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Article

An overview of trends in depressive symptoms in South Africa

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Abstract

The relationship between mental health and socioeconomic status is well established in the literature. The socioeconomic standing of a number of South Africans remains poor and slow changing, while the mental health of the most vulnerable remains both an economic and health problem for government. There is, however, a lack of studies that assess depressive symptoms using panel data. There is also a lack of studies that consider factors that influence transitions of adults into and out of Significant Depressive Symptoms, particularly in the South African context. Panel data from the National Income Dynamics Study were used for this study to assess these transitions. The data included information on various socioeconomic and health variables, as well as a section that assesses the emotional health of adults in South Africa. This emotional health section in National Income Dynamics Study was essentially a 10-item version of the Centre for Epidemiological Studies Depression scale. The study aimed to investigate how socioeconomic status is associated with the risk of adults transitioning into and out of Significant Depressive Symptoms in the South African context. The study found that the prevalence of adults who exhibited Significant Depressive Symptoms declined significantly in South Africa, despite the recent increase. Moreover, adults with a lower socioeconomic standing were identified as being particularly vulnerable to depression and struggled to transition out of Significant Depressive Symptoms.

Mental health is a critical aspect of the overall well-being of an individual. Well-functioning individuals rely on a healthy mental state to be productive and to obtain an adequate amount of resources to survive. Conversely, they also rely on their resources to protect themselves against

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psychosocial stressors (e.g., food insecurity) which, through increased exposure, may have negative physical and mental health consequences for individuals. Ataguba, Day, and McIntyre (2015) find that inequities in social protection and employment are the most significant contributors to disparities in good health. Due to the significant economic deprivation people experience in Africa, the prevalence of mental disorders can be expected to be high (Herman et al., 2009).

Marginalised populations are at a higher risk of having mental disorders due to their relatively poor social environments. In particular, depression follows socioeconomic strata. The existing literature indicates that lower socioeconomic groups tend to be at a higher risk of being depressed. Corroborating this, Qin, Wang, and Hsieh (2016) find that depression prevalence rates in China were 28.81% for low-income groups (0–5000 yuan) and 12.23% for the highest income groups (>30,000 yuan). In South Africa, adults living in neighbourhoods that experience relatively higher levels of social dysfunction, such as high crime rates and gangsterism, are more likely to be depressed (Tomita, Labys, & Burns, 2015).

Depression is often defined through its symptoms, for example, sadness and feelings of hopelessness and helplessness. The degree of severity to which an individual experiences these symptoms determines how ravaging their effects may be on the individual's quality of life. In measuring the severity of depressive episodes, the International Classification of Diseases–10th Revision (ICD-10) criteria enable specification of mild, moderate, and severe depressive episodes. The World Health Organization (WHO, 1992) defines the first criterion for a depressive episode as persisting for a minimum length of 2 weeks. The second criterion is that the depressive episode should include at least two of the following depressive symptoms if the depressive episode is to be specified as mild or moderate: a depressive mood, decreased energy levels/fatigue, and a loss of interest in activities that are usually enjoyed by the individual. All three depressive symptoms should be experienced by the individual for the depressive episode to be considered severe. The WHO (1992) indicates that four, six, or eight other depressive symptoms should be experienced if the depressive episode is to be considered mild, moderate, or severe, respectively.

Depressive episodes could be either once-off occurrences or recurring. Further classifications include major depression and dysthymia. Each classification varies according to the severity, persistence, and chronicity of depression. The severity of depression is particularly important as it may determine the disorder's potential impact on the individual's opportunities in life. Studies that have been conducted on depression in South Africa have further measured depression in terms of lifetime prevalence and point prevalence: the former indicating whether an individual experienced depression at some point in life, and the latter whether depression was experienced in the preceding 12 months.

The South African Stress and Health (SASH) study estimates that major depression was among the mental disorders with the highest lifetime prevalence rates (9.8%) in South Africa (Stein et al., 2008). The lifetime prevalence rate was highest in the Eastern Cape, one of the poorest provinces in South Africa. Andersson et al. (2013, p. 442) estimate the lifetime prevalence rate of depression to be 31.4% in the Eastern Cape, with 15.2% of the study participants depressed at the time of data collection.

In the South African context, socioeconomic conditions may have a bidirectional relationship with mental disorders. Social causation and social drift theories both point to this association between poverty and mental health. According to social causation theory, people in lower social classes have higher prevalence rates for mental disorders (Hudson, 2005; Perry, 1996). Social causation theory asserts that multiple socioeconomic deprivations increase the risk of an individual having poor mental health outcomes. For example, a lack of vitamin B12 caused by a poor individual not being able to afford vitamin-rich nutrition will negatively impact on the mental wellbeing of that individual. In addition, a lack of income for transport limits poor households' access

to health care (their closest healthcare provider is more likely to be under-resourced and to offer less adequate health services than those in more affluent communities). Financial limitation thus affects the mental health system that socioeconomically deprived people are afforded access to, and consequently their mental health outcomes.

In contrast, social drift theory asserts that the mental well-being of individuals affects their socioeconomic status (SES). Poor mental well-being increases the risk of poor people remaining in poverty (the poverty trap) as a result of higher health expenditures incurred and greater discrimination experienced due to the stigma attached to their illness (Lund et al., 2012). Individuals who have poor mental health outcomes may decline into a lower SES and consequently into poverty as a result of their poor mental health. For example, an inability to cope with a death in the family or another negative life event could lead an individual to abuse alcohol to the point of being unable or unwilling to work. The findings of Burger, Posel, and Von Fintel (2017) underscore this. Their study finds that in South Africa, depression vulnerability is influenced by negative life events such as an illness or death in the family. The study finds further that an increase in the frequency of depressive symptoms was experienced with each additional negative life event. A randomised control study in the Overberg and Eden Districts in the Western Cape found that depressed individuals were 25% more likely to be reported unemployed in the follow-up interview of the study (Folb et al., 2015, p. 5). The aggregate effect of mental disorders could therefore be a severe burden not only on communities but on the economy as a whole.

Studies by Lorant et al. (2003), Hamad, Fernald, Karlan, and Zinman (2008), Stein et al. (2008), Ardington and Case (2010), Andersson et al. (2013), Folb et al. (2015), and Qin et al. (2016) all report that individuals with higher educational attainment levels have a lower likelihood of being depressed. In a study on depression in China, Qin et al. (2016) indicate that, relative to illiterate and semiliterate persons, individuals that had completed any education level between primary schooling and undergraduate university were more likely to be mentally healthy. Earlier, Lorant et al. (2003) reported that, for each additional year of education, the odds of being depressed decreased by 3 percentage points. One inference is that education could therefore have a positive impact on depressed individuals through improving their socioeconomic well-being. This is largely dismissed by social drift theory because it, first, focuses on the effect of social status on health and, second, because it assumes that opportunities for access to education and health are equally available across all socioeconomic groups. The foundations of social drift theory are in Darwin's natural selection theory (Perry, 1996). According to Perry (1996), the theory could lead one to conclude that individuals have ended up in a lower social class because they are mentally and physically inferior. Conversely, those who are mentally and physically superior will end up in a higher social class (Perry, 1996). This approach could lead to a misguided focus solely on improving the SES of individuals. The individualistic approach which social selection theory takes is dismissive of systemic injustice and inequality and cannot be appropriate, particularly in South Africa, where historical systemic injustice still affects the access that marginalised populations have to high-quality mental health care.

Both theories may prove to be plausible at different points in an individual's life (Lorant et al., 2003). However, complexities in determining the exact cause of an individual drifting into a lower social class may be why more empirical work has supported the social causation rather than the social drift theory.

This study aimed to assess these links without assuming causality. Specifically, the study sought to investigate how SES is associated with the risk of adults transitioning into and out of Significant Depressive Symptoms (SDS) in the South African context. As there is a lack of studies in South Africa investigating this relationship using panel data, the study aims to fill this gap in the literature.

Method

The research design for this article consisted of empirical research conducted using secondary data that was numeric in nature. The data used in this study were panel data. Panel data are similar to that of a cohort study, in that individuals are tracked over time to measure how individuals are affected by exposure to certain risk factors.

Participants

Secondary data analysis was conducted using panel data from the National Income Dynamics Study (NIDS). The NIDS is carried out by the Southern Africa Labour and Development Research Unit (SALDRU). The NIDS dataset offers a nationally representative sample which has both individual and household-level data. The NIDS data include Continuing Sample Members (CSMs) as well as Temporary Sample Members. CSMs remain part of the panel even if they do not participate in a certain wave. A problem with panel studies is that CSMs migrate to different cities/provinces. The NIDS, however, tracks all CSMs as they move, which is a particularly useful feature.

A two-stage sampling procedure is employed by the NIDS. At the first stage, the NIDS selects primary sampling units (PSUs). At the second stage, a list of all the households in the PSUs is created, and households are randomly drawn from this list. The NIDS specifically draws its sample from 400 PSUs. The NIDS sampling methodology is discussed in more detail in Chinhema et al. (2016).

The NIDS distributes four different questionnaires: an adult, proxy, child, and household questionnaire. The adult questionnaire is administered to individuals 15 years old and above. The adult questionnaire comprises sections related to demographics, labour market participation, personal ownership and debt, education, and emotional health, among others. So far, there have been four waves of the NIDS study: Wave 1 (2008), Wave 2 (2010–2011), Wave 3 (2012), and Wave 4 (2014–2015). The study made use of data from all four waves and restricted its analysis to participants who were at least 18 years old.

Of the total final sample of 31,250 adults, 6321 adults answered the emotional health section in all the waves.

Instruments

SES variables that were assessed included race, gender, educational and occupational status. These variables were included based on the literature which indicates their importance in estimating the risk of having SDS. On the other hand, depressive symptoms were assessed in all waves using the 10-item version of the Centre for Epidemiological Studies Depression (CES-D) scale (Radloff, 1977). The CES-D scale is one of the most commonly used psychiatric scale instruments (Lorant et al., 2003). The questions in the CES-D-10 used for this study were ranked on a 4-point Likert-type scale in which the respondents indicated how frequently they experienced a particular depressive symptom (e.g., *I felt depressed*). They could select *Rarely or none of the time* (<1 day), *Some or little of the time* (1–2 days), *Occasionally or a moderate amount of time* (3–4 days), or *All of the time* (5–7 days). This study used the threshold of 10 as this is the threshold recommended by Radloff (1977) and used by other studies assessing depression using NIDS.

The CES-D is a reliable measurement tool for assessing depressive symptoms. The study found a CES-D internal consistency which was based on 10 items (Cronbach's alpha = .7559) ranging from 0 to 30. This finding confirmed the reliability of the CES-D-10 scale in measuring depression. The questions may, however, be interpreted differently, depending on the language used by the fieldworker. For example, different cultures perceive and interpret the word 'sadness' in different

ways. Baron, Davies, and Lund (2017) report that the CES-D-10 tool used in NIDS is a valid and reliable screening measure to assess depression in Zulu, Xhosa, and Coloured populations in South Africa.

This study did not attempt to diagnose depression but rather to assess the symptomatology that would demonstrate a significant vulnerability to being depressed.

Procedure

The NIDS has more than 100 fieldworkers. The NIDS tracking procedure begins for the fieldworkers with pre-test tracking, which is a trial run that includes fieldworker training, the location, tracking and the administration of the NIDS survey questions to study participants. The NIDS questionnaires and consent forms are available in all the official South African languages.

The adult questionnaire includes an emotional health section that poses questions to the study respondents relating to depressive symptoms. The emotional health section is equivalent to the 10-item version of the CES-D. This provided the opportunity for analysing depressive symptoms as well as their social and economic correlates.

Ethical considerations

Ethical approval was not needed for the study as secondary data that anonymously list study participants were utilised.

Data analysis

The purpose of this study was to assess the socioeconomic factors associated with changes in depressive symptoms. Data analysis was conducted using Stata 12. The statistical analysis included a descriptive analysis in which cross-tabulations were employed, among other methods. Regression analysis was also conducted using a balanced panel (i.e., which according to Colin & Trivedi (2009, p. 230) is a panel in which all individual units are observed in every time period).

Results

Figure 1 illustrates the patterns of depressive symptoms in South Africa over the four waves of NIDS. The CES-D-10 tool of measuring depressive symptomatology was used with a threshold of 10 in place. The proportion of the population that exhibited SDS initially declined drastically but in recent years has been steadily increasing. From Wave 1 to Wave 2, the proportion of people with SDS declined by 10.84 percentage points (note, we place a disclaimer on the Wave 2 depression results due to high rates of non-response). From Wave 2 to Wave 3, there was an increase of 2.12 percentage points in the proportion of adults with SDS. A further increase of 1.62 percentage points can be seen in the proportion of people with SDS from Wave 3 to Wave 4. The overall prevalence rate of people with SDS in South Africa markedly declined by 7.1 percentage points from Wave 1 to Wave 4. This is a positive finding considering the prevalence rate starting point of 33.15 percentage points in 2008. However, 26.05% of the adult population in South Africa were found to experience SDS.

Table 1 describes the scored responses of the study participants in the emotional health section of the NIDS questionnaire in Wave 1. The table illustrates that the largest contributors to a high CES-D score were Questions 4, 5, and 8. Each of the questions had 11.2%, 26.2%, and 32.5%, respectively, of respondents scoring three (i.e., answered *All of the time* for Question 4, *Rarely* for Question 5, and *Rarely* for Question 8). To explicate further, 11.2% of the respondents felt that
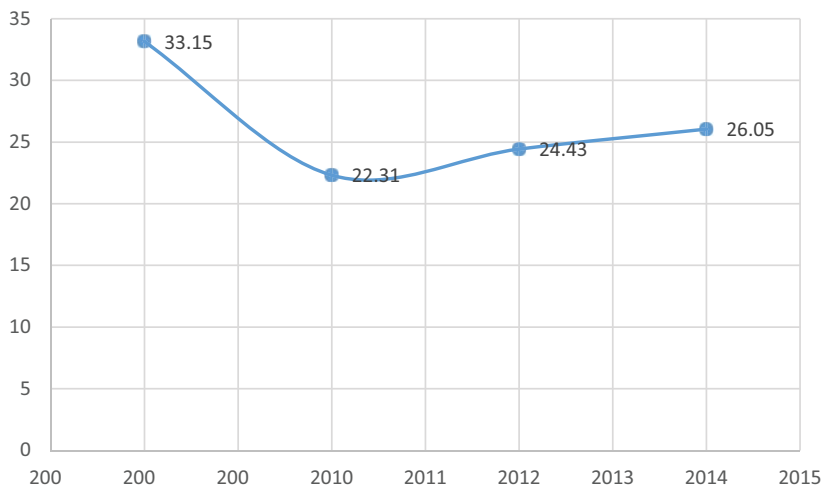
Figure 1. Proportion of adults depressed in South Africa (Waves 1–4; %).
Source: NIDS 2008 2010, 2012, and 2014–2015 (authors' own calculations).

everything had been an effort in the preceding week at a frequency of *All of the time*; 26.2% of the respondents had *Rarely* felt hopeful about the future in the preceding week; and finally, 32.5% of the respondents had *Rarely* felt happy in the preceding week.

Table 2 describes the scored responses of the study participants to the emotional health section of the NIDS questionnaire in Wave 4. Questions 4, 5, and 8 still had the largest proportions of respondents scoring threes. However, the magnitude was less than that of Wave 1: 10.4% of the respondents felt that everything had been an effort in the preceding week at a frequency of *All of the time*; 22.9% of the respondents had *Rarely* felt hopeful about the future in the preceding week; and 14.7% of the respondents had *Rarely* felt happy in the preceding week.

A decline in CES-D scores is to be expected as a result of fewer people scoring threes, which is reinforced by the evidence already presented that there were fewer depressed adults in South Africa in 2014–2015 relative to 2008. We can, nevertheless, still see a persistent perception of hopeless-ness about the future. This result could be linked to the sociopolitical environment in South Africa and its effect on respondents' socioeconomic background.

Figure 2 describes the relationship between depressive symptoms and gender by means of box-plots. The boxplots indicate that the median CES-D scores for males are lower than those of females in both 2008 and 2014–2015. In 2014–2015, however, in the scores for men, the middle 50% CES-D scores were less equitably distributed relative to 2008. Overall, we found inequality in the distribution of CES-D scores when relating CES-D to gender, in that females have higher CES-D scores relative to males.

Interestingly, we found that the median CES-D scores are more similar in 2014–2015 relative to 2008 across racial groups. The median CES-D scores are particularly similar among the Coloured, Asian/Indian, and White population groups. In 2008, for the Asian/Indian group, the middle 50% CES-D scores are less equitably distributed relative to the other population groups. However, by 2014–2015 (see Figure 3), the middle 50% CES-D scores in the Asian/Indian group become more equitably distributed. Despite the reduction in the variation of CES-D scores between the African population group (poorest CES-D outcomes) and the White population group (best CES-D

Table 1. Distribution of the frequency of depressive symptoms in 2008 (%).

Symptoms	Proportion	SE	95% confidence interval
Unusually bothered			
Rarely	0.646	0.007	[0.631, 0.660]
Occasionally	0.241	0.006	[0.228, 0.253]
Sometimes	0.075	0.004	[0.068, 0.083]
All of the time	0.038	0.003	[0.032, 0.044]
Trouble concentrating			
Rarely	0.581	0.008	[0.556, 0.596]
Occasionally	0.297	0.007	[0.284, 0.311]
Sometimes	0.090	0.004	[0.081, 0.098]
All of the time	0.032	0.003	[0.026, 0.037]
Depressed			
Rarely	0.530	0.008	[0.515, 0.545]
Occasionally	0.308	0.007	[0.294, 0.322]
Sometimes	0.116	0.005	[0.107, 0.125]
All of the time	0.046	0.003	[0.040, 0.052]
Everything was an effort			
Rarely	0.443	0.008	[0.428, 0.458]
Occasionally	0.273	0.007	[0.259, 0.286]
Sometimes	0.172	0.006	[0.162, 0.183]
All of the time	0.112	0.005	[0.102, 0.122]
Hopeful about the future			
Rarely	0.277	0.007	[0.263, 0.291]
Occasionally	0.221	0.006	[0.209, 0.234]
Sometimes	0.240	0.006	[0.228, 0.253]
All of the time	0.262	0.007	[0.249, 0.275]
Felt fearful			
Rarely	0.577	0.008	[0.562, 0.592]
Occasionally	0.280	0.007	[0.267, 0.294]
Sometimes	0.095	0.004	[0.087, 0.104]
All of the time	0.047	0.004	[0.040, 0.054]
Restless sleep			
Rarely	0.500	0.008	[0.485, 0.515]
Occasionally	0.315	0.007	[0.301, 0.329]
Sometimes	0.128	0.005	[0.118, 0.137]
All of the time	0.057	0.004	[0.050, 0.065]
Happy			
Rarely	0.325	0.008	[0.310, 0.339]
Occasionally	0.270	0.007	[0.257, 0.283]
Sometimes	0.220	0.006	[0.208, 0.232]
All of the time	0.186	0.006	[0.174, 0.197]
Lonely			
Rarely	0.570	0.008	[0.555, 0.585]
Occasionally	0.298	0.007	[0.285, 0.312]
Sometimes	0.087	0.004	[0.079, 0.095]
All of the time	0.045	0.003	[0.038, 0.051]

Source: NIDS 2008 (authors' own calculations).
NIDS: National Income Dynamics Study; SE: standard error.

Table 2. Distribution of the frequency of depressive symptoms in 2014–2015 (%).

Symptoms	Proportion	SE	95% confidence interval
Unusually bothered			
Rarely	0.653	0.006	[0.641, 0.665]
Occasionally	0.248	0.006	[0.237, 0.259]
Sometimes	0.077	0.004	[0.07, 0.084]
All of the time	0.022	0.002	[0.018, 0.026]
Trouble concentrating			
Rarely	0.591	0.006	[0.579, 0.603]
Occasionally	0.306	0.006	[0.294, 0.317]
Sometimes	0.086	0.004	[0.079, 0.093]
All of the time	0.017	0.002	[0.014, 0.021]
Depressed			
Rarely	0.543	0.006	[0.522, 0.547]
Occasionally	0.321	0.006	[0.309, 0.332]
Sometimes	0.113	0.004	[0.105, 0.121]
All of the time	0.032	0.002	[0.027, 0.037]
Everything was an effort			
Rarely	0.501	0.006	[0.488, 0.513]
Occasionally	0.271	0.006	[0.26, 0.282]
Sometimes	0.124	0.004	[0.116, 0.132]
All of the time	0.104	0.004	[0.096, 0.112]
Hopeful about the future			
Rarely	0.361	0.006	[0.349, 0.373]
Occasionally	0.193	0.005	[0.183, 0.203]
Sometimes	0.217	0.005	[0.207, 0.228]
All of the time	0.229	0.005	[0.219, 0.240]
Felt fearful			
Rarely	0.621	0.006	[0.609, 0.663]
Occasionally	0.269	0.006	[0.258, 0.28]
Sometimes	0.086	0.004	[0.078, 0.093]
All of the time	0.024	0.002	[0.021, 0.028]
Restless sleep			
Rarely	0.505	0.006	[0.493, 0.518]
Occasionally	0.342	0.006	[0.33, 0.354]
Sometimes	0.113	0.004	[0.105, 0.121]
All of the time	0.040	0.003	[0.035, 0.045]
Happy			
Rarely	0.404	0.006	[0.391, 0.416]
Occasionally	0.272	0.006	[0.261, 0.283]
Sometimes	0.178	0.005	[0.168, 0.187]
All of the time	0.147	0.004	[0.138, 0.155]
Lonely			
Rarely	0.614	0.006	[0.602, 0.626]
Occasionally	0.271	0.006	[0.26, 0.283]
Sometimes	0.083	0.004	[0.076, 0.09]
All of the time	0.032	0.002	[0.027, 0.036]

Table 2. (Continued)

Symptoms	Proportion	SE	95% confidence interval
Can't get going			
Rarely	0.660	0.006	[0.647, 0.672]
Occasionally	0.240	0.006	[0.229, 0.251]
Sometimes	0.072	0.003	[0.066, 0.078]
All of the time	0.029	0.003	[0.024, 0.034]

Source: NIDS 2014–2015 (authors' own calculations).
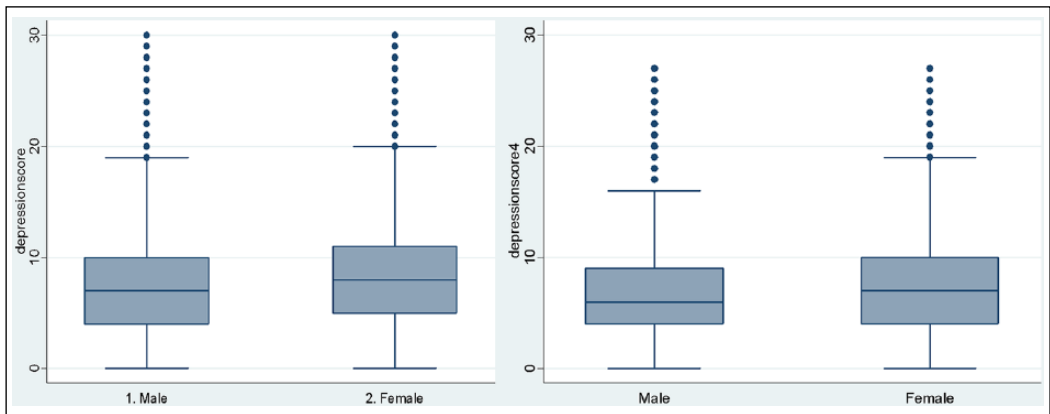NIDS: National Income Dynamics Study; SE: standard error.

Figure 2. Boxplot on CES-D scores by gender in 2008 and 2014–2015.
Source: NIDS 2008 (authors' own calculations).
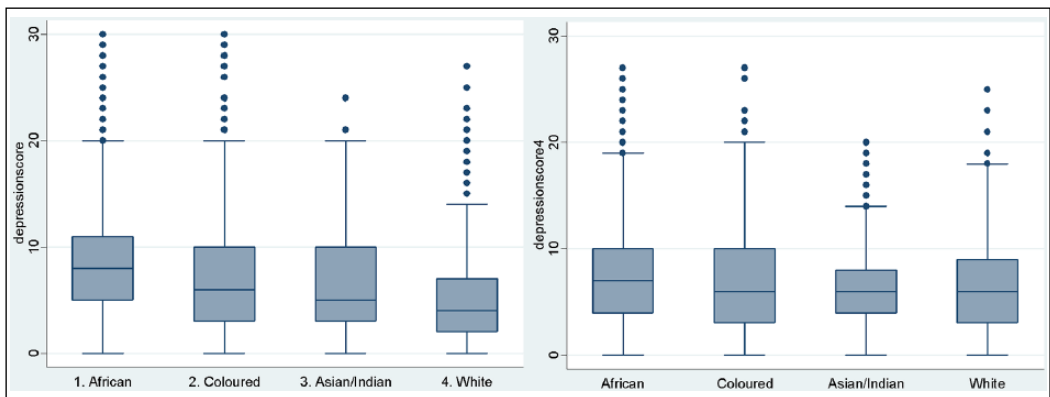
Figure 3. Boxplot on CES-D scores by race in 2008 and 2014–2015.
Source: NIDS 2008 (authors' own calculations).

outcomes), we find inequality to still persist between the most socioeconomically disadvantaged groups (Africans and Coloureds) and the most socioeconomically privileged group (Whites).

Table 3. Characteristics of depressed adults in 2008 and 2014–2015 (%).

CES-D > 10	2008	2014–2015
Gender		
Male	36.89	44.70
Female	63.11	55.30
Race		
African	85.89	80.62
Coloured	7.38	9.28
Asian/Indian	1.94	1.93
White	4.79	8.17
Educational attainment		
Zero schooling	13.36	7.23
Primary school education	24.91	18.23
High school education	54.35	61.43
Tertiary education	7.38	13.11
Occupational status		
Code 1 (elementary occupations)	31.63	32.93
Code 2 (service workers, skilled agricultural workers)	49.51	47.32
Code 3 (technicians and associate professionals)	5.36	5.23
Code 4 (professionals)	13.46	14.52
Perceived health		
Excellent	22.49	26.63
Very good	23.78	23.95
Good	25.15	31.27
Fair	15.65	12.00
Poor	12.93	6.15

Source: NIDS 2008 and 2014–2015 (authors' own calculations).
NIDS: National Income Dynamics Study; CES-D: Centre for Epidemiological Studies Depression.

Table 3 describes the populations in Wave 1 and Wave 4 who had SDS. The table indicates that, relative to 2008, 7.08% more adults who had SDS in 2014–2015 had completed a matric/grade 12-level qualification. With regards to tertiary education, 5.73% more depressed adults had completed a tertiary qualification in 2014–2015, relative to 2008. The simultaneous increase in matric/tertiary qualifications and 6.13% decline in depressed adults who had no schooling, between 2008 and 2014–2015, could be contributing factors to the overall decline in depressive symptoms observed from 2008 to 2014–2015.

Moving to a higher-paying job does not automatically result in depressive symptoms subsiding. The economic returns that may be obtained in terms of job security, higher earnings, and more personal autonomy may lag in impacting on the mental well-being of an individual. Although the increases in educational attainment may have played a role in adults, transitioning from low-paying occupations to higher-paying occupations, exhibiting SDS, the protective impact of a higher SES against exhibiting depressive symptoms may slightly lag. It is, however, important to note the negative association between the proportion of adults who exhibited SDS and the proportion of adults who became more educated over the 7-year period (2008 to 2014–2015). Subsequently, improvements in education and the occupations of depressed adults may have improved the SES of adults, thereby reducing their depressive symptoms.

Figure 4 focuses on African and White adults who did not exhibit SDS in one wave and in the subsequent wave were exhibiting SDS, or African and White adults who exhibited SDS in one
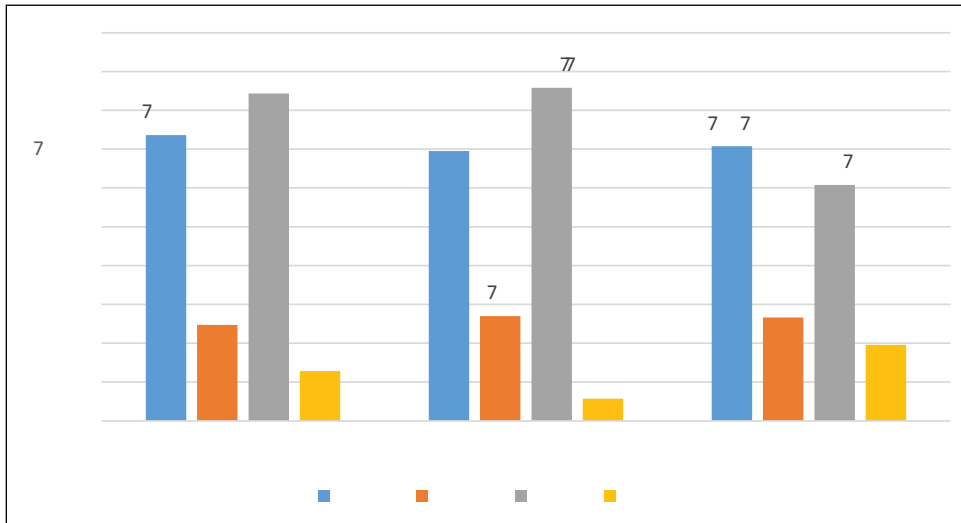
Figure 4. Depression transitions for Black South African and White South African adults (%).
Source: Authors' own calculations using NIDS 2008, 2010, 2012, and 2014–2015 data.
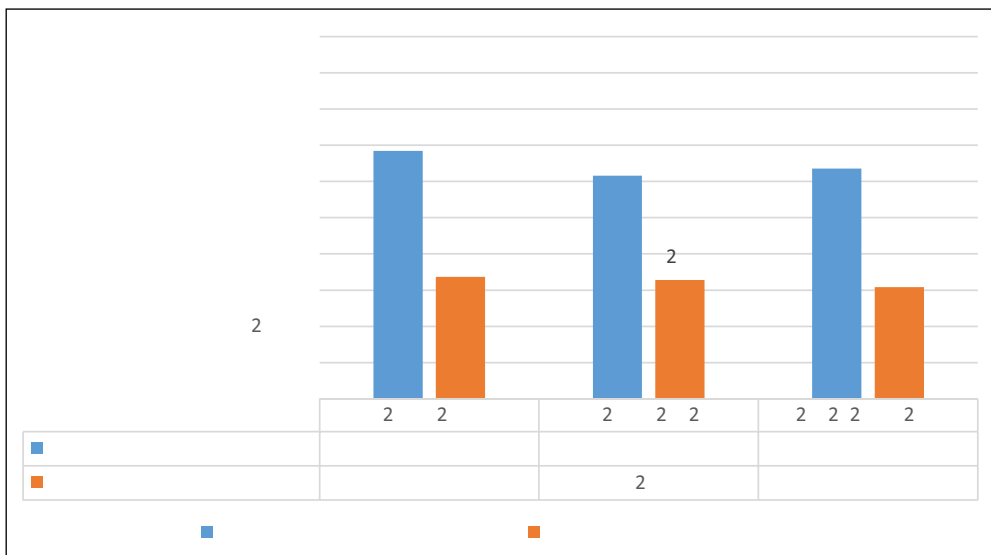

Figure 5. Depression transitions for adults with no schooling (%).
Source: Authors' own calculations using NIDS 2008, 2010, 2012, and 2014–2015 data.

wave and in the subsequent wave did not exhibit SDS. The results indicate that, across the years, more Africans transitioned into exhibiting SDS relative to Whites. Except for 2012 to 2014–2015, the exit rates were at least 10% higher for Whites relative to Africans.

Figure 5 describes the transitions into and out of experiencing SDS for South Africans with no schooling. The graph indicates an overall decline in the proportion of non-school-educated adults who transitioned out of experiencing SDS. A similar trend (i.e., an overall decline in the proportion) is found for non-school-educated adults transitioning into depression.
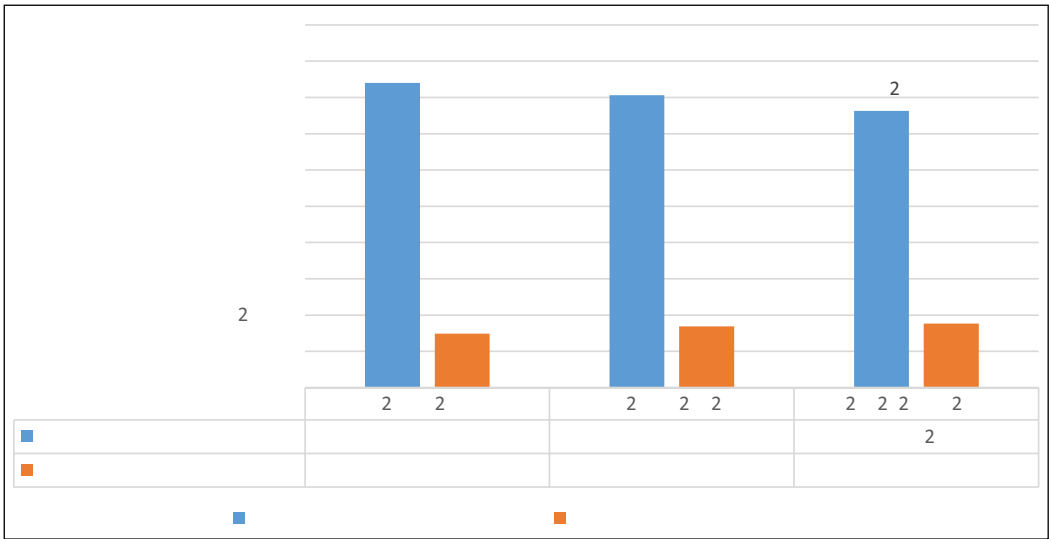
Figure 6. Depression transitions for adults with tertiary education (%).
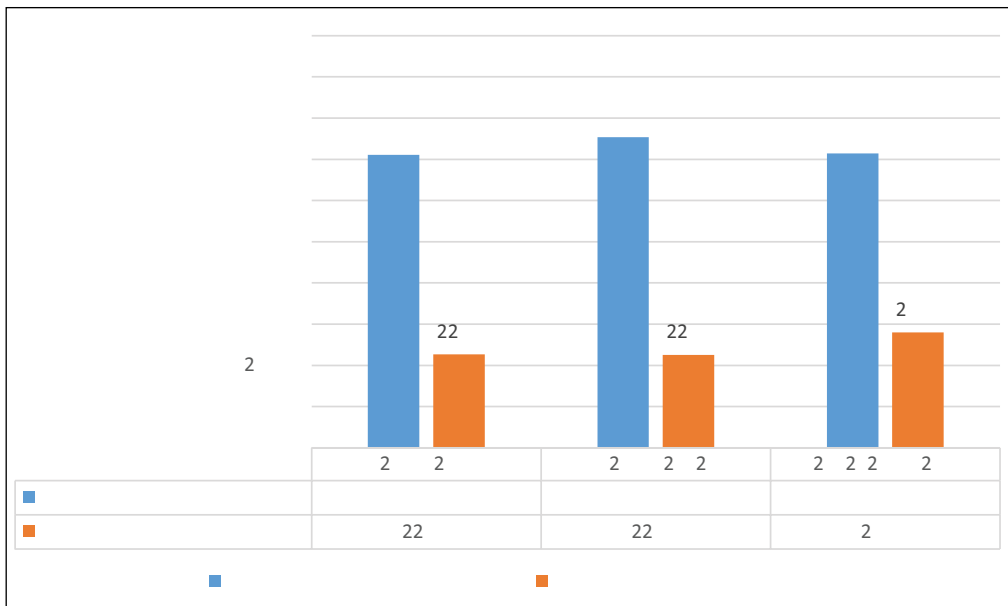Source: Authors' own calculations using NIDS 2008, 2010, 2012, and 2014–2015 data.

Figure 7. Depression transitions for adults with elementary occupations (%).
Source: Authors' own calculations using NIDS 2008, 2010, 2012, and 2014–2015 data.

Figure 6 describes the transitions into and out of experiencing SDS for South Africans with a tertiary education. Interestingly, over the waves, more and more tertiary-educated adults transitioned into experiencing SDS, while fewer transitioned out.

Figure 7 focuses on South Africans who work in elementary occupations. Although no clear trend has developed in terms of elementary workers exiting the experience of SDS, it is clear that more elementary workers are transitioning into experiencing SDS than transitioning out.
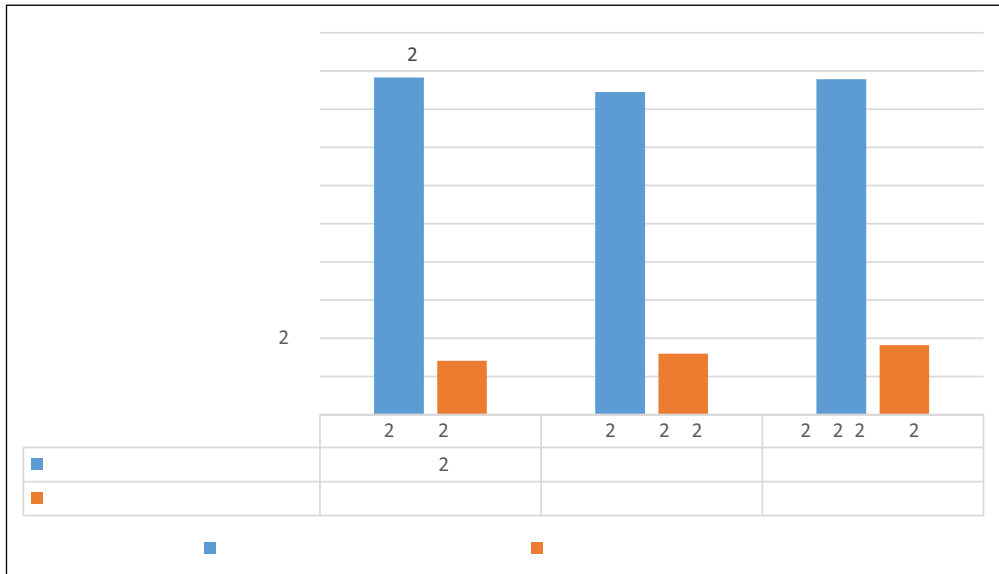
Figure 8. Depression transitions for adults in professional occupations (%).
Source: Authors' own calculations using NIDS 2008, 2010, 2012, and 2014–2015 data.

Figure 8 focuses on South Africans who worked in professional occupations. In a trend similar to elementary-level workers, more professional-level workers transitioned into experiencing SDS over the waves.

Table 4 tabulates six independent probit regressions that were run on race and gender. The outcome variable is a dummy variable, where CES-D scores of 10 and more take on a 1 (SDS) and CES-D scores less than 10 take a 0 value (non-SDS). The explanatory variables are the 10 depressive symptoms. These depressive symptoms are categorical variables with ratings following the CES-D frequency scoring. That is, the frequencies rank from 0 to 3. The outcomes interpreted are statistically significant at a 1% significance level unless otherwise stated.

The first and second probit regression used the CES-D responses and estimated the probability of being either a male or female, respectively. The regressions found that, holding other factors constant, if the frequency of 'having trouble focusing' increased by 1 unit, the probability that the adult was male increased by 13.90 percentage points, while the probability of being female increased by 14.90 percentage points if the frequency of 'feeling fearful' increased by 1 unit. If the frequency of 'not being hopeful about the future' increased by 1 unit, the probability that the adult was male increased by 5.64 percentage points, holding other factors constant. This outcome was statistically significant at a 5% significance level. We therefore observe that having trouble focusing and feelings of hopelessness are significant contributors to depressive symptoms among adult males in South Africa. A lack of economic opportunities constrains the ability of males to contribute financially to their families. This may lead to feelings of hopelessness when considering their future prospects. With regards to women, the high South African crime rates are a serious cause for concern among females, who are far more vulnerable than males. Constant fears of being criminally victimised may pose significant threats to the emotional and mental well-being of women in South Africa. The fear among women depicted in the statistics could also be seen as a form of anxiety, possibly related to a confluence of factors such as job security, food security, or fear for their children's safety and well-being.

Table 4. Multiple probit regressions on the depressive symptoms experienced across gender and race groups (marginal effects).[1]

Outcome variables	Male	SE	Female	SE	African	SE	Coloured	SE	Asian/Indian	SE	White	SE
Explanatory variables	dy/dx		dy/dx		dy/dx		dy/dx		dy/dx		dy/dx	
Bothered	0.0368	0.0483	-0.0368	0.0483	-0.0229	0.0481	-0.0157	0.02	0.0020**	0.0013	0.0202	0.0423
Trouble focusing	0.1390***	0.0514	-0.1390***	0.0514	-0.0012	0.045	-0.0047	0.0218	-0.001	0.0016	0.0082	0.0388
Depressed	-0.048	0.0416	0.048	0.0416	0.0670	0.0395	0.0276	0.0161	-0.0070***	0.0046	-0.0857**	0.0369
Everything an effort	0.0273	0.0295	-0.0273	0.0295	-0.0094	0.0277	-0.0077	0.011	-0.0015	0.0012	0.0245	0.0235
Not hopeful about future	0.0564**	0.0283	-0.0564**	0.0283	0.0309	0.0264	-0.0217	0.0164	-0.0006	0.0008	-0.0223	0.0215
Felt fearful	-0.1429***	0.0416	0.1429***	0.0416	-0.0325	0.0425	0.032	0.0209	0.0001	0.0016	-0.0036	0.0378
Restless sleep	-0.0141	0.0348	0.0141	0.0348	-0.0134	0.0351	-0.0156	0.0139	-0.0013	0.0013	0.0331	0.0286
Not happy	-0.0451	0.0289	0.0451	0.0289	0.0281	0.0266	-0.0127	0.0154	0	0.001	-0.014	0.0218
Felt lonely	0.0426	0.0383	-0.0426	0.0383	0.0549	0.0402	-0.0165	0.0172	0.0005	0.0009	-0.041	0.0369
Could not get going	-0.0245	0.0431	0.0245	0.0431	0.0555	0.0454	-0.0282	0.0227	-0.0027	0.0018	-0.0269	0.0371
Sample size	642		642		642		642		642		642	
Prob > chi-square	0.0028		0.0028		0.1339		0.082		0.0862		0.1323	
Pseudo R²	0.0569		0.0569		0.047		0.0369		0.1804		0.0712	

Source: Authors' own calculations using NIDS 2008 and 2014–2015 data.
NIDS: National Income Dynamics Study; SE: standard error.
*** Significance at 1%.
** Significance at 5%.

The fifth probit regression estimates that, if the frequency of feeling bothered by things that do not usually bother them increased by 1 unit, the probability of being Asian/Indian increased by 0.2 percentage points, holding other factors constant. This was statistically significant at a 5% significance level. If the frequency of feeling depressed increased by 1 unit, the probability that the adult was Asian/Indian decreased by 0.7 percentage points, holding other factors constant.

The sixth probit estimated that, if an adult's frequency of feeling depressed increased by 1 unit, the probability that the adult was White decreased by 8.57 percentage points, holding other factors constant. This was statistically significant at a 5% significance level.

Discussion

Despite the significant decline in the prevalence of adults experiencing SDS in South Africa from 2008 to 2010, the recent increase in the prevalence rate, beginning in 2010, is concerning. In comparison to the prevalence of depression among adults in China, which was estimated to be 23.20% by Qin et al. (2016), our findings for South Africa can be described as slightly above the norm. Our findings indicate prevalence rates of depression in South Africa similar to that indicated by Tomita et al. (2015), of 21.1% in 2010. The studies used as benchmarks, however, do not account for depression in 2008, when the global financial crisis may have inflated the depressive symptomatology experienced by adults in South Africa.

We have yet to reach parity in depression outcomes between men and women. The depressive symptoms that were more common among men and among women differed slightly. Men struggled more with concentration and did not feel hopeful about the future. Among women, feelings of fear were more common. The implications of these gender differences call for government to have a more nuanced approach to reducing socioeconomic problems and social injustices that lead to the persistence of mental health problems among vulnerable population groups.

SDS exit rates for individuals with some education and/or who work in high skill-level occupations are a lot smoother relative to those who have no education and/or work in low skill-level occupations. From a comparative point of view, depression outcomes are markedly different for adults with no education and those with a tertiary-level qualification, as depicted in Figures 5 and 6. The more educated adults are, the greater is their social mobility. It can therefore be concluded that, as a result of their education, more educated adults are better equipped to transition out of experiencing SDS. This further highlights how important education is to not only improving one's socioeconomic standing through higher earnings and better working conditions but also to overall health.

From an employment perspective, the depressive symptom entry rates are at least 10 percentage points higher for elementary-level workers compared with professional-level workers. This could be due to less financial stability in lower-skill occupations, for example, lower-skilled casual or seasonal employment. Workers at this level may fear being unemployed or may struggle to meet their basic needs due to relatively lower earnings. With regards to SDS exit rates, the results indicate slightly higher exit rates for professionals relative to elementary workers. This may be due to professionals' greater social mobility and better access to health care, which may slightly increase their likelihood of escaping adverse socioeconomic upheavals.

Findings from Girdwood and Leibbrandt (2009) on intergenerational mobility indicate that children with fathers working in professional-level employment are 20 percentage points more likely to work in professional occupations than children with fathers working in elementary occupations. Thus, it can be argued that parents working in a professional-level job also empower their children to obtain the qualifications needed to work at that skill level. This form of transmission of

empowerment across generations could lower the risk of mental disability for children growing up in such households.

Eyal and Burns (2017) find parental depression to be the most significant factor in teenage mental health. In their study on intergenerational transmission of depression in South Africa, they find that half of teenagers who are depressed have parents who are or were also depressed. Due to the historical social exclusion of people of colour from access to a quality education and consequently stable, high-paying employment, Black South African adults have been affected by their parents' inadequate access to educational opportunities. Depression transmissions and the lack of social mobility transmitted from their parents may have further disadvantaged them. Black South Africans could be exhibiting depression symptoms as a result of these factors. Another factor that may play a role is that SES may not offer Black adults the same protection against depressive symptoms as experienced by their White counterparts with similar SES levels.

Our results are to be interpreted taking into account the limitations of the study. First, our sample includes a small proportion of Asian/Indians which requires caution when interpreting results pertaining to that specific population group. Second, we place a disclaimer on the Wave 2 results as that wave was subject to high rates of non-response. Third, depressive symptoms may have contextual/cultural interpretations which may influence the cross-cultural validity of the data collected. Finally, our study only considered self-reported depressive symptomatology, which should not be misconstrued to be diagnosed depression. Depression can only be diagnosed through consultation with a health professional and thus bias that may arise with self-reporting may have affected our findings.

Conclusion

Our study relayed the reality that depression, like many other health conditions, manifests along socioeconomic strata, with lower socioeconomic classes being at a higher risk. Moreover, the literature indicates that stress experienced due to the higher prevalence of crime, generally poor living conditions, and a lack of opportunities may severely impact on the emotional well-being of lower social groups, and especially women. Feelings of hopelessness about the future stood out in the study, particularly among men.

Education was found to be pertinent to South African adults transitioning out of experiencing SDS and could assist people to move out of poor socioeconomic environments. It is critical that government should invest in education as a means of improving social mobility for the most vulnerable population groups. More broadly, education could also play a role in reducing the stigma associated with depression and facilitate more stable employment that offers more personal autonomy, better working conditions, and higher earnings.

Due to the limited scope of this study, a number of factors were not analysed and should be considered for future studies. First, it would be interesting to consider the intermediate pathways through which SES affects the risk of exhibiting SDS. Second, a mixed-method approach would be useful in triangulating the quantitative data findings of NIDS with the qualitative data on the clinical experiences of healthcare professionals regarding the topic of SDS.

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Notes

1. The estimations above were conducted in a balanced panel where all individuals answered all the questions.

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