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Mental health matters: depression as a critical mediator of work-stress and leadership self-efficacy in public school principals

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Abstract

Purpose – Principals' capacity for school improvement efforts is influenced by their leadership self-efficacy which is particularly susceptible to psychological stress. While the impact of work-stress on self-efficacy is a global issue among principals and headmasters, the role of mental health conditions such as anxiety and depression is under-explored. This study aims to examine how work-stress influences leaders' perception of total, management, instructional and moral self-efficacies and how mental health conditions operate as moderators and/or mediators in these relationships.

Design/methodology/approach – We conducted a quantitative study with data collected from Texas, US principals (n = 181–194) and performed a series of regression analyses to examine work-stress and demographic factors as predictors of leadership self-efficacies and the role of mental health as mediators/moderators of significant relationships.

Findings – Our findings highlight work-stress as a central negative predictor of leadership self-efficacies, and depression, not anxiety, as a significant partial mediator between work-stress and leadership self-efficacies. Additionally, mental health symptoms were not significant moderators, suggesting that mental health concerns do not affect the strength of the predictive relationships.

Practical implications – We provide recommendations for individuals, districts, and principal preparation programs to support leaders' stress and depression which have downstream effects on principals' confidence to lead schools.

Originality/value – This study extends the literature in school leadership well-being by providing evidence that work-stress induces depression which then negatively impacts principals' leadership self-efficacy. Simultaneously, principals' mental health conditions, whether induced by work or other aspects of life including genetic predispositions, do not change the magnitude of the work-stress self-efficacy relationship.

Keywords School leadership, Mental health, Leadership self-efficacy, Stress, Depression, Well-being

Paper type Research article

Introduction

Principals, or headmasters in other global contexts, are critical agents for school improvement and positive student outcomes (Grissom *et al.*, 2021a, b; Hallinger and Heck, 2010; Leithwood and Jantzi, 2008). Principals manage day-to-day school operations; recruit, hire, and retain teachers and staff; lead professional developments to build instructional capacity; manage challenging budgetary decisions amid financially fiscal times; ensure local, regional, and national compliance; and meet academic accountability metrics all while building positive

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school culture, relationships, and connections with their school community (Darling-Hammond *et al*., 2022; Grissom *et al*., 2021a, b). As such, principals' work and job demands are naturally challenging. Principals often experience unfamiliar problems, uncertainty in their decisions, and absorb the responsibilities for school-wide decisions (DeMatthews *et al*., 2021; Dimmock and Hattie, 1996). Not only are the job expectations growing and the number of hours extensive, but decision-making is challenging due to the complexity of problems amid ever shifting crisis contexts making the role of the principals incredibly demanding and stressful (DeMatthews *et al*., 2021; Su-Keene and Bogotch, 2025; Taie and Goldring, 2019; Virella, 2025).

Leadership and organizational scholars argue that the effectiveness of a principal is related to their perceptions and judgment of capabilities as a school leader otherwise defined as leadership self-efficacy (Bandura, 1977; Tschannen-Moran and Gareis, 2004; Leithwood and Jantzi, 2008). For example, a leader's self-efficacy influences how they think and act, set school goals, engage in risk-taking, and persist through the challenges of the job (MuCullers and Bozeman, 2010; Petridou *et al*., 2014). Self-efficacy is influenced by numerous factors though one notable factor is psychological state, and particularly for principals, the role of work-stress and mental health. Emerging literature across the United States and international contexts has shown that principals identify numerous stressors in their work (Arnold *et al*., 2023; Elomaa *et al*., 2023; Richard, 2024). These include behavioral stressors (problematic behavior of parents, students, staff, and district office), job-related stressors (excessive workload, lack of resources, accountability pressures, bureaucracy, and job insecurity), and psychological stressors (emotional weight of worrying about students, staff, and parents) that can induce high-stress and poor mental health (Doyle Fosco *et al*., 2025; Mahfouz, 2020; Su-Keene *et al*., 2024a). Further, studies suggest that the majority of principals are experiencing elevated stress and mental health conditions (Doyle Fosco *et al*., 2025; Steiner *et al*., 2022). Further, researchers have noted personal impacts on health which threaten principals' longevity and sustainability in their careers (Carr, 1994; Su-Keene *et al*., 2024b). Not only do school improvement efforts require sustained and committed leadership, but there is evidence that the turnover of school leaders increases the turnover of teachers instigating uncertainty that is disruptive on a whole school level (DeMatthews *et al*., 2022).

Given that principals' effectiveness is influenced by perceptions of leadership self-efficacy, which is impacted by psychological factors, principals find themselves in a dilemmatic space between the psychological demands of their work and a shrinking capacity to be successful. That is, psychological and emotional states are strong influencers of leadership self-efficacy (Bandura, 1977; Tschannen-Moran and Gareis, 2004), so it stands to reason that negative psychological states induced by the work environment would weaken principals' beliefs in their ability to succeed. In a post-COVID, polycrisis, and increasingly divisive political times, mental health in schools has become a critically important issue that has been understudied in educational leadership. While researchers have explored the relationship between occupational burnout and leadership self-efficacy (Skaalvik, 2020), few studies have examined the role of mental health conditions, such as anxiety and depression, on leadership self-efficacy and, specifically, the subcomponents which include instructional, management, and moral leadership self-efficacy. Further, there remains a gap in whether work-stress induces mental health struggles which then impact perceptions of self-efficacy (mediation) and/or whether the interaction between work-stress and leadership self-efficacy is affected by mental health symptoms (moderation). Thus, we ask the following research questions:

RQ1. How do principals' perceptions of work-stress and demographic factors predict principals' self-efficacy including instructional, moral, and management self-efficacies?

RQ2. Do principals' mental health symptoms (i.e. anxiety and depression) mediate and/or moderate the relationship between work-stress and leadership self-efficacies?

Critical role of leadership self-efficacy in principals' leadership practice

In school leadership, different institutional goals are set by principals or headmasters, and the achievement of these goals depends on their self-efficacy (Schrik and Wasaga, 2019; Tschannen-Moran and Gareis, 2007). Principals' self-efficacy is defined as the individual's belief in their ability to organize and execute a course of action within the school system aimed at a desired outcome (Bandura, 1977; Tschannen-Moran and Gareis, 2007). Drawing from Bandura's (1977) self-efficacy theory and previous educational leadership literature, principals with high self-efficacy tend to manage school resources effectively and coordinate both teachers and students toward school improvement (Hesbol, 2019; McBrayer *et al*., 2020).

Studies have explored, developed, and tested leadership self-efficacy in schools and established that principals who have strong perceptions of self-efficacy along instructional, moral, and managerial domains are more likely to serve as agents of positive school change by enhancing the effectiveness of teachers and success of students (Dahlkamp *et al.*, 2018; Schrik and Wasoga, 2019; Tschannen-Moran and Gareis, 2007). Tschannen-Moran and Gareis (2007) reported that principals' sense of efficacy was significantly, negatively related to principals' work alienation and positively related to trust in teachers, students, and parents. In a multi-level, quantitative study in Southeast Texas, United States, researchers found that principals with high moral self-efficacy cultivated more positive school climates, which significantly predicted higher teacher retention (Dahlkamp *et al.*, 2018). Similarly, Hesbol (2019) reported that US principals who view schools as a learning organization demonstrated higher levels of management self-efficacy which resulted in confident administrative supports for teachers embracing innovation, creativity, and collaboration for school improvement.

Studies outside of the US context have found similar results. In Norway, Skaalvik (2020) found that principals with higher instructional self-efficacy demonstrated positive engagement with teachers and students leading to school improvement and increased student academic outcomes. During the COVID-19 pandemic, school leaders in Germany who possessed high self-efficacy were more innovative in their risk-taking and problem-solving when leading their schools (Röhl *et al*., 2022). Similarly, in Turkey, researchers found that the relationship between principals' self-efficacy and innovation in their work was mediated by principals' entrepreneurial tendencies (Mavi *et al*., 2023). The extant literature demonstrates theoretically and empirically the importance of high leadership self-efficacy in effective leadership within a global context.

The negative impacts of work-stress on leadership self-efficacy

Principals' belief in their efficaciousness plays an important role in actualizing their leadership efforts; however, self-efficacy is threatened by the demands of the job (Skaalvik, 2020). Bandura's (1977) self-efficacy theory identified psychological and emotional states as one of the four main factors that influence individuals' beliefs in their ability. For principals, who perform their duties in relatively under high-pressure environments with numerous administrative demands, conflicting roles, limited resources, and emotional challenges, the negative impacts on self-efficacy are disproportionate (Skaalvik, 2020; Wittmers and Maier, 2023).

In a national US study, nearly 85% of principals experience frequent job-related stress which is higher than teachers and the general working population (Steiner *et al*., 2022). Similarly, a National Association of Secondary School Principals survey of America's school leaders found that more than half of the principals sampled experience high work-stress and are contemplating early retirement or career change (NASSP, 2022). In Belgium, Yildirim and Dinc (2019) identified several principal stressors, such as role conflict, role ambiguity, accountability pressure, and administrative workload, which in the long run contributed significantly to principal stress and occupational burnout.

Empirical research shows that principals who are confronted with high work-related stress experience decreased self-efficacy and struggle with effective coordination of teachers and students, resource management, and ethical decision-making (Skaalvik, 2020; Wittmers and Maier, 2023). Specifically, Skaalvik (2020) found that self-efficacy for instructional leadership in Norwegian principals was negatively related to burnout through emotional exhaustion and increased principals' motivations to quit. Similarly, Özer (2013) found that Turkish principals generally possess high levels of leadership self-efficacy but self-efficacy accounted for nearly 15% of variance in principals' occupational burnout.

In the United States, researchers have also examined the impact of work-stress on school leaders' self-efficacy. One of the researchers in this study conceptualized the widespread impacts of work-stress on principals' self-efficacy through health consequences of chronic stress (Su-Keene *et al*., 2024a). In their small mixed-method study, researchers found that principals' work-stress differed significantly during different times of the school year which impacted perceptions of self-efficacy, especially managing their workload (Su-Keene *et al*., 2024a). In a follow-up longitudinal study, the researchers found that work-stress and management self-efficacy fluctuated in parallel throughout the school year, though instructional and moral self-efficacy gradually improved throughout the school year (Su-Keene and DeMatthews, 2025). The extant literature highlights the important role that psychological and emotional challenges have on leaders' self-efficacy and the downstream effects on actualizing leadership practices.

Work-stress and mental health: related, but distinct constructs

Psychological stress and mental health are different constructs that are colloquially and interchangeably used. Work-stress is a form of psychological stress that "occurs when an individual perceives that environmental demands tax or exceed his or her adaptive capacity" (Cohen *et al*., 2007). To date, there are several theories of occupational stress including transactional stress and coping theory (Lazarus and Folkman, 1984) defining stress as an imbalance between perceived strain and available coping mechanisms, and job demands-resource theory (Bakker and Demerouti, 2007) where work-related stress manifests due to an imbalance between perceived work demands and the ability to ameliorate these demands. "Operationally, studies of psychological stress focus either on the occurrence of environmental events that are consensually judged as taxing one's ability to cope or on individual responses to events that are indicative of this overload, such as perceived stress and event-elicited negative affect" (Cohen *et al*., 2007). As such, occupational stress in leadership is subjectively experienced based on the principals' appraisal of the stressor, the available resources or coping strategies and the context in which principals find themselves.

In contrast, mental health is a more elusive construct that can take on multiple meanings. The World Health Organization defines mental health as "a state of well-being in which the individual realizes his or her own abilities, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to his or her community" (WHO, 2004). Other scholars have criticized this definition as a western, colonial construction and defined mental health as

> A dynamic state of internal equilibrium which enables individuals to use their abilities in harmony with universal values of society. Basic cognitive and social skills; ability to recognize, express and modulate one's own emotions, as well as empathize with others; flexibility and ability to cope with adverse life events and function in social roles; and harmonious relationship between body and mind represent important components of mental health which contribute, to varying degrees, to the state of internal equilibrium. (Galderisi *et al*., 2015, p. 231-232)

Though mental health conditions can be genetically predisposed, stress, especially in the context of education and work, has been empirically shown to catalyze and exacerbate mental health concerns (Anniko *et al*., 2019; Law *et al*., 2020). In addition, two common dimensions

of mental health – anxiety and depression – have been noted as important consequences of chronic work-stress in school principals (Carr, 1994; Headey *et al*., 1993). In his clinical work with school leaders, Carr (1994) argued that

> Anxiety is viewed as a psychological manifestation of stress. From a psychoanalytic perspective, anxiety is the major concept associated with feelings of tension and being under threat or in a danger situation (stressors). The term depression is used to describe the phenomena experienced as a state of helplessness. (p. 23)

VandenBos (2015) argues that anxiety is an emotional state of apprehension linked with impending danger or misfortune. On the other hand, depression is seen as a negative affective state of misery ranging from mild discomfort to severe sadness, which can impact daily activity (VandenBos, 2015). Though anxiety and depression may share certain common features in relation to mental illness, they present different mental and physical outcomes.

Compared to work-related stress and stressors, less is known about principals' mental health in educational leadership. In the United States, a couple of recent studies have highlighted principals' depression and anxiety levels descriptively (Doyle Fosco *et al*., 2025; Steiner *et al*., 2022). Studies have also documented how work-stress is correlated to anxiety and depression in principals (Su-Keene *et al*., 2024a). However, no studies to date have examined the role of mental health, specifically anxiety and depression symptoms, in the relationship between work-stress and leadership self-efficacy.

Current study: a guiding framework

Given that work-stress and mental health conditions are two related, but distinct aspects of principals' overall mental health, the purpose of this study is to examine how the two operate together and/or independently to impact principals' perceptions of leadership self-efficacy. That is, we seek to examine whether anxiety and/or depression significantly mediates and/or moderates the impact of work-stress on principals' perceptions of leadership self-efficacy (Figure 1). We hypothesize that mental health symptoms (i.e. anxiety and depression) mediate the relationship between work-stress and overall leadership self-efficacy and its subscales (i.e. instructional, moral and management self-efficacy). That is, work-stress induces mental health symptoms that then impact principals' perception of self-efficacy. Additionally, we hypothesize that mental health symptoms also moderate the relationship between work-stress and leadership self-efficacy. That is, principals experiencing anxiety and depression symptoms are more susceptible to the negative effects of work-stress on leadership self-efficacy. Conducting a moderation in addition to a mediation is critical for teasing out whether mental health, induced by other sources, such as personal stressors or genetic predispositions, influences the magnitude of the work-stress and leadership self-efficacy relationship.

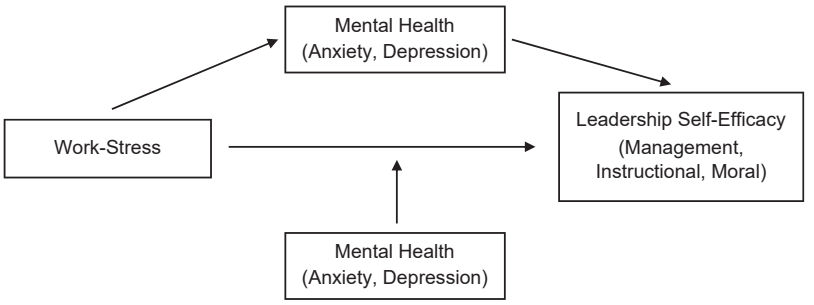

Figure 1. Guiding framework for current study. **Source(s)**: Authors' own work

Methods

Sample

Public, non-charter school principals across the state of Texas, United States, were recruited by email to participate in a survey between March and May of 2024 and 2025 ($n = 206$). Emails were collected across rural and non-rural school districts from school websites. Data were collected through convenience sampling and may be subjected to self-selection bias for participants with deep interest in health and well-being. The response rate was approximately 2%. A breakdown of sample characteristics can be found in Table 1.

Measures

The survey included personal and school demographic questions along with validated scales that measured perceptions of stress adapted to the work environment (Perceived Stress Scale [PSS-4]; Cohen *et al*., 1983; four questions, two reverse scored, on a 0–4 Likert scale), anxiety symptoms screener (General Anxiety Disorder [GAD-7]; Spitzer *et al*., 2006; seven questions, 0–3 Likert scale), depression symptoms screener (Patient Health Questionaire [PHQ-9]; Kroenke *et al*., 2001; nine questions, 0–3 Likert scale), and perceptions of leadership self-efficacies (overall, instructional, moral, and management self-efficacy; Tschannen-Moran and Gareis, 2004; 21 questions, seven questions per subscale, 1–9 Likert scale). After reviewing the surveys for incomplete responses, duplications, and confirming leadership positions, data from 184 to 194 principals were used for data analyses. Sample size varied due to missing data points in specific scales and type of analysis. Data were organized into demographic, psychological, and organizational variables. Specifically, demographic variables included principals' race (white and principals of color), ethnicity, age, gender, and years of experience.

Table 1. Sample demographics

Variable (factor)	Category	Freq. (percent)
Gender	Male	66 (34.02%)
	Female	128 (65.98%)
Age (years)	25–34 years	3 (1.55%)
	35–44 years	64 (32.99%)
	45–54 years	96 (49.48%)
	55–64 years	15.98 (15.98)
School level	Elementary	45 (23.20%)
	Secondary	149 (76.80%
Geographical location	Rural	23 (11.92%)
	Non-rural	170 (88.08%)
Race	White or Caucasian	149 (76.80%)
	Black or African American	31 (15.98%)
	American Indian/Native American or Alaska	2 (1.03%)
	Asian, Native Hawaiian or Other Pacific Islander	3 (1.55%)
	Prefer Not to Say	4 (2.06%)
	Others	5 (2.58%)
Ethnicity	Hispanic	53 (27.46%)
	Non-Hispanic	140 (72.54)

Variable (continuous)	Mean	SD
Years of experience	8.29	6.41
% FARMs	67.30	27.45

Source(s): Authors' own work

School demographic variables included grade level (elementary and secondary), the percent free and reduced meals (FARMs), and geographic location (rural and non-rural). Psychological variables included perceptions of work-stress, anxiety symptoms, and depression symptoms. Organizational variables included overall leadership self-efficacy which consists of instructional, management, and moral self-efficacy.

Data analysis

All analyses were performed in SPSS. Reliability tests of depression (Cronbach's $\alpha = 0.886$), anxiety (Cronbach's $\alpha = 0.914$), work-stress (Cronbach's $\alpha = 0.743$), instructional self-efficacy (Cronbach's $\alpha = 0.889$), management self-efficacy (Cronbach's $\alpha = 0.884$) and moral self-efficacy (Cronbach's $\alpha = 0.839$) all demonstrated excellent or acceptable internal consistency. All items showed acceptable item–total correlations, and thus, no items were removed from the instruments. We conducted a bivariate correlation analysis to explore initial relationships between psychological variables and leadership self-efficacies. We then conducted a two-step regression strategy to examine predictors of principals' self-efficacy across multiple groups of variables. In the first stage, personal demographics, school demographic factors and work-stress were used to model overall leadership self-efficacy and its subscales (instructional, management and moral). Specifically, these factors included age, gender, race, ethnicity, school level, geographic location, years of experience, FARMs and work-stress. All predictors were entered simultaneously using the Enter method. Collinearity diagnostics (VIF and Tolerance) confirmed that there were no severe violations. These exploratory models served as diagnostic tools to identify potential relationships while also screening for multicollinearity.

We then reduced the models and retained predictors if they were statistically significant in the full model, if they consistently trended toward significance, or if prior literature supported their inclusion as important demographic or contextual covariates. This step ensured that the models remained parsimonious and interpretable while maintaining theoretical integrity. Sample size was also considered during the model specification process. With approximately 181–194 cases across models, including a large number of predictors risked overfitting, and that is why we took a two-step approach. Methodological guidelines recommend maintaining a ratio of cases to predictors between 10:1 (liberal) and 15:1 (conservative) (Babyak, 2004; Green, 1991; Peduzzi *et al*., 1996).

We examined whether anxiety and/or depression mediated the effects of work-stress on leadership self-efficacy. Mediation analyses identify sequential pathways – that is, whether work-stress affects self-efficacy through anxiety and/or depression, and thus, accounted for the relationship between work-stress and principals' self-efficacies. These analyses were carried out using PROCESS Model 4 (Hayes, 2022), which estimates indirect effects with 5,000 bootstrap samples and heteroscedasticity-consistent standard errors. Separate mediation models were estimated for overall, management, moral, and instructional self-efficacy, with covariates included based on predictors in the reduced regression models.

Moderation analyses were also conducted to examine whether principals' anxiety and/or depression altered the strength of the relationship between work-stress and leadership self-efficacy. In contrast to mediation, moderation analyses test conditional effects, asking whether the strength of the work-stress–self-efficacy relationship differs across levels of anxiety or depression. These analyses were implemented using PROCESS Model 1 (Hayes, 2022), which estimates conditional effects of the predictor (work-stress) on the outcome (self-efficacy) at different levels of the moderator (anxiety and/or depression). Separate moderation models were estimated for all leadership self-efficacies. Each model included covariates identified in the reduced regression models to ensure consistency and theoretical coherence. Continuous predictors were mean-centered prior to analysis to reduce multicollinearity and facilitate interpretation of interaction terms. Statistical significance of moderation was evaluated using the interaction term (Work-stress $\times$ Anxiety) or (Work-stress $\times$ Depression) and changes in explained variance (ΔR^2).

Findings

Work-stress negatively predicts leadership self-efficacies

To answer our first research question (How do principals' perceptions of work-stress and demographic factors predict principals' self-efficacy including instructional, moral, and management self-efficacies?), we conducted a bivariate correlation analysis that confirmed significant relationships between psychological variables and leadership self-efficacies (Table 2). Our full-model regression analysis revealed that work-stress, gender, and school level were statistically significant predictors of principals' overall self-efficacy; work-stress and school level were significant and gender and race were marginally significant ($p < 0.10$) predictors of management self-efficacy; work-stress and gender were significant and geographic location was a marginally significant predictor of instructional self-efficacy; and work-stress was the only significant predictor of moral self-efficacy. We included these significant and marginally significant predictors in the reduced regression model to increase parsimony and maintain theoretical integrity.

The reduced regression model (Table 3) for overall leadership self-efficacy, including work-stress, gender, and school level, was statistically significant, $F(3, 189) = 21.63$, $p < 0.001$, and explained 25.6% of the variance (adjusted $R^2 = 0.244$). Work-stress was a strong and significant negative predictor ($\beta = -0.49$, $p < 0.001$), and gender (female) was a significant positive predictor ($\beta = 0.14$, $p = 0.049$) while school level ($\beta = 0.11$, $p = 0.13$) was not significant. For management self-efficacy which includes work-stress, race, gender and school level, the model was statistically significant and explained 35.9% of the variance (adjusted $R^2 = 0.35$), $F(4, 180) = 25.20$, $p < 0.001$. Work-stress was a strong negative predictor ($\beta = -0.55$, $p < 0.001$) while gender (female) ($\beta = 0.14$, $p = 0.04$) and school level (secondary) ($\beta = 0.22$, $p = 0.001$) were positive predictors of management self-efficacy. Race was only marginally significant ($\beta = 0.10$, $p = 0.09$). For instructional self-efficacy, the reduced model, which included work-stress, gender and geographic location, was significant and explained 13.8% of the variance (adjusted $R^2 = 0.12$), $F(3,188) = 10.01$, $p < 0.001$. Work-stress remained a significant negative predictor ($\beta = -0.37$, $p < 0.001$). Gender was marginally significant ($\beta = 0.12$, $p = 0.07$) and geographic location was no longer a significant predictor ($\beta = 0.10$, $p = 0.14$). And lastly, for moral self-efficacy, the model included only work-stress ($\beta = -0.37$, $p < 0.001$) which was statistically significant explaining 13.4% of the variance, $F(1,191) = 29.56$, $p < 0.001$.

Full and reduced regression models highlight work-stress as a significant and consistent predictor of lower leadership self-efficacies. The magnitude of work-stress was greatest for principals' perceptions of management self-efficacy which focuses on their confidence to navigate various demands in their jobs (e.g. time demands, paperwork and managing schedules). While still significant, work-stress had a smaller impact (R^2) on principals' confidence in their instructional and moral leadership capabilities. Further, this set of findings

Table 2. Bivariate correlation of psychological factors and leadership self-efficacies

Variable	*M*	SD	1	2	3	4	5	6	7
1. Work stress	6.47	2.39	–						
2. Anxiety	10.02	5.45	0.665*	–					
3. Depression	9.08	6.03	0.572*	0.823*	–				
4. Total self-efficacy	6.79	1.12	0.487*	0.416*	0.438*	–			
5. Management self-efficacy	6.19	1.55	0.561*	0.516*	0.537*	0.879*	–		
6. Instructional self-efficacy	7.03	1.14	0.330*	0.303*	0.317*	0.888*	0.618*	–	
7. Moral self-efficacy	7.15	1.11	0.366*	0.239*	0.250*	0.897*	0.640*	0.808*	–

Note(s): Values are the Pearson correlation coefficients. *$p < 0.001$

Source(s): Authors' own work

Table 3. Reduced regression models for leadership self-efficacies

	B	Std. err.	*β*	*p*
Overall leadership self-efficacy				
Gender (female)	0.326	0.165	0.137	0.049
School level (sec.)	0.244	0.158	0.107	0.125
Work-stress	−0.233	0.030	−0.493	<0.001
$F(3,189) = 21.628$				
R^2 (adj. R^2) = 0.256 (0.244)				
$p < 0.001$				
Management self-efficacy				
Gender (female)	0.442	0.215	0.136	0.041
Race (POC)	0.390	0.235	0.100	0.099
School level (sec.)	0.672	0.208	0.216	0.001
Work-stress	−0.356	0.039	−0.554	<0.001
$F(4,180) = 25.204$				
R^2 (adj. R^2) = 0.359 (0.345)				
$p < 0.001$				
Instructional self-efficacy				
Gender (female)	0.298	0.166	0.124	0.073
Geography (non-*R*)	0.363	0.242	0.104	0.136
Work-stress	−0.175	0.033	−0.365	<0.001
$F(3,188)$	10.01			
R^2 (adj. R^2)	0.138 (0.124)			
p	<0.001			
Moral self-efficacy				
Work-stress	−0.171	0.031	−0.366	<0.001
$F(1,191) = 29.560$				
R^2 (Adj. R^2) = 0.134 (0.129)				
$p < 0.001$				

Source(s): Authors' own work

suggests that the psychological aspect of the principalship is a substantial factor shaping leaders' perceptions of self-efficacy, more so than any personal or school demographic factors.

Depression mediates work-stress and leadership self-efficacy relationships

To answer our second research question (do principals' mental health symptoms [i.e. anxiety and depression] mediate and/or moderate the relationship between work-stress and leadership self-efficacies?), we conducted respective analyses. Our mediation analyses revealed that anxiety was not a significant mediator of any work-stress and leadership self-efficacy relationships. While work-stress significantly predicted anxiety, the indirect effect of work-stress on the total and subcomponents of leadership self-efficacy was not significant, indicating no mediation.

Depression was a strong, significant mediator though the results varied by leadership self-efficacy component. For total self-efficacy, work-stress ($B = -0.17$, $SE = 0.04$, $p < 0.001$) and gender (female) ($B = 0.36$, $SE = 0.16$, $p = 0.025$) remained significant predictors, whereas school level was not significant. Work-stress ($B = 1.45$, $SE = 0.14$, $p < 0.001$) was a strong positive predictor of depression, and the indirect effect of work-stress on total self-efficacy through depression was significant ($B = -0.16$, 95% CI [−0.13, −0.01]), indicating partial mediation. The model explained 30.3% of the variance in total self-efficacy. A similar pattern emerged for management self-efficacy. Work-stress ($B = -0.23$, $SE = 0.06$, $p < 0.001$),

gender (female) ($B = 0.50$, $SE = 0.22$, $p = 0.022$), and school level (secondary) ($B = 0.63$, $SE = 0.22$, $p = 0.004$) remained significant predictors, whereas race was not significant. Work-stress ($B = 1.39$, $SE = 0.15$, $p < 0.001$) and race (principals of color) ($B = -2.31$, $SE = 0.84$, $p = 0.006$) significantly predicted depression. The indirect effect of work-stress on management self-efficacy through depression was significant ($B = -0.18$, 95% CI [−0.20, −0.04]), indicating partial mediation. The model explained 42.8% of the variance in management self-efficacy. For instructional self-efficacy, depression was not a significant mediator though trended toward significance ($B = -0.12$, 95% CI [−0.13, −0.01]). Work-stress ($B = -0.13$, $SE = 0.05$, $p = 0.004$) and gender (female) ($B = 0.33$, $SE = 0.16$, $p = 0.04$) remained significant predictors, whereas geographic location was not significant. Work-stress ($B = 1.52$, $SE = 0.14$, $p < 0.001$) and geographic location (non-rural) ($B = -3.33$, SE = 1.10, $p = 0.002$) were strong, significant predictors of depression in the instructional self-efficacy model. Depression was not a significant mediator of work-stress and moral self-efficacy (Table 4). These findings suggest a significant relationship between high work-stress, depression, and lower perceptions of leadership self-efficacy, especially in principals' ability to manage their work.

To determine whether the effects of work-stress on self-efficacy varied depending on principals' anxiety and depression symptoms, moderation analyses were conducted. Across all eight moderation models, no significant or even marginally significant interaction effects emerged between work-stress and either anxiety or depression ($p > 0.10$). In other words, neither principals' degree of anxiety nor depression symptoms changed the strength of the work-stress and leadership self-efficacy relationships. Instead, both variables exerted independent negative main effects on self-efficacy – particularly within the management domain – indicating an additive rather than interactive pattern of influence, in contrast to the sequential relationships tested in the mediation analyses.

Discussion

Across analyses, work-stress consistently emerged as the strongest negative predictor of principals' perceptions of leadership self-efficacies. Our results show that the degree of mental health symptoms did not influence the strength (i.e. moderate) of the work-stress and leadership self-efficacy relationship. However, mental health was a significant mediator. That is, work-stress not only directly predicts leadership self-efficacy and each subscale but also predicts depression symptoms that negatively predict principals' leadership self-efficacy, especially in management. This finding could be due to the unique symptoms of depression, such as loss of interest in activities, feelings of hopelessness of worthlessness, difficulty concentrating and making decisions, and changes in memory (National Institute of Mental Health, 2025) that impact leaders' confidence in their abilities more so than anxiety symptoms such as excessive worrying. The impact of depression on self-efficacy also aligns with other

Table 4. Anxiety and depression as mediators of the relationship between work-stress and leadership self-efficacies

Relationship	Anxiety mediator	Depression mediator
Work stress → Overall self-efficacy	0.03 (0.04)	−0.16 (0.03)*
Work stress → Management self-efficacy	−0.02 (0.05)	−0.18 (0.04)**
Work stress → Instructional self-efficacy	0.02 (0.04)	−0.12 (0.04)†
Work stress → Moral self-efficacy	0.07 (0.04)	−0.075 (0.03)

Note(s): Entries are standardized indirect effects with bootstrap standard errors in parentheses
$^{\dagger}0.05 < p < 0.10$, $*p < 0.05$, $**p < 0.01$

Source(s): Authors' own work

studies in the workplace and in educational contexts among students and teachers (Chang *et al*., 2011; Devos *et al*., 2012; Sawatzky *et al*., 2012). Similarly, it aligns with seminal research found in Bandura *et al*.'s (1999) work with depression and self-efficacy in children. Together, these results suggest that while stress, anxiety, and depression each contributes to diminished confidence in principals' ability to be effective leaders, the impact of work-stress on leadership self-efficacies remains robust and depression, in particular, is a consequence of work-stress and a contributor to lower leadership self-efficacy.

We also observed several significant demographic predictors of leadership self-efficacy. We noticed a trend suggesting that female principals reported higher perceptions of leadership self-efficacies. Additionally, principals in secondary schools reported higher perceptions of management self-efficacy compared to principals in elementary schools. This could be a result of a larger leadership team, potentially multiple assistant principals, to assist with typically larger schools. Principals' race, those who identified as principals of color, approached statistical significance in predicting positive perceptions of management self-efficacy. This is contrary to literature in the field that has identified principals of color as being more susceptible to psychological strain and therefore negative perceptions of managing workload (Krull and Robicheau, 2020; Steiner *et al*., 2022). Rather, our findings suggest that white principals and principals in rural schools are more likely to experience depression. Scholars have suggested that principals of color are perhaps more resilient and able to tap into cultural capital to support and cope with psychological challenges of the profession (Koh, 2025; Yosso, 2005). Similarly, rural areas tend to have less mental health supports which may reflect the experiences of rural principals in this sample (Gamm *et al*., 2010; Hastings and Cohn, 2013). Additional data collection is needed to fine-tune variables that approached significance like race for management self-efficacy and geographic location for instructional self-efficacy since these factors have been descriptively suggested in the literature (Darmody and Smyth, 2016; Steiner *et al*., 2022).

Our study suggests that principals who are experiencing high work-stress and depression symptoms are at increased risk for lower self-efficacy and thus decreased ability to be effective in their positions (Hesbol, 2019; Tschannen-Moran and Gareis, 2007). Given that self-efficacy is tied to principal retention and turnover, work-stress and depression are not just personal health issues but also critical organizational issues that require additional research and changes in preparation and policy. Additionally, stress-induced mental health challenges among principals and headmasters, especially after COVID-19, have been an issue globally, supported by empirical studies from Australia, Finland, and Belgium (Arnold *et al*., 2023; Elomaa *et al*., 2023; Yildirim and Dinc, 2019). While the pandemic no longer has the same impact as it once did, principals and headmasters are facing numerous challenges, such as continuous underfunding, increased politicization of schools, dehumanizing migrant displacement, destabilization of political ties and ongoing war (Striepe and Cunningham, 2022; Virella, 2025). Our study aligns with others that have highlighted the criticality of supporting leadership well-being as an organizational endeavor (Mahfouz, 2020; Wang, 2024). However, our study extends this knowledge base by providing evidence that depression is a significant and distinct construct that links work-stress and principals' leadership self-efficacy, particularly in how they manage their workload.

Limitations

There are several limitations to be addressed in this study. First, the cross-sectional design limits causal interpretation. Since individuals' data were collected at single time points, the causality between high work-stress and lower leadership self-efficacy is limited. Future research using longitudinal or repeated-measures designs would help clarify the direction of these relationships and determine how they evolve over time. Additionally, all data collected are based on self-report measures. This means that responses reflected principals' perceptions and may have been influenced by their emotional state, recall accuracy or a desire to present

themselves positively. Although self-report is appropriate for assessing personal experiences such as stress and confidence, future studies could strengthen validity by incorporating additional data sources such as observational ratings, peer feedback, and physiological measurements of stress. Our sample is also geographically limited to public school principals in Texas. As such, the findings may not generalize to principals in other states or those working in private, charter or international school contexts. Future studies would benefit from broader sampling to examine whether the same relationships hold across diverse educational systems and sociocultural environments. Finally, the study relied solely on quantitative data. Although this allowed for the identification of statistical relationships among stress, mental health, and self-efficacy, it did not capture the nuanced experiences or contextual factors that shape principals' well-being and confidence in their roles. Mixed-methods approaches that integrate interviews or open-ended responses could yield deeper insight into how individual and organizational factors interact to influence leadership self-efficacy. These limitations highlight the need for continued research that combines quantitative rigor with contextual and longitudinal depth to better understand how stress and mental health shape leadership self-efficacy in complex educational environments.

Implications for policy and practice

Findings from this study highlight the personal and organizational costs of stress and mental health among school leaders. Thus, there is a critical need to reduce work-related stress in the principalship and addressing mental health, especially those experiencing depression. Based on our findings, principals who experience high work-stress and depression are at greatest risk for feeling diminished success in their work, especially in their ability to manage demands. However, the factors influencing work-stress and inducing mental health struggles are systemic. Therefore, we end with holistic recommendations to support principals individually and systemically.

Principal support: Unlike other fields that focus on human work (e.g. counseling and social work), educational professionals do not receive the critical training for self-care, stress management, and secondary trauma management (DeMatthews *et al.*, 2021). Thus, we recommend that principals engage in therapeutic activities, counseling services, planned time off, and cognitive behavioral strategies, such as cognitive reframing and boundary drawing, to support their overall psychological health. Researchers have highlighted the importance of individual coping, mindfulness and stress management in supporting principals' sustainability in the profession given that school improvement efforts take extensive time to come to fruition (Mahfouz, 2020; Rice and Williams, 2022; Su-Keene and DeMatthews, 2022).

Organizational changes: Primary sources of work-stress and poor mental health are due to high workloads and expanding, ambiguous expectations (Doyle Fosco *et al.*, 2025; Mahfouz, 2020). School systems and district leadership need to conduct workload audits to reduce non-essential tasks. Districts can also provide role clarity by drafting clearer expectations in performance evaluation and standards. Additionally, districts need to provide innovative support systems for principals' mental health such as paid time leave for healthcare appointments or in-house counseling services that typically take place within traditional working hours and conflict with school leaders' busy schedules. School districts and central administration can also utilize principals' work-stress and mental health data as indicators of sustainability risk in addition to including policies and leadership standards that enhance leaders' well-being.

Leadership preparation programs: Leadership preparation programs play a critical role in training the next generation of principals who can sustain the increasing challenges and landscape of polycrisis contexts (Virella, 2025). We suggest that preparation programs partner with programs focused on applied health, such as clinical counseling, nutrition, and kinesiology, to develop interdisciplinary courses that can train future school leaders to be prepared for the unique psychological challenges of the job and sustainable leadership for lasting school improvement efforts.

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