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Counting the cost of Afrophobia: Post-migration adaptation and mental health challenges of African refugees and migrants in South Africa

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Abstract

Purpose—There are few studies on the role of migration within sub Saharan Africa and its relation to the development of mental illness. We investigated post-resettlement adaptation and mental health challenges of African refugees/migrants in Durban, South Africa.

Methods—We interviewed 335 African help-seeking refugees/migrants for anxiety, depression (25-item Hopkins Symptom Checklist) and post-traumatic stress symptoms (30-item Harvard Trauma Questionnaire). Socio-demographic and migration history, focusing on post-migration circumstances and experiences of discrimination in the host country, were obtained. Association between migration and post-settlement factors and mental health outcomes were assessed using adjusted logistic regression models.

Results—Prevalence of mental distress was high: 49.4% anxiety, 54.6% depression and 24.9% post-traumatic stress symptoms. After adjustment for family separation since migration, recent arrival in South Africa was associated with increased risk for depression (aOR=4.0, 95% CI: 1.3–11.8) and post-traumatic stress (aOR=5.2, 95% CI: 1.7–15.9), while in unadjusted models, older age on arrival was associated with anxiety (aOR=5.3, 95% CI: 1.4–19.8) and depression (aOR=6.2, 95% CI: 1.6–24.3). History of family separation since migration was independently associated with depression and post-traumatic stress in all models. Discriminatory experiences since migration was also an independent risk factor for all three mental health outcomes. Finally, being divorced/widowed was associated with an increased risk for post-traumatic stress, while higher income earners were protected against post-traumatic symptoms, even after adjustment.

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Conclusion—Refugees/migrants in South Africa show a significant burden of mental distress that is linked to challenges of adjustment in an often-hostile context. Services addressing these and other health-related, social-economic needs should be developed as a priority.

Keywords

refugees; South Africa; depression; anxiety; post-traumatic stress

Introduction

Migration is a major non-normative life transition (Suarez Orozco, 2000), often accompanied by a myriad of stressors that requires significant adjustment to the new surroundings, and can lead to psychological challenges (Dalla, Antoniou & Matsa, 2009), including anxiety, frustration and hopelessness (Oberg, 1960). As an economic powerhouse of the continent, South Africa continues to be a major migration destination (International Organization for Migration, 2010). Although the figure is an under-estimate of actual numbers of refugees and migrants, the country hosts 310,000 registered refugees and asylum seekers (United Nations High Commissioner for Refugees, 2015), many having fled politically and economically unstable situations in sub-Saharan African countries. Despite efforts to establish a national identity of social inclusiveness following the end of the apartheid regime in 1994, migrants residing in South Africa remain a marginalized population. They live under fear of crime, and afrophobia based violence and discrimination, in part due to the perception of competing with local people for scarce economic opportunities (Hunter & Skinner, 2003).

Prevalence rates of mental illness are considerably higher among refugees than non-refugees (Fazel, Wheeler, & Danesh, 2005; Porter & Haslam, 2005), with risk factors for mental distress commonly considered in terms of pre-migration, migration and post-migration phases (Bhugra et al, 2011). Individuals who have suffered dislocation from their home environment, often under violent and dangerous circumstances, which may or may not have included experiences of interpersonal violence and death, are clearly at high risk of emotional and psychological trauma. The migration experience of refugees and migrants very often includes multiple stresses and losses, occurring over a protracted period, both in the country of origin and within the new host country (Bhugra & Jones, 2001; Porter & Haslam, 2005; Bhugra et al, 2011). In addition to actual physical violence experienced prior to and or during the flight from their home communities, many refugees are subject to xenophobic attitudes and behavior on arrival in the host country. They are confronted by legal, housing and financial problems that commonly occur within the context of being separated from friends and family and their natural social supports. Language barriers, cultural stress and bereavement and social rejection by host communities aggravate the hardships faced by this population, and retard their efforts to adapt (Kirmayer et al, 2010; International Organization for Migration, 2010).

In attempting to explain the psychological challenges associated with post-migration adaptation, authors have drawn on several theories, including those of stress and coping (Lazarus & Folkman, 1984), culture learning (Argyle, 1969), as well as social identification

(Deaux, 1996). Post-adjustment risk factors that have been found to negatively influence psychological status include lower education, prolonged detention, and impermanent residence, experiencing discrimination, poverty and rural residency (Levitt, Lane, & Levitt, 2005; Steel et al., 2006; Bogic et al., 2012; Pernice & Brook, 1996; Porter & Haslam, 2005). As with most mental health research, little evidence relating to post-migration adaptation and mental health is based within the African context. More specifically, there is to date no published research that examines the post-migration determinants and challenges facing refugees and migrants residing in South African in terms of their association with common mental disorders. The adapted acculturation model, described by Zhou and colleagues (Zhou, Jindal Snape, Topping, & Todman, 2008), indicates that macro-level factors, which include societies of origin and settlement, are important drivers of psychological outcome. However, we know little about the acculturation and psychological wellbeing of African refugees and migrants immigrating to another African country.

Importantly, while refugees and foreign non refugee migrants are defined as distinct from each other and have essentially different status under international law, we believe the political, economic and social instability of the sub-Saharan regions from whence these individuals originate, makes it difficult and simplistic to strictly differentiate between 'refugees' as persons displaced for political reasons (e.g. conflict) and 'migrants' who are choosing to leave due to severe economic hardships (e.g. in Zimbabwe). For this reason we have chosen to conflate both categories into one group that we refer to interchangeably as migrants/refugees. Coming at a time when South Africa is facing marked internal challenges related to how its citizens receive and treat foreigners from Africa, regardless of their legal rights, the present study addresses an important gap by investigating the post-resettlement adaptation and mental health challenges of African refugees and migrants in that country.

Methods

Sampling and data collection

The study was conducted at a non-government organization (NGO) center that provides (amongst other functions) refugee and foreign non-refugee migrant support in Durban, South Africa, between July 2013 and April 2014. The study population included refugees, and foreign non-refugee migrants seeking assistance at the NGO center for food, housing, legal, health and other needs. Individuals were included if they were 18 years or older, non-South African, and able to speak English, French, or Swahili. Provision of signed written consent was a requirement for inclusion in the study; however, it is important to note that no individuals were excluded for this reason. Where there were language barriers, a trained research assistant (nurse) fluent in the noted languages assisted with translation and interpretation. All individuals attending the NGO and who met the above mentioned criteria were approached to participate in the study based on a consecutive sampling method. At the end a total of 335 participants were enrolled into the study. Participants who required immediate treatment for mental health issues were referred to local mental health services. The University of KwaZulu Natal Biomedical Research Ethics Committee approved the study.

Measures

Three measures were assessed for, namely anxiety, depression, post-traumatic stress symptoms and discrimination. We used the Hopkins Symptom Checklist-25 (HSCL-25), which measures the presence and severity of anxiety and depression symptoms, and has been shown to have good reliability and validity in the African context (Kaaya et al, 2002). The first 10 items focus on anxiety symptoms, while the last 15 items include depression symptoms, both recorded for the preceding seven days. Response is based on self-report using a 4-point Likert scale. Respondents indicate 'not at all', 'a little', 'quite a bit' and 'extremely' (rated 1 to 4) for each item. Average (mean) scores of 1.6 for each subscale indicate a positive screen for anxiety and depression symptoms respectively.

Post-traumatic stress outcome was assessed with the Harvard Trauma Questionnaire-30 (HTQ-30), a 30-item scale that assesses the levels of trauma symptoms during the past week, which has been shown to have good reliability and validity in South Africa (Mollica et al, 1992). Response is based on self-report using the same 4-point Likert scale as for the HSCL-25. The total (composite) score is the sum of all 30 items, and a cutoff score of 60 (range 30–120) is considered an indicator of significant post-traumatic symptoms.

We collected information on their demographic characteristics and measures pertaining to the role of discrimination in their mental status. The participants were asked two questions regarding discrimination: "Have you ever felt discriminated against?" and "Where did you experience discrimination?" Based on the above two questions, exposure to discrimination was coded and dichotomized as 0 'not exposed' or 1 'exposed'.

Data analysis

After demographic characteristics analysis, we assessed the role of post-migration adjustment factors on mental health outcomes using adjusted logistic regression, controlling for gender, marital status, income, and exposure to discrimination in South Africa. Four sets of models each were constructed for anxiety (models 1a–1d), depression (models 2a–2d) and post-traumatic stress outcomes (models 3a–3d), resulting in 12 models. The impact of post-settlement duration of stay and age of arrival on all three mental health outcomes were assessed (models a and b) respectively, and were further adjusted for history of family separation since migration (models c and d).

Results

Demographic characteristics

Table 1 shows the demographic characteristics of the 335 respondents, with a gender distribution of 53% males and 47% females. The age range was 18–67 years old, with a mean age of 32.8 years (SD = 8.4 years). Over half (51%) were married, and a third (36%) were unemployed. The migrants were predominantly from the Democratic Republic of Congo (47.5%), and Zimbabwe (34.0%), with the rest (18.5%) originating from Rwanda, Malawi, Ghana, Uganda, and Mozambique. Over a quarter (28.5%) had no income or made less than R1,000 (\$100) a month. One third (32.7%) reported experiencing family separation

since migrating to South Africa. Half of participants (50.2%) reported experiencing discrimination in South Africa.

Prevalence of anxiety, depression and PTSD symptoms

Prevalence rates for mental health outcomes were based on the proportion of participants who scored above or equal to the respective cutoff values for each outcome: 49.4% (n=165) for anxiety symptoms (mean score 1.6 on HSCL anxiety subscale); 54.6% (n=180) for depressive symptoms (mean score 1.6 on HSCL depression subscale); and 24.9% (n=83) for post-traumatic stress symptoms (composite score 60 on HTQ).

Post-settlement duration of stay and depression, anxiety and post trauma symptoms

Migrants who had lived in South Africa for less than one year (0–1) showed higher rates of anxiety (aOR=3.2, 95% CI: 1.2–8.6), depression (aOR=4.7, 95% CI: 1.6–13.4), and post-traumatic stress (aOR=4.4, 95% CI: 1.5–12.6) than those who had been in the country for a longer period (see Models 1a/2a/3a in Tables 2–4). In the same models, exposure to discrimination was associated with an increased risk of anxiety (aOR=1.9, 95% CI: 1.2–3.2), depression (aOR=2.9, 95% CI: 1.7–5.0), and post-traumatic stress symptoms (aOR=2.6, 95% CI: 1.5–4.8), independent of post settlement duration. When these models were adjusted for a history of family separation since migration, the latter was associated with a higher risk for depressive (aOR=2.8, 95% CI: 1.6–5.0) and post-traumatic stress symptoms (aOR=2.3, 95% CI: 1.2–4.4), but not anxiety symptoms (see Models 1c/2c/3c in Tables 2–4). The shorter duration post-migration remained a risk factor for depressive (aOR=4.0 95% CI: 1.3–11.8), and post-traumatic stress symptoms (aOR=5.2, 95% CI: 1.7–15.9) even after adjusting for history of family separation. Notably, in the adjusted models, exposure to discrimination in South Africa remained associated with an increased risk of anxiety (aOR=1.9, 95% CI: 1.1–3.2), depressive (aOR=2.6, 95% CI: 1.5–4.5), and post-traumatic stress symptoms (aOR=2.2, 95% CI: 1.2–4.2).

Age of arrival in South Africa and depression, anxiety and post trauma symptoms

Individuals who were older (35 years and older) on arrival in South Africa showed higher rates of anxiety symptoms (aOR=5.3, 95% CI: 1.4–19.8) and depressive (aOR=6.2, 95% CI: 1.6–24.3), but not post-traumatic stress symptoms (see Models 1b/2b/3b in Tables 2–4). In the same models, exposure to discrimination in South Africa was associated with an increased risk of anxiety (aOR=1.8, 95% CI: 1.1–3.0), depressive (aOR=2.7, 95% CI: 1.6–4.7), and post-traumatic stress symptoms (aOR=2.4, 95% CI: 1.3–4.3), independent of arrival age. When these models were adjusted for a history of family separation since migration, the latter was associated with a higher risk for depressive (aOR=2.5, 95% CI: 1.4–4.5) and post-traumatic stress symptoms (aOR=2.2, 95% CI: 1.2–4.2) but not anxiety symptoms (see Models 1d/2d/3d in Tables 2–4). When adjusting for a history of family separation, age of arrival in South Africa was no longer an independent factor, while exposure to discrimination in South Africa remained associated with an increased risk of anxiety (OR=1.8, 95% CI: 1.0–3.0), depressive (OR=2.5, 95% CI: 1.4–4.4), and post-traumatic stress symptoms (OR=2.0, 95% CI: 1.1–3.8). Divorced marital status and low-income attainment was associated with higher risk of post trauma symptoms (Table 4 Model 3d).

Discussion

A high proportion of participants in this study reported symptoms of mental distress, with approximately half reporting significant symptoms of depression and anxiety and a quarter post-traumatic symptoms. While these rates are higher than those reported by Fazel and colleagues (2005) in their systematic review of rates of common mental disorders in refugees living within western countries, it should be noted that our study reported symptoms and not diagnosis. The rates reported in our study however are similar to rates reported in refugee populations who have been directly exposed to violence (Marshall, Schell, Elliott, Berthold & Chun, 2005; Onyut et al, 2009; Steel et al, 2009).

Majority of studies focuses on associations between current mental health status and traumatic exposures occurring pre-migration in countries and regions of origin. It is our impression that less attention is paid to how factors related to post settlement adjustment impact on psychological wellbeing. Our findings in the current study suggest that individuals with shorter duration of stay (i.e. more recent arrivals in South Africa), who were 35 years old and above on arrival in the country, and had a history of family separation since migration, are particularly vulnerable to mental health problems. Furthermore, exposure to discrimination in South Africa was an independent risk factor for anxiety, depression and post-traumatic stress symptoms in both unadjusted and adjusted models. Our findings indicate significant cultural adjustment challenges among African migrants in South Africa, and highlight the fact that interventions aimed at facilitating better cultural adaptation in that country are a strategic health priority.

Recent migration a risk factor for mental disorder

Our finding that recent arrival in South Africa is associated with poor mental health outcomes is consistent with a meta-analysis that showed an association between longer stay in the host country and reduced depressive symptoms (Porter & Haslam, 2005). This suggests that for many migrants, residing in the host country for a longer period allows for their eventual integration and adaptation to the new host country (i.e. acculturation) as well as for more time for healing from exposure to human traumas (Gonidakis et al., 2011). Hollander and colleagues (2011) showed a similar effect where migration-related stress was reduced ten years after arrival in Sweden. Our results also show that separation from family is an independent predictor of depression and post-traumatic stress symptoms and that, even when adjusted for family separation, recent arrival remains a risk factor for these disorders. One can assume that individuals escaping difficult circumstances and arriving in a new country, hopeful and optimistic about establishing a new life, very soon experience considerable stress and emotional hardship as they are faced with multiple challenges associated with being a refugee in the new country (Pamaray, 2014). Within low- and middle-income countries (LMICs), the emotional challenges faced by migrants and refugees are further compounded by the lack of housing and food, the insecurity and hostility, and the poverty that they encounter (Handmaker & Parsley, 2001).

Importantly, the fact that longer duration of residence in South Africa was associated with better mental health outcomes in our study is not an endorsement for inaction in regard to the need for efforts aimed at easing migrant adaptation. On the contrary, early detection of

mental distress and the provision of appropriate and effective interventions should be a strategic priority. There is good evidence from the growing literature on migrant mental health that a substantial proportion of immigrants and asylum seekers who have been resident in foreign countries for prolonged periods of time, continue to show symptoms of chronic post-traumatic stress disorder, along with the co-morbidities and functional morbidity that too often accompanies this condition (Hallas, Hansen, Staehr, Munk-Andersen, & Jorgensen, 2007).

Older age at migration and risk for mental disorder

Refugees who arrived in South Africa at the age of 35 years old and above had worse mental health outcomes (depression and anxiety) in unadjusted analyses. When migrating to a new country as a refugee, older individuals are more likely to suffer from loss of identity, community and social networks, especially in the case of forced migration (Steel et al., 2009). A sense of community belonging and the ability to form good social networks is very important in Southern Africa. The local notion of *ubuntu*, for example, refers to an interconnected sense of community that encompasses all communal and social relations, and is considered an important cultural method of mental health promotion (Edwards, Ngcobo, & Pillay, 2004). Older individuals are more likely to have established communal relationships, networks and a social and role identity in their home countries than their younger counterparts. The experience of losing such structures, without community support buffers, and compounded by difficult resettlement in the face of increasing loneliness, inadequate access to social support and incapacity to return home, is likely to cause stress and consequent poor mental health in the host country. Notably, when adjusted for family separation since arrival, the relationship between older age at arrival and depression/anxiety disappeared, suggesting that having family with oneself is protective against mental distress for older migrants. This is consistent with research showing the protective impact of social support for migrants in new countries among other Africans (Schweitzer, Melville, Steel, & Lacherez, 2006).

Discrimination, xenophobia and mental health

Approximately half of participants in our study reported experiencing discrimination since being in South Africa. Unfortunately it is common for some local South Africans to use derogatory names when referring to foreign migrants (e.g. 'amakwerekwere', which means 'cockroaches'). This racist and stereotyping behavior towards foreign migrants has existed for more than two decades in South Africa, from before the dawn of democracy (Amisi, Bond, Cele, & Ngwane, 2011). Refugees in South Africa are commonly viewed as unwanted foreigners who have come to compete for resources with the local people, leading to resentment and even outright hostility (Handmaker & Parsley, 2001). In many LMICs (including South Africa), local populations are faced with significant levels of poverty and unemployment; thus competition for limited resources is already very high, and negative attitudes towards foreign arrivals are likely to be more extreme.

We found that exposure to discrimination was an independent predictor of poor mental health outcomes, especially depression and post-traumatic stress. The constant fear experienced by foreign migrants of discrimination by locals in South Africa is undoubtedly a

cause of psychological stress (Hunter & Skinner, 2003). The role of chronic stress in setting up physiologic changes in neuroendocrine, autonomic, and immune systems that manifest as mental illness is well described (Magarinos, McEwen, Flugge, & Fuchs, 1996; Charmandari, Tsigos, & Chrousos, 2005). Psychological stress associated with subjective experiences of discrimination has been associated with poor health status independent of other stressors across a range of health related behaviors and physical and mental health outcomes (Ahmed, Mohammed, & Williams, 2007).

Marital and income status and post-traumatic stress

Being divorced or widowed was a predictor of post-traumatic symptoms in our study, irrespective of adjustment for family separation since migration. This indicates the protective impact of marriage/partnership (57% of participants) in aiding resilience against the stressors associated with migration. The negative effects of trauma were still evident in those individuals who had lost partners through divorce or death, even where the support offered by families post-migration was present. This is consistent with studies showing increased risk for post-traumatic stress in divorced or widowed internally displaced persons in Sri Lanka (Siriwardhana, Adikari, Pannala, Abas, & Sumathipala, 2013).

There is an extensive literature supporting the association between low economic status and poor mental health, specifically in LMIC contexts (Myer, Stein, Grimsrud, Seedat, & Williams, 2008; de Menil et al, 2012). Migrants in our study with low income (61% earning less than R2500 per month [\$250]) showed higher rates of post-traumatic stress symptoms in both unadjusted and adjusted models. Similarly, Van Griensven and colleagues (2006) found that displaced survivors of the 2004 tsunami in southern Thailand were more likely to manifest posttraumatic stress disorder (PTSD) if they had lost their means of income, while Karunakara and colleagues (2004) reported that having a salaried income was protective against PTSD in Sudanese refugees in southern Sudan and northern Uganda. Importantly, one should note that the relationship between economic status and mental health can be bidirectional as having a mental disorder may lead to loss of employment and economic difficulties.

Limitations of the study

There are several limitations in our study that should be highlighted. First, our study did not document the diversity of the traumas experienced by the migrants/refugees prior to coming to South Africa, and this is likely to have a significant impact on current mental health. Second, we did not assess discrimination using a specific scale (such as the Discrimination and Stigma Scale (DISC)), as validation of such an instrument was outside of the scope of this particular. Our use of a direct question in this study may have failed to identify discrimination in some cases due to differing interpretations of the concept. Thus a degree of caution must be exercised in regard to our findings on discrimination, and we would advocate that future similar studies validate and make use of established instruments such as the DISC. Thirdly, we did not differentiate between refugees and non-refugee migrants as strictly defined by international law and some health discourses. However, as argued earlier in this paper, we believe the distinction between these groups is simplistic and problematic within the context of Southern African migration. Fourthly and related to this point, we did

not have documentation of participants' asylum status. Lastly, we did not have comprehensive measure of mental health diagnosis; rather we measured symptoms as outcomes.

Conclusion

Despite these methodological limitations, our results reveal a high burden of mental distress among refugees and non-refugee migrants. They also highlight important risk factors for common mental disorders associated with adaptation after migration in this vulnerable population, and the requirement for sensitivity to the particular vulnerability of older migrants, recent arrivals and those with a history of family separation since migration. Furthermore, perhaps one of the most important findings is the clear link shown between experiences of discrimination in South Africa and increased rates of mental disorder. This has important social, political and health policy implications for authorities, as strategies are developed to counter xenophobia in that country.

Finally, we conclude that there is an urgent need for the provision of mental health services that are tailored to the needs of refugees in South Africa. At the time of this study, there were no mental health services available for refugees in Durban. Furthermore, in the current and future planning of such mental health services and interventions, there should be an emphasis on the widely accepted principles of cultural competency (knowledge of cultural beliefs, values and practices) and distributive justice (Dein, 1997). While this study has drawn attention to the circumstances and needs of refugees and foreign non-refugee migrants in South Africa, the many basic needs of local people living in conditions of poverty and indigence should not be overlooked. Ignoring the latter would only foment feelings of resentment and hostility towards non-nationals. The number of mental health professionals in South Africa is limited to meet the ever growing needs of the South African population. With the continued increase in the number of migrants settling in South Africa, there is an imperative to restructure services to meet the needs of both local people and foreigners in this country; for example through task shifting approach and screening of vulnerable populations for mental health problems by community-based mental health teams. The latter has been effectively demonstrated within refugee populations in other LMICs, for example in Rwanda (Kamau et al., 2004) and in Palestine (Sarraj et al., 2005). These services should be inclusive and integrated, providing for the multiplicity of socioeconomic and health-related needs, both common to and specific to the various vulnerable populations (e.g. refugees, the homeless and drug users) residing in modern cities.

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Table 1

Demographic characteristics (N=335)

		n	%
Gender:	Male	178	53.1
	Female	157	46.9
Age category:	18–20	15	4.5
	21–24	37	11.1
	25–34	160	47.9
	35+	122	36.5
Marital status:	Single	111	33.1
	Married	172	51.3
	With partner	19	5.7
	Divorced/widowed	33	9.9
Monthly income:	No income declared	41	12.31
	R1–R2,499 (\$1–\$249)	161	48.35
	R2,500 (\$250)	131	39.3
History of family separation since migration:	No	212	67.3
	Yes	103	32.7
Employment status:	Unemployed	119	5.7
	Employed	142	42.6
	Other	72	21.6
Number of social support:	None	75	22.5
	1 or more supportive persons available	258	77.5

Table 2

Anxiety outcome

Variable	Category	Model 1a			Model 1b			Model 1c			Model 1d		
		aOR	SE	95% CI	aOR	SE	95% CI	aOR	SE	95% CI	aOR	SE	95% CI
Post settlement duration: [10+ years]	0-1	3.21	1.61	1.21 8.56				2.67	1.37	0.98 7.32			
	2-5	1.70	0.54	0.91 3.15				1.54	0.52	0.80 2.99			
	6-9	1.22	0.40	0.64 2.32				1.16	0.40	0.59 2.26			
Age of arrival in South Africa: [5-15]	16-25				2.45	1.37	0.82 7.33				1.83	1.07	0.58 5.75
	26-35				3.27	1.90	1.05 10.22				2.32	1.42	0.70 7.72
	35+				5.30	3.57	1.42 19.82				3.52	2.47	0.89 13.95
History of family separation: [no]	Yes							1.59	0.44	0.92 2.73	1.43	0.40	0.82 2.47
Gender: [male]	Female	1.05	0.26	0.64 1.72	1.27	0.32	0.77 2.10	1.11	0.29	0.66 1.86	1.27	0.34	0.76 2.15
Marital status: [married]	Single	0.64	0.18	0.37 1.10	0.90	0.25	0.52 1.57	0.75	0.22	0.43 1.32	0.99	0.29	0.56 1.75
	With partner	1.36	0.72	0.48 3.86	1.66	0.89	0.58 4.74	1.68	0.95	0.55 5.09	1.96	1.11	0.64 5.96
	Divorced/widowed	1.58	0.69	0.67 3.71	1.31	0.58	0.55 3.11	1.84	0.83	0.75 4.47	1.58	0.73	0.64 3.91
Number of social support: [None]	More than 1	0.69	0.21	0.39 1.25	0.74	0.22	0.41 1.33	0.77	0.24	0.42 1.41	0.79	0.24	0.43 1.45
Income: [None declared]	R1-R2,499	1.26	0.47	0.60 2.63	1.11	0.42	0.53 2.33	1.25	0.49	0.58 2.72	1.10	0.44	0.51 2.39
	R2,500	0.83	0.33	0.38 1.79	0.74	0.29	0.34 1.59	0.93	0.38	0.42 2.07	0.82	0.33	0.37 1.82
Exposure to discrimination: [No]	Yes	1.93	0.51	1.15 3.23	1.79	0.47	1.07 2.99	1.88	0.51	1.10 3.21	1.78	0.48	1.04 3.02

Table 3

Depression outcome

Variable	Category	Model 2a			Model 2b			Model 2c			Model 2d		
		aOR	SE	95%	CI	aOR	SE	95%	CI	aOR	SE	95%	CI
Post settlement duration: [10+ years]	0-1	4.68	2.51	1.64	13.40					3.98	2.21	1.34	11.82
	2-5	1.79	0.58	0.95	3.39					1.79	0.63	0.90	3.58
	6-9	1.66	0.56	0.86	3.21					1.72	0.62	0.85	3.48
Age of arrival in South Africa: [5-15]	16-25					3.21	1.84	1.04	9.86				
	26-35					4.71	2.82	1.46	15.22				
	35+					6.19	4.31	1.58	24.25				
History of family separation: [no]	Yes									2.79	0.83	1.56	5.00
Gender: [male]	Female	1.07	0.28	0.64	1.78	1.37	0.36	0.81	2.30	1.32	0.37	0.76	2.28
Marital status: [married]	Single	0.61	0.17	0.35	1.07	0.90	0.26	0.51	1.59	0.78	0.24	0.43	1.42
	With partner	1.77	1.03	0.57	5.52	2.30	1.35	0.73	7.29	2.61	1.65	0.76	8.99
	Divorced/widowed	1.41	0.64	0.57	3.44	1.16	0.54	0.47	2.89	1.46	0.70	0.57	3.72
Number of social support: [None]	More than 1	0.54	0.17	0.29	1.02	0.58	0.19	0.31	1.09	0.58	0.19	0.30	1.12
Income: [None declared]	R1-R2,499	1.33	0.52	0.62	2.84	1.13	0.44	0.53	2.43	1.35	0.56	0.60	3.05
Exposure to discrimination: [No]	R2,500	0.83	0.34	0.38	1.84	0.72	0.29	0.33	1.57	0.97	0.41	0.42	2.24
	Yes	2.91	0.80	1.70	5.00	2.74	0.76	1.60	4.71	2.55	0.74	1.45	4.50
										2.48	0.71	1.41	4.35

Table 4

Trauma outcome

Variable	Category	Model 3a				Model 3b				Model 3c				Model 3d			
		aOR	SE	95%	CI	aOR	SE	95%	CI	aOR	SE	95%	CI	aOR	SE	95%	CI
Post settlement duration: [10+ years]	0-1	4.42	2.37	1.54	12.64					5.16	2.97	1.67	15.93				
	2-5	1.83	0.72	0.85	3.96					2.36	1.03	1.00	5.57				
	6-9	1.20	0.50	0.53	2.72					1.41	0.64	0.58	3.41				
Age of arrival in South Africa: [5-15]	16-25					5.51	5.92	0.67	45.25					4.14	4.51	0.49	34.98
	26-35					7.16	7.75	0.86	59.83					4.74	5.25	0.54	41.44
	35+					5.53	6.30	0.59	51.50					3.04	3.55	0.31	29.98
	Yes									2.33	0.76	1.23	4.40	2.23	0.73	1.17	4.22
Gender: [male]	Female	0.98	0.30	0.54	1.78	1.12	0.34	0.62	2.03	1.11	0.36	0.59	2.08	1.24	0.40	0.67	2.32
Marital status: [married]	Single	0.82	0.27	0.43	1.57	1.11	0.37	0.58	2.13	0.95	0.33	0.48	1.87	1.27	0.44	0.64	2.49
	With partner	0.56	0.39	0.14	2.20	0.65	0.45	0.17	2.55	0.49	0.40	0.10	2.42	0.56	0.45	0.11	2.76
	Divorced/widowed	2.90	1.31	1.20	7.04	2.98	1.36	1.22	7.28	2.61	1.26	1.02	6.71	3.01	1.44	1.17	7.70
Number of social support: [None]	More than 1	0.90	0.30	0.47	1.72	0.91	0.30	0.48	1.73	0.96	0.33	0.49	1.90	0.92	0.31	0.48	1.80
Income: [None declared]	R1-R2,499	1.73	0.79	0.71	4.24	1.40	0.64	0.57	3.43	2.03	1.01	0.76	5.37	1.49	0.73	0.57	3.90
	R2,500	0.73	0.37	0.27	1.97	0.57	0.29	0.21	1.53	0.89	0.48	0.31	2.54	0.62	0.33	0.22	1.76
Exposure to discrimination: [No]	Yes	2.63	0.80	1.45	4.76	2.38	0.71	1.33	4.26	2.24	0.72	1.19	4.19	2.03	0.64	1.10	3.76