Alexithymia as a moderator of the relation between self-care and psychological distress
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Abstract
Alexithymia is considered as important contributor in the psychological distress. This study examined the moderator role of alexithymia in the relationship between self-care and psychological distress in 217 elementary school teachers. Alexithymia, self-care and psychological distress has been assessed in 217 teachers (108 females and 109 males). Participants were asked to complete 4 including socio-demographic questionnaire, toronto alexithymia scale, health-promoting lifestyle profile II, and the depression, anxiety, and stress scales. Results revealed that there is a significant relationship between self-care, alexithymia and psychological distress. Alexithymia was also a moderator in the relationship between self-care and psychological distress. The findings supported the hypothesis that higher levels of alexithymia would be associated with higher levels of psychological distress, and that lower levels of alexithymia would be associated with lower levels of psychological distress. Alexithymia helped explain the self-care and psychological distress link in adults.

Keywords: Alexithymia, Self-Care, Psychological Distress

Introduction
Psychological distress is a continuous experience of unhappiness, nervousness, irritability and problemtic interpersonal relationships [1]. Kyriacou defined teacher stress as the experience by a teacher of unpleasant, negative emotions, such as anger, anxiety, tension, frustration or depression, resulting from resulting from [2]. Studies have found that teachers are seriously affected by the stressfulness of their work environment [3]. For example, researchers have consistently reported time pressure [4], high self-expectations [5], as significant sources of job stress. Administrators can also add to a stressful teacher workload by lack of providing sufficient teacher support [6]. In a study, teachers cited lack of administration support may cause of their job dissatisfaction [7]. Self-care (SC) is personal factor identified in the literature as predictor of distress [8]. Terms such as self-care are also extensively used in the growing scientific literature [9]. The concepts of SC often been used as broad umbrella terms to cover a wide range of activities [10]. Self-care has been described
by World Health Organization (WHO) as the process of engaging individuals to take active responsibility for managing aspects of their health and adopting behaviors that prevent disease, limit illness and restore health self-care involves self-initiated practices that foster personal health and well-being. Self-care competence is extremely important in the overall quality of life [11]. According to Jurgens [11], a person initiates and performs self-care for maintaining life, healthful functioning, and well-being. In particular, engagement in self-care practices (such as mindfulness and acceptance) is associated with lower perceived stress [12]. Furthermore, self-care behaviors help in reducing the build-up and effects of stress and improve one’s general well-being [13]. Also, Shi, Ostwald, S.K. & Wang [14], showed that self-care behavior is linked to self-efficacy. It is suggested that Alexithymia may be a key concept on reducing psychological distress for teachers. Sifneos [15] highlighted the construct of alexithymia, which simply means a lack of words for emotions. Alexithymia describes individuals who 1) are unable to understand and process emotion; 2) are unable to communicate their emotions to others; and 3) process events and behaviors externally, due to the inability to understand internal motivations [16-18]. These individuals are generally not expressive, showing little outside emotional communication, and are uncomfortable discussing feelings. Alexithymic individuals find it harder than non alexithymic individuals even to make lexical decisions in communicating emotions [19]. Research has also associated alexithymia with a number of mental or behavioral disorders [17]. Alexithymia has been empirically associated to poor coping with stress [20], poor bonding with others [15], and higher levels of anxiety, depression, self-consciousness, and vulnerability [21]. Taylor [16] cited associations between alexithymia and somatoform disorders, substance abuse, and posttraumatic stress disorders. In short, in the current study, the moderator role of alexithymia on the relationship between self-care and psychological distress is investigated. The research's hypotheses are as follow;

Hypothesis one: self-care does predict psychological distress. 
Hypothesis two: alexithymia does moderate self-care prediction on psychological distress.

**Method**

This study is a research within framework correlation design. In the present study, elementary schools teachers in Khorramabad, west Iran, were surveyed in 2016-2017 academic years. Based on Morgan table, among 1682 teachers, a total of 300 persons were selected by using simple random sampling and examined by research questionnaires. It should be noted that only 217 inventory were analyzed among study's questionnaires. In sum, the study included 217 elementary school teachers (108 women and 109 men) between 28-55 years old of age in Khorramabad city, Iran. Most of them (N=197; 90.78%) were married.

Procedure: Analysis of the data from this study was performed by using SPSS-24 statistical software. Missing values in the data were computed along with the sample means. The moderator effects of Alexithymia were tested by using hierarchical multiple regression analysis based on the steps of Baron and Kenny’s moderating model. Standard z-scores were used in order to decrease the multicollinearity problems in the analysis. Details about data analyses would be shown in the section on findings.

The measurements of this study are: 
*Health Promoting Lifestyle Profile II:* Self-care frequency was measured by using the Health Promoting Lifestyle Profile II (HPLP) [22]. The HPLP II is a 52-item inventory measuring six sub-dimensions of health-promoting lifestyle: health responsibility, nutrition, physical activity, spiritual growth, interpersonal relationships, and stress management. Responses are given on a four-point scale ranging from 1 (never) to 4 (routinely). The scale developers revised the
original HPLP to improve content validity. Factor analysis was used to measure construct validity and confirmed the six-dimensional structure. Criterion validity was assessed by using correlations with other measures of perceived health status and quality of life (r’s=0.27-0.49). The scale has adequate internal consistency across the total scale (alpha coefficient=0.94) and the subscales (alpha coefficients ranged from 0.79 to 0.87). An overall health-promoting lifestyle score is calculated for each participant by adding scores from all 52 responses, and individual subscale scores are calculated by adding responses specific to the subscale [23]. In this study, HPLP was carefully translated and was addressed to the main scale by the authors. Then, to examine its validity, confirmatory factor analysis was carried out on its items and its reliability was calculated. Results indicate that the scale has appropriate psychometric qualities to be used in Iran. HPLP internal consistency reliability by using Cronbach’s alpha was 0.73.

Depression, Anxiety, and Stress Scales (DASS): Distress was assessed by using the DASS; a set of three self-report scales (depression, anxiety, and stress) containing 14 items scored on a four-point frequency/ severity scale ranging from 0 (did not apply to me) to 3 (applied to me very much, or most of the time). Each scale is divided into subscales of 2-5 items: the depression scale assesses dysphoria, hopelessness, devaluation of life, self-deprecation, lack of interest/involvement, anhedonia, and inertia; the anxiety scale assesses autonomic arousal, skeletal muscle effects, situational anxiety, and subjective experience of anxious affect; the stress scale assesses the levels of chronic nonspecific arousal - difficulty relaxing, nervous arousal, being easily upset/agitated, irritability/overreactivity, and impatience. The total scale has good internal consistency with an alpha coefficient score of 0.97. Alpha coefficients for the Depression, Anxiety, and Stress subscales are 0.94, 0.88, and 0.93, respectively [23]. In this study, DASS was carefully translated and was addressed to the main scale by the authors. Then, to examine its validity, confirmatory factor analysis was carried out on its items and its reliability was calculated. Results indicate that the scale has appropriate psychometric qualities to be used in Iran. DASS’s internal consistency reliability was shown 0.88 by using Cronbach’s alpha.

The Twenty-item Toronto Alexithymia Scale (TAS-20): The TAS-20 is a self-report measure of alexithymia which was developed by Bagby, Parker et al. [21]. It is a 20-item scale with a five point Likert-type scale (1= never true for me to 5= always true for me) that participants rate according to what is typically true for them. The scale measures three factors of alexithymia: 1) difficulty identifying feelings (e.g., “When I am upset, I don’t know If I am sad, frightened or angry”); 2) difficulty describing feelings (e.g., “It is difficult for me to find the right words for my feelings”); and 3) externally-oriented thinking (e.g., “I prefer to just let things happen rather than to understand why they turned out that way”). An empirically derived cut off score of 61 is used for identifying individuals with “high” or “low” alexithymia. In this study, TAS-20 was carefully translated and corresponded to the main scale by the authors. Then, to examine its validity, confirmatory factor analysis was carried out on its items and its reliability was calculated. Results indicated that the scale has appropriate psychometric qualities to be used in Iran. TAS-20 internal consistency reliability was shown 0.75 by using Cronbach’s alpha.

**Results**

Descriptive statistics and bivariate correlation for the self-care, Alexithymia and psychological distress would be presented in Table 1. As expected, Alexithymia was negatively correlated with self-care (r= -0.58, p<0.01), and positively was correlated with psychological distress (r=0.75, p<0.01), also, self-care was negatively correlated with psychological distress (r=-0.55, p<0.01). In addition, skewness and kurtosis values were found to be within acceptable range for a normal distribution.
In order to test the moderating effects of alexithymia on the relationship between self-care and psychological distress, as recommended by Baron and Kenny hierarchical multiple regression procedures were conducted [24]. In the first step, we entered gender as a covariate (B=0.08, t=0.65, p<0.51). In the second step, self-care (B=-0.17, t=-3.22, p<0.001), and alexithymia (B=0.66, t=12.29, p<0.001), were entered as main effects. In the final step, we entered the interaction between self-care and alexithymia (B=0.11, t=2.17, p<0.03).

The significant interaction between self-care and alexithymia was the greatest importance (p<0.03). To illustrate the nature of the interaction effect, we examined the relationship between self-care and teachers’ psychological distress at a high level of alexithymia (one standard deviation above the mean) and at a low level of alexithymia (one standard deviation below the mean) [25]. As can be seen in Figure 1, when alexithymia was low (but not when alexithymia was high), higher levels of self-care led to lower psychological distress.

### Discussion
Increased self-care abilities and improved self-care behavior can empower the individuals...
to have better control over own daily lives. The present study had two objectives. The first objective was an examination of the predictive value of self-care on psychological distress. The second was to determine the ability of alexithymia to act as moderator on that relationship. Results at the individual level of analysis indicate that self-care was negatively correlated with psychological distress. The results of the study support other studies that found a negative relationship between self-care and psychological distress [23,13,22]. According to another important finding of the study alexithymia has a moderator role in the relationship between self-care and psychological distress. According to the results of the current study, less self-care and more psychological distress was observed in teachers with a high alexithymia compared to teachers with a low alexithymia. The results are consistent with the other studies presenting the relationship of alexithymia with psychological distress [17, 20, 21]. In this study we have attempted to increase knowledge of the moderating role of personal characteristics (alexithymia) in the self-care process. Several limitations must be acknowledged in the present study. First, it is important to note that the present study was cross-sectional which means that results can only be interpreted as correlational and direction of causality cannot be determined. Future studies should be encouraged to overcome these limitations by longitudinal design that would enable quantification regarding the effectiveness of intervention alexithymia in moderating the relationship between role self-care and psychological distress. Another issue related to measurement is that data in this study was obtained by using self-report measures, and the results may be contaminated by the variance of the common method. It would be appropriate to complement these measurements with others obtained with different methods.

**Conclusion**
The findings of the present study have numerous implications for theory and practice. Considering these findings, psychological distress would be decreased by increasing of self-care and this reduction is higher for the teachers who have low alexithymia. Thus, an implication of our results is that interventions focused on reducing psychological distress may need to reduce alexithymia.

**Acknowledgements**
Authors extend their most sincere regards to all participants who cooperated with patience and tolerance in this study.

**Contribution**
Study design: MA, FR
Data collection and analysis: MA
Manuscript preparation: MA

**Conflicts of Interest**
"The authors declare that they have no competing interests."

**Funding**
The author(s) received no financial support for the research, authorship and/or publication of this article.

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Abassi and Rezaei


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