

Effects of Sleep Quality on Psychological Distress in Teachers: The Role of Social Support

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Abstract

This study explores the link between sleep quality and psychological distress among teachers in Punjab, Pakistan, using social support as a mediator. Quantitative data were gathered from 200 instructors using the Sleep Quality Scale, Kessler Psychological Distress (KPD) Scale, and Multidimensional Perceived Social Support (MSPSS) Scale. The findings show that poor sleep quality is associated with increased psychological distress, whereas social support improves sleep quality and psychological well-being. Social support helps mitigate the relationship between sleep quality and psychological distress. No significant variations in psychological discomfort were seen across educational levels. These findings highlight the significance of sleep and social support for educator well-being.

Keywords: sleep quality, psychological distress, social support

Introduction

Sleep quality reflects an individual's overall satisfaction with their sleep experience. For teachers, frequent disruptions to their sleep schedule can significantly impact their sleep quality. Research highlights a strong link between the quality of physical and mental resources, psychological distress, and components of sleep quality (Carpi & Vestri, 2022). Mediation analysis shows that overall sleep quality influences anxiety, depression, and stress.

Teaching can be a highly stressful and demanding profession. Teachers' stress experience depends on different aspects of demands within the class, such as challenges with the discipline in the classroom, and beyond the class, such as collaborating with other teachers or administrative tasks (Fraser, 2020).

Teacher's social support affects student achievement, job satisfaction, and teacher retention. Although the benefits of social support have been extensively studied in medicine and psychology, limited research has been completed in education to evaluate how social support influences teacher self-efficacy (Korte, 2017). However, it has been discovered that raising instructors' mental health literacy is one of the best strategies to enhance the organization's function.

Improving teachers' mental health positively affects students, enhancing the effectiveness of programs for mental health (Whitley et al., 2018). While stress is common, psychological distress (PD) can have a profound impact. PD is characterized by symptoms of anxiety such as restlessness and tension, and depression including lack of interest and hopelessness (Vierto, 2021). Psychological distress significantly affects daily functioning and is marked by uncomfortable mental and physical symptoms often associated with mood fluctuations (American Psychological Association).

This study explores the relationship between job satisfaction and dispositional gratitude, focusing on social support's mediating role. Social support, described as behaviors that convey value and care (Ko et al., 2013), includes structural support (social integration) and functional support (concrete assistance and emotional support) (Cohen & Syme, 1985; Cohen & Wills, 1985). Social support may buffer psychological distress and its impact on mental health and sleep quality (Cohen & Wills, 1985). Strong social support networks are linked to better physical and mental health (Cohen & Wills, 1985).

A comprehensive study is necessary to give a complete taxonomy of sleep monitoring systems, with a focus on sleep quality, and to provide informative data regarding the best combination of metrics, signals, and sleep characteristics for various user types (Crivello, 2019).

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A significant factor influencing psychological distress was the quality of sleep. Inadequate sleep, such as trouble falling asleep and short sleep duration, can worsen psychological suffering by lowering mood and raising anxiety during the day (Zhang et al., 2022).

It was believed that the biggest causes of stress were lack of regular breaks and physical activity (Li & Kou, 2018). Social assistance can benefit employees and companies in several ways. In addition to mitigating the negative consequences of stressful demands, social support can promote higher-quality relationships, pleasant affective reactions, and improved individual performance (Jolly et al., 2021).

Social support is feeling safe and connected, having the chance to help others, being a part of a social network, feeling appreciated and valued, and taking part in a community with shared responsibilities (Drageset, 2021).

Dr. Ian Oswald's restorative theory posits that sleep replenishes and repairs the body's cellular components. This theory suggests that naps or daytime sleep can compensate for lost nighttime sleep, although this is only effective if done for a specific duration. Research supports that essential bodily processes occur during sleep, and poor sleep patterns affect biological and psychological well-being (William & Dement, 1927).

The Stress-Buffering Model by Cohen and Wills (1985) indicates that social support can mitigate the adverse effects of psychological distress on health, including sleep quality. Social support helps individuals cope with stress and prevents negative behaviors during stressful situations. This buffering effect protects individuals from the harmful impacts of stress (Cohen & Wills, 1985).

According to Lakey and Cohen (2000) social support theory, a network of people constitutes social support. that people rely on for psychological support or stress management. It takes at least one significant relationship for someone to get assistance from others. According to the Main Effect theory, people with powerful social support systems are less likely to suffer from physical and mental health problems than those with fewer strong social networks. Therefore, what matters is the social support group's caliber. Social support is a mediator in this study. Our study will investigate how social support can manage psychological distress.

Studies show that poor sleep quality affects kids' and teenagers' mental health. 12.2% of secondary school students experienced poor sleep quality, which is linked to psychological distress, stimulant use, and internet use (Olashore & Akanni, 2020). In rural empty nesters, sleep quality correlates with resilience and social support, highlighting the importance of both factors (Hao, 2021).

Guglielmi (2018) investigated the frequency of poor sleep quality and obstructive sleep apnea (OSA) in truck drivers, as well as its relationship to mental health. Among 526 male drivers (mean age 45.9), 51.1% were at risk of OSA, 8.9% experienced excessive daytime sleepiness, and 17.3% reported poor sleep quality. The study highlights the impact of sleep issues on truck drivers' psychological well-being and overall health.

In stroke patients, social support's effect on sleep quality is mediated by anxiety and depression symptoms (Zhao, 2022). The relationship between psychological distress and social support was also examined in older adults in Australia, with findings suggesting that social support can help manage psychological distress (George et al., 2020).

Social support improves mental health and life satisfaction. In Azerbaijan, psychological distress mediated the relationship between social support and life satisfaction among adults (Rustamov et al., 2023). Enhanced sleep quality in depressed teens was associated with reduced suicidal thoughts through perceived social support and resilience (Wu et al., 2024).

The relationship between internet addiction, social support, and sleep quality in college students during the COVID-19 pandemic showed that social support moderates internet addiction's effect on sleep quality (Jiang et al., 2022). In Pakistan, medical students with poor sleep quality had lower psychological well-being and academic performance (Anjum & Mushtaq, 2024).

A study on community workers found that social support affects sleep quality through perceived stress and psychological resilience, with both single and chain mediation roles (Lei et al., 2021).

A study found that supportive social ties are associated with better sleep quality. Sleep quality was lower for individuals identifying their spouse/partner as their closest person at age 53 but not at age 68 (Stafford, 2017).

Factors associated with psychological distress was explored among 200 adolescents in Kosovo ($M = 10.8$; $SD = 0.44$). Gender analysis showed females reported better sleep quality, whereas males reported greater psychological distress and technology use (Duraku & Kelmendi, 2018).

A study shows that social support has been demonstrated to be correlated with the quality of sleep, which is crucial for senior citizens' health and wellness. It was discovered that both subjective and objective sleep quality were positively correlated with social support. It might serve as a moderator reducing the impact of negative emotions and rumination on the quality of sleep, as well as a mediator bridging the gap between hopelessness and sleeplessness (Seo & Mattos, 2024).

Rationale

This study investigates the link between psychological health and sleep quality among teachers in Punjab, Pakistan, with a focus on the mediating function of social support. It seeks to provide insights into how social support promotes mental health and sleep quality, filling a gap in empirical knowledge on these interconnected elements and improving educators' well-being.

Previous research indicates that social support is linked with better sleep quality, which is vital for older adults' health and well-being. Social support improves subjective and objective sleep quality by reducing the effect of negative emotions and rumination on sleep and modulating the relationship between hopelessness and sleeplessness (Seo & Mattos, 2024).

This study intends to fill a research vacuum in Pakistan by examining the links relationship social support, psychological distress, and sleep quality, in addition to the mediation effect of social support. It underscores the shortage of studies in this area and the necessity for additional research in the context of a developing country.

Research Objectives

1. To assess the impact of sleep quality on psychological distress among teachers.
2. To investigate how social support affects psychological discomfort.
3. To investigate the mediating role of social support between sleep quality and psychological distress among teachers.
4. To analyze the correlation between psychological discomfort and the quality of sleep among teachers.
5. To evaluate how sleep quality affects psychological distress across teachers with varying levels of work experience.

Research Hypotheses

1. Poor sleep quality is likely to be significantly negatively related to psychological distress.
2. Social support is expected to have a significant negative relationship with psychological distress.
3. Social support is likely to have a significant positive relationship with sleep quality.
4. Social support is anticipated to mediate the relationship between sleep quality and psychological distress.

Method

Sample/Participants

A cross-sectional survey approach was employed in the study to gather quantitative data using structured questionnaires. Sleep quality was the independent variable; psychological distress was the dependent variable; and social support served as a mediator. The sample included 200 instructors aged 21 to 60 from several cities in Punjab, Pakistan, chosen using purposive sampling. Data collection took place online and in person, with participants from Gujranwala, Lahore, Sialkot, and Gujrat. Teachers with physical limitations or less than three years of experience were excluded.

Measures

Sleep Quality Scale (SQS)

Developed by Yi et al., the SQS includes 28 items assessing sleep quality across six dimensions. It uses a 4-point Likert scale and has demonstrated good reliability with a test-retest reliability of .81.

Kessler Psychological Distress Scale (K10)

Created by Kessler & Mroczek (1992), the K10 measures psychological distress through ten items on a Likert scale, 5 points. Its Cronbach's α indicates that it is highly reliable of 0.88.

Multidimensional Scale of Perceived Social Support (MSPSS)

This 12-item scale evaluates perceived social support from friends, family, and significant others using a 5-point Likert scale. It shows excellent internal reliability with a Cronbach's α of 0.933.

Procedure

The study adhered to ethical guidelines, beginning with approval from the University's Ethical and Research Committee. Data collection occurred over one month, with participants being approached both in person and online. Informed consent was obtained, ensuring participants understood the study's objectives and confidentiality. Questionnaires took approximately 15-20 minutes to complete. Data analysis was conducted using SPSS to test hypotheses and evaluate the research model.

Ethical Considerations

1. Approval was obtained from the university's research committee.
2. Informed consent was provided to participants regarding the study's nature, purpose, risks, and benefits.
3. Confidentiality of participants' data was assured and maintained.

Results

This cross-sectional study examined the relationships between instructors' self-esteem, psychological distress, and sleep quality. Descriptive statistics summarized sample characteristics, while Cronbach's alpha assessed instrument reliability. Statistical techniques such as ANOVA, correlation, and t-tests analyzed variable distributions. Andrew Hayes' Process Macro in SPSS-22 was used to test the mediation effect of self-esteem. The findings will present detailed results to meet the study's objectives.

Table 1. Demographic Characteristics of Sample

Variables	Range	Frequency	%
Gender			
Male		100	50.0
Female		100	50.0
Age	21 - 60		
Area			
Rural		57	28.5
Urban		143	71.5
Sector			
College		66	33.0
School		43	21.5
University		91	45.5
Marital Status			
Married		76	38.0
Single		120	60.0
Other		4	
Work experience			
3 - 5 years		140	70.0
6 - 8 years		31	15.5
9 - onward		29	14.5

The total sample comprises 200 respondents. Out of these 200 respondents, 100 were male and 100 were female. Respondents were further explored based on their age. Age was further divided into age groups i.e. 21-30 years, 31-40 years, 41-50 years, and 51 to 60 years. Results revealed that 135 (67.5%) respondents

belonged to 21-30 years' age group, 44 (22.0%) respondents were in 31-40 years' age group, 18 (9.0%) respondents were under 41-50 years' age group (see Table 1).

Table 2. ANOVA of Study instrument

	Mean	SD	F	P	N2	Posthoc
T_SQ	1.97	2.29	.416	.6	0.004	0.2
T_KP	-1.14	1.98	1.249	.3	0.012	0.1
T_MSPSS	-.56	3.63	1.566	.2	0.015	0.06

Note: SD stands for standard deviation

The mean score for T_SQ is 1.97 with a standard deviation of 2.29. The F-value of 0.416 suggests there is not a significant difference between the groups being compared. The P-value of 0.6 indicates that the result is not statistically significant (commonly, a P-value < 0.05 is considered significant). The effect size (Eta squared) is very small at 0.004, indicating a negligible effect. The post-hoc test significance level is 0.2, further supporting that there is no significant difference between groups. None of the variables (T_SQ, T_KP, T_MSPSS) show statistically significant differences between the groups being compared, as indicated by their P-values (all greater than 0.05). The effect sizes (Eta squared) are also very small for all variables, suggesting that the differences observed are negligible. The post-hoc tests further confirm the lack of significant differences (Table 2).

Table 3. ANOVA of work experience

Experience	Mean	SD	F	P	N2	Posthoc
9 years or more	26.321	9.9445				
3-5 years	27.464	9.183	1.249	.289	0.0127	2>1>3
6-8 years	24.516	10.862				

Note: SD stands for standard deviation.

Table 3 with respect to years of experience, shows the mean (M) and standard deviation (SD) of a particular variable for three groups: 9 years or more, 3-5 years, and 6-8 years. The group with 3-5 years of experience has the highest mean score (M = 27.464, SD = 9.183), followed by the group with 9 years or more (M = 26.321, SD = 9.9445), and finally the group with 6-8 years of experience (M = 24.516, SD = 10.862). The F-statistic for the comparison of these groups is 1.249, with a p-value of .289, indicating no statistically significant difference between the groups. However, the N2 value is 0.0127, suggesting a small effect size. The post hoc analysis indicates the order of means from highest to lowest is: 3-5 years > 9 years or more > 6-8 years.

Table 4. Means, Standard Deviations, and One-Way Anova Analyses of Variance on Kessler Psychological Distress between Different Sectors of Teacher's School, College and University (N=200)

Sector	Mean	SD	F	P	N2	Posthoc
School	24.14	8.98				
College	27.18	9.75	2.32	.10	0.02	2>3>1
University	27.98	9.59				

Note: SD =standard deviation

Table 4 shows the mean and standard deviation between different sectors of schools, colleges, and universities. Findings indicate that there was a significant difference between school, college, and university teachers' F = 2.32, P<.05. Findings indicate that college teachers have higher psychological distress (M = 27.18, SD= 9.75). Then those university teachers (M=27.98, SD=9.59) and school teachers (M=24.14, SD=8.98). There were non-significant differences in psychological distress among school, college, and university teachers.

Psychometric properties of scale used for study variables

The internal consistency of the study measures was determined using Cronbach's alpha coefficient to assess their reliability. Cross-sectional among scale calculations were made to determine the relationship patterns of the research variables. Table 5 lists the psychometric attributes that were employed in the research.

Table 5. Psychometric properties

Variables	Mean	Standard Deviation	Range	Cronbach's α
SQ	67.51	11.20	42-91	.78
KP	26.84	9.58	10-50	.92
MSPSS	56.19	17.82	12-84	.95

Table 5 indicates the mean, standard deviation, and Cronbach alpha of SQ (Sleep quality scale), KP (Kessler Psychological Distress Scale), and MSPSS (Multidimensional Scale of Perceived Social Support). The sleep quality scale has a total of 28 items the alpha reliability of this scale was (.78). The Kessler psychological distress has a total of 10 items the alpha reliability of this scale was (.92) and multidimensional scale perceived social support has total 12 items scale the alpha reliability of this scale was (.95).

Relationship between the Study Variables

Zero-order bivariate correlations were estimated in the current study to find patterns of relationships between the variables under investigation. Relationships can be seen because most of the variables have substantial correlations.

Table 6. Pearson correlation N= 200

	SQ	KP	MSPSS
SQ	-	.49**	-.18**
KP		-	-.64**
MSPSS			-

Note: SQ = Sleep quality, KP = Kessler psychological distress, MSPSS= multidimensional scale persevered social support

Table 6 indicates that sleep quality has a positive relationship with Kessler's psychological distress. Results have shown that sleep quality has a negative relationship with multidimensional scale perceived social support. In addition, psychological distress has a negative relationship with multidimensional scale perceived social support.

Table 7. Mean, Standard Deviation and T-Test Statistics of Study Variable

	Married		Single		t(df)	p	Cohen d
	Mean	SD	Mean	SD			
T_SQ	67.8	11.3	67.7	10.7	.72 (193)	0.4	0.01
T_KP	24.9	9.4	27.3	9.1	-1.7 (191)	0.8	0.3
T_MSPSS	60.5	15.9	54.9	17.4	2.3 (192)	0.1	2.9

Note: SD=standard deviation, df = degree of freedom

Table 7 shows that there is an insignificant marital and single difference in (SQ) sleep quality $t(df) = .72 (193)$, (KP) Kessler Psychological Distress Scale $t(df) = -1.7 (191)$ and (MSPSS) Multidimensional Scale of Perceived Social Support $t(df) = 2.3 (192)$. The result also shows that there is a significant status difference in KP (Kessler Psychological Distress Scale) $p = 0.8$ with married $M = 24.9$, $SD = 9.4$ and single $M = 27.3$, $SD = 9.1$. Findings show that there is (MSPSS) Multidimensional Scale of Perceived Social Support Cohen $d = 2.9$ have high relationship quality.

Mean Difference in Sleep Quality, Kessler Psychological Distress, and Multidimensional Perceived Social Support in Male and Female

To demonstrate the importance of demographic characteristics on teachers' sleep quality, Kessler psychological distress, and social support, a number of analyses were carried out.

Table 8. Social Support

	Male		Female		t(df)	P	Cohan's d
	M	SD	M	SD			
SQ	67.87	11.68	67.15	10.75	.45(196)	.65	0.06
KP	26.69	9.97	26.98	9.23	-.21(195)	.83	0.03
MSPSS	55.39	18.68	56.96	16.99	-.62(196)	.54	0.09

Note: M stands for Mean value SD stands for standard deviation

Table 8 indicates the mean difference in sleep quality, Kessler psychological distress, and social support based on gender differences. Table 8 findings show there is a non-significant gender difference in all three variables i.e. $P > .05$. Results showed that there is no gender difference in sleep quality ($p = .65$), psychological distress ($p = .83$), and multidimensional scale perceived social support ($p = .54$).

The Role of Demographic Factors

To demonstrate the importance of demographic characteristics on teachers' sleep quality, psychological distress, and social support, some analyses were carried out.

Table 9. Mean Difference in Sleep Quality Kessler Psychological Distress and Multidimensional Scale Perceived Social Support in Rural and Urban

	Rural		Urban		t(df)	P	Cohan's d
	Mean	SD	Mean	SD			
SQ	67.05	12.64	67.09	10.61	-.36(19)	.72	0.00
KP	26.52	8.38	26.97	10.06	-.31(19)	.74	0.04
MSPSS	60.84	15.18	54.31	18.50	2.36(19)	.02	0.38

Note: SD= standard deviation

Table 9 specifies the mean difference in sleep quality, Kessler psychological distress, and social support based on area sector. Table 9 findings show there is a non-significant area difference in two variables i.e. $P > .05$, and a significant difference in multidimensional perceived social support $p > .05$. Results showed that there is no area difference in sleep quality ($p = .72$), Kessler psychological distress ($p = .74$), and difference in multidimensional scale perceived social support ($p = .02$).

Moral Character as a Mediator Between Sleep Quality and Kessler Psychological Distress

Mediation was calculated using Hayes' process macro. A significant correlation between the outcome variable, a significant relationship between the independent, dependent variable and the mediator, the mediator's ability to find out the relationship between the dependent and independent variable. When the mediator is controlled for are some of the criteria that Baron and Kenny (1986) proposed for the investigation of a mediating impact. The results of the current study, which examined the mediating role of social support on the association between teachers' psychological distress and sleep quality, are as follows.

Table 10. Mediator Between Sleep Quality and Kessler Psychological Distress

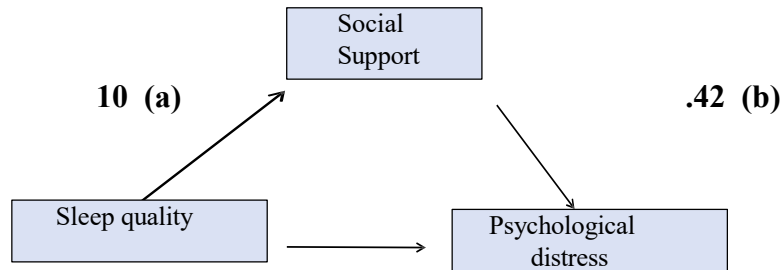
Mediator	Sleep quality		
	Effect	R2	F
Total B	.41	.2094	61.15
Social support	Direct B	.33	.55
	Indirect B	.10	
95CI [.007,.19]			

Note: LLCI = lower limit and ULCI = upper limit

Table 10 indicates the mediating role of social support on sleep quality and psychological distress. Mediation shows that sleep quality has positively predicted with social support ($\beta = .49$, $p < .05$) and negatively predicted psychological distress ($\beta = -.56$, $p < .05$) mediation results confirmed that high social support will increase positive sleep quality and will result in decrease psychological distress ($\beta = .10$, 95% CI=.007,.19).

Therefore, table 10 shows that the positive social support significantly mediating the path between sleep quality and psychological distress.

Figure 1. Mediation link of psychological discomfort and the quality of sleep



Discussion

This study aimed to explore the relationship between sleep quality and psychological distress, with an emphasis on the mediating role of social support. In order to accomplish this, the study utilized three scales; The Multidimensional Scale of Perceived Social Support (MSPSS), the Kessler Psychological Distress Scale (KP), and the Sleep Quality Scale (SQS). The reliability of these scales was robust, with alpha coefficients of SQS ($\alpha = 0.78$), KP ($\alpha = 0.92$), and MSPSS ($\alpha = 0.95$). Kline (1999) indicates that an alpha coefficient of 0.80 is acceptable for cognitive tests, while a value of 0.70 is often sufficient for psychological constructs due to their inherent variability.

The assessment of participants' sleep quality was conducted using the SQS, psychological distress was measured with the KP, and social support was evaluated using the MSPSS. The psychometric properties of these scales were thoroughly assessed, showing solid internal consistency.

Demographic factors such as gender, age, area, number of children, marital status, and work experience were considered. Descriptive statistics revealed an even distribution of males and females (50% each) and a majority of participants aged 21 to 30. These demographics were analyzed to examine potential biases related to gender, area, and sector on sleep quality and psychological distress.

Data analysis revealed no significant gender differences in sleep quality ($p = 0.65$), psychological distress ($p = 0.83$), or social support ($p = 0.54$). This aligns with existing research that emphasizes the impact of the psychosocial work environment on psychological well-being. Previous studies have shown that social support and effective job management can mitigate the detrimental impact of work-related obligations on depression and anxiety (Kline, 1999).

In Hypothesis 1, the study confirmed that psychological stress and poor sleep quality are negatively correlated. The findings demonstrated a strong positive correlation between poor sleep quality and increased psychological distress, which is in line with studies linking sleep issues to psychological discomfort (Alhusseini et al., 2022).

As per Hypothesis 2, the data confirmed a negative relationship between social support and psychological distress. A significant negative correlation was found, supporting existing literature on the role of social support in reducing stress, anxiety, and depression among students (Bukhari & Afzal, 2017). This is consistent with studies showing that perceived social support can significantly alleviate psychological distress among college students (Afreed et al., 2021).

As per Hypothesis 3, the study found that social support and sleep quality were positively correlated. The significant positive correlation found aligns with the literature suggesting that social support enhances sleep quality by improving life satisfaction and reducing depressive symptoms (Krause & Rainville, 2020).

Hypothesis 4 examines the mediating effect of social support between sleep quality and psychological discomfort. The findings indicate that the relationship between psychological discomfort and sleep quality is mediated by social support, consistent with previous research showing social support as a significant mediator in various contexts, including among Chinese women undergoing in vitro fertilization (Zhou, 2020).

In summary, the study offers valuable insights into the intricate relationship between social support, psychological distress, and sleep quality, highlighting the significance of social support as a mediator. These findings have implications for interventions aimed at improving psychological well-being through enhanced social support and better sleep management.

Conclusion

With social support serving as a mediator, the study examined the connections between psychological distress, sleep quality, and social support. The results revealed that poor sleep quality is significantly adversely associated with psychological distress. Furthermore, there is a negative correlation between psychological distress, and social support positively correlates with sleep quality. Social support appears to partially mediate the relationship between sleep quality and psychological distress. These findings suggest that sleep quality directly impacts psychological distress, while social support affects both sleep quality and psychological distress. Enhancing social support can improve sleep quality and reduce psychological distress.

Implications

The study's findings underscore the importance of addressing social support and sleep quality in the care of psychological distress, particularly for teachers. Awareness programs and counseling services can help teachers maintain proper sleep schedules and leverage social support to improve their health. Understanding these relationships can aid social psychologists, clinical psychologists, and therapists in developing effective interventions and treatment plans.

Future research

Future research should consider qualitative approaches and longitudinal designs to explore the impact of psychological distress and sleep quality over time. Future research should include data from all regions of Pakistan to enhance applicability. The study did not include physically disabled teachers, suggesting the need for future research to include this group. Future studies should incorporate alternative methods like behavioral or physiological measurements to enhance accuracy.

Limitations and Suggestions

The study's geographic limitation to Pakistan's Punjab province restricts the generalizability of the findings. The cross-sectional design of the study limits its ability to provide comprehensive insights. A correlational study design could offer a deeper understanding. The small sample size and inclusion of only male and female participants limit generalizability and may not capture long-term effects. The findings may not be fully applicable to teachers in other cultural or educational contexts, and it would be useful to investigate how elements such as culture, geographical differences, and educational systems may influence the findings. Recognizing these limitations might improve the study's conclusions and provide a better understanding of its applicability.

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