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Depressive symptoms among working women and homemakers in an urban community of Pakistan: a community-based comparative study

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Abstract

Depression is a public health problem affecting both males and females and is contributed by multiple social, demographic, and economic factors. However, scientific evidence comparing depressive symptoms among working women and homemakers in Pakistan remains limited. This community-based comparative study compared the proportion of depressive symptoms among working women and homemakers and determined their associations with sociodemographic characteristics. The study included 350 women aged 20–60 years residing in Hirabad, Hyderabad, Sindh, Pakistan, comprising 175 working women and 175 homemakers, and were selected using stratified random sampling. Data were collected using a structured questionnaire, and the Center for Epidemiologic Studies Depression Scale (CES-D) score and depressive symptoms were defined as a CES-D score > 23. The results showed that 137 (39.1%) participants had depressive symptoms, and the proportion of depressive symptoms was greater among homemakers than working women (42.9% vs. 35.4%); however, the difference was not statistically significant ($\chi^2 = 2.027$, df = 1, $p = 0.155$). Depressive symptoms were significantly associated with age ($p = 0.030$), marital status ($p = 0.014$), educational attainment ($p = 0.010$), and socioeconomic status ($p = 0.005$), whereas no significant associations were observed with employment status or area of residence ($p > 0.05$). The study concluded that depressive symptoms were common among both working women and homemakers. Although a nonsignificant higher proportion of depressive symptoms was observed among homemakers. Sociodemographic factors, rather than employment status, were significantly associated with depressive symptoms in this study population.

Keywords

Depression; Working women; Homemakers; Center for Epidemiologic Studies Depression Scale; Depressive symptoms; Pakistan

1. Introduction

Depression is a major public health problem and a common mental disorder contributing significantly to impaired functioning, disability, reduced quality of life (QoL), and increased risk of suicidal tendencies among patients. According to the World Health Organization (WHO), approximately 332 million people are living with depression globally, with women affecting depression approximately 1.5 times more frequently than men do [1]. The burden of major depressive disorder (MDD) increased substantially during and after the COVID-19 pandemic [2]. Depression is characterized and influenced by biological, psychological, and social factors, including but not limited to gender roles, socioeconomic disadvantage, employment conditions, and access to healthcare [3]. Compared with their counterparts, women experience a greater burden of depression be-

cause of the combined influence of biological, reproductive, psychological, and social factors [4]. Recent scientific evidence has highlighted that proportion of depressive disorders among women of reproductive age increased considerably between the years 2019 and 2021 [5].

Compared with men, women are required frequently to balance paid employment, unpaid domestic work, childcare, family responsibilities, and social expectations, which may affect mental health differently among women according to their employment status [6,7]. Moreover, employment may also affect mental health of a woman through both protective and adverse mechanisms; for example, paid work may provide financial security, social interaction, and greater autonomy to a woman, thus improving her psychological well-being [8]. However, employment may also expose a woman to occupational stress, workplace discrimination, job insecurity, long working hours, and work–family conflict, resulting in depressive symptoms [9,10]. Therefore, relationship between employment and depression depends not only on employment status but also on the nature of work, working conditions, working hours, family support, socioeconomic position, and cultural context [11].

Household work among nonworking women is unpaid, repetitive, mostly unappreciated and usually receives limited social recognition despite of its importance in daily operations. Furthermore, financial dependence, reduced autonomy, limited socialization, and continuous domestic responsibilities among nonworking women may contribute to psychological suffering [12]. Literature has reported burnout, loneliness, anxiety, and depressive symptoms among homemakers, emphasizing unpaid domestic work, the family environment and recognition as important determinants of women's mental health [13,14]. Some scientific studies have reported greater depression among homemakers, whereas others have reported greater psychological discomfort among working women, with variations in education, demographic characteristics, and social roles, suggesting that employment alone does not protect against psychological morbidity [6,7,15,16].

Employment opportunities for women and domestic responsibilities in low- and middle-income countries (LMICs) are influenced by the level of education, household income, family structure, marital relationships, and prevailing gender norms and societal values [17]. Similarly, in Pakistan, depression among women is linked to socioeconomic disadvantage, lower educational attainment, marital stress, reduced decision-making authority, domestic violence, and limited access to mental healthcare [18,19]. Studies during the COVID-19 pandemic period have also reported notable levels of depression, anxiety, and stress among the Pakistani population, especially females [20,21]. Despite increasing interest in women's mental health, evidence in Pakistan remains limited, and most available studies have focused on students, pregnant women, healthcare workers, clinical populations, or online surveys [19,20,21,22]. Such population groups are not true representatives of community settings for screening depressive symptoms [23]. Therefore, this study compared depressive symptoms among working women and homemakers in an urban community in Pakistan by assessing the proportion of depressive symptoms, and examining the association between sociodemographic factors and depressive symptoms. These findings may contribute to a better understanding of women's mental health and support evidence-based community mental health planning.

2. Methods

2.1. Study design and setting

This community-based comparative study was conducted in Hirabad, one of the oldest residential localities of Hyderabad, Sindh, Pakistan. Hyderabad is the second-largest

city in the province and comprises a heterogeneous urban population with diverse ethnic, educational, occupational, and socioeconomic backgrounds. Data were collected over a three-month period from November 2024 to January 2025. The study was designed to compare the proportion of depressive symptoms between working women and homemakers residing in the study area.

2.2. Study population

The study population included adult women from different socioeconomic backgrounds and who were eligible for study and included both working women employed outside their homes and homemakers who were engaged primarily in domestic responsibilities. Working women from different occupational categories, including teachers, healthcare professionals, bankers, beauticians, office employees, and other salaried workers from both the public and private sectors, were made part of the study. The homemakers were categorized as women who performed household responsibilities without paid employment outside the home.

2.3. Participant selection

Women aged between 20 and 60 years who had been residing in the study area for more than one year were included. Working women employed in private or public organizations from Basic Pay Scale (BPS) 1 to BPS 18 levels were included in the employed group, whereas women exclusively engaged in household work constituted the homemaker group. However, the study did not include women who refused participation consent for the study or who had cognitive impairments in understanding and responding to the study questions.

2.4. Sample size determination

The sample size was calculated using a two-sample comparison of proportions formula for a comparative study design. The anticipated depression among working women (3.9%) and nonworking women (17.6%). Using these proportions ($p_1 = 0.039$, $p_2 = 0.176$), a two-sided significance level α of 0.05 and 90% power ($Z_{1-\alpha/2} = 1.96$, $Z_{1-\beta} = 1.282$), the standard two-sample proportion formula yields a required sample of 106 participants per group (212 total) to detect the observed difference [24]. Allowing for an anticipated 10% nonresponse (refusal or incomplete participation) and to further increase the strength of the study, the sample was inflated to 175 per group (350 total). This calculation follows the approach used in comparable community studies of depression among working and nonworking women [24].

2.5. Sampling procedure

A stratified random sampling approach was adopted. Initially, the study population was divided into two predefined strata according to employment status: working women and homemakers. Participants were afterwards recruited from different geographical strata within the study area until required sample size was achieved for each study group. Equal representation of both strata was maintained throughout the process of recruitment to allow a direct comparison of depressive symptoms between targeted two groups. To limit biasness in selection of participants, identical inclusion and exclusion criteria was applied to both groups, and recruitment of participants was conducted using a standardized approach across all selected areas. Although potential confounding variables such as age, educational status, and socioeconomic status were not matched at the design

stage, these variables were collected and analyzed as sociodemographic covariates during the statistical analysis.

2.6. Study variables

The primary variable was employment status, categorized as working women or homemakers, and the primary outcome was depressive symptoms among selected groups of women, measured using the Center for Epidemiologic Studies Depression Scale (CES-D) [25]. Sociodemographic variables included age, area of residence, marital status, educational attainment, and socioeconomic status. All sociodemographic variables were analyzed in a bivariate analysis to assess their association with depression. No matching or multivariable adjustment was performed in the study design and analysis.

2.7. Outcome assessment

Depressive symptoms were assessed using the CES-D, a standardized screening instrument developed for epidemiological research [26]. The CES-D consists of 20 items assessing depressive symptoms experienced during the preceding week. Each item on the scale is scored on a four-point Likert scale ranging from 0 to 3, yielding a total score between 0 and 60. Consistent with the original study protocol, a CES-D score greater than 23 was used to identify women with depressive symptoms on the basis of the recommendation by Radloff and Locke [26]. The CES-D has demonstrated good psychometric performance in community populations, with reported internal consistency coefficients ranging from 0.85 in the general population to approximately 0.90 among psychiatric patients [3]. The CES-D is a widely validated instrument and has been used in studies conducted in Pakistani populations. We employed the CES-D as an interviewer-administered tool during face-to-face interviews. Although the CES-D was originally in English, it was translated and explained in Urdu during administration by trained data collectors to ensure participant comprehension, and responses were recorded accordingly. The internal consistency reliability in our study population was assessed using Cronbach's alpha, $\alpha = 0.81$, which indicates acceptable scale reliability in our study sample.

2.8. Data collection

Data were collected using a structured tool for the study which consisted of two sections. First section of the study tool recorded sociodemographic characteristics of the participants, whereas the second section of the study tool included CES-D questionnaire. Prior to data collection, the study tool was pretested among approximately 5% of the target population to gauge its clarity, sequence, and comprehensibility, and feedback received during pilot phase was incorporated before data collection from the targeted populations was commenced, however, participants of pilot phase were not included in final analysis of data.

Participants were approached either at their residences or workplaces after confirming eligibility, and written informed consent was obtained from each participant. Face-to-face interviews were conducted, with each participant, in a private setting to maintain confidentiality. Sociodemographic questions were completed before CES-D tool was administered to facilitate participant engagement. Standard scoring procedures described in the CES-D manual were followed throughout the data collection process.

2.9. Data quality assurance

Several measures were adopted to maintain quality of data for the purpose of the study, and includes pretesting and standardization of tool before field implementation;

data collection by principal investigator using a uniform procedure to minimize interviewer variation; recruitment of participants throughout different periods of the day to maximize participation from both working women and homemakers. Furthermore, completed questionnaires were reviewed immediately after each interview to determine any incomplete responses or inconsistencies before data entry into software.

2.10. Statistical analysis

The data were entered into Microsoft Excel 365 and then exported to IBM SPSS version 25.0 for statistical analysis; descriptive statistics were used to summarize participant characteristics.

Depression was defined as a binary outcome based on the CES-D scale, with a cutoff score of ≥ 23 highlighting depressive symptoms present in respondent and score < 23 highlighting absence of depressive symptoms. Associations between depression and sociodemographic variables were assessed using Pearson's chi-square test. All tests were two-sided, and a p value ≤ 0.05 was considered to indicate statistical significance. Therefore, findings from sociodemographic analyses should be interpreted as unadjusted associations rather than independent effects.

2.11. Ethical considerations

The Research Ethics Committee of Liaquat University of Medical and Health Sciences, Jamshoro, Pakistan granted ethical approval for the study (LUMHS/REC/271), before the initiation of data collection. Participation in the study was entirely voluntary, and written informed consent was obtained from all participants before enrollment. Participants were informed about the objectives of the study, confidentiality of the collected information, and their right to decline participation or withdraw at any stage without consequences. Personal identifiers were removed before analysis to maintain anonymity.

3. Results

3.1. Sociodemographic characteristics

Table 1 presents sociodemographic characteristics of study participants, showing that highest proportion of participants was observed in the younger age category of 20–30 years, with 50.9% among working women and 32.6% among homemakers. Most participants in both groups were from urban areas (78.9% and 82.3%, respectively). More than half of the working women were married (50.9%), while a greater percentage of homemakers were married (78.3%). A relatively greater proportion of working women were single (38.9%) than homemakers (12.0%). The largest proportion of working women were graduates (40.0%), whereas among homemakers, the highest proportion had matriculation-level education (25.7%). Postgraduate education was more common among working women (28.6%) than among homemakers (6.3%). Most participants in both groups belonged to the middle class (46.3% of working women and 58.3% of homemakers), while a smaller proportion belonged to the upper socioeconomic category, particularly among homemakers (2.9%).

Table 1. Sociodemographic characteristics of study participants according to employment status.

Characteristic		Working Women (n=175)	Homemakers (n=175)
		Frequency (%)	Frequency (%)
Age	20–30 years	89 (50.9)	57 (32.6)
	31–40 years	37 (21.1)	54 (30.9)
	41–50 years	37 (21.1)	38 (21.7)
	51–60 years	12 (6.9)	26 (14.9)
Area of residence	Urban	138 (78.9)	144 (82.3)
	Rural	37 (21.1)	31 (17.7)
Marital status	Single	68 (38.9)	21 (12.0)
	Married	89 (50.9)	137 (78.3)
	Divorced	5 (2.9)	1 (0.6)
	Widowed	13 (7.4)	16 (9.1)
Education	Illiterate	13 (7.4)	21 (12.0)
	Primary	7 (4.0)	35 (20.0)
	Matriculation	14 (8.0)	45 (25.7)
	Intermediate	21 (12.0)	30 (17.1)
	Graduate	70 (40.0)	33 (18.9)
	Postgraduate	50 (28.6)	11 (6.3)
Socioeconomic status	Lower	47 (26.9)	68 (38.9)
	Middle	81 (46.3)	102 (58.3)
	Upper	47 (26.9)	5 (2.9)

3.2. Proportion of depressive symptoms

Among 350 participants, 137 (39.1%) met the CES-D criteria for depression, including 62 of 175 working women (35.4%) and 75 of 175 homemakers (42.9%).

3.3. Associations between depression and selected sociodemographic variables

Bivariate analysis showed that depression was observed to be significantly associated with age ($\chi^2 = 8.912$, df = 3, $p = 0.030$), marital status ($\chi^2 = 10.552$, df = 3, $p = 0.014$), education attainment ($\chi^2 = 15.065$, df = 5, $p = 0.010$), and socioeconomic status ($\chi^2 = 10.697$, df = 2, $p = 0.005$). No statistically significant association was observed between depression status and employment status ($\chi^2 = 2.027$, df = 1, $p = 0.155$) or area of residence ($\chi^2 = 3.122$, df = 1, $p = 0.077$).

Table 2. Bivariate association between depression status (CES-D ≥ 23) and selected sociodemographic variables among study participants (N = 350).

Variables		Depression Status (CES-D ≥ 23)		Chi-Square Value	Degree of Freedom (df)	*p* Value
		Depression n (%)	No Depression n (%)			
Employment status	Working women	62 (35.4)	113 (64.6)	2.027	1	0.155
	Homemakers	75 (42.9)	100 (57.1)			
Participant's age	20–30 years	52 (35.6)	94 (64.4)	8.912	3	0.030
	31–40 years	44 (48.4)	47 (51.6)			
	41–50 years	22 (29.3)	53 (70.7)			
	51–60 years	19 (50.0)	19 (50.0)			
Area of residence	Urban	104 (36.9)	178 (63.1)	3.122	1	0.077
	Rural	33 (48.5)	35 (51.5)			

Variables		Depression Status (CES-D ≥ 23)		Chi-Square Value	Degree of Freedom (df)	*p* Value
		Depression n (%)	No Depression n (%)			
Marital status	Single	28 (31.5)	61 (68.5)	10.552	3	0.014
	Married	87 (38.5)	139 (61.5)			
	Divorced	4 (66.7)	2 (33.3)			
	Widowed	18 (62.1)	11 (37.9)			
Education	Illiterate	21 (61.8)	13 (38.2)	15.065	5	0.010
	Primary	18 (42.9)	24 (57.1)			
	Matriculation	26 (44.1)	33 (55.9)			
	Intermediate	22 (43.1)	29 (56.9)			
	Graduate	35 (34.0)	68 (66.0)			
	Postgraduate	15 (24.6)	46 (75.4)			
Socioeconomic status	Lower	52 (45.2)	63 (54.8)	10.697	2	0.005
	Middle	75 (41.0)	108 (59.0)			
	Upper	10 (19.2)	42 (80.8)			

Notes: The chi-square test of independence was applied. Depression was defined as a CES-D score ≥ 23 (depressed) and < 23 (not depressed). All analyses were bivariate, and no adjustment for confounding was performed.

4. Discussion

This community-based comparative study assessed depression among working women and homemakers residing in an urban community in Pakistan. The findings showed that depression was common in both groups, with a higher proportion among homemakers than among working women. In contrast, depression was significantly associated with age, marital status, educational attainment, occupation, and socioeconomic status. These findings highlight presences of depressive symptoms among homemakers and the employment status alone is not a significant determinant of depression among women.

Lack of significant association among employment status and depression among women is consistent with previous scientific studies which have highlighted complex nature of relationship between work status of women and mental health. A systematic review from Turkey reported varying levels of depressive symptoms among employed and unemployed women, as per level of education, demographic characteristics, and social role rather only than employment status [15]. Similarly, among homemakers, psychological discomfort is related to perceived stress, loneliness, the family environment, and burnout [27]. Depression was more frequently observed among homemakers than among employed women, although not statistically significant. Unpaid domestic work is usually supplemented by financial dependence, limited autonomy, social isolation, and continuous caregiving responsibilities, all adversely affecting mental health of a homemaker [12]. Similarly, a Bangladeshi study reported lower mental health help-seeking behavior and practices among homemakers as compared to employed women [28]. Paid employment should also not be regarded as inherently protective; employment may provide some income, social interaction, and independence, and it may also expose women to occupational stress, long working hours, job insecurity, and work-family balance [8,9,10]. Studies from Saudi Arabia and India have reported substantial levels of depression and anxiety among employed women despite active workforce participation [6,7].

Age, marital status, education, occupation, and socioeconomic status were significantly associated with depression in the current study. Similar findings have been reported from Bangladesh, Pakistan, China, and Nepal, indicating that depression among

women is associated with socioeconomic disadvantage, educational attainment, marital circumstances, and household conditions and living environment [18,29,30,31,32,33]. Education and socioeconomic status may affect mental health through health literacy, financial resources, autonomy, and access to healthcare, whereas occupation may reflect differences in job demands, working conditions and workplace competition [6,34,35].

Our study findings show that depression among women is affected by broader social and economic determinants. The Lancet–World Psychiatric Association Commission highlighted that depression is strongly affected by social hardships and requires interventions beyond clinical care for its complete cure [3]. Similarly, scientific evidence from Pakistan have also highlighted considerable burden of mental health issues among women and contribution of socioeconomic disadvantage as a key factor contributing to poor mental health [18,19,36].

The study has several strengths, including but not limited to the equal representation of working women and homemakers, use of a standardized depression screening instrument, and assessment of multiple sociodemographic variables. However, this comparative study rule out causal inference; study was limited only to a single urban community, and depression was determined by using a screening tool rather than a diagnostic interview. Moreover, wide age range may have introduced variability in depressive symptoms; however, age was included in the analysis as a sociodemographic factor. Future studies should include larger representative samples, multivariable analyses, and direct estimations of work-related stress, domestic workload, social support mechanism, and autonomy among women to develop better understanding of determinants of depression among women.

5. Conclusions

Depression was common among both working women and homemakers, with a higher proportion of depressive symptoms observed among homemakers compared to working women; however, this difference was not statistically significant. Age, level of education, marital status, and socioeconomic status were significantly associated with depressive symptoms, whereas employment status and area of residence were not statistically significant determinants. These findings imply that depressive symptoms among women in this population are more likely to be affected by sociodemographic factors than only by employment status.

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Consent to publication: Not applicable.

Data availability: The data supporting this study's findings are available from the corresponding author, Zara Husaain Khan, upon reasonable request.

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