

## Research Report

# TIME TO SHARE UNPAID DOMESTIC LABOR! PREVALENCE OF DEPRESSIVE SYMPTOMS AMONG WORKING WOMEN

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### Abstract

**Background:** The prevalence of depression is higher among women compared to men. The prevalence of depression is higher among married working women compared to married working men. Studies estimating the prevalence of depression among working women and quantitatively evaluating household work about depression in Kerala, India, are limited. The primary objective of the study was to estimate the prevalence of depressive symptoms among working women residing in the field area of Medical College Health Unit – Pangappara, Thiruvananthapuram. The secondary objective was to study factors associated with depressive symptoms among the study population. **Methods:** The study design was a cross-sectional study for which 110 participants were selected using two-stage cluster sampling. The data was obtained over the phone due to the then-ongoing COVID-19 pandemic. The data was analyzed with SPSS Version 26. **Results:** The prevalence of depressive symptoms among the study population was 14.5%, with a PHQ-9 score greater than or equal to five. The prevalence of depressive symptoms with a PHQ-9 score greater than or equal to ten was 4.5%. The prevalence of depressive symptoms was significantly higher among working women who had no one to help with household chores and childcare. **Conclusion:** The study quantifies the duration of unpaid domestic labor done by working women in addition to paid jobs. These unpaid domestic chores are often not shared by their husbands. The study signifies the need for gender equality and the sharing of domestic work and child care by male partners.

**Keywords:** Working women, unpaid domestic labor, depression, depressive symptoms, PHQ-9

### Introduction

Depression is a significant cause of disability and a major contributor to the global disease burden.<sup>1</sup> Although it varies widely between nations, the overall 12-month prevalence of major depressive disorder is about 6%.<sup>2</sup> For women, the lifetime prevalence of depression ranges from 20% to 25%, while for men, it

ranges from 7-12%.<sup>3</sup> Throughout the lifespan, major depressive disorder is almost two times more common in women than in men.<sup>2,4</sup> Genetics accounts for a substantial risk of developing major depression.<sup>5</sup> The remaining risk is environmental, which is comprised of a variety of elements, such as a history of child

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abuse, substance abuse, recent life adversities, social isolation, educational attainment, and socioeconomic position.<sup>6,7</sup>

Women have an increased risk for developing major depression and have a lifetime rate of depression 1.7 to 2.7 times higher than men.<sup>8</sup> The preponderance of women among depressed people is a persistent finding from India.<sup>9</sup> Depression is likely contributed by a combination of genetic, biological, hormonal, chemical, psychological, environmental, and social variables.<sup>10</sup> Psychosocial events like role stress, sex-specific socialization, victimization, internalization, coping style, perceived stigma of mental illness, and disadvantaged social status, being more in females, have been considered to have a role in the increased vulnerability of women to develop depression.<sup>11</sup> Depression is also a consequence of domestic abuse, which affects about one-quarter to over one-half of women in their lives.<sup>12</sup>

In a comparative study of working women and non-working women in Iran, burnout and depression were higher in working women compared to non-working women.<sup>13</sup> Studies on depression in working women and quantitatively assessing the burden of household chores and support in domestic work are limited in Kerala. Hence, this study was conducted with the primary objective of estimating the prevalence of depressive symptoms among working women in Thiruvananthapuram, Kerala. The secondary objective was to study factors associated with depressive symptoms in the study population.

### **Objectives**

*Primary objective:* To estimate the prevalence of depressive symptoms among working women residing in the field area of Medical College Health Unit, Integrated Family Health Centre – Pangappara, Thiruvananthapuram.

*Secondary objective:* To study factors associated with depressive symptoms among working women in the study sample.

### **Methods**

The study design was a cross-sectional study. The study setting was the field area of Medical College Health Unit, Integrated Family Health Centre – Pangappara, Thiruvananthapuram. The study population consisted of working women over 18 years who resided in the field area of this institution. The study period was from April 2021 to April 2022.

**Sample size:** Sample size (N) was calculated using the formula  $N = 4pq/d^2$ , where p was the proportion of the outcome in percentage, q was  $100 - p$ , and d was the relative precision. In a study by Arumugam et al. (2013), the prevalence of depression in working women with a PHQ-9 score of more than five was 62%.<sup>14</sup> This prevalence value (p) was applied to calculate the sample size. Taking the relative precision as 20% of p (12.4), N was estimated at 61.29. Taking a design effect of 1.5, the minimum sample size required was calculated as 93 and rounded to 110. Hence, the sample size of the study was 110.

The sampling technique was two-stage cluster sampling. There were 11 subcentres in the field area of the Medical College Health Unit, Pangappara, Thiruvananthapuram, and each subcentre was considered a cluster. A list of houses of working women in proximity order was obtained with the help of ASHA workers in each subcentre. The first working woman from each cluster was selected by random sampling. The other nine working women from each subcentre were selected by proximity method from consecutive houses. In cases where a single household had two or more working women, the Kish table was used to select one among them. A total of 10 working women were selected for the study, from each cluster.

### **Data collection tool**

A pre-tested structured questionnaire was used to collect information on socio-demographic data, employment status, marital status, number of hours of household chores, and whether pregnant in the past month.

### ***Patient Health Questionnaire-9***

Patient Health Questionnaire-9 is a tool widely used for screening, diagnosing, monitoring, and measuring the severity of depression. The maximum score on this scale is 27. PHQ-9 was useful for detecting major depressive disorder even in palliative care settings.<sup>15</sup> A validated Malayalam version was used in this study. The interpretation of the total score was as follows: 0-4: no depression; 5-9: mild depression; 10 to 14: moderate depression; 15 to 19: moderately severe depression; and 20 to 27: severe depression. When administered by health workers, the internal consistency reliability (Cronbach's alpha 0.89) and inter-rater reliability (intraclass correlation coefficient, 0.94; 95% CI, 0.86-0.95) of the scale were high. For a cut-off score of more than or equal to nine, PHQ-9 validated Malayalam had a sensitivity of 82.5% (95% CI, 72.4-92.6), a specificity of 90.1% (95% CI, 84.5-95.6%), a positive predictive value of 73.4% (95% CI, 62.4-84.4%), and a negative predictive value of 93.9% (95% CI, 90.2-97.6%).<sup>16</sup> Written permission was obtained from the authors to use the tool.

### ***Workplace Stress Scale***

This scale was created and validated by The Marlin Company and The American Institute of Stress to measure workplace stress. Each question was scored from never to very often (1 to 5). Scores of eight items were added to get the total score.<sup>17</sup> The Workplace Stress Scale (WSS) had a Cronbach's alpha reliability coefficient of 0.80.<sup>18</sup> Permission from The American Institute of Stress was obtained for using the tool.

### ***Data collection technique***

From each subcentre area, the phone numbers of working women residing in 10 houses were collected by proximity method with the help of ASHA workers and Junior Public Health Nurses of each subcentre. Due to the then-ongoing COVID-19 pandemic, the primary researcher collected data over a phone audio call and entered it using the Kobo tool.

### ***Data analysis***

Data was entered in an Excel sheet using the Kobo tool by the researcher. The analysis of the data was done using SPSS Version 26. The Chi-square test and Fisher's exact test were used to assess the statistical significance of categorical variables. The association between depressive symptoms and other factors was estimated by taking a PHQ-9 cut-off score greater than or equal to five for depressive symptoms. The independent variables studied were age, income, education, type of occupation, daily working hours of paid employment, number of children, duration of household chores, including childcare, having someone to help with household chores and childcare, and workplace stress.

### ***Ethical considerations***

Institutional Ethics Committee clearance was obtained from the Human Ethics Committee, Government Medical College, Thiruvananthapuram, with Human Ethics Committee number 04/36/2021/MCT. Informed consent was obtained over the phone after obtaining permission to record calls from the study participants, and the call recordings were stored. Privacy and confidentiality were ensured and maintained throughout the study. Working women with newly detected depression using PHQ-9 were psycho-educated, and psychological first aid was given. Then they were referred to Psychiatry OPD of the Family Health Centre – Pangappara or Medical College Hospital, Thiruvananthapuram. For women reporting physical or sexual abuse, psychological first aid was given, and they were informed about the legal aid cell in Government Medical College, Thiruvananthapuram.

### ***Results***

#### ***Socio-demographic variables***

The mean age of study participants was 37.1 years with a standard deviation (SD) of 8.2 years, and the median age was 36 years (interquartile range – 30 to 42.25 years).

Among the study participants, 22 participants (20%) had a personal monthly income of less than ₹10,000, 58 participants (52.7%) had a personal monthly income between ₹10,000 to ₹25,000, and 30 participants (27.3%) had a personal monthly income above ₹25000, as reported.

Among the participants, 57.3% were educated up to graduation or above, 27.3% were educated up to class 12th or diploma, 14.5% were educated up to class 10th, and 0.9% of the participants were educated up to class 7th. Among the participants, 94.5% had a salaried job, and 5.5% had a job with daily wages. Of the participants, 95.5% were married, 0.9% were single, 2.7% were widowed, and 0.9% were divorced. None of the participants were pregnant in the past month of participating in the study. Sixty-two participants (56.4%) had more than one child.

#### ***Distribution of daily working hours of paid employment***

Among the participants, 64 (58.2%) had six to eight daily working hours of paid employment, 29 participants (26.4%) had eight to ten daily working hours of paid employment, and seven participants (6.4%) had more than ten daily working hours of paid employment.

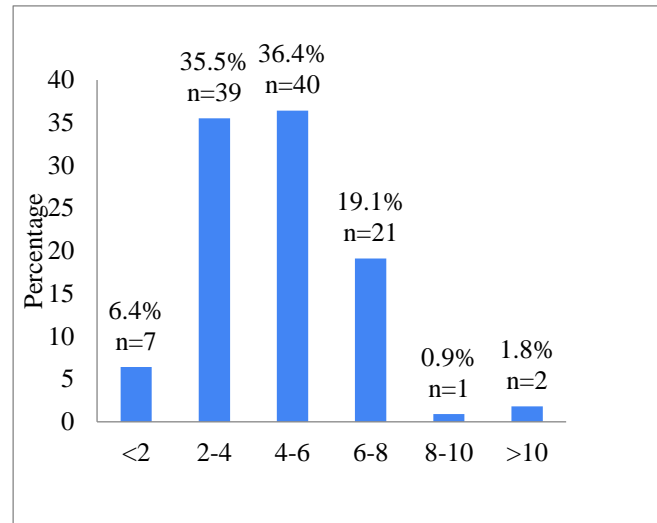
#### ***Distribution of hours spent on household chores, including childcare***

Among the participants, 36.4% were spending four to six hours on household chores, including childcare; 19.1% were spending six to eight hours; 0.9% were spending eight to ten hours; and 1.8% were doing more than 10 hours of household work, including childcare, daily, respectively (See Figure 1).

#### ***Distribution of participants based on having someone to help with household chores, including childcare***

Among the participants, 83 (76.4%) had some family members to help with household chores, including child care at home. Only one participant had a paid domestic help. Twenty-

Figure 1. Distribution of hours spent on household chores, including childcare



six participants (23.6%) had no one to help with household chores, including child care.

#### ***Distribution of who helped participants with household chores, including childcare***

For 46 participants (41.8%), parents were providing help with household chores, including childcare. Twenty-two participants (20%) were helped by their spouses. Fourteen participants (12.7%) were helped by their in-laws, one (0.9%) was helped by a sibling, and one had the help of paid domestic help. Eight participants (7.2%) were helped by multiple people (See Table 1).

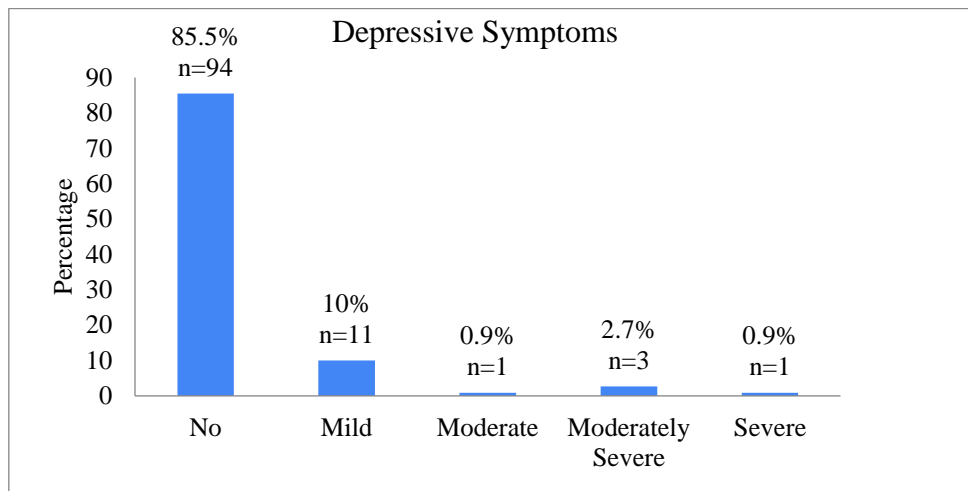
#### ***Prevalence of depressive symptoms***

Sixteen participants (14.5%) had depressive symptoms with a PHQ-9 score  $\geq$  five. Ten

Table 1: Distribution of who is helping participants with household chores, including childcare

Who helps in household chores including childcare	Frequency (%)
Parents	46 (41.8)
Husband	22 (20.0)
In-laws	14 (12.7)
Children	8 (7.3)
Siblings	1 (0.9)
Paid domestic help	1 (0.9)
Multiple persons	8 (7.3)
None	26 (23.6)

Figure 2. Distribution of depressive symptoms in participants



percent of the participants had mild depression (PHQ-9 score 5-9), 0.9% had moderate depression (PHQ-9 score 10-14), 2.7% had moderately severe depression (PHQ-9 score 15-19), and 0.9% had severe depression (PHQ-9 score 20-27) (See Figure 2.). Ten participants (9.09%) had suicidal ideas or death wishes. The mean PHQ-9 score of participants having suicidal ideas or death wishes was 10.4 (SD = 0.96).

### ***Distribution of workplace stress***

Twelve participants (10.9%) had severe workplace stress (WSS score of 26-30), and one participant (0.9%) had potentially dangerous workplace stress (WSS score of 31-40). Forty-nine participants (44.5%) had moderate workplace stress (WSS score of 21-25). Forty-three participants (39.1%) had fairly-low workplace stress (WSS score of 16-20). Five participants (4.5%) were chilled and relatively calm (WSS score was 15 or lower).

### ***Factors associated with depressive symptoms***

The variables tested for association with depressive symptoms were age, income, education, type of occupation, daily working hours of paid employment, number of children, duration of household chores, including childcare, having someone to help with household chores and childcare, and workplace stress. The prevalence of depressive symptoms

among the participants was higher in women having no one to help with household chores, including childcare, and the result was statistically significant with a p-value of 0.001 (See Table 2). As age increased, the prevalence of depressive symptoms increased, but the result was not statistically significant. No significant association was observed between education, income, number of children, and depressive symptoms. The prevalence of depressive symptoms was higher in women with severe workplace stress, but the result was not statistically significant.

### **Discussion**

The primary objective of the study was to estimate the prevalence of depressive symptoms among working women residing in the field area of Medical College Health Unit, Pangappara, Thiruvananthapuram, and the secondary objective was to study factors associated with depressive symptoms among working women in the study sample. The study was a community study, and 110 working women were studied. In addition to the working hours of paid employment, participants had to do household chores and childcare for hours daily, ranging from two hours to more than 10 hours per day. Most participants (58.2%) had to do more than four hours of domestic work, including childcare. Men are often exempted from this additional burden of unpaid labor,

Table 2: Association of depressive symptoms with having someone to help with household chores

Help in household chores	Depression				Total		$\chi^2$	df	p
	Yes		No		N = 110	%			
	n1 = 16	%	n2 = 94	%					
No	9	34.6	17	65.4	26	100	11.03	1	0.001
Yes	7	8.3	77	91.7	84	100			

$\chi^2$  - Chi-square, df - degree of freedom, p - p-value

which becomes women's responsibility alone. This is evident from the current study results. This correlates with previous studies, especially a study of gender differences among the working population in Nepal. The study suggested that the entire burden of unpaid labor in domestic work causes women to work longer than men and causes physical and mental exhaustion.<sup>19</sup> A comparative study of working women and non-working women in Iran suggested that working women have no time for recovery after work, which results in a vicious cycle of doing work at the workplace and home with no recovery, which results in burnout and depression in working women.<sup>13</sup>

The prevalence of depressive symptoms, including mild depression, was 14.5% (16 participants). The prevalence of depression with a PHQ-9 score  $\geq 10$  was 4.5% (five participants). The current prevalence of major depressive disorders in females in India was three percent, according to the National Mental Health Survey 2014-2016. The prevalence of depression with a PHQ score  $\geq 10$  was slightly higher in the current study compared to this study. This may be because our study sample was working women and also due to the difference in study instruments used.<sup>20</sup>

As income increased, the prevalence of depressive symptoms decreased. Among the participants, 18.2% with a monthly income  $\leq$  ₹10,000 and 17.2% with an income between ₹10,000 and ₹25,000 had depressive symptoms. However, the result was not statistically significant. In the study conducted in Chennai, as the income increased, the prevalence of depression decreased, and the result was statistically significant.<sup>21</sup>

There was no association between education and the prevalence of depressive symptoms. This finding was similar to the study conducted on middle-aged women in Kerala.<sup>22</sup> There was no significant association between the daily working hours of paid employment and the prevalence of depressive symptoms.

An association was observed between the duration of household chores, including child care, and the prevalence of depressive symptoms, but it was not statistically significant. In a study of the gender differences in the working population, the prevalence of depression was higher in married working women compared to married working men. However, this was not the same for the marital discord and unmarried categories.<sup>19</sup>

In the current study, the prevalence of depressive symptoms was higher in working women who had no one to help with domestic work or childcare, and the result was statistically significant with a p-value of 0.001. Hence, most working women would be working without time for relaxation and entertainment, and most of their male partners would be relaxing after work. In our study, though 95.5% of the participants were married, only 20% were helped by their husbands in household work and childcare. Among the 105 married participants, only 22 were helped by their husbands with household work and childcare. At the same time, 83 out of 105 married participants were not helped by their husbands in domestic work or childcare for not even one hour per day. This finding stresses the gravity of the burden of unpaid domestic labor on women. In our study, the duration of working hours for domestic work was not significantly associated

with the prevalence of depressive symptoms, but nobody to help in domestic work, including childcare, was significantly associated.

The study points out how working women in the study population were overburdened as household work, and childcare became the responsibility of women, even when both men and women were working as part of paid employment. The study quantifies the gravity of the disadvantages faced by working women compared to working men. For working women to have rest, relaxation, entertainment, and better mental health, men must share cooking, cleaning, childcare, and other household chores. For that to happen, gender equality needs to be stressed by the people themselves, the government, teachers, parents, and policymakers to ensure gender equality at all stages of life. Educating gender equality from childhood as part of the school syllabus might help in the long term.

### **Conclusion**

The prevalence of depressive symptoms was significantly higher in working women who had no one to help with household work, including childcare, in the current study. Findings from our study support the suggestions in many previous studies that domestic work, including childcare, being women's sole responsibility in addition to paid employment, can contribute to depression in working women. The study points out the need for gender equality and the sharing of household chores, including childcare, by male partners.

### **Strengths**

This was a community study. All the interviews were conducted by the same researcher. Studies estimating the prevalence of depression among working women in Kerala are limited. The study also estimated the hours of unpaid labor of working women at home among the study population.

### **Limitations**

The study was conducted over the phone due to

the then-ongoing COVID-19 pandemic. Participants might have been reluctant to reveal sensitive details, like physical and sexual abuse, over the phone.

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**Conflict of interest:** The author(s) declare(s) that there is no conflict of interest.

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