

Prevalence of Fibromyalgia and Its Correlation with Insomnia Among Housewives - A Cross Sectional Study

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DOI: <https://doi.org/10.52403/ijshr.20230222>

ABSTARCT

BACKGROUND: Fibromyalgia and Insomnia are increasingly recognized problems now a day. This preliminary study investigates the prevalence of Fibromyalgia and insomnia among housewives. Since the studies among housewives are rare, we chose housewives as our study sample.

METHODS: A survey method of study was used. A sample consists of 206 subjects at a range of 20-60yrs were recruited. A self structured demographic data, Widespread Pain Index, Symptom Severity Scale and Insomnia Severity Index were used to collect the data.

RESULT: This cross-sectional study shows that there is a prevalence of Fibromyalgia and Insomnia among housewives. From the study we found that, out of 206 subjects 37 (17.96%) had fibromyalgia and 106 (51.45%) had insomnia. After analyzing this we concluded that there is a positive correlation between Fibromyalgia and Insomnia among housewives.

CONCLUSION: This study concluded that there is a prevalence of Fibromyalgia and Insomnia among house wives. There is a positive correlation between fibromyalgia and insomnia with advancing age. Hence our study emphasise the importance of conventional physiotherapy exercises with relaxation techniques to prevent the occurrence of fibromyalgia associated with insomnia. It is important to give awareness about the condition and prevention of it to improve the

quality of life, as they are playing a vital role in the development of our society.

KEY WORDS: *Fibromyalgia, Insomnia, Housewives, Widespread pain index, Symptom severity scale, Insomnia severity index.*

INTRODUCTION

Women makeup nearly half of the population around world. Women have contributed significantly to the expansion, advancement, and sustainability of human society at large throughout history[1]. Within the society, women have significant roles to play. Women are acknowledged as playing key roles in managing domestic duties and attending to family members' wants and expectations[2]. Domestic work performed by women, which includes chores like cleaning, cooking, fetching water, hand washing clothes, and taking care of the family, can be just as physically, emotionally, and time consuming as formal paid work. Women in some low and middle income families put in an average of 10 hours a day performing taxing household chores while hunched over[3]. Fibromyalgia is a chronic pain syndrome marked by widespread pain lasting more than 3 months and the presence of 11 out of 18 tender sites. It is noteworthy that fibromyalgia patients frequently experience additional problems,

particularly weariness, sleep disruption, morning stiffness, paraesthesia, and emotional discomfort. Most patients who acquire fibromyalgia have lived with chronic pain various parts of their body. One can assume that fibromyalgia is a concentrated pain condition. Centralized pain is a chronic condition^[4]. Insomnia is a serious public health problem commonly fought among the general population as a symptom, and remains at about 50-60% of lifetime prevalence. In contrast, insomnia is reported in only about 2% to 5% of the population. Insomnia is more common in females than in men (60% versus 40%), and its prevalence increases with age. Prolonged sleep latency, difficulty in maintaining sleep and early waking are the hallmarks of sleep disorders, while fatigue, reduced attention, impaired cognitive functioning, irritability, anxiety and ill humor are the main diurnal deficiencies^[5]. The aim of this study is to determine the prevalence of Fibromyalgia and insomnia and its correlation among housewives.

METHODOLOGY

- **STUDY DESIGN** : A Cross sectional survey study.
- **SAMPLING METHOD** : Purposive sampling method.
- **SAMPLE SIZE** : 206
- **STUDY SETTING** : This study was conducted on non employed women from various groups like Kudumbasree, Mahilasamajam and many houses of rural areas for data collection.
- **MODE OF SURVEY** : Both online (google forms) and offline(distributed in hand).
- **STUDY DURATION** : Survey study was conducted from September 2022 to November 2022.
- **MATERIALS USED** : Pen, Paper, Demographic chart, Widespread pain index questionnaire. Symptom severity scale, Insomnia severity index

SELECTION CRITERIA

● INCLUSION CRITERIA

- Age : 20 to 60yrs
- Occupation : Housewife
- Symptoms should be present at a similar level for at-least 3 months.
- Housewives who should not suffer from chronic insomnia

● EXCLUSION CRITERIA

- Women who are not within the age limit.
- Women who are not willing to participate in the study.
- Women who are under medication for stress or depression, and those subjects with psychological issues.

Women who have any cardiovascular, musculoskeletal and neurological condition are not included in this study.

STUDY PROCEDURE:

Covid protocols were strictly followed for collecting the required data. We ensured that the subjects maintained social distance while answering the questionnaire and discouraged exchange of pen and paper. We provided sanitizer to them before and after the questionnaire session.

This cross sectional study was conducted from September to November 2022 among 206 subjects. We randomly selected housewives from various district of Kerala (through online and offline method) according to the inclusion and exclusion criteria. We introduced ourselves and a detailed explanation of the purpose of the study was given. Oral acceptance of the subjects was obtained before the survey. After the consent has taken from the subject, we directed them to fill the demographic data before the questionnaire.

We used both online (Google forms) and offline (in hand) methods to distribute our questionnaire for the survey. For those who can grasp English language, they filled out the form on their own, and for those who needed

help in filling the questionnaire; we assisted them in doing so. We explained each question to the subjects thoroughly. After collecting the data, we analyzed each of their score and identified housewives with fibromyalgia and insomnia and made them aware about their condition and educated them properly, exercise pamphlet was also distributed. For those who filled the form online we shared the score and reverted them with proper advice through mail.

OUTCOME MEASURES

1. Widespread Pain Index

In widespread pain index, 19 painful body areas were included. The questions were focused whether the individual might have had any pain or tenderness in these 19 body parts during the past 7 days. Pain in each location equal to a score of 1. Items were summed to yield a total score out of 19 with higher score indicating greater widespread pain.

2. Symptom Severity Scale

In SSS, the questions were focused on symptoms of exhaustion, sleepiness and cognitive impairment (difficulty in thinking or remembering). The scoring was done, based on the intensity of each of these symptoms the individual have experienced for the last 7 days. For rating, the participants used a scale ranging from 0 to 3. Yes/No inquiries were also present in this questionnaire about additional symptoms such as headaches, depression and pain in the lower abdomen, that have been present for last 6 months.

For fibromyalgia syndrome diagnosis, one of the two conditions must be fulfilled: $WPI \geq 7$ and $SSS \geq 5$, or WPI between 3 and 6 and $SSS \geq 9$. As per this criteria the symptom duration of at-least 3 previous months was required^[6].

3. Insomnia Severity Index

ISI is a quick self-report tool that gauges how the patient feels about their insomnia. ISI

focuses on subjective symptoms such as effect of insomnia, as well as the level of worry or distress brought on by difficulties. It consists of seven items that assess the degree of sleep onset and maintenance difficulties (both nocturnal and early morning awakening), satisfaction with the current sleep pattern, interference with daily functioning, noticeability of impairment attributed to the sleep problem, degree of distress or concern caused by the sleep problem. Each item is rated on a scale of 0 to 4 and the total score ranges from 0 to 28. A higher score indicates more severe insomnia^[7].

RESULT

Present study was designed to explore the prevalence of fibromyalgia and insomnia among housewives. In this study, 206 housewives were selected according to inclusion and exclusion criteria. The age group considered for the study was 20 to 60 years.

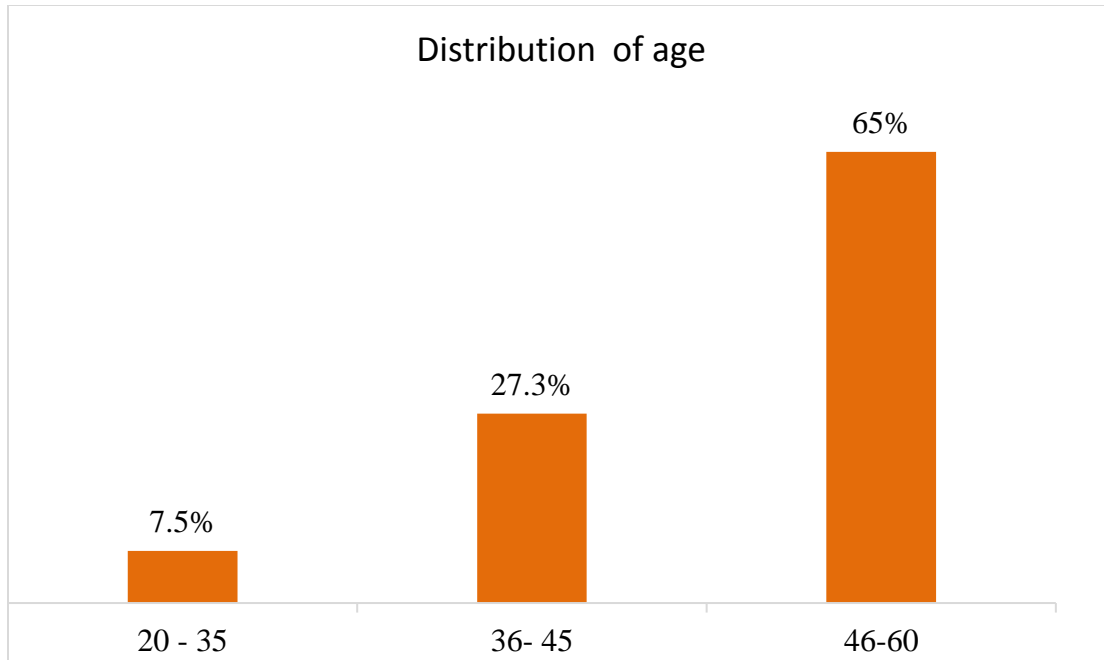
DISTRIBUTION OF FIBROMYALGIA

From this study, out of 206 subjects 37 were identified with fibromyalgia with a prevalence of 17.96%.

Age	Frequency	Percentage
20 - 35	0	0%
36 - 45	11	29%
46 - 60	26	70.2%
Total	37	100.0%

Table 1; Distribution of fibromyalgia among various age group.

The above table represents Frequency and Percentage of fibromyalgia in various age groups among housewives, it states that majority of subjects were between the age of 46 - 60 years with highest frequency of 26 subjects (70.2%) and 11 subjects (29%) were affected between the age of 36 - 45 years and 0% were affected between the age of 20 - 35 years.



Graph 1 Graphical representation of insomnia among various age group.

SEVERITY OF INSOMNIA

Insomnia severity	Frequency	Percentage
Mild	87	82%
Moderate	17	16%
Severe	2	1.8%

Table 2; Severity of insomnia

The table shows that, among 106 subjects with insomnia, 87 subjects (82%) have mild insomnia and 17 subjects (16%) have moderate insomnia and 2 subjects (1.8%) have severe insomnia.

CORRELATION BETWEEN FIBROMYALGIA AND INSOMNIA

According to statistics, the Pearson Coefficient measures how strongly two variables are related to one another. The correlation coefficient determines how a change in one variable affects a change in the other variable. It aims to connect the data of two variables to their relationship by drawing a line through the data. This linear relationship may be either positive or negative.

A linear correlation coefficient is greater than zero indicates a positive relationship and a

value less than zero signifies a negative relationship. Coefficient value can range from +1 to -1 where +1 indicates a perfect positive relationship, -1 indicates a perfect negative relationship and 0 indicates no relationship exists. If the coefficient value lies between +0.50

and +1 or -0.50 and -1 then it is said to be a strong correlation.

In this study, we checked for the correlation between fibromyalgia and insomnia and discovered that both are related. The correlation coefficient is 0.57 and it shows a positive correlation between fibromyalgia and insomnia.

DISCUSSION

Fibromyalgia is a condition characterized by muscular or musculoskeletal pain with stiffness and localized tenderness at specific points on the body. It often accompanied by fatigue and altered sleep, memory and mood. There are many factors which trigger Fibromyalgia which includes both physical and emotional stresses such as repeated injuries, infection, anxiety, depression etc. Insomnia or disturbed sleep is one of the

major cause of Fibromyalgia .Persistent problems in falling and staying asleep is called insomnia. Patients report difficulty falling asleep, significantly more night time awakenings, and unrefreshing sleep. Due to intense pain people may lost sleep and this often effect their day to day life. Many studies shows that women are more affected by fibromyalgia syndrome [8].This is because they have more tender points when compared to men. Among women housewives are a neglected category. They work throughout the day for their family. Due to this continuous work throughout they experience pain at different sites. But none pays much attention to their complaints. Everyone considers their work as duty of a housewife. And studies among housewives are very rare. So we took housewives as our subject for study. Thus we decided to find out the prevalence fibromyalgia and its association with insomnia among homemakers.

Findings of our work demonstrate the prevalence of Fibromyalgia and Insomnia among housewives. According to the collected demographic data we categorize the sample size into various age groups and found that both Insomnia and fibromyalgia are common among housewives of age group 46-60.

For the study we randomly selected 206 subjects. The subjects were informed about the aims of the study and method of data collection in person. And they were assured that the privacy and confidentiality would be maintained, and they had a right to refuse to participate in the study or to withdraw consent to participate at any time without reprisal. They were provided with our forms which includes a detailed demographic data and 3 questionnaires. We collected detailed data from 206 subjects.

On the basis of the data analyzed we concluded that there is a prevalence of 17.96% (37 out of 206) fibromyalgia cases among housewives. Among these sample size

there is a prevalence of 51.45%(106 out of 206)cases of Insomnia .After finding the result we checked the correlation between Fibromyalgia and Insomnia among housewives. And the result shows a positive correlation of 0.571, so we concluded that both are correlated. Then we checked the same correlation between Fibromyalgia and Insomnia, by categorizing the subjects into various age groups within the selected range of 20-60yrs . from this we came to know that the correlation is higher in the age group 46 - 60 years with a correlation coefficient of 0.55. It makes sense to expect that older people may experience fibromyalgia symptoms that are more severe because they may have a general decline in energy, sleep issues, and various sources of joint and muscle pain. We also examined the correlation in post menopausal women and got a positive correlation(0.53),it has been demonstrated that sex hormones influence pain sensitivity and oestrogen deficiency is a key contributor to fibromyalgia.

The end result of our study shows that, there is a direct relation between Fibromyalgia and Insomnia among housewives with a positive correlation. Also other factors like number of children, number of family members, years of marriage, working hours etc. shows an impact in the occurrence of fibromyalgia.

LIMITATION OF STUDY

- The sample size is small for a survey study.
- Other co-founding factors which cause fibromyalgia and insomnia were excluded from the study.
- Study had only taken 2 scales into account for interpretation of result.
- There were 2 incomplete questionnaires.

SCOPE OF STUDY

- More samples can be added for increasing the accuracy in research survey.

- Survey can be conducted all over the places include many other areas of health sector for vast study.
- We can implement this study in other populations like young adults

CONCLUSION

From the study we concluded that, there is prevalence of fibromyalgia and insomnia among housewives. Among the 206 subjects that we selected 17.96% (37 subjects) between the age group of 46-60years had fibromyalgia and 51.45% (106 subjects) subjects between the age group 46-60years had insomnia. And after analyzing the data we concluded that there is correlation between fibromyalgia and insomnia with advancing age.

Declaration by Authors

Ethical Approval: Approved

Acknowledgement: None

Source of Funding: None

Conflict of Interest: The authors declare no conflict of interest.

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How to cite this article: Susan Annie George, Anagha NB, Anna Rose PA et.al. Prevalence of fibromyalgia and its correlation with insomnia among housewives - a cross sectional study. *International Journal of Science & Healthcare Research*. 2023; 8(2): 187-192. DOI: <https://doi.org/10.52403/ijshr.20230222>
