

**Psychological resilience as a moderating factor between childhood
separation trauma and the onset of adult depression.**

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Abstract

Depression is estimated to affect 350 million people worldwide. It is recognized as the largest cause of non-fatal health loss in the world, and it is most prevalent in low income countries. Previous studies have shown that a relationship exists between childhood separation trauma and the development of depression in adult life. Although studies suggest that childhood separation trauma is a predisposing factor to Major Depressive Disorder, resilience has been found to moderate its onset. Resilience is understood as being a person-environment interaction, and it is in essence the ability to successfully adapt to trauma and adversity. The aim of this study was to investigate the hypothesis that psychological resilience acts as an effective moderating factor between childhood separation trauma and the onset of depression in adulthood. Furthermore, this study aimed to provide additional evidence that childhood separation trauma is a predisposing factor to depression in adult life. The results of this study indicated that resilience is a strong negative predictor of depression, and it effectively moderates the relationship between childhood separation trauma and the onset of adult depression ($R = 0.62$, $R^2 = 0.39$, $F(3, 124) = 26$, $p < 0.001$). In addition to this, further evidence was provided for the hypothesis that childhood separation trauma is a predisposing factor to the onset of depression in adult life ($R = .23$, $R^2 = .05$, $F(1, 126) = 6.97$, $p = 0.009$).

Keywords: childhood separation trauma, depression, psychological separation, resilience

Psychological resilience as a moderating factor between childhood separation trauma and the onset of adult depression

There has been a substantial amount of research that has indicated that depression and other mood disorders are aetiologically related to various childhood, environmental and familial factors (Denny, Clark, Fleming, & Wall, 2004). Factors that predispose children to developing depression later on in life include: a lack of parental care, violence or turmoil within the family, maternal substance abuse, parental mental illness, emotional abuse, neglect and the death of or separation from a parent (Denny et al., 2004; Mandelli, Petrelli, & Serretti, 2015). Over the years, the significantly negative impact of depression has come to be recognized as a public health issue. Depression is estimated to affect 350 million people worldwide, it is recognized as the largest cause of non-fatal health loss in the world, and it is most prevalent in low income countries (Ding et al., 2017). Adolescents who suffer from depression are at risk for developing major depressive disorder and anxiety problems, as well as engaging in substance abuse later on in their lives (Ding et al., 2017). Studies have shown that a major predisposing factor to depression in adulthood is the experience of childhood trauma (Ding et al., 2017; Hopfinger, Berking, Bockting, & Ebert, 2016; Mandelli et al., 2015; Poole, Dobson, & Pusch, 2016; Schulz et al., 2014), and more importantly, that specific types of childhood trauma, such as bereavement, emotional and/or physical abuse, and neglect, show a stronger association with depression (Ding et al., 2017). Individuals who have been diagnosed with depression usually report having experienced more challenges and difficulties in their childhood than individuals who have not experienced depression (Mandelli et al., 2015). In addition to this, there is not much evidence for the types of childhood trauma that have the greatest influence on depression in adulthood, as many

studies focus on a specific trauma, instead of a combination of childhood traumatic experiences (Mandelli et al., 2015).

Depression and Childhood Separation Trauma

Major depressive disorder (MDD), as found in the DSM-5, is characterized by some of the following; a depressed mood most of the day, almost every day, loss of interest in most activities, feelings of worthlessness or guilt, recurrent thoughts of death. These symptoms must cause the individual significant distress and impairment in their daily functioning and must not be attributable to another medical condition or disorder (American Psychiatric Association, 2013), in order for the diagnosis to be made.

Childhood separation trauma can be understood as the range of experiences in childhood that lead to a physical or psychological separation in the parent-child relationship (Crook, & Eliot, 1980). Research has not been done on the entirety of experiences that characterize childhood separation trauma, and how they affect depression. Nonetheless, there is evidence of the separate experiences (i.e. child abuse) being predictive of the later development of MDD (Schulz et al., 2014).

Wingo et al. (2010) found that childhood abuse and trauma that includes sexual, physical and emotional abuse, or the sudden death of a loved one, are very important risk factors for depression, as they can lead to a separation in the parent and child relationship. A great deal of research exists surrounding the various risk factors for depression, but there is not much research on adaptive behaviors (i.e. protective factors) after having experienced trauma as a child. Studies have begun to focus on the various individual and psychological protective factors that work towards changing the relationship between childhood separation trauma and depression (Schulz et al., 2014). One of these protective factors, is that of resilience.

Although studies suggest that childhood separation trauma is a predisposing factor to MDD, resilience has been found to moderate its onset (Arslan, 2016; Schulz et al., 2014). Arslan (2016) argues that people who experience trauma as children have lower resilience and self-esteem when compared to individuals who did not experience childhood trauma.

In previous studies resilience, has come to be understood as a dynamic personality trait that can be taught or modified (Schulz et al., 2014). Masten (2014) argues that resilience is not a personality trait itself, but rather that different dimensions of personality, such as conscientiousness, have a relationship with resilience. Nevertheless, there is evidence that personality traits are influenced by our experiences, and these traits can ultimately influence how we respond to adversity (Masten, 2014). In the context of this review, resilience is understood as a person-environment interaction (Masten, 2014). Resilience is in essence the ability to successfully adapt to trauma and adversity (Wingo et al., 2010).

This review will focus on childhood trauma that specifically leads to physical and/or psychological separation in the parent child relationship. Traumatic experiences during childhood that lead to a separation in the parent-child relationship will also be covered, such as bereavement, divorce and separation, as well as abuse and neglect. In addition to this, it will further cover the ways in which resilience acts as a type of defense mechanism against the onset or recurrence of depression.

Physical and Psychological Separation Factors

Childhood separation trauma is a very broad concept and consists of both psychological and physical factors. Psychological separation from a parent is characterized by a loss of the psychological bond between the parent and child (Mandelli et al., 2015; Norman et al., 2012). Psychological factors include aspects such as, feeling or being rejected by the parent, or prolonged distraction of the parent due to their own turmoil (Mandelli et al., 2015). These features of psychological separation have been less thoroughly investigated

with regards to an individual's predisposition to depression. Physical separation is characterized by permanent or temporary physical separation between the parent and child. Examples of physical separation include: death of a parent/s, divorce and separation of parents, or temporary separation (i.e. due to illness; Agid et al., 1999). Studies have shown that individuals that experienced the forms of physical separation discussed above, early on in life had an increased risk of developing depression in their adult lives (Coffino, 2009; Dennehy, 1966; McLeod, 1991; Roy, 1985; Slavich, Monroe, & Gotlib, 2011).

In this context, childhood abuse and neglect would fall under both psychological and physical separation factors. Mandelli et al. (2015) report that psychological abuse does have an association with increased risk for depressive disorders later on in life. Childhood emotional abuse is characterized by behavior that could be detrimental to the emotional wellbeing and development of the child (Mandelli et al., 2015; Norman et al., 2012). This behavior involves verbally insulting or abusing the child as well as a lack of affection, typically resulting in feelings of worthlessness within the child (Mandelli et al., 2015). Physical abuse is characterized by the intentional harming of the child using physical force, and has been shown to be associated with depression later on in life (Fergusson, Boden, & Horwood, 2008; Mandelli et al., 2015; Springer, Sheridan, Kuo, & Carnes, 2007).

Childhood neglect is related to various harmful effects on mental health functioning throughout an individual's life (Mandelli et al., 2015) and it is defined as the lack of or deficit in parental care and the failure to cater to the basic needs of children (Norman et al., 2012). Similar to abuse, childhood neglect has also been shown to be related to depression later on in life (Mandelli et al., 2015; Widom, DuMont, & Czaja, 2007). The basic needs of children include, but are not limited to, physical, health, and psychological factors (Norman et al., 2012).

Resilience as a Protective Factor

Schulz et al. (2014) argue that individual biological and psychological factors can influence/mitigate the risk for long term effects of childhood trauma. This argument is evident in individuals who have experienced childhood trauma but report little to no psychological damage thereafter. This phenomenon has come to be understood or described as resilience (Schulz et al., 2014). “Some young people, despite being raised in environments of high risk, mature into healthy and competent adults. These young people have been described as resilient” (Denny et al., p. 138).

Two main streams of thought have been conceptualized in defining resilience. Firstly, resilience is understood to be the end of a multifaceted process of adaptation to difficulty, and secondly, it is an individual’s dispositional capability to be able to access and use resources in the face of traumatic events (Schulz et al., 2014). When these two streams are integrated, resilience can be understood as a person-environment interaction (Masten, 2014) that involves the individuals’ skill to be able to successfully adapt to adversity, by making use of inter- and intra-personal resources available to them (Schulz et al., 2014). Previous research has shown that some of the fundamental features of resilience involve being exposed to risk, and being able to successfully adapt to said risk (Edward, 2005).

In addition to this, studies have shown that resilience does have a protective function against the onset of depression in adulthood (Ding et al., 2017). Furthermore, psychological resilience has been shown to aid individuals in fighting off depressive effects that come about as a result of stressful life events (Sharpley et al., 2017), and as a result of this, resilient individuals do not develop pathology, despite the presence of predisposing environmental factors (Sharpley et al., 2017). Sharpley et al. (2017) state that although resilience was initially understood to be purely psychological, it has biological determinants that rely on the reward and fear systems within the brain. It is important to note that, despite psychological

resilience having some genetic determinants, it can be taught, and that it should be considered for clinical settings, in both preventive as well as treatment modalities (Sharpley et al., 2017).

Other Risk Factors

Smith and Carlson (1997) define risk factors as events that occur in an individual's childhood that may influence the development of behavioral or psychological disorders later on in their lives. Risk factors for developing depression later on in life, operate as the converse of the protective factor mentioned above, and they have both environmental and biological aspects. Risk factors for depression include, low socio-economic status (SES), being female, or having a poor education (Denny et al., 2004). In a South African context, individuals from low SES communities are more likely to have experienced some form of separation trauma and studies have shown they have a high occurrence of mental illness (Myer, Stein, Grimsrud, Seedat, & Williams, 2008). Individuals from lower SES communities in South Africa have higher rates of HIV and Aids (Wabiri, & Taffa, 2013). The increased precedence of the HIV and Aids epidemic leads to higher rates of physical separation (i.e. orphaned children) due to long periods of hospitalization or death (Gray et al., 2015). Gender also plays a role on an individual's predisposition to depression, as studies have shown that females are more at risk of depression than males (Weismann et al., 1996).

An additional environmental risk factor is general childhood trauma (e.g. bullying, witnessing violence in the community, sexual abuse), which is a far broader category of trauma than the primary risk factor that we are considering, namely childhood separation trauma (Denny et al., 2004).

Genetic risk factors have been narrowed down to several specific genetic markers for depression. One of the most often investigated markers can be found on the, "serotonin transporter gene SLC6A4, and one of its polymorphisms from the promoter region, known as 5-HTTLPR" (Sharpley et al., 2017, p. 53).

As with resilience, literature has shown that there are environmental and genetic factors that influence the association between childhood separation trauma and MDD. Watt and Panksepp (2009) provide evidence that the interaction between genetic and environmental factors constitutes the individuals' predisposition to depression.

Research Aims and Hypotheses

Previous studies have shown that a relationship exists between childhood separation trauma and the development of depression in adult life (Denny et al., 2004; Mandelli, et al., 2015). These studies have considered the various elements (i.e. psychological and physical aspects) of childhood separation as predictors of depression, but they have not looked at the effect they have on depression when these two aspects are combined. One of the main aims of this study is to allow for further investigation surrounding the literature on resilience, childhood separation trauma and adult depression. Research surrounding this topic is of importance because it may aid in understanding the link between childhood separation trauma and depression. By growing our understanding of depression and risk and protective factors, we can develop better treatment and interventions. More specifically, the primary aim of this study was to investigate the hypothesis that psychological resilience acts as an effective moderating factor between childhood separation trauma and the onset of depression in adulthood. The secondary aim was to provide additional evidence to the hypothesis that childhood separation trauma is a predisposing factor to depression in adult life.

Methods

Design and Setting

This study was conducted in a quantitative manner. It branched off from a larger study: "Complexities of the Separation-Depression Relationship: Childhood Separation Trauma and Substitutive Emotional Support", which is still ongoing. In this larger study, a separation trauma scale is being developed and has already been trialled in a pilot study

consisting of 275 participants. It was used in the pilot study to assess whether childhood separation trauma predisposes depression in adulthood, which resulted in a significant positive relationship, with an effect size of 15.2%. In this current component of the larger study, the separation-depression relationship was reassessed in a new sample, whilst paying additional consideration to the role of resilience in this relationship.

Depression was assessed through the Beck Depression Inventory-II (BDI-II; Beck, Steer, & Brown, 1996). Childhood Separation Trauma was assessed through the Separation Trauma Scale (STS; currently in development), and resilience was measured via the Connor-Davidson Resilience Scale (CD-RISC; Connor, & Davidson, 2003). The measures were administered online in the form of an online survey. The survey included limited screening and demographic questions to confirm participant eligibility.

Exploratory Factor Analysis was used to reduce the rough Separation Trauma Scale into its final form, which served as a measure of separation in the relationship analysis. A linear regression analysis was used to determine whether childhood separation trauma (measured by the STS) predicted depression (measured by the BDI-II) in adult life. A moderated regression analysis was used to test whether resilience (measured by the CD-RISC) had a moderating effect on the separation-depression relationship.

Participants

Participants for this study were recruited through UCT's Student Research Participation Programme (SRPP). The participants consisted of 128 undergraduate psychology students. The SRPP program works to benefit both researcher and participant. Participants that sign up and take part in studies are rewarded with the necessary course credits, and the researcher is provided with an easily accessible pool of participants. The type of sampling used here was that of convenience. Convenience sampling was used because it offered the researchers ease of access to participants. This type of sampling proves to be very

useful when a researcher is examining physical and mental processes, or if the theories being investigated are understood to be universal (Terre Blanche, Durrheim, & Painter, 2006).

The data from participants who screened positive for bipolar disorder was excluded from the final analysis. Wray and Gottesman (2012) suggest that because of the high heritability characteristics and genetic influence that bipolar disorder has, it may bring confounding variables to the study. As this study was focused on variables that are influenced by the environment and not an individual's biological makeup, the exclusion of the data collected from individuals with bipolar disorder was warranted.

Sample Size for Linear Model

Before data collection began, an a priori power analysis based off a linear regression was conducted to estimate the number of participants needed for the sample. The estimated effect size was based off the pilot study conducted last year. For an estimated effect size of .15, 270 participants were needed to achieve a power of .80, with an alpha error probability of .05 (G*Power: Faul & Erdfelder, 1992).

Sample Size for Exploratory Factor Analysis

Research has shown that in order for factor analysis to yield a stable factor solution, the ratio of items to participant must be 1:3 (Bujang et al., 2012). Bujang et al. (2012) further suggest that for a factor analysis to be credible in sample size with a ratio of 1:3, measurement of the scales should be in a Likert scale of 4. In addition to this, Cronbach's alpha must be above 0.622, the item total correlations must be above 0.239, the communalities must be higher than 0.46, the total variance must be higher than 80.6% and the factor loadings should be higher than 0.49 (Bujang et al., 2012). However, even though a high standard has been set for the statistics, it does not mean that an exploratory factor analysis that does not meet these criteria will be invalid, the limits merely serve as a guideline to produce valid factor analyses (Bujang et al., 2012).

Post-hoc G*Power Analysis

A post-hoc G-power analysis was conducted on the moderated regression model to test whether the power of .80 was achieved. This analysis showed that with our sample size ($n = 128$), and effect size (0.39), and with the alpha level set to .05, the power achieved was 0.99 (G*Power: Faul & Erdfelder, 1992). This suggests that our sample was an adequate size for this study.

Measures

Beck Depression Inventory-II (BDI-II; Beck, Steer, & Brown, 1996). The BDI-II consists of 21 self-report items (Appendix C). It takes the form of a psychometric scale and its aim is to measure the severity of depression, and it is also used as a screening tool for depression in both clinical and non-clinical samples (Beck et al., 1996; Storch, Roberti, & Roth, 2004). Depression severity ranges from minimal (0-13); mild (14-19); moderate (20-28) to severe (29-63).

Screening questions and Demographics (Appendix A). Participants were asked questions to screen for bipolar disorder and whether they have ever taken bipolar disorder medication. Participants were asked to report their age in order to verify that they met the inclusion criteria.

Separation Trauma Scale (Appendix D).. The STS is still in development as part of the larger study, “Complexities of the Separation-Depression Relationship: Childhood Separation Trauma and Substitutive Emotional Support”. This scale is still in its rough form of 45 items in various formats, but is currently being refined and reduced to form a reliable measure of childhood separation trauma. The scale was evaluated and refined in this component of the study through exploratory factor analysis – producing a reduced version of the STS for further investigation of our hypotheses. The STS that we used to test the separation-depression relationship was thus a shortened, 35-item version of the rough, 45-

item STS. Instances of both physical and psychological separation are included in the scale, forming 2 subscales.

Connor-Davidson Resilience Scale (CD-RISC) (Appendix E). The CD-RISC is a scale that consists of 25 self-report items whose aim is to measure resilience. The format of the scale is a Likert type format. Items on the scale range from 0 (not true at all) to 4 (true nearly all the time), with higher scores indicating greater levels of resilience (Connor, & Davidson, 2003). In this study, the 10 item version of the CD-RISC was used as previous studies have shown that this version has improved validity and still measures resilience efficiently (Campbell-Sills, & Stein, 2007). Previous studies show that Cronbach's alpha for the 10-item CD-RISC was .85 (Campbell-Sills, & Stein, 2007).

Procedure

All undergraduate students between the ages of 18 and 25 were eligible to participate. The rough STS, BDI-II, CD-RISC, as well as the screening and demographic questions were administered in the form of an online questionnaire to a sample of (n= 128) undergraduate psychology students. The survey was administered via the online platform SurveyMonkey. The demographic and screening questions were used to assess the participants' eligibility. Participants were asked to confirm their age before beginning the survey to confirm eligibility. If any participant had been diagnosed with bipolar disorder and had been taking medication for this disorder, their data was excluded from the analysis. A reduced STS was obtained through exploratory factor analysis, and this scale was used to test the hypothesis that childhood separation trauma predisposes an individual to adult depression (measured by the BDI-II). The CD-RISC was used to test the hypothesis that resilience is a moderating factor between childhood separation trauma and the onset of depression in adult life.

Ethical Considerations

Before conducting this study, ethical approval was obtained from the UCT Department of Psychology (see Appendix G). Once approval had been confirmed, various approaches were executed to guarantee that the researcher remained within ethical confines. Each participant was required to sign an informed consent form (Appendix B) before the study could begin. The informed consent form served to explain what the study was going to entail to the participants. The form stated that in answering the STS, the participant would have to recall childhood events that may cause some distress. Participants were informed that participation in the study was completely voluntary and they were free to withdraw from participating at any time without consequences. The participants' confidentiality and anonymity was upheld in this study. The completed surveys were used as data in this study. At the end of the survey, participants were debriefed (Appendix F) and the details of the researchers were provided, should the participants have had any further questions or if they required additional support. To compensate the participants, they were given 1 SRPP point if the survey had been completed. Participants who did not complete the survey were not compensated. There were no other consequences of withdrawal from the study. The participant's data was stored on password protected devices, and was only shared with researchers and supervisors working on this study.

Statistical Analyses

All statistical analyses were conducted through a statistics program called IBM Statistical Package for the Social Sciences (SPSS 25), and R (R Core Team, 2013). We conducted an exploratory factor analysis on the rough STS, and retained items based on this analysis to form the reduced STS scale used in the subsequent regressions. The method used in this factor analysis was principal axis factoring.

Principal Axis factoring is a popular method of estimation in exploratory factor analysis (De Winter, & Dodou, 2012). The main aim of this method of factor analysis is to

reveal the underlying latent variables that are causing the observable variables to vary together (Costello, & Osborne, 2005). Principal axis factoring was the preferred method in this study because it distinguishes between shared and unique variance, and studies have shown that it yields the best results if the data is either normally distributed or non-normally distributed (Costello, & Osborne, 2005). We used principal axis factoring to determine the underlying latent variables in the STS. In order to select the number of factors necessary for extraction, we used the Scree plot. Looking at the scree plot to determine how many factors to extract, includes looking for the break point in the graph where the curve begins to flatten out (Costello, & Osborne, 2005). After looking at the scree plot, we manually selected the number of factors that were to be extracted, as suggested by the scree plot.

In order to ascertain which components are most representative of the items in the scale, we performed an oblique rotation to test if the components were theoretically related (Field, 2013). After conducting the analysis, we had to determine which of the components had the most meaningful loadings. Stevens (2009) suggests that loadings of .40 and upwards are meaningful. However, we used a proposed cut-off point of 0.49 in order to ensure meaningful factor loadings in spite of the small sample size (Bujang et al., 2012). If items loaded poorly or did not have strong correlations with any of the factors, they were excluded from further analysis.

Cronbach's alpha was used to test the subscales (Physical Separation items and Psychological Separation items) of the reduced STS for internal consistency. (Tredoux, & Durrheim, 2013). If a scale has a Cronbach's alpha value of .70 and upwards, it is considered to be suitable for research purposes. Because of our sample size, scales with a Cronbach's alpha of above 0.62 were considered suitable for research purposes. To further investigate for poor items, we looked at the Item Total Correlations (ITC's). If an item had an ITC of lower

than .24, it was understood to be a poor reflection of the participants total score and was reviewed for removal (Bujang et al., 2012).

After conducting the factor analysis, we were left with a refined and reduced final version of the STS (which included only the items that loaded meaningfully), with which the regressions were conducted.

Two linear regression analyses were run to determine whether childhood separation trauma (measured by the reduced STS) is a significant predictor of depression in adult life. In the first regression, childhood separation trauma (the total STS score) was the predictor variable, and depression (measured by the BDI-II) scores were the outcome. In the second regression, childhood psychological separation trauma (the psychological separation subscale total) was the predictor, and depression (measured by the BDI-II) scores were the outcome.

Two moderated regressions were run to investigate whether resilience (measured by the CD-RISC) was a significant moderating variable between childhood separation trauma and the onset of depression later on in life. The first moderated regression tested the STS full scale score against the BDI full scale score with the CD-RISC score as the moderator variable. The second moderated regression tested the Psychological Separation subscale score against the BDI-II full scale score with the CD-RISC scale score as the moderator. The predictor variables were centred for the moderated regressions. For all the statistical analyses, alpha was set at .05.

Results

Eligible Participants

Initially, 132 participants completed the online survey. For the final analysis, 128 participant responses were analysed. We excluded participant responses based on the following exclusion criteria: (1) not meeting the age criteria ($n = 1$), and (2) having received a

bipolar disorder diagnosis and/or taking medication for bipolar disorder, ($n = 3$). All other responses met the necessary inclusion criteria.

Demographics

Table 1 shows a selection of demographic information related to the sample. The table shows that most of the respondents were female ($n = 97$; 75.8%). This was beneficial to us, as studies have shown that females are more prone to depression when compared to their male counterparts (Weissman et al., 1996). Secondly, just slightly over half of the population ($n = 65$; 50.8%) had low depression scores (0-13), and a small amount of the sample ($n = 16$; 12.5%) had severe depression scores (29-63).

Table 1.

Sample Demographics

		Frequency	Percentage
Gender Identity	Male	30	23.4
	Female	97	75.8
	Other	1	.8
Depression Scores (BDI-II)	Low Depression (0-13)	65	50.8
	Mild Depression (14-19)	24	18.7
	Moderate Depression (20-28)	23	18
	Severe Depression (29-63)	16	12.5

Analysing the Scale

The Separation Trauma Scale, consisted of 45 items on a Likert Scale format, with 32 questions addressing psychological separation from a parent/s, and 13 items addressing physical separation. We ran 2 factor analyses, with the first analysis being run on the 32 items that made up the Psychological Separation subscale. The second factor analysis was run on the 13 items that made up the Physical Separation subscale. A factor analysis was run

on the full 45 item scale, however the fit statistics for this analysis were worse as compared to when the factor analyses were run on the subscales separately. This was the grounding on which we made the decision to investigate the subscales separately.

Psychological Separation Subscale

A principal axis factor analysis with an oblique rotation was run. We manually selected 4 factors to be extracted, as suggested by the output in R and confirmed by the Scree plot. Our factor loadings were set at a cutoff of 0.49 because of our sample size (Bujang et al., 2012). Our analysis resulted in 24 items loading meaningfully onto the factors (see Table 2).

The Kaiser-Meyer-Olkin (KMO) Measure of Sampling adequacy indicated that factor analysis was suitable for our sample size ($KMO = .83$). Field (2013) suggests that KMO values above .80 are great, as they show compact patterns of correlations and conducting factor analysis should produce reliable components. Bartlett's test of Sphericity was significant ($X^2(496) = 2634.33, p < .0001$), indicating that the overall correlations were far from zero (Field, 2013). These tests show that our sample was adequate for factor analysis.

The majority of the communalities (18/24) are above 0.46. In addition to this, the output in R gave us the various fit statistics necessary to determine if the selected factor model was consistent with the observed data (i.e. indicating good fit). The fit statistics for the Psychological Separation subscale were as follows: *TLI* was 0.77, *RMSEA* was 0.097 (95% Confidence Interval: 0.90 – 0.94), the fit based on diagonal values was 0.97, and the *RMSR* was 0.05.

We considered various factor structures for this scale, and according to the fit statistics, the above model was the best suited for the Psychological Separation subscale. The Psychological Separation subscale accounted for 50.6% of the total variance in the depression scores, which did not meet the minimum of 80.6% suggested necessary for a stable factor

solution with our sample size (Bujang et al., 2012). However, the fit statistics above suggest that our model adequately reflected the observed data.

Reliability for the Psychological Separation Subscale.

Cronbach's alpha for this scale was 0.92 with the lower confidence level at 0.9 and the upper confidence level at 0.94. All the Item Total Correlations (*ITC's*) were above 0.24, suggesting high levels of internal consistency for this subscale.

Table 2.

Pattern Matrix for Psychological Separation Subscale.

	Factors			
	1	2	3	4
Mother Hostility	0.73			
Father Hostility				0.67
Parents Unhappy			0.50	
Parents Poor Social Skills			0.50	
Parents Stressed			0.52	
Mother Coping Skills	0.49			
Father Coping Skills				0.52
Mother Uninterested	0.68			
Father Uninterested		0.77		
Mother Preoccupied	0.61			
Father Preoccupied		0.86		
Communication with Mother	0.68			
Communication with Father		0.74		

Ashamed of Mother	0.61	
Attention from Father		0.87
Rejected by Mother	0.83	
Rejected by Father		0.71
Criminal Mother	0.72	
Criminal Father		0.66
Stressful Childhood		0.62
Physical Abuse		0.64
Sexual Abuse		0.69
Emotional Abuse		0.57
Neglect		0.52

Physical Separation Subscale.

A principal axis factoring analysis with an oblique rotation was run on the Physical Separation subscale. We manually selected 3 factors for extraction, as suggested by the output in R as well as the Scree Plot. Our factor loading cutoff was set at 0.49. The analysis resulted in 11 items loading meaningfully onto the factors (see Table 3).

The Kaiser-Meyer-Olkin (KMO) Measure of Sampling adequacy for this subscale was $KMO = .74$. Bartlett's test of Sphericity was significant ($X^2 (78) = 1258.49, p < .0001$). The majority (10/11) of the communalities are above 0.46, indicating that the item that has a communality below 0.46 does not have a large influence on the total variance. The fit statistics in R, were as follows: *TLI* was 0.78, *RMSEA* was 0.17 (95% Confidence Interval: 0.77 – 0.87), the fit based on diagonal values was 0.99, and the *RMSR* was 0.04.

Similar to the Psychological Separation subscale, we considered various factor structures for the Physical Separation subscale, and according to the fit statistics, the above model was best suited for the subscale. The Physical separation subscale accounted for 63.9% variance in the depression scores, which did not meet the suggested minimum of 80.6% (Bujang et al., 2012). However, according to the fit statistics, our model adequately reflected the observed data.

Reliability of the Physical Separation Subscale.

The final Cronbach's alpha for the Physical Separation subscale was 0.82 with the lower confidence level at 0.77 and the upper confidence level at 0.87. 10 out of the 11 items had *ITC's* over 0.24, however we did not remove it because it was on the borderline, with an *ITC* value of 0.22.

Table 3.

Pattern Matrix for Physical Separation Items.

	Factors		
	1	2	3
Primary Caregiver Death	0.63		
Father Permanent Move		0.75	
Age Separated from Father		0.85	
Length of Separation from Father		0.82	
No. Times Separated from Father		0.84	
Age Separated from Mother			0.85
Length of Separation from Mother			0.89
No. Times Separated from Mother			0.92

Age Separated from Primary Caregiver	0.88
Length of Separation from Primary Caregiver	0.90
No. Times Separated from Primary Caregiver	0.92

Linear regression analysis

The scores on the BDI-II range from 0 to 63. The minimum and maximum values indicate that none of the participants scored in the upper 7% of the possible scores for the BDI-II (see Table 4). Furthermore, the sample mean was quite low ($M = 15.23$, $SD = 10.78$), and this indicated that most of the sample were not depressed. The scores on the CD-RISC range from 0 to 40. The minimum and maximum values show that the majority of participants scored above the lower 12.5% of possible resilience scale scores, and below the upper 12.5% of possible CD-RISC scores. The CDRISC mean ($M = 25.5$, $SD = 6.58$) was above the halfway-point of the scale, and this indicated that the majority of participants scored higher on the resilience scale (i.e. higher levels of resilience). The STS has a range of 0 to 140. From looking at the minimum and maximum values, we see that none of the participants scored in the upper 43% of the possible scores for the scale, and the STS mean ($M = 27.12$, $SD = 17.15$) was below the halfway point of the scale, indicating lower scores/levels of separation.

Table 4.

Descriptive Statistics of Scales

	Range	Min	Max	M	SD	Skewness	Kurtosis
Total_score.BDI	58.00	.00	58.00	15.23	10.78	1.02	1.38
Total_score.Resi lience	35.00	5.00	40.00	25.5	6.58	-.36	-.05

Total-score	54.00	.00	54.00	16.97	12.81	.90	.20
Psychological							
Total_score	28.00	.00	28.00	10.15	7.69	.32	-.70
Physical							
Total_score	79.00	.00	79.00	27.12	17.15	.74	.14
STS							

We made use of the revised STS scale (35 items) for all regression analyses. We also used the revised subscales (24 item Psychological Separation subscale, and the 11 item Physical Separation subscale).

Regression 1: Physical Separation vs Depression Scores.

We wanted to test whether both subscales had a predictive effect on the BDI-II scores, however the physical separation subscale scores did not meet the assumptions for regression, and there was no suitable transformation available.

Regression 2: Psychological Separation vs Depression Scores.

A linear regression was conducted to determine whether the Psychological Separation Subscale is an effective predictor of depression. The model summary in Table 5 shows that the psychological subscale items significantly predict depression (as measured by the BDI-II) ($R = .28$, $R^2 = .08$, $F(1, 126) = 10.42$, $p = 0.002$). However this model does have a very small effect size (.08).

Table 5.

Model summary of Psychological Scale Items

		Adjusted	SE of the	Change
R	R ²	R ²	Estimate	Statistics

				R ²	F	Sig. F		
				Change	Change	df1	df2	Change
.28 ^a	.08	.07	10.40	.08	10.42	1	126	.002

Regression 3: Full STS vs Depression Scores.

A linear regression was run to test whether the Separation Trauma Scale (STS) Total Score predicts BDI-II Total score. This regression was run to test if childhood separation trauma, as measured by the STS was a significant predictor of depression. The STS Total score was calculated by adding the total score of the psychological separation items to the total scores of the physical separation items. The model summary (Table 6) shows that the STS is a significant predictor of BDI scores ($R = .23$, $R^2 = .05$, $F(1, 126) = 6.97$, $p = 0.009$). This Model has a smaller effect size (.05) than the previous regression, which indicates that the psychological separation subscale is a better predictor of depression on its own.

We experimented with potential methods of improving the models, but the initial models were the best. The data showed a slight right skew, but a square root transformation of the variables did not improve the model, nor did bootstrapping the model with the untransformed variables. As a result of this, we retained our initial models.

Table 6.

Model Summary of STS

				Change Statistics				
R	R ²	Adjusted R ²	SE of the Estimate	R ² Change	F Change	df1	df2	Sig. F Change
.23	.05	.05	10.53	.05	6.97	1	126	.009

Investigating resilience as a moderator.

To test whether resilience was an effective moderator between childhood separation trauma and the onset of depression in adulthood, two moderated linear regression analysis was conducted. One tested the relationship between childhood separation trauma (using the STS full scale score) and depression (as measured by the BDI-II), moderated by resilience (as measured by the CD-RISC). The second regression tested the relationship between childhood psychological separation trauma (psychological separation subscale scores) and depression, also moderated by resilience.

Moderated Regression 1: STS full scale vs. BDI-II, moderated by CD-RISC scores.

The first order regression (where separation and resilience were both independent variables) was significant, with a decent effect size ($R = 0.60, R^2 = 0.36, F(2, 125) = 34.94, p < 0.001$). This model (Model 1:Table 7) indicates that resilience was a strong significant predictor of depression ($\beta = -0.95, p < 0.001$). The resilience coefficient is negative, which indicates that high resilience predicts low depression. Separation is not a significant predictor of depression in this model, as all the variance in the data is explained by the effects of resilience.

The regression with moderation (where the independent variables: separation and resilience were moderated by the interaction variable (separation*resilience)) was significant, with a very nice effect size ($R = 0.62, R^2 = 0.39, F(3, 124) = 26, p < 0.001$). From looking at the coefficients we can see that Resilience ($\beta = -0.95, p < 0.01$) is a better predictor of depression than the moderator variable (STS*Resilience) ($\beta = -0.02, p = 0.02$). From this, we can see that the full STS scale does not significantly predict depression, as resilience has a larger influence.

We compared the two models by running an ANOVA, to determine whether adding the moderator variable significantly improves the model despite its small coefficient. The

ANOVA indicated that the model with moderation was significantly better than the first order model ($F(1, 124) = 5.56, p = 0.020$), thus the interaction between resilience and separation (in the form of a moderator variable) significantly improved the model. The model with moderation had a significantly lower Residual Sums of Squares than the first order model, thus the moderated model (Model 2: Table 7) fits the data better.

Table 7.

Model Summary of STS full Scale vs BDI-II, moderated by CD-RISC Scores.

Model	R	R ²	Adjusted R ²	SE of the Estimate	Change Statistics				
					R ² Change	F Change	df1	df2	Sig. F Change
1	.60	.36	.35	8.70	.36	34.94	2	125	.000
2	.62	.39	.37	8.55	.39	26.00	3	124	.000

Moderated Regression 2: Psychological Separation Subscale vs. BDI-II, moderated by CD-RISC scores.

The first order regression with resilience and psychological separation as independent variables was significant, with a decent effect size ($R = 0.61, R^2 = 0.37, F(2, 125) = 37.37, p < 0.001$) (Table 8). Resilience was a strong significant independent predictor of depression in this model ($\beta = -0.92, p < 0.001$). The negative resilience coefficient indicated that high levels of resilience predict low levels of depression.

The regression with the independent variables: resilience and psychological separation being moderated by the interaction variable (resilience*psychological separation) was also significant, with a very nice effect size ($R = 0.63, R^2 = 0.40, F(3, 124) = 27.56, p <$

0.001). Two of the variables were significant predictors of depression, with resilience being the highest predictor ($\beta = 0.93, p < 0.001$), followed by the moderator (interaction variable: resilience*psychological separation) ($\beta = -0.02, p = 0.023$).

We compared the two models by running an ANOVA, to determine whether adding the moderator variable significantly improves the model despite its small coefficient. The ANOVA indicated that the model with moderation was a significantly better predictor of depression than the model the first order model (without moderation) ($F(1, 124) = 5.33, p = 0.023$), indicating that the addition of the interaction variable significantly improved the model. The model with moderation (Model 2: Table 8) had a significantly lower Residual Sums of Squares than the first order model, thus Model 2 fits the data better.

Table 8.

Model Summary of Psych Subscale vs BDI-II, moderated by CD-RISC Scores.

Model	R	R ²	Adjusted R ²	SE of the Estimate	Change Statistics				
					R ² Change	F Change	df1	df2	Sig. F Change
1	.61	.37	.36	8.60	.37	37.37	2	125	.000
2	.63	.40	.39	8.45	.40	27.56	3	124	.000

Discussion

The aim of this study was to further investigate the relationship between childhood separation trauma and the onset of depression in adult life (i.e. is childhood separation trauma a significant predictor of depression later on in life?). This study also sought to investigate whether resilience can act as an effective protective factor against the onset of depression, by

moderating the hypothesized separation-depression relationship. The scale that we developed to measure childhood separation trauma significantly predicted depression scores, thus confirming the hypothesis that childhood separation trauma is predisposing to adult depression. However, the regressions indicated that the psychological separation subscale was more indicative of depression than the full STS scale. In other words, the psychological separation subscale is more useful as a predictive tool on its own. In addition to this, resilience was found to be a very strong negative predictor of depression.

Psychological Separation (subscale) vs Separation Trauma (full STS)

In this study, psychological separation was found to be a more significant predictor of depression when compared to the full STS. Our reason for separating the psychological separation subscale from the main scale was to determine if the shorter, more precise instrument would result in a stronger prediction of depression than the full separation scale, which it did. The psychological separation trauma subscale significantly predicted depression with an effect size of 8%.

The results of this study are in agreement with previous studies conducted on depression and childhood trauma, in the sense that psychological separation is a stronger significant predictor of depression later on in life when compared to physical separation (Lacey, Bartley, Pikhart, Stafford, & Cable, 2014; Mandelli et al., 2015). However, we cannot rule out physical separation as a predisposing factor of depression, because the full STS (a combination of both physical and psychological separation items) was also a significant predictor of depression. The full STS predicted depression with a very small effect size of 5%.

Moderating effects of Resilience

This study showed that both the full STS and the Psychological separation subscale were not significant predictors in any of the moderated regression analyses. In other words,

when we looked at the relationship between separation trauma, resilience and depression, resilience was found to have a stronger negative predictive effect on depression, thus completing overshadowing the effect of separation trauma. The same was evident in the relationship between psychological separation, resilience and depression. Resilience was found to be a strong significant predictor of depression, with an effect size of 40%. However, we know that separation does play a role in predicting depression because the interactions between both moderator variables (separation*resilience, & psychological separation*resilience) remained significant in both moderations. This study showed that resilience is a majorly protective factor from depression, however separation trauma does lower that protection slightly.

Overall, our models showed that resilience is strongly (negatively) predictive of depression, and does moderate the relationship between childhood separation trauma and the onset of depression by weakening it.

Limitations of the study

The results obtained in this study could be influenced by various limitations. Firstly, all of the measures used in the study were self-report measures. There are advantages and disadvantages to this. An advantage of self-report measures is that there is an increased likelihood of individuals disclosing information that they wouldn't in an interview setting (Kaplan, & Saccuzzo, 2012). However, a disadvantage of self-report measures is that there is an increased chance of individuals not being 100% truthful in their responses (Kaplan, & Saccuzzo, 2012). To prevent this limitation, future research should be more reliant on a clinical diagnosis of depression rather than using the BDI-II as a measure of depression. In addition to this, self-report measures increase the risk of recall bias (Maughan, & Rutter, 1997).

Another limitation of the study was that there was a very low percentage (12.5%) of individuals that fell into the severely depressed category, and the majority of participants fell into the low depression category (50.8%). In addition to this, individuals had low separation scores, with none of the participants scoring in the upper 43% of possible scores. As a result of this, our ability to investigate which factors significantly predict depression was limited. Lastly, because our sample was recruited from a population of Psychology students, our results are not generalizable to the university population, and the South African population.

Significance and Directions for Future Research

This study is of relevance because it aided in furthering the research that is being conducted surrounding resilience and psychological disorders. In order for us to reach a complete understanding of how humans react to experiences of stress and trauma, we have to study resilience. The continuation of research in this area may be useful in prevention efforts, as well as in creating interventions that may help individuals recover from traumatic and stressful experiences (Campbell-Sills, & Stein, 2007). Because this study supports the hypothesis that resilience acts as a moderator between childhood separation trauma and the onset of adult depression, the necessity for intervention and prevention programs has been highlighted.

Future research should consider using a sample with individuals between the ages of 25 and 35, as studies have shown that the age of onset of MDD falls in this age range (Weisman et al., 1996). It would be interesting for future research to focus on other risk and protective factors (i.e. gender and ethnicity) that may have a moderating effect on the onset of depression later on in life. Studies have shown that females and people of colour have a higher predisposition to developing depression later on in life (Gonzalez, Tarraf, Whitfield, & Vega, 2010; Weismann et al., 1996).

Conclusion

Overall, this research has provided further evidence for the hypothesis that childhood separation trauma is a predisposing factor to the onset of depression in adulthood. It has also shown that resilience negatively predicts depression. To put this in other words, higher levels of resilience have been found to result in lower levels of depression. Furthermore, the results of this study show that resilience is an effective moderator between childhood separation trauma and the onset of depression in adult life. It is an effective moderator in the sense that it weakens the separation-depression relationship. This is of great importance, as resilient behaviours can be learnt, and therefore be included in treatment plans and interventions.

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Appendices

Appendix A: Demographic and Screening Questions

Please fill in the following demographic questions:

1. What is your age? (Select the correct answer)
 - Under 18
 - 18 to 24 years old
 - 25 to 40 years old
 - Greater than 40 years.
2. What is your gender? (Select the correct answer)
 - Male
 - Female
 - Other
3. How much was your approximate household income **per month** while you were a child (0-16 years old)? (Select the correct answer)
 - R0 - R16 320
 - R16 321 - R 25 490
 - R25 491 - R35 280
 - R35 281 - 46 300
 - R46 301 - 59 030
 - R59 031 - 125 000
 - R125 000 and above
4. How much is your approximate household income **per month** at the moment? (Mark the correct box with an “x”)

- R0 - R16 320
 - R16 321 - R 25 490
 - R25 491 - R35 280
 - R35 281 - 46 300
 - R46 301 - 59 030
 - R59 031 - 125 000
 - R125 000 and above
5. How many people do you have interpersonal relationships with (friends and family that you contact at least once a month)? (Select the correct answer)
- a. None
 - b. Less than 5
 - c. Less than 10
 - d. More than 10
6. How highly would you rate the level of social support in your life? (Select the correct answer)
- a. Very High
 - b. High
 - c. Low
 - d. Very Low
7. Are you employed currently? (Select the correct answer)
- a. Yes
 - b. No
8. How many drinks do you have per week? (Select the correct answer)
- a. More than 4 drinks on any day or 14 per week
 - b. Between 3 and 4 drinks on any day or 7 - 14 drinks per week

- c. Less than 3 drinks on any day and less than 7 drinks per week
9. Do you use illegal or prescription drugs recreationally (this does not include marijuana/dagga)? (Select the correct answer)
- a. Very rarely
 - b. Rarely
 - c. Frequently
 - d. Very Frequently
10. Are you currently, or have you ever been, diagnosed with bipolar disorder by a mental health professional? (Select the correct answer)
- a. Yes
 - b. No
11. Are you currently taking prescription medication for bipolar disorder? (Select the correct answer)
- a. Yes
 - b. No
12. Have you ever been diagnosed with depression? (Select the correct answer)
- a. Yes
 - b. No
13. Are you currently diagnosed with depression? (Select the correct answer)
- a. Yes
 - b. No
14. Are you currently taking medication for depression? (Select the correct answer)
- a. Yes
 - b. No

Appendix B : Informed Consent Form

Introduction

This study is exploring how personality in adulthood is shaped by interactions of early life experiences, and how certain factors may influence this development. It is being conducted at an Honour's level in the Psychology Department at the University of Cape Town.

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Information for Participants

Purpose of the research study:

The aim of this study is to determine if certain factors influence the way in which early life experiences shape adult personality. Previous studies have shown that personality is influenced by several factors. These factors include, a loss of a parent due to death or divorce, abuse or neglect.

Study Procedure

If you choose to take part in this study you will be required to complete an online survey of demographic questions, and a few questionnaires about current and early life experiences.

The questionnaire will ask about various events that may have taken place during your childhood years, to evaluate if any of these events may have influenced your personality later on in life. Please answer the questions as honestly as possible. Some examples of the type of questions you will be asked include: "Have you lost your mother due to death?" or "Were you separated from your father for reasons other than death or divorce of parents?"

The survey should take 30-45 minutes to complete, and you will receive 1 SRPP point for your participation. Please take your time in answering the questions as this data is very important.

Possible Risks

Emotional distress may be caused by some items in the questionnaire part of the survey, or some of them may bring back bad memories and recollections. If this distress occurs and you are unable to complete the study, you may discontinue the study with no consequences (except that SRPP points are only awarded at the end of a completed survey). Your relationship with the Department of Psychology will not be affected in any way, regardless of whether you do or do not complete the survey. There are no physical risks associated with this study.

Possible Benefits

This study will contribute to an important field of investigation, although there are no direct benefits to you. However, you will receive 1 SRPP point for your participation. (Please note that in order to receive this point you need to complete the survey).

Costs and Economic Considerations

No monetary costs are associated with taking part in this study.

Voluntary Participation

Participation in this study is completely voluntary. You do not have to give consent if you do not want to, and you may withdraw your participation at any time without consequences.

However, the SRPP point will only be given if the survey is completed in full.

Confidentiality

All of the information that will be collected, will be kept strictly confidential, and no data will be linked to your identity. Access to this data will be limited to persons directly involved in this study. The data will be stored on a laptop that has security software and is password-

protected. No access will be given to anybody not directly involved in this research. Your student number will need to be collected for the purpose of SRPP points, however your personal information will NOT be linked to your responses.

Questions and Additional Information

If at any point you have questions or concerns about your participation in this study, you may contact the investigators (sammylee229@gmail.com/ michelleanneblaeser@gmail.com) or the supervisor of this study (Mark.Solms@uct.ac.za). For questions regarding the ethics of this study and your rights as a research participant, contact Rosalind Adams (021 650 3417; Rosalind.adams@uct.ac.za). If you would like additional support after completing/discontinuing the study, please see below. If you wish to be seen individually for professional counselling, contact the Student Wellness Centre (021 650 1017/1020). For telephonic counselling, please contact the National Counselling Line (Lifeline; 086 132 2322), or the South African Depression and Anxiety Group's (SADAG) 24-hour helpline: 0800 12 13 14.

Consent

I state that I am over 18 years of age and agree to participate in this investigation that is being conducted by Samantha Thompson, Michelle Blaeser, and Professor Mark Solms of the Psychology Department, University of Cape Town. I have read all of the above and agree to participate in this study. I realize that this information will be used for educational purposes, and am happy with my understanding of the study, and its possible risks, benefits and alternatives. I have been informed that my participation in this study is voluntary, and I understand that I may withdraw my participation at any time without penalty.

I understand that I will be asked questions about certain events from my childhood in the format of an online questionnaire. I understand that the questionnaire may potentially have a small risk in a minority of cases, so I may contact the Lifeline hotline if necessary. I

understand that confidentiality will be upheld at all times in this study, and none of my data will be linked to my identity.

- By selecting this circle, I state that I have read the above information, and give my voluntary consent to participate in this study.
- I confirm that I am over the age of 18 years.
- I confirm that I am a current student at the University of Cape Town

Appendix C: BDI-II

Instructions: This questionnaire consists of 21 groups of statements. Please read each group of statements carefully, and then pick out the one statement in each group that best describes the way you have been feeling during the past two weeks, including today. Circle the number beside the statement that you have picked. If several statements in the group seem to apply equally well, circle the highest number for that group. Be sure that you do not choose more than one statement for any group, including Item 16 (Changes in Sleep Pattern) and Item 18 (Changes in Appetite).

<p>1. Sadness</p> <p>0 I do not feel sad.</p> <p>1 I feel sad much of the time.</p> <p>2 I am sad all of the time.</p> <p>3 I am so sad or unhappy that I can't stand it.</p> <p>2. Pessimism</p> <p>0 I am not discouraged about my future.</p> <p>1 I feel more discouraged about my future than I used to be.</p> <p>2 I do not expect things to work out for me.</p> <p>3 I feel my future is hopeless and will</p>	<p>6. Punishment Feelings</p> <p>0 I don't feel I am being punished.</p> <p>1 I feel I may be punished.</p> <p>2 I expect to be punished.</p> <p>3 I feel I am being punished.</p> <p>7. Self-Dislike</p> <p>0 I feel the same about myself as ever.</p> <p>1 I have lost confidence in myself.</p> <p>2 I am disappointed in myself.</p> <p>3 I dislike myself.</p> <p>8. Self-Criticalness</p> <p>0 I don't criticise or blame myself more than usual.</p>
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only get worse.

3. Past Failure

- 0 I do not feel like a failure
- 1 I have failed more than I should have.
- 2 As I look back, I see a lot of failures.
- 3 I feel I am a total failure as a person.

4. Loss of Pleasure

- 0 I get as much pleasure as I ever did from the things I enjoy.
- 1 I don't enjoy things as much as I used to.
- 2 I get very little pleasure from the things I used to enjoy.
- 3 I can't get any pleasure from the things I used to enjoy.

5. Guilty Feelings

- 0 I don't feel particularly guilty.
- 1 I feel guilty over many things I have done or should have done
- 2 I feel quite most of the time.

1 I am more critical of myself than I used to be.

2 I criticise myself for all my faults.

3 I blame myself for everything bad that happens.

9. Suicidal Thoughts or Wishes

0 I don't have any thoughts of killing myself.

1 I have thoughts of killing myself, but I would not carry them out.

2 I would like to kill myself.

3 I would kill myself if I had the chance

10. Crying

0 I don't cry anymore than I used to.

1 I cry more than I used to.

2 I cry over every little thing.

3 I feel like crying, but I can't.

3	I feel guilty all of the time.	
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<p>11. Agitation</p> <p>0 I am no more restless or wound up than usual.</p> <p>1 I feel more restless or wound up than usual.</p> <p>2 I am so restless or agitated that it's hard to stay still.</p> <p>3 I am so restless or agitated that I have to keep moving or doing something.</p> <p>12. Loss of Interest</p> <p>0 I have not lost interest in other people or activities.</p> <p>1 I am less interested in other people or things than before.</p> <p>2 I have lost most of my interest in other people or things.</p> <p>3 It's hard to get interested in anything.</p> <p>13. Indecisiveness</p> <p>0 I make decisions as well as ever.</p>	<p>17. Irritability</p> <p>0 I am no more irritable than usual.</p> <p>1 I am more irritable than usual.</p> <p>2 I am much more irritable than usual.</p> <p>3 I am irritable all the time.</p> <p>18. Changes in Appetite</p> <p>0 I have not experienced any changes in my appetite</p> <p>1a My appetite is somewhat less than usual.</p> <p>1b My appetite is somewhat more than usual.</p> <p>2a My appetite is much less than usual.</p> <p>2b My appetite is much more than usual.</p> <p>3a I have no appetite at all.</p> <p>3b I crave food all the time.</p> <p>19. Concentration Difficulty</p> <p>0 I can concentrate as well as ever.</p>
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<p>1 I find it more difficult to make decisions than usual.</p> <p>2 I have much greater difficulty in making decisions than I used to.</p> <p>3 I have trouble making any decisions.</p>	<p>1 I can't concentrate as well as usual.</p> <p>2 It's hard to keep my mind on anything for very long.</p> <p>3 I find I can't concentrate on anything.</p>
<p>14. Worthlessness</p> <p>0 I do not feel I am worthless.</p> <p>1 I don't consider myself as worthwhile and useful as I used to be.</p> <p>2 I feel more worthless as compared to other people.</p> <p>3 I feel utterly worthless.</p>	<p>20. Tiredness or Fatigue</p> <p>0 I am no more tired or fatigued than usual.</p> <p>1 I get more tired or fatigued more easily than usual.</p> <p>2 I am too tired or fatigued to do a lot of the things I used to do.</p> <p>3 I am too tired or fatigued to do most things I used to do.</p>
<p>15. Loss of Energy</p> <p>0 I have as much energy as ever.</p> <p>1 I have less energy than I used to have.</p> <p>2 I don't have enough energy to do very much.</p> <p>3 I don't have enough energy to do anything.</p>	<p>21. Loss of Interest in Sex</p> <p>0 I have not noticed any recent change in my interest in sex.</p> <p>1 I am less interested in sex than I used to be.</p> <p>2 I am much less interested in sex now.</p> <p>3 I have lost interest in sex completely.</p>
<p>16. Changes in Sleep Pattern</p> <p>0 I have not experienced any change in</p>	

<p>my sleeping pattern.</p> <p>1a I sleep somewhat more than usual.</p> <p>1b I sleep somewhat less than usual.</p> <p>2a I sleep a lot more than usual.</p> <p>2b I sleep a lot less than usual.</p> <p>3a I sleep most of the day.</p> <p>3b I wake up 1-2 hours early and can't get back to sleep.</p>	
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Appendix D: Separation Trauma Scale (STS) 45 item trial form

- The following questions are about your *childhood*. Your childhood is defined here as the time you were born **until you turned 16 years old**.
 - If a question is about your *parent(s)*, but you only had/knew one parent, you should select the answer that applies to that parent alone.
 - A *primary caregiver* is someone who is **not** your biological parent (mother or father), but has played the **role of a parent** in your life since your **birth** or soon after birth
 - For each question, please select the most correct answer. Only select **one answer** per question
-

1. Have you lost your *mother* due to death?
 - a. Yes, before my 5th birthday
 - b. Yes, between my 5th and 11th birthday
 - c. Yes, between my 11th and 16th birthday
 - d. No, my *mother* lived until I turned 16 **or** my *mother* is still alive
 - e. I do not know whether my mother is alive or not
2. Have you lost your *father* due to death?
 - a. Yes, before my 5th birthday
 - b. Yes, between my 5th and 11th birthday
 - c. Yes, between my 11th and 16th birthday
 - d. No, my *father* lived until I turned 16 **or** my *father* is still alive
 - e. I do not know whether my father is alive or not
3. Did you lose another *primary caregiver* due to death?
 - a. Yes, before my 5th birthday
 - b. Yes, between my 5th and 11th birthday

- c. Yes, between my 11th and 16th birthday
 - d. No, my *primary caregiver* lived until I turned 16 **or** my *primary caregiver* is still alive
 - e. No, I did not have another *primary caregiver* (other than my *parents*)
4. Did your *father* permanently move out of the home where you lived, due to desertion, separation or divorce? (If he moved out permanently, then he moved out for longer than one year in your childhood, and the separation lasted at least until you turned 16 years old).
- a. Yes, before my 5th birthday
 - b. Yes, between my 5th and 11th birthday
 - c. Yes, between my 11th and 16th birthday
 - d. No, my *father* lived at home at least until I turned 16
 - e. No, my *father* never lived at home
5. Were you separated from your *father* for reasons other than death or divorce of your parents (i.e.: hospitalization, boarding school, work travels, imprisonment, etc.)? And if so, how old were you when you **first** experienced this type of separation?
- a. Yes, before my 5th birthday
 - b. Yes, between my 5th and 11th birthday
 - c. Yes, between my 11th and 16th birthday
 - d. No, I was not separated from my *father* (due to the above) before I turned 16
 - e. No, my *father* never lived at home
6. How long did the separation from your *father* last (described in *question 5*)? If this separation occurred multiple times, please select the longest period of separation.
- a. I did not experience the type of separation described in *question 5*
 - b. The longest separation of this type lasted between 1 week – 12 months

- c. The longest separation of this type lasted for longer than 1 year, but my *father* returned home before I turned 16.
 - d. The longest separation of this type became permanent (I was separated from my *father* for longer than 1 year in my childhood and the separation lasted at least until I turned 16 years old)
 - e. My *father* never lived at home
7. How many times did this type of separation from your *father* occur (described in *question 5*)?
- a. I did not experience the type of separation described in *question 5*
 - b. I experienced this type of separation between 1 and 3 times
 - c. I experienced this type of separation between 4 and 10 times
 - d. I experienced this type of separation more than 10 times
 - e. My *father* never lived at home
8. Were you separated from your *mother* for reasons other than death or divorce of your parents (i.e.: hospitalization, boarding school, work travels, imprisonment, etc.)? And if so, how old were you when you **first** experienced this type of separation?
- a. Yes, before my 5th birthday
 - b. Yes, between my 5th and 11th birthday
 - c. Yes, between my 11th and 16th birthday
 - d. No, I was not separated from my *mother* (due to the above) before I turned 16
 - e. No, my *mother* never lived at home
9. How long did the separation from your *mother* last (described in *question 8*)? If this separation occurred multiple times, please select the longest period of separation.
- a. I did not experience the type of separation described in *question 8*
 - b. The longest separation of this type lasted between 1 week – 12 months

- c. The longest separation of this type lasted for longer than 1 year, but my *mother* returned home before I turned 16.
 - d. The longest separation of this type became permanent (I was separated from my *mother* for longer than 1 year in my childhood and the separation lasted at least until I turned 16 years old)
 - e. My *mother* never lived at home
10. How many times did this type of separation from your *mother* occur (described in *question 8*)?
- a. I did not experience the type of separation described in *question 8*
 - b. I experienced this type of separation between 1 and 3 times
 - c. I experienced this type of separation between 4 and 10 times
 - d. I experienced this type of separation more than 10 times
 - e. My *mother* never lived at home
11. Were you separated from your *primary caregiver* for reasons other than the death of your *primary caregiver* (i.e.: hospitalization, boarding school, work travels, imprisonment, etc.)? And if so, how old were you when you **first** experienced this type of separation?
- a. Yes, before my 5th birthday
 - b. Yes, between my 5th and 11th birthday
 - c. Yes, between my 11th and 16th birthday
 - d. No, I was not separated from my *primary caregiver* (due to the above) before I turned 16
 - e. No, I never had another *primary caregiver*

12. How long did the separation from your *primary caregiver* last (described in *question 10*)? If this separation occurred multiple times, please select the longest period of separation.

- a. I did not experience the type of separation described in *question 10*
- b. The longest separation of this type lasted between 1 week – 12 months
- c. The longest separation of this type lasted for longer than 1 year, but my *primary caregiver* returned home before I turned 16.
- d. The longest separation of this type became permanent (I was separated from my *primary caregiver* for longer than 1 year in my childhood and the separation lasted at least until I turned 16 years old)
- e. I never had another *primary caregiver*

13. How many times did this type of separation from your *primary caregiver* occur (described in *question 10*)?

- a. I did not experience the type of separation described in *question 10*
- b. I experienced this type of separation between 1 and 3 times
- c. I experienced this type of separation between 4 and 10 times
- d. I experienced this type of separation more than 10 times
- e. I never had another *primary caregiver*

The next section of the questionnaire is a set of statements (also about your childhood).

Please select the answer to each question that is the **most** correct, in your opinion.

14. My *mother* treated me with hostility as a child

- a. Very Frequently
- b. Frequently
- c. Rarely
- d. Very rarely

e. I did not know my *mother*/ have a *mother*

15. My *father* treated me with hostility as a child

a. Very frequently

b. Frequently

c. Rarely

d. Very rarely

e. I did not know my *father*/ have a *father*

16. My *parents* were unhappy in their relationship (i.e. arguments, animosity)

a. Very frequently

b. Frequently

c. Rarely

d. Very rarely

e. My parents were not in a relationship with each other

17. My *parent(s)* were poorly socially integrated (i.e. they had few/no friends, didn't attend many social events, were very isolated)

a. Strongly Agree

b. Agree

c. Disagree

d. Strongly Disagree

18. My *parent(s)* had enough help with childcare

a. Very frequently

b. Frequently

c. Rarely

d. Very rarely

[NOTE: this question was reverse coded]

19. My *parent(s)* suffered from a long-term stressful situation (e.g.: disability, debt, poverty, alcoholism, illness, addiction)

- a. Strongly Agree
- b. Agree
- c. Disagree
- d. Strongly Disagree

20. My *mother* had good coping skills (e.g.: wouldn't break down in stressful situations, would keep going even when under pressure)

- a. Strongly Agree
- b. Agree
- c. Disagree
- d. Strongly Disagree
- e. I did not know my *mother*/ have a *mother*

[NOTE: this question was reverse coded]

21. My *father* had good coping skills (e.g.: wouldn't break down in stressful situations, would keep going even when under pressure)

- a. Strongly Agree
- b. Agree
- c. Disagree
- d. Strongly Disagree
- e. I did not know my *father*/ have a *father*

[NOTE: this question was reverse coded]

22. I felt like my *mother* was uninterested in me

- a. Very frequently
- b. Frequently

- c. Rarely
- d. Very rarely
- e. I did not know my *mother*/have a *mother*

23. I felt like my *father* was uninterested in me

- a. Very frequently
- b. Frequently
- c. Rarely
- d. Very rarely
- e. I did not know my *father*/have a *father*

24. My *mother* was preoccupied with something else (e.g.: our time together was rushed or perfunctory, she was distracted with other things)

- a. Very frequently
- b. Frequently
- c. Rarely
- d. Very rarely
- e. I did not know my *mother*/have a *mother*

25. My *father* was preoccupied with something else (e.g.: our time together was rushed or perfunctory, he was distracted with other things)

- a. Very frequently
- b. Frequently
- c. Rarely
- d. Very rarely
- e. I did not know my *father*/have a *father*

26. I felt a lack of emotional communication from my *mother* (i.e.: she wasn't warm/genuine/open with me)

- a. Very frequently
- b. Frequently
- c. Rarely
- d. Very rarely
- e. I did not know my *mother*/have a *mother*

27. I felt a lack of emotional communication from my *father* (i.e.: he wasn't

warm/genuine/open with me)

- a. Very frequently
- b. Frequently
- c. Rarely
- d. Very rarely
- e. I did not know my *father*/have a *father*

28. My *parent(s)* wanted me to be another gender

- a. Strongly Agree
- b. Agree
- c. Disagree
- d. Strongly Disagree
- e. I do not know

29. I was ashamed of my *mother*

- a. Strongly Agree
- b. Agree
- c. Disagree
- d. Strongly Disagree
- e. I did not know my *mother*/have a *mother*

30. I was ashamed of my *father*

- a. Strongly Agree
- b. Agree
- c. Disagree
- d. Strongly Disagree
- e. I did not know my *father*/have a *father*

31. I wanted more attention from my *mother* than I received

- a. Strongly Agree
- b. Agree
- c. Disagree
- d. Strongly Disagree
- e. I did not know my *mother*/have a *mother*

32. I wanted more attention from my *father* than I received

- a. Strongly Agree
- b. Agree
- c. Disagree
- d. Strongly Disagree
- e. I did not know my *father*/have a *father*

33. I was afraid one/both of my *parents* would die

- a. Very frequently
- b. Frequently
- c. Rarely
- d. Very rarely
- e. Never

34. My *parent(s)* favored my siblings over me

- a. Very frequently

- b. Frequently
- c. Rarely
- d. Very rarely
- e. I didn't have any siblings/I don't know if my parents favoured my siblings

35. I did not like myself as a child

- a. Strongly Agree
- b. Agree
- c. Disagree
- d. Strongly Disagree

36. I felt rejected by my *mother*

- a. Very frequently
- b. Frequently
- c. Rarely
- d. Very rarely
- e. I did not know my *mother*/ have a *mother*

37. I felt rejected by my *father*

- a. Very frequently
- b. Frequently
- c. Rarely
- d. Very rarely
- e. I did not know my *father*/ have a *father*

38. I thought my *mother* could go to jail for doing something illegal (e.g.: stealing money from work, shoplifting, taking drugs, avoiding debt collectors)

- a. Very frequently
- b. Frequently

- c. Rarely
- d. Very rarely
- e. I did not know my *mother*/ have a *mother*

39. I thought my *father* could go to jail for doing something illegal (e.g.: stealing money from work, shoplifting, taking drugs, avoiding debt-collectors)

- a. Very frequently
- b. Frequently
- c. Rarely
- d. Very rarely
- e. I did not know my *father*/ have a *father*

40. I had a very stressful childhood (i.e.: worried a lot, unhappy with home/school conditions, afraid a lot)

- a. Strongly Agree
- b. Agree
- c. Disagree
- d. Strongly Disagree

41. There was something terrible in my childhood that I wished I could change (but wasn't able to)

- a. Strongly Agree
- b. Agree
- c. Disagree
- d. Strongly Disagree

Abuse can be anything along the following lines: a *primary caregiver* or *parent* was violent towards me (physical abuse), an adult *primary caregiver* or *parent* performed sexual acts with me (sexual abuse), a *primary caregiver* or *parent* told me things to make me think I was

unloved/worthless (emotional abuse). Please rate the following statements according to the experience(s) relevant to you:

42. I experienced *physical* abuse from a *primary caregiver* or *parent*

- a. Strongly Agree
- b. Agree
- c. Disagree
- d. Strongly Disagree

43. I experienced *sexual* abuse from a *primary caregiver* or *parent*

- a. Strongly Agree
- b. Agree
- c. Disagree
- d. Strongly Disagree

44. I experienced *emotional* abuse from a *caregiver* or *parent*

- a. Strongly Agree
- b. Agree
- c. Disagree
- d. Strongly Disagree

Neglect is when a caregiver or parent does not take care of your physical needs (e.g.: clean clothes, enough food, medical care) or emotional needs (e.g.: care, comfort, attention). Please rate the following statement according to the experience(s) relevant to you:

45. I experienced neglect from a caregiver (physical or emotional)

- a. Strongly Agree
- b. Agree
- c. Disagree
- d. Strongly Disagree

Appendix E: Connor-Davidson Resilience Scale (CD-RISC)

This scale consists of 10 items on a scale that ranges from 0 to 4. Please read each question carefully and select only one option for each question that is most relevant to you.

1. I am able to adapt to change.
 - 0 Not true at all
 - 1 Rarely true
 - 2 Sometimes true
 - 3 Often true
 - 4 True nearly all of the time

2. I can deal with whatever comes my way.
 - 0 Not true at all
 - 1 Rarely true
 - 2 Sometimes true
 - 3 Often true
 - 4 True nearly all of the time

3. I try to see the humorous side of problems.
 - 0 Not true at all
 - 1 Rarely true
 - 2 Sometimes true
 - 3 Often true
 - 4 True nearly all of the time

4. Coping with stress strengthens me.

0 Not true at all

1 Rarely true

2 Sometimes true

3 Often true

4 True nearly all of the time

5. I tend to bounce back after facing illness or hardship.

0 Not true at all

1 Rarely true

2 Sometimes true

3 Often true

4 True nearly all of the time

6. I can achieve my goals despite obstacles.

0 Not true at all

1 Rarely true

2 Sometimes true

3 Often true

4 True nearly all of the time

7. I stay focused under pressure.

0 Not true at all

1 Rarely true

2 Sometimes true

3 Often true

4 True nearly all of the time

8. I am not easily discouraged by failure.

0 Not true at all

1 Rarely true

2 Sometimes true

3 Often true

4 True nearly all of the time

9. I think of myself as a strong person

0 Not true at all

1 Rarely true

2 Sometimes true

3 Often true

4 True nearly all of the time

10. I can handle unpleasant feelings.

0 Not true at all

1 Rarely true

2 Sometimes true

3 Often true

4 True nearly all of the time

Appendix F : Debriefing Form

Thank you for your participation in this study.

You were told that this study tests how certain factors may have an influence on childhood experiences and thus affect adult personality. This is true, but the study is actually testing if resilience can moderate the effect of childhood experiences on adult depression. We could not explain the details of the study before the survey. If you knew exactly what we were testing, you might have changed your answers. This happens often if people think they are helping answer a specific question. If everyone changed their answers, the final results of the study would not be true. So we had to be general, to make sure the results were honest.

Depression affects a lot of South Africans. The South African Stress and Health Study estimated that 9.7% of South Africans have been depressed at some point. Testing which early separation experiences predict adult depression is important. It will allow us to design a questionnaire that can predict adult depression from childhood experiences.

If you would like to know more about this research, please contact the main researchers: Samantha Thompson (sammylee229@gmail.com) or Michelle Blaeser (michelleanneblaeser@gmail.com). Again, thank you for your participation in this study. If you are upset in any way by the survey, or feel that you need emotional support, please contact: (021 650 1017/1020) Student Wellness. For anonymous telephonic telephonic counselling, contact the National Counselling Line (Lifeline): 086 132 2322

Or

The South African Depression and Anxiety Group's (SADAG) 24 hour helpline: 0800 12 13

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Appendix G: Ethical Approval

Dear Samantha

I am pleased to inform you that the Psychology Department Research Ethics Committee has approved the proposed amendments to your study, *Psychological resilience as a moderating factor between childhood separation trauma and the onset of depression in adulthood*. The reference number remains unchanged.

Kind regards

Lauren Wild

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