Identifying resilience-promoting factors for refugee survivors of torture

Phyu Pannu Khin[1], Keith Burt[2] and Karen Fondacaro[2]

Abstract

Introduction: There are 1.3 million refugee survivors of torture living in the United States today. An existing body of research with refugees has largely examined mental health, but few of these studies focused on resilience. *Objective*: Using a clinical sample of refugee survivors of torture, we tested the resilience-promoting factors of community engagement, employment, English fluency, and psychological flexibility. We conducted moderation and mediation analyses to investigate how these resilience-promoting factors impact the torture-mental health relationship. *Results*: Torture severity had significant positive associations with all mental health symptoms including PTSD (post-traumatic stress disorder), depression, and anxiety. Conversely, psychological flexibility had significant negative associations with all mental health symptoms. Additionally, psychological flexibility was a significant mediator of the torture-mental health relationship, highlighting its potential as a causal mechanism between torture and mental health. This evidence suggested that experiencing greater torture severity led to greater mental health problems in part via difficulties in psychological flexibility. Separately, English fluency and employment status were negatively correlated with mental health symptoms. *Conclusion*: The findings from this study identified potentially resilience-promoting factors for

1) M.A. Department of Psychological Science, University of Vermont.
    Correspondence to: pkhin@uvm.edu
2) Ph.D. Department of Psychological Science, University of Vermont.

refugee survivors of torture and contributed to both research and clinical insights in better serving this vulnerable population.

Keywords: psychological flexibility, Acceptance and Commitment Therapy, PTSD, depression, anxiety, refugee resilience

Introduction

According to the United Nations Convention Against Torture (UNCAT, 1984), torture is "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" (UNGA, p. 1, 1984). 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). Research estimates that 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).

The experience of torture has consistently been shown to be a strong predictor of various long-lasting physical and psychological difficulties (Quiroga & Jaranson, 2005). The psychological problems that torture survivors are most frequently diagnosed with include post-traumatic stress disorder (PTSD), generalised anxiety disorder, depression, and somatic disorders (Elklit et al., 2012). Due to the heterogeneous samples and measures presented across studies, it is challenging to conclude the exact prevalence of various psychological disorders among refugee survivors of torture. However, refugee torture survivors are consis-

tently shown to have elevated mental health risks. For example, refugee torture survivors are approximately 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 symptoms of other mental disorders such as anxiety than non-tortured refugees (Shrestha et al., 1998).

On the other hand, not all refugees with a trauma history present with mental health symptoms. For example, in a study with Ugandan former child soldiers, 27.6% of the sample who experienced high trauma at least six months prior to the study did not report clinically significant behavioral or emotional problems, indicating posttraumatic resilience (Klasen et al., 2010). Moreover, in two community studies with Iraqi refugees, although torture survivors reported worse physical health outcomes, they reported signs of greater psychological resilience (i.e., stronger post-traumatic growth attitude, better sociocultural adjustment, and a higher practice of religion as coping) than a non-tortured refugee group with other types of trauma history (Kira, 2014).

There may be many mechanisms to explain why there are differences in *symptomology and resilience* among refugee survivors of torture. The Chronic Traumatic Stress (CTS) Framework (Fondacaro & Mazzulla, 2018) proposes that the interplay between individuals and the environment is critical to consider. Specifically, this framework proposes that one's mental health outcomes can be affected by both protective and risk factors exhibited at the various levels of individual, family, community, and culture. The CTS Framework conceptualises differences in refugee trauma outcomes based on the interaction between

risk and protective factors and stressful events, and this interaction can increase mental health risks or promote resilience (Fondacaro & Mazzulla, 2018). Therefore, the Chronic Traumatic Stress (CTS) Framework emphasises the importance of viewing mental health outcomes through a multisystemic lens and aligns with resilience conceptualisations (Fondacaro & Mazzulla, 2018).

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). It is important to note that various theories and definitions in the literature conceptualise *resilience*. Among these, a prominent view is 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 definition of resilience also aligns with the Chronic Traumatic Stress (CTS) Framework which emphasises the importance of viewing mental health outcomes through a multisystemic lens including the levels of individual, family, community, and culture (Fondacaro & Mazzulla, 2018).

Therefore, guided by the Chronic Traumatic Stress (CTS) Framework, the present study conceptualised resilience as the positive adaptation of refugee torture survivors despite having experienced significant adversity and is viewed through multiple internal and external protective factors. Evidence from previous studies has demonstrated several re-

silience-promoting factors for refugees, some of which include social/community engagement, English fluency, employment, and psychological flexibility.

Specific protective factor: social/community engagement

Social or community engagement in refugee populations seems an important source of resilience, perhaps due to the majority of refugee communities holding high values on collectivism and social cohesion (Bemak et al., 2002). Evidence suggests that refugee individuals and families who utilise and engage with community resources display higher levels of resilience under adverse situations (Sonn & Fisher, 1998). Additionally, community engagement brings social support, buffering the harmful consequences of trauma, loss, and other challenging life events. For example, Allden and colleagues (1996) found that former Burmese political dissidents described camaraderie and support from the community as an important protective factor against the psychological effect of imprisonment and torture. Social participation within the community also alleviates immigration-related psychological distress, as indicated in a study with Iraqi refugees in Sweden (Lecerof et al., 2015). Guided by these findings, community engagement was considered a protective factor for refugees in the current study.

Specific protective factor: employment

Employment can also be a source of resilience for refugee survivors of trauma. Employment offers income opportunities and a stronger sense of self-fulfillment, social connections, and belonging (Mollica, 2008). A study conducted among African refugees in Australia showed that employment was significantly linked to positive physical and psychological outcomes and facilitated successful integration into a new

community (Wood et al., 2019). Additionally, employment allows refugees to have improved healthcare access and promotes healthy lifestyle behaviors, both of which ameliorate mental health problems (Wood et al., 2019).

Refugees typically face systematic barriers when securing employment, such as immigration documentation, language, and cultural differences, in addition to managing physical and mental health issues. Despite these significant barriers, many refugees participate in the labor market, which demonstrates a sign of positive adaptation in the face of adversity. Therefore, the participant's employment status was considered a protective factor in the current study.

Specific protective factor: english language acquisition

Language barriers after resettlement often pose significant risk factors for mental health among refugees since language barriers may prevent access, utilisation, and effectiveness of mental health services (Murray et al., 2010). Therefore, supporting refugees interested in learning the languages of their new communities can foster psychological resilience. For example, research has shown that better acquisition of the new country's language is associated with significantly lower PTSD symptoms among Iraqi refugees in Sweden. Refugee mothers with significantly higher English proficiency also reported receiving greater social support than their counterparts (Scott & Johnson, 1997). Similarly, among refugee youths, competence with the host country's language is significantly associated with a reduced risk of depression and internalizing problems (Fazel et al., 2012).

In the U.S., knowing English can be a particular challenge for refugee adults compared with refugee children and youths who may receive more opportunities to learn English and benefit from greater plasticity in cognitive development. In the current study of refugee adults resettled in the U.S., basic English fluency was considered an important resilience-promoting factor since it demonstrates positive adaptation in this population.

Specific protective factor: psychological flexibility as an internal protective factor

The literature presented thus far focused on factors mainly external to the individual, but it is equally important to consider internal protective factors. 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 fully connecting with the present moment and persisting in or changing behavior to be in line with identified values (Hayes et al., 1999). Opposite of this construct is *psychological inflexibility* (PI) which relates to the concept of "experiential avoidance" and represents a common factor in many mental health problems (Gray et al., 2020; Kashdan & Rottenberg, 2010). Psychological inflexibility is an-unwillingness to experience distressing emotions by avoiding them or remaining attached to unhelpful cognitive or behavioral patterns and avoiding engaging in values-based activities that all cause psychological harm in the long run (Hayes et al., 1999). Psychological flexibility is a central concept in an evidence-based psychotherapy known as *Acceptance and Commitment Therapy* (Hayes et al., 1999). This treatment conceptualises psychological flexibility as comprised of six main components: acceptance, cognitive defusion (i.e., changing one's relationship to thoughts), contact with the present moment, conceptualisation of the self within context, identification and clarification of values, and committed action (Hayes et al., 1999).

Clinical studies with refugees have begun to explore the role of psychological flexibility in moderating treatment outcomes. For instance, evidence shows that interventions focused on psychological flexibility (through mindfulness and acceptance strategies) can significantly decrease somatic distress and rumination (Hinton, Pich, Hofmann, & Otto, 2013). Promoting psychological flexibility is also an important skill for refugees who learn 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 abated psychological distress among refugee survivors of political violence (Lewis et al., 2013, p. 314). Additionally, a previous study from our research team showed that psychological *in*flexibility is a cognitive *mediator* of the torture and mental health relationship, highlighting its important clinical value (Gray et al., 2020). Based on growing evidence of the role of psychological flexibility in refugee resilience, this construct was included as an important internal protective factor in this study.

The current study
In the current study, interviews were conducted with a clinical sample of refugee torture survivors who sought services at an outpatient mental health clinic in the Northeast United States with a specialised refugee and asylum seekers program. Specifically, the current study investigated whether and how resilience-promoting factors moderate or mediate the relationship between 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 dependent variables, and

various resilience-promoting factors as the moderators and mediators in this study.

The specific hypotheses for the current study were as follows:

- Hypothesis 1: Torture severity and mental health symptoms would be positively correlated.
- Hypothesis 2: Resilience-promoting factors would moderate the torture-mental health association. The torture severity-mental health symptoms association will be larger when resilience is low, but smaller when resilience is high.
- Hypothesis 3: Resilience promoting factors would mediate the torture-mental health association, such that resilience promoting factors would emerge as one potential mechanism through which torture impacts mental health.

In addition, the study examined whether these dynamics among the main constructs were observed differently when covariates were included in the models. Covariates in this study included broad demographic factors such as age, gender, marital status, education level, housing status, and immigration status.

Methods
Participants
The current study is a secondary data analysis on two combined datasets. The study includes a total of 75 adult refugee survivors of torture who received mental health services between the period of August 2007 and July 2019. At the time of data collection, participants gave consent to participate in future studies after their information was completely deidentified. Ages for participants ranged from 19-88 years (M = 41.1, SD = 15.4) and 52% of the sample identified as female. 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 (IRB code STUDY00000608).

Measures
Demographic questionnaire: Participants were asked to complete a 26-item questionnaire which includes demographic information such as age, gender, employment, highest education level, English fluency, and community engagement (See Appendix 1). The external protective factors were coded as dichotomized variables, based on the participants' responses on the relevant demographic question items. 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 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 (not employed /employed) based on the participants' self-report in describing their employment status at the time of the interview.

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 (α = .89) internal consistency (α = .90; Mollica et al., 1992); and it has been recommended for assessing PTSD symptoms across non-Western populations (Gagnon, Tuck, & Barkun, 2004). The measure consists of four sections; the two relevant sections for this study were part I and part IV. Part I includes the questions which identify traumatic life events in-

cluding torture experiences and part IV is a list of PTSD symptoms according to the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV, American Psychiatric Association, 2000). In this study, the participant's history of torture severity 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 severity to be consistent with existing literature on similar studies which utilised the HTQ (e.g., Arnetz et al., 2014; Wanna et al., 2019). For the PTSD variable in this study, the mean score of trauma symptoms reported by the participant on the part (IV) of the HTQ was used, as guided by the scoring manual.

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". For anxiety and depression variables in this study, the mean scores of symptoms reported by the participant were used, as guided by the HSCL scoring manual. The HSCL-25 is reported to have the high internal consistency with Cronbach's α values of .93 for the 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 (α = .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).

The Acceptance and Action Questionnaire - II (AAQ II; Bond et al. 2011): The AAQ-II is a self-report scale with seven items that assess levels of psychological flexibility. Psychological flexibility is measured as a continuous construct. 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 total 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).

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 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 centralised database without containing any identifiable information.

Data analytic plan
First, correlational analyses among primary study variables 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 and mediation analyses were conducted using SPSS statistical software version 25 (IBM Corp, 2017) through the PROCESS program in

Table 1. *Descriptive statistics for primary study variables (n=75)*

	M	SD	Range
Torture severity (Number of torture events endorsed)	5.37	3.98	0-15
Posttraumatic 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%	

Table 2. *Correlations among primary study variables(n=75)*								
	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. * $p < .05$; ** $p < .001$

SPSS (Hayes, 2013). Analyses were also rerun in the presence of covariates such as gender, age, marital, housing, and immigration status.

Results

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 considerable variability (SD = 15.4) such that the youngest participant was 19, and the oldest was 88. About 67% of the participants indicated that they were married, 20% were single, and the rest reported as either divorced or widowed. Over 85% of the sample reported having one or more children. Only 6% of the sample reported 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 presents the sample mean, standard deviation, and range for the main study variables.

The findings from the correlational analyses among primary study variables are summarised in Table 2. Torture severity was significantly and highly correlated with the participant's reported mental health symptoms. Specifically, participants with a history of higher torture severity reported greater PTSD symptoms, r = .71, $p < .001$, greater depression symptoms, r =.41, $p < .001$, and greater anxiety symptoms, r = .40, $p < .001$. Therefore, the study's first hypothesis was supported; torture severity and mental health distress was positively associated in this sample of refugee torture survivors.

Participants with higher torture severity history also reported significantly lower

psychological flexibility, $r = -.44$, $p < .001$. However, torture severity was not significantly associated with any of the external resilience-promoting factors.

Among resilience-promoting factors, psychological flexibility and English fluency had significant negative correlations with 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 main study variables.

Using the PROCESS program (Hayes, 2013), linear regression analyses were conducted to test the study's hypotheses of moderating and mediating effects of resilience-promoting factors on torture-mental health associations.

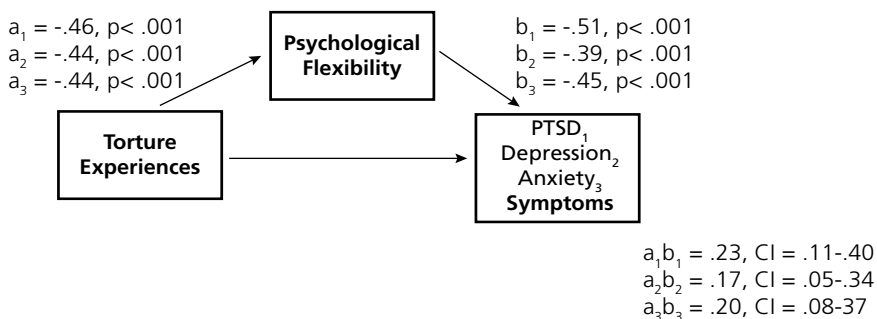### Psychological flexibility's impact on the torture-mental health relationship

Moderation analyses were conducted separately for each outcome measure of PTSD, depression, and anxiety symptoms. In all of these models, there were no statistically significant interactions between torture severity and any of the resilience-promoting factors predict-

ing mental health symptoms. Therefore, these findings did not support Hypothesis 2.

However, it is noteworthy that psychological flexibility emerged as a significant predictor in all of the moderation analyses, even with a greater predictive value than torture severity, for PTSD, depression, and anxiety symptoms. For the PTSD symptoms, psychological flexibility ($\beta = -.53$, $p < .001$) and torture severity ($\beta = .46$, $p < .001$) were both significant predictors. Similarly, for depression symptoms, both psychological flexibility ($\beta = -.41$, $p < .001$) and torture severity ($\beta = .23$, $p = .04$) were significant predictors. For anxiety symptoms, only psychological flexibility ($\beta = -.49$, $p < .001$), but not torture severity ($\beta = .19$, $p = .09$), was a significant predictor.

Next, given the important role of psychological flexibility, we ran mediation analyses to test its impact on the torture-mental health relationship using the PROCESS program (Hayes, 2013). The findings from the mediation analysis demonstrated that higher torture severity indirectly led to greater PTSD symptoms through challenges in psychological flexibility ($ab = .23$, CI $= .11 - .40$, $p < .001$). Specifically, participants with the history of greater torture sever-

Figure 1: Summary of Mediation Analyses

$a_1 = -.46$, $p < .001$
$a_2 = -.44$, $p < .001$
$a_3 = -.44$, $p < .001$

Psychological Flexibility

$b_1 = -.51$, $p < .001$
$b_2 = -.39$, $p < .001$
$b_3 = -.45$, $p < .001$

Torture Experiences

PTSD$_1$
Depression$_2$
Anxiety$_3$
Symptoms

$a_1b_1 = .23$, CI $= .11-.40$
$a_2b_2 = .17$, CI $= .05-.34$
$a_3b_3 = .20$, CI $= .08-37$

ity reported lower psychological flexibility (a = −.46, p < .001), and individuals with lesser degrees of psychological flexibility reported 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 respectively (ab = .17, CI = .05–.34, p < .001; ab = .20, CI = .08–.37, p < .001). 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). Therefore, Hypothesis 3 was supported; psychological flexibility was a significant mediator of torture-mental health relationships. These findings from mediation analyses for the models of PTSD, depression, and anxiety altogether are shown in Figure 1.

The impact of external resilience-promoting factors and covariates on the torture-mental health relationship

Apart from psychological flexibility, there were external resilience-promoting factors and covariates that were noteworthy as important predictors for mental health symptoms. For the PTSD model, employment status (β = −.25, p = .002) was a significant negative predictor of symptoms, and English fluency (β = −.17, p = .05) approached significance as a main effect predictor of lower PTSD symptoms. Additionally, English fluency was a significant predictor of lower anxiety symptoms (β = −.29, p = .007). Self-reported community involvement was not found to be a significant predictor of any of the mental health symptoms.

Among covariates, there were also some variables to highlight that acted as the main effect predictors for mental health. Importantly, *age* was a significant predictor of both

PTSD (β = .22, p = .005) and anxiety (β = .27, p = .02), such that older refugee participants reported significantly greater PTSD and anxiety symptoms. *Immigration status* was also a significant predictor of PTSD (β = .23, p = .002) such that participants with less stable immigrations status (i.e., undocumented individuals, asylum-seekers, and others) reported greater severity of PTSD symptoms than green-card holders and citizens.

Taken together, these results demonstrated psychological resilience as a significant mediator of torture-mental health relationships and revealed external resilience-promoting factors and covariates that may predict variability in mental health symptoms.

Discussion

In the current study, we examined the impact of resilience-promoting factors on the torture-mental health relationship. As predicted by our first hypothesis, there were significant positive correlations between torture experience and mental health symptoms. Participants with a history of higher torture severity reported greater PTSD, anxiety, and depression symptoms. Inconsistent with our second hypothesis, resilience-promoting factors did not significantly moderate the torture-mental health relationship. However, as predicted by our third hypothesis, the resilience-promoting factor of psychological flexibility significantly mediated the relationship between torture severity and all mental health symptoms including PTSD, depression, and anxiety.

The refugee research literature shows a high prevalence of torture survivors as well as significant association between torture severity and mental health symptoms (Steel et al., 2009). We reaffirmed this existing body of knowledge in this study. The average number of physical, psychological, and sexual torture events reported by our participants was *five*

(Table 1), and the greater the number of torture experiences, the greater severity of depression, anxiety, and PTSD symptoms reported by the participants (Table 2). This finding highlights the importance of sensitively screening for torture experiences among refugee clients to inform trauma-informed assessment and treatment when working with such a high-risk client population.

Our finding on psychological flexibility as a potentially causal mechanism between the torture-mental health relationship offers important clinical insights. It is consistent with the emerging evidence by prior refugee studies which showed psychological inflexibility as a cognitive mediator of torture-mental health association among torture survivors (Gray et al., 2020). Recently, the World Health Organisation has developed an intervention app for refugee mental health named Self-Help Plus (SH+) which targets increasing psychological flexibility through mindfulness exercises (Tol et al., 2020). The SH+ app has been tested in a large randomized trial with almost 700 South Sudanese refugee women. After three months of the intervention, participants reported a significant reduction in psychological distress as well as improvements in functioning and well-being (Tol et al., 2020). Our study's finding contributes to this evolving literature on psychological flexibility as a malleable construct of change that can be clinically targeted to improve refugee mental health.

Our study also revealed external resilience-promoting factors for refugees such as English fluency and employment. Specifically, participants who endorsed English as one of their top 3 languages significantly reported fewer PTSD, depression, and anxiety symptoms, and the participants with employment reported significantly fewer PTSD symptoms. Among refugee torture survivors, acquisition of the new language and finding employment may represent better adjustment during their resettlement which may then lead to reducing risks of psychological symptoms. Therefore, we highlight the importance of providing multi-layered and integrated interventions in which clinical psychologists should work closely with a collaborative interdisciplinary team in treating refugee torture survivors. For example, clinicians may help improve psychological flexibility through evidence-based treatments like Acceptance and Commitment Therapy while referring refugee clients to appropriate resources to gain employment or learn English.

Interestingly, the level of self-reported community engagement was not a significant predictor of mental health symptoms in this study. However, we were only able to use a single dichotomous item to assess community engagement. In the future, we aim to advance this research by developing more informative questions that assess the level of community engagement and the quality of such experiences. For example, future studies may consider including questionnaire items on whether refugees experience a sense of belonging in their new communities after resettlement and which types of community engagement activities or resources provide such sense of belonging for refugees.

To the best of our knowledge, this study is one of the first to address factors of refugee resilience through an ecological framework such as Chronic Traumatic Stress (Fondacaro & Mazzulla, 2018), especially in a clinical sample. 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 (e.g., employment status, language abilities, community engagement) will allow clinicians to provide culturally informed and individualised treatments. Future studies should

similarly examine other important risk and resilience factors through a multisystemic framework to better design systemic, integrative treatments for refugees.

There were noteworthy demographic data associated with mental health symptoms in our study. The findings showed that older participants reported significantly higher symptoms of both PTSD and anxiety, and participants without stable immigration status reported higher PTSD symptoms. Older refugees may have higher risks for mental health issues due to various reasons such as accumulating a higher number of traumatic experiences, facing more cognitive challenges in adapting to new languages and customs, and struggling with isolation from the rest of one's family during transition (Pumariega et al., 2005; Steel et al., 2009). Regarding immigration status, previous studies also showed that fear of detention and deportation and other immigration-related stressors exacerbate mental health symptoms, particularly PTSD (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 well-being (Larchanché, 2012).

Limitations

While this study offers many future clinical and research insights, there are a few limitations that should be considered in interpreting the findings. First, this study only used self-reported data collected during the clinical intake interview and some sensitive information (e.g., certain torture experiences, and mental health symptoms) may have been underreported. Secondly, the data available for the study only utilised single-item questions to assess the external protective factors. Therefore, we were unable to capture how different levels of external protective factors can contribute to refugee resilience. A third shortcoming of the study is its cross-sectional design, which precludes making strong causal inferences; alternative direction-of-effects and third-variable explanations of associations need to be ruled out. In the future, longitudinal study should be utilised to examine the hypothesized causal relationships between torture, psychological flexibility, and mental health symptoms to better understand the strength and direction of their relationships pre-treatment and post-treatment.

Conclusions

This study contributes to the limited literature on mental health and resilience of refugee survivors of torture through multisystemic lens. The experience of torture is quite prevalent among refugees, and torture survivors tend to present with higher risks for mental health symptoms. It is imperative that clinicians strive for delivering trauma-informed and culturally sensitive care in working with refugee torture survivors that consider resilience-promoting factors. One promising construct to further study is psychological flexibility, which can be clinically targeted through evidence-based treatments like Acceptance and Commitment Therapy. Our findings also underscore the potential importance of enhancing public policies that protect refugee well-being by offering government assistance programs for opportunities like employment, 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. Especially for vulnerable groups like older refugees and refugees with unstable immigration status, clinicians should

be strategic in delivering holistic treatments that attend to their unique stressors to effectively promote refugee mental health and resilience.

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Appendix 1. Demographic questionnaire completed by the participants (*Numbers in bold were required for reporting to the Office of Refugee and Resettlement.* *)

Name: _____   Today's Date_____

1. Sex: ____Male   ____Female   ____Other

2. Age: _____   **2.a.** DOB: Month_____Day_____Year_____

3. Marital Status: ____Single   ____Engaged   ____Married   ____Divorced
                      _____ Widowed   _____Separated

4. What is your country of origin? _____

5. What ethnic group (*not nationality*) do you identify with? _____

6. What languages do you speak (top 3 in proficiency)
    [primary:]_____
    _____
    _____

7. What is your religion?
    ___ Islam   ___ Christianity   ___Hinduism   ___Buddhism
    ___Agnostic/Nonbeliever   ___ Other (please list): _____

8. When did you arrive in the United States? Month_____Day_____Year_____

9. What is your current immigration status? (*if refugee at arrival, circle "former refugee" in addition to other current status*)
    ___ Asylum Seeker   ___ Refugee/Former Refugee   ___ U.S. Citizen
    ___ Asylee/Former Asylee   ___ Permanent U.S. Resident (Greencard)
    ___ Other

10. What is your current employment status? (check all that apply)
    ___ Not authorized by US government   ___ Unemployed, SEEKING employ-
       to work   ment
    ___ Unable to work (physical reasons)   ___ Student
    ___ Unemployed, NOT SEEKING em-   ___ Employed, full-time
       ployment   ___ Primary caregiver
    ___ Unable to work (psychological   ___ Employed, part-time
       reasons)   ___ Other

11.a. If employed, how satisfied are you with your current employment?

___ Not at all   ___ A little   ___ Somewhat   ___ Very

12. What was your education level prior to arrival in the U.S.?

___ less than a year   ___ 9-12 years

___ 1-4 years   ___ 13-16 years

___ 5-8 years   ___ 16+ years

12.a. What is the highest level of education you have completed?

___ Never attended school   ___ Finished university (Bachelor's

___ Primary school (K-8)   degree)

___ Secondary school (9-12)   ___ Some graduate school, no degree

___ Some university, no degree   ___ Finished grad school (Masters or

___ Finished university (Associate's   Doctorate)

     degree)   ___ Other (i.e. ESL classes)

13. How many children do you have? (total = alive + deceased + adopted) _____

14. Did you live in a refugee camp before coming to the U.S.? ____ No ____ Yes

14.a. If YES, for how long? _____

14.b. If YES, where? _____

15. What is your current housing status?

____ Stable (6+ months in one resi-   ____ Homeless

     dence)   ____ U.S. Immigration and Customs

____ Unstable (more than one residence   ____ Other

     within 6 month period)

15.a. How many people live in the house (including self)? _____

16. What is your INDIVIDUAL yearly income?

____ No income   ____ $25,000 to $34,999

____ Less than $5,000   ____ $35,000 to $49,999

____ $5,000 to $14,999   ____ $50,000 to $74,999

____ $15,000 to $24,999   ____ $75,000 or more

16.a. Which government subsidies do **you** receive? (check all that apply)

____ Medicare (entitled to seniors 65+)

____ Medicaid/SSI (public assistance for disability)

____ WIC (public assistance for women and children)

____ Section 8 (low-income housing)
____ 3 Squares (food stamps)
____ Reach Up (short-term assistance; kid required)
____ SSTA (transportation assistance)
____ Other

17. How satisfied are you with the community support you have from the refugee community?
   ___ Not at all   ___ A little   ___ Somewhat   ___ Very

18. How satisfied are you with the community support you have from the non-refugee community?
   ___ Not at all   ___ A little   ___ Somewhat   ___ Very

19. How satisfied are you with the support you receive from your family?
   ___ Not at all   ___ A little   ___ Somewhat   ___ Very

20. Are you involved with any community organisations?   ___ No   ___ Yes

21. What is your primary presenting problem?
   ___ Psychological
       21.a. If psychological, is it court mandated? ___ No   ___ Yes
   ___ Legal
       21.b. If Legal, check ONE
          ___ Asylum Evaluation
          ___ Citizenship
   ___ Social Work
       21.c. If social work, check TOP THREE
          ___ support system
          ___ education and/or language
          ___ occupational
          ___ housing
          ___ economic
          ___ access to health care
          ___ childcare
          ___ other

22. What medical problems (acute or chronic) do you experience? (check ALL that apply)
   ___ Diabetes (Type I; genetic)   ___ Cancer
   ___ Diabetes (Type II; adult-onset)   ___ Hypertension (high blood pressure)
   ___ Obesity   ___ High cholesterol
   ___ Cardiovascular Disease (any disease   ___ Chronic pain
     related to the heart)

23. Please list any medications that you are currently taking or are prescribed:
_____
_____

24. Torture survivor: _____ Yes   _____ No

24.a. If YES, what age where you first subjected to torture?
    ___ Less than 5   ___ 25 – 44
    ___ 5 – 13   ___ 45 – 64
    ___ 14 – 17   ___ 65 and older
    ___ 18 – 24

24.b. Which types of torture have you experienced? (check ALL that apply)
    __ Beating (*slapping, kicking, punching, or blows with another object*)
    __ Burning (*through water, cigarettes, chemicals, burning sticks, live fire, etc.*)
    __ Asphyxiation (*through immersion into liquids or any time of strangulation*)
    __ Deprivation (*of food, water, medical attention, personal space, forced isolation, forced feeding*)
    __ Threats/Psychological (*against victim or family, friends, colleagues, acquaintances*)
    __ Pharmacological (*physiological or psychological drug effects*)
    __ Electrical (*use of electric shock to inflict pain or suffering*)
    __ Kidnapping/Disappearance
    __ Wounding/Maiming (*with knives/sharp objects or removal of body parts such as nails or amputation*)
    __ Rape/Sexual torture (*forced sexual acts, molestation, touching as harassment*)
    __ Forced postures, stretching, hanging (*such as standing or kneeling for extended period of time*)
    __ Sensory stress (*extreme exposure to heat/cold, immobilisation, stress to hearing/vision, etc*)
    __ Witnessing torture of others
    __ Dental (*pain or damage to mouth, misuse of dental equipment, no anesthesia*)
    __ Severe humiliation
    __ Secondary survivor *(family member or partner of primary survivor)*

25. Reason for Torture:
___ Ethnicity   ___ Nationality   ___ Political Reasons   ___ Religion
___ Social Activism   ___ Social Group   ___ Other: _____

26. Country where torture occurred: _____