

# Burnout among primary school teachers in Iraq: prevalence and risk factors

Jasim Al-Asadi<sup>1</sup>, Shukrya Khalaf<sup>1</sup>, Aqeel Al-Waaly<sup>2</sup>, Alaa Abed<sup>3</sup> and Sabah Shami<sup>4</sup>

<sup>1</sup>Community Medicine Department, College of Medicine, Basrah University, Basrah, Iraq (Correspondence to: Jasim N. Al-Asadi: jnk5511@yahoo.com).

<sup>2</sup>College of Medicine, Missan University, Amarah, Iraq. <sup>3</sup>Community Medicine Department, College of Medicine, Thi-Qar University, Nasiriyah, Iraq.

<sup>4</sup>Basrah General Health Directorate, Basrah, Iraq.

## Abstract

**Background:** Studies from various parts of the world have shown that teachers are likely to suffer from burnout. So far, there has been no research on burnout among primary school teachers in Basrah, Iraq.

**Aim:** We aimed to determine the prevalence and predisposing factors of self-reported burnout among primary school teachers in Basrah.

**Methods:** This was a cross-sectional study in 32 governmental primary schools during November 2014–February 2015. A self-administered questionnaire was used to collect sociodemographic and work-related data using the Oldenburg Burnout Inventory.

**Results:** Of 800 questionnaires distributed, 706 (88.3%) were completed; 58.4% were from women. The prevalence of burnout was 24.5% (95% CI: 21.5–27.8). A statistically significant association was found between burnout and age, sex and marital status. Work-related factors that showed significant association with burnout were: work overload, problems related to career advancement, high number of students per class and student misbehaviour.

**Conclusion:** Burnout is an important health problem among primary school teachers in Basrah. A number of risk factors, particularly those related to work, are amenable to modification since they are related to the education policy.

Keywords: Basrah, burnout, prevalence, teachers

Citation: Al-Asadi J; Khalaf S; Al-Waaly A; Abed A; Shami S. Burnout among primary school teachers in Iraq: prevalence and risk factors. *East Mediterr Health J.* 2018;24(3):262–268. <https://doi.org/10.26719/2018.24.3.262>

Received: 11/01/16; accepted: 27/02/17

Copyright © World Health Organization (WHO) 2018. Some rights reserved. This work is available under the CC BY-NC-SA 3.0 IGO license (<https://creativecommons.org/licenses/by-nc-sa/3.0/igo>).

## Introduction

The concept of professional burnout was first described in the mid-1970s, referring to “emotions of depletion and loss of motivation and commitment that social workers experience after prolonged and extensive stress conditions” (1,2). Shortly afterwards, it was characterized in detail by Maslach and Jackson (3) as a syndrome of excessive emotional load, or burnout, comprising a set of emotional and physical responses to chronic work stress.

Teaching stress is a prevalent and well confirmed problem (4). Job dissatisfaction and burnout among teachers can have personal implications such as absenteeism and decline in performance and productivity, and a negative effect on students’ outcome (5).

Risk factors for burnout among teachers may be organizational, such as work pressure, student misbehaviour (6), role stress (7), lack of support from peers and supervisors (8), school rules and type (private or governmental), school location (9) and financial considerations (10), or personal factors such as age, sex, marital status, years of service and self efficacy (11,12).

Survey data have indicated that both in the Western countries and in some Eastern European countries, about 10–40% of teachers suffer from burnout (13,14), while in Asian countries it may reach 50–70% (11).

Therefore, it becomes extremely important to investigate not only the sources or predictors of burnout but also their relationships. A considerable amount of information can be found on burnout and its related factors among school teachers in many countries, however, there is no known research on burnout among primary school teachers in Basrah, Iraq. In this study, we aimed to determine the level of self-reported burnout and the main sources of burnout among primary school teachers in Basrah.

## Methods

### Study design

This was a cross-sectional study carried out in Basrah City during the period November 2014–February 2015. The study was approved by the Research and Ethics Committee of the College of Medicine, Basrah University.

### Participants

The study population included governmental primary school teachers of both sexes.

### Sampling and sample size

The sample size was calculated assuming a prevalence rate of 50%, with a precision degree of 0.05 at the 95% confidence level, and a design effect of 1.8 (15). Taking into

consideration a nonresponse rate of 15%, the sample size was calculated as 795. Eight hundred teachers (15.2% out of 5250 primary school teachers in Basrah City) received questionnaires.

Participation in the study was voluntary and participants were assured of the confidentiality and anonymity of the survey.

### Data collection

A self-administered questionnaire especially designed for the purposes of the study was used to collect data including sociodemographic and occupational information. The survey form also included questions about student misbehaviour, in-service training, career advancement, salaries, distance from school to residence, professional relationship, years of service, workload and job satisfaction. Student misbehaviour was defined as “those behaviours involving rule-breaking, violating implicit norms or expectations, being inappropriate in the classroom settings and upsetting teaching and learning (talking out of turn, disrespecting teachers, habitual failure in submitting assignments, copying homework, lateness to class, etc.” (16). Training was defined as activities to increase the knowledge, skills and positive beliefs of teachers.

Work overload has been defined as employees' perception that they have more work than they can complete within a given time (17). Job satisfaction has been defined as a perceived relationship between what one wants from one's job and what one perceives it as offering (18). The teachers were asked to indicate how satisfied they felt with their job. The scale of answers ranged from “very satisfied” to “not at all satisfied” (19). For statistical purposes, job satisfaction was dichotomized into satisfied and unsatisfied.

The Oldenburg Burnout Inventory (20) has been found to be valid in different populations and can be applied to any occupational group (21). An English version translated into Arabic was used to measure burnout in this study. Two independent bilingual reviewers checked the Arabic translation to ensure consistency.

The Oldenburg Burnout Inventory includes 2 subscales: exhaustion and disengagement. It exhibits good test-retest reliability and internal reliability ( $\alpha > 0.80$ ) for both subscales (20). Each subscale includes 4 positively worded and 4 negatively worded items that are scored on a 4-point Likert scale from 1 “strongly agree” to 4 “strongly disagree”. After reverse scoring of the negatively worded items, the average was calculated for each subscale, with higher scores indicating higher level of burnout. The cut-off score above the 75th percentile on both subscales was considered as burnout.

### Statistical analysis

The statistical analysis was made using SPSS, version 19. Frequencies and percentages were calculated for the categorical variables. Chi-squared test or Fisher's exact test were used to assess the differences between these variables. Continuous numerical data were summarized

as mean and standard deviation (SD). Logistic regression analysis was used to determine the independent predictors of burnout. Pearson's correlation coefficient ( $r$ ) was calculated to determine the relationship between job satisfaction and burnout;  $P < 0.05$  was considered statistically significant.

## Results

A total of 800 questionnaires were distributed; 706 completed questionnaires were returned, a response rate of 88.3%.

The mean age of respondents was 36.6 (SD 8.9; range 20–63) years, 58.4% of them were women. The majority (89.8%) were classroom teachers, and 36.7% had teaching experience of > 15 years (Table 1).

The mean of the total burnout scores was 38.9 (SD 5.6), while the means for the exhaustion and disengagement subscales scores were 23.3 (SD 4.4) and 15.6 (SD 4.2) respectively. Males showed significantly higher mean burnout scores than women for the total and both subscales. The prevalence of burnout among the teachers was 24.5% (95% confidence interval: 21.5–27.8).

**Table 1. Sociodemographic and work-related characteristics of primary school teachers (n = 706) in Basrah, 2014/2015**

Variable	No.	%
<b>Age (years)</b>		
20–34	326	46.2
35–49	298	42.2
≥ 50	82	11.6
<b>Sex</b>		
Male	294	41.6
Female	412	58.4
<b>Marital status</b>		
Married	474	76.1
Unmarried	127	18.0
Divorced/widowed	105	14.9
<b>No. of children</b>		
0	139	19.7
1–3	276	39.1
> 3	291	41.2
<b>Job responsibility</b>		
Classroom teacher	634	89.8
Administration	72	10.2
<b>Years of service</b>		
1–5	186	26.3
6–10	170	24.1
11–15	91	12.9
> 15	259	36.7
<b>Training courses</b>		
Yes	366	51.8
No	340	48.2

Burnout was found to be negatively related to age. It decreased with advancing age and the difference was highly significant ( $P < 0.001$ ). Sex was also significantly associated with burnout: men showed a higher prevalence of burnout than women. Married teachers showed a significantly lower level of burnout compared with their unmarried, widowed or divorced counterparts. No significant association was detected between number of children and burnout. Number of years of service was inversely and significantly related to burnout. Teachers who had received training courses showed a significantly lower level of burnout compared with those who had no training courses (Table 2).

Table 3 shows the association between work-related factors and burnout. Work overload ( $P = 0.001$ ), students' misbehaviour ( $P = 0.002$ ), high number of students per class ( $P = 0.024$ ), and problems related to career advancement ( $P = 0.021$ ) were found to be significantly associated with burnout.

The logistic regression analysis showed that age, marital status and sex were the only sociodemographic independent risk factors for burnout; work overload,

problems related to career advancement, high number of students per class and student misbehaviour were the work-related independent risk factors (Table 4).

Only 13.5% of the teachers in our sample were dissatisfied with their job. Burnout was negatively and significantly correlated with job satisfaction ( $r = -0.131$ ,  $P < 0.001$ ).

### Discussion

This study, which is the first to examine burnout among teachers in Basrah, showed a high rate of burnout (24.5%) among the participants. Although comparing our results with those of others is not straightforward due to variations in sociocultural factors, occupational settings or using different measures of assessment, our findings are in line with those of a number of other studies. A similar prevalence of burnout among teachers was reported in studies from a number of countries, e.g. 26% in Taiwan (22), 11.6% in Sri Lanka (23) and 21% in Tunisia (24). Quality of education in Iraq is declining now due to poor preparation and weak training of teachers, lack of minimum standards of teaching materials, and

**Table 2. Association of burnout with selected risk factors among primary school teachers (n = 706) in Basrah, 2014/2015**

Variable	Burnout		No burnout		$\chi^2$	P-value
	No.	%	No.	%		
<b>Age (years)</b>					15.995	< 0.001
20–34	102	31.3	224	68.3		
35–49	59	19.8	239	80.2		
≥ 50	12	14.6	70	85.4		
<b>Sex</b>					16.605	< 0.001
Male	95	32.3	199	67.7		
Female	78	18.9	334	81.1		
<b>Marital status</b>					13.364	0.001
Married	97	20.5	377	79.5		
Unmarried	39	30.7	88	69.3		
Divorced/Widowed	37	35.2	68	64.8		
<b>No. of children</b>					4.534	0.104
0	42	30.2	97	69.8		
1–3	70	25.4	206	74.6		
> 3	61	21.0	230	79.0		
<b>Job responsibility</b>					0.011	0.918
Classroom teacher	155	24.4	479	75.6		
Administrative	18	25.0	54	75.0		
<b>Years of service</b>						
1–5	62	33.3	124	66.7	15.410	0.001
6–10	45	26.5	125	73.5		
11–15	21	23.1	70	76.9		
> 15	45	17.4	214	82.6		
<b>Training courses</b>					4.435	0.026
Yes	77	21.0	289	79.0		
No	96	28.2	244	71.8		
<b>Total</b>	<b>173</b>	<b>24.5</b>	<b>533</b>	<b>75.5</b>		

**Table 3. Association of burnout with work-related factors among primary school teachers (n = 706) in Basrah, 2014/2015**

Variable	Burnout		No burnout		$\chi^2$	P-value
	No.	%	No.	%		
<b>Work overload</b>					14.589	0.001
Absent	108	21.1	405	78.9		
Present	65	33.7	128	66.3		
<b>Low salary</b>					0.860	0.354
No	49	23.3	171	77.7		
Yes	124	25.5	362	74.5		
<b>Students' misbehaviour</b>					9.563	0.002
Absent	75	19.8	303	80.2		
Present	98	29.9	230	70.1		
<b>Distance from residence to school (Km)</b>					0.081	0.770
< 10	124	24.8	376	75.2		
≥ 10	49	23.8	157	76.2		
<b>High no. of students per class</b>					5.081	0.024
No	26	17.4	123	82.6		
Yes	147	26.4	410	73.6		
<b>Problems related to career advancement</b>					5.358	0.021
Absent	95	21.6	345	78.4		
Present	78	29.3	188	70.7		
<b>Problems with colleagues</b>					0.809	0.368
Absent	131	25.4	385	74.6		
Present	42	22.1	148	77.9		
<b>Total</b>	<b>173</b>	<b>24.5</b>	<b>533</b>	<b>75.5</b>		

**Table 4. Logistic regression analysis of independent predictors of burnout among primary school teachers (n = 706) in Basrah, 2014/2015**

Variable	B	P	OR	95% CI
Age	-0.030	0.006	0.97	0.95-0.91
Marital status	0.322	0.005	1.38	1.10-1.73
Sex (male)	0.544	0.003	1.72	1.20-2.47
Work overload	0.500	0.009	1.85	1.14-2.40
Problems related to career advancement	0.376	0.045	1.46	1.01-2.10
High no. of students/class	0.252	0.032	1.29	1.15-2.12
Students' misbehaviour	0.299	0.035	1.49	1.03-2.16

OR = odds ratio.

CI = confidence interval.

deteriorating infrastructure. Furthermore, teachers are demoralized and unmotivated (25), these factors together with that studied in this study could be the reasons for such high prevalence rate of burnout among primary school teachers in Basrah.

We found that younger teachers and those with fewer years of service showed a significantly higher rate of burnout than their older and more experienced counterparts; this has also been reported in other studies (26-28). Younger teachers may be more idealistic and may feel inadequate and undervalued if they fail to reach their students (29,30).

Studies on the role of sex in prevalence of burnout have shown inconsistent results. Some studies have found that male teachers were more subject to burnout than females (31,32) and this is in accordance with our own findings. However, other studies have reported that female teachers experienced burnout more than males (27,33) or that there was no difference in burnout rates (34). In a 1992 study, it was reported that men and women suffered burnout in similar ways but they differed in what they experienced as stressors (35). Some researchers have attributed sex differences in burnout to the different career expectations resulting from differences in sex role socialization or to differences in the ways men and women cope with stress (36). It has also been suggested that women may have a wider range of social relationship and support than men that can help them in coping with burnout (37).

We found that married teachers showed a lower rate of burnout than single teachers. The findings of previous research on this aspect are not clear-cut: some studies found that single people were more susceptible to burnout (26,38) while others found no significant association (39,40).

In agreement with many studies, we found that work-related factors played a significant role in burnout development. Work pressure or overload was significantly related to burnout, a finding that has been reported by others (41,42). In line with the findings of a

French study (43), high number of students per class was significantly associated with burnout.

Other significant sources of burnout were student misbehaviour and problems related to career advancement. Similarly, Hastings et al. found that difficulties experienced with student behaviour were associated with burnout (44) and according to a study in Kenya, lack of promotion opportunities or slow progress in career advancement were found to be risk factors for burnout (45).

In univariate analysis, we found that number of years of service was negatively and significantly associated with burnout, but the association disappeared in multivariate analysis, possibly due to the confounding effect of age: older teachers were found to be less burnt out than younger teachers.

In accordance with the results of a study in Namibia (46), we found a significant negative correlation between job satisfaction and burnout in teachers.

This study had some limitations. It was a cross-sectional study, and consequently this may preclude

inferences of causality among variables. Nonresponse is a particular problem affecting cross-sectional studies and can result in bias of the measures of outcome. This is a particular problem when the characteristics of nonrespondents differ from those of respondents. In our study, the response rate was good and there is no reason to believe that those who declined to participate were systematically different from those included in the study in terms of their career characteristics. Despite the limitations, the results of our study are comparable to published findings.

In conclusion, burnout is an important health problem among primary school teachers in Basrah, and many risk factors, particularly those related to work, are amenable to modification since they are related to the national education policy. Therefore, there is a need for periodic psychological assessment of teachers to early detect burnout and for the introduction of an intervention policy to prevent its effects on job performance.

**Funding:** None.

**Competing interests:** None declared.

## Épuisement professionnel chez les professeurs des écoles primaires en Iraq : prévalence et facteurs de risque

### Résumé

**Contexte :** Des études issues de différentes parties du monde ont révélé que les professeurs sont exposés au risque d'épuisement professionnel (burnout). À ce jour, aucune recherche n'a été réalisée sur l'épuisement professionnel parmi les professeurs des écoles primaires à Bassora, en Iraq.

**Objectif :** La présente étude avait pour objectif de déterminer la prévalence et les facteurs prédisposant à l'épuisement professionnel perçu par les professeurs des écoles primaires à Bassora.

**Méthodes :** Une étude transversale a été conduite dans 32 écoles primaires gouvernementales entre novembre 2014 et février 2015. Un questionnaire auto-administré a été utilisé afin de recueillir des données sociodémographiques et des informations directement liées à la profession à l'aide de l'Inventaire du burnout d'Oldenberg (OLBI).

**Résultats :** Sur 800 questionnaires distribués, 706 (88,3 %) ont été remplis, dont 58,4 % par des femmes. La prévalence de l'épuisement professionnel était de 24,5 % (IC à 95 % : 21,5-27,8). Une association statistiquement significative a été trouvée entre l'épuisement professionnel et l'âge, le sexe, et le statut marital. Les facteurs directement liés à l'activité professionnelle ont montré une association significative avec l'épuisement professionnel quand il y avait une surcharge de travail, des problèmes liés à l'avancement de carrière, un grand nombre d'élèves par classe et des problèmes de comportement chez ces derniers.

**Conclusion :** L'épuisement professionnel constitue un problème de santé important parmi les professeurs des écoles primaires à Bassora. Un nombre de facteurs de risque, notamment ceux directement liés à l'activité professionnelle, sont sujets à modification étant donné qu'ils sont inhérents à la politique d'éducation.

### الإرهاك في أوساط معلمي المدارس الابتدائية في العراق: معدل الانتشار وعوامل الخطر

جاسم الأسدي، شكرية خلف، عقيل الوائلي، علاء عبد، صباح شامي

### الخلاصة

الخلفية: أظهرت دراسات أجريت في أنحاء مختلفة من العالم أن المعلمين معرضون للإصابة بالإرهاك. وحتى الآن، لم يجر أي بحث بشأن الإرهاك بين معلمي المدارس الابتدائية في البصرة بالعراق.

الهدف: تمثل هدفنا من هذه الدراسة في تحديد مستوى انتشار الإنهاك حسب الإفادات الذاتية والعوامل المؤدية إليه بين معلمي المدارس الابتدائية في البصرة.

طرق البحث: أجريت دراسة مقطعية في ٣٢ مدرسة ابتدائية حكومية خلال الفترة من نوفمبر/ تشرين الثاني ٢٠١٤ حتى فبراير/ شباط ٢٠١٥. واستخدم استبيان يوجب عليه ذاتياً لجمع بيانات اجتماعية-سكانية وبيانات متعلقة بالعمل باستخدام قائمة أولدنبرج للإنهاك.

النتائج: من أصل ٨٠٠ استبيان تم توزيعه، استكمل ٧٠٦ (٨٨,٣٪) منها؛ ٤,٥٨٪ من نساء. وبلغ مستوى انتشار الإنهاك ٢٤,٥٪ (٩٥٪ CI: ٢١,٥ - ٢٧,٨). وتبين وجود ارتباط ذي دلالة إحصائية بين الإنهاك والعمر والنوع والحالة الاجتماعية. وجاء من بين العوامل المرتبطة بالعمل والتي أظهرت ارتباطاً كبيراً بالإنهاك: فرط عبء العمل، والمشكلات المتصلة بالارتقاء الوظيفي، وارتفاع عدد الأطفال في الفصل الدراسي، وسوء سلوك الطلاب.

الاستنتاج: يشكل الإنهاك مشكلة صحية مهمة بين معلمي المدارس الابتدائية في البصرة. وثمة عدد من عوامل الخطر، لا سيما تلك المرتبطة بالعمل، يمكن تعديلها نظراً لارتباطها بالسياسة التعليمية.

## References

1. Freudenberger HJ. Staff burnout. *J Soc Issues*. 1974;30:159-65.
2. Freudenberger HJ. The staff burnout syndrome in alternative institutions. *Psychother Res*. 1975;12:72-83.
3. Maslach C, Jackson SE. Maslach burnout inventory-human services survey (MBI-HSS). In: Maslach C, Jackson SE, Leiter MP, eds. Maslach burnout inventory manual, 3rd ed. Palo Alto, California: Consulting Psychologists Press; 1996.
4. Kokkinos CM. Job stressors, personality and burnout in primary school teachers. *Br J Educ Psychol*. 2007;77:229-43. PMID:17411497
5. Chennoufi L, Ellouze F, Cherif W, Mersni M, M'rad MF. [Stress and burnout among Tunisian teachers]. *Encephale*. 2012;38(6):480-7 (in French). PMID:23200614
6. Klassen RM. Teacher stress: the mediating role of collective efficacy beliefs. *J Educ Res*. 2010;103 (5):342-50.
7. Conley S, Woosley SR. Teacher role stress, higher order needs and work outcomes. *J Educational Admin*. 2000;38:179-201.
8. Wang Y, Ramos A, Wu H, Liu L, Yang X, Wang J, et al. Relationship between occupational stress and burnout among Chinese teachers: a cross-sectional survey in Liaoning, China. *Int Arch Occup Environ Health*. 2015;88(5):589-97. PMID:25256806
9. Santana Â, De Marchi D, Junior LC, Girondoli YM, Chiappeta A. Burnout syndrome, working conditions, and health: a reality among public high school teachers in Brazil. *Work*. 2012;41(Suppl. 1):3709-17. PMID:22317286
10. Tye BB, O'Brien L. Why are experienced teachers leaving the profession? *Phi Delta Kappan*. 2002;84:24-32.
11. Maslach C, Schaufeli WB, Leiter MP. Job burnout. *Annu Rev Psychol*. 2001;52:397-422. PMID:11148311
12. Ventura M, Salanova M, Llorens S. Professional self-efficacy as a predictor of burnout and engagement: the role of challenge and hindrance demands. *J Psychol*. 2015;149(3-4):277-302. PMID:25590343
13. Quattrin R, Ciano R, Saveri E, Balestrieri M, Biasini E, Calligaris L, et al. Burnout in teachers: an Italian survey. *Ann Ig*. 2010;22(4):311-8. PMID:21417167
14. Kristensen TS, Borritz M, Villadsen E, Christensen KB. The Copenhagen Burnout Inventory: a new tool for the assessment of burnout. *Work & Stress*. 2005;19(3):192-207.
15. Gorstein J, Sullivan KM, Parvanta I, Begin F: Indicators and methods for cross-sectional surveys of vitamin and mineral status of populations. The Micronutrient Initiative (Ottawa) and the Centers for Disease Control and Prevention (Atlanta) 2007 (<http://www.who.int/vmnis/toolkit/mcn-micronutrient-surveys.pdf>, accessed 25 November 2017).
16. Sun RCF, Shek DT. Student classroom misbehavior: an exploratory study based on teachers' perceptions. *Scientific World Journal*. 2012;2012:208907. PMID:22919297
17. Jex SM. Stress and job performance: Theory, research and implications for managerial practice. Thousand Oaks, California: Sage; 1998.
18. Lund DB. Organizational culture and job satisfaction. *J Bus Ind Market*. 2003;18:219-236.
19. Darmody M, Smyth E. Job satisfaction and occupational stress among primary school teachers and school principals in Ireland. Maynooth, Ireland: The Teaching Council; 2010 (<http://www.teachingcouncil.ie/en/Publications/Research/Documents/Job-Satisfaction-and-Occupational-Stress-among-Primary-School-Teachers-and-School-Principals-in-Ireland.pdf>, accessed 7 November 2017).
20. Demerouti E, Bakker AB, Vardakou I, Kantas A. The convergent validity of two burnout instruments: a Greek study. *Eur J Psychol Assess*. 2003;19(1):12-23.
21. Halbesleben J, Demerouti E. The construct validity of an alternative measure of burnout: Investigating the English translation of the Oldenburg Burnout Inventory. *Work & Stress*. 2005;19(3):208-20.
22. Kyriacou C, Chien P. Teachers stress in Taiwanese primary schools. *J Educational Enquiry*. 2004;5:2-5.

23. De Silva PV, Hewage CG, Fonseka P. Prevalence of burnout and its correlates among female primary school teachers in the southern province of Sri Lanka. *Eur J Preventive Medicine*. 2015;3(2-1):9-14.
24. Chennoufi L, Ellouze F, Cherif W, Mersni M, M'rad MF. [Stress and burnout among Tunisian teachers]. *Encephale*. 2012;38(6):480-87 (in French). PMID:23200614
25. Issa JH, Jamil H. Overview of the Education System in Contemporary Iraq. *European Journal of Social Sciences* 2010;14(3):360-8.
26. Luk AL, Chan BPS, Cheong SW, Ko SKK. An exploration of the burnout situation on teachers in two schools in Macau. *Soc Indic Res*. 2010;93(3):489-502. PMID:20062816
27. Lau PSY, Yuen MT, Chan RMC. Do demographic characteristics make a difference to burnout among Hong Kong secondary school teachers? *Soc Indic Res*. 2005; 71:491-516. PMID:20062816
28. Singh P, Aulak DS, Mangat SS, Aulak MS. Systematic review: factors contributing to burnout in dentistry. *Occup Med (Lond)*. 2016;66(1):27-31. PMID:26443193
29. Gibbs B. Novice but great. *Talking About Teaching*. 2010;4:47-53.
30. Daniel J, Sarmany-Schuller I. Burnout in teacher's profession: age, year of practice and some disorders. *Studia Psychologica*. 2000;42(1-2):33-41.
31. Bauer J, Unterbrink T, Hack A, Pfeifer R, Buhl-Griesshaber V, Muller U, et al. Burnout and effort-reward-imbalance in a sample of 949 German teachers. *Int Arch Occup Environ Health*. 2007;80(5):433-41. PMID:17294239
32. Correa-Correa Z, Muñoz-Zambrano I, Chaparro AF. [Burnout syndrome in teachers from two universities in Popayán, Colombia.] *Rev Salud Publica (Bogota)*. 2010;12(4):589-98 (in Spanish). PMID:21340124
33. Zhang L, Zhao J, Xiao H, Zheng H, Xiao Y, Chen M, et al. Mental health and burnout in primary and secondary school teachers in the remote mountain areas of Guangdong Province in the People's Republic of China. *Neuropsychiatr Dis Treat*. 2014;10:123-30. PMID:24465129
34. Jamshidirad M, Mukundan J, Nimehchisalem V. Language teachers' burnout and gender. *Int J Applied Linguistics and Eng Lit*. 2012;1(4):46-52.
35. Beer J, Beer J. Burnout and stress, depression and self-esteem of teachers. *Psychol Rep* 1992;71(3 Pt 2):1331-36. PMID:1480718
36. Purvanova RK, Muros JP. Gender differences in burnout: a meta-analysis. *J Vocat Behav*. 2010;77:168-85.
37. Ahola K, Toppinen-Tanner S, Huuhtanen P, Koskinen A, Väänänen A. Occupational burnout and chronic work disability: An eight-year cohort study on pensioning among Finnish forest industry workers. *J Affect Disord*. 2009;115(1-2):150-9. PMID:18945493
38. Cui G, Wang F, Xu Y. [Job burnout among physicians in ten areas of China.] *Zhonghua Yi Xue Za Zhi*. 2013;93(47):3773-5 (in Chinese). PMID:24548396
39. Aguwa EN, Nduka I, Arinze-Onyia SU. Assessment of burnout among health workers and bankers in Aba south local government area, Abia state, South East Nigeria. *Niger J Clin Pract*. 2014;17(3):296-302. PMID:24714006
40. Popa F, Arafat R, Purcarea VL, Lala A, Popa-Velea O, Bobimac G. Occupational burnout levels in emergency medicine – a stage 2 nationwide study and analysis. *J Med Life*. 2010;3:449-53. PMID:21254747
41. Sonnentag S, Kuttler I, Fritz C. Job stressors, emotional exhaustion, and need for recovery: A multi-source study on the benefits of psychological detachment. *J Vocat Behav*. 2010;76(3):355-65.
42. Mukundan J, Khandehroo K. Burnout among English language teachers in Malaysia. *Contemp Issues Educ Res* 2010;3(1):71-6.
43. Vercambre MN, Brosselin P, Gilbert F, Nerrière E, Kovess-Masféty V. Individual and contextual covariates of burnout: a cross-sectional nationwide study of French teachers. *BMC Public Health* 2009;9:333. PMID:19744328.
44. Hastings RP, Bham MS. The relationship between student behavior patterns and teacher burnout. *School Psychol Int*. 2003;24:115-27.
45. Ng'eno G. Causes of Burnout among primary school teachers within Kericho municipality, Kenya. *Journal of Technology and Education in Nigeria*. 2007;12(2):9-18.
46. George E, Louw D, Badenhorst G. Job satisfaction among urban secondary-school teachers in Namibia. *S Afr J Educ* 2008;28(2):135-54.