



Research article

Mediating and moderating factors between economic pressure and turnover intention among school teachers in Lebanon during the ongoing crisis era

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ABSTRACT

Background: The Lebanese ongoing crisis has exposed big challenges for the education system, including low teachers' salaries and their desire to leave their jobs. Identifying key contributing factors to teacher turnover intention may help policymakers develop and implement appropriate and informed retention strategies aiming at preserving the struggling Lebanese educational system and saving costs. The present study aimed to examine the mediating role of three potential factors, i.e. job satisfaction, work-related fatigue, and psychological distress, and the moderating role of employment sector, in the relationship between economic pressure and turnover intention among teachers who work in Lebanon during the economic crisis.

Methods: We carried-out a cross-sectional, web-based study targeting a nationally-representative sample of Lebanese teachers (N = 3779, mean age = 38.33 years, 86.7 % females).

Results: The results of mediation analyses showed that physical/emotional/mental work fatigue, psychological distress and job satisfaction mediated the relationship between perceived economic pressure and turnover intentions among Lebanese teachers. Economic pressure was significantly associated with higher work fatigue, more distress, less job satisfaction and more turnover intentions. Also, more work fatigue, higher distress levels and less job satisfaction were significantly associated with higher turnover intentions. Finally, more economic pressure was significantly

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associated with more turnover intentions. On the other hand, the moderating effect of teachers' sector of employment (Private versus Public) was not significant.

Conclusion: This is among the first studies to link economic pressure, job satisfaction, work fatigue, psychological distress and turnover intentions in the teachers' psychology literature. This is also the first study on this topic in Lebanon, a country that offers a unique context and opportunity to understand the link between teachers' economic pressure and turnover intentions. The results expand on past research by showing that work-related fatigue, job satisfaction and psychological distress are three factors that underline the cross-sectional relationship between economic pressure and teachers' turnover intention. This implies that further attention of policy makers and school officials should be paid to enhance job satisfaction, decrease work fatigue and prevent psychological distress in order to retain and attract teachers at schools in Lebanon.

1. Introduction

Teaching is a multifaceted, complex, and demanding professional activity that has its specific challenges. Indeed, classrooms are complex environments where the teaching/learning experience is highly influenced by teachers' psychological characteristics [1]. As such, investigating teachers' psychology is necessary as it enables a better knowledge of the classroom practice, including social and cognitive processes taking place therein [1,2]. One important teacher-related psychological factor that has attracted research attention is turnover intention. This can be defined as a deliberate and conscious willfulness to leave the job [3]; it, thus, precedes and predicts actual turnover [4]. As a prominent indicator of turnover behavior and potential target to prevent voluntary turnover, the turnover intention has attracted much research attention over the last years [5].

Teacher turnover is a major and prevalent problem globally ([6,7], which implies, like in any other profession, high direct and indirect costs [8,9]. Beyond its economic burden, teacher turnover has also a wide range of negative effects, including detrimental impact on instruction quality and student achievement [10,11], a higher tendency to leave the profession among the most academically talented teachers [12,13] and those who work with disadvantaged and in special need students [14,15]. For these reasons, teacher turnover had been referred to as "a problematic and highly negative outcome" [13]. Identifying factors that affect intention to leave represent the first step towards effective management solutions to reducing turnover rates [16]. One of the most influential factors in determining teachers' turnover intention and decision to leave their posts is economic pressure [13,17].

1.1. The relationship between economic pressure and job turnover

Economic pressure was considered as an occupational risk that substantially threatens or interferes with workers' well-being, especially during financially unfavorable periods of global crises [18]. In particular, it has been well-established that one of the important factors closely related to turnover tendencies is employee's satisfaction with salary. The significant positive relationship between economic pressure and turnover intentions was consistently identified in different worker populations, including high school principals [19], medical reps from pharmaceutical companies [20], and marketing managers [21]. In the particular case of teaching profession, salary has proven to serve as a strong motivation for teachers to be committed to the profession [22]. Since decades now, salary has proven as a pivotal motivation in deciding either to continue teaching in the same position [23] or to leave the job [24]. For instance, a meta-analytic review by Borman et al. encompassing 34 studies on teacher attrition and retention revealed that, with respect to resources, higher teacher turnover significantly correlated with lower salaries [13]. Another review found that teachers reported preferring a job that offers high pay, and that their turnover intent is highly motivated by the salary they receive [17]. A positive relationship between low salary and desire/intention to quit the job has been reported among teachers in various settings and contexts in developing and developed countries (teachers at private Nigerian secondary schools [25], teachers at the Offinso South District of Ghana [26], private secondary school teachers in Islamabad and Rawalpindi [27], rural and urban Chinese teachers [28], US public school teachers [29]). However, such evidence has been noticeably lacking for teachers from Arab countries. Overall, the linkage between economic pressure and turnover intentions among workers in general, and teachers more specifically, is a highly relevant – yet underexplored – research topic. In addition, mechanisms underlying this relationship remain unclear. An examination of potential mediators in the context of an economic crisis may help inform effective retention strategies that keep teachers in their jobs and [establish a lasting educational environment](#).

1.2. Theoretical framework

Given the complex interplay between economic strain and turnover intention, the present study proposes a model of both work-related (i.e., job satisfaction and work fatigue) and teacher-related (i.e., psychological distress) factors mediating this relationship. The first mediator that we seek to investigate is job satisfaction. This refers to teachers' attitudes toward, and relationship with, their work environment [30]. According to Mobley's turnover theory, the process leading to the intention to leave a job then the decision to actually quit starts with experiencing dissatisfaction [31]. In line with this hypothesized model, several previous studies have demonstrated that employee's job satisfaction significantly impacts their turnover intention ([22,32–35]). On the other hand, low salaries and inadequate remuneration have been found to substantially influence teachers' job satisfaction in different settings [30, 36–39]. A recent systematic review revealed that, during times of an economic crisis, the perception of job satisfaction is largely

affected by employee's salary levels and economic benefits [40]. As such, some researchers from developing countries (Kenya [36], Cyprus [30], have recommended for government, educational policy makers, and the general public to provide teachers with higher allowances and salaries in order to increase their job satisfaction.

The second theoretical mediator explored is work fatigue. This is a multidimensional construct including emotional, mental, and physical dimensions, and reflecting the exhaustion and diminished functionality that is felt during and at the end of a working day [41]. Fatigue is frequent among teachers because of the nature of their job, which involves intense interactions with students and a high level of physical labor. According to conservation of resources theory (i.e., people's motivation to protect, retain, and obtain valued resources) [42], exposure to work fatigue resulting from energy depletion can lead to a desire to "escape" and leave the job. In the same line, many previous studies documented a positive link between emotional and mental work fatigue and turnover intention in various employees' groups (Canadian military personnel [43], U.S. civilian workers [44], Indonesian employees [45], South Korean nurses [46], and Chinese nursing assistants [47]. Earlier studies pointed to a positive link between work-related fatigue and turnover intentions among teachers [48]. More fatigue has also been associated greater economic pressure [49], more psychological distress [50], and less work satisfaction [51].

The third mediator that we intend to examine in this study is teachers' psychological distress. Teachers around the world are among professionals who exhibit the highest levels of depression, anxiety and stress [52–56]. Increased levels of distress symptoms among teachers have consistently been found to be related to perceived low or inadequate salary and poor economic situation on the one hand [55,57,58], and to turnover intention on the other hand [28,59–65]. For instance, recent studies among nurses in China [66] and Korea [67] indicated that emotional exhaustion, anxiety and depression had significant positive impacts on turnover intention. More distress has also been associated with decreased job satisfaction [68,69] and increased work fatigue [70–72].

Finally, the sector of employment (Private versus Public) might play a significant role in the relationship between economic pressure and turnover intention. Indeed, teachers working in the private sector often feel well-resourced to meet the demands of their work [73], and are paid more than those working in public schools [74]. Therefore, it can be suggested that being a public- or private-school teacher may serve as a potential moderator in the link between economic pressure and turnover intention among teachers. Based on all the above-mentioned data, we built a theoretical model illustrating how economic pressure would be associated with turnover intention, with the mediating effect of job satisfaction, work fatigue, psychological distress, and the moderating effect of employment sector (Private versus Public) (Fig. 1).

1.3. Rationale of the present study

While being a global issue, teacher turnover is particularly problematic in certain contexts, such as Lebanon. The country has been going through a "triple crisis" that has rapidly led to a deteriorated social and economic situation, starting with the October 2019 protests, followed by the emergence of the COVID-19 pandemic, and the Beirut blast [75]. During this ongoing crisis, a substantial proportion of the Lebanese people has fallen below the poverty line due to inflation and a rapidly progressing devaluation of the Lebanese Lira [75]. As a result, approximately 15 % of Lebanon's 53,000 private school teachers have immigrated since the beginning of the crisis [22]. Those who stayed have repeatedly gone on strike since 2019, protesting at non-payment or delays in the payment of wages, and demanding higher salaries and allowances. As such, the Lebanese education system is currently facing big challenges including low teachers' salaries and their desire to leave their jobs, and even their country. This now precarious situation of Lebanese

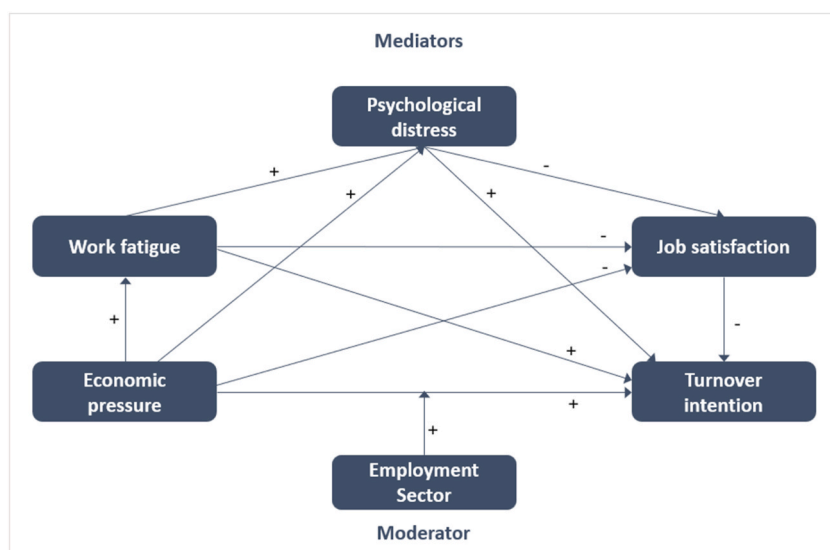


Fig. 1. Theoretical model of the mediating effect of work fatigue, psychological distress, job satisfaction and the moderating effect of employment sector between economic pressure and job turnover intention.

teachers seriously threatens the future of younger generations and society generally. We believe that identifying key contributing factors to teacher turnover intention may help policymakers develop and implement appropriate and informed retention strategies aiming at preserving the struggling Lebanese educational system and saving costs. To this end, the present study aimed to examine the mediating role of three potential factors, i.e. job satisfaction, work-related fatigue, and psychological distress, and the moderating role of employment sector, in the relationship between economic pressure and turnover intention among teachers who work in Lebanon during the economic crisis. It is hypothesized that less job satisfaction, more fatigue and greater distress will serve as partial mediators, and that employment sector will act as a moderator in the positive relationship between teachers' economic pressure levels and their turnover intention.

2. Methods

2.1. Research design

This was a cross-sectional study that was achieved between April and June 2022.

3. Data collection method

We collaborated with the Lebanese Ministry of Education and Higher Education (MEHE) to conduct this cross-sectional study and reach a representative sample of teachers from across the country. A Google forms link was created, which was sent by the MEHE to private and public schools of all governorates, including both rural and urban areas. Lebanese teachers aged 18 years and above, and who teach kindergarten, primary, complementary, and secondary levels were included in the study. Prior to filling the survey, participants were clearly informed about the objectives and the anonymity of the study. No credits of any sort were given for participation.

3.1. Minimum sample size

To have enough statistical power for the multivariable analysis, the G-power software calculated a minimum of 661 participants needed, using the minimum R^2 deviation from zero of 5 %, 5 % type I error, power of 95 % and 26 predictors to be entered in the final model. At the end, 3779 teachers out of 43681 in public and private schools (8.65 %) in 2022 filled the survey.

3.2. Questionnaire

The questionnaire, which required 10–15 min to complete, was built in Arabic, the native and official language of Lebanon. Participants were required to answer questions divided as follows.

3.2.1. Sociodemographic characteristics

It included questions about participants' age, gender, marital status, governorate, and number of children. The Household Crowding Index was calculated by dividing the number of individuals living in the same house by the number of available rooms [76]. It reflects the socioeconomic status of the family, with higher values reflecting a worse socioeconomic status.

3.2.2. Teaching characteristics

It included questions about the type of school (private/public), the grade levels taught, giving private lessons, job other than teaching, the number of schools, the average number of students taught, the number of teaching hours per week and the years of experience. We note that, according to the Lebanese teaching law, teachers (contractual and hourly) are allowed to work in more than one school at the same time, without exceeding 30 working hours per week. However, there is no laws regulating the possibility of having another job besides teaching in Lebanon.

3.2.3. Economic pressure

To evaluate economic pressure, teachers were asked to answer a single-item question "How much pressure do you feel with regard to your personal financial situation in general?" on a scale from 1 to 10, with 10 referring to overwhelming pressure. This item has been previously used in Lebanese studies among the general population ([77]).

3.2.4. Turnover Intention Scale

Turnover intention was evaluated using the 6-item Turnover Intention Scale (TIS-6) [78]. Questions' scoring ranked from with 1 (never) to 5 (always) (Cronbach's alpha in this study = 0.62).

3.2.5. Job satisfaction scale

Job satisfaction was evaluated using the 10-item job satisfaction scale [79]. Each item was scored on a seven-point Likert scale from 1 (very dissatisfied) to 7 (very satisfied) (Cronbach's alpha in this study = 0.88).

3.2.6. Three-dimensional work fatigue inventory (3D-WFI)

Physical, mental, and emotional work fatigue were measured using the 18-item 3D-WFI scale [80], which is validated in Lebanon

[81]. For all the three dimensions, answers were obtained based on a five-point Likert scale, from 0 (never) to 4 (every day) (Cronbach's alpha in this study = 0.94, 0.97 and 0.98 for the physical, mental and emotional subscales respectively).

3.2.7. DASS-8 scale

Psychological distress was assessed using the 8-item depression anxiety stress scale (DASS-8) [82] in its Arabic version [83]: 3 items for depression assessment, 3 items for anxiety assessment, and 2 items for stress assessment. Scoring was based on a four-point Likert scale, from 0 (never) to 3 (almost always) (Cronbach's alpha in this study = 0.91).

3.3. Statistical analysis

SPSS software version 23 was used to conduct data analysis. Cronbach's alpha values were computed for each scale and subscale. We had no missing data since all questions were required in the Google form. Cronbach's alpha values were recorded for reliability analysis of all scales and subscales. All scores were normally distributed, with its skewness and kurtosis varying between -2 and $+2$ [84]. The Student t was used to compare two means, whereas the Pearson correlation test was used to compare two continuous variables. A two-step hierarchical regression was conducted afterwards, with all the controls in step 1, and the substantive variables in Step 2. To check for a significant indirect effect of work fatigue, psychological distress and job satisfaction between economic pressure and job intention turnover, we conducted a mediation analysis using PROCESS v.3.4 model 6. The moderation analysis was conducted

Table 1
Sociodemographic and other characteristics of the patients (N = 3779).

Variable	N (%)
Gender	
Male	501 (13.3 %)
Female	3278 (86.7 %)
Marital status	
Single	1007 (26.6 %)
Married	2594 (68.6 %)
Divorced	127 (3.4 %)
Widowed	51 (1.3 %)
Governorate	
Beirut	309 (8.2 %)
Mount Lebanon	1200 (31.8 %)
North	1039 (27.5 %)
South	644 (17.1 %)
Beqaa	585 (15.5 %)
Teaching in public schools	
No	2558 (67.7 %)
Yes	1221 (32.3 %)
Teaching in private schools	
No	1015 (26.9 %)
Yes	2764 (73.1 %)
Teaching kindergarten level	
No	3073 (81.3 %)
Yes	706 (18.7 %)
Teaching primary level	
No	1648 (43.6 %)
Yes	2131 (56.4 %)
Teaching complementary level	
No	2183 (57.8 %)
Yes	1596 (42.2 %)
Teaching secondary level	
No	2906 (76.9 %)
Yes	873 (23.1 %)
Give private lessons	
No	2810 (74.4 %)
Yes	969 (25.6 %)
Job other than teaching	
No	3441 (91.1 %)
Yes	338 (8.9 %)
	Mean \pm SD
Age (in years)	38.33 \pm 10.11
Number of children	1.61 \pm 1.41
Household crowding index	1.16 \pm 0.59
Economic pressure	8.76 \pm 1.62
Number of schools where you teach	1.20 \pm 0.50
Average number of students taught	76.82 \pm 70.13
Number of teaching hours per week	23.06 \pm 7.07
Years of experience	13.61 \pm 9.86

Table 2
Correlation of continuous variables with teachers' turnover intention.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. Turnover	1														
2. Job satisfaction	-0.41 ^a	1													
3. Physical work fatigue	0.31 ^a	-0.10 ^a	1												
4. Mental work fatigue	0.35 ^a	-0.18 ^a	0.70 ^a	1											
5. Emotional work fatigue	0.36 ^a	-0.23 ^a	0.58 ^a	0.71 ^a	1										
6. Stress	0.37 ^a	-0.23 ^a	0.50 ^a	0.56 ^a	0.56 ^a	1									
7. Anxiety	0.34 ^a	-0.22 ^a	0.33 ^a	0.45 ^a	0.46 ^a	0.59 ^a	1								
8. Depression	0.42 ^a	-0.32 ^a	0.41 ^a	0.52 ^a	0.55 ^a	0.71 ^a	0.78 ^a	1							
9. Age	-0.11 ^a	-0.02	-0.05 ^b	-0.05 ^b	-0.02	-0.08 ^a	-0.08 ^a	-0.07 ^a	1						
10. Number of children	-0.01	-0.02	0.05 ^b	0.04 ^c	0.05 ^b	0.02	-0.04 ^c	-0.01	0.43 ^a	1					
11. Household crowding index	0.09 ^a	-0.03	0.001	0.01	0.02	0.03	0.03	0.03	-0.17 ^a	0.18 ^a	1				
12. Economic pressure	0.33 ^a	-0.17 ^a	0.19 ^a	0.19 ^a	0.22 ^a	0.20 ^a	0.14 ^a	0.22 ^a	0.10 ^a	0.09 ^a	0.11 ^a	1			
13. Number of schools where you teach	0.07 ^a	-0.07 ^a	0.01	0.02	0.03	0.03	0.02	0.03	0.01	0.003	0.02	0.01	1		
14. Average number of students	0.06 ^a	-0.08 ^a	0.05 ^b	0.04 ^c	0.05 ^b	0.04 ^c	-0.04 ^c	0.004	0.04 ^c	0.004	-0.02	0.05 ^b	0.15 ^a	1	
15. Average number of teaching hours	0.001	-0.03	0.14 ^a	0.11 ^a	0.11 ^a	0.09 ^a	0.05 ^b	0.06 ^a	0.08 ^a	0.03	-0.05 ^b	0.07 ^a	0.16 ^a	0.10 ^a	1
16. Years of experience	-0.08 ^a	-0.05 ^b	-0.01	-0.02	0.01	-0.04 ^c	-0.04 ^b	-0.02	0.88 ^a	0.36 ^a	-0.18 ^a	0.12 ^a	0.01	0.04 ^b	0.10 ^a

^a p < 0.001.

^b p < 0.01.

^c p < 0.05.

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using PROCESS MACRO (an SPSS add-on) v3.4 model 1, taking private/public schools as moderators in the association between economic pressure and turnover intention. Variables that showed a $p < 0.025$ in the bivariate analysis were entered in the multi-variable and mediation models as independent variables. Significance was set at a $p < 0.05$.

4. Results

4.1. Sociodemographic and other characteristics

A total of 3779 teachers filled the survey (mean age: 38.33 years; 86.7 % females). Details related to the teachers can be found in Table 1. The mean turnover intention score in the total sample was 19.64 ± 4.21 .

4.2. Bivariate analysis taking anxiety and depression as dependent variables

Higher job satisfaction, older age and a higher number of years of experience were significantly associated with less turnover intentions, whereas higher physical, mental and emotional work fatigue, stress, anxiety and depression levels, household crowding index, economic pressure, number of schools where participants teach, and number of students taught were significantly associated with more turnover intentions (Table 2).

A higher mean turnover intention score was seen in males compared to females, in teachers who teach in public schools, teach complementary and secondary levels, give private lessons, and work another job than teaching. Moreover, a lower mean turnover intention score was found in teachers who teach in private schools, and those who teach the kindergarten level (Table 3).

4.3. Multivariable analysis taking turnover intention as a dependent variable

The results of the multivariable analysis, taking the turnover intention score as the dependent variable, showed that higher physical (Beta = 0.05), mental (Beta = 0.03) and emotional (Beta = 0.04) work fatigue, depression (Beta = 0.32), household crowding index (Beta = 0.21), economic pressure (Beta = 0.61), teaching in public schools (Beta = 0.99) and having another job than teaching (Beta = 0.62) were significantly associated with more turnover intentions. Finally, older age (Beta = -0.04), female gender (Beta = -0.71), and teaching the kindergarten level (Beta = -0.56) were significantly associated with less turnover intentions (Table 4).

Table 3
Bivariate analysis of factors associated with teachers' turnover intention.

Variable	Mean \pm SD	<i>p</i>	Effect size
Gender		<0.001	0.228
Male	20.46 \pm 4.11		
Female	19.51 \pm 4.21		
Marital status		0.599	0.019
Single/divorced/widowed	19.69 \pm 4.34		
Married	19.61 \pm 4.14		
Teaching in public schools		<0.001	0.216
No	19.35 \pm 4.24		
Yes	20.25 \pm 4.07		
Teaching in private schools		<0.001	0.160
No	20.13 \pm 4.13		
Yes	19.46 \pm 4.22		
Teaching kindergarten level		<0.001	0.231
No	19.82 \pm 4.13		
Yes	18.83 \pm 4.44		
Teaching primary level		0.110	0.052
No	19.51 \pm 4.23		
Yes	19.73 \pm 4.18		
Teaching complementary level		<0.001	0.153
No	19.37 \pm 4.31		
Yes	20.01 \pm 4.03		
Teaching secondary level		0.001	0.126
No	19.52 \pm 4.25		
Yes	20.04 \pm 4.03		
Give private lessons		0.025	0.083
No	19.55 \pm 4.20		
Yes	19.90 \pm 4.21		
Job other than teaching		0.002	0.184
No	19.57 \pm 4.21		
Yes	20.33 \pm 4.07		

Note. Numbers in bold indicate significant *p*-values.

Table 4
Multivariable analysis: Linear regression (using the ENTER model) taking the turnover score as the dependent variable.

Variable	Unstandardized Beta	Standardized Beta	p	95 % CI
Step 1: Confounding variables only entered in the model (Nagelkerke R² = 0.047)				
Age	-0.08	-0.19	<0.001	-0.11; -0.05
Household crowding index	0.50	0.07	<0.001	0.27; 0.74
Number of schools where you teach	0.12	0.01	0.443	-0.18; 0.42
Number of students	0.001	0.03	0.134	-0.001; 0.003
Years of experience	0.04	0.09	0.007	0.01; 0.07
Sex (females vs males ^a)	-0.55	-0.04	0.010	-0.97; -0.13
Teaching in a public school (yes vs no ^a)	0.81	0.09	0.003	0.28; 1.34
Teaching in a private school (yes vs no ^a)	0.03	0.003	0.908	-0.51; 0.58
Teaching kindergarten level (yes vs no ^a)	-0.76	-0.07	<0.001	-1.12; -0.40
Teaching complementary level (yes vs no ^a)	0.22	0.03	0.131	-0.07; 0.51
Teaching secondary level (yes vs no ^a)	0.36	0.04	0.049	0.001; 0.71
Job other than teaching (yes vs no ^a)	0.50	0.03	0.040	0.02; 0.97
Step 2: Confounding variables and substantive variables entered in the model (Nagelkerke R² = .296)				
Age	-0.04	-0.10	<0.001	-0.07; -0.02
Household crowding index	0.21	0.03	0.036	0.01; 0.41
Number of schools where you teach	0.05	0.01	0.691	-0.21; 0.31
Number of students	0.001	0.01	0.850	-0.001; 0.002
Years of experience	-0.001	-0.003	0.918	-0.03; 0.02
Sex (females vs males ^a)	-0.71	-0.06	<0.001	-1.07; -0.34
Teaching in a public school (yes vs no ^a)	0.99	0.11	<0.001	0.53; 1.45
Teaching in a private school (yes vs no ^a)	0.19	0.02	0.433	-0.28; 0.66
Teaching kindergarten level (yes vs no ^a)	-0.56	-0.05	<0.001	-0.87; -0.26
Teaching complementary level (yes vs no ^a)	0.20	0.02	0.125	-0.05; 0.44
Teaching secondary level (yes vs no ^a)	0.01	0.001	0.936	-0.29; 0.32
Job other than teaching (yes vs no ^a)	0.62	0.04	0.003	0.21; 1.02
Economic pressure	0.61	0.24	<0.001	0.54; 0.69
Physical work fatigue	0.05	0.07	0.001	0.02; 0.07
Mental work fatigue	0.03	0.06	0.012	0.01; 0.06
Emotional work fatigue	0.04	0.08	<0.001	0.02; 0.06
Stress	0.06	0.03	0.171	-0.03; 0.15
Anxiety	0.03	0.02	0.439	-0.04; 0.09
Depression	0.32	0.22	<0.001	0.25; 0.39

^a Reference number; numbers in bold indicate significant p-values.

4.4. Mediation analysis

The mediation analyses were conducted following the indirect effect key below:

Indirect effect 1: Economic pressure → Physical/mental/emotional work fatigue → Turnover intention.

Indirect effect 2: Economic pressure → Psychological distress → Turnover intention.

Indirect effect 3: Economic pressure → Job satisfaction → Turnover intention.

Indirect effect 4: Economic pressure → Physical/mental/emotional work fatigue → Psychological distress → Turnover intention.

Indirect effect 5: Economic pressure → Physical/mental/emotional work fatigue → Job satisfaction → Turnover intention.

Indirect effect 6: Economic pressure → Psychological distress → Job satisfaction → Turnover intention.

Indirect effect 7: Economic pressure → Physical/mental/emotional work fatigue → Psychological distress → Job satisfaction → Turnover intention.

The results of the mediation analysis were adjusted over all variables that showed a $p < 0.003$ (after Bonferroni correction in the bivariate analysis: age, household crowding index, number of school where you teach, average number of students, years of experience, sex, teach in a public school, teach in a private school, teach kindergarten level, teach primary level, teach complementary level, teach secondary level, give private lessons, has another job other than teaching). The results showed that physical/mental/emotional work fatigue (M1), psychological distress (M2) and job satisfaction (M3) mediated the association between economic pressure and turnover intentions among Lebanese teachers (Table 5).

In summary, economic pressure was significantly associated with higher work fatigue, psychological distress, less job satisfaction, and more turnover intentions. Higher work fatigue, higher psychological distress and less job satisfaction were significantly associated with higher turnover intentions. Finally, more Economic pressure was significantly associated with more turnover intentions (Figs. 1–4).

4.5. Moderation analysis with turnover intention taken as the dependent variable

The model was adjusted over the following variables: age, household crowding index, number of schools, number of students, teaching class, sex, years of experience, job other than teaching, and the other two independent variables (economic pressure/psychological distress/work fatigue). The interactions economic pressure by public/private schools were not significant (Table 6).

Table 5

Indirect effect analyses results, taking economic pressure as the independent variable, work fatigue/psychological distress/job satisfaction as the consecutive mediators and the job turnover intention as the dependent variable.

	Direct effect			Indirect effect		
	Beta	SE	p	Beta	Boot SE	Boot CI
Model 1: physical work fatigue, psychological distress and job satisfaction as the mediators.						
Total	0.57	0.04	<0.001	0.31	0.02	0.26; 0.35 ^a
Indirect effect 1				0.07	0.01	0.05; 0.10 ^a
Indirect effect 2				0.07	0.01	0.05; 0.09 ^a
Indirect effect 3				0.08	0.01	0.06; 0.10 ^a
Indirect effect 4				0.05	0.01	0.04; 0.06 ^a
Indirect effect 5				-0.01	0.003	-0.01; 0.001 ^a
Indirect effect 6				0.03	0.004	0.02; 0.04 ^a
Indirect effect 7				0.017	0.002	0.013; 0.022 ^a
Model 2: mental work fatigue, psychological distress and job satisfaction as the mediators.						
Total	0.58	0.04	<0.001	0.30	0.02	0.25; 0.34 ^a
Indirect effect 1				0.07	0.01	0.05; 0.09 ^a
Indirect effect 2				0.06	0.01	0.04; 0.07 ^a
Indirect effect 3				0.07	0.01	0.05; 0.10 ^a
Indirect effect 4				0.05	0.01	0.04; 0.06 ^a
Indirect effect 5				0.002	0.003	-0.003; 0.01
Indirect effect 6				0.02	0.003	0.01; 0.03 ^a
Indirect effect 7				0.02	0.003	0.01; 0.03 ^a
Model 3: emotional work fatigue, psychological distress and job satisfaction as the mediators.						
Total	0.58	0.04	<0.001	0.30	0.02	0.25-0.34 ^a
Indirect effect 1				0.07	0.01	0.05-0.09 ^a
Indirect effect 2				0.05	0.01	0.03-0.07 ^a
Indirect effect 3				0.07	0.01	0.04-0.09 ^a
Indirect effect 4				0.06	0.01	0.05-0.08 ^a
Indirect effect 5				0.01	0.003	0.005-0.02 ^a
Indirect effect 6				0.015	0.003	0.01-0.02 ^a
Indirect effect 7				0.019	0.002	0.015-0.024 ^a

^a Indicates significant indirect effect.

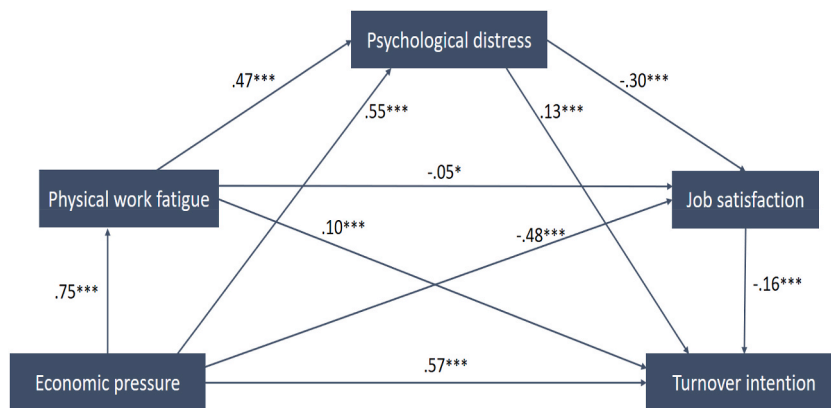


Fig. 2. Association between economic pressure and turnover intention, mediated by physical work fatigue, psychological distress and job satisfaction.

5. Discussion

A healthy educational system is vital for the development of a nation, and teachers are the main pillars of this system. Teachers' psychology is thus necessary to be studied since it represents a major determinant of the quality of service they render to students and society, and in turn of the revolution of the entire educational system. Drawing on the previous literature, this study proposed a theoretical model to understand the factors playing a mediating/moderating role in the relationship between economic pressure and turnover intention among Lebanese teachers in the context of the ongoing crisis. As hypothesized, our results showed that job satisfaction, all dimensions of work fatigue, and psychological distress mediated the association between economic pressure and turnover intentions in our sample. However, the moderating effect of teachers' sector of employment (Private versus Public) was not significant. These findings have potential practical policy implications that we will discuss later in this paper.

As for direct effects, our mediation analyses showed that teachers who perceived more economic pressure had increased turnover

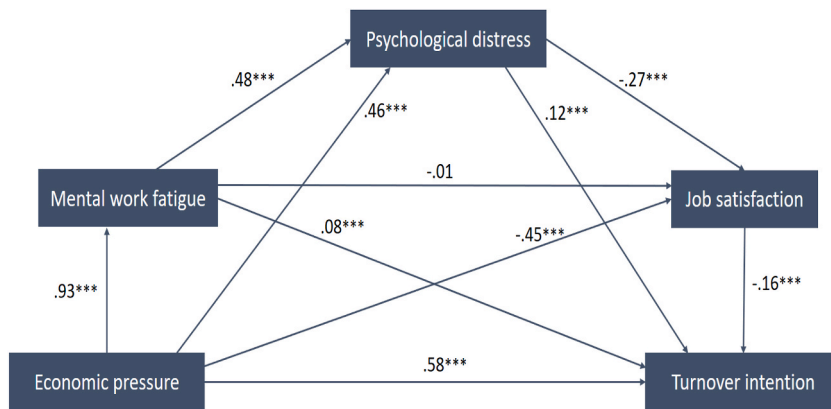


Fig. 3. Association between economic pressure and turnover intention, mediated by mental work fatigue, psychological distress, and job satisfaction.

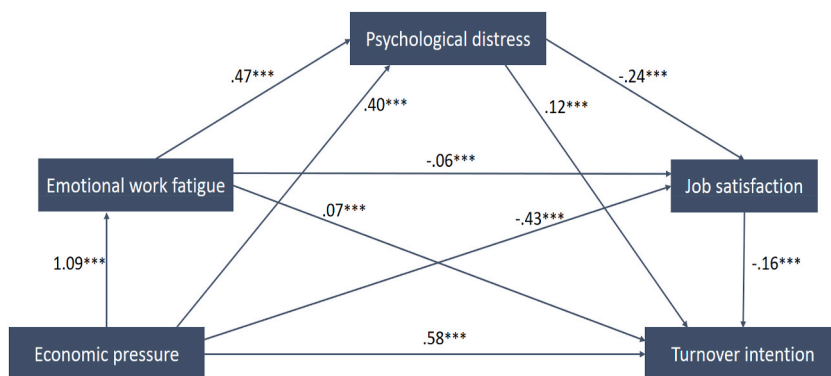


Fig. 4. Association between Economic pressure and turnover intention, mediated by emotional work fatigue, psychological distress, and job satisfaction.

Table 6

Moderation analysis taking economic pressure as independent variables, public/private schools as moderators and turnover intention as the dependent variable.

	a) Public schools as the moderator (Nagelkerke R ² = 0.292)				b) Private schools as the moderator (Nagelkerke R ² = 0.289)			
	Beta	t	p	95 % CI	Beta	t	p	95 % CI
Economic pressure	0.63	13.86	<0.001	0.54; 0.71	0.62	9.00	<0.001	0.48; 0.75
Moderator	0.78	1.14	0.255	-0.56; 2.11	-0.81	-1.13	0.259	-2.21; 0.59
Interaction economic pressure by moderator	0.01	0.10	0.919	-0.14; 0.16	0.02	0.20	0.839	-0.14; 0.17

Numbers in bold indicate significant *p* values. All models were adjusted over: age, household crowding index, number of schools, number of students, teaching class, sex, years of experience, job other than teaching, and the independent variable (economic pressure).

intentions. These findings are in agreement with previous evidence from different studies in non-teachers' [19–21] and teachers' [17, 25,27–29] populations. Historically, salary has been shown to be one of the main reasons to leave the profession [24], or to decide continue teaching in the same position [23]. However, it is not sufficient to verify the consistency of this well-established relationship in the Lebanese context. It is also important to determine the mediators involved in the association between perceived economic pressure and turnover intention. By knowing the factors that mediate the association between economic pressure and turnover intention, schools will have tools that enable them to implement tailored measures to retain teachers despite the financial challenges. Indeed, in the absence of being able to immediately improve the financial situation of teachers due to the ongoing economic crisis, this study suggests other avenues for action and shows that there are many things' policymakers can do to prevent teachers' turnover and save the educational sector.

In this sense, our findings helped to draw attention to the mediating role of three key variables in the pathways leading from economic pressure to turnover intention, i.e., job satisfaction, work fatigue, and teachers' distress. The moderating effect of working in

an institution from the public versus private sector in the relationship between economic pressure and turnover intention was not significant; suggesting that teachers' sector of employment does not mitigate the effect of financial strain on desiring to voluntarily leave the job. Overall, these findings support our theoretically driven hypothesis that teachers who perceive more economic pressure displayed less job satisfaction [30,36–39], higher work fatigue [49], more distress [55,57,58]; and reported more turnover intentions [17,25,27–29]. On the other hand, and as expected, less job satisfaction [22,32–35,85,86], increased work-related fatigue [48], and higher levels of psychological distress [28,59–65] were greatly associated with turnover intentions. This lends more evidence to the turnover original model theory of Mobley [31], which stipulates that reaching the point of actually quitting the job can be regarded as the end-stage product of a serial decision process that proceeds from job satisfaction/dissatisfaction to quit intentions. These results suggest that interventions aiming at increasing teachers' commitment to the organization and preventing turnover in the context of the current Lebanese crisis may be more effective if focused on work-related fatigue, job satisfaction and distress.

5.1. Study strengths and limitations

Our study has several strengths, including the use of a large nationally representative sample size of Lebanese teachers, standardized assessment instruments, and anonymous online questionnaires that guarantee to some extent honest answers. In addition, this is among the first studies to link economic pressure, job satisfaction, work fatigue, psychological distress and turnover intentions in the teachers' psychology literature. This is also the first study on this topic in Lebanon, a country that offers a unique context and opportunity to understand the link between teachers' economic pressure and turnover intentions.

Apart from its strengths, the study has also certain limitations. Mediation analyses are affected by the cross-sectional design of our study, which cannot establish causality or directionality of the observed relationship. Additionally, we only examined the subjectively perceived economic pressure, which might not reflect the teachers' economic status. Future studies should consider using objective income rank and other financial indicators (e.g., extra allowances, benefits, and pension). The Cronbach's alpha of the job turnover intention scale was below the 0.7 threshold. Although the sample was selected randomly, a selection bias is possible since the sample, although large enough, might not be representative of all teachers. Finally, teacher's turnover intention has been shown to be complex and impacted by multiple organizational, economic/environmental, and individual factors [87]. Additional studies need to explore organizational factors that have not been subject of the present study (i.e., workplace, work characteristics, people management policies) [87].

5.2. Study implications and future research directions

There has never been a more urgent need to take action and tackle the scourge of Lebanese teachers' turnover than today, in the ongoing crisis era. For this, we believe it is relevant to examine possible factors that may relate to turnover intention, since it offers the possibility to act and change before quitting occurs. Based on the present findings, we could preliminarily confirm the mediating effects of three factors, i.e. work-related fatigue, job satisfaction and distress, in the association between economic pressure and turnover intention among Lebanese teachers. This implies that further attention of policy makers and school officials should be paid to these three factors in order to retain and attract teachers at schools in Lebanon. As such, efforts for teachers' retention need to focus on the factors that enhance the job satisfaction, such as facilitating professional development opportunities and promoting collaborative leadership practices [88]. The focus should also be on decreasing work-related fatigue. This can be through implementing strategies that help teachers recuperate from work demands (e.g., daily exercise, healthy sleep, more time dedicated to socializing, less amount of work outside of formal working hours) [48]. Another important result of this study that might offer a potential avenue for intervention relates to the indirect role of psychological distress in the economic pressure-turnover intention relationship. This implies that, to reduce turnover intention, schools' preventive and intervention strategies aiming at promoting teachers' mental health may be highly effective. Finally, future prospective studies are required to confirm the present findings. Following his conceptual framework, Mobley [89] has suggested that, as turnover represents an evolutionary decision process like, repeated measures over time and statistical analyses including the temporal dimension are needed to further understand the process of turnover more fully.

6. Conclusion

In sum, our results align with past findings regarding the importance of perceived economic pressure as it relates to turnover intention among Lebanese teachers. In addition, our study expands on past research by showing that work-related fatigue, job satisfaction and psychological distress are three factors that underline the cross-sectional relationship between economic pressure and teachers' turnover intention. This preliminarily suggests that policy makers and school officials need to target these factors when developing teachers' retention strategies, albeit additional prospective studies are needed to confirm our assumptions.

Ethics approval and consent to participate

The Ethics and Research Committee of the Psychiatric Hospital of the Cross approved this study protocol (HPC-042-2021). Submitting the form online was considered equivalent to obtaining a written informed consent. All methods were performed in accordance with the relevant guidelines and regulations.

Consent for publication

Not applicable.

Availability of data and materials

All data generated or analyzed during this study are not publicly available as per the rules and regulations of the ethics committee. The dataset supporting the conclusions is available upon request to the corresponding author (SH).

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CRediT authorship contribution statement

Feten Fekih-Romdhane: Writing – review & editing, Writing – original draft. **Anthony Shebly:** Writing – review & editing. **Tracy Daoud:** Writing – review & editing. **Reine Gedeon:** Data curation. **Rabih Hallit:** Writing – review & editing. **Sahar Obeid:** Writing – review & editing. **Diana Malaeb:** Writing – review & editing. **Souheil Hallit:** Writing – review & editing, Writing – original draft, Validation, Supervision, Investigation, Formal analysis, Conceptualization.

Declaration of competing interest

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