

Running head: Personal factors and mood disorder

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

Malose Makhubela

Affiliation: Department of Psychology, University of Johannesburg

Contact details

Office: C Ring 422, Auckland park campus, Johannesburg, South Africa;

email: <mmakhubela@uj.ac.za>

Telephone: (+27)11 559 3248

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.

Keywords: self-esteem, depressive mood, risk, stressful life events, gender

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, & Bufferred, 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, & Esterhuysen, 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 ($\alpha = 0.79$; 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 \geq 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	<i>t</i>	<i>d</i>
	<i>M</i> (SD)	Range ^a	<i>M</i> (SD)	<i>M</i> (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: ^aRefers 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 test 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

	χ^2	<i>df</i>	<i>CFI</i>	<i>TLI</i>	<i>RMSEA</i>	<i>90% RMSEA CI</i>
Model	60.706	24	0.99	0.98	0.04	0.03, 0.05

Note. $p > 0.05$; χ^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 contrast, low self-esteem increases the probability of maladaptive adjustment in the face of stressful life events, depleting coping resources (Moksnes, 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.

References

Arbuckle, J. L. (2016). *IBM SPSS Amos 22 User's Guide*. Crawfordville, FL: Amos Development Corporation.

Bazana, S., & Mogotsi, O. P. (2017). Social identities and racial integration in historically white universities: A literature review of the experiences of black students. *Transformation in Higher Education* 2(0), a25.
<https://doi.org/10.4102/the.v2i0.25>

Beck, A. T. (1967). *Depression: Causes and treatment*. Philadelphia, Pennsylvania: University of Pennsylvania Press.

Bodiba, P., Madu, S. N., Ezeokana, J. O., & Nnedum, O. A. U. (2008). The relationship between body mass index and self-concept among adolescent black female university students. *Curationis*, 31(1), 77-84.

Burwell, R. A., & Shirk, S. R. (2006). Self-processes in adolescent depression: The role of self-worth contingencies. *Journal of Research on Adolescence*, 16, 479–490.
doi:10.1111/j.1532-7795.2006.00503.x

Cohen, S., & Williamson, G. (1988). Perceived stress in a probability sample of the United States. In S. Spacapan & S. Oskamp (Eds.), *The social psychology of health: Claremont symposium on applied social psychology* (pp. 31–67). Newbury Park, CA: SAGE.

Delisle, V. C., Beck, A. T., Dobson, K. S., Dozois, D. J. A., & Thombs, B. D. (2012). Revisiting gender differences in somatic symptoms of depression: Much ado about nothing? *PLoS One*, *7*(2), e32490. doi: org/10.1371/journal.pone.0032490.

Donnellan, B. M., Trzesniewski, K. H., Robins, R. W., Moffitt, T. E., & Caspi, A. (2005). Low self-esteem is related to aggression, antisocial behavior, and delinquency. *Psychological Science*, *16*, 328–335.

Efron, B., & Tibshirani, R. J. (1993). *An introduction to the bootstrap*. New York, NY: Chapman & Hall.

Evraire, L. E., & Dozois, D. J. A. (2011). An integrative model of excessive reassurance seeking and negative feedback seeking in the development and maintenance of depression. *Clinical Psychology Review*, *31*, 1291–1303. doi: 10.1016/j.cpr.2011.07.014

Fernander, A. F., Flisher, A. J., King, G., Noubary, F., Lombard, C., Price, M., & Chalton, D. (2006). Gender differences in depression and smoking among youth in Cape Town, South Africa. *Ethnicity & Disease*, *16*(1), 41–50.

Finchilescu, G., Gibson, K., Sennet, J. and Strauss, R. (2003). Adjustment of black students at a historically white South African University. *Educational Psychology*, *23*, 107-116.

Halvorsen, J. O., & Kagee, A. (2010). Predictors of psychological sequelae of torture among South African former political prisoners. *Journal of Interpersonal Violence*, 25, 989–1005.

Hamad, R., Fernald, L. C. H., Karlan, D. S., & Zinman, J. (2008). Social and economic correlates of depressive symptoms and perceived stress in South African adults. *Journal of Epidemiology and Community Health*, 62(6), 538–544. doi: 10.1136/jech.2007.066191.

Hankin, B. L., Lakdawalla, Z., Carter, I. L., Abela, J. R. Z., & Adams, P. (2007). Are neuroticism, cognitive vulnerabilities and self-esteem overlapping or distinct risks for depression? Evidence from exploratory and confirmatory factor analyses. *Journal of Social and Clinical Psychology*, 26, 29–63.

Herman, A. A., Stein, D. J., Seedat, S., Heeringa, S. G., Moomal, H., & Williams, D. R. (2009). The South African Stress and Health (SASH) study: 12-month and lifetime prevalence of common mental disorders. *South African Medical Journal*, 99(5), 339–344.

Hu, L-T., & Bentler, P. M. (1999). Cut-off criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling*, 6, 1–55.

Hu, L-T., & Bentler, P. M. (1995). Evaluating model fit. In R. H. Hoyle (Ed.), *Structural equation modeling: Concepts, issues, and applications* (pp. 76–99). Thousand Oaks, CA: Sage.

Joiner, T. E. (2000). Depression's vicious scree: Self-propagating and erosive processes in depression chronicity. *Clinical Psychology: Science and Practice*, 7, 203-218.

Judge, T.A., Erez, A., Bono, J.E., Thoresen, C.J. (2002). Are measures of self-esteem, neuroticism, locus of control, and generalized self-efficacy indicators of a common core construct? *Journal of Personality and Social Psychology*, 83, 693–710.

Klein, D. N., Kotov, R., & Bufferd, S. J. (2011). Personality and depression: Explanatory models and review of the evidence. *Annual Review of Clinical Psychology*, 7, 269–295.

Kline, R. B. (2005). *Principles and practice of structural equation modeling (2nd ed.)*. New York, NY: Guilford.

Kling, K. C., Hyde J. S., Showers, C. J., & Buswell B. N. (1999). Gender differences in self-esteem: A meta-analysis. *Psychological Bulletin*, 125, 470–500.

Malefo, V. (2002). Psycho-social factors and academic performance among African women students at a predominantly white university in South Africa. *South African Journal of Psychology*, 30, 40-45.

Mall, S., Mortier, P., Taljaard, L., Roos, J., Stein, D. J., & Lochner, C. (2018). The relationship between childhood adversity, recent stressors, and depression in college students attending a South African university. *BMC Psychiatry, 18*(63), DOI: 10.1186/s12888-017-1583-9.

Manna, G., Falgares, G., Ingoglia, S., Como, M.R., De Santis, S. (2016). The relationship between self-esteem, depression and anxiety: Comparing vulnerability and scar model in the Italian context. *Mediterranean Journal of Clinical Psychology, 4*(3), 1-17.

Metalsky, G. I., Joiner, T. E., Hardin, T. S., & Abramson, L. Y. (1993). Depressive reactions to failure in a naturalistic setting: A test of the hopelessness and self-esteem theories of depression. *Journal of Abnormal Psychology, 102*, 101–109.

Minor, K. L., Champion, J. E., & Gotlib, I. H. (2005). Stability of DSM–IV criterion symptoms for major depressive disorder. *Journal of Psychiatric Research, 39*, 415–420. doi:10.1016/j.jpsychires.2004.11.001

Moksnes, U. K., Moljord, I. E. O., Espnes, G. A., Byrne, D. G. (2010). The association between stress and emotional states in adolescents: The role of gender and self-esteem. *Personality and Individual Differences, 49*(5), 430-435. doi:10.1016/j.paid.2010.04.012

Mollica, R. F., Wyshak, G., de Marneffe, D., Khuon, F., & Lavelle, J. (1987). Indochinese versions of the Hopkins Symptom Checklist-25: A screening instrument for the psychiatric care of refugees. *American Journal of Psychiatry*, *144*, 497–500.

Morley, T. E., & Moran, G. (2011). The origins of cognitive vulnerability in early childhood: Mechanisms linking early attachment to later depression. *Clinical Psychology Review*, *31*, 1071–1082. doi:10.1016/j.cpr.2011.06.006

Mosotho, N. L., Louw, D. A., Calitz, F. J. W., & Esterhuyse, K. G. F. (2008). Depression among Sesotho speakers in Mangaung, South Africa. *The African Journal of Psychiatry*, *11(1)*, 35–43. doi: 10.4314/ajpsy.v11i1.30253.

Murray, S.L., Rose, P., Bellavia, G., Holmes, J., & Kusche, A. (2002). When rejection stings: How self-esteem constrains relationship- enhancement processes. *Journal of Personality and Social Psychology*, *83*, 556-573.

Nduna, M., Jewkes, R. K., Dunkle, K. L., & Jama Shai, N. P. (2010). Associations between depressive symptoms, sexual behaviour and relationship characteristics: A prospective cohort study of young women and men in the Eastern Cape, South Africa. *Journal of the International AIDS Society*, *13(44)*, 1–8.

Ngcobo, M., & Pillay, B. J. (2008). Depression in African women presenting for psychological services at a general hospital. *The African Journal of Psychiatry*, *11(2)*, 133–137. <http://dx.doi.org/10.4314/ajpsy.v11i2.30266>.

Nduna, M., Jewkes, R. K., Dunkle, K. L., & Jama Shai, N. P. (2010). Associations between depressive symptoms, sexual behaviour and relationship characteristics: A prospective cohort study of young women and men in the Eastern Cape, South Africa. *Journal of the International AIDS Society*, *13*(44), 1–8.

O'Brien, E. J., Bartoletti, M., & Leitzel, J. D. (2006). Self-esteem, psychopathology, and psychotherapy. In M. H. Kernis (Ed.), *Self-esteem issues and answers: A sourcebook of current perspectives* (pp. 306–315). New York, NY: Psychology Press.

Ormel, J., Oldehinkel, A.J., & Vollebergh, W. (2004). Vulnerability before, during, and after a major depressive episode. *Archives of General Psychiatry*, *61*, 990–996.

Orth, U., & Robins, R.W. (2014). The development of self-esteem. *Current Directions in Psychological Science*, *23*(5), 381–387.

Orth, U., Robins, R.W., & Meier, L.L. (2009). Disentangling the effects of low self-esteem and stressful events on depression: Findings from three longitudinal studies. *Journal of Personality and Social Psychology*, *97*, 307–321.

Orth, U., Robins, R. W., & Roberts, B. W. (2008). Low self-esteem prospectively predicts depression in adolescence and young adulthood. *Journal of Personality and Social Psychology*, *95*, 695–708.

Orth, U., Robins, R. W., Trzesniewski, K. H., Maes, J., & Schmitt, M. (2009). Low self-esteem is a risk factor for depressive symptoms from young adulthood to old age. *Journal of Abnormal Psychology, 118*, 472–478.

Orth, U., Robins, R. W., & Widaman, K. F. (2012). Life-span development of self-esteem and its effects on important life outcomes. *Journal of Personality and Social Psychology, 102*, 1271–1288.

Orth, U., Robins, R. W., Widaman, K. F., & Conger, R. D. (2014). Is low self-esteem a risk factor for depression? Findings from a longitudinal study of Mexican-origin youth. *Developmental Psychology, 50*(2), 622-633.

Pillay, A. L., Edwards, S. D., Gambu, S. Q., & Dhlomo, R. M. (2003). Depression among university students in South Africa. *Psychological Reports*. DOI: 10.2466/PRO.91.7.725-728

Rieger, S., Göllner, R., Trautwein, U., & Roberts, B. W. (2016). Low self-esteem prospectively predicts depression in the transition to young adulthood: A replication of Orth, Robins, and Roberts (2008). *Journal of Personality and Social Psychology, 110*(1), e16-e22. doi: 10.1037/pspp0000037

Rosenberg, M. (1965). *Society and the adolescent self-image*. Princeton, NJ: Princeton University.

Shahar, G., & Davidson, L. (2003). Depressive symptoms erode self-esteem in severe mental illness: A three-wave, cross-lagged study. *Journal of Consulting and Clinical Psychology, 71*, 890–900.

Shahar, G., & Henrich, C. C. (2010). Do depressive symptoms erode self-esteem in early adolescence? *Self and Identity, 9*, 403–415. doi:10.1080/15298860903286090

Sowislo, J. F., & Orth, U. (2013). Does low self-esteem predict depression and anxiety? A meta-analysis of longitudinal studies. *Psychological Bulletin, 139*, 213–240.

Steiger, A. E., Allemand, M., Robins, R. W., & Fend, H. A. (2014). Low and decreasing self-esteem during adolescence predict adult depression two decades later. *Journal of Personality and Social Psychology, 106*(2), 325-38. doi: 10.1037/a0035133

Steiger, A. E., Fend, H. A., & Allemand, M. (2015). Testing the vulnerability and scar models of self-esteem and depressive symptoms from adolescence to middle adulthood and across generations. *Developmental Psychology, 51*(2), 236-247. doi: 10.1037/a0038478

Supple, A.J., Su, J., Plunkett, S.W., Peterson, G.W., & Bush, K.R. (2013). Factor structure of the Rosenberg Self-Esteem Scale. *Journal of Cross-Cultural Psychology, 44*(5), 748–764. doi: 10.1177/0022022112468942

Tomlinson, M., Grimsrud, A. T., Stein, D. J., Williams, D. R., & Myer, L. (2009). The epidemiology of major depression in South Africa: Results from the South African stress and health study. *South African Medical Journal, 99*, 367-373.

Trzesniewski, K. H., Donnellan, M. B., Moffitt, T. E., Robins, R. W., Poulton, R., & Caspi, A. (2006). Low self-esteem during adolescence predicts poor health, criminal behavior, and limited economic prospects during adulthood. *Developmental Psychology, 42*, 381–390.

Watson, D., Suls, & J., Haig, J. (2002). Global self-esteem in relation to structural models of personality and affectivity. *Journal of Personality and Social Psychology, 83*, 185–197.

Zeiss, A. M., & Lewinsohn, P. M. (1988). Enduring deficits after remissions of depression: A test of the scar hypothesis. *Behaviour Research and Therapy, 26*, 151–158.

Zeigler-Hill, V. (2011). The connections between self-esteem and psychopathology. *Journal of Contemporary Psychotherapy, 41*(3), 157-164.