

**The Role of Meaning-Making in Posttraumatic Growth among Eritrean Refugees with
Posttraumatic Stress Disorder**

A Dissertation Presented for the
Doctor of Philosophy
Degree
The University of Tennessee, Knoxville

Yacob Tewolde Tekie
August 2018

Dedication

I dedicate this project to all refugees, asylum seekers, and immigrants who have been victims of injustice, political dictatorship, war, terrorism, and displaced from their home and separated from their beloved families. I specifically want to thank the Eritrean refugees who took time to participate in this study and share their stories of their struggles of migration and the impact of this research with me.

Acknowledgment

I would like to thank my graduate advisor, mentor, and extraordinary educator Dr. Brent Mallinckrodt, Dean for College of Arts and Sciences at Western Washington University. He has served as a mentor and an excellent example of what it is to be a scientist-practitioner-advocate. His tireless encouragement and support throughout my graduate training made my dreams a reality!

I would like to thank my dissertation co-chair, Dr. Gina Owens for stepping and tirelessly providing me the guidance and support to successfully complete my dissertation. Also, I would like to extend my heartfelt gratitude to my dissertation committee Dr. Joseph Miles and Dr. Jennifer Ann Morrow, whose feedback and support have been beyond measures.

Many thanks are owed to my colleagues and graduate students at the Counseling Program, University of Tennessee who offered so much support to during the process of this research and my entire graduate school years. They have been consistently supportive and always there with advice or just a shoulder to lean on. They are Nicole Cherry, Elizabeth Thomas, Joel Muller, Funmi Obiri. It would be difficult to survive graduate school without the constant support and stress releasing laughter of my stellar cohort, Joel Muller, Shelby Reyes, Chandra Feltman, Mathew Seitz, and Allan Donahue.

I believe in support and I never met anyone who is an excellent model of support system than my beloved family. Even though they are too many to list in this page, each one of them offered they shoulders to lean on, and stretched their hands to hold on in times of struggle. Thank you all for your invaluable support, encouragement and believing in me and my dreams.

Finally, I would like to extend my gratitude to all Eritrean refugees, asylees and immigrants who took their time to complete the surveys and participate in my studies. Without your support, this study wouldn't be a success. Thank you!

Abstract

The study examined the moderating role of meaning made, meaning making and social support on the relationship between negative life events and posttraumatic stress disorder (PTSD), anxiety and depression as well as the facilitating role of these moderating variables for posttraumatic growth (PTG). Eritrean refugees ($N = 135$) who were residing in Europe were recruited. The results showed that post-migration living difficulties significantly related with negative outcomes. In addition, the results showed that social support moderated the relationship between the number of traumatic life events and anxiety symptoms. However, meaning made and social support were not significant moderators on the relationship between number of traumatic life events and PTSD and depression, as well as the relationship between negative outcomes and PTG. Clinical implications and the next step for future research are discussed.

Keywords: refugee, traumatic life events, post-migration living difficulties, Posttraumatic stress disorder, depression, anxiety, meaning made, social support, posttraumatic growth

Table of Contents

Chapter 1 Introduction	1
Mental Health among Refugees and Asylum seekers	2
Resilience and Vulnerability among Refugees.....	3
Meaning-Making Model.....	5
Social Support.....	7
Post-traumatic Growth (PTG)	8
The Present Study	9
Chapter 2 Method	11
Participants	11
Outcome Measures	11
Procedures	18
Chapter 3 Results	20
Data screening and preparation	20
Preliminary analysis	20
Traumatic events and mental health	21
Tests of Hypotheses.....	23
Chapter 4 Discussion	28
Limitation and Future Direction	33
Conclusion	35
List of Reference	37
Appendix.....	54
Vita.....	65

List of Tables

Table 1 Descriptive table of participant characteristics	55
Table 2 Mean differences by legal residence, military history, asylum status, Lampedusa survivors, exposure to war/conflict, sex	56
Table 3 Mean, Standard Deviations, and intercorrelations of the subscales of the variables of interest.....	57
Table 4 Summary of Moderation analysis: Model 1 meaning made and social support as moderation variables	58
Table 5 Conditional effect of X on Y at values of Moderators: Model 1	58
Table 6 Summary of moderation analysis: Model 1 meaning made and social support as moderating variables	59
Table 7 Conditional effects of X on Y at values of Moderators: Model 1	59
Table 8 Summary of Moderation analysis: Model 1 meaning-made and social support as moderating variables	60
Table 9 Conditional effect of X on Y at values of Moderators: Model 1	60
Table 10 Summary of Moderation analysis: Model 1 social support and meaning in life as moderating variables.	61
Table 11 Conditional effect of X on Y at values of Moderators: Model 1	61

List of Figures

Figure 1 Moderated Model testing hypothesis that meaning made and social support moderates the relationship between negative life events, posttraumatic stress disorder, depression, anxiety and posttraumatic growth.....	62
Figure 2 Moderated Model: Social support (SPS) moderating the relationship between the number of traumatic life events (LEC) and anxiety.....	62
Figure 3 Percentage of participants reporting post-migration living difficulties.....	63
Figure 4 Percentage of participants reporting traumatic life events	64

Chapter 1

Introduction

Over 65.3 million refugees remain displaced internally (within their home country) and externally (outside their home country) around the world, with more than 21.3 million identified as refugees and asylum seekers (United Nations High Commissioner for Refugees, UNHCR, 2016). The term *refugee* is used to define a person who has been forced to leave and live outside his/her home country of nationality due to fear, threat, violence or persecution and war, for reasons of race, religion, nationality, ethnicity, or membership in particular social and political groups (Toole & Waldman, 1993). Refugees are protected by several international conventions (UNHCR, 2011). Unfortunately, the potential traumas do not end when the refugee escapes from his/her country. Many refugees live in unstable resettlement camps or other insecure settings, in which they are exposed to multiple traumatic events (Knipsheer, Sleijpen, Mooren, Heide, & Van der Aa, 2015). These traumas often start in their home countries and continue in the resettlement host country, including imprisonment in concentration camps, torture, multiple rapes, lack of social support systems and education, and racism and discrimination (Teodorescu, Heir, Hauff, Wentzel-Larsen, & Lien, 2012; UNHCR, 2014). As a result, many years after their resettlement in another country, many refugees suffer from numerous psychological and emotional problems, including Posttraumatic Stress Disorder (PTSD) (Carre et al., 2011; Hinton Chhean, Pich, Pollack, Orr, & Pitman, 2006; Kaltman, Green, Mete, Shara, & Miranda, 2010).

In the second quarter of 2014 (April, May, and June), the UNHCR reported that Eritrea was the second highest refugee producer following Syria, with over 11,000 asylum seekers in the world. The UNHCR report further indicates that in terms of the number of asylum seekers in industrialized countries Eritrea ranks third, following Syria and Iraq. Although Eritreans lodged

asylum applications in 34 out of the 44 industrialized countries, the distribution of claims is not spread equally across all countries. Roughly three quarters of all Eritrean claims were submitted in just four European countries: Sweden (4,200), Germany (3,800), the Netherlands (3,500), and Switzerland (2,200). Despite these high numbers, no empirical studies of Eritrean refugees that documented their pre-migration, migration, and post-migration experiences could be found. The current study will serve as an opportunity to evaluate the prevalence of PTSD, depression, and anxiety among these Eritrean refugees. Furthermore, because anecdotally the Eritrean people are described as hardy people with strong social networks and support systems (Chernet, Pfeiffer, Probst-Hensch, & Labhardt, 2016), the current study will explore protective factors and coping resources, including meaning making and social support as buffers against developing PTSD and other negative psychological outcomes.

Mental Health among Refugees and Asylum seekers

Although PTSD is a common effect of serious trauma in a wide range of circumstances, what makes traumatized refugees different from many other people suffering from PTSD is that their traumas are usually prolonged, repeated, and consciously caused by another human being; and further, they have been forced to live in exile (Brune et al., 2002). Exile exposes refugees to more difficult post-migration living conditions, including acculturation stress, racism and discrimination, as well as language and communication problems (Nickerson, Steel, Bryant, Brooks, & Silove, 2011; Schweitzer, Brough, Vromans, & Asic-Kobe, 2011; Steel et al., 2011). The constant exposure to different traumatic life events, including pre-migration, migration, and post-migration experiences, complicates the course, severity, and treatment of individuals with PTSD. However, in refugee populations, other comorbid psychological problems are common, such as persistent somatoform pain disorder and dissociative disorder (Van Ommeren et al.,

2001), depression (Bleoch, Koslowsky, Dolev, & Lerer, 1997), generalized anxiety disorder (GAD), and panic disorders (Hinton, Ba, Peou, & Um, 2000; Thapa, Van Ommeren, Sharma, de Jong & Hauff, 2003; Van Ommeren et al., 2001). For example, a study of Somali refugees in the UK found that 80% of individuals with PTSD also had anxiety or non-psychotic depression (Bhui et al., 2006).

Numerous researchers have found that mental disorders and distress are higher in refugees and immigrants compared to non-immigrants (e.g., Breslau et al., 2007; Iglesias et al., 2003; Porter & Haslam, 2005). The prevalence of PTSD in individuals who are exposed to different traumatic events varies depending on the magnitude of the exposure, and characteristics of the individual, culture, country of origin, support system and other sociocultural factors. For example, prevalence of PTSD has ranged from less than 5% in a sample of resettled Sudanese refugees (Schweitzer, Melville, Still, & Lacherez, 2006), to 62% for Congolese refugees (Ssenyonga, Owens, & Olema, 2013), and 71% for Syrian refugees (Alpak et al., 2015). However, studies on tortured refugees reported much higher prevalence of current and lifetime PTSD, for example, 69-92% among refugee torture victims in a sample from six different nations (Moisander & Edston, 2003), 91% among exiled survivors of torture (Wenzel et al., 2000), and 90% among Vietnamese ex-political detainees (Mollica et al., 1998). Similar studies of refugees from African countries reported PTSD prevalence rates ranging from 4% to 49% (Bhui et al., 2006; Gerritsen et al., 2006). Even though the prevalence of PTSD among refugees and survivors of torture has been inconsistent, it remains high.

Resilience and Vulnerability among Refugees

The variability in the rates of PTSD and other symptoms, such as depression and anxiety is thought to be due in part to pre-trauma and post-trauma vulnerability. Both pre- and post-

trauma vulnerability factors increase the intensity of symptoms in individuals who go through traumatic life experiences (Bonanno, 2004; Bonanno et al., 2011). A meta-analysis of risk factors for PTSD in trauma-exposed adults found that pre-trauma variables such as gender (being female), lack of education, and other previous trauma; were significantly related to PTSD (Hooberman, Rosenfeld, Rasmussen, & Keller, 2010). Further, the study reported that post-trauma factors such as lack of social support and life stress were also significantly related to PTSD. These risk factors increase the likelihood of experiencing or re-experiencing psychological distress (Jamil, Ventimiglia, Mahmoud, & Arnetz, 2009). Refugees are at a substantially increased risk of psychological distress mainly because of their exposure to pre-migration, migration and post-migration traumatic life events (Jamil et al). Nevertheless, not all individuals exposed to traumatic life events develop psychological distress, PTSD and other symptoms (Hog, Austin, & Pollack, 2007). Protective factors such as resilience, social support and meaning in life help individuals against developing PTSD (Duan, Guo, & Gan, 2015).

Resilience is a broadly defined dynamic process where individuals show positive adaptation despite experiencing significantly adverse life events (Steger & Park, 2012). Steger and Park described resilience as a trajectory, defined as “a relatively flat level of functioning over time” (p. 177) rather than a static variable. The authors argued that resilient people experience temporarily elevated distress when an adverse event happens but their distress declines over time reflecting their normal variation in mood, distress, and functioning. Refugees are a vulnerable population who may be victims of multiple traumatic events and face many migration living difficulties prior to arriving in the host country. They are often displaced and come from different regions where different psychosocial and political problems are prevalent, such as long periods of conflict/war, migration, lack of resources, or lack of social support.

Refugee vulnerability includes a combination of internal factors including being female, low sense of safety, psychiatric history, negative self-appraisal, as well as external characteristics, such as low educational level, immigration status, previous trauma, trauma severity, level of social support (Ahmed, 2007). Resilience among refugees can be evaluated based on these internal and external factors (Ahmed, 2007).

Previous studies predominantly focused on factors that make refugees more vulnerable for developing PTSD and other psychological disorders. Nonetheless, limited research has studied resilience as a potential protective factor among refugees (e.g., Arnetz, Rofa, Arnetz, Ventimiglia, & Jemil, 2013; Bonanno & Mancini, 2012; Ssenyonga, Owens, & Olema, 2013). In a study of Iraqi and non-Iraqi Arab immigrants, resilience was an inverse predictor of psychological distress (Arnetz et al.). Consistent with previous studies (e.g., Klasen et al., 2010), resilience and posttraumatic growth, were protective factors against PTSD in a sample of Congolese refugees (Ssenyonga et al.). Thus, to capture the post-trauma factors experienced by refugees, the current study will focus on post-migration living difficulties related to PTSD.

Meaning-Making Model

Park's meaning-based theory of trauma argues that distress due to traumatic life events results from the violation of an individual's *global beliefs* and *goals* (Park & Folkman, 1997). Park and Folkman (1997) proposed a model of meaning making to understand this process. *Meaning-making* refers to working to regain global life meaning when it has been disrupted by a major traumatic life event (Park, 2010; Park & Ai, 2006). Meaning making involves understanding and reinterpreting the traumatic situation in a different way to rearrange one's core beliefs and goals, which were once violated, to regain control again (Park, 2010). When individuals encounter traumatic life events, they appraise the meaning of the event, by asking

“What has happened?” (Park & Ai, 2006, p. 392). The extent to which this appraised meaning is discrepant from the global meaning determines how much discomfort or distress one would experience, which “reflects loss of sense of control, predictability, or comprehensibility of the world” (Park & Ai, 2006, p. 392). Those who experience discrepancy between global meaning and appraised meaning after a traumatic life event may experience more distress as a result (Davis, Wortman, Lehman, & Silver, 2000). Similarly, Steger and Park (2012) argue that the meaning-making model could explain the discrepancy between those who experience posttraumatic trajectories and those who do not. Thus, when resilient people experience traumatic life events that violate their global beliefs, their global meaning-making system would readily accommodate the new events, causing little distress. On the other hand, if their meaning-making system is not constructed adaptively, posttraumatic distress should be evident.

Meaning-based theories of trauma have investigated the meaning-making model with the military veteran population and found meaning-making to be a protective factor against developing posttraumatic stress as well as experiencing posttraumatic growth (Park & Ai, 2006). So far, few studies have explored the role of meaning-making as a protective factor against developing PTSD among refugees and no study has yet explored directly the role of meaning-making against developing PTSD as well as facilitating posttraumatic growth among refugees. Thus, the current study will use a measure of meaning made (Bonanno, Brewin, Kaniasty, & La Greca, 2010; Holland, Currier, Coleman, & Neimeyer, 2010; Park & Folkman, 1997) to understand trauma development in refugees who are residing currently in Europe. Furthermore, the current study will explore the role of meaning made as a protective factor against developing PTSD as well as a facilitator of PTG among Eritrean refugees.

Social Support

In addition to the personal qualities of optimism, adaptability, hopes, refocusing on the future, sense of control, active coping rather than victimization, and perseverance, external social support systems are prominent in the construction of resilience among refugees (Hutchinson, 2012). For example, a qualitative study among Bosnian refugee women indicated that support from their spouses, children and family played a key role in developing resilience (Hutchinson, 2012, Hutchinson & Dorsett, 2012). Social support could be considered as a foundation of resilience and meaning-making among refugees. In different studies, the theoretical formulation of social support has been documented either as interactive (stress buffer) or additive (the main effect model) (Kaniasty, 2005). In times of adversity, a person's sense of meaning in life emerges from interaction and identification with family and cultural systems (Chung, Bemak, & Wong, 2000; Miller et al., 2002).

It has been widely reported that the refugee experience disrupts family and cultural systems and separation from the family and ethnic community when they get displaced from their homes or countries. This is particularly so in the African context where there are large cultural differences in mainstream European cultures that can challenge the sense of identity and belonging. The purpose or meaning of life is often built on a broad sense of identity and belongingness. Trauma and the stressors of living in exile change the way of thinking not only of the past, but also of the present and the future. Traumatic experiences often challenge a person's belief in the world (Mollica, Sarajlic, Chernoff, & Lavelle; Silove, 1999). It has been argued that the inability to regain this sense of identity, agency and meaning in life can lead to feelings of aimlessness, helplessness and powerlessness (Silove, 1999). Such feelings can manifest in poor social functioning and include symptoms of apathy, low energy, social

withdrawal and impairment of daily roles such as parenting (Crossley, 2000; Mollica, McInnes, Poole, & Tor, 1998). Conceptualizing the mental health of refugees requires the recognition of the role of both pre-migration trauma and post-migration stressors and that psychological distress can manifest in various ways depending on the biopsychosocial context.

Post-traumatic Growth (PTG)

In trauma studies, one of the common reasons documented as a cause of PTSD is threatened individuals' core beliefs about the world. In the process of modifying their assumptions about the world, individuals may reexamine many aspects of their lives, which may help to identify personal strengths, relationships with others, gratitude, spirituality, and new possibilities for growth (Tedeschi & Calhoun, 1996). In spite of being exposed to an overwhelming traumatic event, some people report positive personal changes related to the highly negative event, which is often referred to as *posttraumatic growth* (PTG) (Tedeschi & Calhoun, 1995, 2004; Teodorescu et al., 2012). Posttraumatic growth is a potential outcome of the effort to redefine or modify these core beliefs about the world (Calhoun & Tedeschi, 2006).

Supporting evidence indicates strong correlates and protective factors of trauma, such as meaning-making, social support (Linley & Joseph, 2004), coping strategies (mainly, emotion-focused coping), resilience, strong belief systems (Brune et al., 2002), hope, and affect regulation. The current study will address meaning made and social support as protective factors against PTSD symptom severity and facilitators of PTG. For example, in a U.S. veteran sample who were screened positive for PTSD, over two-third of the sample reported at least moderate PTG in relation to their traumatic event (Tsai, El-Gabalawy, Sledge, Southwick, & Pietrzak, 2015). Further, the authors reported that individuals' greater social relationship and purpose in life were independently associated with PTG. In a similar study, combat exposure,

psychopathology, psychosocial functioning, social support and PTG were assessed among Operations Enduring Freedom and Iraqi Freedom U.S. veterans (Pietrzak et al., 2010). Among other findings, the authors reported that individuals with high PTSD symptoms, higher perceptions of support and perseverance were significantly related to PTG. In another study conducted among traumatized outpatient refugee population, about one-third of the patients reported posttraumatic growth related to the traumatic life events (Teodorescu et al., 2012). The study further showed that posttraumatic growth was positively associated to quality of life and negatively related to post-migration stressors.

The Present Study

Previous studies reported that making meaning in traumatic life events plays a significant role in protecting combat veterans from suffering from PTSD and in facilitating PTG as a result of exposure to traumatic life events (Davis, Nolen-Hoeksema, & Larson, 1998). However, no previous study could be found that has addressed the role of meaning-making as a protective factor against developing traumatic reactions, and as a facilitative factor of posttraumatic growth among refugees. Therefore, the purpose of the present study is to investigate the set of relationships shown in Figure 1 among Eritrean refugees. The basic relationship of interest is shown along the center-line of the figure. Traumatic life experiences of refugees (a) are hypothesized to relate to (b) PTSD symptoms, (c) anxiety, and (d) depression; which in turn lead to (e) post-traumatic growth. This three-stage model of causal links are hypothesized to be influenced by two moderator variables, (f) social support and (g) meaning made. The four moderator paths are labeled M_1 and M_2 in Figure 1. The study will examine the role of meaning made and social support as protective factors against developing posttraumatic stress disorder and negative psychological outcomes, namely, depression and anxiety.

The study will test these specific hypotheses:

1. Negative life events (post-migration living difficulties) will be significantly associated with symptom severity of all three negative outcomes (b) PTSD, (c) anxiety, and (d) depression.
2. The link between negative events and PTSD symptoms ($a \rightarrow b$) will be significantly buffered by M_1 social support and M_2 meaning made.
3. The link between traumatic events and anxiety ($a \rightarrow c$) will be significantly buffered by M_1 social support and M_2 meaning made.
4. The link between traumatic events and depression ($a \rightarrow d$) will be significantly buffered by M_1 social support and M_2 meaning made.
5. The likelihood that PTSD symptoms eventually lead to posttraumatic growth ($b \rightarrow e$) will be moderated by the protective factors of M_1 social support and M_2 meaning made.

Chapter 2

Method

Participants

Eritrean refugees ($N = 135$) currently residing in Europe were recruited through paper and pencil as well as online solicitations. All participants were 18 years old and older ($M = 30.14$, $SD = 6.97$, range between 18 - 56) and the majority were male ($n = 95$); 10 participants did not identify their gender. In addition, 79 participants reported that they were legal residents, while 17 were not legal residents. With regard to military history, 67 indicated as veteran status, while 31 reported no military history. Further, 16 participants reported that they had been exposed to war or conflict while the majority ($n = 77$) did not. Moreover, the mean years of residence in current country was 3.60 ($SD = 2.28$, range 1-9).

Outcome Measures

Life Events Checklist for DSM-5: (LEC-5; Weathers et al., 2013) is a self-report measure designed to screen for potentially traumatic events in a respondent's lifetime. The LEC-5 is a revised version of LEC (which had been based on the DSM-IV) with 17 items with 4 response options measuring life events that potentially result in PTSD or distress. Respondents' check each item as *Happened to me*, *Witnessed it*, *Learned about it*, *Part of my job*, *Not sure*, *Doesn't apply*. Sample items include, *Assault with a weapon (for example being shot, stabbed, threatened with a knife, gun, bomb)*, and *combat or exposure to war-zone (in the military or as a civilian)*. The LEC was computed using dichotomized items ("happened to me and/or witnessed" versus all other response categories) (APA, 2013; Fazel, Doll, & Stein, 2009; Gray, Litz, Hsu, & Lombardo, 2004). In a sample of undergraduate students (Gray, et al., 2004), the LEC was significantly related with PTSD as measured by the PTSD Checklist-Civilian ($r = -.48$)

and in the same study with a veteran sample, the LEC was significantly associated with depression ($r = -.32$) as measured by the Beck Depression Inventory, Anxiety ($r = -.27$) as measured by Beck Anxiety Inventory, and the Clinician Administered PTSD Scale ($r = -.39$). In the current study, using a dichotomous response, Cronbach's alpha for the LEC was .90.

PTSD Checklist for DSM-5 (PCL-5). Posttraumatic stress disorder symptoms was assessed using the PTSD Checklist DSM-5 (PCL-5; Weathers, et al., 2013), which includes 20 self-report items, each following this stem: "In the past month, how much were you bothered by: ____." An example item is "Repeated, disturbing, and unwanted memories of the stressful experience?" Each item is rated on a scale from 0 (*not at all*), 1 (*a little bit*), 2 (*moderately*), 3 (*quite a bit*) to 4 (*extremely*), and total PTSD symptom severity scores will be calculated by summing these ratings. Participants were asked to indicate the degree to which they were distressed by each of the symptoms of PTSD listed in the fifth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5; 2013). The new PCL-5 has not been tested for its psychometric properties; however, in a sample of veterans from multiple conflicts, the total PCL-5 showed high internal consistency ($r = .95$) (Weathers et al). In addition, the PCL-5 showed good convergent validity ($r = .75$) with the Clinician Administered PTSD Scale-IV (Blevins, Weathers, Davis, Witte, & Domino, 2015). The National Center for PTSD has suggested an optimal cut-off point of 33 to make a provisional diagnosis of PTSD. The current study reported a Cronbach's alpha of .93 for the full scale, and .86, .72, .82, and .84 for re-experiencing, avoidance, negative alterations in cognition and mood, and alterations in arousal and reactivity subscales, respectively.

Post Migration Living Difficulties Scale (PMLD) (Sinnerbrink, Silove, Field, Steel, & Manicavasagar, 1997) was utilized to assess current stressors and difficulties faced by the study

participants since they migrated to Europe. The PMLD has a total of 25 items and yields a total score for the five subscale scores, which measure (a) financial (e.g., Being unable to find work); (b) health (e.g., Poor access to medical care); (c) family and relational (e.g., Separation from family); (d) discrimination (e.g., discrimination); and (e) immigration stressors (e.g., Fears of being sent home). Participants respond on a five-point scale ranging from 0 (*No problem*), 1 (*A little Problem*), 2 (*Somewhat of a problem*), 3 (*A fairly big problem*), to 4 (*Serious problem*). A high total score indicates a high amount of post-migration stress. This questionnaire has been previously used among African refugee populations; however, no reliability or validity of the measure was reported (Schweitzer et al., 2006). In addition, PMLD was significantly related with PTSD as measured by the PCL-5 ($r = .25$), depression as measured by HSCL-25 ($r = .31$), and the Integration of Stressful Life Experience ($r = -.27$). A Cronbach's alpha of .90 was achieved for the current study.

Hopkins Symptom Checklist-25 (HSCL-25; Mollica et al., 1991) was developed to identify symptoms of anxiety and depression. The shortened version was derived from the 90-item questionnaire (Derogatis, Lipman, Rickels, Uhlenhuth, & Covi, 1974). It has 25 items divided into two parts. Part I has 10 items for the Anxiety subscale (e.g., *I get very frightened or have panic feelings for apparently no reason at all*) and Part II has 15 items for the Depression subscale (e.g., *I have lost interest in things*). Each item is rated on a four-point scale of 1 (*Not at all*), 2 (*A little*), 3 (*Quite a bit*), 4 (*Extremely*), in the period of reference of the past week. Scoring for the full scale is made based on the average of the 25 items. Similarly, individual subscale scores are calculated based on the average of the total subscale items. The total score is highly correlated with severe emotional distress of unspecified diagnosis, and depression score is correlated with major depression as defined by the Diagnostic and Statistical Manual of Mental

Disorders of the American Psychiatric Association, 4th edition (DSM-IV, APA, 1994). A 1.75 cut-off point has been recommended as a criterion based on different diagnostic interviews around the world (Mollica, Wyshak, De Marneffe, Khuon, & Lavelle, 1987), which means that an individual who score greater or equal to the cut-off score has a probable depression and/or anxiety. In a sample of Kosovo war affected families, a Cronbach's alpha of .83-.93 for the anxiety subscale, and .90-.93 for the depression subscale were reported (Schick, Morina, Klaghofer, Schnyder, & Müller, 2013). The HSCL has been translated into different languages and has been used in different cultural contexts (Mollica et al., 1987). Internal consistency of alpha .92, .89 and .87 was achieved for the full scale, depression and anxiety subscales, respectively.

Meaning in Life Questionnaire (MLQ; Steger, Frazier, Oishi, & Kaler, 2006). The 10 items of the MLQ are designed to assess two dimensions of meaning. The *Presence of Meaning* dimension (MLQ-P) contains five items that measure the degree to which a person feels they have achieved meaning in life (e.g., "My life has a clear sense of purpose"). The five-item *Search for Meaning* dimension (MLQ-S) assesses the extent to which an individual is continuing to attempt understand the meaning of one's life (e.g., "I am searching for meaning in life"). Ratings are made on a 7-point scale indicating "*Absolutely untrue*" (1), "*mostly untrue*" (2), "*Somewhat untrue*" (3), "*Can't say True or False*" (4), "*Somewhat true*" (5), "*mostly true*" (6), "*Absolutely true*" (7), and scores are reported as means. Internal reliability for both subscales in past research was .86 (MLQ-P) and .87 (MLQ-S) (Steger et al., 2006). In an undergraduate student sample MLQ significantly predicted PTSD ($r = -.25$) and depression ($r = -.30$) (Lancaster & Carlson, 2015). In addition, in a study of Chinese international students, MLQ-P significantly related with PTG ($r = -.68$) (Pan, 2015). In a different study with a veteran sample, MLQ-P was

significantly related to PTSD ($r = -.47$) as measured by Posttraumatic Stress Disorder Checklist (PCL-S) and depression ($r = -.61$) as measured by the Depression Subscale of the Depression Anxiety Stress Scale-21 (Blackburn & Owens, 2014). Cronbach's alphas of .81 and .89 were found for MLQ-P and MLQ-S, respectively.

Integration of Stressful Life Experiences Scale (ISLES; Holland, Currier, Coleman, & Neimeyer, 2010). The ISLES has 16 items with two factors (i.e., *Footing in the world* and *Comprehensibility*) assessing meaning-making after experiencing stressful life stressors (Holland et al., 2010, 2014). The Footing in the World subscale (ISLES-FW) has 11 items (e.g., Since this event, the world seems like a confusing and scary place), and the Comprehensibility (ISLES-C) has five items (e.g., I have made sense of this event). Participants respond on a five-point Likert scale, from 1 (*Strongly agree*), 2 (*Agree*), 3 (*Neither agree nor disagree*) 4 (*Disagree*), to 5 (*Strongly disagree*), with regard to the most stressful life event they experienced in the past two years. In two samples of young adults who (a) experienced a variety of stressors, and (b) experienced a recent bereavement, reported Cronbach's alphas were .93 - .94, .80-.85, .92- .94, for the footing in the world, comprehensibility, and full scale, respectively. Test-retest reliability, 3-months after the initial assessment was $r = .57-.59$ for footing in the world subscale, $r = .48-.57$ for comprehensibility, and $r = .57$ for the full scale (Holland et al). Holland et al. reported that the total scores of the ISLES significantly related with more positive world assumptions about benevolence ($r = .19$) and self-worth ($r = .26$) as measured by the World Assumptions Scale in a sample of young adults who experienced a variety of stressors. In addition, the ISLES was significantly related to depression ($r = -.53$) as measured by the Patient Health Questionnaire and PTSD ($r = -.69$) as measured by the PTSD Checklist-Civilian version in a sample of Iraq and Afghanistan U.S. veterans (Currier, Holland, Rojas-Flores, Herrera, &

Foy, 2015). In the current study, Cronbach's alphas of .92, .92. and .77 were reported for the full scale, ISLES-FW and ISLES-C, respectively.

Social Provisions Scale (SPS, Cutrona & Russell, 1987) is a 24-item self-administered measure of six perceived support functions, designed for use in the general population (Cutrona & Russell, 1987). Each subscale has four items rated on a three-point strength of dis/agreement response format: 1 (*Strongly agree*), 2 (*Agree*), 3 (*disagree*) 4 (*Strongly disagree*). Sample items for the subscales are as follows: Reassurance of worth (e.g., There are people who admire my talents and abilities); Guidance (e.g., There is a trustworthy person I could turn to for advice if I were having problems); Reliable alliance (e.g., There are people I can count on in an emergency); Opportunity for nurturance (e.g., I feel personally responsible for the well-being of another person); Attachment (e.g., I have close relationships that provide me with a sense of emotional security and well-being); and Social integration (e.g., I feel a part of a group of people who share my attitudes and beliefs). After reverse coding of the negatively worded items, subscale scores are obtained by summing up responses to individual item scores. Similarly, the SPS total score is calculated by summing all items after appropriate reverse coding. Based on a diverse sample, including students, nurses, and public school teachers, the SPS showed a combined Cronbach's alpha of .92 (Cutrona & Russel, 1987). The internal consistency of the subscales ranged from .65 to .76. The convergent and divergent validity of the SPS was provided based on 242 college students comparing with measures of social desirability, psychological distress, personality factors, and social skills. The results showed that SPS scores were lower than the correlations between SPS scores and other validity social support measures, including satisfaction with support, number of supportive persons, number of helping behaviors, and attitudes toward support (Cutrona & Russell, 1987). In a community sample, the SPS was

significantly associated with depression ($r = -.41$) as measured by the Center for Epidemiologic Studies Depression Scale (CES-D) (Cutrona & Russell, 1987). A Cronbach's alpha of .81 was reported in the current study.

Posttraumatic Growth Inventory (PTGI, Tedeschi & Calhoun, 1996). The 21-item PTGI assesses five domains of potential growth after stressful events (i.e., *Relating to Others*, *Personal Strength*, *New Possibilities*, *Spiritual Change*, and *Appreciation of Life*) that were identified by exploratory factor analysis with a sample of American university students (Tedeschi & Calhoun, 1996) and validated by confirmatory factor analyses with another university sample (e.g., Taku, Cann, Calhoun, & Tedeschi, 2008). Participants indicate the degree to which they experienced each of 21 changes as a result of the most stressful life event that they had identified on a 6-point scale, from 0 (*Not at all*), 1 (*Very small degree*), 3 (*Small degree*), 4 (*Moderated degree*), 5 (*Great degree*), 6 (*Very great degree*). In the original sample of university students, internal consistency of the PTGI was reported as satisfactory $\alpha = .90$ for the total scale, $\alpha = .85$ relating to others, $\alpha = .84$ new possibilities, $\alpha = .72$ personal strength, $\alpha = .85$ spiritual change, and $\alpha = .67$ appreciation for life, and test-retest reliability was .71 over a two-month period (Tedeschi & Calhoun, 1996). However, in a different sample, Chinese cancer survivors, using a translated PTG, a Cronbach's alpha of .76, .79, .63, .37, .63 for the subscales of Relating to others, New possibilities, Personal strength, Spiritual change, and Appreciation for Life (Ho, Chan, & Ho, 2004). The authors also reported that the original factor structure of the PTGI did not apply to the cancer patients. Thus, they recommended dichotomous factors for PTGI and found $\alpha = .70$ (Interpersonal) and $\alpha = .80$ (Intrapersonal). In a sample of undergraduate students (Triplett, Tedeschi, Cann, Calhoun, & Reeve, 2011), PTG was significantly related with Meaning in Life-Presence ($r = .27$). In addition, in a study of Iraqi

students who experienced war related adversities, PTG was significantly related to PTSD ($r = .22$) as measured by the Traumatic Stress Symptom Checklist (Magruder, Klic, & Koryurek, 2015). An internal consistency of .90 was found for the PTGI in the current study.

Demographic Questionnaire: Demographic information about the participants were collected using a questionnaire developed by the researcher which asked about (1) gender, (2) age, (3) education, (4) place of residence, (5) duration of residence in the current European country, (6) marital status, (7) asylum status, (8) exposure to war/conflict, (9) military history, (10) legal status, (11) Lampedusa survivors.

Procedures

The current study employed a number of measures standardized in the Western culture and administered in English. Using translation and back translation method, all the measures were translated to Tigrigna, an official language of Eritrea (Brislin, 1970). Five English-Tigrigna (E-T) bilinguals, educational level ranging from Masters to Ph.D., as well as two English monolinguals, with a Masters and PhD were involved in translation and back translation of the questionnaires. The translation and back-translation procedures were performed in four steps (Brislin, 1970). In the first step, an English-Tigrigna bilingual translated the questionnaires from English to Tigrigna. In step 2, another E-T bilingual checked the grammatical style and comprehensibility of the translated measures. Step 3 was a blind back-translation and 3 E-T bilinguals back translated the Tigrigna version into English. In the fourth step, two English monolinguals compared the original English measures with the translated measures checking for linguistic and cultural equivalence. If any error was identified or discrepancy between the original and back translated measures, the questionnaires were forwarded back to Step 1. Each

translated measure was checked for consistency and Cronbach alpha was reported in the current sample.

The data collection was accomplished using a paper and pencil as well as a web-based survey via “Qualtrics.” Survey packages were distributed to potential participants through a link posted on Facebook as well through several contact persons at different research sites. The link for the research announcement stated briefly what the project was about, directed participants to the first page of the survey, which included the informed consent. When the participants indicated their consent by clicking the “Yes” box on the consent form, then the initial page of the survey instrument appeared. If the participant clicked “No” on the consent form, the browser window presented a “Thank you” note and directed them out of the survey. At the end of the consent form, the participants were told that they had an opportunity to stop any time they wish. In addition, participants were provided links for mental health services they could use if they wished.

For participants who participated through paper and pencil format, a contact person at each research site distributed the questionnaires. Each participant was provided the survey package with an empty envelope. Participants were told in the consent form to put the survey back in the envelope after completing it, and seal the envelope before returning it to the contact person. Participants were also informed not to write any identifiable information inside or outside the envelope. All the information collected from the participants were downloaded from Qualtrics with a code number that did not, in itself, provide any information about their identity. Thus, all the information was kept confidential and anonymous.

Chapter 3

Results

Data screening and preparation

Prior to analysis, all variables were screened for missing values, outliers, the fit between the variables of distributions and assumptions of normality. Descriptive statistics for demographics and variables of interest, as well as correlations among variables can be found in Table 1, Table 2, and Table 3. Several cases evidenced missing data, largely because many participants left the surveys blank. PCL-5, LEC-5, SPS, PTGI, MLQ-P, MLQ-S, ISLES, and PMLD scores were not normally distributed (skewness & Kurtosis > 2, Tabachnick & Fidell, 2001). Thus, the Mann-Whitney U test, which does not require normal distribution of data was used to compare mean rank scores of the variables of interest for all demographic variables.

Participants with greater than 20% of missing items were excluded from all analysis. Missing values with less than 20% missing items were estimated using SPSS EM procedure (Tabachnik & Fidell, 2007), which is a preferred method for imputing missing data because it adds residual variance to the imputed values (Enders, 2003). For participants with less than 20% of responses missing, values were assumed to be missing completely at random (MCAR).

Preliminary analysis

Bivariate correlational analysis was completed (see Table 3) to explore the relationship among the 12 variables of interest. Due to a high number of correlations and inflation of experiment-wise error, only correlations with $p < .001$ will be discussed. Some of the most noteworthy findings can be seen in the table, for example, PTSD (PCL-5) was significantly and negatively correlated with meaning made (ISLES; $p = .000$), presence of meaning in life (MLQ-P; $p = .000$), and social support ($p = .000$), however, it was not significantly related to

posttraumatic growth ($p > .05$) and the number of traumatic life events (LEC; $p > .05$).

Posttraumatic growth was significantly and positively related with social support ($p = .000$) and presence of meaning in life ($p = .000$).

A one-way multivariate analysis of variance (MANOVA) was conducted to explore potential differences based on legal residence, military history, asylum status, exposure to war, and sex. Results indicated that a significant difference existed based on legal residence, Pillai's trace = .22, $F(11,84) = 2.12$, $p = .028$. Univariate analyses indicated that there was a significant difference in post-migration living difficulties ($p = .001$) between legal and illegal residents. Also, MANOVA results suggested a significant difference in military history, Pillai's trace = .26, $F(11,88) = 2.81$, $p = .024$. Univariate analyses indicated a significant difference existed on social support ($p = .018$), presence of meaning made ($p = .026$), and posttraumatic growth ($p = .008$) between refugees who had a military history (veterans) and civilians. However, there was no significant difference between refugees who were granted an asylum and those who were not, Pillai's trace = .07, $F(11,82) = .53$, $p = .877$. Similarly, the analysis showed no significant difference between refugees who were exposed to conflict or war and those who did not, Pillai's trace = .11, $F(11,81) = .92$, $p = .525$ as well as between male and female refugees, Pillai's trace = .10, $F(11,108) = 1.05$, $p = .405$. Table 2 reports means and SD's for legal residence, sex, exposure to war, and asylum status.

Traumatic events and mental health

The National Center for PTSD proposed that a tentative cut-point of 33 can be used to determine the presence of symptoms of PTSD using the PCL-5 (Weathers et al, 2013). Majority of the refugees (85.2%) in the current study showed symptoms of PTSD. Similarly, a 1.75 cut-off point has been recommended for the Hopkins Symptom Checklist (HSCL) as a criterion to

determine symptoms of anxiety and depression (Mollica et al., 1987). Descriptive analysis of the HSCL-Anxiety and HSCL-Depression indicated that the majority of the refugees showed high levels of anxiety symptoms (69.6%, $M=2.08$, $SD = .68$) and depression (71.9% $M = 2.16$, $SD = .64$). Furthermore, 63.7% of the refugees reported that they either witnessed or experienced at least one traumatic life event. Over one-third (38.5%) of the sample reported physical assault, such as being attacked, hit, slapped, kicked or beaten up, and 27.4% reported sexual assault including rape, attempted rape, or being made to perform any type of sexual act through force or threat of harm (see figure 3). Similarly, 86% reported that they are unable to return to their family in times of emergency, while 83.7% worry about their family who are in their home country (see figure 3). Other most commonly reported stressors were separation from family (79.2%), being unable to find work (72.2%), and loneliness and boredom (67.4%).

The distribution of data for PTSD, anxiety and depression was not normal; thus, non-parametric statistics were used to determine if the number of post-migration living difficulties was associated with depression, anxiety, and PTSD. We grouped scores in anxiety, depression, and PTSD in to two categories. Those who scored above the median score of 1.75 on the HSCL were coded as 1, and those who scored below the median of 1.75 were coded as 0. Mann-Whitney U test were performed to examine the impact of post-migration living difficulties on mental health (PTSD, anxiety, and depression). PMLD was higher for individuals with higher depression ($Mdn \geq 1.75$, $U = 1317.00$, $p = .01$) than lower depressive scores; however, was not different for anxiety ($Mdn \geq 1.75$, $U = 1533.00$, $p = .059$) or PTSD ($Mdn \geq 1.75$, $U = 847.50$, $p = .061$).

In addition, we dummy coded educational level: 0= lower educational level (elementary or below to high school) and 1 = higher educational level (2-year college or higher). A Mann-

Whitney U test was conducted to examine the differences between educational level, PTSD, anxiety, depression, meaning made, and meaning in life. Descriptive statistics showed that individuals with lower educational level (mean rank = 77.05) scored significantly higher than those with higher education (mean rank = 61.78) on PTSD symptom scores ($U = 1702.00, p = .026, Z = -2.23, r = -.20$). Similarly, refugees with lower educational level showed significantly higher levels of anxiety (mean score = 81.53) compared to refugees with higher education (mean score = 58.01; $U = 1401.00, p = .000, Z = -3.58, r = -.31$). Likewise, refugees with lower education levels scored significantly higher (mean rank = 78.51) on depressive symptoms than those with higher education levels (mean rank = 60.78, $U = 1622.00, p = .000, Z = -2.59, r = -.22$). Refugees with lower educational level scored lower on posttraumatic growth as measured by the PTGI (mean rank = 59.13) compared to refugees with higher education (mean rank = 74.10). The Mann-Whitney U test was statistically significant ($U = 17012.00, p = .029, Z = -2.19$) and the difference between low and high educational level groups was small ($r = -.19$). However, there was not a significant difference between the two groups in term of presence of meaning on the MLQ ($U = 1830.50, p = .098, Z = -1.66$), and meaning made as measured by the ISLES ($U = 1775.50, p = .057, Z = -1.90$).

Tests of Hypotheses

To test hypothesis one that post-migration living difficulties (PMLD) will be significantly associated with symptoms of PTSD, anxiety, and depression, a bivariate correlational analysis was conducted. PMLD was significantly correlated with PTSD ($r = .31, p = .01$), depression ($r = .37, p = .000$), and anxiety ($r = .21, p = .024$).

To test hypotheses 2 to 5, using the PROCESS macro (Hayes, 2013), the moderation analysis was conducted using variables of social support (M_1) and meaning made (M_2) measured

using the ISLES and MLQ-P scales. To test the moderating role of meaning made between traumatic life events and PTSD, the overall model showed that the number of traumatic life events and social support significantly predict PTSD symptoms, $F(3,90) = 12.29, p = .0000, R^2 = .26$. Traumatic life events and meaning made were unique predictors of symptoms of PTSD, $b = 1.02, t(90) = 3.09, p = .0026$, meaning made, $b = -.45, t(90) = -3.96, p = .0002$. However, the interaction between traumatic life events and meaning made was not significantly related with symptoms of PTSD, $\Delta F(1,90) = 1.88, p = .1733$. The Johnson-Neyman conditional effect, however, shows that slopes for traumatic life events predicting PTSD symptoms at each level of meaning made (moderator) were different (see Table 6 and 7).

For refugees with low levels of meaning made, there was a significant relationship between traumatic life events and symptoms of PTSD, $b = 1.44, t(90) = 2.76, p = .007$. Similarly, for refugee with moderate levels of meaning made, there was a significant relationship between traumatic life events and symptoms of PTSD, $b = 1.02, t(90) = 3.09, p = .0026$. However, for individuals with high levels of meaning made, there was no significant relationship between traumatic life events and symptoms of PTSD, $b = .60, t(90) = 1.64, p = .1033$. More specifically, meaning made, traumatic life events and symptoms of PTSD were significantly related, $t(90) = -1.99, p = .05, b = .68$. Thus, as levels of meaning made decrease, the relationship between traumatic life events and symptoms of PTSD becomes positive, $b = 2.02, t(90) = 2.25, p = .0266$.

The second moderation analysis was conducted using social support as a moderator between the number of traumatic life events and PTSD symptom severity. The overall model indicated that social support and the number of traumatic life events were significant predictors of symptoms of PTSD, $F(3,110) = 6.36, p = .0005, R^2 = .13$. However, neither number of

traumatic life events [$b = .67, t(110) = 1.80, p = .0747$] nor social support [$b = -.69, t(110) = -1.62, p = .1075$] were significant predictors. Similarly, the interaction between number of traumatic life events and social support was not significantly related to PTSD symptom severity, $\Delta F(1,110) = 1.06, p = .3061, \Delta R^2 = .02$.

To test the third hypothesis that the relationship between the number of traumatic life events and anxiety will be significantly buffered by social support (M_1) and meaning made (M_2), a moderation analysis was conducted using PROCESS macro (Hayes, 2013). Using social support as a moderating variable, the overall model was significant, $F(3,135) = 6.25, p = .0005, R^2 = .10$. In the next step, social support was not a significant predictor, $b = .15, t(135) = .57, p = .7215$, while number of traumatic life events was a significant predictor, $b = .49, t(135) = 2.09, p = .0386$. In the final step, an interaction term between number of traumatic life events and social support was entered, which significantly accounted for 4% of the variance in anxiety total scores, $\Delta F(1,131) = 4.05, p = .0461, \Delta R^2 = .04, b = 1.52, t(135) = 2.01$. However, the conditional effect shows that refugees with average to high perceived social support tended to show higher anxiety after experiencing or witnessing stressful life events (see Table 8 & Figure 2). On the other hand, for individuals who scored low on social support, anxiety scores were not significantly related.

In the second analysis, meaning made was used as moderating variable to test the relationship between number of traumatic life events and anxiety. The overall model showed that meaning made was significant, $F(3,131) = 9.36, p = .0000, R^2 = .17$. Both meaning made and number of traumatic life events were uniquely significant predictors, $b = -.34, t(131) = -3.03, p = .003$ and $b = .65, t(131) = 2.79, p = .006$, respectively. However, in the final step, an interaction term between number of traumatic life events and meaning made was not significant,

$\Delta F(1,131) = .01, p = .5176, \Delta R^2 = .01, b = -.29, t(131) = -.65$. Even though the interaction term was not significant, interestingly, the conditional effect indicated that low and average scores on meaning made were significantly related to higher anxiety symptoms after experiencing traumatic life events.

In the fourth hypothesis, social support and meaning made were used as moderating variables to test the relationship between the number of traumatic life events and depression. Social support as a moderating variable, the overall model was significant, $F(3,131) = 25.95, p = .0000, R^2 = .19$. Both social support, $b = .72, t(131) = 5.28, p = .0000$, and number of traumatic life events, $b = .66, t(131) = 2.90, p = .0045$, were significant unique predictors. In the final step, the interaction between social support and number of traumatic life events was not significant $\Delta F(1,131) = .31, p = .5797, \Delta R^2 = .00, b = .26, t(131) = .56$. As shown in Table 9, individuals with average to high scores on social support positively correlated with higher scores on symptoms of depression. On the other hand, there was no significant difference in symptoms of depression between those who experienced traumatic life events and those who did not, when their social support was low.

Next, meaning made was entered as a moderator to test the relationship between number of traumatic life events and depression. The overall model was significant and accounted for 10% of the variance in the total depression scores, $F(3,131) = 4.85, p = .0031, R^2 = .10$. In the second step, meaning made, $b = -.20, t(131) = -2.56, p = .0256$ and number of traumatic life events $b = .56, t(131) = 2.77, p = .0064$ were uniquely significant predictors. In the last step, the interaction between number of traumatic life events and meaning made was not significant, $\Delta F(1,131) = .53, p = .4665, \Delta R^2 = .00, b = -.23, t(131) = -.73$. Refugees with scores low to average on meaning made (see Table 9) tended to score lower on symptoms of depression.

However, higher scores on meaning made were not significantly associated with lower scores on depression.

To test the last hypothesis, a separate moderation analysis was conducted, using social support and meaning in life, as measured by the Meaning in Life Questionnaire–Presence subscale (MLQ-P). The first analysis was conducted using social support as a moderating variable to investigate the relationship between symptoms of PTSD and posttraumatic growth scale (PTGI). The overall model was significant, $F(3,131) = 3.23, p = .0217, R^2 = .07$. Social support was a unique significant predictor, $b = .69, t(131) = 2.40, p = .0176$; however, PTSD was not a significant predictor, $b = .03, t(131) = .33, p = .7418$. In the final step, the interaction between social support and PTSD symptoms was not significant, $\Delta F(1,131) = .65, p = .4202, \Delta R^2 = .01, b = .32, t(131) = .42$.

In the second part of the analysis, using meaning in life as a moderator, the overall model was significant, accounting for 13% of the variance in the overall score of PTG, $F(3,131) = 7.30, p = .0001, R^2 = .13$. Both, meaning in life and PTSD symptoms were unique significant predictors, $b = .26, t(131) = 4.54, p = .0000, b = .21, t(131) = .16, p = .0316$, respectively. The final model, with the interaction term between meaning in life and PTSD symptoms, was not significant, $\Delta F(1,131) = .02, p = .8745, \Delta R^2 = .00, b = .01, t(131) = .16$. Table 10 depicts the conditional effect of PCL-5 on PTG at different levels of the moderating variables. Individuals with average scores on meaning in life significantly related with PTG scores 95% CI [.02 - .41] while low [-.08 - .48] and high [-.05 - .51] scores on meaning in life were not related.

Chapter 4

Discussion

Due to the nature of refugee migration, refugees are often exposed to multiple traumatic life events, including torture, systemic violence, and human rights violations (George, 2010, Kirmayer, 2006). The traumatic experiences of refugees tend to be cumulative (Knipscheer, Sleijpen, Mooren, Heide, & Van der Aa, 2015). These experiences challenge their sense of identity, well-being and meaning in life. Even though the long-term effect of trauma on mental health is still debated, evidence suggests that mental health symptoms improve over time for the majority of individuals, but may remain a significant risk factor for a minority of individuals (Steel et al., 2002). However, refugees report significantly higher symptoms of PTSD, depression and anxiety compared to the general population (Birman et al., 2008; Carswell, Blackburn, & Parker, 2011; Murray, Davidson, Schweitzer, 2010). The current study results were consistent with previous studies (e.g., Silove et al., 1997; Zimbrea, 2014) in finding that the majority of the participants reported higher symptoms of anxiety, depression, and PTSD. One reason for the significant increase in symptoms of anxiety, depression, and PTSD could be post-migration living difficulties (Aragona, Pucci, Mazzetti, & Geraci, 2012). Previous studies reported that refugees with post-migration living difficulties were more likely to have PTSD (Momartin, Steel, Coello, Aroche, Silove, & Brooks, 2006), as well as anxiety and depression (Schweitzer, Melville, Steel, & Lacherez, 2006) compared to refugees without difficulties. For example, more than two-thirds of the refugees in the current study reported that they were worried about their family who were in their home country, unable to return to their family in times of emergency, separated from family, as well as unable to find work.

In the initial stages of coping with multiple traumas, social support should play a role in helping refugees to regain emotional equilibrium (Kaniasty & Norris, 2008). A person's sense of meaning in life emerges from interaction and identification with family and cultural systems (Chung, Bemak, & Wong, 2000). Therefore, disruption of family and cultural systems, as well as separation from family and native community may negatively affect mobilization of social support. This negative effect is particularly relevant in the context of Eritrean refugees where there are large cultural differences with the mainstream European culture that might challenge the refugee's sense of identity and belonging. An individual's meaning in life is often built based on a broad sense of identity and belonging, in which traumatic life experiences and life stressors challenge a person's belief in the world (Mollica, Sarailic, Chernoff, & Lavelle, 2001). In the current study, one to two-thirds of the participants reported post-migration living difficulties including discrimination, fear of being sent home, isolation, and separation from family, which implies disruption in the support system. Furthermore, refugees with lower educational level (less than high school) showed higher symptoms of PTSD, anxiety, and depression compared to those with high levels of education (higher than 2-year college). More interestingly, refugees with lower levels of education reported lower posttraumatic growth. In a mixed trauma sample, previous research (Linley & Joseph, 2004) found that educational level was significantly correlated with PTG, in which individuals with higher levels of education showed higher PTG.

In order to further explain the present findings within the context of prior research, the path from traumatic life events to PTSD was considered. The second hypothesis that integration of stressful life experience, or meaning made (ISLES), and social support (SPS) would moderate the relationship between traumatic life events and PTSD symptom severity was not

substantiated. Both moderators were analyzed separately. First, even though meaning made was not a moderating variable, both the number of traumatic life events and meaning made were significant predictors of PTSD symptom severity, accounting for 26% of the variance.

Contrary to our hypothesis, social support was not a significant moderator between number of traumatic life events and PTSD symptoms. Further, although significant correlations were found among social support, number of traumatic life events, and PTSD, both social support and number of traumatic life events were not significant unique predictors of PTSD severity. Previous trauma research reported that perceived support was negatively correlated with trauma exposure, while received support was positively correlated with trauma exposure (Kaniasty, 2005). This finding implies that social support declines initially after traumatic experiences which may contribute to higher stress rather than serving as a buffer. For example, mobilization of social support may initially decline after a stressful event, such as disaster, which usually affects perceived social support and sense of companionship (Kaniasty, 2004). Considering the refugee experience, it is not uncommon to see post-migration difficulties, such as little help with welfare from charities, poor access to counseling services, discrimination, isolation, loneliness, and separation from family (Crepet et al., 2017). The diminished interest in interpersonal activities, feeling isolated and detached from others, and social skills deficits may be particularly pervasive among refugees whose symptoms of PTSD, anxiety and depression may be extended over time (Marshall, Panuzio, & Niles, 2007). On one hand, the complex interpersonal dynamics refugees face might create demands on their social network to an extent that the refugee might be perceived as a burden by their family members, close friends, neighbors, coworkers, etc. On the other hand, the negative cognitions and appraisals may make it difficult for survivors of trauma to appreciate the support they might have from others.

The third hypothesis similarly used meaning made and social support as moderating variables between the number of traumatic life events and anxiety. Meaning made did not significantly moderate the relationship between the number of traumatic life events and anxiety; however, number of traumatic life events and meaning made were significant predictors accounting for 17% of the variance in anxiety. Previous research with a college sample found an association between high scores in meaning made and low psychological distress (Holland et al., 2010). Similarly, the current study found that low to average scores on meaning made were associated with high scores on anxiety. Contrary to previous studies (Holland et al.), high levels of meaning made were not associated with low anxiety scores. In accord with our hypothesis, social support significantly buffered the relationship between number of traumatic life events and anxiety, accounting for a 10% increase of the variance in anxiety. The direction of the relationship was contrary to our expectation, with higher scores on social support (average – high) correlated with higher scores on anxiety, while low perceived social support was not associated with low symptoms of anxiety. In a similar study among asylum seekers, perceived social support did not predict a decrease in symptoms of anxiety (Khan, 2014). One explanation could be a difference in attachment styles. In a sample of married couples, examining the moderating role of perceived social support in the relationship between anxious attachment and physical and mental health outcomes, the authors found that anxious individuals reported poorer health even when perceived social support was high, while less anxious individuals' health benefited from higher perceived support (Stanton & Campbell, 2014). Even though social support has been linked with positive health outcomes (Stadler, Snyder, Horn, Shrout, & Bolger, 2012; Uchino, 2004), perceived social support might not be enough to improve psychological distress when individuals experience multiple stressors (in this case traumatic life events).

Contrary to our fourth hypothesis, both social support and integration of stressful life experiences were not significant moderators of the relationship between traumatic life events and symptoms of depression. Although the interaction between the predictor and moderators was not significant, both variables were significant predictors of depressive symptoms. It seems that low scores on meaning made significantly affected the severity of depression symptoms. On the other hand, similar to anxiety, high social support did not seem to be helpful in reducing symptoms of depression, but rather was associated with higher depression severity among the participants in the current study.

Social support provides the opportunity to process events with others, which is crucial for trauma survivors. In the last hypothesis, contrary to previous studies, social support was not a significant moderator between PTSD symptoms and PTG. However, it was a unique predictor of PTG after controlling for PTSD symptoms. Similarly, meaning in life also was not a significant moderator. In a closer look, however, average scores on MLQ-P were related with higher scores on PTGI, but low and high scores were not related to growth. Previous studies (Larner & Blow, 2011) reported that social support is crucial during the reappraisal phase, where individuals try to associate meaning to traumatic events. Each refugee compares his or her appraised meanings with global meanings as he or she evaluates his or her traumatic life experiences that happened during pre-migration, during migration and post-migration. The reappraisal process involves reconciliation of appraised and global meanings, which requires individuals to face difficult memories and emotions. The reappraisal process is inherently social, which involves interpersonal (supported, challenged, discussed, and validated by others) and intrapersonal (wrestling internally) aspects. Descriptives on the PMLD showed that the majority of the participants reported separation from family members (79.2%), loneliness and boredom (67.4%),

being or feeling alone (56.3%) and discrimination (48.9%). These living difficulties seem to be some evidence that the support system of these refugees was interrupted, which might directly or indirectly affect the reappraisal process. In a study on cancer patients, quality of social support and cognitive appraisal of their illness significantly predicted PTG (Tebbe, 2015). However, further inquiry should examine the different levels of presence of meaning in relation to social support and posttraumatic growth among refugees.

Limitation and Future Direction

Interpretation of these data should be made within the context of the study's strengths and limitations. First, recall bias in reporting trauma events must be considered. In addition, given the cross-sectional and correlational design, the findings do not imply causation and are not generalizable to the general population. Second, although the method of recruitment was random, the sample size was small which affected statistical power. Due to the characteristics of the participants and general sensitivity of the variables of interest, a large number of participants did not complete the survey. Anecdotal experiences indicated that the current educational level of participants, knowledge and computer skills, current political environment in their home country, current living difficulties in the host country, as well as length of the survey were some of the factors that affected response rate. Future inquiries should consider these challenges to maximize response rate. As a result, the findings of the current study should not be regarded as an indication of the prevalence of PTSD, anxiety, and depressive disorders in the general Eritrean refugee population.

Further, the majority of the participants were trauma-exposed, based on a rigorous assessment of Criterion A (LEC-5, Weathers et al., 2013); and prevalence of a presumed PTSD diagnosis based on a PCL-5 score of 33 was 85.2%, indicating that a substantial proportion of

respondents reported high levels of PTSD symptoms (McDonald & Calhoun, 2010; Weathers et al). Generalizability of the current results is also limited with respect to demographic variables such as age, race, ethnicity, and socioeconomic status, and future research using samples with greater diversity is warranted. In addition, to the best of our knowledge, there has been no study in the literature that has differentiated acute, chronic, and late-onset PTSD diagnoses among refugees. Thus, further inquiry should investigate the relationship between the different levels of the moderating variables and PTSD, anxiety, and depression severity.

Furthermore, the translated measures reported excellent internal consistency and there is a growing evidence that shows clinical patterns across ethnic groups (e.g., Mollica et al., 1999), caution should be taken to apply western criteria for PTSD, anxiety, and depression across cultures (Summerfield, 1999). In the current population, the diagnostic utilities of PCL-5 and HSCL-25 was not investigated. Thus, the findings of the current study are not diagnostic in nature. Thus, future research should utilize structured diagnostic interviews to ensure accuracy of symptom presentation and differential diagnosis (Kraemer, 1992). Thus, these scores require replication, should not be reified, and even if replicated should be considered appropriate only for the populations and purposes for which they have been shown to be valid.

To our knowledge, this is the first comprehensive study among Eritrean refugee trauma sample. Nonetheless, there is a considerable variability in rates of prevalence of PTSD, anxiety and depression among refugee's studies (Hooberman & Rosenfeld, 2010). Some of the reasons include difference in sampling strategies; measurement strategies (e.g., self-reported measures versus structured clinical interviews); latency of assessment and potential for recall bias, type of trauma and traumatic experiences including, pre-migration, migration, and post-migration experiences, as well as the inclusion and measurement of the DSM-5 clinically significant

impairment criterion. A methodologically rigorous research is needed to further our understanding of the prevalence, course, phenomenology, and protective factors (Richardson, Frueh, & Acierno, 2011).

Conclusion

In summary, the findings of the present study strongly supported the relationship between post-migration living difficulties and symptoms of PTSD, anxiety, and depression. Perceived social support and traumatic life events jointly accounted for symptoms of PTSD, anxiety, as well as depression. Similarly, meaning made and traumatic life events accounted for symptoms of PTSD, anxiety, and depression. However, social support was the only moderating variable between traumatic life events and symptoms of anxiety. Further, although neither social support nor presence of meaning in life were significant moderators, PTSD symptoms and social support, as well as PTSD symptoms and presence of meaning in life were significant predictors of posttraumatic growth. A more refined analysis is needed to identify the interrelations between levels of moderating variables (social support, meaning made, and presence of meaning in life) and outcome variables (PTSD, anxiety, depression and PTG). Finally, there is a need for more methodologically consistent and rigorous research on the mental health of refugees, especially those exposed to multiple traumas.

If findings of this study were confirmed by future research, important clinical implications would be suggested. Considering the experiences of refugees, post-migration living difficulties have a significant effect on the psychological well-being of refugees. Refugees with more post-migration living difficulties show higher symptoms of depression, anxiety and PTSD. Thus, reducing the post-migration living difficulties in their host country through improved services such as creating job opportunities, maximizing community support and social

networking, counseling services, etc. could help refugees deal with anxiety, depression and PTSD which are related to post-migration living difficulties. Furthermore, providing educational opportunities, including language learning might have a significant impact on the lives of refugees after resettlement. This could help refugees to integrate with the community in the hosting country and be more productive citizens.

Moreover, helping refugees make sense of their traumatic experience might help the deal with their trauma. Clearly there is a need for more research to identify ways to help refugees make meaning out of their suffering and traumatic experiences. Service providers and agencies in the host country could collaborate with mental health professionals to provide support and corrective emotional experience to build better understanding of their traumatic experience. This corrective experience not only gives refugees an opportunity to deal with their trauma, but also may render ways to develop posttraumatic growth and make them more resilient.

List of Reference

- Ahmed, A. (2007). Post-traumatic stress disorder, resilience and vulnerability. *Advances in Psychiatric Treatment*, 369-375.
- Alpak, G., Unal, A., Bulbul, F., Sagaltici, E., Bez, Y., Altindag, A., ... Savas, H.A. (2015). Post-traumatic stress disorder among Syrian refugees in Turkey: A cross-sectional study. *International Journal of Psychiatry in Clinical Practice*. 19(1), 45–50.
- American Psychiatric Association (2013) *Diagnostic and Statistical Manual of Mental Disorders, DSM-5 (5th ed)*. Washington DC. APA.
- American Psychiatric Association. (1994). *Diagnostic and statistical manual of mental disorders (4th ed.)*. Washington, DC, APA.
- Aragona, M., Pucci, D., Mazzetti, M., & Geraci, S. (2012). Post-migration living difficulties as a significant risk factor for PTSD in immigrants: a primary care study. *International Journal of Public Health*, 9,67-74. DOI: 10.2427/7525
- Arnetz, J., Rofa, Y., Arnetz, B., Ventimiglia, M., & Jamil, H. (2013). Resilience as a Protective Factor against the Development of Psychopathology among Refugees. *The Journal of Nervous and Mental Disease*, 201(3), 167–172. doi: /10.1097/NMD.0b013e3182848afe
- Bhui, K., Craig, T., Mohamud, S., Warfa, N., Stansfeld, S. A., Thornicroft, G., . . . McCrone, P. (2006). Mental disorders among Somali refugees. *Social Psychiatry and Psychiatric Epidemiology*, 41(5), 400-408. doi:10.1007/s00127-006-0043-5
- Birman D., et al. (2008). International family, adult and child enhancement services (FACES): a community-based comprehensive services model for refugee children in resettlement. *American Journal of Orthopsychiatry*, 78(1):121–132.
- Blackburn, L., & Owens, G. P. (2015). The effect of self-efficacy and meaning in life on posttraumatic stress disorder and depression severity among veterans. *Journal of Clinical*

- Psychology*, 71(3), 219-228. doi:10.1002/jclp.22133
- Bleich, A., Koslowsky, M., Dolev, A., & Lerer, B. (1997). Post-traumatic stress disorder and depression - An analysis of comorbidity. *British Journal of Psychiatry*, 170, 479-482. doi:10.1192/bjp.170.5.479
- Blevins, C. A., Weathers, F. W., Davis, M. T., Witte, T. K., & Domino, J. L. (2015). The Posttraumatic Stress Disorder Checklist for DSM-5 (PCL-5): Development and initial psychometric evaluation. *Journal of Traumatic Stress*, 28, 489–498. doi: 10.1002/jts.22059
- Bonanno, G. A. (2004). Loss, trauma, and human resilience - Have we underestimated the human capacity to thrive after extremely aversive events? *American Psychologist*, 59(1), 20-28. doi:10.1037/0003-066x.59.1.20
- Bonanno, G.A., Brewin, C.R., Kaniasty, K., & La Greca, A.M. (2010). Weighing the costs of disaster: Consequences, risks, and resilience in individuals, families, and communities. *Psychological Science in the Public Interest*. 11(1), 1-49.
- Bonanno, G.A., et al. (2012). Trajectories of trauma symptoms and resilience in deployed US military service members: prospective cohort study. *The British Journal of Psychiatry*. 200(4), 317–323. doi: 10.1192/bjp.bp.111.096552.
- Bonanno, G.A., Pat-Horenczyk, R., & Noll, J. (2011). Coping flexibility and trauma: The Perceived Ability to Cope with Trauma (PACT) Scale. *Psychological Trauma-Theory Research Practice and Policy*. 3(2), 117–129. doi: 10.1037/a0020921.
- Breslau, J., Aguilar-Gaxiola, S., Borges, G., Kendler, K. S., Su, M., & Kessler, R. C. (2007). Risk for psychiatric disorder among immigrants and their US-born descendants - evidence from the National Comorbidity Survey Replication. *Journal of Nervous and*

- Mental Disease*, 195(3), 189-195. doi:10.1097/01.nmd.0000243779.35541.c6
- Brislin, R. (1970). Back-translation for cross-cultural research. *Journal of Cross-cultural Psychology*, 1(3), 185-216. Doi: [10.1177/135910457000100301](https://doi.org/10.1177/135910457000100301)
- Brune, M., Haasen, C., Krausz, M., Yagdiran, O., Bustos, E., & Eisenman, D. (2002). Belief systems as coping factors for traumatized refugees: A pilot study. *European Psychiatry*, 17(8), 451-458. doi:10.1016/s0924-9338(02)00708-3
- Calhoun, L. G., & Tedeschi, R. G. (Eds.) (2006). *The handbook of posttraumatic growth: Research and practice*. Mahwah, NJ: Lawrence Erlbaum Associates Pub.
- Carrer, S., Meuti, V., Catino, E., Pucci, D., Lafuente, M., Colosimo, F., . . . Geraci, S. (2011). Immigration, trauma, living difficulties and psychopathology: Apreliminary study in a primary care setting. *Rivista Di Psichiatria*, 46(2), 129-139.
- Carswell, K., Blackburn, P., Barker, C. (2011). The relationship between trauma, post-migration problems and the psychological well-being of refugees and asylum seekers. *International Journal of Social Psychiatry*, 57,1007.
- Chernet, A., Pfeiffer, C., Probst-Hensch, N., & Labhardt, N. (2016). Mental health and resilience among newly arrived refugees in Switzerland. *European Journal of Public Health*, 26, 400-401.
- Chung, R., Bemak, F. & Wong, S. (2000). Vietnamese refugees' levels of distress, social support and acculturation: Implications for mental health counseling. *Journal of Mental Health Counseling*, 22, 150-62.
- Crepet, A., Rita, F., Reid, A., Boogaard, W. V., Deiana, P., Quaranta, G., . . . Carlo, S. D. (2017). Mental health and trauma in asylum seekers landing in Sicily in 2015: A descriptive

- study of neglected invisible wounds. *Conflict and Health*, 11(1). doi:10.1186/s13031-017-0103-3
- Cromer, L., & Smyth, J. (2010). Making meaning of trauma: Trauma exposure doesn't tell the whole story. *Journal of Contemporary Psychotherapy*, 40, 65-72.
- Crossley, M. L. (2000). Narrative psychology, trauma and the study of self/identity. *Theory & Psychology*, 10(4), 527-546. doi:10.1177/0959354300104005
- Currier, J. M., Holland, J. M., Rojas-Flores, L., Herrera, S., & Foy, D. (2015). Morally injurious experiences and meaning in Salvadorian teachers exposed to violence. *Psychological Trauma-Theory Research Practice and Policy*, 7(1), 24-33. doi:10.1037/a0034092
- Cutrona, C.E., & Russell, D.W. (1987). The provisions of social relationships and adaptation to stress. In Jones, W.H. & Perlman, D. (Eds.), *Advances in Personal Relationships* (pp. 37–67). JAI Press, Greenwich (Conn)
- Davis, C. G., Nolen-Hoeksema, S., & Larson, J. (1998). Making sense of loss and benefiting from the experience: Two construals of meaning. *Journal of Personality and Social Psychology*, 75(2), 561-574. doi:10.1037/0022-3514.75.2.561
- Davis, C. G., Wortman, C. B., Lehman, D. R., & Silver, R. C. (2000). Searching for meaning in loss: Are clinical assumptions correct? *Death Studies*, 24(6), 497-540.
- Derogatis, L., Lipman, R., Rickels, K., Uhlenhuth, E., & Covi, L. (1974). The Hopkins Symptom Checklist (HSCL): A self-report symptom inventory. *Systems Research and Behavioral Science*, 19(1), 1-15.
- Duan, W., Guo, P., & Gan, P. (2015). Relationships among trait resilience, virtues, post-traumatic stress disorder, and post-traumatic growth. *Plos One*, 10(5). doi:10.1371/journal.pone.0125707

- Enders, C.K. (2003). Using the expectation maximization algorithm to estimate coefficient alpha for scales with item-level missing data. *Psychological Methods*, 8(3), 322–337. doi: 10.1037/1082-989X.8.3.322.
- Fazel, M., Doll, H., and Stein, A. (2009). A school-based mental health intervention for refugee children: An exploratory study. *Clinical Child Psychology and Psychiatry*, 14(2), 297–309.
- George, M. (2010). A theoretical understanding of refugee trauma. *Clinical Social Work Journal*, 38(4), 379–387. DOI: 10.1007/s10615-009-0252-y
- Gerritsen, A.A.M., et al. (2006). Physical and mental health of Afghan, Iranian and Somali asylum seekers and refugees living in the Netherlands. *Social Psychiatry and Psychiatric Epidemiology*. 41(1), 18–26.
- Gray, M. J., Litz, B. T., Hsu, J. L., & Lombardo, T. W. (2004). Psychometric properties of the life events checklist. *Assessment*, 11(4), 330–341. doi:10.1177/1073191104269954
- Hayes, A. F. (2013). *Introduction to Mediation, Moderation, and conditional process analysis: A regression based approach*. Guilford Pub. NY: New York.
- Hinton, D. E., Chhean, D., Pich, V., Pollack, M. H., Orr, S. P., & Pitman, R. K. (2006). Assessment of posttraumatic stress disorder in Cambodian refugees using the clinician-administered PTSD scale: Psychometric properties and symptom severity. *Journal of Traumatic Stress*, 19(3), 405–409. doi:10.1002/jts.20115
- Hinton, D., Ba, P., Peou, S., & Um, K. (2000). Panic disorder among Cambodian refugees attending a psychiatric clinic: Prevalence and subtypes. *General Hospital Psychiatry*, 22(6), 437–444. doi:10.1016/s0163-8343(00)00102-x
- Ho, S. M. Y., Chan, C. L. W., & Ho, R. T. H. (2004). Posttraumatic growth in Chinese cancer

- survivors. *Psycho-Oncology*, 13(6), 377-389. doi:10.1002/pon.758
- Holland, J. M., Currier, J. M., & Neimeyer, R. A. (2014). Validation of the Integration of Stressful Life Experiences Scale-Short Form in a bereaved sample. *Death Studies*, 38(4), 234-238. doi:10.1080/07481187.2013.829369
- Holland, J. M., Currier, J. M., Coleman, R. A., & Neimeyer, R. A. (2010). The Integration of Stressful Life Experiences Scale (ISLES): Development and initial validation of a new measure. *International Journal of Stress Management*, 17(4), 325-352. doi:10.1037/a0020892
- Hooberman, J., Rosenfeld, B., Rasmussen, A., & Keller, A. (2010). Resilience in trauma-exposed refugees: the moderating effect of coping style on resilience variables. *American Journal of Orthopsychiatry*, 80 (4), 557-63.
- Hutchinson, M. & Dorsett, P. (2012). What does the literature say about resilience in refugee people? Implications for practice. *Journal of Social Inclusion*. 3(2), 55-78.
- Jamil, H., Ventimiglia, M., Mahmoud, R., & Arnetz, B. (2009). Somatic and psychiatric disorders and health care utilization among Iraqi Refugees and Yemeni immigrant. *New Iraqi Journal of Medicine*, 5(3), 14-22.
- Jin, Y., xu, J., Liu, H., & Liu, D. (2014). Posttraumatic stress disorder and posttraumatic growth among adult survivors of Wenchuan earthquake after 1 year: Prevalence and correlates. *Archives of Psychiatric Nursing*, 28(1), 67-73.
- Kaltman, S., Green, B. L., Mete, M., Shara, N., & Miranda, J. (2010). Trauma, depression, and comorbid PTSD/depression in a community sample of Latina immigrants. *Psychological Trauma-Theory Research Practice and Policy*, 2(1), 31-39. doi:10.1037/a0018952

- Kaniasty, K. (2005). Social support and traumatic stress. *PTSD Research Quarterly*, 16(2). The National Center for PTSD.
- Kaniasty, K., & Norris, F. H. (2004). Social support in the aftermath of disasters, catastrophes, and acts of terrorism: Altruistic, overwhelmed, uncertain, antagonistic, and patriotic communities. In R. Ursano, A. Norwood, & C. Fullerton (Eds.), *Bioterrorism: Psychological and public health interventions*, (pp. 200- 229). Cambridge: Cambridge University Press.
- Kaniasty, K., & Norris, F. H. (2008). Longitudinal linkages between perceived social support and posttraumatic stress symptoms: Sequential roles of social causation and social selection. *Journal of Traumatic Stress*, 21, 274 - 281.
- Khan, A.W. (2014). Asylum-seeking migration, identity building and social cohesion: Policy making vs. social action for cultural recognition. *Journal of the Academy of Social Sciences*, 9(3), 285-297. Doi: 10.1080/21582041.2012.682087
- Kirmayer, L. J., Narasiah, L., Munoz, M., Rashid, M., Ryder, A. G., Guzder, J., ... Pottie, K. (2011). Common mental health problems in immigrants and refugees: general approach in primary care. *CMAJ: Canadian Medical Association Journal*, 183(12), E959–E967. <http://doi.org/10.1503/cmaj.090292>
- Kirmayer, L.J. (2006). Beyond the 'new cross-cultural psychiatry': cultural biology, discursive psychology and the ironies of globalization. *Transcultural Psychiatry*, 43(1), 126-44.
- Klasen, F., Oettingen, G., Daniels, J., Post, P., Hoyer, C., & Hubertus, A. (2010). Posttraumatic resilience in former Ugandan child soldiers. *Child Development*, 81, 1096-1113.
- Knipsheer, J. W., Sleijpen, M., Mooren, T., ter Heide, F. J. J., & van der Aa, N. (2015). Trauma exposure and refugee status as predictors of mental health outcomes in treatment-seeking

- refugees. *British Journal of Psychiatry Bulletin*, 39(4), 178–182.
<http://doi.org/10.1192/pb.bp.114.047951>
- Kraemer, H. C. (1992). *Evaluating medical tests: Objective and quantitative guidelines*.
 Newbury Park, CA: Sage.
- Lancaster, S. L., & Carlson, G. C. (2015). Meaning made, distress, and growth: An Examination
 of the Integration of Stressful Life Experiences Scale. *International Journal of Stress
 Management*, 22(1), 92-110. doi:10.1037/a0038296
- Larner, B., & Blow, A. (2011). A model of meaning-making coping and growth in combat
 veterans. *Review of General Psychology*, 15(3), 187-197. doi:10.1037/a0024810
- Linley, P. A., & Joseph, S. (2004). Positive change following trauma and adversity: A review.
Journal of Traumatic Stress, 17(1), 11-21. doi:10.1023/B:JOTS.0000014671.27856.7e
- Magruder, K. M., Kilic, C., & Koryurek, M. M. (2015). Relationship of posttraumatic growth to
 symptoms of posttraumatic stress disorder and depression: A pilot study of Iraqi students.
International Journal of Psychology, 50(5), 402-406. doi:10.1002/ijop.12146
- McDonald, S.D., & Calhoun, P.S. (2010). The diagnostic accuracy of the PTSD checklist: A
 critical review. *Clinical Psychology Review*, 30(8), 976-87. Doi:
 10.1016/j.cpr.2010.06.012.
- Miller, K. E., Weine, S.M., Ramiec, A., Brkic, N., Bjedic, Z.d., Smajkic, A., ... Worthington, G.
 (2002). The relative contribution of war experiences and exile-related stressors to levels
 of psychological distress among Bosnian refugees. *Journal of Traumatic Stress*, 15(5),
 377-387. doi:10.1023/a:1020181124118
- Moisander, P. A., & Edston, E. (2003). Torture and its sequel - a comparison between victims
 from six countries. *Forensic Science International*, 137(2-3), 133-140.

doi:10.1016/j.forsciint.2003.07.008

Mollica, R. F. & Caspi-Yavin, Y. (1991). Measuring torture and torture-related symptoms.

Psychological Assessment, 3, 1-7

Mollica, R. F., McInnes, K., Pham, T., Smith, M. C., Murphy, E., & Lin, L. (1998). The dose-effect relationships between torture and psychiatric symptoms in Vietnamese ex-political detainees and a comparison group. *Journal of Nervous and Mental Disease*, 186(9), 543-553. doi:10.1097/00005053-199809000-00005

Mollica, R. F., McInnes, K., Poole, C., & Tor, S. (1998). Dose-effect relationships of trauma to symptoms of depression and post-traumatic stress disorder among Cambodian survivors of mass violence. *British Journal of Psychiatry*, 173, 482-488. doi:10.1192/bjp.173.6.482

Mollica, R. F., McInnes, K., Sarajlic, N., Lavelle, J., Sarajlic, I., & Massagli, M. P. (1999). Disability associated with psychiatric comorbidity and health status in Bosnian refugees living in Croatia. *Journal of the American Medical Association*, 282(5), 433-439. doi:10.1001/jama.282.5.433

Mollica, R. F., Wyshak, G., DeMarneffe, D., khuon, F., & Lavelle, J. (1987). Indochinese versions of the Hopkins Symptom Checklist - 25: A screening instrument for the psychiatric care of refugees. *American Journal of Psychiatry*, 144, 497 -500.

Mollica, R.F., Sarajlic, N., Chernoff, M., & Lavelle, J. (2001). Longitudinal study of psychiatric symptoms, disability, mortality and emigration among Bosnian refugees. *Journal of the American Medical Association*, 286, 546-554.

Momartin, S., Steel, Z., Coello, M., Aroche, J., Silove, D.M., & Brooks, R. (2006). A comparison of the mental health of refugees with temporary versus permanent protection visas. *Medical Journal of Australia*, 185(7), 357-61.

- Murray, K, Davidson, G, Schweitzer, R. (2010). Review of refugee mental health interventions following resettlement: best practices and recommendations. *American Journal of Orthopsychiatry*, 80(4): 576-85.
- Nickerson, A., Steel, Z., Bryant, R., Brooks, R., & Shove, D. (2011). Change in visa status amongst Mandaean refugees: Relationship to psychological symptoms and living difficulties. *Psychiatry Research*, 187(1-2), 267-274. doi:10.1016/j.psychres.2010.12.015
- Ozer, E.J., Best, S.R., Lipsey, T.L., & Weiss, D.S. (2003). Predictors of posttraumatic stress disorder and symptoms in adults: a meta-analysis. *Psychological Bulletin*, 129(1), 52--73. doi: 10.1037/0033-2909.129.1.52
- Park, C. L. & Folkman, S. (1997). Meaning in the context of stress and coping. *General Review of Psychology*, 1, 115–144.
- Park, C. L. (2010). Making sense of the meaning literature: An integrative review of meaning making and its effects on adjustment to stressful life events. *Psychological Bulletin*, 136(2), 257-301. doi:10.1037/a0018301
- Park, C. L., & Ai, A. L. (2006). Meaning making and growth: New directions for research on survivors of trauma. *Journal of Loss & Trauma*, 11(5), 389-407. doi:10.1080/15325020600685295
- Porter, M., & Haslam, N. (2005). Predisplacement and postdisplacement factors associated with mental health of refugees and internally displaced persons - A meta-analysis. *Journal of the American Medical Association*, 294(5), 602-612. doi:10.1001/jama.294.5.602
- Richardson, L. K., Frueh, B. C., & Acierno, R. (2010). Prevalence estimates of combat-related PTSD: A critical review. *The Australian and New Zealand Journal of Psychiatry*, 44(1), 4–19. <http://doi.org/10.3109/00048670903393597>

- Schick, M., Morina, N., Klaghofer, R., Schnyder, U., & Muller, J. (2013). Trauma, mental health, and intergenerational associations in Kosovar families 11 years after the war. *European Journal of Psychotraumatology*, 4. doi:10.3402/ejpt.v4i0.21060
- Schweitzer, R. D., Brough, M., Vromans, L., & Asic-Kobe, M. (2011). Mental health of newly arrived Burmese refugees in Australia: contributions of pre-migration and post-migration experience. *Australian and New Zealand Journal of Psychiatry*, 45(4), 299-307. doi:10.3109/00048674.2010.543412
- Schweitzer, R., Melville, F., Steel, Z., & Lacherez, P. (2006). Trauma, post-migration living difficulties, and social support as predictors of psychological adjustment in resettled Sudanese refugees. *Australian and New Zealand Journal of Psychiatry*, 40(2), 179-187. doi:10.1080/j.1440-1614.2006.01766.x
- Shalev, A.Y., & Freedman, S. (2005). PTSD following terrorist attacks: a prospective evaluation. *American Journal of Psychiatry*, 162(6), 1188–1191
- Silove, D. (1999). The psychosocial effects of torture, mass human rights violations, and refugee trauma - Toward an integrated conceptual framework. *Journal of Nervous and Mental Disease*, 187(4), 200-207. doi:10.1097/00005053-199904000-00002
- Silove, D., Sinnerbrink, I., Field, A., Manicavasagar, V., & Steel, Z. (1997). Anxiety, depression and PTSD in asylum-seekers: Associations with pre-migration trauma and post-migration stressors. *British Journal of Psychiatry*, 170, 351-357. doi:10.1192/bjp.170.4.351
- Sinnerbrink, I., Silove, D., Field, A., Steel, Z., & Manicavasagar, V. (1997). Compounding of premigration trauma and postmigration stress in asylum seekers. *Journal of Psychology*, 131(5), 463-470.

- Ssenyonga, J., Owens, V., & Olema, D. K. (2013). Posttraumatic Growth, Resilience, and Posttraumatic Stress Disorder (PTSD) among Refugees. Procedia - Social and Behavioral Sciences, 82, 144-148. doi:10.1016/j.sbspro.2013.06.238*
- Stadler, G., Snyder, K.A., Horn, A.B., Shrout, P.E., & Bolger, N.P. (2012). Close relationships and health in daily life: a review and empirical data on intimacy and somatic symptoms. *Psychosomatic Medicine, 74*(4), 398–409.
- Stanton, S. C. E., & Campbell, L. (2014). Perceived social support moderates the link between attachment anxiety and health outcomes. *PLoS ONE, 9*(4), e95358. Doi: 10.1371/journal.pone.0095358
- Steel, Z., Silove, D., Phan, T., & Bauman, A. (2002). Long-term effect of psychological trauma on the mental health of Vietnamese refugees resettled in Australia: A population-based study. *Lancet, 360*(9339):1056–1062. doi: [10.1016/S0140-6736\(02\)11142-1](https://doi.org/10.1016/S0140-6736(02)11142-1).
- Steger, M. F., & Park, C. L. (2012). The creation of meaning following trauma: Meaning making and trajectories of distress and recovery. In Keane, T., Newman, E. & Fogler, K. (Eds.). *Toward an integrated approach to trauma focused therapy: Placing evidence-based interventions in an expanded psychological context* (pp. 171–191). Washington, DC: APA.
- Steger, M. F., Frazier, P., Oishi, S., & Kaler, M. (2006). The meaning in life questionnaire: Assessing the presence of and search for meaning in life. *Journal of Counseling Psychology, 53*(1), 80-93. doi:10.1037/0022-0167.53.1.80
- Summerfield, D. (1999). A critique of seven assumptions behind psychological trauma programs in war-affected areas. *Social Science and Medicine, 48*, 1449 -1462

- Tabachnick, B.G. & Fidell, L.S. (2001). *Using multivariate statistics*. Needham Heights, MA, Allyn & Bacon Pub.
- Taft, C.T., Vogt, D.S., Marshall, A.D., Panuzio, J., & Niles, B.L. (2007). Aggression among combat veterans: Relationships with combat exposure and symptoms of posttraumatic stress disorder, dysphoria, and anxiety. *Journal of Traumatic Stress*, 20, 135–145.
- Taku, K., Cann, A., Calhoun, L. G., & Tedeschi, R. G. (2008b). The factor structure of the posttraumatic growth inventory: A comparison of five models using confirmatory factor analysis. *Journal of Traumatic Stress*, 21(2), 158-164. doi:10.1002/jts.20305
- Tebbe, D. (2015). *Characterization of Posttraumatic Stress Disorder and Posttraumatic Growth: Common Determinants and Associations* (Doctoral dissertation). Retrieved from UTA Libraries <http://hdl.handle.net/10106/25135>
- Tedeschi, R. G., & Calhoun, L. G. (1996). The posttraumatic growth inventory: Measuring the positive legacy of trauma. *Journal of Traumatic Stress*, 9(3), 455-471. doi:10.1007/bf02103658
- Tedeschi, R. G., & Calhoun, L. G. (2004a). A clinical approach to post-traumatic growth. In P. A. Linley, & S. Joseph (Eds.), *Positive psychology in practice* (pp. 405–419). Hoboken, NJ: Wiley.
- Tedeschi, R.G., & Calhoun, L.G. (1995). *Trauma and transformation: Growing in the aftermath of suffering*. Thousand Oaks, CA: Sage.
- Teodorescu, D. S., Heir, T., Hauff, E., Wentzel-Larsen, T., & Lien, L. (2012). Mental health problems and post-migration stress among multi-traumatized refugees attending outpatient clinics upon resettlement to Norway. *Scandinavian Journal of Psychology*, 53(4), 316-332. doi:10.1111/j.1467-9450.2012.00954.x

Teodorescu, D. S., Siqveland, J., Heir, T., Hauff, E., Wentzel-Larsen, T., & Lien, L. (2012).

Posttraumatic growth, depressive symptoms, posttraumatic stress symptoms, post-migration stressors and quality of life in multi-traumatized psychiatric outpatients with a refugee background in Norway. *Health and Quality of Life Outcomes*, 10.

doi:10.1186/1477-7525-10-84

Thapa, S. B., Van Ommeren, M., Sharma, B., de Jong, J., & Hauff, E. (2003). Psychiatric

disability among tortured Bhutanese refugees in Nepal. *American Journal of Psychiatry*, 160(11), 2032-2037. doi:10.1176/appi.ajp.160.11.2032

Tolin, D.F., Foa, E.B. (2006). Sex differences in trauma and posttraumatic stress disorder: a quantitative review of 25 years of research. *Psychology Bulletin*, 132(6), 959–992.

doi:10.1037/0033-2909. 132.6.959

Toole, M. J., & Waldman, R. J. (1993). Refugees and displaced persons: War, hunger, and public health. *Journal of the American Medical Association*, 270(5), 600-605.

doi:10.1001/jama.270.5.600

Triplett, K. N., Tedeschi, R. G., Cann, A., Calhoun, L. G., & Reeve, C. L. (2011).

Posttraumatic Growth, Meaning in Life, and Life Satisfaction in Response to Trauma.

Psychological Trauma: Theory, Research, Practice, and Policy. doi: 10.1037/a0024204

Tsai, J., El-Gabalawy, R., Sledge, W. H., Southwick, S. M., & Pietrzak, R. H. (2014). Post-traumatic growth among veterans in the USA: results from the National Health and

Resilience in Veterans Study. *Psychological Medicine*, 45(01), 165-179.

doi:10.1017/s0033291714001202

- Uchino, B.N. (2004). Social support and physical health: Understanding the health consequences of relationships. *American Journal of Epidemiology*, 161(3), 240-241.
- United Nations High Commissioner for Refugees, *Global Trends: Forced displacement in 2015*. (Geneva: United Nations, 2016), available from <http://unhcr.org/556725e69.html>
- United Nations High Commissioner for Refugees, *Refugee status determination*. (Geneva: United Nations, 2011), Retrieved from <http://www.unhcr.org/cgi-bin/texis/vtx/home/opendocPDFViewer.html?docid=4d944d5b9&query=what%20is%20refugee>
- Van Ommeren, M., et al. (2001). Psychiatric disorders among tortured Bhutanese refugees in Nepal. *Archives of General Psychiatry*. 58(5), 475-482. doi:10.1001/archpsyc.58.5.475
- Vishnevsky, T., Cann, A., Calhoun, L.G., Tedeschi, R.G., Demakis, G. (2010). Gender differences in self-reported posttraumatic growth: a meta-analysis. *Psychology of Women Quarterly*, 34(1):110–120. doi:10.1111/j.1471-6402.2009.01546.x
- Weathers, F.W., Blake, D.D., Schnurr, P.P., Kaloupek, D.G., Marx, B.P., & Keane, T.M. (2013). *The Life Events Checklist for DSM-5 (LEC-5)*. Instrument available from the National Center for PTSD at www.ptsd.va.gov
- Weathers, F.W., Litz, B.T., Keane, T.M., Palmieri, P.A., Marx, B.P., & Schnurr, P.P. (2013). *The PTSD Checklist for DSM-5 (PCL-5)*. Scale available from the National Center for PTSD at www.ptsd.va.gov.
- Wu, H.C., et al. (2006). Survey of quality of life and related risk factors for a Taiwanese village population 3-years post-earthquake. *Australian & New Zealand Journal of Psychiatry*, 40(4),355–361. doi:10.1111/j.1440-1614.2006.01802.x 31.

Zimbrea, P. (2014). Risk factors and prevalence of mental health in refugees. In Annamalai, A. (Ed). *Refugee Health Care* (pp. 149-162). Doi: 10.1007/978-1-4939-0271-2_11

Appendix

Table 1 Descriptive table of participant characteristics

Characteristics		<i>N</i>	<i>M</i>	<i>SD</i>
Gender	Male	95		
	Female	25		
Age		116	30.14	6.97
	18-29	53		
	30-40	53		
	>41	10		
Place of residence (in years)		68	3.60	2.28
Marital Status				
	Married	29		
	Single	52		
	Divorced	4		
	Separated	3		
	Widowed	1		
	Engaged	7		
Military History	Yes	67		
	No	31		
Exposure to War/Conflict		16		
Yes				
	No	77		
Legal residence	Yes	79		
	No	17		
Asylum seeker	Yes	87		
	No	7		
Lampedusa survivor	Yes	36		
	No	61		
Educational level				
	Elementary – Middle School	20		
	High School	35		
	Technical College	8		
	University	18		
	Graduate School	16		

Table 2 Mean differences by legal residence, military history, asylum status, Lampedusa survivors, exposure to war/conflict, sex

Dependent Variables			PCL-5	PTGI	HSCL-A	HSCL-D	PMLD	SPS	MLQ-P	ISLES
Legal Residents	Yes	<i>M</i>	1.94	3.51	2.28	2.27	2.33	2.55	4.73	3.07
		<i>SD</i>	0.87	0.85	0.64	0.59	0.69	0.33	1.17	0.65
	No	<i>M</i>	2.02	3.46	2.04	2.35	2.97	2.48	4.12	3.06
		<i>SD</i>	0.77	1.01	0.54	0.72	0.54	0.3	1.63	0.53
	<i>t</i>		-0.32	0.24	1.46	-0.5	-3.60***	0.78	1.81	.07
	Military History	Yes	<i>M</i>	2.98	3.81	2.28	2.25	2.5	3.08	4.91
<i>SD</i>			0.88	1.05	0.72	0.72	0.77	0.18	1.4	0.76
No		<i>M</i>	2.54	3.5	1.93	2.07	2.41	3.21	4.7	3.04
		<i>SD</i>	0.94	0.92	0.85	0.7	0.64	0.36	1.37	0.59
<i>t</i>		-2.80**	-2.04*	-2.07 ^a	-1.31*	-0.75	2.44*	-0.81	1.11	
Asylum Status		Granted	<i>M</i>	1.97	3.47	2.23	2.29	2.47	2.52	4.59
	<i>SD</i>		0.83	0.87	0.62	0.61	0.72	0.31	1.23	0.70
	No	<i>M</i>	1.87	3.72	2.24	2.22	2.11	2.63	4.8	2.99
		<i>SD</i>	1.1	0.98	0.48	0.58	0.67	0.14	1.82	0.62
	<i>t</i>		0.29	-0.76	-0.05	0.3	1.24	-0.92	-30	0.28
	Exposure to War/conflict	Yes	<i>M</i>	2.2	3.62	2.17	2.25	2.38	2.64	4.81
<i>SD</i>			0.9	0.72	0.67	0.64	0.87	0.19	1.17	0.67
No		<i>M</i>	1.73	3.56	2.07	2.15	2.47	2.53	4.77	3.07
		<i>SD</i>	0.89	0.87	0.68	0.64	0.62	0.29	1.29	0.66
<i>t</i>		-1.99*	-0.29	-0.59	-0.59	0.39	-1.52	-0.13	0.21	
Sex		Men	<i>M</i>	1.86	3.6	2.12	2.18	2.48	2.53	4.7
	<i>SD</i>		0.87	0.88	0.68	0.66	0.68	0.32	1.3	0.63
	Women	<i>M</i>	1.56	3.61	1.99	2.2	2.36	2.61	5.21	3.21
		<i>SD</i>	0.96	0.85	0.75	0.66	0.72	0.19	1.14	0.63
	<i>t</i>		1.49	-0.05	0.83	-0.17	0.81	-1.26	-1.77	-0.69

Note. PCL-5 = PTSD Symptom Checklist-DSM-5; PTGI = Posttraumatic Growth Inventory; HSCL-A = Hopkins Symptom Checklist – Anxiety subscale; HSCL-D = Depression subscale; PMLD = Post-migration Living Difficulties; SPS = Social support Provision Scale; MLQ-P = Meaning in Life Questionnaire-Presence of Meaning subscale; ISLES = Integration of Stressful Life Experience Scale. * $p < .05$ ** $p < .01$ *** $p < .001$

Table 3 Mean, Standard Deviations, and intercorrelations of the subscales of the variables of interest

Variables	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8	9	10
1. PCL-5	2.64	.96	1	.34**	.04	.73***	.74***	.31**	-.39***	-.31***	.23*	-.38***
2. LEC-5	3.09	.71		1	.18*	.18	.21*	.21*	-.04	-.06	.09	.35*
3. PTGI	3.64	1.03			1	-.20*	-.07	-.01	.26***	.28***	.29*	.35*
4. HSCL-A	1.98	.79				1	.76**	.21*	-.37**	-.36**	.06	-.45**
5. HSCL-D	2.09	.71					1	.34***	-.35**	-.39***	.11	-.34**
6. PMLD	2.46	.71						1	-.10	-.11	.29**	-.36***
7. SPS	3.20	.35							1	.25**	-.07	-.06
8. MLQ-P	4.61	1.20								1	.29**	.31*
9. MLQ-S	4.76	1.48									1	.11
10. ISLES	3.17	.77										1

Note. *N* = 113 PCL-5 = PTSD Symptom Checklist-DSM-5; LEC-5 = Life Event Checklist-DSM-5; PTGI = Posttraumatic Growth Inventory; HSCL-A = Hopkins Symptom Checklist – Anxiety subscale; HSCL-D = Hopkins Symptom Checklist – Depression subscale; PMLD = Post-migration Living Difficulties; SPS = Social support Provision Scale; MLQ-P = Meaning in Life Questionnaire- Presence of Meaning subscale; MLQ-S = Meaning in Life Questionnaire- Search Meaning subscale; HSCL = Hopkins Symptoms Checklist full scale; ISLES = Integration of Stressful Life Experience full scale.

p* < .05 *p* < .01 ****p* < .001

Table 4 Summary of Moderation analysis: Model 1 meaning made and social support as moderation variables

Measure	<i>R</i>	<i>R</i> ²	ΔR^2	<i>F</i> test			<i>b</i>	<i>t</i> (90)	95% Confidence Interval	
				<i>F</i>	ΔF	<i>d</i> <i>f</i>				
PCL-5 (Y)	.13	.26		6.36***		3				
LEC-5 (X)							.67	1.80	-.07	1.40
SPS (M ₁)							-.69	-1.62	-1.53	.15
LEC-5 x SPS(XM ₁)			.02		1.06	1	7.82	1.03	-7.26	22.91
PCL-5 (Y)	.51	.26		12.29***		3		<i>t</i> (110)		
LEC-5 (X)							1.02***	-3.96***	-.68	-.22
ISLE (M ₂)							-.45**	3.09**	.37	1.68
LEC-5 x ISLE (XM ₂)			.02		1.88	1	-.51	-1.37	-1.27	.23

p* < .05 *p* < .01 ****p* < .001

Table 5 Conditional effect of X on Y at values of Moderators: Model 1

Moderators	Meaning-made (ISLES)			Social Support (SPS)		
	Conditional direct effect	95% Confidence Interval		Conditional direct effect	95% Confidence Interval	
Low	1.44	.40	2.48	-1.65	-6.27	2.97
Average	1.02	.37	1.68	.67	-.07	1.40
High	.60	-.13	1.33	2.98	-1.45	7.42

Table 6 Summary of moderation analysis: Model 1 meaning made and social support as moderating variables

Model	Variables	<i>R</i>	<i>R</i> ²	ΔR^2	<i>F</i> test			<i>b</i>	<i>t</i> (131)	95% Confidence Interval	
					<i>F</i>	ΔF	<i>df</i>				
1	Anxiety (Y)	.32	.10		6.26***		3				
	LEC-5 (X)							.49*	2.09*	.03	.96
	SPS (M ₁)							.15	.57	-.37	.67
	LEC-5 x SPS(XM ₁)			.02		1.06	1	1.52*	2.01*	.03	3.01
2	Anxiety (Y)	.41	.17		9.36***		3				
	LEC-5 (X)							.65**	2.79**	-.56	-.12
	ISLE (M ₂)							-.34**	-3.03**	.37	1.68
	LEC-5 x ISLE (XM ₂)			.01		.42	1	-.29	-.65	-1.16	.59

* $p < .05$ ** $p < .01$ *** $p < .001$

Table 7 Conditional effects of X on Y at values of Moderators: Model 1

Moderators	Meaning-made (ISLES)			Social Support (SPS)		
	Conditional direct effect	95% Confidence Interval		Conditional direct effect	95% Confidence Interval	
Low	.85	.11	1.58	.06	-.64	.76
Average	.65	.19	1.11	.49	.03	.96
High	.46	-.32	1.23	.93	.37	1.48

Table 8 Summary of Moderation analysis: Model 1 meaning-made and social support as moderating variables

Model	Variables	R	R ²	ΔR^2	F test			b	t(131)	95% Confidence Interval	
					F	ΔF	df				
1	Depression (Y)	.44	.19		25.95***		3				
	LEC-5 (X)							.66**	2.90**	.21	1.10
	SPS (M ₁)							.72***	5.28***	.45	.99
	LEC-5 x SPS(XM ₁)			.00		.31	1	1.43	.56	-.67	1.19
2	Depression (Y)	.31	.10		4.85**		3				
	LEC-5 (X)							.56*	-2.23*	-.38	-.02
	ISLE (M ₂)							-.20**	2.77**	.16	.97
	LEC-5 x ISLE (XM ₂)			.00		.53	1	-.23	-.73	-.84	.38

* $p < .05$ ** $p < .01$ *** $p < .001$

Table 9 Conditional effect of X on Y at values of Moderators: Model 1

Moderators	Meaning-made (ISLES)			Social Support (SPS)		
	Conditional direct effect	95% Confidence Interval		Conditional direct effect	95% Confidence Interval	
Low	.72	.10	1.34	.55	-.18	1.28
Average	.56	.16	.97	.56	.21	1.10
High	.41	-.13	.94	.76	.39	1.13

Table 10 Summary of Moderation analysis: Model 1 social support and meaning in life as moderating variables.

Model	Variables	R	R ²	ΔR^2	F test			b	t(131)	95% Confidence Interval	
					F	ΔF	df				
1	PTGI (Y)	.27	.07		3.33*		3				
	PCL-5 (X)							.03	.33	-.16	.22
	SPS (M ₁)							.68*	2.40*	.12	1.26
	PCL-5 x SPS(XM ₁)			.01		.65	1	.32	.81	-.46	1.09
2	PTGI (Y)	.37	.13		7.30***		3				
	PCL-5 (X)							.21	2.17	.02	.41
	MLQ-P (M ₂)							.26	4.54	.15	.38
	PCL-5 x MLQ-P (XM ₂)			.00		.02	1	.01	.16	-.14	.17

* $p < .05$ ** $p < .01$ *** $p < .001$

Table 11 Conditional effect of X on Y at values of Moderators: Model 1

Moderators	Social Support (SPS)			Meaning in life (MLQ-P)		
	Conditional direct effect	95% Confidence Interval		Conditional direct effect	95% Confidence Interval	
Low	-.06	-.36	.24	.20	-.08	.48
Average	.03	-.16	.22	.21	.02	.41
High	.12	-.16	.40	.23	-.05	.51

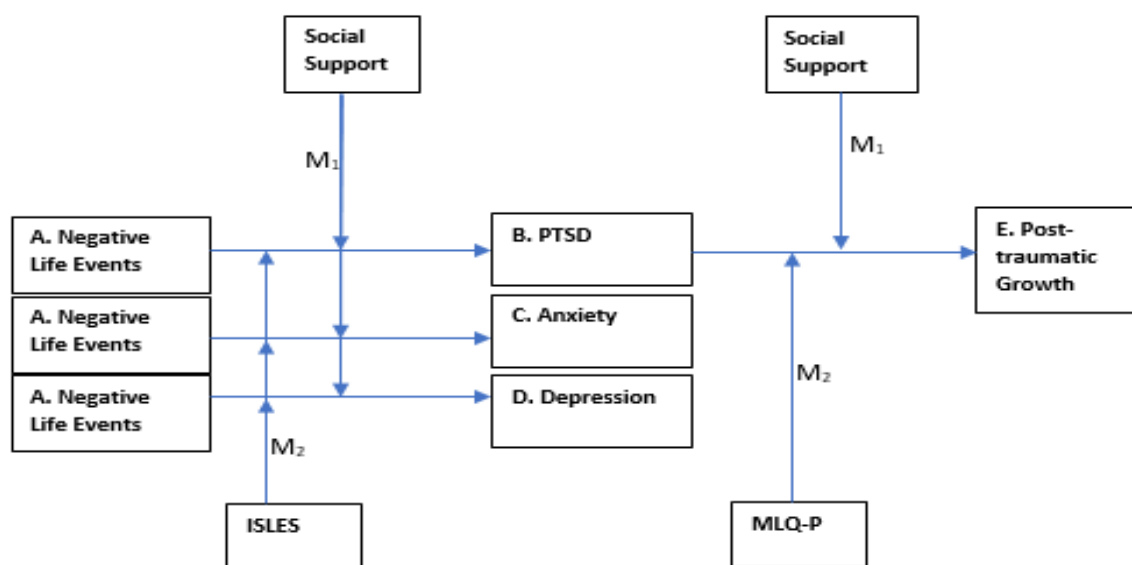


Figure 1 Moderated Model testing hypothesis that meaning made and social support moderates the relationship between negative life events, posttraumatic stress disorder, depression, anxiety and posttraumatic growth

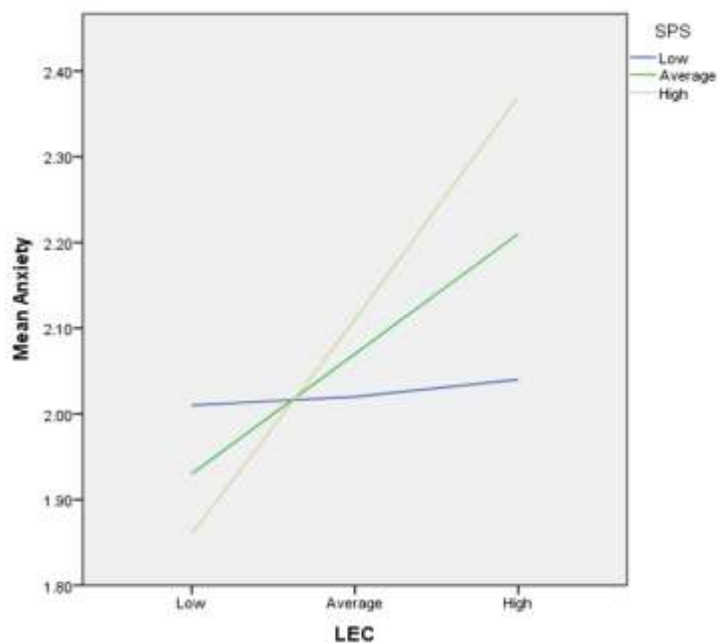


Figure 2 Moderated Model: Social support (SPS) moderating the relationship between the number of traumatic life events (LEC) and anxiety

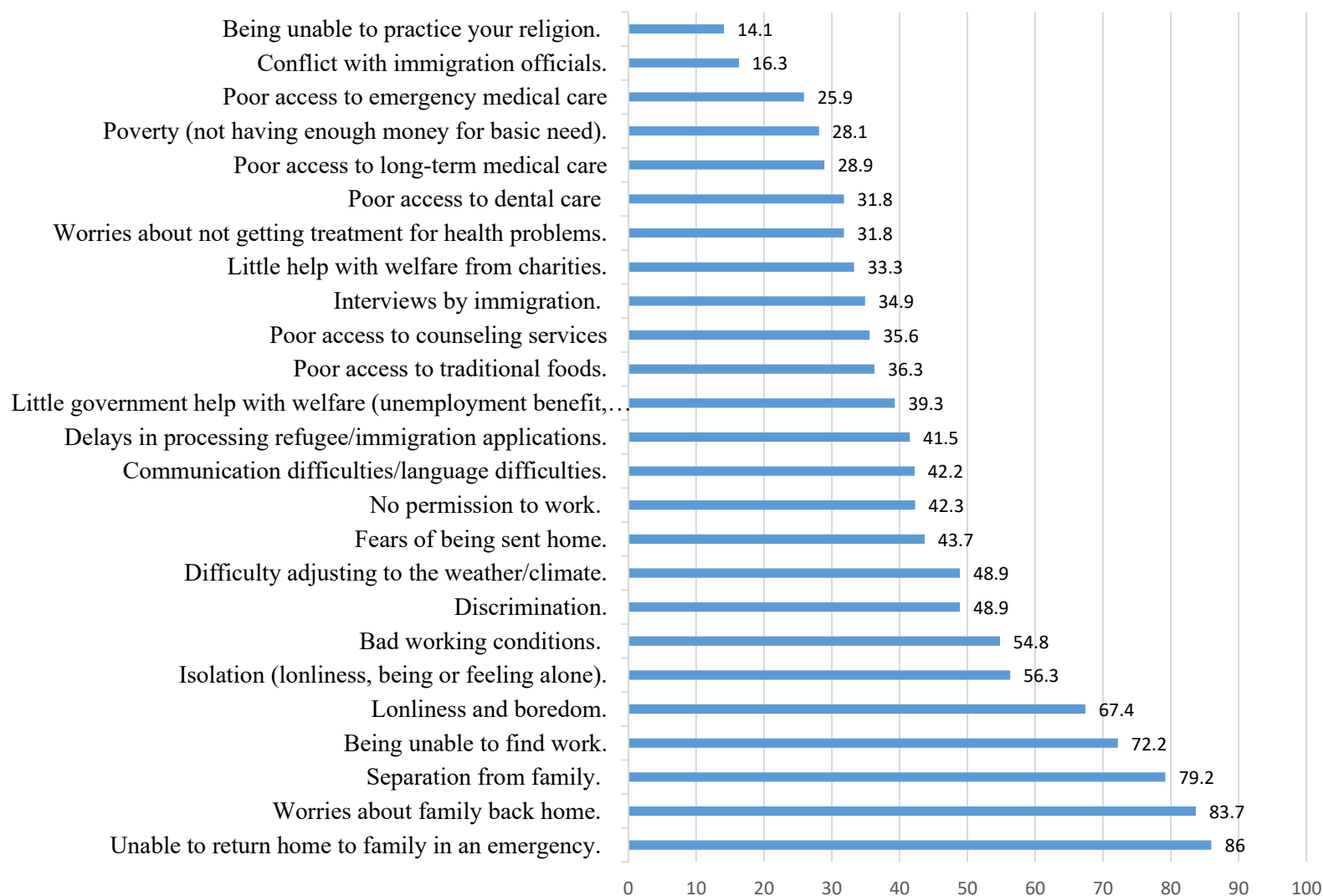


Figure 3 Percentage of participants reporting post-migration living difficulties

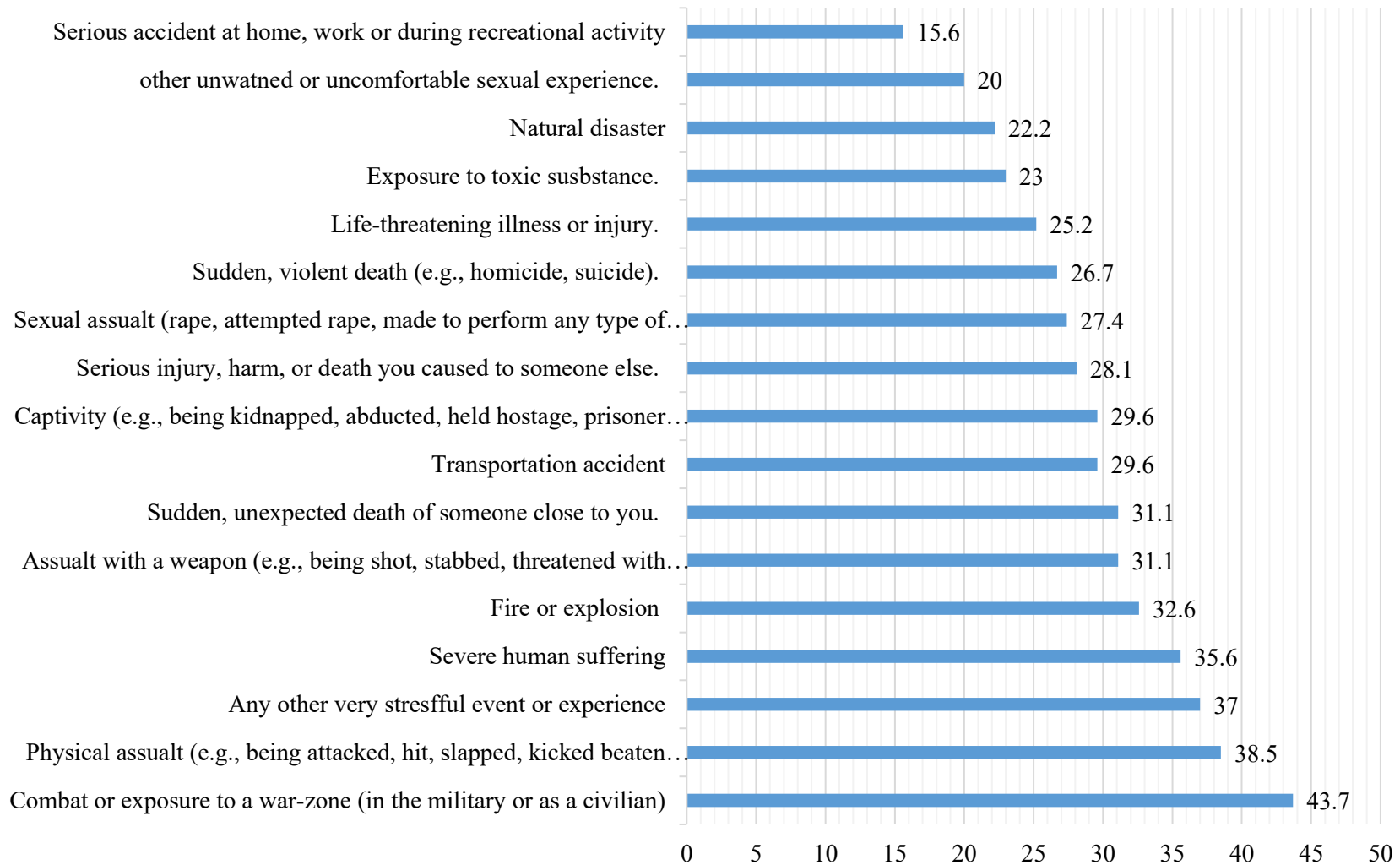


Figure 4 Percentage of participants reporting traumatic life events

Vita

Yacob Tekie was born in Asmara, Eritrea and grew up in Asmara. He attended the University of Asmara for his undergraduate education and graduated with distinction in 2005 with a degree in Educational Psychology. Yacob attended the University of Tennessee in pursuit of a doctor of philosophy degree in counseling psychology. He also completed a concurrent Masters of Arts degree in counseling psychology in 2014. Also, he is completing a Master's of Science in Statistics as well as a Graduate Certificate in Statistics, Measurement and Evaluation at the University of Tennessee and he is expected to graduate in Spring 2017. For his doctor of philosophy, he will graduate in December 2018 after completion of a year-long clinical internship at the University of Pennsylvania Counseling and Psychological Services.