# Strengthening Resilience: Work Stress, Coping Strategies, and Health-Related Quality of Life (HRQoL)

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#### ABSTRACT:

**Objective:** To examine the interrelationships between perceived work stress, coping strategies, resilience, and health-related quality of life (HRQoL) among factory workers. It focused on understanding how coping mechanisms and psychological resilience influence stress and overall well-being in occupational settings.

**Methodology:** A cross-sectional quantitative design was used, involving 200 full-time employees from a master tile factory. Participants aged 21-60 years with at least one year of employment were selected through purposive sampling. Data were collected via structured, face-to-face interviews incorporating the Perceived Stress Scale (PSS-10), Brief COPE Inventory, Connor-Davidson Resilience Scale (CD-RISC-10), and the SF-36 Health Survey. Descriptive statistics summarized the data, and Pearson correlation assessed relationships among variables. Ethical approval and verbal informed consent were secured.

**Results:** Findings revealed that 40.5% of participants experienced mild stress, 24.5% moderate, and 17% high stress. Adaptive coping strategies such as humor (23%), active coping (21%), and emotional support (20.5%) were most commonly used. Resilience scores indicated that 64 participants had high resilience and 58 had moderate to high levels. HRQoL results showed that 61% had well to excellent quality of life, while 21.5% reported poor to very poor health. Correlation analysis demonstrated significant associations: stress negatively correlated with resilience (r = -0.45) and HRQoL (r = 0.35), while resilience positively correlated with HRQoL (r = 0.48). Coping strategies positively correlated with both resilience (r = 0.35) and HRQoL (r = 0.31).

**Conclusion:** Stress reduction and enhanced HRQoL are associated with greater resilience and adaptive coping mechanisms. These results lend credence to the necessity of workplace mental health programs that emphasize good coping and resilience-building.

Key words: Resilience, Health-related quality of life (HRQoL), Occupational health, Stress management, Adaptive coping, Mental health.

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#### Introduction:

In today's fast-paced and demanding work environments, occupational stress has become a widespread concern affecting employees across various sectors. Chronic work-related stress not only impairs productivity but also poses serious risks to psychological and physical health. Prolonged exposure to stress is linked with fatigue, burnout, and a decline in health-related quality of life (HRQoL), underscoring the need for effective stress management frameworks. Coping strategies and psychological resilience play a central role in how individuals manage work stress. Adaptive coping mechanisms—such as emotional

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Received: 4.7.2025 . Revised: 23.7.2025 Accepted: 21.08.2025 Published online 20.10.2025 support, problem-solving, and humor—can buffer the impact of stress, while maladaptive strategies may exacerbate it. Resilience, defined as the ability to recover from adversity, is increasingly recognized as a protective factor that enhances both mental well-being and quality of life.<sup>2</sup>

Health-related quality of life (HRQoL) is a comprehensive indicator reflecting an individual's physical, psychological, and social functioning. Identifying how resilience and coping influence HRQoL under stress can guide interventions that promote employee well-being.3 Despite growing interest, the interplay among these factors remains underexplored, especially in specific occupational or regional contexts. Recent studies have shown that a significant proportion of working individuals experience moderate to high levels of stress, particularly in high-demand professions. Occupational stress has been associated with reduced concentration, poor job satisfaction, absenteeism, and long -term psychological issues such as anxiety and depression. While some degree of stress may be inevitable, the ability to manage it effectively is crucial. Coping strategies, whether adaptive (e.g., active coping, acceptance, humor) or maladaptive (e.g., denial, substance use, self-blame), can significantly influence how individuals respond to workplace challenges and, ultimately, how stress affects their quality of life.

Resilience has emerged as a key psychological construct in occupational health research. It enables individuals to adapt positively despite adversity and is strongly associated with better mental health outcomes. When supported by effective coping strategies, resilience can help maintain against the negative effects of stress.7,8 However, limited research has explored the combined influence of stress, coping, and resilience on HRQoL in occupational settings in Pakistan. This study seeks to address this gap by assessing these interrelated factors and providing data-driven insights to support organizational well-being strategies. 9

To examine the relationships between perceived work stress, coping strategies, resilience, and HRQoL among factory workers. Specifically, it aims to determine how coping and resilience influence stress levels and impact overall health-related quality of life. The findings are intended to contribute to the growing body of evidence supporting psychological resource development and to inform workplace mental health and wellness interventions.

#### Methodology:

This quantitative, cross-sectional study examined the relationship between work stress, coping strategies, resilience, and health-related quality of life (HRQoL) among employees at a master tile factory from February to June 2025. The goal was to assess how coping and resilience influence the effects of occupational stress on well-being. A total of 200 full-time factory workers, aged 21 to 60 years, were selected using purposive sampling. Inclusion criteria; required at least one year of continuous full-time employment and the ability to understand interview questions. Exclusion criteria; included part-time or temporary status, current medical leave, or diagnosed severe mental health conditions. Data were collected through face-to-face interviews using a structured questionnaire. The first section gathered demographic details such as age, gender, education, and job role. The second section employed the Perceived Stress Scale to measure perceived stress (e.g., "How often have you felt nervous and stressed?"). The third section used the Brief COPE Inventory to assess coping strategies (e.g., "I've been turning to work to take my mind off things"). The fourth section applied the Connor-Davidson Resilience Scale with items such as "I am able to adapt to change." The final section used the SF-36 Health Survey to assess HRQoL, including physical and mental health. Ethical approval was obtained before data collection. Verbal informed consent was secured from all participants. Interviews were conducted in a quiet, private area within the factory and lasted 20-25 minutes. Participation was voluntary, and confidentiality was maintained throughout. Data were analyzed using SPSS (Version 26). Descriptive statistics summarized demographic and scale data. Pearson correlation, was used to test associations, mediation, and moderation effects. The study followed ethical principles outlined in the Declaration of Helsinki.

### Results:

According to the study "Strengthening Resilience: Work Stress, Coping Strategies, and Health-Related Quality of Life (HRQoL)," demographic information (Table 1) was gathered to learn more about the participants' profiles and how these traits may affect stress, coping strategies, and HRQoL outcomes. There were two hundred participants in the study, with 86.5% of them being men and 13.5% being women. Twenty-one percent had no formal education, twenty-one percent had finished elementary school, twenty percent had completed secondary school, eighteen percent had a diploma, and nineteen percent had a degree or more. 45% of the participants were single, while 55% of them were married. In terms of work experience, 22% had

emotional balance, foster personal growth, and protect 34% had 8-10 years' experience. These demographic traits offer a baseline for examining how people view and cope with work-related stress and how it affects their quality of life in terms of their health. The PSS-10 scores (Table 2) were used to analyze the participants' perceived stress levels, and the results show that most of them had mild to moderate stress. Mild stress was specifically the most frequently seen category, with 40.5% (n = 81) of the individuals reporting it. This was followed by 24.5% (n = 49) who reported moderate stress, suggesting that a significant percentage were experiencing considerable psychological strain. 18% (n = 36), a smaller group, reported low stress levels, which may indicate that they were managing their stressors well or that there were fewer stressors in their surroundings. Crucially, 17% (n = 34) of individuals had high stress levels, indicating a group that would be more vulnerable to stress-related health problems and could profit from focused interventions. Overall, the results indicate that although the majority of participants do not experience extreme stress, a sizeable portion do, and their stress levels need consideration, especially in the context of occupational or community health.

Table No 1: Socio-demographic and professional characteristics of study participants (n = 200)

Characteristics	Frequency (%)	
Gender		
Male	(86.5)	
Female	(13.5)	
Education Level		
No formal	42 (21%)	
education		
Primary	42 (21%)	
Secondary	40 (20%)	
Diploma	37 (18.5%)	
Degree/Higher	39 (19.5%)	
Marital Status		
Married	110(55%)	
Unmarried	90 (45%)	
Years of Experience		
0-2	44 (22%)	
3-5	56 (28%)	
6-8	32 (16%)	
8-10	68 (34%)	

Table No 2: Frequency and Percentage Distribution of Participants by Perceived Stress Levels Based on PSS-10 Scores.

Stress	Score	Frequency
levels	range	(%)
Low	0-7	36 (18)
Mild	8-13	81(40.5)
Moderate	14-26	49 (24.5)
High	27-40	34 (17)

As determined by the Brief COPE Inventory, the data shows (Table 3) the frequency and percentage distribution of the different coping mechanisms that individuals used. 23% (n = 46) of the participants identified comedy as their most commonly utilized method, indicating that a sizable percentage of people try to find humor or lightness in their circumstances in order to cope with stress. Active coping, 0-2 years, 28% had 3-5 years, 16% had 6-8 years, and at 21% (n = 42), came in second, suggesting that many

head-on.

Table No 3. Frequency and Percentage Distribution of Coping Strategies Based on the Brief COPE Inventory.

Coping strategy	Frequency (%)
Distraction	23 (11.5)
Emotional Support	41 (20.5)
Substance Use	11 (5.5)
Active Coping	42 (21)
Self-Blame	13 (6.5)
Humor	46 (23)
Acceptance	24 (12)

In addition, 20.5% (n = 41) of individuals sought consolation or assistance from others, indicating the prevalence of emotional support and the significance of social ties in coping. Acceptance (12%, n = 24) and diversion (11.5%, n = 23) were less commonly used tactics, which may indicate a preference for problem-focused coping techniques over avoidant ones. Among the least reported strategies were substance use (5.5%, n = 11) and self-blame (6.5%, n = 11)13), suggesting that fewer participants turned to unhealthy coping techniques. Overall, the findings indicate that most participants preferred adaptive coping strategies like humor, emotional support, and active coping.

The majority of participants (Table 4) showed relatively great resilience, according to the distribution of participants across various resilience levels based on the CD-RISC-10 scores. In particular, 64 participants-the most resilient group-were in the high resilience category (score range: 35-40). A significant percentage of the sample had aboveaverage coping skills in the face of adversity, as seen by the 58 participants who scored in the moderate to high resilience range (27-34). 45 individuals (ages 14-26) were classified as having mild to moderate resilience, indicating some resilience but perhaps a lack of tools or techniques for efficient stress management. 33 participants, on the other hand, received poor resilience scores (0-13), indicating that they may be at risk for adverse psychological effects when faced with stresses. Overall, the findings imply that although participants' levels of resilience varied, most showed moderate to high levels, which could work as a protective factor for mental health.

Table No 4: Categorization of Participants According to Resilience Levels Based on CD-RISC-10 Total Scores.

Resilience Level	Score range	Frequency (%)
Low resilience	0-13	33
Mild to moderate resilience	14-26	45
Moderate to high resilience	27-34	58
High resilience	35-40	64

According to the results (Table 5), a significant percentage of participants reported having a good quality of life in relation to their health. In particular, 31% (n = 62) of participants had excellent health/quality of life scores (80-100), indicating a high level of general wellbeing. Furthermore, 30% of respondents (n = 60) reported being in good health with only minor impairments (scores 60-79), indicating that

people take proactive measures to deal with challenges restrictions (scores 40-59), which indicates that they had some trouble with their physical or mental functioning. 9% (n = 18) were categorized as having severe limits or low quality of life (scores 0-19), whereas a smaller percentage, 12.5% (n = 25), reported poor health or considerable problems (scores 20-39). Although most participants had moderate to excellent health-related quality of life overall, a sizable minority reported severe impairments, underscoring the need for supporting measures to improve these people's well-being.

Table No 5: Frequency and Percentage Distribution of Participants by Health-Related Quality of Life (HRQoL) Scores.

Interpretation	Score range	Frequency (%)
Excellent health/ quality of life	80-100	62 (31)
Good health, mild impairments	60-79	60 (30)
Moderate health limitations	40-59	35 (17.5)
Poor health or significant chal- lenges	20-39	25 (12.5)
severe limita- tions/poor quality of life	0-19	18 (9)

Resilience, coping mechanisms, perceived stress, and health-related quality of life (HRQoL) were found to be significantly correlated by the Pearson correlation analysis (Table 6). People who are more resilient tend to have lower stress levels, according to a moderately negative connection between perceived stress and resilience (r = -.45, p <.01). Perceived stress also had a negative correlation with HRQoL (r = -.52, p < .01), indicating that higher levels of stress are linked to lower quality of life. Conversely, a robust positive connection was seen between resilience and HRQoL (r = .48, p < .01), underscoring resilience's protective function in fostering general well-being. Coping strategies were positively correlated with both resilience (r = .35, p < .01) and HRQoL (r = .31, p < .01), suggesting that the use of effective coping mechanisms is linked to greater resilience and better health outcomes. Interestingly, a positive correlation between coping strategies and perceived

Table No 6. Pearson Correlation Matrix among Perceived Stress, Coping Strategies, Resilience, and Health-Related Quality of Life (HRQoL).

Variables	Perceived Stress	Coping Strate- gies	Re- silien ce	HRQoL
Per-	1			
ceived				
Stress				
Coping Strate-	28*	1		
gies				
Resili-	45**	.35**	-	
ence			.45**	
HRQoL	52**	.31**	.48**	1
*p < .05, *p < .01 indicate levels of statistical significance.				

their health was usually good with only minor limits. How- stress (r = .28, p < .05) was also observed, which may indiever, 17.5% (n = 35) of individuals had significant health cate that individuals experiencing higher stress levels are more likely to engage in various coping efforts, whether adaptive or maladaptive. These findings underscore the interconnected roles of stress, coping, and resilience in shaping individuals' quality of life.

#### Discussion:

This study explored the relationships among perceived stress, coping strategies, resilience, and health-related quality of life (HRQoL). The findings provide meaningful insights into the psychological profile of the participants and reflect trends consistent with existing research. A majority of participants reported mild to moderate levels of stress, with 17% experiencing high stress. These figures are comparable to general population studies, where mild stress tends to be most prevalent, while high stress re- 2. mains a concern for a smaller, vulnerable subgroup. Notably, stress was moderately negatively correlated with resilience and HRQoL, indicating that higher stress is associated with lower adaptability and poorer perceived well-being. Previous studies showing the detrimental effects of longterm stress on psychological functioning and quality of life reinforce these connections. <sup>11</sup> In a variety of professional contexts, prior studies have consistently shown moderate to high levels of occupational stress. 12 According to a meta -analysis, 69% of people said they were under moderate stress at work. Likewise, 95% of participants assessed their work-related stress as moderate to severe, indicating that psychological strain in demanding tasks is common. <sup>13</sup>,

There were also reports of moderate levels of occupational stress in specialized professional contexts (Mean = 7.98, SD = 1.77). 15

Our data showed humor (23%), active coping (21%), and emotional support (20.5%) as the most commonly used coping strategies indicating a preference for adaptive approaches. This aligns closely with findings from UK health and social care employees, where active coping, help-seeking, and humor were significantly associated with better work and health related quality of life. 16 The positive correlations between coping and both resilience (r = .35) and HRQoL (r = .31) match results from frontline healthcare workers during COVID-19, where resilience and active coping predicted quality of life, accounting for a substantial variance. 17 These parallels underscore that in high -pressure work environments, adaptive strategies consistently bolster well-being. 18 Interestingly, we also found a modest positive correlation between coping and stress (r = .28)—suggesting that those under higher stress report engaging more in coping. This reflects broader findings that high-stress employees actively use social or problemfocused coping to maintain well-being (e.g., problem-solying coping correlated r = .55 and social support r = .33). Moreover, substance use and avoidance were the least 8. reported strategies in our sample (5.5% and 6.5%), mirroring workplace studies where avoidant methods were significantly linked to lower well-being. 20 Moreover it was found in a previous research that avoidant coping negatively impacted HRQoL across occupations. Thus, our results reinforce that HRQoL is closely linked to stress regulation and psychological resources, supporting the value of resilience training and coping interventions to improve overall well-Conclusion:

Current study underscores the significant interconnection between perceived stress, coping strategies, resilience, and health-related quality of life. The findings highlight the protective role of resilience and adaptive coping in promoting well-being and reducing stress. These insights have important implications for workplace mental health pro-

grams, emphasizing the need to foster resilience and encourage constructive coping approaches. Future research may explore longitudinal patterns and evaluate targeted interventions to strengthen psychological resources across diverse occupational settings.

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*Author's contribution*		
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Farheen Zahra	Manuscript draft writing, Grammatical review	