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## Testing Resilience as a Moderator of the Torture-Mental Health Relationship in Refugee Survivors of Torture

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TESTING RESILIENCE AS A MODERATOR OF THE TORTURE-MENTAL  
HEALTH RELATIONSHIP IN REFUGEE SURVIVORS OF TORTURE

A Thesis Presented

by

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## ABSTRACT

The current study focuses on a clinical sample of refugee survivors of torture to examine resilience-promoting factors including external protective factors, *community engagement*, *employment*, and *English fluency*, and an internal protective factor, *psychological flexibility*. This study conducted moderation and mediation analyses to better understand how resilience-promoting factors impact on the torture-mental health relationship. Findings showed that torture severity was significantly and positively associated with all mental health symptoms including PTSD, depression, and anxiety. For all models of mental health symptoms, *psychological flexibility* was revealed as a significant and negative predictor as well as a significant mediator of torture-mental health relationship. Additionally, English fluency and employment, but not community engagement, were significantly and negatively associated with mental health symptoms. There were no significant interaction effects observed in the study. Overall, the results from the present study identified variables that may have a meaningful impact on the mental health of refugee survivors of torture, and these findings provide future insights and implications in treating this patient population from the strengths-based and resilience-oriented clinical frameworks.

*Keywords:* refugee mental health, refugee torture survivor, resilience, psychological flexibility

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## CHAPTER 1: INTRODUCTION

Today, the world is witnessing a significant increase in refugee crises. By the end of 2017, 68.5 million people worldwide—the largest number ever recorded—had been forcibly displaced from their homes due to violence and persecution (UNHCR Global Trends, 2018). Before being forced to flee, a majority of refugees suffer from violence and experiences of torture which may include various forms of intentional and systematic infliction of physical and psychological pain (Steel et al., 2009). Although estimates vary, the overall prevalence of torture survivors in the refugee population is around 44% (Higson-Smith, 2015), and up to 1.3 million survivors of torture currently live in the United States (Center for Victims of Torture, 2015).

Torture can be defined as any act that intentionally inflicts severe pain or suffering—physical or psychological—for specific purposes such as obtaining information or a confession, punishment, or as an act of intimidation or coercion, or discrimination of any kind (United Nations Convention Against Torture, 1984). Some experts also characterize torture as “a deliberate and calculated effort to destroy the psychological and/or physical well-being of the targeted individuals” (Engstrom et al., 2008, p. 16). Although the practice of torture has been prohibited and condemned under international law, torture and other inhumane acts are still widely present in at least 141 countries, which represents three-quarters of the world (Amnesty International, 2014).

In the literature, there are diverse methods of torture reported. Some prevalent methods are types of physical torture such as beatings, burnings, electric shocks, suffocation, drowning, and sexual violence (Amnesty International, 2014). Psychological torture methods can be seen in such forms as threats of death, sham execution,

brainwashing, solitary confinement, humiliation, and the forced witnessing of the murder or torture of others (Amnesty International, 2014). Most forms of torture tend to involve both physical and psychological components, with common examples being rape and sexual violence (McColl et al., 2010).

Experience of torture has been consistently shown to be a strong predictor of various damaging and long-lasting physical and psychological conditions (Quiroga & Jaranson, 2005). In a sample of former political prisoners of refugees, physical and psychological torture were independent predictors of posttraumatic stress disorder (PTSD) symptoms, with an especially pronounced effect when the two types were combined (Punamäki, Qouta, & Sarraj, 2010). The psychological conditions that torture survivors most frequently report include posttraumatic stress disorder, generalized anxiety disorder, depression, and somatic disorders (Elklit et al., 2012; Shrestha et al., 1998; Tufan et al., 2013; Van Ommeren et al., 2002).

Across studies and regions, the prevalence of posttraumatic stress symptoms within refugee populations shows a wide range. A study conducted with refugee torture victims from six different nations found that PTSD diagnoses ranged from 69-92% across all patient groups (Moisander & Edston, 2003). At a community psychiatry clinic, the rate of PTSD following torture was reported as 90% among Vietnamese former political prisoners seeking treatment (Mollica et al., 1998). Due to the non-random sampling and small sample sizes in these studies, generalizability of these findings may be limited. However, most studies in the literature show a PTSD rate of 50% or higher among refugee torture survivors, which is a far higher prevalence than the 6.8% rate of PTSD in the general population (Kessler, 2005).

Although PTSD appears to be the predominant mental health concern among refugee survivors of torture, it is important to highlight that anxiety, depression, and other conditions are also commonly reported in this population. For example, the rates of anxiety and depression are reported as up to 90% among African refugee survivors of torture in some studies (Carlsson et al., 2006). According to Abu Suhaiban and colleagues' (2019) review on the studies of refugee torture survivors, the prevalence of depression ranged from 28-95% and the prevalence of anxiety ranged from 23-91% across studies.

Due to the heterogeneous samples and measures presented across studies, it is challenging to conclude the overall prevalence of psychological disorders among refugee survivors of torture. However, refugees with a history of torture are consistently shown to have higher risks for mental health issues such that they are in general about four times more likely to suffer from PTSD than other refugees, and about two-and-a-half times more likely to suffer from depression than non-tortured refugees (Steel et al., 2009). Refugee torture survivors also tend to report significantly greater depression and anxiety symptoms than non-tortured refugees (Rončević-Grzeta, 2001; Shrestha et al., 1998).

### **1.1. Resilience and Protective Factors**

On the other hand, not all individual refugees with a history of significant trauma are observed to present with mental health symptoms. For example, in a study with Ugandan refugees, 27.6% of the sample (90 participants) who had high-trauma experiences as former child soldiers did not report any signs of clinically significant behavioral and emotional problems today, indicating posttraumatic resilience (Klasen et al., 2010). Moreover, in two community studies with Iraqi refugees, although torture

survivors were found to self-report worse physical health outcomes, they reported stronger post traumatic growth attitude, better sociocultural adjustment, and higher practice of religion as a way of coping than a non-tortured refugee group with other types of trauma history (Kira, 2014).

There may be different mechanisms to explain why such differences in *symptomology and resilience* exist among refugee survivors of torture. To understand the impact of trauma, the Chronic Traumatic Stress (CTS) Framework (Fondacaro & Mazzulla, 2018) proposes that the interplay between individuals and the surrounding environment is critical to consider. Specifically, under this framework, one's mental health outcomes are viewed as being affected by both protective and risk factors exhibited at the various levels of individual, family, community, and culture. In refugee populations, such protective and risk factors should be contextualized both in the domains of premigration (e.g., exposure to torture, war, violence) and postmigration (e.g., current living difficulties, presence of social support). The CTS Framework suggests that the differences in trauma outcomes of refugees could be conceptualized such that "the risk factors interact with stressful events to increase the likelihood of negative physical and psychological outcomes whereas protective factors mitigate negative outcomes and increase resilience" (Fondacaro & Mazzulla, 2018, p. 64).

While a strong body of research has investigated refugee mental health, few studies have examined refugee resilience (Watters, 2001). Broadly, resilience describes the process where an individual can bounce back and adapt positively to move forward in life in the face of significant adversity and challenging experiences (Edward et al., 2005). However, it is important to note that a variety of theories and definitions are present in

the literature in conceptualizing *resilience*. In the trauma literature, resilience is most often defined by the absence of psychopathology or maladaptive stress responses in the aftermath of exposure to traumatic experiences (Agaibi & Wilson, 2005; Klasen et al., 2010). In some studies, resilience is conceptualized as a personality trait (e.g., hardiness or ego resilience) that may influence thinking, emotional regulation, and coping styles associated with adaptive outcomes (Agaibi & Wilson, 2005; J. H. Block & Kremen, 1996). On the other hand, resilience in developmental studies is defined as a fluid construct describing the pathways or processes leading to an individual's positive adaptation, or even flourishing despite adversity (Masten et al., 2018). Importantly, researchers have also proposed that resilience is not restricted within the level of individuals but is a byproduct of the interactions within multi-level systems—for example, Masten and colleagues (2011) proposed that resilience is “the capacity of a dynamic system (individual, family, school, community, society) to withstand or recover from significant challenges that threaten its stability, viability, or development” (p. 494). This conceptualization on resilience is also aligned with the Chronic Traumatic Stress (CTS) Framework which emphasizes the importance of viewing the mental health outcomes through the multi-systemic lens through the levels of individual, family, community and culture (Fondacaro & Mazzulla, 2018).

Regardless of these diverse theories and definitions, resilience is fundamentally understood as referring to positive adaptation or the ability to maintain or regain mental health after experiencing adversity (Hermann, 2011). In the present study, resilience is conceptualized as positive adaptation of refugee torture survivors despite having been exposed to significant adversity, and is viewed through multiple internal and external

protective factors. Evidence from previous studies has demonstrated several resilience promoting factors for the refugee community, introduced below.

### **1.1.1. Social/community engagement**

Healing and recovery in the refugee community appear to be fostered when individuals actively utilize and harness their surrounding resources. Social or community engagement in refugee populations in particular seems an important source of resilience, perhaps due to the majority of refugee communities placing high values on collectivism and social cohesion (Bemak et al., 2002). Evidence suggested that refugee individuals and families who better engage with capacity, opportunities, and resources from the community to deal with challenges and adversity display higher levels of resilience (Sonn & Fisher, 1998). Research has also demonstrated that social support can buffer the harmful consequences of trauma, loss, and other challenging life events (Brown & Harris, 1978), and is associated with improved psychological wellbeing in refugees (McMichael & Manderson, 2004).

For example, African refugees identified that social support from friends and their community played a central role in helping them survive the risks and adversities they strongly experienced (Bemak et al., 2002). Similarly, Alden and colleagues (1996) found that former Burmese political dissidents described camaraderie and support from the community as one of the main protective factors against the psychological effect of interrogation, imprisonment, and torture. Other studies also showed that social participation within the community alleviated immigration-related psychological distress among recently settled Iraqi refugees in Sweden (Lecerof et al., 2015), and that the level of social support played an important factor in determining the severity of both PTSD and

depressive symptoms in a sample of torture survivors (Gorst et al., 1998). Guided by these previous findings, community engagement was considered as a protective factor for refugees in the current study.

### **1.1.2. Employment**

The ability of refugees to participate in the labor force could play an important role in the process of psychological healing. Mollica (2008) describes that engaging in employment provides refugee survivors of trauma an opportunity to have an income, connect with the camaraderie of fellow workers, and form a stronger sense of self-fulfillment and belonging. In a 10-year-old study conducted on Southeast Asian refugees in Canada, unemployment predicted a higher risk of developing depression particularly among refugee men (Beiser et al, 2001). Another study conducted among African refugees in Australia showed that employment is significantly linked to positive physical and mental health outcomes and facilitates a successful integration into a new community (Wood et al., 2019). Additionally, regular income from employment allowed these refugees to have improved healthcare access and promoted healthy lifestyle behaviors (Wood et al., 2019).

In order to secure employment, there are a number of systematic challenges and barriers (e.g., immigration documentation, language, cultural differences, etc.) that refugees need to overcome, on top of having to manage possible physical and mental health issues in this at-risk population. Despite these major barriers, many refugee individuals participate in the labor market, which demonstrates a sign of positive adaptation in the face of adversity. Therefore, participant employment status was considered as a protective factor in the current study.

### **1.1.3. Language acquisition**

Language barriers in new communities after resettlement pose additional risk factors for accessing mental health services among refugee individuals. For example, Kim and colleagues (2011) showed that in a study with Latino and Asian refugees with psychological disorders, limited English proficiency was a significant barrier to mental health service use. In the systematic review by Ohtani (2015), the 12 published articles consistently reported a significant association between limited language proficiency and underutilization of mental health services among refugee individuals and families. Similarly, a study of Burmese refugees living in Australia found a strong association between post-migration communication challenges and PTSD symptoms (Schweitzer et al., 2011).

Conversely, research has shown that better acquisition of the language of the new country has been associated with significantly lower levels of PTSD symptoms among Iraqi refugees living in Sweden. Refugee mothers with significantly higher English language proficiency have also reported receiving greater social support than their counterparts (Scott & Johnson, 1997). Similarly, in a sample of young refugees, competence with the host country's language is shown to be significantly associated with a reduced risk of depression and internalizing problems (Fazel et al., 2012).

Language acquisition can be a particular challenge for refugee adults as compared with refugee children and youths who may receive more opportunities to learn English and who benefit from greater plasticity in cognitive development. In the current study of refugee adults, language acquisition was therefore considered as an important

resilience-promoting factor which demonstrates a sign of positive adaption in this population.

#### **1.1.4. Psychological flexibility as an internal protective factor**

The majority of the studies conducted on refugee resilience have focused on factors external to the individual, but it is equally important to consider internal protective factors. Some examples of internal protective factors may include coping strategies such as optimism, identifying one's strengths, having the determination to cope, and perceiving oneself as a survivor rather than a victim (Gorman et al., 2003).

Among several internal protective factors, one promising candidate to examine is psychological flexibility. The construct of psychological flexibility (PF) is defined as the process of connecting with the present moment fully, as a conscious human being, and persisting in or changing behavior to be in line with identified values (Gloster et al., 2011; Hayes et al., 1999). On the opposite end of this construct, individuals who demonstrate *psychological inflexibility* (also known "*experiential avoidance*") may exhibit an unwillingness to experience distressing emotions by avoiding them or remaining attached to unhelpful cognitive or behavioral patterns, and they may avoid engaging in values-based activities, creating more harm in the long run (Hayes et al., 1999). Psychological flexibility is a central concept in Acceptance and Commitment Therapy (Hayes et al., 2004), and it is comprised of six main components: acceptance, cognitive defusion (i.e. changing one's relationship to thoughts), contact with the present moment, conceptualization of the self within context, identification and clarification of values, and committed action (Hayes et al., 2006).

Clinical studies have begun to explore the role of psychological flexibility in moderating treatment outcomes. For instance, evidence shows that individuals with higher levels of psychological flexibility reported lower severity of PTSD symptoms following trauma exposure (Thompson, Arnkoff, & Glass, 2011). Similarly, improving psychological flexibility (through mindfulness and acceptance strategies) is an important component of refugee intervention by decreasing somatic distress and rumination (Hinton, Pich, Hofmann, & Otto, 2013). Promoting psychological flexibility has been considered an important skill for refugee individuals who are trying to adapt to living in a novel and multicultural environment (SAMHSA, 2013). According to a study conducted with Tibetan refugees, psychological flexibility was described as a learned and active process of “making the mind more spacious and flexible”, which potentially abated psychological distress among refugees who were formerly exposed to political violence (Lewis et al., 2013, p. 314). A pilot study in Uganda among South Sudanese refugees also showed that enhancing psychological flexibility through Acceptance and Commitment Therapy was a promising and potentially scalable intervention for reducing psychological distress in refugees with traumatic experiences or adversities (Tol et al., 2018). Based on these specific findings on the role of psychological flexibility in refugee resilience, this construct was included as an important internal protective factor in this study.

## **1.2.The Current Study**

The current study examined a clinical sample of refugee torture survivors who sought services at Vermont Psychological Services to better understand the relationships and interplay between refugee risks, resilience and mental health outcomes. Specifically, the current study aimed to investigate whether and how resilience moderates the

relationship of torture history and mental health outcomes. Therefore, analyses focused on torture severity as the independent variable, the level of mental health symptomology (PTSD, depression, and anxiety) as the dependent variable, and resilience as the moderator in this treatment-seeking sample of refugee torture survivors. To investigate this, a resilience composite index was created in this study by combining self-reported values of psychological flexibility, employment, English fluency, and community engagement, all of which are described above as protective factors in the literature.

The specific hypotheses for the current study were as follows:

Hypothesis 1: Torture severity and mental health symptoms will be positively associated in this sample of refugee torture survivors.

Hypothesis 2: Resilience will moderate the torture-mental health association, such that the torture severity-mental health symptoms association will be larger when resilience is low, but smaller when resilience is high.

Hypothesis 3: There will be a difference between the moderating impact of external protective factors (social support, employment, English proficiency) versus the psychological flexibility (PF) on the torture-mental health relationship. Specifically, we hypothesized that psychological flexibility may have a greater moderating impact than other external protective factors on torture-mental health relationship, considering the evidence from former clinical studies showing that psychological flexibility serves as an important protective factor in reducing mental health symptoms (Hinton, Pich, Hofmann, & Otto, 2013, Thompson, Arnkoff, & Glass, 2011). Additionally, evidence showed that psychological inflexibility is a cognitive *mediator* on torture and mental health relationships from a previous study (Gray et al., 2020). This prior study by Gray and

colleagues (2020) has examined a similar dataset from the same clinical research team but the independent variable was the dichotomous predictor of whether a participant was a torture survivor or not. In comparison, the independent variable in our current study was the continuous measure of torture severity, and we now aim to particularly examine the effect of psychological flexibility as a *moderator* on the torture-mental health relationships.

In addition, the study will examine whether the role of resilience on the torture-mental health relationship will be observed differently when covariates were included in the models, specifically broad demographic factors such as age, gender, marital status, education level, housing status, and immigration status.

## **CHAPTER 2: METHOD**

### **2.1. Participants**

The current study is a secondary data analysis on two combined datasets. The study includes a total of total 75 adult refugees who received mental health services at Vermont Psychological Services between the period of August 2007-July 2019. At the time of data collection, participants gave consent to participate in future studies after their information has been completely deidentified. Ages for participants ranged from 19-88 years ( $M = 41.1$ ,  $SD = 15.4$ ) and 52% of the sample identified as female. Only 2.8% of the sample spoke English as a native language, and the rest spoke 27 different languages. The participants reported to be from 13 different countries of origin and self-identified as 27 different groups of ethnicities. All use of data and other study procedures were approved by the Institutional Review Board (IRB) at the University of Vermont.

### **2.2. Measures**

#### **2.2.1. Demographic Questionnaire**

Participants were asked to complete a 21-item questionnaire which includes demographic information such as age, gender, employment, highest education level, English fluency, and community engagement. The external protective factors were coded as dichotomized variables, based on the participants' responses on demographic questionnaire. Specifically, community engagement was coded as a 0/1 dichotomized variable such that any level of community engagement was coded 1, and none as 0. English fluency was coded as a 0/1 dichotomous variable based on whether participants endorsed English as one of their top 3 languages that they were most fluent in.

Employment was coded as a 0/1 dichotomous variable based on the participants' self-report on their employment status at the time of the interview.

### **2.2.2. Harvard Trauma Questionnaire (HTQ; Mollica et al., 1992)**

The Harvard Trauma Questionnaire is a validated cross-cultural screening instrument designed to assess torture, trauma exposure, and trauma-related symptoms in refugees. The HTQ has been reported to have high test-retest reliability ( $\alpha = .89$ ) and internal consistency ( $\alpha = .90$ ; Mollica et al., 1992). The measure consists of four sections in which part I includes 17 questions to identify traumatic life events, part II is an open-ended question to inquire subjective description of the most traumatic event that participants experienced, part III assesses events that may have led to head injury, and part IV is a list of trauma symptoms to determine whether participants meet the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV, American Psychiatric Association, 2000) criteria for posttraumatic stress disorder (PTSD). Several studies have recommended the use of Harvard Trauma Questionnaire as a culturally sensitive tool for the assessment of PTSD across cultures and in non-Western populations (Gagnon, Tuck, & Barkun, 2004, Keane et al., 2008, Shoeb et al., 2007).

In this study, the participant's torture history was calculated by a sum of the experiences of torture endorsed in the part I of the HTQ. Events reported as "witnessed" or "heard about" were not included within torture history, in order to be consistent with existing literature on similar studies which utilized the HTQ (e.g., Arnetz et al., 2014; Finklestein & Solomon, 2009; Wanna et al., 2019). A sum total of PTSD symptoms endorsed by the participants in part IV of the HTQ were utilized as the PTSD variable in this study.

### **2.2.3. Hopkins Symptoms Checklist (HSCL-25; Derogatis et al, 1974)**

The Hopkins Symptoms Checklist is a cross-culturally validated screening tool designed to detect symptoms of anxiety and depression. The HSCL includes a 10-item subscale for anxiety symptoms as well as a 15-item subscale for depression symptoms experienced within the past week, with each question item scored on a Likert scale from 1 (not at all) to 4 (extremely). Sample anxiety items include “being scared for no reason” or “heart racing”, and sample depression items include “feeling hopeless” or “feeling no interest”. The HSCL-25 is reported to have the high internal consistency with Cronbach’s  $\alpha$  values of .93 for overall scale, .90 for the depression subscale, and .85 for anxiety subscales respectively (Kaaya et al., 2002). The test-retest reliability of the HSCL was also high ( $\alpha = .86$ ; Derogatis et al., 1974). Interrater reliability for the total and subscale across groups of the HSCL was higher than .98 (Mollica et al., 1987, p. 499).

### **2.2.4. The Acceptance and Action Questionnaire - II (AAQ II; Hayes et al., 2011)**

The AAQ-II is a self-report scale with 7 items that assess levels of psychological flexibility. Psychological flexibility is measured as a continuous construct, and in the original scoring participants’ scores lie on a continuum with higher scores indicating higher psychological **in**flexibility. For our purpose, the psychological flexibility score was reversed such that higher scores represented greater psychological flexibility, to be consistent with the rest of resilience-promoting factors in this study. Participants were asked to rate items on the questionnaire from 1 (*never true*) to 7 (*always true*). Sample questions include “I’m afraid of my feelings” and “My painful memories prevent me from living a fulfilling life.” The AAQ-II has demonstrated good internal consistency

with a mean alpha coefficient of .84, strong test-retest reliability ( $r = .81$  at 3-months and  $r = .79$  at 12-months) in clinical samples (Bond et al., 2011; Gloster, 2011).

### **2.3. Procedure**

As noted above, this project used previously-collected data. A clinician obtained informed consent from participants after explaining the nature of research, confidentiality, privacy, and that participation in this project was completely voluntary. Next, the clinician conducted several self-report questionnaires and measures through an in-person interview. The questionnaires were completed in English through an in-person or telephone interpreter who spoke the participant's language when needed. After each interview, the clinician or a research team member entered the participant's information into a centralized database without containing any identifiable information.

### **2.4. Data Analytic Plan**

First, a resilience composite index was created by combining the standardized z-scores of the following variables: psychological flexibility (as measured by Acceptance and Action Questionnaire and reverse-coded so that higher scores indicated higher psychological flexibility), community engagement, English fluency, and employment (all of which were measured by the demographic questionnaire). Correlational analyses were conducted to test hypotheses about associations between torture history, resilience, mental health symptoms and to determine the magnitude, direction, and statistical significance of associations among these variables.

Moderation analyses were conducted using SPSS statistical software version 25 (IBM Corp, 2017). Specifically, through the PROCESS program in SPSS (Hayes, 2013), the resilience index was tested as a moderator of the torture-mental health symptoms

association in the presence of covariates such as gender, age, marital, housing, and immigration status.

## CHAPTER 3: Results

### 3.1. Descriptive Statistics and Zero-Order Correlations

In the current sample ( $N = 75$ ), 48% of the participants self-identified as male and 52% as female. The mean age of the participants was 41.1 years old with a considerable variability ( $SD = 15.4$ ) such that the youngest participant was 19, and the oldest was 88. About 67% of the participants reported as married, 20% were single, and the rest reported as either divorced or widowed. Over 85% of the sample reported having one or more children. The participants came from 13 different countries and self-identified as 27 different groups of ethnicities. Only 6% of the sample reported as having become either U.S. citizens or green card holders, with the rest reporting their current immigration status as refugees, asylees, or asylum seekers.

Table 1 below presents the sample mean, standard deviation, and range for the main study variables.

Table 1. Descriptive statistics for primary study variables

	<i>M</i>	<i>SD</i>	<i>Range</i>
Torture Severity (Number of Torture Events Endorsed)	5.37	3.98	0-15
Post-Traumatic Stress Symptoms (HTQ)	2.34	0.81	1.06 – 3.90
Depression Symptoms (HSC-D)	2.39	0.74	1.00 - 3.67
Anxiety Symptoms (HSC-A)	2.30	0.81	1.00 - 3.80
Psychological Flexibility (AAQ)	23.67	13.24	7 - 49
	Yes	No	
Endorsed English as one of Top 3 Most Proficient Languages	38.7%	61.3%	
Endorsed Employed status	41.3%	58.7%	
Endorsed Community Involvement	44.4%	55.6%	

Next, correlational analyses were performed to test the association between torture severity and symptoms of PTSD, depression, and anxiety (See Table 2). Torture severity was significantly and highly correlated with the participant's risk of developing PTSD symptoms according to DSM-IV items on the Harvard Trauma Questionnaire;  $r(75) = .71, p < .001$ . Additionally, torture severity was significantly and positively associated with depression symptoms,  $r(75) = .41, p < .001$ , and with anxiety symptoms,  $r(75) = .40, p < .001$ . These findings supported the study's first hypothesis that torture severity and mental health distress would be positively associated in this sample of refugee torture survivors. Moreover, psychological flexibility was found to be significantly and negatively associated with torture severity and all mental health symptoms. Among its negative association with mental health conditions, psychological flexibility had the strongest negative association with PTSD symptoms,  $r(75) = -.72, p < .001$ .

Correlational analyses between torture, mental health, and external protective factors were also examined. The findings indicated that there were significant negative associations between self-reported English fluency and all mental health symptoms. There was also a significant negative correlation between employment status and PTSD symptoms. Self-reported community involvement was not significantly associated with any of the mental health symptoms. Torture severity was not significantly associated with the presence of any of the external protective factors.

Table 2. Correlations among primary study variables

	1	2	3	4	5	6	7	8
1. Torture severity	–							
2. Average PTSD symptoms	.71**	–						
3. Average depression symptoms	.41**	.65**	–					
4. Average anxiety symptoms	.40**	.69**	.73**	–				
5. Psychological flexibility	-.44**	-.72**	-.50**	-.54**	–			
6. Self-reported English fluency	-.14	-.31**	-.26*	-.35**	.23*	–		
7. Self-reported employment status	.04	-.26*	-.15	-.16	.12	.28	–	
8. Self-reported community involvement	.01	-.05	-.11	-.12	-.05	.00	.13	–

$N = 75$ . \*  $p < .05$ ; \*\*  $p < .001$

Using the SPSS PROCESS program (Hayes, 2013), linear regression analyses were conducted to test the study’s hypotheses of moderating effects of resilience-promoting factors on torture-mental health associations. These analyses were conducted separately for each outcome measure of PTSD, depression, and anxiety symptoms.

### 3.2. Torture-PTSD Relationship (Resilience-Promoting Factors as Moderators)

First, psychological flexibility was tested as a moderator of the torture-PTSD relationship. The results from the moderation analysis showed that the overall model was significant,  $R^2 = .70$ ,  $F(3, 68) = 53.77$ ,  $p < .001$ , demonstrating that 70% of the variance in the PTSD symptoms could be attributed to the combination of torture severity and psychological flexibility. For the PTSD symptoms, both torture severity ( $\beta = .46$ ,  $p < .001$ ) and psychological flexibility ( $\beta = -.53$ ,  $p < .001$ ) were significant predictors, but showed no interaction ( $\beta = .03$ ,  $p = .70$ ). This same model was tested again by including

covariates such as gender, age, immigration status, and housing status, and the overall model was significant at  $R^2 = .75$ ,  $F(7, 53) = 22.57$ ,  $p < .001$ . Among covariates, age ( $\beta = .22$ ,  $p = .005$ ) and immigration status ( $\beta = .23$ ,  $p = .002$ ) were significant predictors of PTSD symptoms, such that older participants and participants who were not yet US citizens reported more PTSD symptoms. In this model with covariates, there was also no statistically significant interaction observed between torture severity and psychological flexibility.

Subsequently, English fluency, employment status, and community engagement were tested as moderators of the torture-PTSD association in three different models. The findings demonstrated that English fluency ( $\beta = -.17$ ,  $p = .05$ ) approached significance as a main effect predictor, and employment status ( $\beta = -.25$ ,  $p = .002$ ) was a significant predictor of PTSD symptoms in these models. Community involvement was not found to be a significant predictor of PTSD symptoms ( $\beta = -.08$ ,  $p = .37$ ).

There were significant associations between some of these external protective factors and covariates such that English fluency was significantly associated with age and education level, and employment was significantly associated with age. Therefore, the regression models for both English fluency and employment were rerun by controlling for the covariates. Findings showed that when controlling for the covariates (age, education), English fluency was no longer a significant predictor ( $\beta = -.65$ ,  $p = .06$ ), but employment remained a significant predictor ( $\beta = -.28$ ,  $p = .006$ ) of PTSD symptoms.

There were no statistically significant interactions between torture severity and any of the external protective factors (English fluency, employment status, and community engagement) in predicting PTSD in each of the models.

### **3.3. Torture-Depression Relationship (Resilience-Promoting Factors as Moderators)**

Similarly, resilience-promoting factors were tested as moderators of the relationship between torture severity and depressive symptoms. The first model with psychological flexibility as a moderator showed a significant effect of all predictors taken together,  $R^2 = .30$ ,  $F(3, 71) = 10.09$ ,  $p < .001$ , demonstrating that 30% of the variance in the depression symptoms could be attributed to the combination of torture severity and psychological flexibility. In this model, both torture severity ( $\beta = .23$ ,  $p = .04$ ) and psychological flexibility ( $\beta = -.41$ ,  $p < .001$ ) were significant predictors of depression, but there was no significant interaction between them ( $\beta = -.08$ ,  $p = .45$ ). This same model was tested again by including covariates such as gender, age, immigration status, and housing status, and the overall model was significant at  $R^2 = .43$ ,  $F(7, 56) = 5.91$ ,  $p < .001$ ; but none of these covariates were significant predictors of depression symptoms. Inclusion of the covariates also did not lead to major changes in regression coefficients of torture severity and psychological flexibility and there were no statistically significant interactions between them.

English fluency, employment status and community involvement were tested as moderators of the torture-depression association and the results were all non-significant. The regression coefficient  $\beta$  values of English fluency, employment status and community involvement ranged from  $-.12$  to  $-.18$  and  $p$  values ranged from  $.09$  to  $.27$ . There were no statistically significant interactions between torture severity and any of these protective factors (i.e. English fluency, employment status, and community engagement) in predicting depression in these models. For these external protective

variables, regression analyses were rerun by including covariates in the models.

Interestingly, when age and education were controlled, English fluency ( $\beta = -.99, p = .03$ ) and employment ( $\beta = -.28, p = .02$ ) became significant predictors of depression. In these models with covariates, education level ( $\beta = .11, p = .03$ ) also emerged as a significant predictor of depression.

### **3.4. Torture-Anxiety Relationship (Resilience-Promoting Factors as Moderators)**

Next, resilience-promoting factors were tested as moderators of the relationship between torture severity and anxiety symptoms. The first model with psychological flexibility as moderator showed a significant overall effect of all predictors,  $R^2 = .35, F(3, 71) = 12.65, p < .001$ , demonstrating that 35% of the variance in the anxiety symptoms could be attributed to torture severity and psychological flexibility. Psychological flexibility ( $\beta = -.49, p < .001$ ), but not torture severity ( $\beta = .19, p = .09$ ), was a significant predictor of anxiety symptoms. This same model was tested again by including covariates such as gender, age, immigration status, and housing status, and the overall model was significant at  $R^2 = .42, F(7, 56) = 5.89, p < .001$ . Among the covariates, age was the only significant predictor of anxiety symptoms ( $\beta = .27, p = .02$ ) such that older participants reported higher anxiety symptoms. Inclusion of the covariates also did not lead to major changes in regression coefficients of torture severity and psychological flexibility in predicting anxiety and there were no statistically significant interactions between them.

English fluency, employment status, and community engagement were again tested as moderators of the torture-anxiety association in three different models. The findings demonstrated that English fluency ( $\beta = -.29, p = .007$ ) was the only significant predictor of anxiety in these models. Neither employment status ( $\beta = -.18, p = .09$ ) nor

community involvement ( $\beta = -.13, p = .24$ ) significantly predicted symptoms of anxiety. When these external protective factors were rerun with covariates (age and education), English fluency was no longer a significant predictor of anxiety ( $\beta = -.33, p = .08$ ), and employment became a significant predictor of anxiety, when age was controlled, ( $\beta = -.26, p = .04$ ). There were no statistically significant interactions between torture severity and any of these protective factors (i.e., English fluency, employment status, and community engagement) in predicting anxiety.

Taken together, these results from all three mental health models demonstrated that resilience-promoting factors did not significantly moderate torture-mental health associations. Therefore, the findings did not support the study's hypotheses 2 and 3. Among the external protective factors, the relationships between English fluency and mental health, and employment and mental health changed when covariates (age, and education) were included in the regression models. Across all models, higher psychological flexibility consistently predicted lower mental health symptoms, and psychological flexibility's predictive values for mental health symptoms were greater than torture severity.

### **3.5. Mediation Analyses Results**

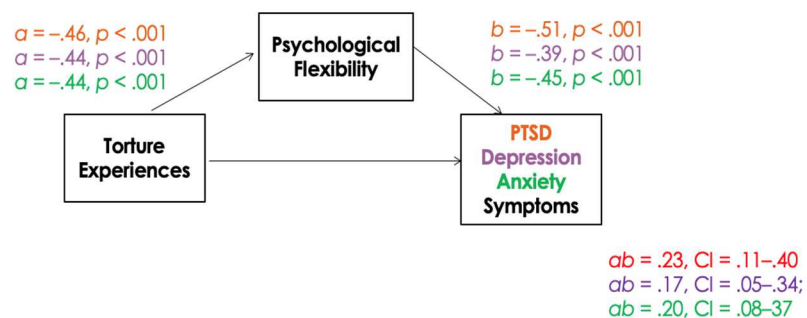
Given such strong role of psychological flexibility in torture-mental health relationships, we ran mediation models as exploratory follow-up analyses by using the PROCESS macro SPSS version 25 program (Hayes, 2013). For each of the mediation models, torture severity was entered as the independent variable, psychological flexibility as the mediator, and mental health symptoms (PTSD, depression, and anxiety) were entered as dependent variables. Apart from psychological flexibility, other resilience

promoting factors in this study were not tested as mediators since there were no significant associations between them and torture severity (Table 2).

The findings from the first mediation analysis demonstrated that higher torture severity indirectly led to greater PTSD symptoms through changes in psychological flexibility ( $ab = .23$ ,  $CI = .11 - .40$ ). The results indicated that participants who reported as having experienced more severe torture were less likely to report psychological flexibility ( $a = -.46$ ,  $p < .001$ ), and individuals who experienced lesser psychological flexibility were more likely to report higher PTSD symptoms ( $b = -.51$ ,  $p < .001$ ).

Similarly, the experience of higher torture severity indirectly led to increasing both depression and anxiety symptoms through difficulties in psychological flexibility ( $ab = .17$ ,  $CI = .05-.34$ ;  $ab = .20$ ,  $CI = .08-.37$ ). Specifically, higher experience of torture severity was linked to lower psychological flexibility ( $a = -.44$ ,  $p < .001$ ), and lower degrees of psychological flexibility predicted higher depression symptoms ( $b = -.39$ ,  $p < .001$ ) and higher anxiety symptoms ( $b = -.45$ ,  $p < .001$ ) respectively.

The findings from the mediation analyses can be summarized in the following diagram as follows.



**Figure 1: Summary of Mediation Analyses**

## CHAPTER 4: DISCUSSION

In the current study, we examined associations between the experience of torture and the risks of developing various mental health symptoms, and we tested resilience-promoting factors as moderators of the torture-mental health relationship. As hypothesized, our results indicated that there were significant and highly positive correlations between torture experience and all mental health symptoms in a dose-dependent manner, such that the higher the severity of one's torture experience, the greater mental health symptoms were reported by the participants. Inconsistent with our hypothesis, resilience-promoting factors did not significantly moderate the relationships between torture severity and mental health symptoms. However, in an exploratory follow-up analysis, we found that psychological flexibility (among the resilience-promoting factors) significantly mediated the relationships between torture severity and mental health symptoms including PTSD, depression, and anxiety.

Our results on the significant associations between torture severity and mental health symptoms reaffirm the existing body of evidence which demonstrates the detrimental and long-term damage of torture on refugees' mental health (Steel et al., 2009; de C Williams, & van der Merwe, 2013). As demonstrated in the existing literature, the nature of torture is meant to induce extreme pain, humiliation, fear, and helplessness which all leads to destroying the survivor's understanding about the self and others as well as shattering their sense of safety in the world (De la Rie et al., 2018; Leach, 2016). Across multiple studies, refugee torture survivors reported higher rates of debilitating mental health symptoms, especially PTSD, in comparison to non-tortured control groups (Başoğlu et al., 1994; Shrestha et al., 1998; Tufan et al., 2013; & Van Ommeren et al., 2002). In our clinical sample, the average number of physical, psychological, and sexual

torture events reported by the participants was *five*, and our results demonstrated that the higher the number of torture experiences, the greater mental health symptoms of depression, anxiety, and PTSD reported. This finding provides a clinical implication highlighting the importance of screening and assessing for torture experiences among refugee clients to inform treatment and to better provide trauma-informed and culturally-sensitive interventions in working with such highly vulnerable clients.

Another important finding from the study was the demonstration of the potential role of psychological flexibility as a protective factor among refugee torture survivors. Participants who reported higher levels of psychological flexibility reported significantly lower symptoms of depression, anxiety, and particularly PTSD. In our analyses for the PTSD model without any covariates, the combination of torture experiences and psychological flexibility alone predicted nearly three quarters of the variance in the PTSD symptoms. In all of our models, psychological flexibility also significantly predicted depression, anxiety, and PTSD symptoms, and its predictive values for the mental health symptoms revealed to be even greater than torture severity. Additionally, psychological flexibility significantly mediated the relationships between torture severity and all mental health symptoms which indicates its potential causal mechanism between torture-mental health relationship. This finding supported the emerging evidence on the role of *psychological inflexibility* as a cognitive mediator on torture and mental health relationships from a previous study (Gray et al., 2020). This prior study by Gray and colleagues (2020) has examined a similar dataset from the same research team but the independent variable was the dichotomous predictor of whether a participant was a torture survivor or not. In comparison, the independent variable in our current study was

the continuous measure of torture severity reported by the participants. Given that our findings remain consistent, psychological flexibility appeared to be a promising mediator of torture and mental health relationships in the sample of refugee torture survivors.

Clinically, improving psychological flexibility is a primary focus of Acceptance and Commitment Therapy (ACT), which is a strength-based treatment in which individuals learn to choose and engage in behaviors that are in line with their personal values in the face of adversity and psychological distress with the goal of living a meaningful, value-driven life (Hayes et al., 2012). In a systemic review conducted by Stockton and colleagues (2019), four out of five studies showed that psychological flexibility was a mechanism of change for better outcomes and was an important underlying processes that contribute to improvements (Flaxman & Bond, 2010; Forman et al., 2007; Niles et al., 2014; Rost et al., 2012). Importantly, relevant to refugee mental health, the World Health Organization has recently developed a group-based and multimedia-guided intervention named Self-Help Plus (SH+) which focuses on increasing psychological flexibility through mindfulness exercises (WHO, 2020). The SH+ has been now tested in a large randomized trial with almost 700 South Sudanese refugee women and after three months of the intervention, the results showed significant reduction in psychological distress and improvements in functioning and wellbeing among participants (Tol et al., 2020). Our study's finding contributes to this evolving literature and future studies should continue to examine this promising construct, psychological flexibility, especially in the context of treating refugee torture survivors. For example, the WHO's novel research with the SH+ treatment thus far showed that improving psychological flexibility among South Sudanese refugees was well-suited,

effective, and feasible as a first-line intervention (Tol et al., 2020) and further studies should test the clinical utility of promoting psychological flexibility in other refugee communities.

Our study also examined other protective factors for refugee mental health and found English fluency and employment as potentially resilience-promoting factors. Specifically, our correlation analyses showed that endorsing English as one of the top 3 languages was significantly associated with fewer PTSD, depression, and anxiety symptoms reported. Additionally, the participants who self-reported as employed reported significantly fewer PTSD symptoms. Among refugee torture survivors, better acquisition of the new language and finding employment may represent better adjustment and adaptation during their resettlement into new societies, which potentially indicate developing lower risks of psychological symptoms.

These findings aligned with the guidelines from the ecological frameworks such as the Chronic Traumatic Stress (CTS) Framework (Fondacaro & Mazzulla, 2018) which emphasizes the importance of assessing various domains of individual, systemic, and sociocultural factors in order to better provide holistic treatments in treating refugee clients. As suggested by the CTS model, understanding salient factors that impact refugee well-being from pre-migration (e.g. torture history) as well as post-migration and the current situations (e.g. employment status, language abilities, social engagement) will allow clinicians to better conceptualize both risk and protective factors of refugee torture survivors in order to provide more culturally informed and individualized treatments. Given the protective roles of English language skills and employment on refugee mental health in our study, we also highlight the importance of providing multi-layered and

integrated interventions in which clinical psychologists should work closely with social work providers, cultural brokers, and immigration advocates/lawyers in treating our refugee clients. In addition to helping clients through evidence-based psychotherapy, clinicians may collaborate with a multidisciplinary team to support refugee clients in managing their daily life stressors. For example, while providing effective treatments such as Acceptance and Commitment Therapy, clinicians may also refer refugee clients to appropriate resources if clients are interested in gaining employment or learning English.

As demonstrated in our findings, the relationship dynamics between English fluence and mental health and employment and mental health were impacted by covariates such as age and education level. Future studies are required to further examine these associations and confounds to better disentangle the effects of these protective factors and covariates on refugee mental health and resilience.

In our study, we did not find that the level of community engagement was a significant predictor of mental health symptoms. It is important to note that in this study, community engagement was only measured by a single dichotomous item, and it is possible that this measure did not effectively estimate community engagement in our sample. There are few tools in psychological science that measure the level of community engagement for quantitative research purposes (Goodman et al., 2017). In fact, Niemi and colleagues (2019) conducted a large systematic review of 64 research studies to examine how the construct of *social participation* among refugees and asylum seekers is conceptualized and measured. Their review revealed that there is as yet no unified definition or robust methodological approaches to empirically measure social

participation or community engagement among refugee communities, and data in the previous studies were more typically collected through qualitative interviews, national population surveys, and the review of participants' health records (Niemi et al., 2019).

To address such a limitation in quantitative methodology, we aim to better investigate this topic in refugee mental health in our future studies by developing more informative interview questions that assess the level of community engagement and the quality of experiences of such community engagement. For example, future studies may consider including questionnaire items on whether refugees experience the sense of belonging in their new communities, and which types of community engagement activities and resources provide such sense of belonging and support to refugees, in order to better understand the role of community engagement and refugee mental health and resilience.

In the current study, we also found some important demographic data associated with mental health symptoms. Regarding age, our findings showed that older participants reported significantly higher symptoms of both PTSD and anxiety. This is consistent with several studies from the literature which demonstrated that older immigrants and refugees are more vulnerable for developing mental health problems (Marshall et al., 2005; Porter & Haslam, 2005; Pumariega et al., 2005). Some research suggests that older refugees and immigrants may have higher risks for mental health symptoms due to various reasons such as accumulating a greater number of traumatic experiences over time (Steel et al., 2009), facing more developmental and cognitive challenges in adapting to new languages and customs (Pumariega et al., 2005), and struggling with isolation and loneliness due to physical separation or emotional distancing from their children and grandchildren who

may be more rapidly acculturated during the cultural transition (Hynie, 2018; Pumariega et al., 2005).

Regarding immigration status, our findings also indicated that participants who were not U.S. citizens or green-card holders yet (i.e. self-identified as refugees, asylum seekers, asylees, or others) reported higher symptoms of PTSD. This is not surprising since there is a strong body of literature demonstrating that the fear of detention and deportation and other immigration-related stressors exacerbate mental health symptoms, particularly PTSD (Carswell, Blackburn, & Barker, 2011; Steel et al., 2006).

Additionally, individuals with an unstable immigrant status are more likely to be exposed to human rights violations, excluded from government assistance, or presented with significant barriers to receive basic medical or social services, all of which add significant burdens to their mental health and wellbeing (Berk & Schur, 2001; Larchanché, 2012; Martinez et al., 2005).

#### **4.1. Strengths, Limitations, and Future Directions**

The present study contributes to a growing literature on refugee mental health by testing resilience-promoting factors as moderators of the torture and mental health relationship in a treatment-seeking sample of refugee torture survivors. This area of research is urgently needed today given that the majority of the evidence-based treatments and assessments are based on a Western philosophy of psychology and clinicians need to develop a better understanding on mechanisms of resilience that promote refugee mental health. Additionally, in the current times of a global COVID pandemic and challenging sociopolitical climate, at-risk groups like refugee clients may be disproportionately experiencing higher risks of mental health issues, and therefore it is

critical for clinicians to better understand how to promote the mechanisms of psychological resilience among refugee torture survivors.

To our best knowledge, this study is one of the first to look at the factors of refugee resilience from an ecological framework like the Chronic Traumatic Stress (Fondacaro & Mazzulla, 2018), especially in a clinical sample. Our findings highlighted the detrimental impacts of torture on refugee mental health and identified some factors as potentially resilience-promoting constructs that may ameliorate symptoms of depression, anxiety, and PTSD. By examining different variables that include psychological variables and systemic factors, our study aimed to potentially inform how to design multi-layered interventions in addition to clinical treatments to reduce significant mental health burdens and promote resiliency in the refugee patient population.

While our findings offered such insights for clinical implications and advancement in the research literature, there are a few limitations of the study that should be considered when interpreting the study. First, this study only used self-reported data collected in the questionnaires that participants completed during the clinical intake interview. Due to the nature of these questionnaires inquiring about sensitive information such as torture history and psychological well-being, it is possible that some responses are biased. For example, participants may have chosen not to report or underreport experiences of sexual violence and other extreme types of torture, due to shame and stigma associated with these experiences, particularly in the presence of an interpreter (Cook et al., 2015; Patel et al., 2016).

Additionally, the study only utilized single-item questions to assess the external protective factors which included community engagement, employment, and English

proficiency. There is some research showing that for certain constructs (e.g. job satisfaction), single-item measures can perform sufficiently well and can be more robust than the scale measures in some cases (Wanous et al., 1997). Given such evidence, single-item measures may be acceptable in overall assessing the presence of external protective factors in this study. However, it is worth noting that only utilizing single-item measures for external protective factors may have limited the variability for these constructs. Therefore, we were unable to capture how different levels of external protective factors may have contributed to our conceptualization of refugee resilience.

A third limitation of the current study relates to the nature of secondary data analysis of the existing datasets. The study examined refugee resilience as guided by the existing literature and by identifying the relevant protective factors available in the previously collected data. Although this methodology provides important insights on refugee resilience based on the current data, the study did not investigate other important parameters that are related to resilience. Given that resilience is a multidimensional construct, future studies should investigate various factors such as personality, lifestyle habits, coping strategies, and access to basic needs and healthcare, which can all potentially impact refugee resilience. Alternatively, future studies may also utilize self-report measures specifically designed to assess subjective resilience to stress, such as the Connor-Davidson Resilience Scale (CD-RISC; Connor & Davidson, 2003), which has been utilized in some prior studies with refugees (Klasen et al., 2010).

A fourth shortcoming of the study is its cross-sectional design, which precludes making causal inferences. The findings from this study only examined the strength of association between reported torture history and mental health symptoms, and how

protective factors moderate their relationship at the pre-treatment when the data was collected. In the future, longitudinal assessment and treatment outcome studies should be utilized to examine the hypothesized causal relationships between torture and mental health, and to better understand the strength and direction of the relationships between resilience-promoting factors and mental health outcomes. For example, it would be interesting to compare the data collected at pre-treatment, mid-treatment, and post-treatment to better understand how various resilience-promoting factors affect the dynamic of the torture-mental health relationship over time.

#### **4.2 Conclusions**

This study contributed to the growing literature on mental health and resilience of refugee survivors of torture through multisystemic lens. Greater experience of torture was significantly associated with higher risks for various mental health symptoms. In this clinical sample, the average torture experiences that participant reported was *five*. It is imperative that providers strive for delivering services that are trauma-informed and culturally sensitive in working with this vulnerable group of clients to minimize further risks and to promote resiliency. Given the strong role of *psychological flexibility* plays in promoting refugee resilience, treatments like Acceptance and Commitment Therapy that focus on promoting psychological flexibility should be also further studied to be culturally adapted for different refugee groups.

From the systemic lens, our findings also underscore the importance of enhancing public policies that protect refugee well-being and offering government assistance programs for things like employment opportunities, English classes, and free legal services. Even the most effective clinical treatments will not be sufficient if the refugee

client's basic safety or well-being is at risk. For especially vulnerable groups such as older individuals or clients with insecure immigration status, providers should be strategic in delivering holistic treatments that attend to unique stressors of each client while promoting psychological wellbeing. By furthering clinical research with refugee survivors of torture, we aim to continue developing a stronger understanding on different risk and resiliency factors that impact mental health of this underserved population.

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