history of gynecological problems, consumed mixed diet, and who suffered with chronic diseases experienced more menopausal symptoms and were found to be statistically significant.

Keywords: assess, menopause, menopausal symptoms, modified menopause rating scale

**Corresponding Author
E-mail: svcnp@vidyanikethan.edu*

INTRODUCTION
At the time when menstrual period permanently ceases in a woman's life is called as menopause and it is also called the "change of life". Menopause is defined as natural physiological phenomenon and also the "permanent stoppage of menstruation" for a period of 12 consecutive months, resulting from the loss of ovarian follicular activity (WHO).

Menopause is, in fact, a special phase of female conceptive cycle. In the current circumstance with the better availability of well-being administration to improve prosperity, the future has extended, and as a result, the women will undoubtedly spend a tremendous period of their life during this time of menopause. In spite of the way that it is a standard physiological change, but at this point and afterward, the signs of menopause can be not kidding to the point that they can hamper ordinary activity and amazingly most women are unaware of certain menopausal changes. These side effects are principally a result

of decreased estrogen levels as the ladies approach menopausal stage and even these side effects can be noticed in perimenopausal stage [1].

Around the world, the evaluations for the mean time of menopause go from 40 to 65 years. During the progress to menopause, ladies may encounter vasomotor, urogenital, psychosomatic, psychological, and sexual dysfunction [2].

The normal period of menopause in Indian ladies is 47.5 years as per Indian Menopause Society (IMS) research, which is significantly less than their western partners (51 years) [3]. It was additionally found in some postmenopausal ladies that due to long period of estrogen lack, there can be changes in cardiovascular system or bone which can prompt osteoporosis. Along these lines, menopausal prosperity demands a lot higher need in Indian situation [1].

Menopause is a bio-mental wonder and is a characteristic maturing process which is recognized by a decrease in the body work. This needs consolidated restorative and mental help. Consequently, the ladies can have solidarity to defeat the seriousness of changes which ruins the prosperity of ladies [4].

REVIEW OF LITERATURE
Senthilvel et al. conducted a descriptive study on assessment of symptoms and quality of life among postmenopausal women in a tertiary care hospital in Kochi, which aimed to assess the menopause-related symptoms and their impact on the women's life [5]. Data were collected among 150 postmenopausal women by using the structured menopause-specific QOL (MENQOL) questionnaire. Among 150 postmenopausal ladies, 51 (34%) were in the age gathering of 55–59 years and the greater part of the investigation populace

(n = 116, 77.3%) were married. The administration of menopausal manifestations was trailed by 28 (18.7%) ladies. The commonness levels of the traditional menopausal indications, for example, hot flushes, night sweats, and vaginal dryness in ladies of 50–65 years were 75.3%, 58%, and 30.7%, separately. The general MENQOL mean absolute score was found as 112.47 ± 28.80. Most of them encountered the mean physical side effect, which was seen as 62.05 ± 17.82. The relationship between QOL scores with instructive status and financial status was measurably profoundly noteworthy with $P < 0.01$ and with conjugal status factually huge with $P < 0.05$.

Khatoon et al. did an observational cross-sectional investigation in Era's Lucknow Medical College and emergency clinic on 300 patients who had achieved menopause by utilizing modified menopause rating scale (MRS) [6]. The dominant part of patients accomplished menopause at the age of 50–54 years, and the determined mean age came to be 50.33 ± 5.26. The most widely recognized side effects revealed were joint and muscular uneasiness (87%), burdensome state of mind (70%), heart inconvenience (60.3%), physical and mental weariness (60%), and sleep problems (56%). The most old-style indication of menopause, i.e. hot flushes, was accounted for in 53.3%. Commonness of different side effects in diminishing order was irritability (46.6%), anxiety (40.3%), bladder issue (26%), dryness of vagina (23%), and sexual issues (20%). The menopausal side effects were seen as increasingly pervasive in ladies of lower financial and the individuals who had no conventional instruction; and this distinction was seen as measurably critical.

Singh and Prandhan led a cross-sectional investigation in a rustic zone of New Delhi

in South Asia on 539 postmenopausal ladies [7]. The outcomes signified that the mean age at accomplishing menopause was 46.24 (standard deviation = 3.38) years. Just 4 (1.6%) postmenopausal ladies had untimely menopause. A sum of 225 (89.3%) postmenopausal ladies experienced at any rate at least one menopausal symptom(s). The most widely recognized grievances of postmenopausal ladies were sleep disturbances (62.7%), muscle or joint pain (59.1%), hot flushes (46.4%), and night sweats (45.6%). A total of 32.1% ($n = 81$) postmenopausal women suffered from depression and 21.0% ($n = 53$) postmenopausal women suffered from anxiety.

OBJECTIVES
- To assess the menopausal symptoms.
- To recognize the relationship between the menopausal manifestations with the chosen demographic variables.

METHODOLOGY
This is a descriptive study conducted in the month of June 2019 at selected villages of Chandragiri Mandal, Andhra Pradesh. An aggregate of 200 ladies between age of 40 years and above 56 years was taken from the chosen villages, and the samples agreed to involve in the study being conducted. This study used questionnaire from MRS for assessing menopausal symptoms. MRS is a self-administered instrument and is a validated scale used for many clinical studies and in research on the etiology of menopausal symptoms to assess the severity of menopausal symptoms.

The MRS is composed of 11 items like hot flushes, heart discomfort, sleep problems, depression mood, irritability, anxiety, physical and mental exhaustion, sexual problems, bladder problems, dryness of vagina, and joint and muscular discomfort. Each one of the 11 symptoms stated contains a scoring of "0" (no complaints) to "4" (very severe symptoms).

The source of information for socio-demographic data, which included age, religion, educational status, employment status, family monthly income, age at menarche, menstrual cycle, premenstrual symptoms during menstrual cycle, marital status, age at marriage, type of delivery, miscarriages, number of children, birth spacing, type of family planning adopted, attained menopause, age at menopause, who suffered with any gynecological condition, dietary pattern, history of chronic disease, and BMI, was collected.

Ladies were personally interviewed and information was gathered on the 11 menopausal manifestations, and relying upon the seriousness of these manifestations, they were set apart from "0" to "4".

RESULTS
Statistical Analysis
The factual investigation was finished utilizing the chi-square test P-value < 0.05 was taken to be measurably critical.

Frequency of Menopausal Symptoms Assessed by MRS
Table 1 shows the frequency and severity of menopausal symptoms as assessed by the MRS. The most prevalent menopausal symptoms were joint and muscular discomfort 181 (90.5%), irritability 133 (66.5%), sleep problems 115 (57.5%), dryness of vagina 108 (54%), bladder problems 102 (51%), anxiety 89 (44.5%), depressive mood 86 (43%), physical and mental exhaustion 80 (40%), heart discomfort 70 (35%), hot flushes 33 (16.5%), and sexual problems 9 (4.5%).

Table 2 depicts that, out of 200 women with menopausal symptoms, 183, i.e. (91.5%), were unemployed. The correlation between employment status and presence of menopausal symptoms was found to be statistically significant.

Table 1. *Frequency of menopausal symptoms assessed by MRS.*

S.N.	Menopausal symptoms	No. of women	Mild	Moderate	Severe	Very severe
1	Hot flushes	33(16.5%)	31(15.5%)	1(0.5%)	1(0.5%)	0(0%)
2	Heart discomfort	70(35%)	63(31.5)	6(3%)	1(0.5%)	0(0%)
3	Sleep problems	115(57.5%)	98(49%)	15(7.5)	1(0.5%)	1(0.5%)
4	Depressive mood	86(43%)	60(30%)	26(13%)	0(0%)	0(0%)
5	Irritability	133(66.5%)	71(35.5%)	25(12.5%)	34(17%)	3(1.5%)
6	Anxiety	89(44.5%)	81(40.5%)	6(3%)	2(1%)	0(0%)
7	Physical and mental exhaustion	80(40%)	68(34%)	10(5%)	2(1%)	0(0%)
8	Sexual problems	9(4.5%)	9(4.5%)	0(0%)	0(0%)	0(0%)
9	Bladder problems	102(51%)	77(38.5%)	25(12.5%)	0(0%)	0(0%)
10	Dryness of vagina	108(54%)	97(48.5%)	11(5.5%)	0(0%)	0(0%)
11	Joint and muscular discomfort	181(90.5%)	75(37.5%)	74(37%)	27(13.5%)	5(2.5%)

Table 2. *Association of employment status with menopausal symptoms.*

Employment status	Frequency	Percentage
Employed	17	8.5
Unemployed	183	91.5

P-value: 0.009 (Employment status shows high significance).

Table 3. *Association of birth spacing with menopausal symptoms.*

Birth spacing	Frequency	Percentage
None	3	1.5
6 months to 1 year	100	50
2–3 years	91	45.5
Above 4 years	6	3

P-value: 0.039 (Birth spacing is associated with menopausal symptoms and is significant).

Table 3 shows that, among 200 women, 100 (50%) had 6 months to 1 year birth spacing. It was found that birth spacing and menopausal symptoms are statistically significant.

Table 4. *Women who suffered with any gynecological conditions.*

Suffered with any gynecological condition	Frequency	Percentage
a. Yes	47	23.5
b. No	153	76.5

Table 5. *Women who suffered with specific gynecological conditions.*

If yes specify	Frequency	Percentage
a. None	153	76.5
b. DUB	17	8.5
c. Leucorrhea	30	15

P-value: 0.624 and 0.922 (women with no gynecological problems showed high significance).

Table 4 and Table 5 illustrate that, out of 200 women with no history of gynecological problems, 153 (76.5%) had showed significance indicating that they experience mild menopausal symptoms.

Table 6. *Association between dietary pattern and menopausal symptoms.*

Dietary pattern	Frequency	Percentage
a. Vegetarian	4	2
b. Non-vegetarian	2	1
c. Mixed	194	97

P-value: 0.000 (Dietary pattern and menopausal symptoms showed strong significance).

Table 6 shows that, on the basis of dietary pattern, most of the women (97%) belong to mixed diet. Dietary pattern and menopausal symptoms were found statistically significant.

Table 7. *Association between history of chronic diseases and menopausal symptoms.*

History of chronic disease	Frequency	Percentage
a. Yes	119	59.5
b. No	81	40.5

Table 8. *Women suffered with specific chronic diseases.*

If yes, specify	Frequency	Percentage
a. None	81	40.5
b. Hypertension and diabetes	104	52
c. Arthritis	7	3.5
d. Respiratory diseases	8	4

P-value: 0.001 and 0.031(History of chronic diseases and menopausal symptoms are strongly associated and highly significant).

Table 7 and Table 8 depict that, out of 119 who suffered with chronic diseases, 104 women were suffering with hypertension and diabetes and showed significance.

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DISCUSSION

The mean age at menopause in our study was 42.5 years. Unni found that it is marginally lower than the normal period of menopause as expressed by Indian Menopause Society, which is around 47.5 years [3].

The most common symptom in our study was joint and muscular discomfort (90.5%). Many other studies found this symptom to be prevalent. In a study by Cheng et al. and Hafiz et al., joint and muscular discomfort was found as the predominant symptom. Other symptoms like irritability (66.5%), sleep problems (57.5%), anxiety (44.5%), depressive mood (43%), physical and mental exhaustion (40%), and heart discomfort (35%) were decreasing the quality of life [8, 9]. Rahman et al. show that physical and mental exhaustion (67.1%) and sleep problems (52.2%) were prevalent, whereas irritability (37.9%), anxiety (36.5%), depressive mood (32.6%), and heart discomfort (18.3%) were less prevalent [10].

A study by Sireger et al. found that psychological complaints are more frequent in the postmenopausal paramedic group compared to the perimenopausal group in which they more frequently complained anxiety (67.5%), irritable (54.5%), and sleep difficulty (50.6%) [1].

The study revealed the symptoms like hot flushes (16.5%) and sexual problems (4.5%) were experienced by the women. Pal et al.'s study showed similar results like hot flushes (33.3%) and sexual problems (0%) were less prevalent [11].

In this study, symptoms like bladder problems (51%) and dryness of vagina (54%) were found. Avanie's study also showed the same results like bladder problems (56%) and vaginal dryness

(53.3%), and these were the more prevalent symptoms among women [11].

Thus, the variation in prevalence of different menopausal symptoms at various places is highly dependent on the tradition, culture, sources of food, and styles of life [12].

CONCLUSION

Most of the women had decreased quality of life and burden as age advances. This is an indication for establishment of health centers with good geriatric care facilities so as to treat postmenopausal women in order to lead a productive life.

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