Childhood Family Environment and Depression in Early Adulthood in Botswana

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Abstract

The childhood family environment is a determinant of mental health outcomes later in life. Yet, few studies have examined its role in outcomes such as depression in early adulthood, especially in low- and middle-income countries such as Botswana. This study explores the relationship between childhood family environmental factors and depression among young adults in Botswana. A sample of 351 students at the University of Botswana was surveyed through a self-administered questionnaire, which included various childhood environmental factors, the Beck Depression Inventory-II and socio-demographic items. Descriptive statistics, *t*-tests and regression models were used in the data analyses. About one in four young adults reported moderate to severe symptoms of depression with about one in ten in the severe category. Childhood alcohol use, parental drug and alcohol use, physical assault, and psychological aggression towards parents or guardians during childhood, all significantly predicted symptoms of depression in early adulthood. Altogether, the childhood family environmental factors and gender explained significant variance in depressive symptoms. Multiple adverse childhood environments constitute significant risk factors for depression in early adulthood and the next generation. Preventive and early intervention services for vulnerable children, evaluation of mental health, childhood family experiences, and creating awareness of the need for treatment are critical. Cognitive behavioural therapy and mindfulness training are possible strategies to reduce the life-course effects of adverse childhood family environmental factors on depression in young adults.

Keywords: childhood; depression; family environment; young adults; Botswana

Introduction

Background

Depression is a common and leading mental health problem in late adolescence (15- to 19-year-olds) and early adulthood (20- to 24-year-olds) (Gibbs, Govender, and Jewkes 2018; Murray et al. 2012). At both stages, depression forms the basis for future mental disorders (Auerbach et al. 2018; Jaffee 2017). In addition, depression is a cause of disability-adjusted life years lost (Gore et al. 2011) and is also linked to low self-esteem, suicidal behaviours (Gibbs, Govender, and Jewkes 2018; Gore et al. 2011; Moran et al. 2012; Rodway et al. 2016) and a host of other outcomes such as unemployment (Caetano et al. 2016), physical impairment (Erskine et al. 2015) and other social malaise. Few studies have been conducted to determine what shapes depression in early adulthood, especially in low- and middle-income countries such as Botswana, despite depression being a significant public health burden. The health of the subpopulations of late adolescents and young adults is vital for human resource planning and future development as depression can limit chances of upward social mobility and potential for future gainful employment and productivity.

Several factors are known to be associated with depression including adverse childhood environmental factors such as witnessing assault on parents or the guardian, witnessing psychological aggression, living with adults who abuse drugs and alcohol, childhood sexual abuse, hormonal and maturational changes, family history of depression, parental unemployment and other psychosocial difficulties (Thapar et al. 2012).

The goal of the present study is to assess the influence of an adverse childhood family environment on depression in early adult students at a university in Botswana. Specifically, the objectives of the study are to: 1) assess the prevalence of adverse family environmental factors; 2) determine the prevalence of depression among the students; 3) evaluate any gender differences in reporting current depressive symptoms and childhood (< 18 years) family environmental factors; and 4) assess the extent to which each of the adverse family environmental factors individually (univariably) and collectively (uniquely) predict depression among the students.

Literature Review

Previous studies have associated depression in young adults with truancy (Bannink et al. 2015), poor academic performance (English, Lambert, and Lalongo 2016; Sörberg et al. 2019), drug and substance abuse (Gibbs, Govender, and Jewkes 2018), and reduced quality of life. Other studies suggest that adverse childhood environmental factors appear to affect the male and female gender differently (Brown et al. 2015). For example, girls who witness domestic violence are more likely to manifest internalising behaviours and become victims themselves while their male counterparts show externalising behaviours and are more likely to perpetrate violence (Mills and

Kellington 2012; Wood and Sommers 2011). Correspondingly, hormonal and maturational changes appear to affect girls disproportionately compared to boys (Thapar et al. 2012).

Witnessing domestic violence and parental alcohol abuse during childhood are known risk factors for emotional, academic, social and physical problems in children (Barchi et al. 2018; Lambie and Sias 2005). However, little is known whether the residual effects linger on into early adulthood. Equally, childhood factors that predispose to depression are not only poorly understood but hardly studied, especially in low- and middle-income countries. For example, early on in life, children may be raised in family environments with a high density of stressors which predispose them to depression (Campbell, Walker, and Egede 2016; Chapman et al. 2004; Seehuus, Clifton, and Rellini 2015; Wood and Sommers 2011). These family environmental stressors may include poverty and poor neighbourhoods, diseases in the family (for example HIV and AIDS), family dysfunction, and drug and alcohol abuse (Gupta et al. 2010; Lawler et al. 2011; Misra and Castillo 2004; Seloilwe, 2005; Thorsteinsson et al. 2013). All these family environmental factors are common in Botswana. For example, family violence (Barchi et al. 2018), drug and substance abuse (Gotsang, Mashalla, and Seloilwe 2017; Lama et al. 2016), and child abuse (Phillip and Amone-P'Olak 2018; Seloilwe and Thupayagale-Tshweneagae 2009) are rampant in Botswana. Consequently, this childhood adversity may be linked to depression in early adulthood. Indeed, previous studies have related stressful childhood family environments to later mental health problems such as depression (Barchi et al. 2018; Steele et al. 2016).

Several previous studies have attempted to define the pathways from childhood maltreatment to mental health problems such as depression. For example, Danese et al. (2008) found an elevated level of inflammation and depression in people with a history of childhood maltreatment. Developing inflammation as a consequence of childhood maltreatment has been linked to depression and cardiovascular diseases (Danese et al. 2008). Families are systems in which each member's behaviour influence the entire family, particularly children. Therefore, future outcomes (for example mental health) of children raised in family environments with a high density of stressors may be gravely affected (Lambie and Sias 2005). Another pathway is that children carry the burden of secrecy as they are likely to hide the shame of their parents' drug and substance abuse from other people leading to low self-esteem and a sense of guilt.

Consequently, such children are likely to have problems coordinating their ideas, thoughts, emotions, attitudes and social relationships in future, thus leading to mental health problems such as depression. Therefore, this study will be embedded within the cumulative stress hypothesis (Nederhof and Schmidt 2012). The cumulative stress hypothesis posits that the effects of exposure to stress are cumulative, and is associated with psychopathology, for example, depression (Nederhof and Schmidt

2012). Therefore, accumulation and convergence of psychosocial stressors, highlighted above, may be linked to depression (Taylor 2010).

Method

Design and Sample

A cross-sectional survey design using the quantitative data collection method was used in the current study. The sample size was computed based on a regression statistical analyses using G*Power 3.1.9.2 software (Faul et al. 2009). With an effect size of 0.8, a significance level of $\alpha = 0.05$, and a statistical power of $1-\beta = 0.8$, the power analysis showed a sample size of 350 respondents. The sample size was computed before inviting the respondents to take part in the study. These students were registered for different programmes of study at the University of Botswana. Initially, 375 students were invited to participate: 24 of the students declined to participate (n = 7), were underage (6) and did not respond to many questions in the questionnaire or did not return the questionnaires (n = 11). Consequently, data from 351 respondents, representing a response rate of 93.7 per cent, were used in the study.

Procedure

Permission was sought from the lecturers to distribute questionnaires during class in the lecture rooms. Next, the purpose of the study was explained to the students. After that, the students were informed about the anonymous, confidential and voluntary nature of their participation. Subsequently, 375 questionnaires were distributed to those who agreed to participate and had signed a consent form. Furthermore, the students were asked not to indicate any identifying mark on the questionnaire. It took about approximately 10 minutes to complete the questionnaire.

Measures

The self-report questionnaire consisted of several sections: socio-demographic questions (age, gender, year of study, parental educational attainment, place of upbringing, etc.), a revised version of the Conflict Tactics Scale (CTS-2) (Straus et al. 1996), and self-made single item questions were used to assess parental drug and alcohol use and the respondents' alcohol use before 18 years of age. For the items on the CTS-2, the behaviours reported occurred during childhood (< 18 years).

Physical Assault and Psychological Aggression

Two subscales from the CTS-2 (Straus et al. 1996) were used to assess family violence: physical assault (12 items) and psychological aggression (8 items). The physical assault subscale consisted of items such as "slammed partner against the wall" or "hit partner with an object" while the psychological aggression included items such as "shouted at partner" and "stomped out of the room". The response format was "never" = 1; "sometimes" = 2, and "often" = 3. Both subscales had good

internal consistency reliabilities of Cronbach's alpha of α = .79 for physical assault and α = .95 for psychological aggression, respectively.

Symptoms of Depression

Depressive symptoms were measured by the 21-item Beck Depression Inventory-II (BDI-II) (Beck, Steer, and Brown 1996). The response format for respondents is based on a 4-point Likert-type scale ranging from 0 to 3 based on the clinical severity of each item. The scores range from 0 to 63. Scores are grouped into four sub-categories: minimal depression (scores ranging from 0 to 13), mild depression (scores ranging from 14 to 19), moderate depression (scores ranging from 20 to 28), and severe depression (scores ranging from 29 to 63) (Beck, Steer, and Brown 1996). Higher ratings indicate the severity of depressive symptoms. The use of BDI-II is common and widespread with acceptable internal consistency reliabilities. For example, in Botswana, the internal consistency reliabilities (Cronbach's alpha) of studies that used BDI-II ranged from α = .89 to α = .89 (Hetolang and Amone-P'Olak 2018; Korb and Plattner 2014; Phillip and Amone-P'Olak 2018).

Childhood Alcohol Use

One question was used to determine whether the respondents used alcohol as a child with the following response format: never used alcohol = 0, started using alcohol after 18 = 1; started using alcohol between the age of 15 to 17 = 2; started using alcohol before the age of 15 = 3.

Household Drug and Alcohol Use

A single question was used to assess whether the respondents lived with a parent or guardian who used drugs and alcohol when they were children (≤ 18). A binary response format was used: no = 0 and yes = 1.

Ethical Considerations

Ethical permission to conduct this study was secured from the Institutional Review Board of the University of Botswana. After completing the questionnaire, the respondents were debriefed and provided with contact information on available support services for those who might have been affected as a result of participating in the study.

Data Analyses

Socio-demographic characteristics, the prevalence of adverse childhood family environmental factors and depressive symptoms were computed using descriptive statistics. Univariable regression models were fitted to quantify the extent to which individual adverse family environmental factors univariably predicted depression. Finally, a multivariable regression analysis was conducted to determine the unique roles of adverse childhood family environmental factors in predicting depression. The

t-test was used to assess both current (depression) and childhood CTS behaviours (< 18 years) gender differences. Since gender differences are common and manifest with variables such as reporting psychological aggression, physical assault, drug and alcohol use, and depression, gender was included in all the regression models. The effect sizes of the associations between adverse family environmental factors on depression and depression were computed using the eta-squared (η2) coefficient. IBM SPSS statistical software, version 25.0, was used to perform the statistical analyses. A *p*-value of less than .05 was regarded as statistically significant.

Results

Socio-demographic Characteristics of the Respondents

A total sample of 351 students participated in this study, with 53 per cent (n = 186) female participants aged between 18 and 25 years (mean age = 21.86, SD = ± 2.24). The socio-demographic characteristics of the study population are presented in Table 1. About 27 per cent (n = 95) of the young adults started using alcohol before the age of 18, and 11 per cent (n = 39) started before they turned 14 years of age. About 16.2 per cent (n = 57) reported at least one or more physical assault on their parents or guardians, while 57.4 per cent (n = 202) reported at least one or more act of psychological aggression. Parental use of drugs and alcohol use was reported by 41 per cent (n = 141) of the respondents. About 24.8 per cent (n = 87) of the young adults reported moderate to severe depressive symptoms, with 8.8 per cent (n = 31) of them in the severe category.

Table 1: Prevalence of depressive symptoms and adverse family environmental factors (*N* = 351)

	N (%)		
Childhood alcohol use			
Before 14	39 (11.11)		
Between 15–17	56 (15.95)		
At 18 or older	78 (22.22)		
Never used alcohol	178 (50.71)		
Parental use of drugs and alcohol			
Use	141 (41)		
No use	210 (59)		
Depressive symptoms			
Minimal	203 (57.8)		
Minimum	61 (17.4)		
Moderate	56 (16.0)		
Severe	31 (8.8)		
Physical assault	**Often (n, %)**	**Sometimes (n, %)**	**Never (n, %)**
Threw an object at parent/guardian that could hurt	12 (3.4)	27 (7.7)	312 (88.9)
Pushed, grabbed or shoved my parent/guardian	9 (2.6)	23 (6.6)	316 (90.8)

	N (%)		
Slapped my parent/guardian	10 (2.9)	13 (3.7)	326 (93.4)
Hit my mother/father with an object	10 (2.8)	13 (3.7)	326 (93.4)
Kicked, beat or punched my father/mother	9 (2.6)	11 (3.1)	330 (94.3)
Beat up my father/mother	8 (2.3)	16 (4.6)	325 (93.1)
Choked my father/mother	10 (2.9)	8 (2.3)	331 (94.8)
Twisted my mother/father's arm or hair	10 (2.8)	16 (4.6)	325 (92.6)
Used a knife or fired a gun	9 (2.6)	8 (2.3)	333 (95.1)
Burned or scalded my mother/father on purpose	11 (3.1)	5 (1.4)	334 (95.4)
Slammed my mother/father against the wall	13 (3.7)	6 (1.7)	331 (94.6)
Grabbed my parent or guardian	8 (2.3)	15 (4.3)	324 (93.4)
Psychological aggression			
Shouted at my mother/father	19 (5.4)	16 (33.2)	214 (61.3)
Insulted or swore at my mother/father	14 (4)	34 (9.8)	300 (86.2)
Stomped out of the room or house or yard	22 (6.4)	100 (28.9)	224 (64.7)
Did something to spite my mother/father	23 (6.6)	75 (21.4)	252 (72.0)
Threatened to hit/throw an object at my mother/father	12 (3.4)	22 (6.3)	316 (90.3)
Destroyed something belonging to my mother/father	11 (3.2)	58 (16.7)	278 (80.1)
Called my parent/guardian fat or ugly	8 (2.3)	19 (5.5)	320 (92.2)
Accused parent/guardian of being a lousy lover	12 (3.5)	21 (6.1)	314 (90.5)

Key: N = total number; n = subpopulation

Gender Differences

The results of the gender differences are included in Table 2. The male respondents were older, started using alcohol earlier, and reported more childhood parental drug and alcohol use but fewer current depressive symptoms than their female peers. However, there were no gender differences in reporting childhood experiences of physical assault and psychological aggression on parents or guardians.

Table 2: Gender difference in age, childhood environmental factors and depressive symptoms ($N = 351$)

	All (M, SD, min., max.)	Male (M, SD, min., max.)	Female (M, SD, min., max.)	t-test ($df = 348$)
Age	21.86 (± 2.24, 18–25)	22.17 (± 2.36)	21.55 (± 2.08)	$t = 2.51$, $p < 0.05$
Childhood alcohol use (n, %)	143 (40.7%)	98 (68.5%)	45 (31.5%)	$t = 3.12$, $p < 0.01$
Parental use of drugs and alcohol (n, %)	141 (40.20%)	1.3 (73.10%)	38 (26.10%)	$t = 4.01$, $p < 0.01$
Physical assault (M, SD, min.-max.)	13.08 (± 3.94)	13.33 (± 4.44)	12.83 (± 3.37)	$t = 1.19$, $p < 0.05$
Psychological aggression (M, SD, min.-max.)	9.92 (± 2.94)	9.95 (± 3.18)	9.89 (± 2.71)	$t = 0.20$, $p < 0.05$

	All (M, SD, min., max.)	Male (M, SD, min., max.)	Female (M, SD, min., max.)	*t*-test (*df* = 348)
Depression	12.51 (± 9.35)	11.46 (± 9.70)	13.55 (± 8.90)	$t = 2.11$, $p < 0.05$

Key: N = total number of respondents; n = subpopulation; M = mean; SD = standard deviation

Correlations between Variables in the Study

The current depressive symptoms significantly correlated with all the indicators of adverse family environmental factors: childhood alcohol use ($r = .41$, $p < .05$), parental drug and substance use ($r = .26$, $p < .01$), and the two indicators of family violence: physical assault ($r = .49$, $p < .05$) and psychological aggression ($r = .45$, $p < .05$) against a parent or guardian. Only age did not significantly correlate with current depressive symptoms. All the childhood family environmental factors significantly correlated with each other, particularly parental drug and alcohol abuse and childhood alcohol abuse ($r = .51$, $p < .001$).

Results of Univariable Regression Analyses

Generally, all adverse childhood family environmental factors significantly predicted depressive symptoms in univariable regression models (Table 3). The regression coefficients ranged from β = .26, 95 per cent confidence interval (CI) = (.11, .38) for parental use of drugs and alcohol to β = .49, 95 per cent CI = (.29, .52) for physical assault on parent or guardian (Table 3). Each regression coefficient represents the number of SD change in the dependent variable per SD change in the independent variable. For example, the regression of alcohol use during childhood indicates that a change of 1 SD is associated with a .41 SD change in depressive symptoms. The effect sizes of the associations between childhood family environmental factors on depressive symptoms ranged between $\eta^2 = .07$ for parental use of drugs and alcohol to $\eta^2 = .24$ for physical assault meted out to parents or guardians.

Table 3: Results of univariable regression analyses of depression on childhood family environmental factors

Variables	β	95% CI	*p*-value	η^2
Socio-demographic characteristics				
Gender	.11	.01, .22	$p < .05$	.02
Age	−.07	−.17, .04	ns	.00
Childhood family environmental factors				
Childhood alcohol use	.41	.31, .51	$p < .001$	.16
Parental use of drugs and alcohol	.26	.11, .38	p < .010	.07
Physical assault	.49	.30, .52	p < .001	.24
Psychological aggression	.45	.29, .42	$p < .001$	.20

Key: β = standardised beta; CI = confidence interval; η^2 = eta squared; ns = not significant

Results of Multivariable Regression Analysis

The results of the multivariable regression model to assess the unique influence of adverse childhood family environmental factors on depressive symptoms are presented in Table 4. Reporting the parental drug and alcohol use and physical assault on parents or guardians independently and uniquely predicted depressive symptoms in young adults. The effect sizes of the relations between childhood family environmental factors and depressive symptoms in a multivariable regression analysis were large at $\eta^2 = .30$.

Table 4: Results of multivariable regression analyses of depression on childhood family environmental factors (all analyses are adjusted for gender)

Childhood family environmental factors	β	95% CI	*p*-value	η^2
Childhood alcohol use	.09	.03, .19	ns	.30
Parental use drugs and alcohol	.17	.12, .25	$p < .05$	
Physical assault	.26	.15, .37	$p < .05$	
Psychological aggression	.08	.02, .18	ns	

Key: β = standardised beta; CI = confidence interval; η^2 = eta squared; ns = not significant

Discussion

From the onset, the current study aimed to assess the extent to which adverse childhood family environmental factors predict depression in a sample of young adults at a university in Botswana. The results showed that adverse family environmental factors were significantly associated with depressive symptoms during early adulthood. In a multivariable regression model, parental drug and alcohol use and physical assault against parents or guardians were independent of childhood alcohol use, psychological aggression, and gender in predicting depressive symptoms. All the childhood family environmental factors together with gender significantly predicted depressive symptoms, and, in total, helped to explain 30.0 per cent of the variances in depressive symptoms experienced during early adulthood. This is in line with the cumulative stress hypothesis in which the accumulation of stressful life events is associated with disease such as depression (Nederhof and Schmidt 2012).

The results of this study corroborate with those of previous studies that demonstrated the toxic effects of adverse family environmental factors on early adult outcomes (Campbell, Walker, and Egede 2016; Chapman et al. 2004; Jaffee 2017). Although several biological, social and psychological factors are known to contribute to the aetiology of depression, the results of this study indicate that adverse family environment factors play a vital role in shaping depressive symptomatology in early

adulthood. For example, alcohol and drug abuse by parents is significantly correlated with childhood alcohol use (Mellentin et al. 2016). Besides, witnessing family violence such as assaults or psychological aggression on parents or guardians, is recognised as a risk factor of depression in late adolescence or early adulthood (Campbell, Walker, and Egede 2016; Chapman et al. 2004; Jaffee 2017). Indeed, previous studies have confirmed the toxic effect of an adverse childhood environment for adult outcomes (Campbell, Walker, and Egede 2016; Chapman et al. 2004; Danese et al. 2008).

Many students at universities come from dysfunctional family backgrounds with a high density of adverse childhood environments such as drug and alcohol abuse and witnessing violence (Brockie et al. 2015). For example, in this study, between 5 to 11 per cent of the respondents reported physical assault and 8 to 39 per cent reported psychological aggression towards their parents or guardian (see Table 1). Moreover, many of the students might have started using drugs and substances as children (Gotsang, Mashalla, and Seloilwe 2017; Kiburi et al. 2018). All these adverse childhood experiences are linked to poor mental health outcomes in early adulthood. In Botswana, it is estimated that seven out of every ten children come from a family with only one parent, often the mother (Dintwat 2010). Likewise, only 25.3 per cent of the parents are married, 27.3 per cent are cohabiting, and the rest never married, and are separated/divorced or widowed (Statistics Botswana 2018). Besides, previous studies showed that families headed by single mothers have poor outcomes such as poor functioning (Modecki et al. 2015), poor academic performance (Autor et al. 2015), poor psychological well-being (Betts et al. 2015), and are vulnerable to drug and substance abuse (Ewing et al. 2015).

Equally, young adults from adverse childhood environments who make it to university level may find navigating the freedom and responsibility associated with university life more difficult and could become easy targets for further drug and substance abuse and consequently mental health problems such as depression. Globally, at many universities, including those in Botswana, the culture of heavy alcohol use and high-risk sexual behaviours, is rampant (Weiser et al. 2006). Although these studies have demonstrated a link between adverse childhood experiences and mental health problems, further research is needed to explore neuropsychological pathways from childhood adversity to mental illness.

About nine per cent of the young adults in this study reported severe depressive symptoms. The prevalence of depressive symptomatology corroborates with previous results from the same population (Hetolang and Amone-P'Olak 2018; Khumalo and Plattner 2019) and elsewhere in Africa (Adewuya et al. 2006; Othieno et al. 2014). Although the prevalence of depressive symptoms in the current study may not be typical of the level in the broader population of young adults, the need for interventions to reduce the negative consequences of adverse childhood experiences on the students' academic, social and psychological well-being remains an important

area of consideration. The government should invest in preventive and early intervention services to reduce vulnerability to childhood abuse, which later puts children at risk of depression. Such preventive and early intervention services may include employing more social workers and counsellors in communities and schools to identify and attend to child victims. In countries such as Britain and the United States, interventions such as cognitive behavioural therapy (CBT) (Hetrick et al. 2015) and mindfulness training (Boyle et al. 2017) have been demonstrated to be effective in reducing depressive symptomatology. In the same way, student counselling centres must be more proactive in evaluating students for common mental disorders and designing strategies not only to deal with current mental health disorders but also to prevent them.

Limitations and Strengths

Several limitations of the results in this study need to be highlighted. First, the information on depressive symptoms was based on self-reports. Consequently, the associations obtained may only apply to emotional and behavioural problems and not psychological disorders based on psychological diagnoses. However, the self-report measure may be an indicator of mental disorders. Second, the adverse childhood family environmental factors assessed in this study cannot be interpreted as distinct and independent but may co-vary. This became clear when the risks of all the elements were evaluated together in a multivariable regression analysis; only parental drug use and physical assault uniquely predicted depressive symptomatology, indicating that the factors co-vary. Third, it is not possible to determine the causal link as a result of the cross-sectional design. Consequently, it is difficult to show whether the effects of adverse childhood environmental factors regard the incidence, duration, or temporal order. It is possible that depressive symptomatology may have preceded the occurrence of adverse family environmental factors, although this is unlikely in children. Also, alcohol use or depression among young adults may be associated with personality (Ludick and Amone-P'Olak 2016) or ongoing stress (Hetolang and Amone-P'Olak 2018; Moitlakgola and Amone-P'Olak 2015). Fourth, a mood state bias may alter recall of adverse childhood events. Lastly, it is as well likely that the associations between adverse childhood family environmental factors and depressive symptoms are reciprocal.

In spite of these limitations, the results of this study suggest toxic effects of adverse childhood environmental factors on young adulthood or maybe throughout the lifespan as indicated in previous studies (Chapman et al. 2004). What is more, we have not come across any research that has attempted to study the role of childhood family environmental factors in shaping depressive symptomatology in young adults in Botswana.

Conclusions and Recommendations

The current study assessed the influence of an adverse childhood family environment on depressive symptoms in young adults at a university in Botswana. The results highlight the importance of the family context in which children are reared and how this impacts on their later mental health. The results demonstrate that the childhood family environment plays a critical role in reporting depressive symptoms among young adults. Investments in preventive and early intervention services to reduce poverty, social exclusion, drug and substance abuse and to protect children are critical. Depression impairs functioning, leads to underachievement in school, and diminishes students' quality of life.

Interventions to identify vulnerable students to mitigate the adverse effects of depressive symptoms through strategies such as CBT (Fitzpatrick, Darcy, and Vierhile 2017) or mindfulness training (Bravo et al. 2016) may be important to consider as previous studies have demonstrated their efficacy in reducing depressive symptoms. Other interventions may include expanding the current university's counselling departments to be more proactive and less reactive to students' psychosocial issues to include the following: First, universities should create a safe and regulated environment for students not only to explore their psychosocial challenges but also to report sexual and other forms of abuse (for example through a helpline). Second, universities should establish a structure with a network of peers and tutors and counsellors with an elaborate referral mechanism (peers to tutors to counsellors) to deal with students' life challenges (Van Breda 2013; 2017). Third, universities should create awareness among students of their psychological problems, help-seeking, and tips on regulating their vulnerability (Van Breda 2013; 2017). Finally, universities should facilitate learning in various disciplines that could be situated in the real world of the students, especially on topics such as stress, mental health, and family configuration (Van Breda 2017). Situating learning in real life of the students may help students to cope and voice their vulnerabilities.

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Authors' Contributions

The first author was responsible for the research idea, literature review, data collection, data analysis and writing of the article. The second author supervised the study and contributed to the project design, literature review, data analysis and writing of the report.

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