CORRELATES OF SELF-ESTEEM AMONG THE LEBANESE POPULATION: A CROSS-SECTIONAL STUDY

Sahar Obeid1,2,3, Chadia Haddad1, Maha Zakhour4, Kassandra Fares2, Marwan Akel3,5, Pascale Salameh3,6,7,* & Souheil Hallit3,8,*

1Psychiatric Hospital of the Cross, Jal Eddib, Lebanon  
2Faculty of Art and Sciences, Holy Spirit University of Kaslik (USEK), Jounieh, Lebanon  
3INSPECT-LB: Institut National de Santé Publique, Epidémiologie Clinique et Toxicologie - Liban, Beirut, Lebanon  
4Faculty of Sciences, Lebanese University, Fanar, Lebanon  
5School of Pharmacy, Lebanese International University, Beirut, Lebanon  
6Faculty of Pharmacy, Lebanese University, Beirut, Lebanon  
7Faculty of Medicine, Lebanese University, Beirut, Lebanon  
8Faculty of Medicine and Medical Sciences, Holy Spirit University of Kaslik (USEK), Jounieh, Lebanon

*Pascale Salameh & Souheil Hallit are last co-authors

received: 3.8.2018; revised: 28.8.2019; accepted: 18.9.2019

SUMMARY

Background: To the best of our knowledge, no studies have been conducted in order to assess the correlation of these factors with the self-esteem in Lebanon. Therefore, this study aims to assess risk factors associated with self-esteem among a representative sample of the Lebanese population.

Subjects and methods: A cross-sectional, conducted between November 2017 and March 2018, enrolled 789 participants. Self-esteem was measured using the Rosenberg scale. An exploratory factor analysis was executed to detect patterns of risk factors associated with self-esteem from our sample. A cluster analysis was then performed with the identified factor scores to identify the different profiles of the participants.

Results: Relationship management (Beta=0.117), emotional awareness (Beta=0.074) and personal accomplishment (Beta=0.064) were associated with a higher self-esteem, whereas high depression (Beta=-0.102), alexithymia (Beta=-0.077), burnout depersonalization (Beta=-0.078), suicidal ideation (Beta=-0.391) were associated with a lower self-esteem.

Factor 1 (High emotional intelligence & low depersonalization) (Beta=1.819) was associated with increased self-esteem, whereas Factor 2 (High suicidal ideation, high alcohol dependence, high depression and anxiety) and Factor 3 (High burnout, high stress and high alexithymia) were associated with decreased self-esteem (Beta=-1.380 and Beta=-0.751) respectively.

Being widowed (Beta=-2.332), belonging to cluster 1 (People with emotional dysregulation) (Beta=-2.850) and cluster 2 (People in distress) (Beta=-3.660) were significantly associated with decreased self-esteem.

Conclusions: Depression, anxiety, burnout, stress, low emotional intelligence, alexithymia, suicide ideation, alcohol dependence and many other factors can be prevented, or reduced, by interventions that improve self-esteem.

Key words: self-esteem - depression - anxiety - alexithymia - burnout - stress

INTRODUCTION

Self-esteem is the subjective evaluation, negative or positive, that an individual reflects about his or her value. It’s the degree of self-acceptance or self-worth (Rosenberg 2015). The usual depiction of low self-esteem includes a low general assessment of the self, constant sentiments of being inferior to others, feelings of worthlessness, isolation, and self-doubt (Mruk 2006).

There is previous proof that negative self-assessments are shown to be directly incorporated in Social Anxiety Disorder (SAD) individuals after the presence within social circumstances (Clark & Wells 1995, Heimberg et al. 2010). Psychological models suggest that anxious patients think they would be less evaluated than poorly anxious patients (Leary et al. 1988).

Regarding depression, previous findings showed that low self-esteem is a risk factor of depressive disorders (Evraire & Dozois 2011, Morley & Moran 2011, Sowislo et al. 2014). The exact nature of the relationship between low self-esteem and depression has been controversial and a source of a continuing debate (Sowislo & Orth 2013, Zeigler-Hill 2011), with two models explaining this correlation; (1) the vulnerability model that describes low self-esteem as a risk factor for depression (Orth & Robins 2013). In this model, low self-esteem is conceptualized as a stable personality factor that predisposes the person to experience depression, and (2) the scar model that suggests that low self-esteem is a consequence, rather than a cause, of depression (Shahar & Davidson 2003).

In the same line, self-esteem deficits appear to play an important role in understanding suicidal behavior (Wilburn & Smith 2005). Low self-esteem can lead to both suicidal ideation and suicide attempts, with the person seeing the self as worthless and the future as hopeless (Creeemers et al. 2012). Individuals with low
self-esteem may see life as not worth living and may perceive everyday stressors as overwhelming, with suicidal ideation/attempts being a consequence of these negative self-evaluations (Swann et al. 2007).

In addition, early studies suggested a negative association between burnout, emotional exhaustion, and self-esteem (Janssen et al. 1999). People feeling that their professional competences are insufficient and those not satisfied with their work accomplishments may be delicate and easily disappointed by failure and become subjects to difficulties and delay. In the long term, this may create burnout and eventually decrease self-esteem (Maslach et al. 2001).

Poor feelings elaboration, lack of expression and insufficient awareness of the self, are common in people with alexithymia. Such defects may stretch out more extensively to self-recognition (Herbert et al. 2011). Also, there is a correlation between alcohol consumption and self-perception. When comparing patients to control, those with alcohol use disorders have a lower evaluation of their own worth (Silverstone & Salsali 2003). This correlation is found to be disproportionate, self-esteem decreases with the use of alcohol (Sevi et al. 2014). Another relationship identified impaired overall reflection of an individual's self-regard as an indicator of regular exposure to stress (Kirschbaum et al. 1995). The Montreal Imaging Stress Task (MIST) performed by young participants with low self-reflection again confirmed previous observations (Pruessner et al. 2005).

To the best of our knowledge, no studies have been conducted in order to assess the correlation of these factors with the self-esteem in Lebanon, apart from a single Lebanese study published and studied self-esteem among the elderly (El Bcheraoui et al. 2015). Hence the interest of our research is to focus on the actuality of this factor and its influence on the level of the Lebanese population and to compare our results with those of international studies. Therefore, this study aims to assess risk factors associated with self-esteem among a representative sample of the Lebanese population.

**SUBJECTS AND METHODS**

This is a cross-sectional study, conducted between November 2017 and March 2018, which enrolled 789 participants using a proportionate random sample of Lebanese pharmacies from all districts of Lebanon (Beirut, Mount Lebanon, North, South and Bekaa). An exhaustive list of pharmacies was provided by the Lebanese Order of Pharmacists. An online software was used to randomly choose the community pharmacies sample. The study targeted the first eligible person entering the community pharmacy and accepting to take part of the study. All participants above 18 years of age were eligible to participate. Patients with mental retardation, dementia or who refused to participate in the study, were excluded.

The questionnaire used during the interviewed was in Arabic, the native language of Lebanon. One trained person was responsible for the data collection, via a personal interview with each patient. This person was independent of this study. The first part assessed the sociodemographic characteristics of the participants (age, gender, education level, marital status, socioeconomic level, type of alcohol drunk). The other parts included the different scales used in this study as follows.

**Rosenberg self-esteem scale (RSES)**

It is a 10-item scale that measures global self-worth by measuring both positive and negative feelings about the self (Rosenberg 1965). The responses on the scale were measured on a 4-point Likert scale: 1 (strongly agree), 2 (agree), 3 (disagree), and 4 (strongly disagree). Five of the items are positively-worded (items 1, 2, 4, 6, and 7) whereas the remaining five are negatively-worded (3, 5, 8, 9, and 10); negative items were reverse-coded prior to data analysis. Higher scores indicated higher self-esteem. In this study, the Cronbach alpha was 0.733.

**Hamilton depression rating scale (HDRS)**

The validated Arabic version of the HDRS was used in this study (Obeid et al. 2018). It includes 21 items, with the last four items (diurnal variation, depersonalization/derealization, paranoid symptoms, and obsessive compulsive symptoms) not counted toward the total score since these symptoms provide additional clinical information and are either uncommon or do not reflect depression severity (Hamilton 1960). Therefore, the remaining 17 items of the HDRS are scored and measure the severity of depressive symptoms. Eight items are scored on a 5 point scale, ranging from 0 = not present to 4 = severe (Hamilton 1960). Nine items are scored from 0–2. The total score was calculated by summation of the first seventeen items. The severity of depression was divided into 5 categories as follows: 0–7 are considered as normal patients, 8–13 suggesting mild depression, 14–18 suggesting moderate depression, 19-22 indicate severe depression and scores over 23 indicating very severe depression. The total HDRS score ranged from 0 to a maximum of 52 points. In this study, the Cronbach alpha was 0.890.

**Hamilton anxiety scale (HAM-A)**

The HAM-A (Hamilton 1959) recently validated in Lebanon (Hallit et al. 2019) was one of the first rating scales developed to measure the severity of anxiety symptoms, and is still widely used today in both clinical and research settings. The scale consists of 14 items, each defined by a series of symptoms, and measures both psychic anxiety (mental agitation and psychological distress) and somatic anxiety (physical complaints related to anxiety). The responses on the
scale were measured on a 5-point Likert scale: 0 (symptoms not present), 1 (mild symptoms), 2 (moderate symptoms), 3 (severe symptoms) and 4 (very severe symptoms). The total score was calculated by summation of the 14 items. In this study, the Cronbach alpha was 0.898.

The Alcohol Use Disorders Identification Test (AUDIT)

It is a 10-item screening tool developed by the World Health Organization (WHO) to assess alcohol consumption, drinking behaviors, and alcohol-related problems (Bohn et al. 1995). We used the self-report version of the AUDIT in this study. Patients were encouraged to answer the AUDIT questions in terms of standard drinks. A score of 8 or more is considered to indicate hazardous or harmful alcohol use. In this study, the Cronbach alpha was 0.778.

Toronto Alexithymia Scale (TAS-20)

Alexithymia was assessed with the Toronto Alexithymia Scale (TAS-20) (Bagby et al. 1994), which includes 20 items, graded from 1 to 5. Items are rated using 5-point Likert scale whereby 1 = strongly disagree and 5 = strongly agree. Five items are negatively keyed (items 4, 5, 10, 18 and 19). A total alexithymia score is the sum of the 20 items. The cut-off scoring of TAS-20 is: equal or less than 51 = non-alexithymia, 52-60 = possible alexithymia and equal or greater than 61 = alexithymia. The TAS-20 has acceptable validity and reliability (Bagby et al. 1994, Thorberg et al. 2010). In this study, the Cronbach alpha was 0.885.

Maslach Burnout Inventory-General Survey (MBI-GS)

The 22 total items are divided into the three themes with nine items relating to emotional exhaustion, five to depersonalization, and eight to accomplishment. Each item is also rated on a frequency and intensity scale. The frequency scale ranges from zero (never) to six (everyday). The intensity scale ranges from one (never) to six (very-strong) (Maslach et al. 1986). The score for emotional exhaustion was classified as weak if the score was less than 17, moderate if it ranged between 18-29 and high if it exceeded 30 or more. The depersonalization score was classified as weak if the score was less than 5, moderate if it ranged between 6-11 and high if it exceeded 12 or more. The accomplishment score was classified as weak if the score was less than 33, moderate if it ranged between 34-39 and high if it exceeded 40 or more. A high score of emotional exhaustion and accomplishment, and a low score of depersonalization indicate burnout. In this study, the Cronbach alpha for emotional exhaustion was 0.823, for personal accomplishment 0.667 and for depersonalization 0.909.

Columbia-Suicide Severity Rating Scale (C-SSRS)

It is an assessment tool that evaluates suicidal ideation and behavior. The maximum suicidal ideation category ranges from 1-5 on the C-SSRS present at the assessment. A score of 0 is assigned if no ideation is present. A suicidal ideation is considered if the patient answers “yes” at any time during treatment to any one of the five suicidal ideation questions (Categories 1-5) on the C-SSRS (Nilsson et al. 2013). In this study, the Cronbach alpha was 0.762.

The Perceived Stress Scale (PSS)

It is a 10-item classic stress assessment instrument which was originally developed in 1983. The questions in this scale ask about your feelings and thoughts during the last month, with the answers measured on a 5-point Likert scale: 0 (never) up to 4 (very often). Scores for questions 4, 5, 7, and 8 should be reversed. Individual scores on the PSS can range from 0 to 40 with higher scores indicating higher perceived stress; scores ranging from 0-13 would be considered low stress, 14-26 moderate stress and 27-40 high perceived stress. In this study, the Cronbach alpha was 0.667.

Liebowitz Social Anxiety Scale

It is a short questionnaire developed in 1987 (Liebowitz 1987), with the purpose is to assess the range of social interaction and performance situations feared by a patient in order to assist in the diagnosis of social anxiety disorder. The scale features 24 items are rated in a Likert scale from 0 to 3, which are divided into two subscales. 13 questions relate to performance anxiety and 11 concern social situations. The overall score is calculated by combining the total scores for the fear and avoidance sections. The maximum score is 144 points indicating a very severe social phobia. The LSAS has been validated as a self-report scale (Rytwinski et al. 2009). In this study, the Cronbach alpha for the total score was 0.954, for the fear and avoidance subscales the Cronbach alpha was 0.945 and 0.953.

The Quick Emotional Intelligence Self-Assessment

The scale is divided into 4 domains as follows: emotional awareness, emotional management, social emotional awareness and relationship management. Each domain is composed of 10 questions, with the answers measured on a 5-point Likert scale, with 0 (never) and 4 (always). Higher scores would indicate higher emotional intelligence (Mohapel 2017). In this study, the Cronbach alpha for the 4 domains was: 0.823 for emotional awareness, 0.888 for emotional management, 0.902 for social emotional awareness, and 0.908 for relationship management.
All scales were translated from English to Arabic through an initial translation and back translation process. The English version was translated into Arabic by a mental health specialist, then this translation was translated again into English by another specialist. Upon completion of this process, the translators compared the English versions of all the scales to determine whether the variables had the same meaning.

**Statistical analyses**

Data analysis was conducted using SPSS software version 23. The independent-sample t-test was used when comparing two means. For categorical variables, the Chi-2 were used when applicable. Three stepwise linear regressions were conducted, taking the Rosenberg score as the dependent variable. All variables that showed a p<0.1 in the bivariate analysis were taken as independent variables in the model. Moreover, Cronbach’s alpha was recorded for reliability analysis for all the scales. A P-value less than 0.05 was considered significant.

Various statistical methods are used to derive common patterns among specific populations; factorial and cluster analyses are two of the most common methods. Both methods allow for empirical derivation of patterns: factor analysis derives patterns based on inter-correlations between the items/groups, whereas cluster analysis depends on individual differences in mean intakes when reducing data into patterns. First, an exploratory factor analysis was performed to identify patterns of risk factors associated with self-esteem from our sample. After ensuring sample adequacy with the Kaiser-Meyer-Olkin (KMO) index and Bartlett’s Chi-square test of sphericity, factors of the different risk factors were extracted using the principal component analysis and using a promax rotation. Factors with an Eigenvalue higher than one were retained; confirmation of adequacy with a Scree plot was performed and interpretability of the results was taken into account. Items with factor loading >0.4 were considered as belonging to a factor. Reliability analysis was performed by Cronbach’s alpha values for factors and the total scale. Second, a cluster analysis was performed with the identified factor scores reflecting patterns of the risk factors using the K-mean method to identify the different patterns of the participants. This method allowed study participants to be grouped into non-overlapping mutually exclusive clusters. Analysis allowed for 10 iterations centering results on zero and convergence was only reached using a three-cluster structure, i.e., three different patterns.

**RESULTS**

Out of 950 questionnaires distributed, 789 (83.05%) were completed and collected back. The mean age of the participants was 30.30±12.52 years (54.8% males), 62.3% had a university level of education, 50.7% had a monthly salary less than 1000 USD and 63.1% were single. In the absence of a cut-off point to categorize the Rosenberg scale score, we chose the median to dichotomize our sample; at a median of 25, the results showed that 331 (42.2%) of the participants had low self-esteem, whereas 454 (57.8%) had high self-esteem (Table 1).

Table 1. Sociodemographic characteristics of the sample population

| Frequency (%) | Gender | Education level | Socioeconomic status | Marital status |
|---------------|--------|-----------------|----------------------|---------------|
|               | Male   | Female          | Illiterate           | < 1000 $      |
|               | 423 (54.8%) | 349 (45.2%) | 12 (1.6%) | 376 (50.7%) |
|               | 260 (35.1%) | 105 (14.2%) | 52 (7.0%) | 260 (35.1%) |
|               | 19 (2.5%) | 12 (1.6%) | 376 (50.7%) | 260 (35.1%) |
|               | 64 (8.6%) | 462 (62.3%) | 113 (15.2%) | 105 (14.2%) |
|               | 488 (63.1%) | 462 (62.3%) | 488 (63.1%) | 462 (62.3%) |
|               | 236 (30.5%) | 236 (30.5%) | 236 (30.5%) | 236 (30.5%) |
|               | 19 (2.5%) | 19 (2.5%) | 19 (2.5%) | 19 (2.5%) |
|               | 30 (3.9%) | 30 (3.9%) | 30 (3.9%) | 30 (3.9%) |
|               | Mean ± SD | Mean ± SD | Mean ± SD | Mean ± SD |
|               | 30.30±12.52 | 30.30±12.52 | 30.30±12.52 | 30.30±12.52 |

Factor analysis

Out of all the items asked in the questionnaire, all variables could be extracted from the list except for the Liebowitz total score (low communality of 0.208), which was taken out of the factor analysis. All others items did not over-corr-ele to each other (r>0.9), did not have a low loading on factors (<0.3) or a low communality (<0.3). The factor analysis for all the scales total score was run over the whole sample (Total=789). The total items converged over a solution of 3 factors, every factor including items that go together among the study participants (Factor 1= High emotional intelligence & low depersonalization; Factor 2= High suicidal ideation, high alcohol dependence, high depression and anxiety; Factor 3= High burnout, high stress and high alexithymia), explaining a total of 63.95% of the variance. A Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy of 0.847 was found, with a significant Bartlett’s test of sphericity (p<0.001) (Table 2).

Profiles of participants

A cluster analysis based on the three factors derived three mutually exclusive clusters, which form 29.2%, 33.8%, and 36.9% of all participants respectively. The first
Table 2. Pattern loading of the major factor solutions after promax rotation

| Factor 1                                      | Factor 2 | Factor 3 |
|-----------------------------------------------|----------|----------|
| High Social emotional awareness                | 0.862    |          |
| High Relationship management                  | 0.857    |          |
| High Emotional management                     | 0.807    |          |
| High Emotional awareness                      | 0.796    |          |
| Low Burnout depersonalization                 | 0.739    |          |
| High Suicidal ideation                        |          | 0.834    |
| High depression                               |          | 0.810    |
| High Alcohol dependence                       |          | 0.683    |
| High anxiety                                  |          | 0.545    |
| High Perceived stress                         |          | 0.854    |
| High Burnout emotional exhaustion             |          | 0.789    |
| High alexithymia                              |          | 0.763    |
| High Burnout personal accomplishment           |          | 0.439    |

Factor 1 = High emotional intelligence & low depersonalization; Factor 2 = High suicidal ideation, high alcohol dependence, high depression and high anxiety; Factor 3 = High burnout, high stress and high alexithymia

Table 3. Classification of participants in the study sample by cluster analysis using the categories factor scoring

|                  | Cluster 1 | Cluster 2 | Cluster 3 |
|------------------|-----------|-----------|-----------|
|                  | N=191 (29.2%) | N=221 (33.8%) | N=241 (36.9%) |
| Factor 1: High emotional intelligence & low depersonalization | -1.04 | -0.12 | 0.94 |
| Factor 2: High suicidal ideation, high hazardous alcohol drinking, high depression and anxiety | -0.10 | 0.91 | -0.75 |
| Factor 3: High burnout, high stress and high alexithymia | -0.42 | 0.95 | -0.53 |

Cluster 1 = People with emotional dysregulation (low emotional intelligence and high depersonalization with low burnout, stress and alexithymia); Cluster 2 = People in distress (high suicidal ideation, hazardous alcohol drinking, depression and anxiety with high burnout, stress and alexithymia); Cluster 3 = People with high wellbeing (high emotional intelligence and low depersonalization, with low suicidal ideation, low alcohol dependence & low depression and anxiety)

Table 4. Bivariate analysis of the factors associated with the Rosenberg score

| Marital status | Rosenberg score Mean ± SD | p-value |
|----------------|---------------------------|---------|
| Single         | 18.54±4.78                |         |
| Married        | 18.39±4.77                |         |
| Widowed        | 14.94±3.29                | 0.003   |
| Divorced       | 16.65±4.11                |         |

| Audit score    | -0.319                    | < 0.001 |
| HAM-D score    | -0.407                    | < 0.001 |
| HAM-A score    | -0.372                    | < 0.001 |
| PSC score      | -0.242                    | < 0.001 |
| Liebowitz social anxiety scale | -0.239 | < 0.001 |
| Emotional awareness | 0.275 | < 0.001 |
| Emotional management | 0.372 | < 0.001 |
| Social Emotional awareness | 0.364 | < 0.001 |
| Relationship management | 0.403 | < 0.001 |
| MBI - Emotional exhaustion | -0.208 | < 0.001 |
| MBI - Personal accomplishment | 0.153 | < 0.001 |
| MBI - Depersonalization | -0.388 | < 0.001 |
| Suicidal ideation score | -0.336 | < 0.001 |
| Alexithymia     | -0.290                    | < 0.001 |
cluster represented people with emotional dysregulation (low emotional intelligence and high depersonalization, low burnout, low stress and low alexithymia with low suicidal ideation), the second one represented people in distress (high suicidal ideation, hazardous alcohol drinking, depression anxiety, burnout, stress and alexithymia), whereas cluster 3 represented people with high wellbeing (high emotional intelligence and low depersonalization with low suicidal ideation, low alcohol dependence and low depression and anxiety and low burnout, stress and alexithymia) (Table 3).

Bivariate analysis

A significantly higher mean of Rosenberg score was found in single persons (18.54) compared to widow one (14.94). Also, higher self-esteem was significantly and positively correlated with emotional awareness (r=0.275), emotional management (r=0.372), social emotional awareness (r=0.364), relationship management (r=0.403) and personal accomplishment (r=0.153). Less self-esteem was significantly correlated with high depression (HAM-D score) (r=-0.407), anxiety (HAM-A score) (r=-0.372), perceived stress (PSC score) (r=-0.242), social phobia (Liebowitz social anxiety scale) (r=-0.239), alcohol dependence (AUDIT score) (r=-0.319), more emotional exhaustion (r=-0.208), depersonalization (r=-0.388), suicidal ideation (r=-0.336) and alexithymia (r=-0.290) (Table 4).

Multivariable analysis

The results of a first linear regression, taking the Rosenberg score as the dependent variable, showed that relationship management (Beta=0.117), emotional awareness (Beta=0.074) and personal accomplishment (Beta=0.064) were significant predictors of self-esteem. Table 5 shows the results of the multivariable analysis with the clusters as independent variables.

Table 5. Multivariable analysis

| Model 1: Linear regression taking the Rosenberg score as dependent variable and all the scales as independent variables |
|---------------------------------------------|------------------------|------------------------|------------------------|------------------------|
| Unstandardized Beta | Standardized Beta | p-value | Confidence interval | Unstandardized Beta | Standardized Beta | p-value | Confidence interval |
| Relationship management | 0.117 | 0.214 | <0.001 | 0.068 | 0.166 |
| Depression | -0.102 | -0.226 | <0.001 | -0.137 | -0.067 |
| Alexithymia | -0.077 | -0.170 | <0.001 | -0.107 | -0.047 |
| Burnout depersonalization | -0.078 | -0.140 | 0.001 | -0.122 | -0.034 |
| Suicidal ideation | -0.391 | -0.108 | 0.003 | -0.647 | -0.135 |
| Emotional awareness | 0.074 | 0.110 | 0.009 | 0.019 | 0.130 |
| Burnout personal accomplishment | 0.064 | 0.084 | 0.016 | 0.012 | 0.116 |

Variables entered: Audit score, alexithymia, HAMD score, HAMA score, PSC score, Liebowitz social anxiety scale, Emotional awareness, Emotional management, Social Emotional awareness, Relationship management, MBI - Emotional exhaustion, MBI - Personal accomplishment, MBI – Depersonalization, Suicidal ideation score and marital status.

Model 2: Linear regression taking the Rosenberg score as dependent variable and three factors obtained in the factor analysis as independent variables

| Unstandardized Beta | Standardized Beta | p-value | Confidence interval |
|---------------------|------------------|---------|---------------------|
| Factor 1: High emotional intelligence & low depersonalization | 1.819 | 0.385 | 0.001 | 1.517 | 2.120 |
| Factor 2: High suicidal ideation, high alcohol dependence, high depression and anxiety | -1.380 | -0.292 | <0.001 | -1.713 | -1.046 |
| Factor 3: High burnout, high stress and high alexithymia | -0.751 | -0.159 | <0.001 | -1.071 | -0.432 |

Factor 1 = High emotional intelligence & low depersonalization; Factor 2 = High suicidal ideation, high alcohol dependence, high depression and anxiety; Factor 3 = High burnout, high stress and high alexithymia and marital status.

Model 3: Linear regression taking the Rosenberg score as dependent variable and the clusters as independent variables

| Unstandardized Beta | Standardized Beta | p-value | 95% Confidence Interval |
|---------------------|------------------|---------|------------------------|
| Cluster 2 | -3.660 | -0.346 | <0.001 | -4.405 | -2.914 |
| Cluster 1 | -2.850 | -0.257 | <0.001 | -3.623 | -2.076 |
| Widowed* | -2.332 | -0.075 | 0.025 | -4.373 | -0.292 |

Variables entered in the model: cluster 1, cluster 2 and marital status. Cluster 1 = People with emotional dysregulation (low emotional intelligence and high depersonalization with low burnout, stress and alexithymia); Cluster 2 = People in distress (high suicidal ideation, alcohol dependence, depression and anxiety with high burnout, stress and alexithymia). Cluster 3 = People with high wellbeing (high emotional intelligence and low depersonalization, with low suicidal ideation, low alcohol dependence & low depression and anxiety).
feedback, which lowers their self-esteem (Sowislo & Orth 2013). Also, he found reciprocal, with both negatively affecting each other in relationship between anxiety and self-esteem was 2011, Trzesniewski et al. 2003). Sowislo found that the esteem is related to depression and emotional reactions, especially anxiety (Liu et al. 2014, Michalak et al. 2013, Rosse et al. 1991). Achievement successes elevate positive self-esteem (Nwanwko et al. 2013). Alexithymia was also found to be inversely related to self-esteem. By definition, persons with high alexithymia have little self-awareness (Taylor et al. 1991). Higher levels of emotional distress, such as depressive symptomology, correlate highly with low self-esteem (Shin & Shin 2008).

The lowest self-esteem scores was observed in suicidal ideation scale. In fact suicide attempts may decrease self-esteem (Yoo et al. 2015). Previous studies reported the strong relationship between low self-esteem and suicidal ideation (Lin 2015, McGee & Williams 2000). Self-esteem has strong support as a buffer to suicide (Sharaf et al. 2009). There is also evidence from longitudinal studies that relatively low self-esteem is a risk factor for health problems, including social isolation, depression and suicide ideation (McGee & Williams 2000).

Through these analyses, it has been found out that dimensions of the dependent variable, three factors, namely “High emotional intelligence & low depersonalization”, “High suicidal ideation, high alcohol dependence, high depression and high anxiety”, and “High burnout, high stress and high alexithymia” came out as final factors. After defining the factors of the variables, regression analyses were conducted in order to identify the factors that correlated with the self-esteem. The analyses reveal that the following factor “high emotional intelligence and low depersonalization” contribute positively to a high self-esteem. While the two others factors are correlated with low self-esteem. These results were kind of expected. In fact, higher alexithymia, stress, burnout was associated with low self-esteem, in line with previous studies that showed that perceived stress and alexithymia may play a significant role in the development of burnout syndrome (Alarcon et al. 2009, Popa-Velea et al. 2017), which would also contribute to a low self-esteem (Shin et al. 2007). Alcohol dependence, associated with anxiety and depression, may lead to a dramatic decrease in self-esteem and an increase in the suicidal ideation. Research showed that people with alcohol dependence are more at risk of suicide and have higher levels of depressive and affective problems (DeSimone et al. 1994). Heavy alcohol use may produce or exacerbate depressive symptoms indirectly through its effects on the psychosocial functio-
ning of the individual (Davidson & Ritson 1993). Alcohol-related negative consequences may result in feelings of guilt, hopelessness, and low self-worth.

Based on these factors three mutually exclusive clusters were derived: “people in distress”, “people with emotional dysregulation” and “people with high well-being”. Regression analyses showed that being in any of the first two clusters was correlated to a low self-esteem. Positive emotional intelligence is considered a strong predictor of better psychological adjustment and high self-esteem, whereas negative or low emotional intelligence is significantly related to depression, harmful and distressing behavior (Bibi et al. 2016). Low emotional intelligence results in the interpersonal relational difficulties, low self-esteem, poor impulse control, loneliness, suicidal thoughts, drug, stress, depression, anxiety, aggressive behaviors and alcohol usage (Gardner & Qualter 2009). Emotional intelligence appeared to be a strong determinant of self-esteem (Mayer et al. 2008).

Regarding the cluster “People in distress” (high suicidal ideation, hazardous alcohol drinking, depression and anxiety with high burnout, stress and alexithymia), the results of the Rosenberg scores were the lowest. Indeed, a high degree of burnout is evidenced by high scores on the emotional exhaustion and depersonalization subscales combined with a low score on the personal accomplishment subscale. All these factors contribute to the low self-esteem. From another side, this cluster presents high suicidal ideation and it is not surprising that individuals who lack respect for themselves would have suicidal ideation tendencies. The relationships among stress, self-esteem, and suicidal ideation were proven by different studies (Daan et al. 2012, Mitsui et al. 2014, Wilburn & Smith 2005).

Regarding the marital status, we can see that widowed persons have also lower Rosenberg scores. Single persons have higher self-esteem than widower persons. Widowhood and divorce are significantly distressing events in the life of an individual, with associated psychological ramifications. Loneliness is a major problem associated with widowhood. Many widows live by themselves. They suffer the fear of being alone and loss of self-esteem (Fasorant & Aruna 2007). Fry suggested that loss of self-esteem during widowhood may occur through a variety of pathways (Fry 2001). Other studies have also suggested that self-esteem drops during widowhood as a result of lowered emotional efficacy (Utz et al. 2011).

Gender, age, education level and socioeconomic status were not significantly associated with self-esteem symptoms in our sample. However, a meta-analysis had showed that men tend to have higher self-esteem than women and that both men and women show age-related increases in self-esteem from late adolescence to middle adulthood (Kling et al. 1999). In fact, these two effects are now considered some of the most well-established findings in the self-esteem literature (Orth et al. 2014).

Recently, several studies have shown that subjective well-being significantly correlates with high self-esteem, and that self-esteem shares significant variance in both mental well-being and happiness (Zimmerman 1999). Self-esteem has been found to be the most dominant and powerful predictor of happiness (Furnham & Cheng 2000). Indeed, while low self-esteem leads to maladjustment, positive self-esteem, internal standards and aspirations actively seem to contribute to ‘wellbeing’ (Glick & Zigler 1990). In this line, low self-esteem has an impact on patient prognosis, then it is beneficial from a therapeutic standpoint to identify and address the causes of low self-esteem, and therefore focus on therapeutic strategies to improve self-esteem and well-being of individuals.

**Limitations**

A few limitations to our study are noteworthy. The current study has a cross-sectional design, with a low level of evidence. The instruments used to assess the psychological symptoms had not yet been validated. Since 60% of the participants had a university degree, the results might not be representative to the whole population. The self-esteem was diagnosed using a score tool not a clinical diagnostic interview. Taking into consideration more socioeconomics and demographics factors can be interesting to understand the risk factors associated with self-esteem. This can lead to an optimization of a psychological intervention. Finally, we relied on participants to provide us with information on depression, anxiety, and alexithymia, using self-report questionnaires. Future research using alternative methods, such as interviews, might obtain a more complete view of depression and anxiety and alexithymia. Despite these limitations, the study is useful in providing the first delineation of developmental change in the self-esteem, highlighting the importance of studying self-esteem throughout an entire lifespan.

**CONCLUSIONS**

In summary, the present research provides crucial information about the different correlates to the self-esteem among the Lebanese populations. The knowledge provided by the present study suggests that interventions aimed at increasing global self-esteem among Lebanese populations and so moreover, suggesting that depression, anxiety, burnout, stress, low emotional intelligence, alexithymia, suicide ideation, alcohol dependence and many other factors can be prevented, or reduced, by interventions that improve self-esteem. It is necessary to conduct further intervention studies examining the role of self-esteem and social support in facilitating Lebanese people stress, anxiety and depression-related coping during their life.
Acknowledgements: None.
Conflict of interest: None to declare.
Contribution of individual authors:
Sahar Obeid & Souheil Hallit conceived and designed the survey.
Kassandra Fares & Marwan Akel performed the data collection and entry.
Chadia Haddad, Pascale Salameh & Souheil Hallit were involved in the statistical analysis and data interpretation.
Sahar Obeid wrote the manuscript.
Chadia Haddad, Maha Zakhour & Souheil Hallit contributed to the writing.
Souheil Hallit edited the paper for English language; all authors critically reviewed it for intellectual content, and approved the final version.

References
1. Abdallah T: Prevalence and predictors of burnout among Palestinian social workers. International Social Work 2009; 52:223-233
2. Alarcon G, Eschleman KJ & Bowling NA: Relationships between personality variables and burnout: A meta-analysis. Work & stress 2009; 23:244-263
3. Bagby RM, Parker JD & Taylor GJ: The twenty-item Toronto Alexithymia Scale - I. Item selection and cross-validation of the factor structure. J Psychosom Res 1994; 38:23-32
4. Bibi S, Saliain S & Musawar B: Relationship between Emotional Intelligence and Self Esteem among Pakistani University Students. J Psychol 2016
5. Bohn MJ, Babor TF & Kranzler HR: The Alcohol Use Disorders Identification Test (AUDIT): validation of a screening instrument for use in medical settings. J Stud Alcohol 1995; 56:423-432
6. Clark DM & Wells A: A cognitive model of social phobia. Social phobia: Diagnosis, assessment, and treatment 1995; 41:00022-00023
7. Creemers DH, Scholte RH, Engels RC, Prinstein MJ & Wiers RW: Implicit and explicit self-esteem as concurrent predictors of suicidal ideation, depressive symptoms, and loneliness. J Behav Ther Exp Psychiatry 2012; 43:638-646
8. Davidson KM & Ritson EB: The relationship between alcohol dependence and depression. Alcohol Alcohol 1993; 28:147-155
9. Desimone A, Murray P & Lester D: Alcohol use, self-esteem, depression, and suicidality in high school students. Adolescence 1994; 29:939-942
10. El Becharoua C, Adib S & Chapuis-Lucciani N: Perception of ageism and self-esteem among Lebanese elders at home and abroad. J Med Liban 2015; 63:27-33
11. Evrare LE & Dozois DJ: An integrative model of excessive reassurance seeking and negative feedback seeking in the development and maintenance of depression. Clin Psychol Rev 2011; 31:1291-1303. doi:10.1016/j.cpr.2011.07.014
12. Fasoranti O & Aruna J: A cross-cultural comparison of practices relating to widowhood and widow-inheritance among the Igbo and Yoruba in Nigeria. Pakistan Journal of Social Sciences 2007; 4:525-533
13. Fry PS: Predictors of health-related quality of life perspectives, self-esteem, and life satisfactions of older adults following spousal loss: An 18-month follow-up study of widows and widowers. The Gerontologist 2001; 41:787-798
14. Furnham A & Cheng H: Lay theories of happiness. Journal of happiness studies 2000; 1:227-246
15. Gardner K & Qualter P: Emotional intelligence and borderline personality disorder. Personality and individual differences 2009; 47:94-98
16. Glick M & Zigler EF: Premorbid competence and the courses and outcomes of psychiatric disorders. 1999
17. Hallit S, Haddad C, Hallit R, Akel M, Obeid S, Haddad G et al.: Validation of the Hamilton Anxiety Rating Scale and State Trait Anxiety Inventory A and B in Arabic among the Lebanese population. Clinical Epidemiology and Global Health 2019; 7:464-470. doi: https://doi.org/10.1016/j.cegh2019.02.002
18. Hamilton M: The assessment of anxiety states by rating. Br J Med Psychol 1959; 32:50-55
19. Hamilton M: A rating scale for depression. J Neurol Neurosurg Psychiatry 1960; 23:56-62
20. Heinberg RG, Brozovich FA & Rauepp RM: A cognitive behavioral model of social anxiety disorder: Update and extension Social Anxiety (Second Edition) (pp. 395-422): Elsevier, 2010
21. Herbert BM, Herbert C & Pollatos O: On the relationship between interoceptive awareness and alexithymia: is interoceptive awareness related to emotional awareness? J Pers 2011; 79:1149-1175
22. Hwang WJ, Kim JA & Rankin SH: Depressive symptom and related factors: a cross-sectional study of Korean female workers working at traditional markets. International Journal of environmental research and public health 2017; 14:1465
23. Janati Y, Musavi SA, Azimi Lolaty H, Fani Saberi L, Hamta A, Feyzi S et al.: Investigating emotional intelligence and self esteem Level among nursing and midwifery students of Mazandaran University of Medical Sciences in 2010. Journal of Mazandaran University of Medical Sciences 2012; 21:254-261
24. Janssen PP, Schaafelioe WB & Houkes I: Work-related and individual determinants of the three burnout dimensions. Work & stress 1999; 13:74-86
25. Kirschbaum C, Pruessner JC, Stone AA, Federenko I, Gaab J, Lintz D et al.: Persistent high cortisol responses to repeated psychological stress in a subpopulation of healthy men. Psychosom Med 1995; 57:465-474
26. Kling KC, Hyde JS, Showers CJ & Buswell BV: Gender differences in self-esteem: a meta-analysis. Psychol Bull 1999; 125:470
27. Koučhák zadeh Talamí S, Namazi A & Alizadeh S: The Correlation between Emotional Intelligence and Academic Achievement on Nursing and Midwifery Students. Iran Journal of Nursing 2016; 29:1-10
28. Lahoud N, Zakkour M, Haddad C, Salameh P, Akel M, Fares K, Hallit S, Obeid S: Burnout and Its Relationships With Alexithymia, Stress, Self-Esteem, Depression, Alcohol Use Disorders, and Emotional Intelligence: Results From a Lebanese Cross-Sectional Study. J Nerv Ment Dis 2019; 207:642-650. doi: 10.1097/NMD.0000000000001017
Lebanon: The role of alexithymia, depression, anxiety, factors associated with the adults' attachment styles in Lebanese depressed patients. Encephale, 2018.

Obeid S, Haddad C, Akel M, Fares K, Salameh P, Hallit S: Validation of the Hamilton Depression Rating Scale (HDRS) and sociodemographic factors associated with adjustment. Personality and individual differences 2014; 66:92-97

Lin CC: The relationships among gratitude, self-esteem, psychosis 1987; 22:141-173

Leary MR, Kowalski RM & Campbell CD: Self-presentation concerns and social anxiety: The role of generalized impression expectancies. Journal of Research in Personality 1988; 22:308-321

Liebowitz MR: Social phobia. Mod Probl Pharmacopsychiatry 1987; 22:141-173

Liu Y, Wang Z, Zhou C & Li T: Affect and self-esteem as mediators between trait resilience and psychological adjustment. Personality and individual differences 2014; 66:92-97

Maslach C, Jackson SE & Leiter MP: Maslach Burnout Inventory: Palo Alto: CA: Consulting psychologists press, 1986

Maslach C, Schaufeli WB & Leiter MP: Job burnout. Annual review of psychology 2001; 52:397-422

Mayer JD, Roberts RD & Barsade SG: Human abilities: Emotional intelligence. Annu Rev Psychol 2008; 59:507-536

McGee R & Williams S: Does low self-esteem predict health compromising behaviours among adolescents? J Adolesc 2000; 23:539-582. doi:10.1006/jado.2000.0344

Michalak J, Teismann T, Heidenreich T, Ströhle G & Vocks S: Buffering low self-esteem: The effect of mindful acceptance on the relationship between self-esteem and depression. Personality and individual differences 2011; 50:751-754

Mitsui N, Asakura S, Shimizu Y, Fujiy T, Toyomaki A, Kako Y et al.: The association between suicide risk and self-esteem in Japanese university students with major depressive episodes of major depressive disorder. Neuropsychiatric disease and treatment 2014; 10:811

Mihalak P: The Quick Emotional Intelligence Self Assessment. 2017. Available at: https://conservancy.umn.edu/handle/11299/195791/emotional-intelligence-self-assessment.pdf?sequence=1&isAllowed=y, Accessed on 14 August, 2018

Morley TE & Moran G: The origins of cognitive vulnerability in early childhood: mechanisms linking early attachment to later depression. Clin Psychol Rev 2011; 31:1071-1082. doi:10.1016/j.cpr.2011.06.006

Mrak CJ: Self-esteem research, theory, and practice: Toward a positive psychology of self-esteem. Springer Publishing Company, 2006

Nilsson ME, Suryawanshi S, Gassmann-Mayer C, Dubrava S, McSorley P & Jiang K: Columbia–Suicide Severity Rating Scale Scoring and Data Analysis Guide. CSSRS Scoring Version 2013; 2:1-13

Nwankwo B, Obi T & Aju S: Relationship between self-esteem and achievement motivation among undergraduates in South Eastern Nigeria. IOSR Journal of Humanities and Social Science 2013; 13:102-106

Obeid S, Abi Elias Hallit C, Haddad C, Hany Z & Hallit S: Validation of the Hamilton Depression Rating Scale (HDRS) and sociodemographic factors associated with Lebanese depressed patients. Encephale, 2018. doi:10.1016/j.encep.2017.10.010

Obeid S, Haddad C, Akel M, Fares K, Salameh P, Hallit S: Factors associated with the adults’ attachment styles in Lebanon: The role of alexithymia, depression, anxiety, stress, burnout, and emotional intelligence. Perspectives in Psychiatric Care 2019; 55:607-617. doi:10.1111/ppc.12379

Orth U & Robins RW: Understanding the link between low self-esteem and depression. Current Directions in Psychological Science 2013; 22:455-460

Orth U, Robins RW, Widaman KF & Conger RD: Is low self-esteem a risk factor for depression? Findings from a longitudinal study of Mexican-origins youth. Devl Psychol 2014; 50:622

Padyab M, Richter J, Nygren L & Ghazinour M: Burnout among social workers in Iran: relations to individual characteristics and client violence. Global journal of health science 2013; 5:142

Popa-Velea O, Diaconescu L, Mihaiescu A, Jidveian Popescu M & Macarie G: Burnout and Its Relationships with Alexithymia, Stress, and Social Support among Romanian Medical Students: A Cross-Sectional Study. Int J Environ Res Public Health 2017; 14. doi:10.3390/ijerph14060560

Pruessner JC, Baldwin MW, Dedovic K, Renwick R, Mahani NK, Lord C et al.: Self-esteem, locus of control, hippocampal volume, and cortisol regulation in young and old adulthood. Neuroimage 2005; 28:815-826

Rosenberg M: Society and the adolescent self-image. Princeton university press, 1965

Rosse JG, Boss RW, Johnson AE & Crown DF: Conceptualizing the role of self-esteem in the burnout process. Group & Organization Studies 1991; 16:428-451

Rytwinski NK, Fresco DM, Heimberg RG, Coles ME, Liebowitz MR, Cissell S et al.: Screening for social anxiety disorder with the self-report version of the Liebowitz Social Anxiety Scale. Depress Anxiety 2009; 26:34-38. doi:10.1002/da.20503

Sevi OM, Genç Y, Odabaşıoğlu G, Soykal İ & Öztürk Ö: The relationship between alexithymia characteristics in alcohol dependence and anxiety, social anxiety, self-esteem and adult attention-deficit hyperactivity symptoms: A comparative study. Bağcılar Yargıç-Journal of Dependence 2014; 15:10-14

Shahar G & Davidson L: Depressive symptoms erode self-esteem in severe mental illness: a three-wave, cross-lagged study. J Consult Clin Psychol 2003; 71:890-900. doi:10.1037/0022-006X.71.5.890

Sharaf AY, Thompson EA & Walsh E: Protective effects of self-esteem and family support on suicide risk behaviors among at-risk adolescents. J Child Adolesc Psychiatr Nurs 2016; 50:751-754

Shin HS, Han HR & Kim MT: Predictors of psychological well-being amongst Korean immigrants to the United States: a structured interview survey. Int J Nurs Stud 2007; 44:415-426. doi:10.1016/j.ijnurstu.2006.04.007

Shin NY & Shin MS: Body dissatisfaction, self-esteem, and depression in obese Korean children. The Journal of Pediatrics 2008; 152:502-506

Sillick TJ & Schatte NS: Emotional intelligence and self-esteem mediate between perceived early parental love and adult happiness. Sensory: A Journal of Mind, Brain & Culture 2006; 2:38-48

Silverstone PH & Salsali M: Low self-esteem and psychiatric patients: Part I–The relationship between low self-esteem and psychiatric diagnosis. Annals of general hospital psychiatry 2003; 2:2
61. Sowislo JF & Orth U: Does low self-esteem predict depression and anxiety? A meta-analysis of longitudinal studies. Psychol Bull 2013; 139:213-240. doi:10.1037/a0028931
62. Sowislo JF, Orth U & Meier LL: What constitutes vulnerable self-esteem? Comparing the prospective effects of low, unstable, and contingent self-esteem on depressive symptoms. J Abnorm Psychol 2014; 123:737-753. doi:10.1037/a0037770
63. Swann Jr WB, Chang-Schneider C & Larsen McClarty K: Do people's self-views matter? Self-concept and self-esteem in everyday life. American Psychologist 2007; 62:84
64. Taylor GJ, Bagby RM & Parker JD: The alexithymia construct: a potential paradigm for psychosomatic medicine. Psychosomatics 1991; 32:153-164
65. Thorberg FA, Young RM, Sullivan KA, Lyvers M, Hurst C, Connor JP et al.: A confirmatory factor analysis of the Toronto Alexithymia Scale (TAS-20) in an alcohol-dependent sample. Psychiatry Res 2010; 178:565-567. doi:10.1016/j.psychres.2009.09.015
66. Trzesniewski KH, Donnellan MB & Robins RW: Stability of self-esteem across the life span. J Pers Soc Psychol 2003; 84:205
67. Utz RL, Lund DA, Caserta MS & Devries B: Perceived self-competency among the recently bereaved. Journal of social work in end-of-life & palliative care 2011; 7:173-194
68. Vărășteanu CM & Iftime A: The role of the self-esteem, emotional intelligence, performance triad in obtaining school satisfaction. Procedia-Social and Behavioral Sciences 2013; 93:1830-1834
69. Wilburn VR & Smith DE: Stress, self-esteem, and suicidal ideation in late adolescents. Adolescence 2005; 40:33-45
70. Yoo T, Kim SW, Kim SY, Lee JY, Kang HJ, Bae KY et al.: Relationship between Suicidality and Low Self-esteem in Patients with Schizophrenia. Clin Psychopharmacol Neurosci 2015; 13:296-301. doi:10.9758/cpn.2015.13.3.296
71. Zakhour M, Haddad C, Salameh P, Akel M, Fares K, Sacre H, Hallit S, Obeid S: Impact of the interaction between alexithymia and the adult attachment styles in participants with alcohol use disorder. Alcohol 2019. doi: 10.1016/j.alcohol.2019.08.007
72. Zeigler-Hill V: The connections between self-esteem and psychopathology. Journal of Contemporary Psychotherapy 2011; 41:157-164
73. Zimmerman SL: Self-esteem, personal control, optimism, extraversion, and the subjective well-being of midwestern university faculty. 1999

Correspondence:
Sahar Obeid, PhD
Psychiatric Hospital of the Cross
P.O. Box 60096, Jall-Eddib, Lebanon
E-mail: saharobeid23@hotmail.com