A Longitudinal Investigation of Changes to Social Resources Associated With Psychological Distress Among Kurdish Torture Survivors Living in Northern Iraq

Brian J. Hall,1,2 George A. Bonanno,3 Paul A. Bolton,2,4 and Judith K. Bass2

1Department of Psychology, University of Macau, Taipa, Macau (SAR), People’s Republic of China
2Department of Mental Health, Johns Hopkins Bloomberg School of Public Health, Baltimore, Maryland, USA
3Department of Counseling and Clinical Psychology, Teachers College, Columbia University, New York, New York, USA
4Department of International Health, Johns Hopkins Bloomberg School of Public Health, Baltimore, Maryland, USA

Social resources can buffer against psychological distress following potentially traumatic events. Psychological distress can also lead to social resource deterioration. This longitudinal study evaluated whether baseline psychological distress symptoms and changes in these symptoms were associated with changes in social resources 5 months later among 96 adult male (52.6%) and female treatment-seeking torture survivors residing in Kurdistan, Iraq. Adapted versions of the Hopkins Symptom Checklist-25, Harvard Trauma Questionnaire, and a traumatic grief measure were used. Locally derived scales measured perceived social support, social integration, and frequency of social contact. Multinomial logistic regression models assessed the association between symptoms and loss or gain in social resources. We hypothesized that higher mental health symptoms would relate to decreased social resources. Higher baseline depression (adjusted conditional odds ratio [ACOR] = 1.14), posttraumatic stress disorder (PTSD; ACOR = 1.09), and traumatic grief symptoms (ACOR = 1.14) increased the odds of loss of social integration. For some, higher traumatic grief symptoms were associated with increased social integration (ACOR = 1.17). Increased anxiety (ACOR = 1.23) and PTSD symptoms (ACOR = 1.07) was associated with declines in social contact; decreased depression (ACOR = 1.06) and PTSD symptoms (ACOR = 1.04) were related to gaining social contact. This study highlights the complex relationship between mental health symptoms and losses and gains in social resources among torture survivors.

This research was supported by funding from the USAID Victims of Torture Program. Dr. Hall was supported by the National Institute of Mental Health T32 in Psychiatric Epidemiology T32MH014592-35 and through the National Institute of Health Fogarty Center Global Health Fellows Program 1R25TW009340-01. The authors thank Dr. Sandro Galea for providing helpful comments on an earlier draft of this manuscript, Pia Mauro for her comments on the statistical analyses, and the Heartland Alliance team in Kurdistan for their hard work.

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In a cross-sectional study of Palestinian male survivors of torture and political imprisonment, torture severity was associated with reduced social affiliation (Salo et al., 2005). PTSD symptoms following political violence predicted continued losses of personal and social resources over 18 months (Heath et al., 2012). These results support Hobfoll’s (1989) concept of loss cycles in conservation of resources (COR) theory, which posits that losses of valued resources lead to further resource losses.

Mental health problems are likely to affect social resources mediated through person-level (i.e., behavioral and cognitive) and community-level (i.e., social and cultural) processes. Depression, anxiety, traumatic grief, and PTSD symptoms may lead to avoidance of social contact which contributes to social isolation and the disruption of social relationships. Lacking positive activities with others affects response-contingent reinforcement for nondepressive behaviors (Jacobson, Martell, & Dimidjian, 2001), which could disrupt the actual or perceived availability of social resources. Anxiety symptoms of worry, fear, and panic may lead to loss of social resources through avoidance behaviors that are shown to maintain these symptoms (Hendriks, Spijker, Licht, Beekman, & Penninx, 2012).

Unique to PTSD are numbing symptoms, which may reduce social resources (King, Taft, King, Hammond, & Stone, 2006). Cognitive models of depression suggest that thoughts about self and others become distorted and affect perceptions of support availability and community membership (Gotlib & Joormann, 2010). Distortions about one’s self-worth may inhibit support seeking and accepting support from others. Cognitive models of PTSD suggest that trauma affects trust in others and beliefs in personal safety (Ehlers & Clark, 2000).

People who experience trauma and distress may also report feeling closer to friends and loved ones following political violence (Hall, Hobfoll, Canetti, Johnson, & Galea, 2009), during forced relocation following terrorism exposure (Hall et al., 2008), as former prisoners of war (Solomon & Dekel, 2007), and when living as refugees (Kroo & Nagy, 2011). Increased psychological insight, social affiliation, and spirituality are also reported as a result of surviving torture (Gorst-Unsworth, Van Velsen, & Turner, 1993; Qouta, Punamäki, Montgomery, & El Sarraj, 2007). Accumulating evidence suggests a strong relationship between mental health problems and social resources; however, no study of which we are aware has longitudinally examined these relationships in a torture-affected sample. The present analysis examined predictors of changes in social resources among Kurdish torture survivors in northern Iraq. Following COR theory and much of the empirical research, we hypothesized that higher baseline mental health symptoms would relate to decreases in social resources over time. Given the competing evidence suggesting the opposite (e.g., Gorst-Unsworth et al., 1993; Qouta et al., 2007), however, we also examined whether mental health symptoms were related to gains in social resources.

Method

Participants and Procedure

Data were collected as a part of a randomized clinical trial evaluating behavioral activation and cognitive-processing therapy against general supportive counseling in Kurdistan, Iraq, aimed at reducing depressive symptoms and dysfunction along with trauma-related symptoms (e.g., PTSD). Trial eligibility was based on exceeding locally defined cutoff scores indicating clinically significant depression symptoms, impaired functioning, and reporting exposure to torture or related systematic violence (i.e., personally experiencing or witnessing physical torture, gas attacks, imprisonment, or other military violence). Study participants were interviewed by community mental health workers at local health clinics and were not compensated. The trial was implemented in both the Kurdish Bhadini and Sorani speaking regions of Kurdistan, with all study measures adapted to the local context using a mixed methods approach whereby qualitative interviews were conducted to identify locally relevant signs and symptoms of mental health problems (Bolton, Michalopoulos, Ahmed, Murray, & Bass, 2013). Standard instruments were translated, back-translated, and further adapted by including locally relevant symptoms, and then were tested for local validity.

Four hundred ninety-one participants were randomized. We used data from waitlist control participants (N = 116) who did not receive study treatments during the 5-month period between baseline and follow-up assessments. Twenty participants were lost to follow-up; Little’s (1988) test confirmed that data were missing completely at random (MCAR; degrees of freedom [df] = 58, \( \chi^2 = 59.90, p = .410 \)), allowing us to analyze this smaller sample without concern for biased parameter estimates. The Johns Hopkins Bloomberg School of Public Health Institutional Review Board and the Ethical Committee of the College of Medicine at the University of Sulaimani approved the study; verbal informed consent was obtained from study participants.

Measures

Social resources were measured with items that evaluated two functional domains of social provisions (Weiss, 1974; social support and social integration) and one structural feature of participants’ social network (Cutrona, 1986; frequency of social contact). Items were generated based on the prior qualitative study, so they reflect locally relevant social resources (Bolton et al., 2013). Social support was measured by summing two items: “In a crisis, I would have the support I need from family or friends; I know people who will listen and understand me when I need to talk.” Social integration was measured by summing three items: “I am happy with the friendships I have,” “I have people with whom I can do enjoyable things,” “I feel I belong in my community.” Responses for both scales ranged from 0 = strongly disagree to 3 = strongly agree. Frequency of social contact was measured by summing two items inquiring how often participants socially connected with friends and other
families in the last 2 weeks. Responses ranged from 0 = 0–1 times to 3 = 8 or more times. These constructs showed good internal reliability; Cronbach’s α values were .80 for social support, .82 for social integration, and .72 for frequency of social contact.

Depression and anxiety symptoms were assessed with the Hopkins Symptom Checklist (HSCL-25; Hesbacher, Rickels, Morris, Newman, & Rosenfeld, 1980; Winokur, Winokur, Rickels, & Cox, 1984). The HSCL-25 includes subscales for anxiety (n = 10 items) and depression (n = 15 items). Five additional symptoms relevant to the local context (“Wishing you were dead,” “Feeling inferior to others,” “The brain is tired,” “Thinking too much,” and “Able to enjoy feasts or other celebrations”) were added to the Depression scale. Cronbach’s α was .70 and .80 for Depression and Anxiety subscales, respectively.

Posttraumatic stress symptoms were assessed using 29 items from the symptom section of the Harvard Trauma Questionnaire (HTQ; Mollica, Caspi-Yavin, Bollini, & Truong, 1992). Two symptoms were added related to trauma reactions in the local context (“Unable to express your feelings,” “Fighting with others”). Cronbach’s α was .86.

Traumatic grief was assessed with 12 items related to the violent death of a close friend or family member, derived from qualitative interviews. Of these items, 11 are found on either the Inventory of Traumatic Grief (ITG; Prigerson et al., 1995) or the ITG-Revised (Prigerson et al., 1999), suggesting overlap between Kurdish and Western conceptualizations of traumatic grief. Sample items are “Feeling drawn to places and things associated with people who have died” and “Feeling that you have lost your sense of control.” One symptom was specific to the Kurdish sample: “Imitating some of the same behaviors or characteristics of people who have died.” Cronbach’s α was .81. For each of the three preceding instruments, participants reported how frequently they experienced symptoms in the prior 2 weeks using a 4-point Likert-type response scale ranging from 0 = never to 3 = always.

Participant characteristics included sex, age, educational attainment (none/primary school vs. secondary school/college), marital status (unmarried vs. married), and two linguistically different locations (Erbil/Sulaimaniya, Iraq vs. Dohuk, Iraq).

Data Analysis

At the individual participant level, change in each social resource from baseline to follow-up was categorized as “no measurable change,” “loss of resources,” and “gain in resources.” Categorical classification was accomplished by subtracting follow-up scores from baseline scores and using the SD of the difference to classify “no measurable change” (change within 1 SD from zero on the change score), “loss of resources” (change lower than 1 SD from zero); and “gain in resources” (change greater than 1 SD from zero). The mean baseline score for social support was 1.79 (SD = 1.63), 2.49 (SD = 2.15) for social integration, and 1.26 (SD = 1.39) for frequency of social contact. Our modeling approach allowed us to examine meaningful changes, both positive and negative, occurring in our participants. Simply modeling average change may obfuscate subgroup changes as several patterns or trajectories of loss and gain may exist; our sample was not sufficiently large to employ latent modeling.

Multinomial logistic regression assessed whether mental health problem scores were associated with changes in each social resource over time. The first set of analyses investigated the associations between baseline mental health problem scores and change in social resources over time yielding adjusted conditional odds ratios (ACORs). ACORs are interpreted as the likelihood of being in either the loss or gain in resources group for a 1-unit change in each of the baseline mental health problem scores conditioned on the no-change group (the reference category). Analyses were adjusted for potential confounding by participant sex, age, education, marital status, and linguistic group.

The second set of analyses evaluated whether changes in mental health problem scores occurring between baseline and follow-up accounted for changes in social resources identified in the first set of analyses. These analyses were conducted because relying only on baseline mental health problems scores would tell an important yet incomplete story by failing to consider the time-varying nature of mental health problems. We generated mental health problem change scores by subtracting follow-up from baseline scores for each of the mental health measures. The mental health problem change scores were included in multivariable multinomial regression models in the same way the baseline scores were utilized in the first analyses described above. Data analyses were conducted using PASW version 18 (IBM, 2009).

Results

Participant demographics and baseline average mental health problem scores are shown in Table 1. The sample was roughly equal in the distribution of sex and educational attainment. The majority of the sample was married (72.4%) and more than half lived in the Sulaimaniya/Erbil region (56.9%). Table 2 presents the means of each social resource and the proportion of the sample who lost or gained each of these resources.

Results of multivariable analyses for baseline mental health problems predicting changes in social resource outcomes are shown in Table 3. Higher baseline depression, ACOR = 1.10, p = .044; 95% confidence interval (CI) [1.02, 1.20], and traumatic grief, ACOR = 1.17, p = .004; 95% CI [1.05, 1.30], significantly increased the odds of gaining social support. The odds of gaining social support (vs. no change) increased 10% for every 1-point increase in baseline depression, and 17% for every 1-point increase in baseline traumatic grief. No baseline symptoms were significantly associated with losses to social support.

Higher baseline depression, ACOR = 1.22, p < .001; 95% CI [1.10, 1.35], anxiety, ACOR = 1.15, p = .011; 95% CI...
Table 1

<table>
<thead>
<tr>
<th>Variable</th>
<th>n</th>
<th>%</th>
<th>M</th>
<th>SD</th>
<th>Range</th>
</tr>
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<td>Female</td>
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<td>Education</td>
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<td>59.4</td>
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<td>Secondary/college</td>
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<td>Married</td>
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<td></td>
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<td>Sulaimaniya/Erbil region</td>
<td>53</td>
<td>55.2</td>
<td></td>
<td></td>
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<tr>
<td>Dohuk region</td>
<td>43</td>
<td>44.8</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Age (years)</td>
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<td>13.25</td>
<td>19–76</td>
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<td>HSCL–Depression</td>
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<td>6.57</td>
<td>10–45</td>
<td></td>
<td></td>
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<tr>
<td>HSCL–Anxiety</td>
<td>11.65</td>
<td>4.99</td>
<td>2–24</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HTQ–PTSD symptoms</td>
<td>38.62</td>
<td>11.67</td>
<td>6–64</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Traumatic grief</td>
<td>8.89</td>
<td>5.28</td>
<td>0–22</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. N = 96. HSCL = Hopkins symptom checklist; HTQ = Harvard Trauma Questionnaire; PTSD = posttraumatic stress disorder.

Baseline mental health problems were not associated with changes in the frequency of social contact.

Regression results evaluating changes in symptoms predicting changes in social resources are shown in Table 4. Changes in symptoms between baseline and follow-up were not significantly related to changes in social support.

Decreased depression, $ACOR = 1.11, p < .001; 95\% CI [1.04, 1.18]$, anxiety, $ACOR = 1.14, p = .001; 95\% CI [1.03, 1.25]$, and PTSD symptoms, $ACOR = 1.06, p < .001; 95\% CI [1.02, 1.11]$, was significantly associated with the odds of gaining social integration. Changes in symptoms were not associated with losses to social integration.

Decreased depression, $ACOR = 1.11, p = .001; 95\% CI [1.04, 1.18]$, and traumatic grief, $ACOR = 1.17, p = .004; 95\% CI [1.05, 1.30]$, increased the odds of gaining social integration. Depression symptoms, $ACOR = 1.14, p = .035; 95\% CI [1.01, 1.30]$, PTSD symptoms, $ACOR = 1.09, p = .017; 95\% CI [1.02, 1.17]$, and traumatic grief, $ACOR = 1.14, p = .049; 95\% CI [1.01, 1.29]$, were also associated with losses to social integration.

Decreased depression, $ACOR = 1.06, p = .037; 95\% CI [1.01, 1.24]$, and PTSD symptoms, $ACOR = 1.04, p = .041; 95\% CI [1.01, 1.09]$ was associated with the odds of gaining social contact. Increased anxiety, $ACOR = 1.23, p = .017; 95\% CI [1.04, 1.45]$, and PTSD symptoms, $ACOR = 1.07, p = .045; 95\% CI [1.01, 1.14]$, was associated with the odds of losing social contact.

Discussion

Examining the disruption to social resources is relevant in low resource contexts given the scarcity of available mental health services in these communities and the high prevalence of traumatic events. Social resources are important predictors of mental health outcomes following potentially traumatic events (Brewin, Andrews, & Valentine, 2000; Gorst-Unsworth & Goldenberg, 1998; Hobfoll et al., 2011; Steel, Silove, Bird, McGorry, & Mohan, 1999).

Baseline mental health symptoms were not related to changes in social support. Greater baseline depression, PTSD symptoms, and traumatic grief symptoms, however, were reported among torture survivors who lost social integration. This was not accounted for by changes in mental health symptoms between baseline and follow-up. Baseline symptoms did not predict changes in the frequency of social contact, but changes occurring in symptoms over time did; participants who experienced a reduction in depression and PTSD symptoms were more likely to have greater social contact, whereas those whose anxiety and PTSD symptoms increased were in contact with people less frequently.

Baseline symptoms of depression and traumatic grief were higher among torture survivors who gained social support. Baseline symptoms of depression, anxiety, PTSD symptoms, and traumatic grief were higher for torture survivors who gained social integration. Our analysis of the change in mental health symptoms partially explained these findings indicating that decreases in symptoms occurring between baseline and follow-up were generally related to these gains.

In our study, baseline mental health symptoms were not related to changes in social contact. Changes in symptom severity over time (either improvement or worsening), however, were associated with changes in frequency of contact, implying that...
social behaviors of the participants or their community members were affected by psychological distress. This fits the evidence that anxiety is strongly associated with behavioral avoidance (Hendriks et al., 2012) and that social behaviors increase as symptoms are reduced (Gorst-Unsworth & Goldenberg, 1998). When mental health problems are reduced, people may attract their supports, which may account for why symptom decline was associated with increased social contact.

Kurdish torture survivors reported that symptoms of depression affected social and family relationships (Bolton et al., 2013); poor mood and lack of interest in social activities may lead friends and family members to avoid or stop initiating contact. Irritability, common to both depression and PTSD, is one explanation for the erosion of social support (King et al., 2006). Mental health symptoms may overwhelm a social network’s ability to empathize, leading to discomfort, confusion, and a lack of ability to relate to the survivor, leading to support deterioration.

Following interpersonal trauma, stigmatizing and alienating reactions from others increases vulnerability to psychological distress (Campbell, Ahrens, Seif, Wasco, & Barnes, 2001; Davis, Brickman, & Baker, 1991; Ullman, 1996). These reactions were noted during the earlier qualitative study. Participants reported discrimination, being cursed at, looked down upon, and that their social relationships had “become weak.” Kurdish torture survivors reported that experiencing symptoms were both a cause and consequence of being marginalized within their community (Bolton et al., 2013).

Although tortured political prisoners may report benefits because of their personal sacrifice for an ideological cause (Ursano, Grieger, & McCarroll, 1996), this was not the case in Kurdistan. The Kurds were not advocating for a political ideology. Those who gained in resources reported high levels of distress at baseline, but these symptoms declined over time. Our results demonstrate that psychological distress is associated with social resources through this intuitive inverse relationship;

Table 3
Baseline Mental Health Symptoms and Their Relationship to the Changes in Social Resources

<table>
<thead>
<tr>
<th>Variable</th>
<th>Social support</th>
<th>Social integration</th>
<th>Frequency of social contact</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Loss ACOR</td>
<td>Gain ACOR</td>
<td>Loss ACOR</td>
</tr>
<tr>
<td>HSCL-D</td>
<td>0.98 [0.86,1.12]</td>
<td>1.10 [1.02,1.20]</td>
<td>1.14 [1.01,1.30]</td>
</tr>
<tr>
<td>HSCL-A</td>
<td>1.10 [0.94,1.28]</td>
<td>1.11 [1.00,1.23]</td>
<td>1.03 [0.90,1.17]</td>
</tr>
<tr>
<td>HTQ</td>
<td>1.05 [0.97,1.14]</td>
<td>1.03 [0.97,1.08]</td>
<td>1.09 [1.02,1.17]</td>
</tr>
<tr>
<td>TG</td>
<td>1.13 [0.96,1.33]</td>
<td>1.17 [1.05,1.30]</td>
<td>1.14 [1.01,1.29]</td>
</tr>
</tbody>
</table>

Note. N = 96. Each row in this table represents three separate analyses; each mental health symptom score separately regressed on changes in each social resource outcome. Each ACOR for loss and gain is compared against the reference group of no change in social resources. Models are adjusted for age, sex, education, marital status, and geographical location. Marital status was not included in the social support model, as no one who was not married gained in support. ACOR = adjusted conditional odds ratio; HSCL-D = Hopkins symptom checklist-Depression subscale; HSCL-A = Hopkins symptom checklist-Anxiety subscale; HTQ = Harvard Trauma Questionnaire; TG = traumatic grief.

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

Table 4
Changes in Mental Health Symptoms and Their Relationship to the Changes in Social Resources

<table>
<thead>
<tr>
<th>Variable</th>
<th>Social support</th>
<th>Social integration</th>
<th>Frequency of social contact</th>
</tr>
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<tr>
<td></td>
<td>Loss ACOR</td>
<td>Gain ACOR</td>
<td>Loss ACOR</td>
</tr>
<tr>
<td>HSCL-D</td>
<td>1.04 [0.97,1.13]</td>
<td>1.04 [1.00,1.10]</td>
<td>1.00 [0.93,1.08]</td>
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<tr>
<td>HSCL-A</td>
<td>0.96 [0.87,1.14]</td>
<td>1.06 [0.97,1.15]</td>
<td>1.00 [0.92,1.15]</td>
</tr>
<tr>
<td>HTQ</td>
<td>1.02 [0.96,1.08]</td>
<td>1.01 [0.97,1.04]</td>
<td>0.98 [0.94,1.03]</td>
</tr>
<tr>
<td>TG</td>
<td>1.23 [0.97,1.57]</td>
<td>1.11 [0.99,1.23]</td>
<td>1.00 [0.87,1.16]</td>
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</tbody>
</table>

Note. N = 96. Each row in this table represents three separate analyses; each mental health symptom score separately regressed on changes in each social resource outcome. Each ACOR for loss and gain is compared against the reference group of no change in social resources. Models are adjusted for age, sex, education, marital status, and geographical location. Marital status was not included in the social support model, as no one who was not married gained in support. Loss is predicted by the increase in symptoms occurring between baseline and follow-up. Gain is predicted by decreases in symptoms between baseline and follow-up. ACOR = adjusted conditional odds ratio; HSCL-D = Hopkins symptom checklist-Depression subscale; HSCL-A = Hopkins symptom checklist-Anxiety subscale; HTQ = Harvard Trauma Questionnaire; TG = traumatic grief.

*p < .05. **p < .001.
as symptoms decline, social resources improve. Conversely, we would also expect that as gains in social resources occur, symptoms of distress would reduce.

Baseline traumatic grief led to an increase in social support and social integration. For some survivors, intense grief may be associated with support mobilization. Suffering a traumatic loss jointly affects individuals and communities, which may lead to increases in support from friends and family. Although traumatic grief is described by a variety of cognitive, emotional, and behavioral difficulties, the dominant emotional experience of traumatic grief is yearning and intense sadness. Clinical and nonclinical research suggests that the emotion of sadness serves two important functions, one intrapersonal and one interpersonal (Bonanno, 2009; Bonanno, Goorin, & Coifman, 2008). At an intrapersonal level, the expression of sadness appears to turn attention inward to facilitate reflection and recalibration of schematic meaning structures. At an interpersonal level, the expression of sadness evokes similar emotional responses in others as well as sympathy and caring behaviors (Bonanno, 2009). The debilitating symptoms of traumatic grief, depression, and PTSD that often characterize torture survivors may obviate any functional value that sadness might engender. The results of our study, however, suggest that for some torture survivors this is likely not the case.

We examined three specific domains of social resources and whether different mental health symptoms were associated differentially with these outcomes, which offers a more nuanced methodological approach. That mental health and social resources measures were locally validated increases confidence in the results and overcomes methodological artifacts inherent in imposing Western conceptualizations of distress on other cultural groups.

Several important limitations should be noted. This was a treatment-seeking sample and these results may not generalizable to nonclinical community samples. Initially high symptom levels can also lead to regression to the mean. We attempted to account for this process by modeling changes in symptoms occurring between baseline and follow-up. Changes in symptoms over time may better explain resource gains, but this was not the case for losses.

Participants experienced torture years before this study, but the time since event was not ascertained. This study offers only a snapshot of an ongoing dynamic interplay of the course of symptoms and social resources. Detailed information about torture experiences is not available and greater exposure (Bolton, Michalopoulos, Ahmed, Murray, & Bass, 2013). The mental health and psychosocial problems of survivors of torture and genocide in Kurdistan, Northern Iraq: A brief qualitative study. Torture, 23, 1–14.


References


Distress and Changes to Social Resources


