

# How are psychological capital and emotion regulation associated with schoolteachers' burnout? A systematic review

Gunchanon Khawda<sup>1\*</sup>, Chaichana Nimnuan<sup>2</sup>

<sup>1</sup>*PhD program in Mental Health, Department of Psychiatry, Faculty of Medicine, Chulalongkorn University, Bangkok, Thailand*

<sup>2</sup>*Department of Psychiatry, Faculty of Medicine, Chulalongkorn University, Bangkok, Thailand*

*\*Corresponding author, E-mail: gunchanon.kh@gmail.com*

## Abstracts

Teachers are one of the professions that suffer from burnout, which has negative effects not only on teachers but also on their students. This systematic review aimed to examine the relationships between psychological capital, emotion regulation, and burnout among schoolteachers. The review was based on electronic databases including SCOPUS, PubMed, and ERIC and included 10 original articles that met the inclusion and exclusion criteria. The findings showed that higher levels of psychological capital and emotion regulation were negatively associated with burnout and its dimensions. Additionally, cognitive reappraisal was found to have a negative effect on burnout, while expressive suppression was positively associated with burnout. This systematic review could be useful in developing interventions and guidelines to improve psychological capital and emotion regulation, and prevent burnout in schoolteachers, leading to better well-being.

**Keywords:** Burnout, psychological capital, emotion regulation, teacher, systematic review.

## I. Introduction

Burnout is an occupational phenomenon defined by the 11th Revision of the International Classification of Diseases (ICD-11) as relating to long-term working stress. (World Health Organization, 2019) Burnout has three dimensions: emotional exhaustion, depersonalization, and reduced personal accomplishment. (Maslach & Jackson, 1986) Emotional exhaustion refers to a decrease in energy and emotional resources, leading to chronic fatigue. (García-Arroyo et al., 2019) Depersonalization involves feeling cynical and uncaring about work, lacking enthusiasm, and disengaging from work. (Sachdeva & Narwal, 2015; Shoji et al., 2016) Reduced personal accomplishment refers to negative feelings about one's own efficacy and achievement in their work. (García-Arroyo et al., 2019; García-Carmona et al., 2019)

Secondary school teachers are among the professions with a high risk of working stress and burnout. (Mérida-López & Extremera, 2017) According to García-Carmona et al. (2019), they have a particularly high risk of burnout due to low feelings of personal accomplishment. (García-Carmona et al., 2019)

Teachers' burnout has negative physical, psychological, and behavioral consequences, such as headaches, insomnia, exhaustion, weight loss, restlessness, inefficacy, isolation, depression, family problems, and marital problems, reduced work performance, drug abuse, and poor quality of life. (Demir, 2018; García-Carmona et al., 2019) It also impacts the teacher-student relationship and student performance. (Capone et al., 2019) Contributing factors to burnout include work overload, stressors, inadequate income, overcrowded classrooms, time pressures, poor time management (García-Carmona et al., 2019),

low emotional intelligence (Mérida-López & Extremera, 2017), limited psychological capital (Yin et al., 2021; Zhang et al., 2019a, 2019b), and impaired emotion regulation. (Chang, 2013, 2020; Fathi et al., 2021) This review focuses on the latter two.

Psychological capital, consisting of self-efficacy, hope, optimism, and resilience (Luthans, 2002), is a positive resource that boosts work performance and achievement (Luthans et al., 2007; Luthans & Youssef, 2007). Self-efficacy represents confidence in handling challenging tasks, hope refers to motivation for achieving desired goals, optimism represents positive attitudes, and resilience indicates the ability to turn failures into successes. (Luthans et al., 2007)

Psychological capital positively affects teachers' attitudes and reduces negative emotions. (Demir, 2018) Studies have shown that teachers with higher psychological capital experience lower levels of burnout across all dimensions. (Cheung et al., 2011; Freire et al., 2020; Kaya & Altinkurt, 2018)

Emotion regulation refers to the process of managing, appraising, and changing emotional responses, using both intrinsic and extrinsic strategies. (Gross, 2001; Thompson, 1994) It involves two dimensions: cognitive reappraisal and expressive suppression. (Gross & John, 2003) Cognitive reappraisal involves changing the way emotions are perceived, which can lead to a reduction in negative emotions and an increase in positive emotions. (Gross & John, 2003) On the other hand, expressive suppression involves inhibiting emotional expression, which fails to reduce negative emotions and often leads to an accumulation of such emotions. Additionally, it causes a disconnect between inner feelings and outward expressions, resulting in negative feelings about oneself and others. (Gross & John, 2003)

Previous studies have shown that teachers with higher emotion regulation experience lower levels of burnout, better well-being, and effective classroom management. (Fathi et al., 2021; Yin et al., 2016) Higher cognitive reappraisal is associated with lower emotional exhaustion, depersonalization, and self-inefficacy (Chang, 2020), while higher expressive suppression is

associated with higher levels of burnout in all dimensions. (Chang, 2013, 2020)

There are a few studies to explain the relationships between psychological capital, emotion regulation, and burnout, especially in schoolteachers. Therefore, this study aims to systematically review the relationships between psychological capital, regulation, and burnout among schoolteachers.

## 2. Methods

### 2.1 The data search

This systematic review was conducted using search strategies to find original articles from electronic databases including SCOPUS, PubMed, and ERIC (Educational Resource Information center). The researchers consulted with librarians to establish search terms that covered the objectives of the study which aimed to explain the relationships between psychological capital, emotion regulation, and burnout among schoolteachers. The searching terms included titles, abstract, and keywords were "(burnout OR burn-out OR "burn out") AND "psychological capital" AND ("emotion regulation" OR "emotional regulation" OR "emotion-regulation") AND teacher\*". The English published and full-text articles were included in the review. The entire systematic process was carried out in February 2022.

### 2.2 Inclusion and exclusion criteria

Inclusion criteria were (a) English-language original articles published in full-text, (b) The study focused on psychological capital, emotion regulation, and burnout, with psychological capital defined as self-efficacy, optimism, hope, and resilience, emotion regulation as cognitive reappraisal and expressive suppression, and burnout as emotional exhaustion, depersonalization, and reduced personal accomplishment, and (c) The study participants were schoolteachers.

Exclusion criteria were (a) Systematic or meta-analysis review articles, (b) Non-English or other

language articles, and (c) Studies conducted on teachers in universities, colleges, or higher education institutions.

### 2.3 Data extraction

The search for articles from electronic databases (SCOPUS, PubMed, and ERIC) resulted in 103 articles, as depicted in the PRISMA flow chart (Page et al., 2021) in *Figure 1*. After excluding duplicates, there were 87 articles remaining. The titles and abstracts of these articles were first screened to ensure they aligned with the research objectives. The total number of articles after this screening was 37.

The second screening included 37 articles that were thoroughly read in every part. The articles that met all inclusion and exclusion criteria were included, resulting in a total of 10 articles. The articles from the second screening were assessed for quality using a checklist for analytical cross-sectional studies, which is a critical appraisal tool used in JBI Systematic Reviews. (Moola et al., 2020)

All articles deemed suitable for inclusion in this review were thoroughly read and analyzed, and relevant data was extracted to examine the relationships between psychological capital, emotion regulation, and burnout among schoolteachers. The extracted data was then used to present the results of this systematic review.

## 3. Results

The systematic review included 10 articles, 7 of which examined the relationship between psychological capital and burnout in schoolteachers, and were published between 2011-2021 (as shown in *Table 1*). The remaining 3 articles, which were published between 2013-2021, examined the relationship between emotion regulation and burnout in schoolteachers (as shown in *Table 2*).

### 3.1 The relationships between psychological capital and burnout

*Table 1* presents a systematic review of the relationship between psychological capital and burnout among schoolteachers. The studies included teachers from various school types, such as pre-schools, primary schools, middle schools, and secondary schools. The descriptive data indicated that three studies focused mainly on secondary school teachers, four studies were conducted with Chinese teachers, five studies had mostly female participants, and one study exclusively involved female teachers.

*Table 1* shows the studies examining the relationship between psychological capital and burnout. It indicates that psychological capital has a negative correlation with burnout. (Yin et al., 2021; Zhang et al., 2019a, 2019b)

Psychological capital had a significant negative correlation with all dimensions of burnout, including emotional exhaustion, depersonalization, and reduced personal accomplishment. (Cheung et al., 2011; Freire et al., 2020; Kaya & Altinkurt, 2018) In other words, a positive correlation was found between psychological capital and professional accomplishment. (Freire et al., 2020)

All dimensions of psychological capital, such as self-efficacy, hope, optimism, and resilience, were found to have a significant negative correlation with all three dimensions of burnout: emotional exhaustion, depersonalization, and reduced personal accomplishment. (Ferradás et al., 2019; Peng et al., 2019)

Psychological capital had a significant negative effect on the dimensions of burnout such as emotional exhaustion and depersonalization, and a positive effect on professional accomplishment. Additionally, structural equation modeling studies showed that positive coping style and job satisfaction were significant mediators between psychological capital and burnout. (Yin et al., 2021; Zhang et al., 2019b)

### 3.2 The relationships between emotion regulation and burnout

*Table 2* presents the studies examining the relationship between emotion regulation and

burnout among schoolteachers. The studies showed that the majority of participants were English as a Foreign Language (EFL) teachers in Fathi et al. (2021), urban-school teachers in Chang (2020), and high school teachers in Chang (2013). Two studies reported mostly female participants. (Chang, 2013; Fathi et al., 2021)

The study by Fathi et al. (2021) found a strong negative correlation between emotion regulation and burnout ( $r = -0.74$ ,  $P < 0.01$ ). With regards to the dimensions of emotion regulation, such as cognitive reappraisal and expressive suppression, cognitive reappraisal was negatively correlated with depersonalization and inefficacy. (Chang, 2013, 2020) The study by Chang (2013) found that cognitive reappraisal was negatively correlated with emotional exhaustion. However, the study by Chang (2020) reported no significant association between cognitive reappraisal and emotional exhaustion. On the other hand, expressive suppression was positively correlated with all dimensions of burnout, including emotional exhaustion, depersonalization, and inefficacy. (Chang, 2013, 2020)

The structural equation modeling (SEM) results showed that emotion regulation had a significant negative impact on burnout. (Fathi et al., 2021) The findings indicated that cognitive reappraisal had a significant negative impact on all dimensions of burnout, including emotional exhaustion, depersonalization, and inefficacy. (Chang, 2020) In contrast, expressive suppression had a significant positive effect on overall burnout (Chang, 2013) and had a positive impact on all dimensions of burnout. (Chang, 2020)

#### 4. Discussion

This study aims to systematically explain the relationship between psychological capital, emotion regulation, and burnout among schoolteachers. The findings showed that psychological capital was negatively associated with burnout (Yin et al., 2021; Zhang et al., 2019a, 2019b), indicating that teachers with higher psychological capital received lower levels of burnout. Psychological capital was also negatively associated with all dimensions of burnout, including emotional exhaustion,

depersonalization, and lack of personal accomplishment (Cheung et al., 2011; Freire et al., 2020; Kaya & Altinkurt, 2018), indicating that teachers with higher psychological capital experienced lower levels of emotional exhaustion and depersonalization, and higher levels of personal accomplishment. Furthermore, the findings showed that higher levels of all dimensions of psychological capital, comprising efficacy, hope, optimism, and resilience, were related to lower levels of teachers' burnout. (Ferradás et al., 2019; Peng et al., 2019)

Psychological capital was a positive resource for individuals that influenced their thoughts and behaviors. (Peng et al., 2019) Individuals with high self-efficacy were characterized by high levels of self-confidence, as they believed that they had the ability to handle challenging tasks and achieve them. (Ferradás et al., 2019; Kaya & Altinkurt, 2018; Luthans et al., 2007) Individuals with hope had the ability to set their own goals. (Ferradás et al., 2019; Freire et al., 2020) When they encountered problems, they believed that they had the ability to find alternative ways to achieve their goals. Those with high optimism had positive thoughts about current behaviors and future achievements. (Freire et al., 2020; Kaya & Altinkurt, 2018) Individuals with resilience had the ability to recover their energy when faced with difficult situations and could persevere until they achieved their goals. (Ferradás et al., 2019; Kaya & Altinkurt, 2018) Therefore, it could be implied that teachers with high psychological capital would believe they have high self-efficacy in managing burnout, have hope in their ability to set goals to cope with burnout, have a positive attitude towards successfully managing burnout, and have the resilience to recover energy and persevere in managing burnout.

Psychological capital helped individuals reduce feelings of failure and increase feelings of personal accomplishment. (Kaya & Altinkurt, 2018) Furthermore, it helped teachers increase their teaching satisfaction and positive emotions. (Freire et al., 2020) On the other hand, individuals with lower psychological capital could experience negative work moods and higher levels of burnout. (Zheng et al., 2020) Therefore, it is possible that higher psychological capital can increase positive

psychological energy, which can help regulate and reduce the onset of burnout. (Yin et al., 2021; Zhang et al., 2019a, 2019b)

The systematic findings showed that emotion regulation was negatively associated with burnout (Fathi et al., 2021), indicating that teachers with higher levels of emotion regulation had lower levels of burnout. All dimensions of emotion regulation were associated with teachers' burnout. For example, cognitive reappraisal was negatively associated with dimensions of burnout, including depersonalization and inefficacy, (Chang, 2013, 2020) and emotional exhaustion. (Chang, 2020) These results suggest that teachers with high levels of cognitive reappraisal perceived lower levels of depersonalization, inefficacy, and emotional exhaustion. This could be attributed to individuals who frequently regulate their emotions with cognitive reappraisal potentially experiencing higher levels of positive emotions and lower levels of negative emotions. They also might feel freer to share their personal emotions with others, which can lead to better relationships with others. (Gross & John, 2003) Furthermore, individuals with higher levels of cognitive reappraisal might perceive higher levels of life satisfaction, self-esteem, and lower levels of depression. (Gross & John, 2003)

Findings also showed that expressive suppression was negatively linked to burnout in all dimensions. This means that teachers who often suppress their emotions experience high levels of emotional exhaustion, depersonalization, and self-inefficacy. The study by Chang (2020) explained that this might be due to the pressure to conform to work and power structures in schools. Overuse of expressive suppression can lead to emotional maladjustment, distress, and depression. (Chang, 2020; Gross & John, 2003)

The ability of teachers to regulate their emotions has an impact on managing the work environment and expressing emotions in their teaching. (Yin et al., 2021) Teachers who have high emotional regulation skills have effective strategies to manage their desirable emotions and reduce or adjust their undesirable emotions. (Brackett et al., 2010) Additionally, teachers with high emotional regulation abilities are better equipped to handle the emotional pressures associated with their

work, leading to reduced stress, lower exhaustion, higher job satisfaction, and a greater sense of personal accomplishment. (Brackett et al., 2010)

## 5. Limitations

This study has some limitations. First, the components of the variables - burnout, psychological capital, and emotion regulation - were determined based on a specific definition in this study, which may not be generalized to other studies that use different concepts. Second, the focus of this study was on schoolteachers ranging from pre-schools to secondary schools, and did not include studies on university teachers, who may have different working contexts. Finally, due to the limited number of studies on the relationship between psychological capital, emotion regulation, and burnout among schoolteachers, a small number of articles were included in this systematic review.

## 6. Future research and practical directions

The systematic review showed that there were few studies focused on the relationships between psychological capital, emotion regulation, and burnout, particularly among schoolteachers. According to García-Carmona et al. (2019), schoolteachers, especially those in secondary schools, were at risk of burnout. Future research should give more attention to conducting studies among these schoolteachers and should also employ other study designs such as longitudinal studies in order to determine possible causal relationship.

The findings demonstrated that psychological capital and emotion regulation could be protective factors to reduce teachers' burnout. The higher psychological capital and emotion regulation teachers had, the lower burnout they perceived. This study might be beneficial to mental health professionals and related persons for they could utilize these findings to develop interventions or guidelines to improve higher psychological capital and emotion regulation among schoolteachers, resulting in reducing and preventing the severe risks of teachers' burnout.

## 7. Conclusions

This systematic review examines the relationships between psychological capital, emotion regulation, and burnout in schoolteachers. The results indicate that psychological capital has a negative association with burnout, including all dimensions such as emotional exhaustion, depersonalization, and reduced personal accomplishment. All dimensions of psychological capital, including hope, optimism, self-efficacy, and resilience, were found to have a negative relationship with burnout. The results also showed that emotion regulation has a negative impact on

burnout, with cognitive reappraisal having a negative association and expressive suppression having a positive association. These findings suggest that psychological capital and emotion regulation may act as protective factors against burnout risk in teachers.

## 8. Disclosure and conflicts of interest

The authors declare no conflict of interest and no funding sources related to this study.

**Table 1.** The studies of psychological capital and burnout. (7 articles)

| Author (Year)                | Sample   | Country | Demographics characteristics  | Descriptive data of the study variables  | Statistical analysis               | Findings on the relationships between PsyCap and BO  |
|------------------------------|--|---------|---|--|------------------------------------|--|
| <i>Yin, et al. (2021)</i>    | 132 teachers from middle-school in Hebei and Jiangxi province, China.  | China   | Female (74.2%)<br>Male (25.8%)  | PsyCap (M = 109.62, SD = 10.82)<br>BO (M = 47.99, SD = 11.14)  | Correlation, Mediating effect test | <i>PsyCap</i> was negatively correlated with BO. ( $r = -0.56^{***}$ )<br><br><i>PsyCap</i> had the significantly direct effect on BO. ( $b = -0.28$ , 95%CI -0.39 to -0.17)<br><br>Job satisfaction is significant moderator between <i>PsyCap</i> and BO (Effect = -0.087, Effect size = 24%, 95%CI -0.16 to 0.02)                                 |
| <i>Freire, et al. (2020)</i> | 1,379 teachers from pre-school (7.8%), primary school (21.5%), compulsory secondary schools (34.2%), and others (e.g., Baccalaureate, vocational training, etc.) (36.5%) | Spain   | Female (73.7%)<br>Male (26.3%)<br>Aged 24-63 years old. (M = 43.17, SD = 13.21) | PsyCap (M = 4.00, SD = 0.53)<br>BO: EE (M = 2.35, SD = 1.28), DP (M = 0.91, SD = 0.91), PA (M = 4.39, SD = 0.89) | Correlation, Mediation analysis    | <i>PsyCap</i> was negatively correlated with EE ( $r = -0.43^{***}$ ), DP ( $r = -0.31^{***}$ ), whereas it was positively correlated with PA ( $r = 0.68^{***}$ )<br><br><i>PsyCap</i> had negative direct effect on EE ( $b = -0.76^{***}$ ), and DP ( $b = -0.27^{***}$ ).<br><br><i>PsyCap</i> had positively effect on PA ( $b = 1.005^{***}$ ) |

| Author (Year)                      | Sample   | Country         | Demographics characteristics   | Descriptive data of the study variables   | Statistical analysis                         | Findings on the relationships between PsyCap and BO  |
|------------------------------------|--|-----------------|--|---|--|--|
| <i>Ferradás et al. (2019)</i>      | 1,379 teachers from pre-school (7.8%), primary school (21.5%), compulsory secondary schools (34.2%), and others (e.g., Baccalaureate, vocational training, etc.) (36.5%) | Galicia (Spain) | Female (73.7%)<br>Male (26.3%)<br><br>Aged 24-63 years old. (M = 43.17, SD = 13.21)        | PsyCap: Efficacy (M = 3.77, SD = 0.64), Hope (M = 4.08, SD = 0.79), Optimism (M = 4.33, SD = 0.67), Resilience (M = 4.05, SD = 0.56)<br><br>BO: EE (M = 2.3, SD = 1.28), DP (M = 0.91, SD = 1.31), PA (M = 4.39, SD = 0.89) | Correlation, A latent profile analysis (LPA) | <i>Efficacy</i> was negatively correlated with EE ( $r = -0.31^{***}$ ), DP ( $r = -0.20^{***}$ ), whereas it was positively correlated with PA ( $r = 0.52^{***}$ )<br><br><i>Hope</i> was negatively correlated with EE ( $r = -0.39^{***}$ ), DP ( $r = -0.28^{***}$ ), whereas it was positively correlated with PA ( $r = 0.60^{***}$ )<br><br><i>Optimism</i> was negatively correlated with EE ( $r = -0.38^{***}$ ), DP ( $r = -0.30^{***}$ ), whereas it was positively correlated with PA ( $r = -0.59^{***}$ )<br><br><i>Resilience</i> was negatively correlated with EE ( $r = -0.31^{***}$ ), DP ( $r = -0.24^{***}$ ), and was positively correlated with PA ( $r = 0.55^{***}$ ) |
| <i>Zhang et al. (2019a, 2019b)</i> | 386 teachers from primary schools (N = 269) and secondary school (N = 117)   | China           | Female (55.1%)<br>Male (38.6%)<br><br>Mean of age = 37.4 (SD = 10.9)<br><br>23 to 55 years | PsyCap (M = 122.04, SD = 23.91)<br><br>BO (M = 58.85, SD = 14.04)   | Correlation, SEM, Mediating effects          | <i>PsyCap</i> was negatively correlated with Burnout ( $r = -0.67^{**}$ )<br><br>SEM showed that PsyCap had negative direct effect on BO ( $B = -0.53^{**}$ )<br><br>PsyCap was serially associated with positive coping style ( $b = 0.60^{***}$ ), BO ( $b = -0.55^{***}$ ).   |
| <i>Peng et al. (2019)</i>          | 355 female teachers in kindergartens. (Pre-school teachers)  | China           | All participants are female<br><br>Age 20 to 39 years<br><br>(M = 26.24, SD = 3.61)        | Self-efficacy (M = 4.05, SD = 0.85)<br><br>Optimism (M = 4.06, SD = 0.85)<br><br>Resilience (M = 4.11, SD = 0.71)   | Correlation Regression SEM                   | <i>Self-efficacy</i> was negatively correlated with EE ( $r = -0.53^{***}$ ), DP ( $r = -0.44^{***}$ ), Reduced PA ( $r = -0.34^{***}$ )<br><br><i>Hope</i> was negatively correlated with EE ( $r = -0.40^{***}$ ), DP ( $r = -0.33^{***}$ ), Reduced PA ( $r = -0.34^{***}$ )  |

| Author (Year)                      | Sample  | Country | Demographics characteristics  | Descriptive data of the study variables   | Statistical analysis                    | Findings on the relationships between PsyCap and BO   |
|------------------------------------|---|---------|---|---|---|---|
|                                    |   |         |   | Hope (M = 3.95, SD = 0.61)<br>BO: EE (M = 1.62, SD = 1.17), DP (M = 2.4, SD = 1.19), Reduced PA (M = 2.47, SD = 1.26)     |   | <i>Optimism</i> was negatively correlated with EE (r = -0.52***), DP (r = -0.42***), Reduced PA (r = -0.38***)<br><br><i>Resilience</i> was negatively correlated with EE (r = -0.41***), DP (r = -0.38***), Reduced PA (r = -0.32***)  |
| <i>Kaya &amp; Altinkurt (2018)</i> | 374 teachers from preschools (5.3%), elementary schools (25.7%), secondary schools (36.1%), high schools (13.9%), vocational high schools (19%) | Turkey  | Female (41.2%)<br>Male (58.8%)  | PsyCap: (M = 4.70, df = 0.60)<br>BO: EE (M = 2.39, df = 0.74), DP (M = 1.83, df = 0.69), PA-reverse (M = 2.26, df = 0.56) | Correlation, SEM, Mediating effect test | <i>PsyCap</i> was negatively correlated with EE (r = -0.34**), DP (r = -0.35**), PA-Reverse (r = -0.59**) The direct effects of <i>PsyCap</i> on EE ( $\beta$ = -0.46**), DP ( $\beta$ = -0.49**), and PA-reverse ( $\beta$ = -0.74**) were significant.                                      |
| <i>Cheung et al. (2011)</i>        | 264 Chinese school teachers (primary schools and 2 secondary schools)   | China   | Female (67.5%)<br>Male (31.1%)<br>Unidentified sex (22%)<br>Mean age was 34.4 years old (SD = 8.09) | PsyCap (M = 4.23, SD = 0.71)<br>BO: EE (M = 2.30, SD = 0.64), DP (M = 1.73, SD = 0.65), Lack of PA (M = 2.17, SD = 0.58)  | Correlation Regression                  | <i>PsyCap</i> was negatively correlated with EE (r = -0.50**), DP (r = -0.56**), Lack of PA (r = -0.50**) The interaction terms between <i>PsyCap</i> and the expression of naturally felt emotion and were significant for DP ( $\beta$ = 0.18**), and job satisfaction ( $\beta$ = -0.17**) |

**Note:** PsyCap is psychological capital; BO is burnout; EE is emotional exhaustion; DP is depersonalization; PA is personal accomplishment

\*P < 0.05; \*\*P < 0.01, \*\*\*P < 0.001



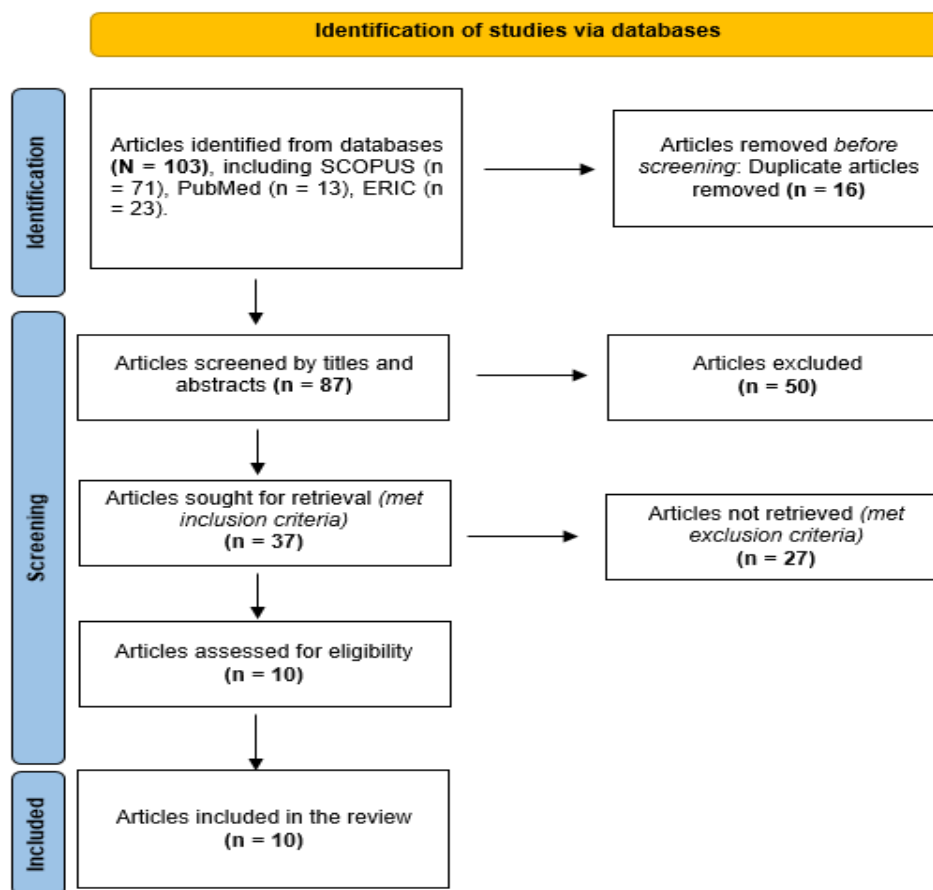
**Table 2.** The studies of emotion regulation and burnout. (3 articles)

| Author (Year)              | Sample   | Country               | Demographics characteristics               | Descriptive data of the study variables  | Statistical analysis | Findings on the relationships between ER and BO  |
|----------------------------|--|-----------------------|--|--|----------------------|--|
| <i>Fathi et al. (2021)</i> | 238 Iranian EFL (English as a Foreign Language) teachers in schools                          | Iran                  | Female (60%)<br>Male (40%)                 | ER (M = 27.52, SD = 9.88)<br>BO (M = 46.26, SD = 16.52)  | Correlation          | <i>ER</i> was negatively correlated with BO ( $r = -0.74, P < 0.01$ )<br><br>SEM showed that ER negatively affects BO ( $\beta = -0.68, P < 0.001$ )<br><br>Self-efficacy significantly affected burnout via the mediation of ER.<br><br>Teacher reflection significantly influenced BO through the mediation of ER.   |
| <i>Chang (2020)</i>        | 561 teachers from urban schools (39.1%), suburban schools (29.9), and rural schools (25.2%). | the Midwest of U.S.A. | Not reported percentage of male and female | ER: CR (M = 4.31, SD = 0.95), ES (M = 2.47, SD = 0.95)<br>BO: EE (M = 3.99, SD = 1.60), DP (M = 2.18, SD = 1.19), Inefficacy (M = 2.59, SD = 1.39) | Correlation          | <i>CR</i> was negatively correlated with DP ( $r = -0.13, P < 0.01$ ) and inefficacy ( $r = -0.11, P < 0.05$ ). However, not significantly correlated with EE ( $P > 0.05$ )<br><br><i>ES</i> was positively correlated with EE ( $r = 0.09^*$ ), DP ( $r = 0.24^{**}, P < 0.01$ ), and inefficacy ( $r = -0.15^{**}$ )<br><br>SEM showed that CR was negatively covaried with all three BO: EE (beta = $-0.10^*$ ), DP (beta = $-0.18^*$ ), and inefficacy (b = $-0.14^*$ ) while EE positively covaried with all three burnout symptoms: EE (b = $0.14^*$ ), DP (b = $0.39^*$ ), and inefficacy (b = $0.22^*$ ). |

|                     |  |                |                                    |  |             |  |
|---------------------|--|----------------|------------------------------------|--|-------------|--|
| <i>Chang (2013)</i> | 492 teachers from elementary schools (N = 165), middle-school (N = 120), and high-school (N = 207) | The US Midwest | Female (N = 391)<br>Male (N = 101) | ER: CR (M = 4.34, SD = 0.94), ES (M = 2.50, SD = 0.97)<br>BO: EE (M = 4.06, 1.60)<br>DP (M = 2.23, SD = 1.20), reduced personal efficacy (M = 2.65, SD = 1.39) | Correlation | CR was negatively correlated with EE (r = -0.13**), DP (r = -0.19**), and reduced personal efficacy (r = -0.16**) significantly<br>ES was positively correlated with EE (r = 0.13), DP (r = 0.29**), reduced personal efficacy (r = 0.22**) significantly<br>SEM showed that ES negatively affected with BO, significantly (standardized coefficients = 0.18*)<br>CR was non-significant |
|---------------------|--|----------------|------------------------------------|--|-------------|--|

**Note:** ER is emotion regulation; BO is burnout; CR is Cognitive reappraisal; ES is Expressive suppression.

\*P < 0.05; \*\*P < 0.01, \*\*\*P < 0.001

**Figure 1.** PRISMA flow chart of studies included in the systematic review

## References

- [1] Brackett, M. A., Palomera, R., Mojsa-Kaja, J., Reyes, M. R., & Salovey, P. (2010). Emotion-regulation ability, burnout, and job satisfaction among british secondary-school teachers [Article]. *Psychology in the Schools*, 47(4), 406-417. <https://doi.org/10.1002/pits.20478>
- [2] Capone, V., Joshanloo, M., & Park, M. S. A. (2019). Burnout, depression, efficacy beliefs, and work-related variables among school teachers [Article]. *International Journal of Educational Research*, 95, 97-108. <https://doi.org/10.1016/j.ijer.2019.02.001>
- [3] Chang, M. L. (2013). Toward a theoretical model to understand teacher emotions and teacher burnout in the context of student misbehavior: Appraisal, regulation and coping [Article]. *Motivation and Emotion*, 37(4), 799-817. <https://doi.org/10.1007/s11031-012-9335-0>
- [4] Chang, M. L. (2020). Emotion Display Rules, Emotion Regulation, and Teacher Burnout [Article]. *Frontiers in Education*, 5, Article 90. <https://doi.org/10.3389/feduc.2020.00090>
- [5] Cheung, F., Tang, C. S. K., & Tang, S. (2011). Psychological capital as a moderator between emotional labor, burnout, and job satisfaction among school teachers in China [Article]. *International Journal of Stress Management*, 18(4), 348-371. <https://doi.org/10.1037/a0025787>
- [6] Demir, S. (2018). The relationship between psychological capital and stress, anxiety, burnout, job satisfaction, and job involvement [Article]. *Egitim Arastirmalari - Eurasian Journal of Educational Research*, 2018(75), 137-154. <https://doi.org/10.14689/ejer.2018.75.8>

- [7] Fathi, J., Greenier, V., & Derakhshan, A. (2021). Self-efficacy, Reflection, and Burnout among Iranian EFL Teachers: The Mediating Role of Emotion Regulation [Article]. *Iranian Journal of Language Teaching Research*, 9(2), 13-37. <https://doi.org/10.30466/ijltr.2021.121043>
- [8] Ferradás, M. M., Freire, C., García-Bértoa, A., Núñez, J. C., & Rodríguez, S. (2019). Teacher profiles of psychological capital and their relationship with burnout [Article]. *Sustainability (Switzerland)*, 11(18), Article 5096. <https://doi.org/10.3390/su11185096>
- [9] Freire, C., Ferradás, M. M., García-Bértoa, A., Núñez, J. C., Rodríguez, S., & Piñeiro, I. (2020). Psychological capital and burnout in teachers: The mediating role of flourishing [Article]. *International Journal of Environmental Research and Public Health*, 17(22), 1-14, Article 8403. <https://doi.org/10.3390/ijerph17228403>
- [10] García-Arroyo, J. A., Osca Segovia, A., & Peiró, J. M. (2019). Meta-analytical review of teacher burnout across 36 societies: the role of national learning assessments and gender egalitarianism [Article]. *Psychology and Health*, 34(6), 733-753. <https://doi.org/10.1080/08870446.2019.1568013>
- [11] García-Carmona, M., Marín, M. D., & Aguayo, R. (2019). Burnout syndrome in secondary school teachers: a systematic review and meta-analysis [Article]. *Social Psychology of Education*, 22(1), 189-208. <https://doi.org/10.1007/s11218-018-9471-9>
- [12] Gross, J. J. (2001). Emotion regulation in adulthood: Timing is everything [Article]. *Current Directions in Psychological Science*, 10(6), 214-219. <https://doi.org/10.1111/1467-8721.00152>
- [13] Gross, J. J., & John, O. P. (2003). Individual Differences in Two Emotion Regulation Processes: Implications for Affect, Relationships, and Well-Being [Article]. *Journal of Personality and Social Psychology*, 85(2), 348-362. <https://doi.org/10.1037/0022-3514.85.2.348>
- [14] Kaya, Ç., & Altınkurt, Y. (2018). Role of psychological and structural empowerment in the relationship between teachers' psychological capital and their levels of burnout [Article]. *Egitim ve Bilim*, 43(193), 63-78. <https://doi.org/10.15390/EB.2018.6961>
- [15] Luthans, F. (2002). The need for and meaning of positive organizational behavior [Article]. *Journal of Organizational Behavior*, 23(6), 695-706. <https://doi.org/10.1002/job.165>
- [16] Luthans, F., Avolio, B. J., Avey, J. B., & Norman, S. M. (2007). Positive psychological capital: Measurement and relationship with performance and satisfaction [Review]. *Personnel Psychology*, 60(3), 541-572. <https://doi.org/10.1111/j.1744-6570.2007.00083.x>
- [17] Luthans, F., & Youssef, C. M. (2007). Emerging positive organizational behavior [Review]. *Journal of Management*, 33(3), 321-349. <https://doi.org/10.1177/0149206307300814>
- [18] Maslach, C., & Jackson, S. E. (1986). *Maslach Burnout Inventory manual* (2nd ed.). CA:Consulting Psychologists Press.
- [19] Mérida-López, S., & Extremera, N. (2017). Emotional intelligence and teacher burnout: A systematic review [Article]. *International Journal of Educational Research*, 85, 121-130. <https://doi.org/10.1016/j.ijer.2017.07.006>
- [20] Moola, S., Munn, Z., Tufanaru, C., Aromataris, E., Sears, K., Sfetcu, R., Currie, M., Qureshi, R., Mattis, P., Lisy, K., & Mu, P.-F. (2020). Chapter 7: Systematic reviews of etiology and risk. In *JBIM Manual for Evidence Synthesis*. JBI. <https://synthesismanual.jbi.global>
- [21] Page, M. J., McKenzie, J. E., Bossuyt, P. M., Boutron, I., Hoffmann, T. C., Mulrow, C. D., Shamseer, L., Tetzlaff, J. M., Akl, E. A., Brennan, S. E., Chou, R., Glanville, J., Grimshaw, J. M., Hróbjartsson, A., Lalu, M. M., Li, T., Loder, E. W., Mayo-Wilson, E., McDonald, S., . . . Moher, D. (2021). The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. *BMJ*, 372, n71. <https://doi.org/10.1136/bmj.n71>
- [22] Peng, J., He, Y., Deng, J., Zheng, L., Chang, Y., & Liu, X. (2019). Emotional labor strategies and job burnout in preschool

- teachers: Psychological capital as a mediator and moderator [Article]. *Work*, 63(3), 335-345. <https://doi.org/10.3233/WOR-192939>
- [23] Sachdeva, G., & Narwal, M. (2015). A Study of Job Burnout among Teachers in Private Professional Institutions. *Journal of Organization and Human Behaviour*, 4. <https://doi.org/10.21863/johb/2015.4.2and3.013>
- [24] Shoji, K., Cieslak, R., Smoktunowicz, E., Rogala, A., Benight, C. C., & Luszczynska, A. (2016). Associations between job burnout and self-efficacy: A meta-analysis [Review]. *Anxiety, Stress and Coping*, 29(4), 367-386. <https://doi.org/10.1080/10615806.2015.1058369>
- [25] Thompson, R. A. (1994). EMOTION REGULATION: A THEME IN SEARCH OF DEFINITION [Article]. *Monographs of the Society for Research in Child Development*, 59(2-3), 25-52. <https://doi.org/10.1111/j.1540-5834.1994.tb01276.x>
- [26] World Health Organization. (2019). *Burn-out an "occupational phenomenon": International Classification of Diseases [Internet]. [cited 25 Feb 2020]. Available from: [https://www.who.int/mental\\_health/evidence/burn-out/en/](https://www.who.int/mental_health/evidence/burn-out/en/).*
- [27] Yin, H., Huang, S., & Wang, W. (2016). Work environment characteristics and teacher well-being: The mediation of emotion regulation strategies [Article]. *International Journal of Environmental Research and Public Health*, 13(9), Article 907. <https://doi.org/10.3390/ijerph13090907>
- [28] Yin, X., Luo, L., & Chen, G. (2021). Research on the relationship among teachers' psychological capital, job satisfaction and job burnout. ICCSE 2021 - IEEE 16th International Conference on Computer Science and Education,
- [29] Zhang, Y., Zhang, S., & Hua, W. (2019a). Correction to: The Impact of Psychological Capital and Occupational Stress on Teacher Burnout: Mediating Role of Coping Styles (The Asia-Pacific Education Researcher, (2019), 28, 4, (339-349), 10.1007/s40299-019-00446-4) [Erratum]. *Asia-Pacific Education Researcher*, 28(4), 351-352. <https://doi.org/10.1007/s40299-019-00465-1>
- [30] Zhang, Y., Zhang, S., & Hua, W. (2019b). The Impact of Psychological Capital and Occupational Stress on Teacher Burnout: Mediating Role of Coping Styles [Article]. *Asia-Pacific Education Researcher*, 28(4), 339-349. <https://doi.org/10.1007/s40299-019-00446-4>
- [31] Zheng, G., Jioo, W., & Ren, K. (2020). Relationship between psychological quality, positive emotion and job burnout of teachers [Article]. *Revista Argentina de Clinica Psicologica*, 29(2), 387-392. <https://doi.org/10.24205/03276716.2020.253>