Original Article

Moroccan teachers' perceived stress: the role of self-efficacy

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ABSTRACT

Background

This study analyzes the effect of self-efficacy on perceived stress among experimental science teachers in public high schools in the city of Tetouan, Morocco.

Methods

We used two instruments in this cross-sectional study to measure perceived stress and self-efficacy rates among 258 participating teachers. The Perceived Stress Scale (PSS-10) assessed stress levels, while the Teacher Sense of Self-Efficacy Scale (TSES) measured self-efficacy across three dimensions: teaching strategies, student engagement, and classroom management.

Results

There is a significant correlation between teachers' perceived stress and the three dimensions of the TSES. Age, years of teaching experience, number of classes taught, and regular physical activity were all significant indicators of reported stress. We found that weekly working hours and physical activity negatively influenced the level of self-efficacy.

Conclusion

These findings emphasize the pivotal significance of self-efficacy in diminishing stress and alleviating its detrimental consequences. Hence, it is imperative to prioritize the improvement of teachers' psychological well-being.

Keywords

perceived stress; self-efficacy; teachers; mental health

INTRODUCTION

In recent decades, there has been an increase in research on self-efficacy. This is due in part to the solid theoretical foundations established by Bandura (1977) [1], which give educators a clear research framework. Another justification is the link to many real-world issues like academic performance, self-directed learning, and motivation [2–5]. Additionally, recent empirical studies of teacher efficacy have made substantial use of self-efficacy and have found strong correlations between it and classroom goal setting, job happiness, and teacher engagement [6–13]. And, common definitions of self-efficacy describe teacher efficacy as an evaluation of a teacher's capacity to achieve desired student

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Bangladesh Journal of Medical Science Vol. 24 No. 02 April'25

DOI: https://doi.org/10.3329/bjms.v24i2.81710

engagement and learning results [14].

Teaching experiences positively affect self-efficacy, whereas life and work experiences negatively affect self-effectiveness [15]. Researchers have discovered time and time again that job stress and teacher behavior have a significant impact on student achievement [6,10,12,13,16]. Low self-efficacy leads to failure of coping activities, improper resolution of stress causes, and chronic job stress in teachers, which can ultimately result in burnout [17–20].

Work-related stress is a major issue in the field of occupational health and safety [21–24]. Compared to other occupations in this field, studies have cited the teaching profession as having one of the highest levels of work-related stress [25–31], a global phenomenon that is on the rise [32,33]. Indeed, stress has become the main indicator of the mental health of teachers [34]. In this study, we will attempt to demonstrate that teachers' sense of efficacy has a corrective effect on perceived stress. We will also assess teachers' stress levels and sense of efficacy in a particular context such as Morocco.

METHODS AND MATERIALS:

Participants

This was an observational, cross-sectional study of 258 public high school experimental science teachers in Tetouan, Morocco. Only 147 teachers responded to all questions. Schools were selected by random sampling.

Data collection

In terms of data collection, it took place in April 2021. Once the provincial directorate of education granted the necessary authorization, each participating teacher received the questionnaires. In addition to sociodemographic factors and teaching load variables, the questionnaire contains two measurement instruments:

- Cohen was the creator of the 10-item PSS (Perceived Stress Scale) [35], an assessment tool. We use a Likert scale from 1 (never) to 5 (very often) to assess feelings and thoughts [36]. Low stress is defined as a score under 25, while excessive stress is defined as a score over 40 [37].
- De-Stercke adapted the 12-item TSES (Teacher Sense of Self-Efficacy Scale) [14] into the French language [38]. Its structure has three subscales: teaching strategy self-efficacy, student engagement self-efficacy, and classroom management self-effectiveness. We evaluate teachers' sense of self-efficacy (TSES) on a scale that ranges from 1 (strongly disagree) to 9 (strongly agree). We designed the instrument to address validity and reliability issues with other existing measurement instruments, as well as to better reflect the types of tasks teachers face [39].

Statistical analysis

We performed the analyses using data analysis software—SPSS®, version 25. We computed descriptive statistics of demographic characteristics and professional background, as well as perceived stress and self-efficacy at work. We assessed the internal reliability of the scales using Cronbach's alpha. We ran Pearson correlation coefficients for inferential statistics to ascertain the relationship between perceived stress and the three dimensions of self-efficacy. We performed multiple linear regression analyses to identify significant predictors of perceived stress and self-efficacy among the teachers. All tests were set at a statistical significance level of $p < 0.05$, and results were reported in line with the corresponding confidence intervals, where applicable.

Ethical clearance

Ethical review and approval were waived for this study because the research does not involve vulnerable groups or sensitive issues. Informed consent was obtained from all subjects involved in the study.

RESULTS

Sociodemographic characteristics

In this study, 52% of the teachers were female. Their average age was 41 years; 78% of them were married; and their average number of years of experience was 16 years.

Table 1. Demographic and professional profile of participating teachers

Characteristics	N (%) *
Gender	
Female	76 (52)
Male	71 (48)
Age group	
21-30 years	20 (14)
31-40 years	58 (39)
41-50 years	38 (26)
Over 50 years	31 (21)
Marital status	
Married	115 (78)
Unmarried	27 (18)
Divorced	5 (4)
Years of teaching experience	
1-5 years	10 (7)
6-10 years	36 (24)
11-15 years	37 (25)
16-20 years	26 (18)
Over 20 years	38 (26)
Number of classes taught	
1-3 classes	21 (14)
4-6 classes	92 (63)
More than 6 classes	34 (23)
Class size	
10-20 students	21 (14)
21-30 students	41 (28)
More than 30 students	85 (58)
Weekly working hours	
14-16 hours	16 (11)
17-19 hours	40 (27)
20-21 hours	91 (62)
Regular physical activity	
Yes, regularly	31 (21)
Rarely	80 (54)
No	36 (25)

* N (%): number of participants (percentage).

Teachers' perceived stress

The scale has a high Cronbach's alpha, which is equal to 0.80. Of the participating teachers, 31% have low levels of stress, 68% moderate, and 1% higher. The multiple linear regression analysis revealed several significant predictors of perceived stress presented in Table 2.

Table 2. Multiple linear regression results for perceived stress

Characteristics	Coefficient B	Error Standard	t	Sig.
Gender	1.504	0.926	1.624	0.107
Age	-0.177	0.087	-2.039	0.043
Marital status	0.129	1.038	0.125	0.901
Years of teaching experience	0.223	0.094	2.373	0.019
Number of classes taught	0.562	0.254	2.215	0.028
Class size	0.015	0.061	0.253	0.801
Weekly working hours	-0.383	0.271	-1.411	0.161
Regular physical activity	-1.906	0.675	-2.822	0.005

Teachers' self-efficacy sense

Table 3 presents the descriptive data for the three dimensions of the TSES: efficacy in student engagement (ESE), efficacy in classroom management (ECM), and efficacy in instructional strategies (EIS).

The determined mean of the scale is 6.53, obtained by dividing the mean score by the number of elements. This number was quite similar to the sixth choice on the nine-point Likert-type items. The level of perceived self-efficacy among instructors is not very high, according to this research.

The TSES scale meets reliability requirements for each of the instrument's constituent dimensions (Cronbach alpha >.70). Values for all dimensions are above average.

Table 3. Descriptive statistics for the TSES-12 dimensions.

	Means	Deviation	α Cronbach's
TSES-12	6.53	1.97	0.970
ESE	5.95	1.98	0.890
EIS	6.90	2.01	0.941
ECM	6.74	2.21	0.936

The multiple linear regression analysis for the three dimensions of the TSES reveals several significant relationships.

Table 4. Multiple linear regression results for the three dimensions of self-efficacy

Variable	ESE*	EIS*	ECM*
Gender			
Coefficient B Standard Error p-value	1.675 1.260 0.186	2.909 1.245 0.021	3.142 1.400 0.026
Age			
Coefficient B Standard Error p-value	0.029 0.118 0.807	0.180 0.117 0.126	0.169 0.131 0.200
Marital status			
Coefficient B Standard Error p-value	-0.194 1.412 0.891	-2.152 1.396 0.125	-0.876 1.569 0.577
Years of teaching experience			
Coefficient B Standard Error p-value	-0.052 0.128 0.684	-0.103 0.127 0.418	-0.090 0.142 0.529
Number of classes taught			
Coefficient B Standard Error p-value	-1.379 0.345 < 0.001	-1.454 0.341 < 0.001	-1.355 0.383 0.001
Class size			
Coefficient B Standard Error p-value	-0.334 0.083 < 0.001	-0.225 0.082 0.007	-0.263 0.092 0.005
Weekly working hours			
Coefficient B Standard Error p-value	1.043 0.369 0.005	1.162 0.365 0.002	1.269 0.410 0.002
Regular physical activity			
Coefficient B Standard Error p-value	1.589 0.919 0.086	1.966 0.908 0.032	1.899 1.021 0.065

* ESE: Efficacy in Student Engagement; EIS: Efficacy in Instructional Strategies; ECM: Efficacy in Classroom Management.

The relationship between teachers' sense of efficacy and perceived stress

We used Pearson product correlations to test the null hypothesis that there is no statistically significant relationship between the perception of personal efficacy and perceived stress among Moroccan experimental science teachers. The bivariate analysis revealed statistically significant correlations between perceived stress and the three TSES dimensions.

Table 5. Bivariate analysis of Pearson correlations between the dimensions of the TSES and the PSS scale.

Variables	1	2	3	4
ESE	1			
EIS	0.861**			
ECM	0.848**	0.874**		
PSS-10	-0.241**	-0.205*	0.262**	1

** Correlation is statistically significant at the 0.01 level.

* Correlation is statistically significant at the 0.05 level.

DISCUSSION

This study aims to explore the correlation between teacher stress and self-efficacy in Moroccan high schools, according with literature recommendations concerning the interplay of personal characteristics that may influence teachers' perceived stress. The two scales used in the study are considered among the best measurement instruments in the literature: The PSS-10 is considered the best instrument to measure perceived stress, which has been the subject of much scientific research, both in terms of its satisfactory psychometric qualities and its application [40–43]. The TSES-12 has satisfactory psychometric properties and is an acceptable measure of teacher self-efficacy [44]. For the current study, the TSES and PSS showed high reliability.

This analysis highlights several significant predictors of perceived stress. We found a negative association age and stress, suggesting that older teachers typically experience lower levels of stress ($B = -0.177$, $p = 0.043$). Conversely, years of teaching experience and the number of classes taught were positively associated with stress, suggesting that more experienced teachers and those with heavier teaching loads experience higher stress levels ($B = 0.223$, $p = 0.019$; $B = 0.562$, $p = 0.028$, respectively). Regular physical activity was a significant negative predictor, implying that teachers who engage in regular physical activity report lower stress levels ($B = -1.906$, $p = 0.005$). These findings underscore the importance of considering teachers' workloads and promoting physical activity to mitigate stress. Table 2 summarizes the detailed regression results.

The analysis of self-efficacy revealed that gender plays a significant role, with female teachers reporting higher efficacy in instructional strategies and classroom management. This finding supports previous studies indicating gender differences in self-efficacy perceptions. Furthermore, the number of classes taught and class size negatively impacted self-efficacy across all dimensions, highlighting the importance of manageable teaching loads and smaller class sizes in enhancing teacher efficacy.

The current study set out to investigate the function of teachers' sense of self-efficacy in reducing work-related stress. We can conclude that stress levels rise as perceived efficacy levels fall, as the correlations showed statistically significant connections. This outcome is consistent with earlier research. Brissie found that self-efficacy might predict teacher stress levels [45] . According to Evers and Glickman's research, instructors who lack self-efficacy are more likely to experience stress and to consider quitting their jobs [46,47] . According to Friedman and Faber, teachers who experience high levels of inefficiency and low levels of classroom efficacy are anxious and pessimistic about their work and the potential of their pupils to advance [48,49 ,50].

CONCLUSION

Our study found that moderate levels of self-efficacy induced moderate levels of perceived stress in 65% of the experimental science teachers in Tetouan, and that self-efficacy plays an important role as a coping strategy to combat perceived stress in teachers. We recommend that the Ministry of National Education incorporate a specialized module on emotional management into the initial teacher training course for aspiring educators and closely monitor the progress of teachers' psychological wellbeing.

FUNDING

The authors received no funding for this research.

Conflict of interest

The authors declare no conflict of interest.

AUTHOR'S CONTRIBUTION

Conceptualization, H.G., Y.E-M. and H.H.; Methodology, H.G., Y.E-M. and H.H.; Software, H.G. and F.H.; Validation, A.S., A.M. and H.H; Formal Analysis, H.G. and F.H; Investigation, H.G. and B.D.; Resources, Z.B. and B.D.; Data Curation, H.G. and F.H.; Writing-Original Draft Preparation, H.G., F.H. and H.H.; Writing-Review & Editing, H.G., F.H. and H.H.; Visualization, H.G. and Z.B.; Supervision, Y.E-M. and H.H.; Project Administration, Y.E-M., A.S., A.M. and H.H.; Funding Acquisition, H.G., F.H. All authors have read and agreed to the published version of the manuscript.

ACKNOWLEDGEMENTS

We would like to express our gratitude to the Provincial Education Delegate of Tetouan, as well as the school administrations and the participating teachers, for allowing and facilitating the conduct of this survey.

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