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**The relation between low self-esteem and depressive mood in a nonclinical sample: The role of gender and negative life events**

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**Abstract**

The suggestion that low self-esteem is both a protective and a risk factor for depression is well document. However, this association is not consistently observed by empirical research. The current study investigated the main and interactive effects of low self-esteem and stressful life events on depressive mood in a sample of university students (N = 862, females = 72%, Blacks = 67%, mean age = 21.70, SD = 13.51). The students completed the Hopkins Symptom Checklist, Rosenberg Self-Esteem scale and Perceived stress scale. Data were analysed using structural equation modeling (SEM), with stressful life events scores as a mediator and gender as a moderator of the relation between low self-esteem and depression. Results indicate that low self-esteem significantly predicted depression, and that stressful life events partially mediated that relationship. Support emerged for the vulnerability effects of low self-esteem on depression and they held across gender groups. Low self-esteem may be a significant indicator of individuals who are at risk for developing depressive mood.

**Introduction**

The link between depression and low self-esteem is well cited. However, evidence on the specific nature of this relationship is still outstanding and debate is still abound on their directional effects on each other (Orth & Robins, 2013; Sowislo & Orth, 2013). Moreover, there is evidence to suggest that depression and self-esteem are similar concepts and should likewise be considered as different sides of a single construct or experience (Judge, Erez, Bono, & Thoresen, 2002; Watson, Suls, & Hiag, 2002). However, a case has been made for the separation of two the constructs (Hankin, Lakdawalla, Carter, Abela, & Adams, 2007; Minor, Champion, & Gotlib, 2005; Orth, Robins, & Roberts, 2008). The assertion that depression and self-esteem may be similar constructs, flow from the *common factor model* (Klein, Kotov, & Buffered, 2011; Watson et al., 2002), which suggest that there is a significant amount of shared variance between the two constructs. Research on the relationship between self-esteem and depression would benefit from studies conducted with diverse populations and from developing countries in which the framing of these constructs may be nuanced by culture and lived experiences. This study aimed to examine whether self-esteem influences depression symptoms among South Africa university students.

**The South African Context**

Depression is major mental health problem in South Africa, with attendant personal, societal and economic consequences (Nglazi et al., 2016). Available epidemiological data records the incidence rates of major depression in South Africa to be high at 9.8% for lifetime and 4.9% for the past 12 months (i.e., relatively higher than Nigeria and China) (Nglazi et al., 2016; Tomlinson, Grimsrud, Stein, Williams, & Myer, 2009).

South African university students are seen to be at an even greater risk for depression, with studies reporting depression prevalence rates of about 16% (over the last 12 months) for this population (Mall et al., 2018; Peirson & Heuchert, 2000; Pillay, Edwards, Gambu, & Dhlomo, 2003). However, several gaps remain in this line of research. One of which is that, regardless of the reported prevalence rates, few studies have attempted to understand the aetiological and risk factors for the development of depression in South African university students.

Self-esteem is known, among other factors, to predict psychological health and functioning (Donnellan, Trzesniewski, Robbins, Moffitt, & Caspi, 2005; Orth, Robins, & Widaman, 2012; Trzesniewski et al., 2006). For instance, a number of studies in South Africa show a relationship between self-esteem and important outcomes like psychological wellbeing in university students (Bazana & Mogotsi, 2017; Bodiba, Madu, Ezeokana, & Nnedum, 2008; Finchilescu, Gibson, Sennet, & Strauss, 2003; Malefo, 2002). While considered an important variable, the role and relevance of self-esteem with relations to depression within the South African society remains unclear and largely unexplored.

**Aetiological and Vulnerability Factors**

Low self-esteem is an aetiological and vulnerability factor for the development of depression rather than just a mere correlate (Evraire & Dozois, 2011; Joiner, 2000; Morley & Moran, 2011; O'Brien, Brien, Bartoletti, & Leitzel, 2006; Orth, Robins, Trzesniewski, Maes, & Schmitt, 2009). There are two competing models that explain this relationship: *vulnerability* and *scar*. The *vulnerability model* considers low self-esteem to be a risk/predisposing factor responsible for the onset and preservation of

depression (Beck, 1967; Metalsky, Joiner, Hardin, & Abrahamson, 1993; Steiger, Fend, & Allemand, 2015), while the *scar model* views low self-esteem as by-product rather than the cause of depression. This is attributed to the fact that depression erodes one's self-concept (Joiner, 2000; Zeiss & Lewinsohn, 1988).

Unambiguous evidence in support of either of the two models is not yet available. While increasing research shows that low self-esteem prospectively predicts depression (Orth, Robins, & Meier, 2009; Orth et al., 2008; Orth et al., 2009; Sowislo & Orth, 2013; Steiger, Allemand, Robins & Fend, 2014; Steiger et al., 2015), others have either failed to support this results or have produced conflicting evidence supporting the scar model (Burwell & Shirk, 2006; Shahar & Davidson, 2003; Shahar & Henrich, 2010). Recently, Rieger, Göllner, Trautwein and Roberts' (2016) study provided strong support for the vulnerability model and rebutted both the scar and common factor model. Moreover, the vulnerability effect has also been supported in clinical samples (Ormel, Oldehinkel, & Vollebergh, 2004; Trzesniewski et al., 2006). The observation that the two constructs have a significant amount of shared variance, if proven consistently across studies, will have direct implications on how we understand and measure depression.

While meta-analytic studies support the vulnerability model to hold across a wide range of samples (e.g., Sowislo & Orth, 2013), it is not clear if this will also be true for South Africa, especially because cultural influences on conceptualization and operationalization of association between low self-esteem and depressive symptomatology. For instance, research evidence in South Africa shows that culture influences, modulates and modifies the experience and manifestations of

psychopathology (and depression specifically) (Hassim & Wagner, 2013; Mosotho, Louw, Calitz, & Esterhuyse, 2008; Mosotho et al., 2013; Schlebusch, 2005; Tomlinson et al., 2007).

Goal of the study. The present study aimed to further explore the following associations in an African context whether: 1) self-esteem and depressive symptoms can be accounted by a single factor, 2) low self-esteem predicts depressive symptoms (vulnerability model) or does depression lead to low self-esteem (scar model), and 3) low self-esteem's effects on depression can be accounted by stressful life events. These relationships were examined taking gender into account. According to the diathesis stress model (Beck et al., 1979), low self-esteem and stressful life events are expected to have an interactive effect on the development of depressive mood (Stewart et al., 2004).

**Method**

*Participants*

A sample of 862 undergraduate students ($M_{age}$ = 21.70 yrs., SD = 13.51; 72% = Female; 67% = Black) was recruited from both the University of Limpopo (46%) and the University of Pretoria (54%). They were from the faculties of humanities, education, natural and management sciences (spread across all levels of study).

*Measures*

The data was collected using the following self-report measures: the Hopkins Symptom Checklist (HSCL-15), Rosenberg Self-Esteem Scale (RSES) and Perceived Stress Scale (PSS–10).

*Hopkins Symptom Checklist (HSCL-15)*

The 15-item depression subscale of the HSCL-25 (Mollica, Wyshak, de Marneffe, Khuon, & Lavelle, 1987) was used to measure depressive symptoms (e.g., "Feeling blue"). The self-report measure is scored on a severity scale from '1' (*not at all*) to '4' (*extremely*), and has good psychometric properties in South Africa (Halvorsen & Kagee, 2010). Participants obtaining mean scores > 1.75 are classified as having significant emotional distress. The HSCL-15 had good reliability of $\alpha = 0.84$ in the present study.

*Rosenberg Self-Esteem Scale (RSES)*

The RSES (Rosenberg, 1965) is a 10-item Guttman type measure of global self-esteem (1 = totally disagree to 4 = totally agree). Items 2, 5, 6, 8, and 9 are reverse scored to obtain the scale score (e.g., "All in all, I am inclined to feel that I am a failure"). Scores < 15 suggest low self-esteem, while those ≥ 15 are considered to be within normal range. The measure has good psychometric properties across racially diverse samples (Supple et al., 2013). The scale also showed good internal consistency of $\alpha = 0.73$ in the current study.

*Perceived Stress Scale (PSS–10)*

The PSS-10 (Cohen & Williamson, 1988) was used to examine stressful life situations and circumstances. Respondents are required to respond to a 5-point Likert scale (*never* = 0; *almost never* = 1; *sometimes* = 2; *fairly often* = 3; *very often* = 4) (e.g., In the last month, how often have you felt nervous and "stressed"?). Higher scores reflect greater stress levels. The measure displayed a good internal consistency in the present and past studies (α = 0.79; Campbell et al., 2009).

*Procedure*

The Ethics boards of the University of Limpopo and University of Pretoria provided clearance for the study. All students consented to participation in the research. Participation in the study was voluntary and no incentives were offered. The questionnaire was self-administered outside of formal class hours.

*Data Analysis*

Structural Equation Modeling (SEM) was conducted using maximum likelihood (ML) estimation with AMOS 24.0 (Arbuckle, 2016) to examine the hypothesized relationship between the variables (vulnerability and scar model). Confirmatory factor analysis was used to examine the one-factor (i.e., all indicators for self-esteem and depression were modeled to load on one factor) and two-factor model. The model fit of the two models were compared. Multi-group analysis was used to examine gender differences between self-esteem and depression. The difference in fit and Chi-squares between the freely estimated and constrained model was used to examine if gender moderates

the association between self-esteem and depression (i.e., Chi-square difference value ≥ cut-off value of 3.84, to be statistically significant).

Overall models were accepted as providing acceptable fit if $X^2/df < 1.5$, nonsignificant $X^2$ values, the Tucker-Lewis index (TLI) and the comparative fit index (CFI) ≥ 0.95 [acceptable at > 0.90], the root mean square error of approximation (RMSEA) < 0.06 (see Hu & Bentler, 1995, 1999; Kline, 2011). Bootstrapping estimation procedure was used to assess model fit since the variable data (total scale and item scores) represented a nonnormal distribution (i.e., item-level skewness > 1.5 and item-level kurtosis > 2.5; Mardia multivariate kurtosis = 184.21; c.r. = 89.69) (Efron & Tibshirani, 1993). Lastly, the mediating effects of stressful events were also examined for significance using bootstrap estimation (bootstrap sample of 2000).

**Results**

*Descriptive data*

Table 1 presents total and by gender means, standard deviation and ranges of the sample. Females ($M$ = 1.79) reported to have experienced more depressive symptoms than males ($M$ =1.58) ($t$ = -6.62, $p$ = 0.00). Males ($M$ = 32.85) reported higher self-esteem than females ($M$ = 32.00) ($t$ = 2.40, $p$ = 0.02). Females ($M$ = 21.85) reported more experiences of stress than males ($M$ = 20.36) ($t$ = -3.89, $p$ = 0.00). Table 2 presents the correlations between the study variables. Depression was significantly negatively associated to self-esteem and positively associated to stress. Self-esteem was significantly negatively correlated with stress.

**Table 1**

**Mean, standard deviations of the study variables**

|  | Total | | Males | Females | $t$ | $d$ |
|---|---|---|---|---|---|---|
|  | $M$ (SD) | Range[a] | $M$ (SD) | $M$ (SD) |  |  |
| Depression | 1.74(0.48) | 1.0-3.8 | 1.58 (0.40) | 1.79 (0.47) | -6.62 | 0.46 |
| Self-esteem | 32.24(4.85) | 17-76 | 32.85 (5.28) | 32.00 (4.65) | 2.40 | 0.17 |
| Stress | 21.43(5.24) | 0-37 | 20.36 (4.91) | 21.85 (5.31) | -3.89 | 0.29 |

Note: [a]Refers to observed range; $p < 0.05$.

**Table 2**

**Correlations of the study variables**

|  |  | 1 | 2 | 3 |
|---|---|---|---|---|
| 1. | Depression | - |  |  |
| 2. | Stress | 0.361** | - |  |
| 3. | Self-esteem | -0.502** | -0.070* | - |

Note:     **$p < 0.01$; *$p < 0.05$

*Common factor model*

To test whether depression and self-esteem can be accounted for by a single factor, the one-factor model was compared against the two-factor model of self-esteem and depression, separately. The one factor model fit was poor: $X^2$ [9] = 290.11, $p < 0.05$;

CFI = 0.85; TLI = 0.65; RMSEA = 0.18; 90% CI of RMSEA [0.16-0.20], while the two-factor solution was good: $X^2$ [8] = 14.84, $p > 0.05$; CFI = 0.99; TLI = 0.99; RMSEA = 0.03; 90% CI of RMSEA [0.00-0.05]. The results suggest that there is minimal shared variance between self-esteem and depression.

*Relations between self-esteem and depression*

The effects of low self-esteem on depressive symptoms (Vulnerability model) were first tested and the model fit the data well: $X^2$ [8] = 14.84, $p = 0.62$; CFI = 0.99; TLI = 0.99; RMSEA = 0.03; 90% CI of RMSEA [0.00-0.05], with large-sized effects ($\beta$ = -0.98, $p < 0.05$). Secondly, depression's effects on self-esteem (Scar model) were examined and the model fit remained virtually identical: $X^2$ [8] = 14.84, $p = 0.62$; CFI = 0.99; TLI = 0.99; RMSEA = 0.03; 90% CI of RMSEA [0.00-0.05], except for the small effect size ($\beta$ = - 0.41, $p < 0.05$). Overall, the results supported the Vulnerability model and not the Scar model.

*Gender differences in the association between low self-esteem and depressive symptoms*

To tests whether gender moderates the effects of low self-esteem on depression, the model with a freely estimated path ($X^2$ = 23.47) was compared with a constrained model between males and females ($X^2$ = 24.48). The freely estimated and constrained models were not significantly different ($X^2_{diff}$ = 1.01, $p > 0.05$) and this suggests that gender does not moderate the relationship between self-esteem and depression.

A multi-group analysis was also conducted to examine if the specific estimated parameters/paths differed across the groups. The pair-wise comparisons (i.e., critical ratios for differences [critical value of 1.96, $p < 0.05$]) of the parameters in the model are as follows: path between self-esteem and depression was not statistically significantly different across the groups ($Z = -1.140$; $p > 0.05$). This suggests that the path is equal between the gender groups.

*Stressful events as a mediator of the effect of low self-esteem on depression*

The proposed structural model hypothesized that the effect of low self-esteem on depressive mood would be mediated by stressful life events. The model fit results for the mediated associations are presented in table 3. The results revealed significant associations between stress and self-esteem ($\beta = -1.24$, $p = 0.000$), self-esteem and depression ($\beta = -0.40$, $p = 0.000$), stress and depression ($\beta = 0.46$, $p = 0.000$). The results further suggest that stressful events partially mediate the effect of self-esteem on depression ($p = 0.000$).

**Table 3:**

**Stressful events as a mediator of the effect of low self-esteem on depression**

| | $X^2$ | df | CFI | TLI | RMSEA | 90% RMSEA CI |
|---|---|---|---|---|---|---|
| Model | 60.706 | 24 | 0.99 | 0.98 | 0.04 | 0.03, 0.05 |

Note. $p > 0.05$; $X^2$ = Chi-square test; df = degrees of freedom; CFI = Comparative Fit Index; ; TLI = Tucker-Lewis index; RMSEA = root mean square error of approximation and its 90% confidence interval.

**Discussion**

The following results emerge from the present study. Firstly, consistent with cognitive vulnerability models of depression, low self-esteem was found to may play a significant role in the development of depressive symptoms in university students. While the results show that both the vulnerability and scar model had acceptable fit, the effects of low self-esteem on depression (vulnerability model) were significantly larger than the effects of depressive symptoms on self-esteem (scar model). These findings are consistent with studies that report vulnerability effects to be greater than those of the scar model (Manna, Falgares, Ingoglia, Como & De Santis, 2014; Orth et al., 2008, 2014; Sowislo & Orth, 2013; Steiger et al., 2014, 2015). Given the age/development stage of the participants in the present study, this result is not entirely unexpected. Studies suggest that self-esteem generally decreases across adolescence and early adulthood years (Steiger et al., 2014). This is due to, amongst other things, pubertal changes and life transitions (transition from school to university). Also, the majority of the participants are black African and are often exposed to risk factors like poverty and discrimination (as a result of their social and economic status) (Hamad, Fernald, Karlan, & Zinman, 2008). This risk factors are negatively associated with social and academic success, and the two are closely related to global and domain-specific self-esteem. As such, it is exactly this state of harbouring dysfunctional attitudes or negative inferential styles about oneself that is a greater risk for the development of depressive mood.

Students with high self-esteem were less likely to report with depression symptoms. This may be explained by the fact that high self-esteem can be protective of

depression. Individuals with high self-esteem are thought to possess better coping resources and this buffers them against consequences of adverse life events (Orth et al., 2009). By contract, low self-esteem increases the probability of maladaptive adjustment in the face of stressful life events, depleting coping resources (Moksenes, Moljord, Espnes & Byrne, 2010; Trzesniewski et al., 2006; Ziegler-Hill, 2011).

The fact that females report with high incidence rates of depression and low self-esteem is not new (see Delisle, Beck, Dobson, Dozois, & Thombs, 2012; Fernander et al., 2006; Hamad, Fernald, Karlan, & Zinman, 2008; Herman, Stein, Seedat, Heeringa, Moomal, & Williams, 2009; Kling, Hyde, Showers, & Buswell, 1999; Mosotho, Louw, Calitz, & Esterhuyse, 2008; Nduna, Jewkes, Dunkle, & Jama Shai, 2010; Ngcobo & Pillay, 2008). However, in this South African sample, gender did not moderate the relation between low self-esteem and depressive mood, supporting the pattern of results suggesting that the vulnerability effect is highly robust to the extent that it holds across gender. Also, this result is possible in South Africa, because traditional socio-cultural norms that engendered different socializations for males and females (promoting more autonomy and gender roles that see self-confidence being more prized in males than females, which may lead to lower self-esteem in females) have waned due to modernisation and democratisation (i.e., gender equality).

*Implications for Research on Self-Esteem, Stress and Depression among College Students*

The results supported a partial mediational model, wherein stressful events constituted a mechanism by which low self-esteem leads to depressive mood. Accordingly, the results indicate that low self-esteem has a stress-generating effect. This finding partly

supports the idea that individuals with low self-esteem may be especially disposed to generating stressful life events through their own actions, which in turn affects their mental health (Donnellan et al., 2005; Murray, Rose, Bellavia, Holmes, & Kusche, 2002). However, the study sample was predominantly female (72%) and college student which restricts the generalizability of the findings.

Future studies should longitudinally examine the relationship between low self-esteem and depression in non-student and clinical populations.

**Conclusion**

In this study, low self-esteem served as a significant predictor of depressive symptoms, this relationship was partially mediated by stressful life events and held across gender groups. The findings of the current study suggest that low self-esteem and stressful life events collaboratively influence the development of depressive symptoms among university students.

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