P-ISSN 2664-0422	Pakistan Social Sciences Review	May-June 2026, Vol. 10, No.3
O-ISSN 2664-0430	https://doi.org/10.35484/pssr.2026(10-III)04	[37-52]

Pakistan Social Sciences Review
www.pssr.org.pk

RESEARCH PAPER

Domestic Violence, Psychosomatic Distress, and Resilience Among Female Cleaners in Pakistan: A Two-Phase Quantitative Study with MBCT Intervention

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ABSTRACT

This study explores whether resilience among cleaning women experiencing domestic violence would moderate the relationship between domestic violence and psychosomatic problems in female cleaners from domestic and commercial workplaces in Islamabad and Rawalpindi. Cleaning women in Pakistan belong to an occupational class vulnerable to domestic violence, economic deprivation, and reduced access to health care services that may predispose them to psychosomatic problems. The study used a two-phased quantitative methodology. In Phase I, 150 female cleaners completed assessments of domestic violence, psychosomatic symptoms, and resilience. Participants with mild-to-moderate psychosomatic symptoms (n = 25) participated in an eight-session MBCT intervention in Phase II using a pretest-posttest design. Domestic violence positively predicted psychosomatic problems while resilience negatively predicted psychosomatic symptoms. Resilience did not moderate this relationship. MBCT significantly decreased psychosomatic symptoms and significantly increased resilience among participants. Implications for the benefits of mindfulness-based interventions with psychologically vulnerable women are discussed among study participants overall.

KEYWORDS Domestic Violence, Psychosomatic Distress, Resilience, Female Cleaners, Mindfulness-based cognitive therapy (MBCT), Pakistan

Introduction

Domestic violence against women and women's health are severe public health issues, especially among women from socioeconomically disadvantaged groups. Urbanization, economic instability, and growth of the informal labor sector drove women into unsafe, laborious jobs such as cleaning (Marmot, 2005; Anjara et al., 2017). Cleaning jobs among women are often accompanied by harsh working conditions which include long work hours, occupational hazards, low access to healthcare, and financial instability (Svanes et al., 2018; Zock et al., 2007). Women cleaners in Pakistan and similar conservative societies often belong to underserved communities characterized by poverty, low socioeconomic status, poor social mobility, gender inequality, and patriarchal community ties (NIPS & ICF, 2019; Zakar et al., 2012). Additionally, feminist theory and gender-based violence framework suggests that unequal power dynamics between men and women in a relationship, economic dependence of women on their partners/husbands, and restrictive sociocultural beliefs about women's role in the household limit women's agency and their ability to seek help from the violence they endure at home. Moreover, many women are also exposed to work-related stressors.

Domestic violence is considered to be one of the most widespread forms of violence against women globally. The WHO states that about one-third of women will

experience physical and/or sexual violence from their intimate partner in their lifetime. Physical and sexual violence against women have been linked to depression, anxiety disorders, chronic fatigue, sleep difficulties, and bodily pain (Campbell, 2002; Coker et al., 2000). Chronic dysregulation of the body's stress response system (hypothalamic–pituitary–adrenal axis) may occur with long-term stress induced by violence and negatively impact women's biology and psychology (McEwen, 1998). Moreover, pain and physical symptoms are often how women express their emotional suffering psychologically. Many studies have shown an association between psychological disorders and psychosomatic symptoms like headache, gastrointestinal issues, body pain, and fatigue (Henningsen et al., 2003; Creed et al., 2011). Existing literature has repeatedly found strong links between psychological distress and somatic symptomatology (Kroenke, 2003; Eberhard-Gran et al., 2007).

To explain how stress can lead to physical pain among women, this study will be drawing from Engel's (1977) biopsychosocial model of health. This model suggests that multiple psychosocial (social & psychological) and physical factors interact with one another to contribute to an individual's health outcomes. As per the biopsychosocial model, domestic violence can be considered a psychosocial stressor leading to emotional distress among women and can dysregulate various physiological processes (Dantzer et al., 2008; McEwen, 1998). When considering the plight of women engaged in cleaning jobs, domestic violence may be even more detrimental as their work conditions include physical repetitive movements, constant standing, exposure to chemicals, and low control over job tasks (Zock et al., 2007; Svanes et al., 2018). Existing literature on job strain has found that jobs with high psychological demands and low control over the job contribute to psychological distress among workers and lead to feelings of physical exhaustion (Karasek & Theorell, 1990; Chandola et al., 2006). Therefore, the authors believe that enduring stress at work and home may have significant implications for women cleaners developing psychosomatic symptoms.

However, not all people who experience similar levels of stress develop health issues. Psychological literature defines resilience as a personal strength that allows individuals to adapt positively and recover quickly during adversities and stressful life events (Masten, 2001). Studies have shown that resilient people exhibit better psychosocial adjustment, healthy coping behaviors, and lower rates of stress-related illnesses (Southwick et al., 2014). Furthermore, physiological studies have found that resilience is associated with lower cortisol reactivity and decreased inflammatory responses after stress (Feder et al., 2009; Kalisch et al., 2015). These findings are in line with the stress-buffering hypothesis, which states that individual resources can help lower the negative effects of stress on mental and physical health (Cohen & Wills, 1985). Hence, it was hypothesized that resilience would moderate the association between domestic violence and psychosomatic distress such that the association would be weaker at higher levels of resilience.

The Transactional Model of Stress and Coping by Lazarus and Folkman (1984) also suggested that appraisal of stress and coping response plays a vital role in the development of stress-related outcomes. Stress resilient individuals are more likely to appraise stressful events as less threatening and utilize healthy coping skills to deal with stressors. Moreover, Bronfenbrenner's Ecological Systems Theory posited that multiple environmental systems (micro, meso, and macro) interact with one another to influence how an individual functions and develops. As shown in the study figure, domestic violence was considered stressors in the woman's microsystem (family), job stress represented stress in the work microsystem, and finally, poverty and gender inequality

were considered distal stressors in the macrosystem that influenced women's health outcomes. Thus, it was assumed that psychosomatic distress among women cleaners is caused by the complex interplay of stress across various environments in their lives.

Empirical research has been conducted on domestic violence, psychosomatic symptoms, and resilience. However, research that connects all three variables is scarce, and none among the population of marginalized working women such as female cleaners in Pakistan. Moreover, none has considered resilience as a possible moderator for domestic violence and psychosomatic symptom relations. Thus, the current study explores relations between domestic violence and psychosomatic symptoms among female cleaners. Additionally, resilience as a potential moderator will also be studied. Findings can further assist in understanding the experiences of vulnerable working women and offer implications for psychologists and policymakers.

Feminist and intersectional theory would suggest that the experiences of female cleaners are influenced by structural inequalities across gender, class, and low-wage employment. Intersectionality theory by Crenshaw (1991) would suggest how these forms of vulnerability may compound to place women at higher risk of violence and psychosomatic symptomatology. Hochschild's (1983) emotional labor theory also suggests that women are expected to hide away their emotional suffering while persisting in occupational duties and caregiving. Female cleaners in Pakistan experience these aspects within a patriarchal system which may compound psychosomatic vulnerabilities.

Literature Review

The current study is informed by a number of frameworks, including the biopsychosocial model (Engel, 1977), the Transactional Model of Stress and Coping (Lazarus & Folkman, 1984), Bronfenbrenner's Ecological Systems Theory model (1979), and Cohen and Wills' (1985) stress-buffering hypothesis. When considered together, these models help to illustrate the impact of psychosocial adversity, coping resources, and environmental conditions on psychological and physical health among vulnerable groups.

Interpersonal violence exposure is known as chronic stressor which is associated with poorer psychological and physiological functioning. Stress Process Framework proposed that chronic violence exposure leads to emotional suffering, physiological dysregulation and psychosomatic vulnerability by connecting the social and psychological processes to biological systems (Pearlin et al., 1981)Among victims of violence, women consistently report feelings of chronic fear, helplessness, emotional depletion, and hypervigilance due to domestic violence exposure leading to dysregulation of stress-response systems as well as psychosomatic symptoms (Dantzer et al., 2008; van der Kolk, 2014). Working in cleaning occupations can involve strenuous labor while navigating adverse working and social conditions which may potentiate emotional and somatic distress (Zock et al., 2007; Svanes et al., 2018). Using Bronfenbrenner's Ecological Systems Theory as a foundation, women's health may be impacted by their immediate environmental conditions such family dynamics, job strain, financial stress, and societal systems. Therefore, interpersonal violence exposure and cleaning occupation may lead to greater psychosomatic vulnerability among women through these interconnected systems.

The Transactional Model of Stress and Coping also highlights that people vary in their cognitive appraisal and reaction to stressful experiences. Some individuals may have stronger protective psychological resources that allow them to better recover from stress and trauma with less psychological and physical harm (Masten, 2001). These protections are known as resilience. Resilient individuals may be more likely to regulate their emotions and use adaptive coping strategies during times of stress, allowing for better psychological functioning (Southwick et al., 2014). Similarly, the stress-buffering hypothesis suggests that psychosocial resources may mitigate the deleterious effects of stress exposure on mental and physical health outcomes (Cohen & Wills, 1985). Studies have also shown resilience may mediate the link between adversity and distress through promoting positive coping and emotion regulation (Feder et al., 2009; Kalisch et al., 2015). On the other hand, research on resilience in previous literature has shown that resilience may have a weaker protective effect under chronic conditions of structural adversity, violence, poverty, and low social support among socioeconomically disadvantaged women. Thus, while we predicted resilience to moderate the relationship between domestic violence and psychosomatic symptoms among participants, it is possible that resilience may have a weaker protective effect depending on participants' exposure to adversity.

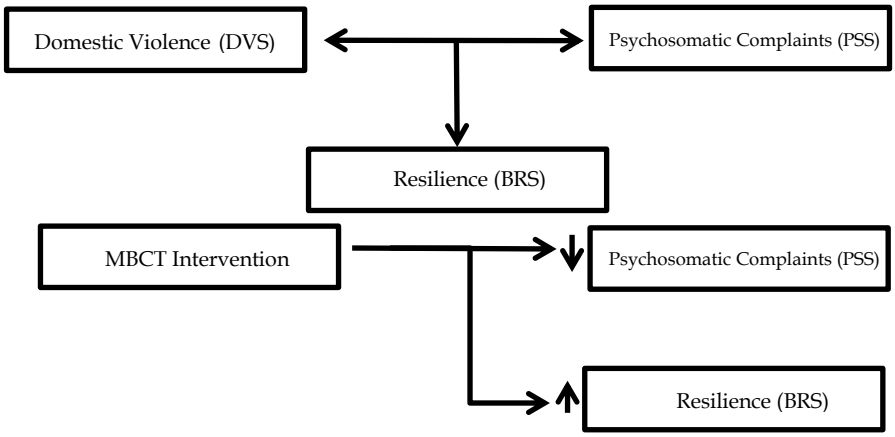

Fig.1. Conceptual Model

Since resilience was identified as a key psychological resource within our stress and coping framework, the present study also implemented a Mindfulness-Based Cognitive Therapy (MBCT) intervention to explore if resilience and psychosomatic functioning could be bolstered among participants experiencing psychological distress. MBCT is a psychological intervention that teaches individuals mindfulness skills in combination with cognitive behavioral techniques to improve emotion regulation, increase present-moment awareness, and decrease maladaptive responses to stress (Segal et al., 2013). Prior research has found mindfulness-based interventions to be helpful in decreasing stress symptoms and enhancing coping among chronic stress and trauma-affected populations (Kuyken et al., 2016). Thus, the intervention portion of our study explored if MBCT could improve psychosomatic symptoms and resilience among female cleaners with mild-to-moderate psychosomatic symptoms of distress.

Thus, the current study aims to add to the scarce body of research on psychosomatic health among disadvantaged female laborers. The study aims to (1) explore the relationship between domestic violence and psychosomatic symptoms, (2) examine the

moderating role of resilience on this relationship, and (3) assess the preliminary efficacy of MBCT among participants who were identified as psychologically distressed.

Hypotheses

The study made the following hypotheses based on the proposed framework and previous literature:

H1: Domestic violence will positively correlate with psychosomatic symptoms in female cleaners.

H2: Resilience will negatively correlate with psychosomatic symptoms in female cleaners.

H3: Resilience will moderate the relationship between domestic violence and psychosomatic symptoms such that the relationship will be significantly smaller among women with higher resilience scores.

H4: Participants that received MBCT will experience a significant decrease in psychosomatic symptoms following intervention.

H5: Participants that received MBCT will experience a significant increase in resilience following intervention.

Material and Methods

This study's design was two-phase quantitative. Phase I included cross-sectional correlational design used to explore correlates between domestic violence, psychosomatic symptoms, and resilience in women cleaners. Phase II involved a single-group pretest–posttest intervention used to assess the efficacy of MBCT at reducing psychosomatic symptoms and improving resilience among study participants with mild-to-moderate psychosomatic symptomology.

Participants

The current study recruited married women cleaners working in household and organization-based cleaning jobs in Islamabad/Rawalpindi. Household cleaners (cleaning job in private homes) and organization cleaners (cleaning jobs in institutions, offices, hospitals, and commercial places) were recruited from the accessible population since differences existed on job structure, supervision styles, and work environments. The target sample were women of low-income occupational groups employed in cleaning jobs.

Purposive sampling method was used to recruit participants for the quantitative analysis. A sample size of N = 150 was justified using Cohen's (1992) guidelines for moderation which with $f^2 = .15$ (medium effect size), power $(1-\beta) = .80$, $\alpha = .05$, would allow for adequate statistical analysis. Women with serious physical illnesses, psychotic disorders, pregnant women, women who were separated/divorced, and those who were unwilling or unable to understand questionnaires were excluded to avoid confounds and incomprehensible answers. Additionally, women with fewer than six months of experience working as cleaners were excluded due to low job exposure. Since the study aimed to address psychosocial stressors stemming from marital relationships, only

married women were recruited. Questionnaires were coded anonymously to ensure confidentiality and decrease participant's reluctance in sharing personal experiences.

Similar to the above sampling method, the recruited sample was confined to Islamabad and Rawalpindi cities. Therefore, the findings might not be generalized to females in other cities of Pakistan. Also, the sample size recruited for moderation analysis was small. Thus, limiting the power to detect.

Women who scored in the moderate range of the PSS indicating mild-to-moderate psychosomatic symptoms were asked to participate in Phase II. Women who scored above the moderate range were screened for severe psychiatric symptoms to refer them to a clinical center if needed. Twenty-five participants voluntarily joined the intervention program.

Measures

Demographic sheet was used to gather information on age, marital status, education, monthly income, nature of job (housemaids/corporate cleaners), and job experience. Demographic characteristics were summarized for descriptive purposes and used for comparisons.

Urdu version of Domestic Violence Scale (DVS) by Parveen and Bano (2023) was used to measure domestic violence among participants. It was comprised of 25 items assessing violence experienced within household related to different subtypes which included neglect (3 items), psychological violence (4 items), spiritual violence (3 items), verbal violence (3 items), economic violence (3 items), physical violence (5 items) and sexual violence (4 items). Each item was rated on a 4-point Likert scale (Never = 1 to Every Time = 4). Higher scores on the total scale indicated greater exposure to domestic violence. It has been noted in previous literature that psychometric properties of the scale were satisfactory, showing acceptable validity and internal consistency. Cronbach's alpha reliability coefficient for this study was .81. Scores were interpreted using recommended percentile-based cutoffs for assessing relatively lower risk, moderate risk, and higher risk of domestic violence exposure.

Urdu version of Psychosomatic Symptoms Scale (PSS) by Shah et al. (2022) was used to determine psychosomatic distress among study participants. Scale consisted of 26 items measuring psychosomatic symptoms such as tiredness, headache, body ache, upset stomach, and lack of sleep. Responses were given on a 4-point Likert scale ranging from Never (1) to Always (4). Higher scores indicated greater severity of psychosomatic symptoms. Previous validation studies showed that psychometric characteristics of the measure were satisfactory. Cronbach's alpha reliability coefficient for this study was .87. Scores were interpreted using recommended cutoff guidelines for mild, moderate, and severe psychosomatic symptoms. Chosen participants for Phase II experienced mild-to-moderate psychosomatic symptoms and were not screened as having severe psychological distress that would require clinical referral.

Brief Resilience Scale (BRS) by Urdu adapted by Naz and Ashraf (2023) was used to measure resilience. Scale consisted of 6 items measuring bounce back abilities of individuals when stressed. Responses were based on a 5-point Likert scale ranging from Strongly Disagree (1) to Strongly Agree (5). Items 2, 4, and 6 were reverse coded prior to calculating total score. Higher scores indicated greater resilience. Scale has been noted to be relatively short but has been used frequently in psychological studies to determine

one's ability to adaptively recover from stress. Cronbach's alpha reliability coefficient for current sample was .84. Scores were used based on suggested score categorizations indicating low, normal, and high resilience.

Statistical Procedure

Ethics Committee of Air University approved this study before conducting data collection. All participants were briefed about the purpose of the study, voluntariness of their involvement, confidentiality of their responses and their right to withdraw from the study at any point without any consequences. Written informed consent was taken from the participants prior to their participation in the study. Participants endorsing severe distress and violence-related issues were further directed to receive psychosocial support and provided with referrals as needed. Phase I: Cross-sectional data was collected from female cleaners by using self-report questionnaires. Study participants were individually approached at their workplace and residing areas. Questionnaires were provided in Urdu language to have a better understanding by the study participants from all levels of education.

Phase II: A subgroup of 150 participants who presented mild-to-moderate psychosomatic symptoms engaged in the eight-session MBCT intervention. Using the single-group pretest–posttest method, mindfulness skills training involved mindfulness exercises, breathing awareness, body scan, cognitive restructuring, emotional regulation strategies, and stress management skills modified from the traditional MBCT program (Segal et al., 2013). The intervention sessions were delivered by the first author under academic supervision and consultation from a licensed mental health provider. Pretest and posttest surveys were administered to measure psychosomatic symptoms and resilience pre- and post-intervention.

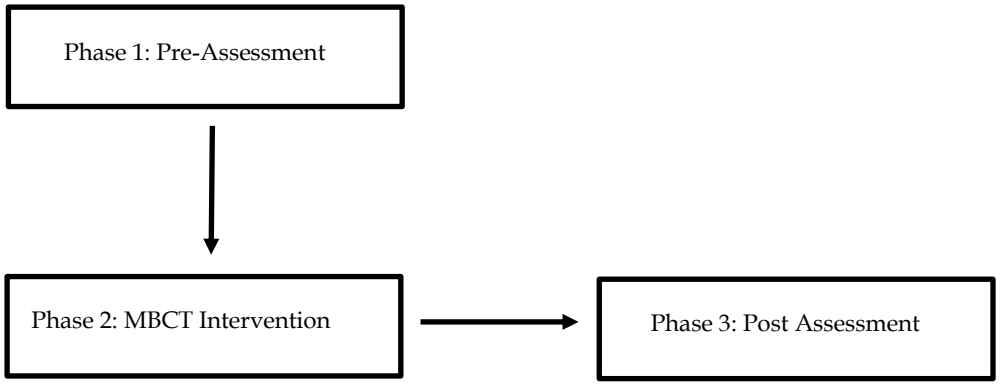

Fig.2. Phases of Pre-Assessment and Post- Assessment

Missing values, outliers, and normality were tested prior to running any statistical analyses. Z-scores were used to determine outliers, and skewness and kurtosis values were used to determine normality. All variables were within acceptable ranges. Descriptive statistics, Cronbach's alpha, and bivariate correlation coefficients were run first.

Pearson product–moment correlations were conducted to determine the relationship between domestic violence, psychosomatic symptoms, and resilience. Moderation analyses were then conducted to determine the effect of resilience on the

relationship between domestic violence and psychosomatic symptoms. Moderator terms (Domestic Violence × Resilience) were entered during stepwise regression. PROCESS Macro Model 1 (Hayes, 2013) was used to conduct moderation analysis.

Independent samples t-tests were used to compare domestic and corporate cleaners on demographic and study variables. One-way analysis of variance (ANOVA) and Tukey HSD post hoc tests were used to determine differences between educational categories. Paired sample t-tests were used to determine changes in pretest and posttest scores of psychosomatic symptoms and resilience among participants who completed the MBCT program. Cohen's d was used to calculate effect sizes for the intervention.

Interpretation of the intervention should be taken with caution. There was no control group which limits causal conclusions that can be made about the intervention and increases the likelihood that history, regression to the mean, participant expectancy, and natural remission may have played a role in the outcomes. Furthermore, the small sample who participated in the intervention may have contributed to inflated effect sizes. IBM SPSS Statistics Version 26 was used to analyze all data. Alpha was set at $p < .05$.

Table 1
Overview of MBCT Intervention

Session	Session Title	Objectives	Homework / Practice	Duration
1	Mindful Breathing	Introducing mindfulness and reducing initial stress	Practice mindful breathing daily for 5 minutes and maintain a diary of feelings before and after practice	45 mins
2	Body Scan Awareness	Increase awareness of bodily sensations and tension	Perform a 5-minute body scan daily and record observations	45 mins
3	Cognitive De-Centering	Identify automatic negative thoughts and reduce rumination	Label stressful thoughts as "just thoughts, not facts" and observe reactions	45 mins
4	Mindful Movement	Integrate mindfulness into daily physical activities	Perform one daily activity mindfully with full awareness	45 mins
5	Emotion Awareness	Recognize and label emotions accurately	Reflect daily on emotional triggers and bodily sensations	45 mins
6	Combined Practice	Integrate breathing, body scan, and thought observation	Practice a combined 10-minute mindfulness routine daily	45 mins
7	Resilience Reinforcement	Strengthen coping strategies and resilience	Apply mindfulness during stressful situations and record experiences	45 mins
8	Review and Consolidation	Consolidate learning and maintain mindfulness practice	Continue independent mindfulness practice and peer support	45 mins

Note. All sessions were 45 minutes in duration. Adapted from Segal et al. (2013).

Results and Discussion

The basic characteristics of collected responses were initially examined in IBM SPSS Statistics and results are reported in the following tables.

Table 2
Descriptive Statistics and Reliability Analysis of Study Variables (N = 150)

Variable	Mean	SD	Skewness	Kurtosis	α	1	2	3
PSD	39.35	13.28	0.06	-0.21	0.87	—		
DV	60.75	11.18	0.23	-0.64	0.81	.347**	—	

RE	14.25	5.04	0.74	-0.21	0.84	-0.092	-.220**	—

(Note: *N = 150; **p < .01, SD = Standard Deviation, PSD = Psychosomatic Distress, DV = Domestic Violence, RE = Resilience)*

Mean and standard deviation scores for all variables were shown in Table.2 . As can be seen, female cleaners had moderate psychosomatic symptoms and DV. Moreover, resilience scores were lower. Skewness and kurtosis scores were lower than 1 or higher than -1 for all variables, suggesting there weren't any serious outliers in the data. Internal consistency reliability for all measures was good. Cronbach alpha coefficients were higher than .70 which shows that scales had acceptable reliability and could be used for further analyses. Table 3 showed that DV was significantly correlated with psychosomatic symptoms positively, and resilience was correlated with DV negatively. Correlation coefficient between resilience and psychosomatic symptoms was negative but non-significant.

Table .3
Mean Differences Across Nature of Work for Study Variables (N = 150)

	Domestic cleaners (*N*=89)		Corporate cleaner (*N*=61)				
Variables	**M**	**SD**	**M**	**SD**	**t**	**p**	**Cohen's d**
PSD	38.43	14.38	40.69	11.47	-1.03	0.307	-0.17
DV	62.16	10.17	58.71	12.3	1.87	0.063	0.31
RE	13.94	4.45	14.71	5.8	-0.87	0.389	-0.15

(Note: PSD = Psychosomatic Distress, DV = Domestic Violence, RE = Resilience)

Independent sample t-tests were performed to assess differences between domestic and corporate cleaners on study variables. Analyses (reported in Table 3) revealed no significant differences between domestic and corporate cleaners on psychosomatic symptoms, domestic violence or resilience. Domestic cleaners reported higher scores on domestic violence compared to corporate cleaners; however, effect sizes were small.

Table 4
Mean Differences Among Study Variables Across Education Levels (N = 150)

Variables	**Uneducated M (SD)**	**Primary M (SD)**	**Middle M (SD)**	**Matric M (SD)**	**Inter M (SD)**	**F**	**p**	**Eta²**
PSD	37.15 (12.65)	42.95 (11.82)	33.00 (15.28)	30.86 (13.63)	36.33 (15.31)	4.2	0	0.1
DV	57.94 (11.56)	63.35 (11.06)	58.25 (10.91)	54.86 (6.59)	55.33 (1.53)	2.73	0.03	0.07
RE	14.12 (4.70)	14.13 (4.87)	13.67 (5.68)	15.43 (4.93)	21.00 (6.56)	1.56	0.19	0.04

One-way ANOVA showed that psychosomatic symptoms and domestic violence have statistical differences among education categories, but resilience scores do not vary significantly among education groups. Results showed that participants with primary education had significantly higher psychosomatic symptoms than participants with middle-level education.

Table 5
Hierarchical Regression (N = 150)

Predictors	**β**	**95% CI (LL, UL)**
Step 1		
Age	0.152	(-.087, 3.138)
Education	-0.106	(-4.055, .819)

Salary	0.169	(.181, 5.883)
R^2 =.07 | F=3.90*		
Step 2		
Domestic Violence	0.312	(.188, .552)
R^2 =.17 | ΔR^2 =.093 | ΔF=16.13**		
Step 3		
Resilience	0.119	(-2.605, 3.233)
Domestic Violence x Resilience	-0.095	(-.054, .045)
R^2 =.168 | ΔR^2 =.001 | ΔF=.065		

(Note: **p < .01, CI = Confidence Interval.)

In Step 1, age, education, and salary explained 7% of the variance in psychosomatic symptoms (F (3, 146) = 3.90, p < .05). Salary was the only significant positive predictor. In Step 2, domestic violence explained an additional significant portion of variance (ΔF (1, 145) = 16.13, p < .01) such that with the addition of domestic violence, the overall variance explained increased to 16.7% (R^2 = .17). Domestic violence significantly and positively predicted psychosomatic symptoms (β = .31, p < .01). These results indicated that higher domestic violence was related to higher psychosomatic complaints among female cleaners.

Table 6
Moderation Analysis (N = 150)

Predictors	**B**	**95% CI [LL, UL]**
Constant	39.29**	[37.17, 41.41]
Domestic Violence (Predictor)	0.40**	[0.20, 0.60]
Resilience (Moderator)	-0.06	[-0.49, 0.38]
Domestic Violence × Resilience	-0.005	[-0.05, 0.05]
R^2 =.12 | ΔR^2 =.0002 | F=6.69**		

(Note: **p < .01, CI = Confidence Interval.)

Resilience was tested as a moderator by entering the interaction term (Domestic Violence X Resilience) into the regression model. The interaction term was non-significant (β = -.005, p > .05) and did not lead to meaningful change in variance (ΔR^2 = .0002), such that resilience did not moderate the relationship between domestic violence and psychosomatic symptoms. Conditional effects were not interpreted further.

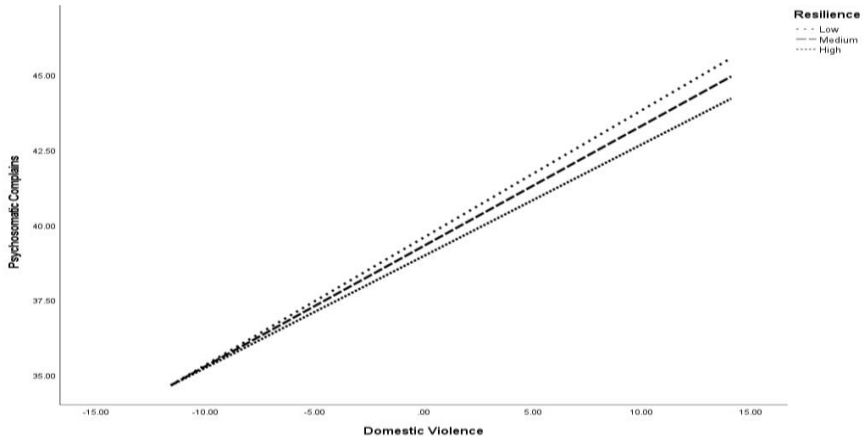

Fig.3. Role of Resilience as a Moderator of the Domestic Violence - Psychosomatic Complaints Relationship

Table 7
Paired Sample t-Test Comparing Pretest and Posttest Scores (N = 25)

Variables	Mean Difference	SD	t	p	Cohen's d
Pre–Post PSD	5.8	2.4	12.09	< .001	2.42
Pre–Post DV	-0.12	1.01	-0.59	0.559	-0.11
Pre–Post RE	-11.28	2.39	-23.6	< .001	-4.72

(Note: *Pre–Post = Pre assessment & Post assessment, PSD = Psychosomatic Distress, DV = Domestic Violence, RE = Resilience)*

There was a significant decrease in psychosomatic scores after MBCT intervention with a large effect size. There was also a significant increase in resilience after MBCT intervention. There was no significant change in domestic violence scores after the intervention phase.

MBCT appeared to improve internal resources and reduce psychosomatic complaints in female cleaners but did not impact their external environment of domestic violence.

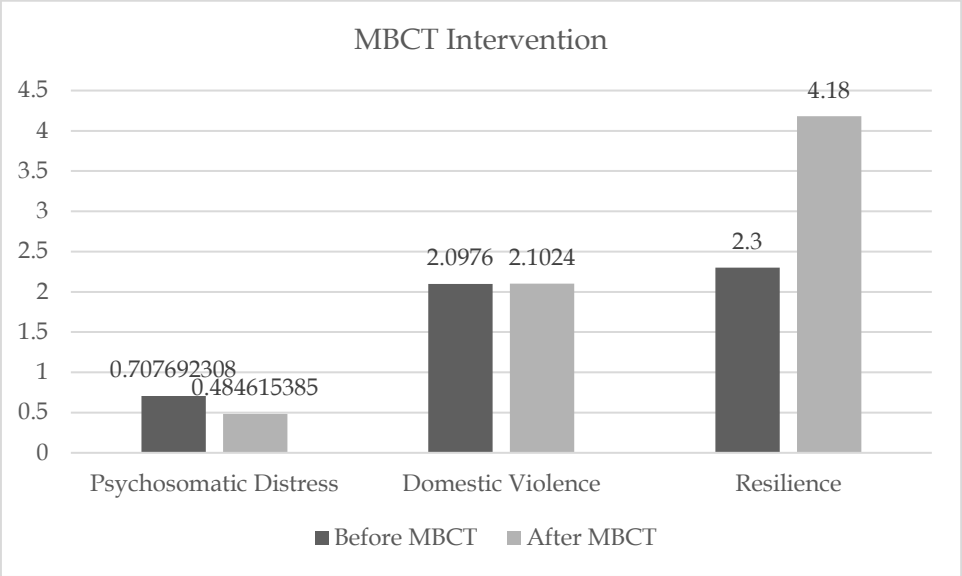

Fig.4. Effect of Mindfulness-Based Cognitive Therapy intervention

Discussion

Results indicated high levels of psychosomatic symptoms among female cleaners. These findings inform upon the psychological impact of chronic financial strain, occupational stress, and interpersonal violence.

As with past trauma and psychosomatic research, DV was positively associated with psychosomatic symptoms. These results are consistent with literature which demonstrates how chronic interpersonal trauma can negatively influence psychophysiological regulation and increase symptoms of emotional fatigue, sleep disturbance, chronic tiredness, and pain. These findings might also be explained by Engel's (1977) biopsychosocial model, which proposes that social, emotional, and physiological factors dynamically interact to predict health outcomes. Although the moderation model accounted for 12% of variance in psychosomatic symptoms, a majority of variance in psychosomatic symptoms was unexplained. These findings suggest that other important factors may contribute to psychosomatic symptoms among

female cleaners. These factors may include psychosocial, occupational, interpersonal, and environmental variables that were not measured in the present study such as job stress, physical health symptoms, coping strategies, lack of social support, and chronic financial stress.

Results also found that resilience was negatively associated with psychosomatic symptoms and DV. However, there was a negative but not significant relationship between resilience and psychosomatic complaints (r = -.092), such that H2 was not supported. This may suggest that resilience is not enough to combat the psychological impact of chronic violence, economic stress, emotional invalidation, and occupational stressors. Coping strengths may become depleted or less effective in the face of chronic stressors.

DV and psychosomatic symptoms were also significantly different across educational status. Women who had completed their primary level of education reported significantly higher levels of psychosomatic symptoms and DV compared to women who finished higher levels of education. This may suggest that education plays a protective role by increasing awareness, feelings of control, financial stability, and social options.

Resilience was negatively associated with psychosomatic symptoms of distress; however, resilience did not moderate the relationship between DV and psychosomatic symptoms. This is an important finding as it challenges the assumption made by the stress-buffering model (Cohen & Wills, 1985). One reason may be that chronic exposure to structural violence, poverty, occupational stressors, and interpersonal violence negatively impacts protective psychological factors like resilience. Additionally, there may not have been enough participants to provide sufficient statistical power to detect a moderation effect. Lastly, the BRS may have been too narrow of a measurement to assess the multidimensional concept of resilience for women who experience chronic social and interpersonal stressors. Similar to the diathesis-stress model, ecological models and trauma-informed care would suggest that environmental conditions can weaken individual protective resources when trauma is continuous and systemic.

Psychosomatic symptoms experienced by female cleaners should be considered in a larger socio-cultural and intersectional context. Due to existing social hierarchies and inequalities, women who are low-income, socially marginalized, and experience gender discrimination may be more susceptible to psychological distress. Female cleaners who have lower-income and less access to social resources may experience a build-up of psychological distress from other social and structural factors in addition to DV.

Results from the intervention phase were promising. MBCT was associated with decreased levels of psychosomatic symptoms as well as increased resilience. This is consistent with past research on mindfulness interventions which have found benefits in emotion regulation and coping. Mindfulness meditation could have promoted an increased awareness of thoughts and feelings without reacting to them. By reacting less to stressful situations, psychophysiological stress may have decreased, therefore improving overall levels of psychosomatic symptoms. Caution should be taken when interpreting the large effect sizes found for psychosomatic symptoms (d = 2.42) and resilience (d = 4.72). Given the small sample size who received the intervention and lack of control group, there are many reasons why participants who chose to receive the intervention could have improved scores. It could be due to a variety of factors such as measurement bias, participant expectancy, regression towards the mean, self-selection,

or because participants who took the time out of their day to complete the intervention may have been more motivated to improve. Because there was no control group, it is difficult to conclude that the decrease in symptoms was due to the MBCT intervention. Future studies should include a control group to compare whether symptoms naturally decrease over time. Additionally, future studies should increase the sample size to have enough power to detect differences if there are actual differences to be found.

DV scores were not significantly different after the intervention. Although MBCT did not decrease DV scores, this may have been due to the nature of the intervention. This intervention was meant to improve psychological factors that could help female cleaners cope with DV; however, it is not meant to change the behaviors of their spouses. Interventions are only one piece of the solution and should be combined with other resources to prevent violence and help women who experience DV.

Conclusion

The results of this study add to the small body of research done in Pakistan on psychosomatic health. Findings highlight the negative impacts of DV on women's psychological and physiological well-being. Although this study was promising, future research should replicate the study results and explore other factors that can influence psychosomatic distress among female cleaners.

Recommendations

- MBCT interventions are necessary in occupational settings to improve resilience and reduce psychosomatic complaints in female cleaners.
- Policies should focus on improving working conditions by addressing structural vulnerabilities, such as including protection from domestic violence and livable wages.
- Provision of mental health services for women in marginalized communities is necessary.
- Educational interventions on domestic violence awareness and resilience-building coping strategies should be implemented with low-education populations.
- Future research should use more diverse samples with greater ranges of domestic violence exposure and test other potential moderating variables, such as social support.

References

Anjara, S. G., Nellums, L. B., Bonetto, C., Van Bortel, T., & Corrigan, P. (2017). Stress, health and quality of life of female migrant domestic workers in Singapore: A cross-sectional study. *BMC Women's Health, 17*(1), 98. https://doi.org/10.1186/s12905-017-0442-7

Bronfenbrenner, U. (1979). *The ecology of human development: Experiments by nature and design*. Harvard University Press.

Campbell, J. C. (2002). Health consequences of intimate partner violence. *The Lancet, 359*(9314), 1331–1336. https://doi.org/10.1016/S0140-6736(02)08336-8

Chandola, T., Brunner, E., & Marmot, M. (2006). Chronic stress at work and the metabolic syndrome: Prospective study. *BMJ, 332*(7540), 521–525. https://doi.org/10.1136/bmj.38693.435301.80

Cohen, J. (1992). A power primer. *Psychological Bulletin, 112*(1), 155–159. https://doi.org/10.1037/0033-2909.112.1.155

Cohen, S., & Wills, T. A. (1985). Stress, social support, and the buffering hypothesis. *Psychological Bulletin, 98*(2), 310–357. https://doi.org/10.1037/0033-2909.98.2.310

Coker, A. L., Smith, P. H., Bethea, L., King, M. R., & McKeown, R. E. (2000). Physical health consequences of physical and psychological intimate partner violence. *Archives of Family Medicine, 9*(5), 451–457. https://doi.org/10.1001/archfami.9.5.451

Creed, F., Henningsen, P., & Fink, P. (2011). *Medically unexplained symptoms, somatisation and bodily distress: Developing better clinical services*. Cambridge University Press.

Crenshaw, K. (1991). Mapping the margins: Intersectionality, identity politics, and violence against women of color. *Stanford Law Review, 43*(6), 1241–1299. https://doi.org/10.2307/1229039

Dantzer, R., O'Connor, J. C., Freund, G. G., Johnson, R. W., & Kelley, K. W. (2008). From inflammation to sickness and depression: When the immune system subjugates the brain. *Nature Reviews Neuroscience, 9*(1), 46–56. https://doi.org/10.1038/nrn2297

Eberhard-Gran, M., Schei, B., & Eskild, A. (2007). Somatic symptoms and diseases are more common in women exposed to violence. *Journal of General Internal Medicine, 22*(12), 1668–1673. https://doi.org/10.1007/s11606-007-0376-9

Engel, G. L. (1977). The need for a new medical model: A challenge for biomedicine. *Science, 196*(4286), 129–136. https://doi.org/10.1126/science.847460

Feder, A., Nestler, E. J., & Charney, D. S. (2009). Psychobiology and molecular genetics of resilience. *Nature Reviews Neuroscience, 10*(6), 446–457. https://doi.org/10.1038/nrn2649

Hamberg, K. (2008). Gender bias in medicine. *Women's Health, 4*(3), 237–243. https://doi.org/10.2217/17455057.4.3.237

Hayes, A. F. (2013). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach*. Guilford Press.

Henningsen, P., Zimmermann, T., & Sattel, H. (2003). Medically unexplained physical symptoms, anxiety, and depression: A meta-analytic review. *Psychosomatic Medicine, 65*(4), 528–533. https://doi.org/10.1097/01.PSY.0000075977.90337.E7

Hochschild, A. R. (1983). *The managed heart: Commercialization of human feeling*. University of California Press.

Kalisch, R., Müller, M. B., & Tüscher, O. (2015). A conceptual framework for the neurobiological study of resilience. *Behavioral and Brain Sciences, 38*, Article e92. https://doi.org/10.1017/S0140525X1400082X

Karasek, R., & Theorell, T. (1990). *Healthy work: Stress, productivity, and the reconstruction of working life*. Basic Books.

Kroenke, K. (2003). Patients presenting with somatic complaints: Epidemiology, psychiatric comorbidity and management. *International Journal of Methods in Psychiatric Research, 12*(1), 34–43. https://doi.org/10.1002/mpr.140

Kuyken, W., Warren, F. C., Taylor, R. S., Whalley, B., Crane, C., Bondolfi, G., Hayes, R., Huijbers, M., Ma, H., Schweizer, S., Segal, Z., Speckens, A., Teasdale, J. D., Van Heeringen, K., & Williams, J. M. G. (2016). Efficacy of mindfulness-based cognitive therapy in prevention of depressive relapse. *JAMA Psychiatry, 73*(6), 565–574. https://doi.org/10.1001/jamapsychiatry.2016.0076

Lazarus, R. S., & Folkman, S. (1984). *Stress, appraisal, and coping*. Springer.

Marmot, M. (2005). Social determinants of health inequalities. *The Lancet, 365*(9464), 1099–1104. https://doi.org/10.1016/S0140-6736(05)71146-6

Masten, A. S. (2001). Ordinary magic: Resilience processes in development. *American Psychologist, 56*(3), 227–238. https://doi.org/10.1037/0003-066X.56.3.227

McEwen, B. S. (1998). Protective and damaging effects of stress mediators. *New England Journal of Medicine, 338*(3), 171–179. https://doi.org/10.1056/NEJM199801153380307

Naz, F., & Ashraf, S. (2023). Urdu adaptation and psychometric properties of the Brief Resilience Scale among Pakistani adults. *Pakistan Journal of Psychological Research, 38*(2), 215–229.

National Institute of Population Studies (NIPS) [Pakistan], & ICF. (2019). *Pakistan demographic and health survey 2017–18*. NIPS and ICF.

Parveen, T., & Bano, Z. (2023). Development and validation of the Domestic Violence Scale in Pakistani women. *Pakistan Journal of Social and Clinical Psychology, 21*(1), 45–58.

Pearlin, L. I., Menaghan, E. G., Lieberman, M. A., & Mullan, J. T. (1981). The stress process. *Journal of Health and Social Behavior, 22*(4), 337–356. https://doi.org/10.2307/2136676

Segal, Z. V., Williams, J. M. G., & Teasdale, J. D. (2013). *Mindfulness-based cognitive therapy for depression* (2nd ed.). Guilford Press.

Shah, S., Ahmad, R., & Fatima, N. (2022). Development and validation of the Psychosomatic Symptoms Scale for Pakistani adults. *Pakistan Journal of Psychological Research, 37*(4), 601–618.

Southwick, S. M., Bonanno, G. A., Masten, A. S., Panter-Brick, C., & Yehuda, R. (2014). Resilience definitions, theory, and challenges. *European Journal of Psychotraumatology, 5*(1), Article 25338. https://doi.org/10.3402/ejpt.v5.25338

Svanes, Ø., Bertelsen, R. J., Lygre, S. H. L., Carsin, A. E., Antó, J. M., Forsberg, B., García-García, J. M., Gullón, J. A., Heinrich, J., Jarvis, D., Kim, J. L., Leynaert, B., Norbäck, D., Olivieri, M., Ponzio, M., Probst-Hensch, N., Schlünssen, V., Villani, S., Zock, J. P., & Svanes, C. (2018). Cleaning at home and at work in relation to lung function decline and airway obstruction. *American Journal of Respiratory and Critical Care Medicine, 197*(9), 1157–1163. https://doi.org/10.1164/rccm.201706-1311OC

van der Kolk, B. A. (2014). *The body keeps the score: Brain, mind, and body in the healing of trauma*. Viking.

Zakar, R., Zakar, M. Z., & Krämer, A. (2012). Voices of strength and struggle: Women's coping strategies against spousal violence in Pakistan. *Journal of Interpersonal Violence, 27*(16), 3268–3298. https://doi.org/10.1177/0886260512441257

Zock, J. P., Plana, E., Jarvis, D., Antó, J. M., Kromhout, H., Kennedy, S. M., Künzli, N., Villani, S., Olivieri, M., Torén, K., Radon, K., Sunyer, J., Dahlman-Hoglund, A., Norbäck, D., & Kogevinas, M. (2007). The use of household cleaning sprays and adult asthma. *American Journal of Respiratory and Critical Care Medicine, 176*(8), 735–741. https://doi.org/10.1164/rccm.200612-1793OC