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Trauma Exposures and Posttraumatic Stress among Zimbabwean refugees in South Africa

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Abstract

Zimbabwean refugees can be considered a vulnerable group in terms of how they are displaced with many of them having lived through hardships on their way to South Africa and other African countries. Zimbabwe is known to be Africa's most extraordinary producer of migrants and the biggest producer of refugees in Southern Africa. It is estimated that 3.4 million Zimbabweans, a quarter of the country's population, have fled the country. Economic collapse, hunger and political repression have been blamed for the mass exodus. The present study examines the impact of trauma exposures (pre- and post-migration stressors and poor mental health) on posttraumatic stress disorder (PTSD) among homeless Zimbabwean refugees living in South Africa. Through a guided convenient sampling, in-depth interviews using questionnaires were collected from 125 homeless Zimbabwean refugees in Polokwane, Limpopo Province, South Africa. The study was anchored on the hypothesis that predictor variables (pre- and post- migration stressors, poor mental health) would significantly affect outcomes (PTSD). Participants were assessed on demographic variables, pre- and post-migration difficulties checklists, mental health using the General Health Questionnaire (GHQ-28) and the PTSD Checklist (Civilian Version (PCL). Participants ranged from 18 to 48 years with a mean age of 28.3 years (SD = 6.27). The majority of the sample had at least a secondary education (76.8%) and were employed as unskilled labourers (61.6%) in South Africa. Being married was reported by 54.4% in Zimbabwe but changed to only 19.2% in South Africa. Hierarchical multiple regression analyses showed that the overall model significantly predicted PTSD among homeless Zimbabweans ($R^2 = 0.17$, adjusted $R^2 = 0.11$, $F (6, 124) = 2.960$, $p < .01$). Thus, the entire set of pre- and post-migration variables (Post total stress, PreThreat to life, Presexabuse, PrePoverty, Postsexabuse, Postpoverty and two mental health symptoms (Anxiety and Insomnia, and Social dysfunction) explained 41.2 % of the total variance on PTSD. However, main significant predictors were Post total stress ($t (125) = 2.571$, $P < .001$); Postsexabuse ($t (125) = 2.175$, $P < .003$); Postpoverty ($t (125) = 3.450$, $P < .001$); Anxiety and Insomnia ($t (125) = 2.000$, $P < .04$) and Social dysfunction ($t (125) = 2.113$, $P < .$

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003). Of these variables in order of strong impact predictor is Post total stress ($\beta = 0.737$) followed by Postpoverty ($\beta = 0.701$), Postsexabuse ($\beta = 0.377$) and Social dysfunction ($\beta = 0.196$). The Dubin-Watson results (2.252) also showed that the assumption of independent errors was tenable and almost certainly met for this model. Variables excluded in the model were Pre total Stress, Post threat to life, Somatic complaints (GHQ A), Severe depression (GHQ D) and Total GHQ. Zimbabwean refugees constitute a particularly vulnerable group to poor mental health and PTSD. These findings have significant implications for refugees in South Africa and other places where integrating refugee treament in the main stream health system is undermined. As a migratory group, there is need to develop ways of using probability sampling methods in further research and increasing sample size. In addition, there is need to develop culturally relevant interventions to address the sequalaes of pre- and post-migration traumas and poor mental health.

Keywords

Trauma exposure; Zimbabwean Refugees; PTSD; Mental health; Post-migration/Pre-migration difficulties

1. Introduction

International attention has been drawn to Zimbabwe, a country whose socio-political challenges may be influencing its citizens to immigrate to other countries (Latham & Chohen, 2011; Meldrum, 2007). Approximately, a quarter of the country's population has already relocated (Latham & Chohen, 2011; Meldrum, 2007). Reasons for the almost 3.4 million Zimbabweans to immigrate are varied but cited motivations include primarily economic challenges or inequalities (Zinyama, 2011, Maharaj & Rajkumar, 2007). With the country's economic collapse, there was a significant exodus of Zimbabweans with South Africa being a popular destination (Latham & Chohen, 2011; Maharaj & Rajkumar, 2007). The former South African Minister of Home Affairs, Chief Inkosi Mangosuthu Buthelezi, has suggested that South Africa was particularly attractive because, relative to other African countries, it is economically advanced and Zimbabweans, despite being foreigners or undocumented immigrants, had the opportunity of being hired by South African employers, and it had well established historic and economic ties with other African countries (Zinyama, 2011; Maharaj & Rajkumar, 2007; Maharaj, 2001; World Development Report, 2000; Hansard, 1994).

Zimbabwean individuals, families and communities, have been significantly impacted by economic challenges including poverty, unemployment, and homelessness (Zinyama, 2011). Additionally, they have encountered other complex factors which operate at the institutional and structural level. In general, stressors such as civil unrest, wars, and political instability, have been cited as factors contributing to immigration (Zinyama, 2011, Clark, 1986) and consequently, approximately 15 million refugees and 22 million internally displaced persons exist throughout the world [Hussain & Bhushan, 2009; United Nations, 1951). Unfortunately, the impact of these highly disruptive factors frequently manifest with individuals lacking essential goods such as food and water (Cardozo, Vergara, Agani & Gotway 2000) and in extreme situations, being exposed to severe and threatening

experiences such as being tortured (Burnett & Peel) and/or imprisoned (Kleijn, Hovens, & Rodenburg).

While diverse factors have been identified as specifically influencing the immigration of Zimbabweans to other countries (Reitzes 1997), a dearth of research exists that examines the psychological and potentially traumatic effects associated with the immigration process. The psychological impact of the immigration process does not begin upon arrival to South Africa or to any other new country. It begins with life in Zimbabwe and the pre-migration stressors that may initiate the desire to relocate. Stressors that occur upon arrival in the new country (post-migration) may also affect the psychological health of Zimbabwean immigrants. Thus, pre- and post-migration stressors all need to be considered as potential contributors to the psychological health outcomes of any immigrant.

For Zimbabweans, the pre-migration stressors include challenges such as poverty, the lack of food, water and housing, and other basic resources. While each individual stressor may be a hardship, it may be the increasing number of challenges or their cumulative effects that drive immigration (Reitzes 1997) Further, Zimbabweans who arrive in South Africa are commonly greeted with hostility. Xenophobic views create an environment wary of foreigners and feelings of resentment toward Zimbabweans who compete with South Africans for employment (Maharaj & Moodley, 2000). In addition to threats of physical harm, actual killings of Zimbabwean immigrants have been used to dissuade them from coming to and remaining in South Africa (Lindow, 2008).

Due to these challenges and the fact that Zimbabweans lack many basic human, institutional, and structural resources, the status of the immigrants may not be most appropriate. That is, the status of refugees may more accurately describe this population. Unfortunately, the literature lacks consistency with regard to operationalized definitions in describing individuals who believe they have no other option but to leave their own country. According to the 1951 Convention of the United Nations (CRSR, 1951) and the 1967 Protocol on the Status of Refugees (PRSR, 1967), a refugee is defined as, “a person who owing to well-founded fear of being persecuted for reason of race, religion, nationality, membership of a particular social group or political opinion, is outside the country of his nationality and is unable or owing to such fear, is unwilling, to avail himself of the protection of that country.” Despite being undocumented and homeless, a refugee status is appropriate for the newly relocated Zimbabweans in South Africa. Supporting the refugee status is the fact that Zimbabweans were confronted with stressful pre-migration experiences (Farias, 1991), their decision to migrate was perceived as being involuntary and increased their risk of psychological and social adjustment problems (Zinyama, 2011; Mayada, 1983; Idemudia, 1995) and many lacked cross cultural preparation (i.e., financial and basic resources, language skills, etc.) (Boman & Edwards, 1984; Stein, 1986; Mollica, 1990). These experiences not only support the refugee status, but also draws attention to the need to examine them as potential correlates of psychological health outcomes. In essence, these experiences may be traumatic.

The relationship between trauma and outcome is complex. According to Silove. (1999), trauma disrupts five broad systems: (i) personal safety; (ii) interpersonal attachments; (iii)

sense of justice; (iv) existential meaning; and (v) various psychosocial responses within these domains. Trauma and the stressor of living in exile can challenge a person's way of life, thinking and belief in the world (Silove, 1999; Mollica, 2001; Barudy, 1989). Schweitzer, Melville, Steel and Lacherez (2006) have also shown that refugees from Sudan evidenced history of trauma in Australia.

Studies in Australia (Schweitzer, *et al*, 2006; DIMIA, 2003; McLennan, 1997; Steel, Silove Phan, Bauman, 2002), USA (Steel, 2001; Başoğlu & Paker, 1995), Europe (Steel, 2001; Posel, 2003; Idemudia, 2007), Africa (Idemudia, 1995, Guardian, 2007; Ward, Bochner, Furnham, 2003) have shown that refugees experience greater levels of stress and social difficulties than other immigrants and report greater emotional distress with high levels of posttraumatic stress, anxiety and depression. Also, to a lesser extent, they report other mental health issues such as psychosomatic disorders, grief-related disorders, and crises of existential meaning, disruptions of cultural and family systems and separation from the family and ethnic community. Importantly, researchers (Mollica, Sarajlic, Chernoff & Lavelle, 2001; Mollica, Cui & Massagli, 2002) have also shown that the emotional well-being or mental health of refugees appears to be influenced not only by pre-migration traumas and the post-migration adjustment experience but also by the biopsychosocial setting within which the individuals live. Refugees often experience serious human rights violations, torture and systematic violence and, as a result, the traumas they experience, tend to be interrelated and generally cumulative unlike single-event traumas. According to Başoğlu and Paker (1995), these experiences can challenge their sense of empowerment, identity and meaning in life.

Studies (Nicassio, 1985; Ward *et al.* 2007) have shown that experiencing stress over a long period of time can produce feelings of helplessness which may stop refugees striving for goals. According to Ward *et al.* 2007), refugees are thrust into 'passive, victimized roles' during flight, displacement and resettlement, that they are frequently forced to surrender personal control to various organizations and bureaucracies and that unpredictability and lack of control become a way of life. As a result, refugees in such circumstances may come to believe that efforts on their part to regain control and to improve the quality of their lives are largely futile which according to Nicassio (1985), help to account for the passivity sometimes observed in resettled refugees and explain the prevalence of depressive disorders in refugees.

2 The present Study

Zimbabweans can be considered a vulnerable population in terms of pre-migration traumas, many having lived through hardships on their way to South Africa and other African countries (Guardian, 2007). In South Africa, they are resented and exposed to additional stressors including physical threats. An example of this included the burning of 50 refugees that occurred on May 23, 2008 (http:news.bbc.co.uk). According to Posel (2003), one of the main reasons attributed to the conflicts was the problem of competition for employment between illegal immigrants and South Africans during a time when rates of unemployment were rising in South Africa. Unfortunately, despite the enormity of the problems facing Zimbabweans, research studies examining psychological health outcomes are scarce.

In general, refugees may experience unpredictability in their newly relocated country. Additionally, they may have vulnerability factors such as immediate past traumas, lack of social support and concurrent stressful life events. Reporting greater perceived threat or danger, experiencing fear and harassment from the police and immigration officers of the host country, living in social environments that produce shame and other psychological distress are among some of the traumas that refugees do exprience (Idemudia, 2007; Idemudia & Boehnke, 2005; Idemudia & Boehnke, 2006). Despite the effects of trauma being significant, affecting emotional/psychological or physical health, the difficulties experienced by refugees have been largely understudied. Importantly, many studies that have included refugees were limited in that challenges were commonly framed not as mental health disorders, but as problems of adaptation – problems that require social and political action rather than the intervention of mental health practitioners.

Many refugees from Zimbabwe experience multiple trauma exposures before, during flight, displacement and upon arrival in South Africa. Some may also have poor mental health as a result of these traumas. Conceptually, multiple trauma exposures at the pre and post migration periods and poor mental health may as a result, increase the likelihood of Zimbabwean refugees to report PTSD It is on this basis that the study hypothesized that predictor (independent) variables (pre-post migration stressors/traumas and poor mental health-severe depression, anxiety and insomnia, somatic complaints and social dysfunctions) will significantly affect outcomes (PTSD)

To understand human adaptation to traumatic stress exposure, the Stress Diathesis (Rabkin, 1982; Koenen, Amstadter, Nugent, 2008) and the Conservation of Resources (COR) (Hobfoll, 1991) theories are discussed briefly to help conceptualize pre and post migration trauma exposures.

According to Benight (Benight 2012; McKeever & Huff, 2003), the stress diathesis theory is used as a metatheory for understanding the interactions between the environment and the individual in predicting biopsychosocial outcomes after stress or trauma. The Diathesis-Stress model of posttraumatic stress disorder (PTSD) asserts that traumatic events function as stressors that interact with vulnerabilities such as pre-trauma individual differences and conditions which then influence the development of PTSD (McKeever & Huff, 2003). In this framework, external stressors (traumas) such as (pre and post migration difficulties) constitute risk factors that act on personal predispositions (poor mental health) to produce pathophysiological process or biopsychosocial effects (PTSD). Vulnerability factors are proposed to be causally related to symptom development and to later serve as maintenance factors. There is evidence to suggest a cumulative effect of trauma exposure on PTSD symptoms whereby multiple traumatic experiences are associated with a linear increase in symptoms of PTSD and depression (Suliman, Mkabele, Fincham, Ahmed, Stein & Seedat, (in press).

The COR theory is a stress-based theory which emphasizes that both individual and environmental factors are predictive of stress. In this case, Zimbabweans will experience extensive stress when (a) resources are threatened with a loss (b) resources are actually lost and (c) there is no sufficient gain of resources after investing them. In COR theory,

resources are defined as 'objects', personal characteristics, conditions, energies etc. Trauma, according to Hobfoll is defined by the sudden, unpredictable, loss of extensive resources. There is no doubt that extensive resources (actual) are lost when people 'vote with their feet'. These resources are defined in terms of abuse/violence/police victimization, poverty/ lacking of resources, and sexual/physical abuses.

Conceptually, having experienced multiple traumas (pre-migration and post-migration stressors) which involves a lot of actual loss of resources, may as a result, increase the likelihood of refugees reporting psychological symptoms, such as PTSD. It is on this basis that the present study hypothesizes that predictor variables (pre-migration stressors/ difficulties, post migration stressors and poor mental health) would significantly affect outcomes (PTSD) among Zimbabwean refugees in South Africa.

3 Method

The present study is part of a larger investigation concerning trauma among homeless Zimbabweans in South Africa. One hundred and twenty five homeless Zimbabweans in South Africa responded to a questionnaire with 3 sections. Section A had 16 socio-demographic items including reasons for leaving Zimbabwe. Section B contained the Pre/ Post migration difficulties checklist. It contained 22 short items measuring history of pre-migration stressors in Zimbabwe and post-migration stressors in South Africa with three domains: threat to life/family; lacking basic resources/hunger and sexual/physical abuses. The same items were used for pre and post migration stressors/difficulties. Section C contained the Resiliency Scale (26-items) (Wagnild, 1993), PTSD Scale (17-item PTSD checklist-Civilian Version) (Weathers, Huska & Keane, (1991) and the General Health Questionnaire (28 item GHQ-28) (Goldberg & Williams, 1988). Only Sections A and B and the PTSD scale are reported in this paper.

Demographic and social characteristics

The sample consisted of 125 homeless Zimbabweans in Polokwane (formerly known as Pietersburg) in Limpopo Province, South Africa. Information was collected on demographic and social characteristics and migration history. Variables included age of participants, work history, migration history, pre- and post-migration difficulties.

Approach to Sampling: There is no accurate data of undocumented Zimbabweans in South Africa and, in addition, Polokwane serves as a passage route from Zimbabwe to other parts of South Africa hence a guided convenient sampling method was used. First, there was a general call for interviews for the study, (see procedure). Second, those who responded to the fliers were then checked for certain entry criteria such as: (i) Minimum of one month of being a refugee; (ii) first-entry refugees and homeless Zimbabweans (never had anywhere to stay/living on the streets and hideouts); (iii) males or females; (iv) 18 years or older; (v) more than one month resident in South Africa; (vi) English speaking; and (vii) willing to participate. Exclusion criteria included (i) refugees who have a residence; (ii) South African Zimbabwean resident; (iii) under 18 years; (iv) unable to speak the English language; (v) unable to participate in discussions due to serious drug or alcohol oriented illness.

Procedure

The study was approved by the Institutional Review Board (IRB) of the University of California, Los Angeles, USA (GO8-06-010-02A) and the University of Limpopo, South Africa (TREC2009/65-119). Recruitment fliers were posted on public sites and facilities such as nongovernmental organization (NGO) buildings, shopping malls and other locations that were frequently visited by homeless Zimbabweans and the unemployed. Interested individuals came to a private room in a designated mall (Savannah Mall, Polokwane) where they were screened. The aims and objectives of the research were described and explained. If eligible, individuals were invited to participate in the study. Informed consent was obtained and enrolled participants were then administered a questionnaire via a face-to-face interview. No identifying information was collected. Participants were given incentives which included monetary and non-monetary assistance such as gift vouchers (R35 which is approximately $6 US) and transportation fares (R15 which is approximately $2.50) to and from Savannah Mall (Polokwane).

Screenings included 500 individuals. Two hundred and twenty of the Zimbabweans on screening had relatives (i.e., stable environments) in South Africa and as such were ineligible. Another 100 Zimbabweans were ineligible due to place of origin/migratory process not being from Zimbabwe. Fifty five of the displayed Zimbabweans were younger than the entry age criteria. Only 125 Zimbabweans met the inclusion criteria and participated in the study.

Instruments: The PTSD Scale

PTSD Checklist (Civilian Version (PCL) (Weathers *et al*, 1991)—The 17-item PTSD Checklist is a self-report measure that assesses trauma that people have in response to stressful experiences. The items correspond to DSM IV TR criteria for the disgnosis of PTSD (D*iagnostic and Statistical Manual of Mental Disorders* (4th ed, DSM-IV, American Psychiatric Association, 1994), (APA, 1994). The scale has a likert score system ranging from 1 (*not at all*) to 5 (*extremely*). The PCL-C can be used with any population. The symptoms endorced may not be specific to just one event which makes it useful when assessing survivors with multiple (premigration, during and post migration) events. The PCL-C determines whether the total severity score exceeds a given cutpoint. In this study, a half-standard deviation was used to determine a continous measure of PTSD symptoms severity of .50 and above. It has been validated in health care settings, Stein *et al.* (2000) and among older adults, Cook *et al.* (2005). This instrument has been extensively used in South Africa and has been validated for South African men and women (Peltzer, 1999, 1998; Smit *et al*, 2006). Its consistence in the present study was α = .80. The cut-off point of 50 corresponds with the validation done by Hudson, Beckford, Jackson and Philpot, (1978).

General Health Questionnaire 28 (GHQ-28)—The General Health Questionnaire (Goldberg, 1978; Goldberg & Hillier, 1979) is a psychological instrument used in measuring psychological mental health or dysfunctions. It is a self-administered screening instrument designed to detect psychiatric disorders in community settings and non-psychiatric clinical settings such as primary care or general practice. It comes in three packs GHQ 60, 28 and 12. This study used the GHQ 28. The GHQ is popular and widely used in research across

different cultural settings (Wagnild & Young, 1993; Stein *et al.* 2000; Cook *et al.* 2005; Smit *et al.* 2006). In this scale, the respondents are asked to compare their recent psychological state with their usual state. It consists of 28 items comprising four sub-scales. Scale A (questions 1–7) measures somatic complaints, scale B (questions 8–14) measures anxiety and insomnia, scale C (questions 15–21) measures social dysfunction, and scale D (questions 22–28) measures severe depression. All items have a 4 point scoring system using Likert scoring (0–1–2–3) (less than usual, no more than usual, not at all, and much more than usual respectively). Each question has four possible responses. Some of the items are also reversed and so is the scoring. In this study, scoring was done in such a way that the higher the score, the poorer the psychological symptom report. A test retest in two weeks for this study demonstrated good reliability (0.91). The GHQ-28 is a widely used instrument and validated for African cultures in Nigeria and South Africa with high reliabilities of .71 to 80 (Gureje & Obikoya,1990; Aderibigbe & Gureje,1992; Aderibigbe & Gureje, 1992; Straker *et al.* 1996 and Idemudia & Matamela, 2012).

Pre and post migration difficulties checklist—Pre/Post migration Difficulties: This is a 22-item checklist designed by the first author. The checklist measures pre and post migration difficulties in Zimbabwe and South Africa. Some of the items were adapted from the Wyatt Sexual History Questionnaire which assessed child and adult sexual abuse. The instrument was based on a 5-point Likert scale (from strongly agree to strongly disagree). A pilot study of 20 homeless Zimbabweans was carried out. Content validity was conducted using the judgment of experts at UCLA, University of Limpopo and from the review of several peer-reviewed journal articles.

For the current analyses, responses were dichotomized into 0 (original scores 1, ‘strongly disagree.’ to 3, ‘neutral’) and 1 (original scores 4, ‘agree,’ and 5, ‘strongly agree’. The items are short, easy to understand and measure negative life events in the areas of problems with human rights abuse/violence/police victimization, poverty/lacking of resources, and sexual/physical abuse. Three subscales pertaining to the three topical fields were formed. Consistency coefficients were α = .90, .90 and .89 respectively for pre-migration stress, and α = .90, α = .89, and α = .90, resp. for post-migration stress.

Statistical analysis

The relationship between possible predictor variables and PTSD was investigated using hierarchical multiple regression models reflecting refugee migration experiences. For PTSD, pre-migration and post-migration stressors were entered at step 1. At steps 2 and 3, GHQ and subscales were entered. Pre- and post-migration stressors each had four subscales: Threat to life in Zimbabwe, Poverty in Zimbabwe, Sexual and physical abuse in Zimbabwe, and Zimbabwe total stress and Threat to life in South Africa, Poverty in South Africa, Sexual and physical abuse in South Africa, and South Africa total stress. GHQ 28 measuring mental health had four subscales: Somatic complaints, Anxiety and Insomnia, Social Dysfunction and Severe depression, and Total GHQ scores. All data were evaluated for the assumptions of regression.

4 Results

Description of Sample

The sample consisted of 125 homeless Zimbabweans who recently migrated into South Africa. Fifty-three females (42.4%) and 72 males (57.6%) whose age ranged from 18–48 years with a mean age of 28.3 years (SD = 6.27) participated in the study. The mean length of stay in South Africa was 4.8 months. Among the participants, 13 (10.4%) had a primary education, 96 (76.8%) attended secondary school or its equivalent, and 16 (12.8%) had a tertiary education. Sixty eight (54.4%) were married, 48 (38.4%) were single and only 9 (7.2%) were divorced/separated in Zimbabwe, while in South Africa only 24 (19.2%) reported being married and 93 (74.4%) became single. Nine (6.4%) continued to report being divorced/separated. Major reasons as to why their marital status changed included migration stressors from Zimbabwe to South Africa and economic and political reasons. Seventy-seven (61.6%) were employed and 48 (38.4%) were unemployed prior to migrating to South Africa, whereas 38 (30.4%) reported working in a manual/unskilled job and 87 (69.6%) were unemployed in South Africa.

Reasons for going to South African included economic (50.4%), political (21.6%), and health issues (4%). All three of these were reported by 22.4%. One person each attributed their reasons for coming to South Africa as “conflict with family” and “problems with authority”.

Pre-migration Trauma events

The pre-migration stressors endorsed as causing problems in the two years before migration to South Africa included: Having trouble getting a job (80.8%), having nothing (73.6%), Hungry all the time (72.8%), did not have food (66.4%), did not have food and water (66.4%), threats to life (61.6%), death of a family member (60.0%), economic hardship (58.4%), beaten and harassed (58.4%), almost died due to threat of life (57.6%), and threats to family life member (48.0%).

In addition, the following results show the number of post-migration stressors endorsed as causing problems in the last 4 months while living in South Africa: Trouble getting a job (83.2%), no place to live (80.0%), forced to leave family members (76.8%), trouble with housing (76.8%), having nothing (75.2%), do not have food and water (68.8%), hungry all the time (68.0%), money problems (58.4%) and trouble with papers (56.8%).

Predictors of PTSD

Correlational analyses—The mean, standard deviation, and zero-order correlations revealed that the pre-migration stressor, threats to life ($r = .15$, $p < .05$), experience in Zimbabwe and post-migration stress (poverty) in South Africa ($r = .13$, $p < .05$) had a significant positive relationship with PTSD. Reports of mental health were also significantly correlated with PTSD: Anxiety and Insomnia ($r = .14$, $p < .05$), Severe depression ($r = .18$, $p < .05$), and GHQ total, ($r = .15$, $p < .05$). There were also several significant correlations between pre-migration stress (stresses in Zimbabwe) and post-migration stressors in South Africa. These results were used to construct the multivariate models.

Hierarchical multiple regression analysis—Hierarchical multiple regression analysis was used to examine the relative contributions of pre-migration difficulties in Zimbabwe and post-migration stressors in South Africa. The pre-migration stressors were prestress threat to life, prestress poverty, prestress sexabuse and prestress total. The post-migration stressors were poststress threat to life, poststress poverty, poststress sexabuse and poststress total. Outcome was post traumatic stress disorder. Entry of the predictor variables was determined on the basis of their relative strength, as revealed by the Person coefficients. Pre and post-migration variables were introduced at Step 1. Mental health measured with GHQ 28 with four subscales were introduced at subsequent steps yielding three models.

Results of the hierarchical multiple regression analysis, as presented in Table 2 show that the overall model significantly improves the ability to predict PTSD among homeless Zimbabweans, $R^2 = 0.17$, adjusted $R^2 = 0.11$, $F(6, 124) = 2.960$, $p < .01$. Thus, the entire set of variables (Poststress total, PreThreat to life, Presexabuse, PrePoverty, Postsexabuse, Postpoverty, Anxiety and Insomnia, and Social dysfunction) explained 41.2 % of the total variance on PTSD. However, main significant predictors were Postpoverty, $t(125) = 3.450$, $P < .001$; Postsexabuse, $t(125) = 2.175$, $P < .003$; Posttotal stress, $t(125) = 2.571$, $P < .001$; and Social dysfunction, $t(125) = 2.113$, $P < .003$. Of these variables, in order of strong impact predictor, was Posttotal stress ($\beta = 0.737$) followed by post poverty ($\beta = 0.701$), Postsexabuse ($\beta = 0.377$) and Social dysfunction ($\beta = 0.196$). The Dubin-Watson results (2.252) also showed that the assumption of independent errors was tenable and almost certainly met for this model.

For Model 1, post-migration stressors in South Africa including poverty and lacking basic resources ($t(125) = 2.974$, $P < .001$), Sexual and physical abuse ($t(125) = 1.947$, $P < .05$) and total stress ($t(125) = 2.202$, $P < .03$) were significant predictors of PTSD. Pre-migration stressors in Zimbabwe did not predict PTSD. However, the post migration variables in the model predicted PTSD and explained 32% of variance on PTSD ($R^2 = .10$, adjusted $R^2 = .06$; ($F = (6, 124)$, 2.383, $p < .03$).

In Model 2, Anxiety and Insomnia ($t(125) = 2.000$, $P < .04$) with poverty and lack in South Africa ($t(125) = 3.244$, $P < .01$), Sexual and physical abuse ($t(125) = 2.089$, $P < .03$ and total stress in South Africa ($t(125) = 2.411$, $P < .04$) were significant predictors of PTSD, ($R^2 = .13$, adjusted $R^2 = .08$; ($F = (7, 124)$, 2.666, $p < .01$) and in addition, the variables in the model explained 37% of variance on PTSD. Variables excluded in the model are pre-migration stress total, post-migration threat to life, Somatic complaints (GHQ A), Severe depression (GHQ D) and Total GHQ.

5 Discussion

The aims of this study were twofold: To present a description of stressors/difficulties or trauma exposures experienced by homeless Zimbabwean refugees in South Africa at the pre- and post-migration phases and whether poor mental health will predict PTSD. Findings support that Zimbabwean refugees experienced several pre-migration difficulties or traumas. In Zimbabwe, the majority of them reported multiple stressors including having trouble getting a job, having nothing, not having food to eat and being hungry all the time, not

having food and water, having threats to their life and that of family members, witnessing death of family member(s), suffering economic hardship, and being beaten and harassed. They also reported similar stressful events in South Africa, as well as being homeless and lacking residency papers. These stressors increased vulnerability and combined with psychological stress.

The multivariate data identified poor mental health and pre- and post-migration stressors as significant predictors of post-traumatic stress disorder. Although variables such as threat to life, poverty, lacking basic resources, and sexual and physical abuses experienced in Zimbabwe (pre-migration stressors) combined with other variables to predict post-traumatic stress disorder, they were not statistically significant. Variables that reached statistical significance were poverty, sexual and physical abuses and the totality of all the stresses in South Africa. In addition, anxiety and insomnia and social dysfunction predicted PTSD. The findings suggested that post-migration stressors overshadow the experiences suffered in Zimbabwe. Despite the insignificant findings of the pre-migration experiences, they cannot be ignored as it was possible that participants were experiencing delayed post-traumatic disorder.

The present study is consistent with the limited research conducted with refugees. That is, refugees experience greater levels of stress and social difficulties than other immigrants and report greater emotional distress with high levels of PTSD, anxiety and depression Silove, 1999; Schweitzer et al, 2006; DIMIA, 2003; McLennan, 1997; Steel, 2001). Two additional studies have also reported that refugees may experience trauma and mental health problems due to unpredictability, vulnerability, immediate past trauma, lack of social support, and concurrent stressful life event (Idemudia, 2007; Idemudia & Boehnke, 2005, 2006). Similar to our findings, other studies support that the emotional well-being or mental health of refugees appears to be influenced not only by pre-migration traumas and the post-migration adjustments experience, but also by the biopsychosocial setting within which the participant exists (Mollica *et al.* 1999; Mollica *et al.* 2002; Yehuda *et al.* 1995; Sinnerbrink *et al.* 1997; Steel *et al.* 2002). Importantly, our findings support the COR and diathesis-stress theories which recognize the interaction between traumatic events and vulnerabilities including loss of resources particularly jobs, money and homes to predict PTSD for Zimbabwean refugees in the South African context.

6 Conclusion

From the findings of the study, the following conclusions were made:

- Zimbabwean refugees experienced several pre-migration difficulties or stressors.
- In Zimbabwe, the majority of Zimbabwean refugees reported poverty, lacking basic resources, and threats to their life and that of family members and human rights abuses.
- In South Africa, participants were also re-experiencing similar stresses of poverty and lack, sexual and physical abuse, homelessness and disruption of family life.

- Poverty and lack in South Africa, Sexual and physical abuse and total stress in South Africa were significant predictors of PTSD.
- Poor mental health (Anxiety/insomnia and social dysfunction) significantly predicted PTSD.
- Although variables such as threat to life, poverty, lack, sexual and physical abuses experienced in Zimbabwe (pre-migration stressors) combined with other variables to predict post-traumatic stress disorder, they were not statistically significant in the model.

7 Recommendations

- There is no doubt that mental health and PTSD are complex public health and clinical issues affecting diverse populations (Roberts *et al*, 2009; Westermeyer, 1989). Refugees, including the Zimbabwean participants in this study, are commonly marginalized and excluded from main stream populations. As such, they often lack access to medical care. Attempts to provide long-term and evidenced based interventions should be made available, especially to those who develop chronic PTSD (Weems *et al*, 2010).
- Asylum seeking can be a difficult process in South Africa which further exacerbates experiences of stress and trauma (Vigneswaran, 2009). Host or receiving countries should establish humane programmes to minimize triggering factors that can predispose refugees to psychological problems. These programmes should also target the local population in developing positive attitude to refugees.

8 Limitations

An inherent problem in conducting research with refugee populations is that they are highly migratory and hard-to-reach. A few limitations are associated with this study. First, the sample size and the nature of sampling (convenience) used. This makes it difficult to generalize the findings. Second, despite having a significant population of Zimbabwean refugees, the study was conducted in only one province (Limpopo) out of the nine provinces in South Africa. Third, only Zimbabweans were studied. There are other ethnic groups, particularly those from Somalia/Eritrea, Malawi, and west Africa, who may have similar problems in South Africa and should be included in future studies.

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Table 1

Zero-Order Correlations (N = 125).

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	M	SD
1. PTSD	-	.15*	.08	.03	.12	.09	.13*	−.02	−.02.	.01	.14*	.18*	.10	.15*	52.6	12.4
2. PrestressThreat		-	.64**	.54**	.91**	.50**	.33**	..47**	.51**	.−06	.08	−.06	−.00	−.01	27.5	10.2
3. PrestressPov			-	.41**	.83**	.46**	.48**	.36**	.53**	−.02	.11	.01	−.01	.02	27.2	7.8
4. PrestrSexabuse				-	.73**	.55**	.32**	.69**	.60**	.05	.06	.01	−.04	.02	11.6	6.0
5. PrestressTotal					-	.59**	.45**	.58**	.64**	.02	.10	−.02	−.02	.00	66.4	20.2
6. PoststressThreat						-	.61**	.61**	.90**	−.02	.03	−.03	−.13	−.05	21.6	8.4
7. PoststressPov							-	.40**	.83**	.07	.13	.08	−.03	.08	27.4	7.8
8 Postsressexabuse								-	.75**	.11*	.06	.00	−.08	.02	10.8	5.6
9. PoststressTotal									-	.05	.09	.01	−.10	.01	59.9	18.4
10. GHQA+										-	.43**	.43**	.30**	.74**	16.4	3.01
11. GHQB+											-	.38**	.32**	.72**	16.6	2.86
12. GHQC+												-	.33**	.75**	15.5	3.26
13. GHQD+													-	.69**	16.5	3.26
14. GHQTotal															65.2	9.02

* p < .05;

** p < .001.

+GHQ A (Somatic Complaints); GHQ B (Anxiety and Insomnia), GHQ C (Social Dysfunction), GHQ D (Severe Depression, GHQ Total (total stress score).

Table 2

Summary of Hierarchical Regression Analysis for Variables Predicting Post-Traumatic Stress Disorder (N = 125)

	Model 1			Model 2			Model 3		
Variable	***B***	***SE B***	***β***	***B***	***SE B***	***β***	***B***	***SE B***	***β***
Prestress Poverty	.111	.199	.069	.096	.196	.060	.089	.193	.055
Prestress Sex Abuse	−.066	.269	−.032	.075	.265	−.037	−1.08	.262	−.053
PostPoverty	.968	.325	.614**	.1.051	.324	.667**	1.105	.320	.701***
PostSex abuse	.763	.392	.346*	.810	.388	.368*	.831	.382	.377*
Poststress Total	.434	.197	.644**	.471	.195	.700**	.496	.193	.737***
Constant				42.45	7.201	-	36.12	7.702	-
Prestress Threat to life				.192	.153	.158	.226	.151	.186
GHQ B (Anxty & Insomnia)				.755	.377	.174*	.431	.402	.100
GHQ C (Social Dysfunctn							.744	.352	.196*
R.	0.329			0.371			.412		
R^2	0.108			0.138			.170		
Change R^2	0.108			0.030			.032		
F	2.383*			2.666**			2.960***		

* $p < .05$.

** $p < .01$.

*** p < .001. (Durbin Watson = 2.252)