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Factors Associated With Adverse Mental Health Outcomes in Locally Recruited Aid Workers Assisting Iraqi Refugees in Jordan

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Nongovernmental organizations (NGOs) serve Iraqis living in Jordan as “guests.” In 2008, 258 Jordanian humanitarian staff and Iraqi volunteers working for NGOs completed a needs assessment survey. Work characteristics, stressors, and support variables were evaluated regarding their influence on depression, anxiety, post-traumatic stress disorder (PTSD), and burnout through multivariate logistic regressions. There was a significant difference in depression, anxiety, and burnout across nationality. Traumatic exposure increased the risk for anxiety, depression, and PTSD. Working longer in the humanitarian sector was associated with less risk of anxiety and depression, and lower social support was a risk for anxiety. Managers were at higher risk for burnout, and low team cohesion was a risk for burnout. Implications for aid organizations are discussed.

KEYWORDS humanitarian aid workers, Jordan, mental health, refugees

The ongoing violent conflict in Iraq led to the displacement of an estimated 4.2 million Iraqis around the world, including around 800,000 in Jordan in 2008 (Mowafi & Spiegel, 2008). Many of the families have suffered directly from death, injury, separation, and loss of homes and property, and they face a precarious legal status when arriving in Jordan because Jordan is not a signatory to the 1951 Refugee Convention. Therefore, Iraqis are not officially recognized as refugees, but are viewed as “guests,” preventing most from obtaining work permits and earning a living (International Rescue Committee, 2010). They often live scattered in urban areas with only certain family members venturing out into the marketplace to seek work (Mowafi & Spiegel, 2008). As personal savings and family support decrease, Iraqis in Jordan report financial burdens, health problems, and difficult living conditions (Salem-Pickartz, 2009).

There is limited research on how work with refugee populations affects locally recruited staff working with nongovernmental organizations (NGOs). Organizational support services including basic health care, psychological support, salaries and other benefits, and security policies are generally less comprehensive for local than for expatriate staff (McCall & Salama, 1999). In addition, depending on the context, locally recruited staff might have suffered traumatic experiences related to the complex humanitarian emergency in their countries (Stoddard, 2007). Locally recruited staff members are also more likely to identify with beneficiaries of the programs of the organizations they work for, and such identification could lead to vicarious traumatization and burnout (Shah, Garland, & Katz, 2007). Yet, resources
to support this strain related to past and present experiences are often not provided (Stoddard, Harmer, & Haver, 2011) or offered in ways that are culturally relevant (Shah et al., 2007).

Locally recruited workers often constitute the majority of the workforce of international organizations, and local relief and aid organizations (those founded by nationals in the country) usually employ only local staff. The majority of staff working directly with the Iraqi refugees in Jordan are local Jordanians; however, a number of Iraqi refugees themselves are also occupied as “volunteers” for humanitarian organizations receiving stipends for their work. Iraqis working for these organizations might be exposed to an even more complex set of stressors than the Jordanian local staff. Many of them have experienced traumatic events in Iraq prior to arriving in Jordan and face similar problems as the Iraqi beneficiary population whom they are now assisting.

**STRESS AND MENTAL HEALTH IN AID WORKERS**

Humanitarian work might include both direct and indirect exposure to trauma depending on the local context. Research with national aid workers has demonstrated the increased risk of posttraumatic stress based on both the number of direct traumatic incidents (as reported by Kosovar Albanian aid workers; Lopes Cardozo et al., 2005), and indirect or vicarious exposure to life-threatening events (as described by Indian aid workers; Shah et al., 2007). In addition, the number of traumatic events experienced was significantly associated with risk for depression in local aid workers in Kosovo (Lopes Cardozo et al., 2005).

Personal variables of age (Lopes Cardozo et al., 2005; Musa & Hamid, 2008), gender (Lopes Cardozo et al., 2005), and traumatic bereavement (Putman et al., 2009) have also been identified as predictors of distress in samples of national aid workers working in contexts such as Sudan, Kosovo, and Guatemala. Support systems have been identified as possible buffers to the challenges of humanitarian aid work in the Middle East and Eastern Europe (Fawcett, 2003). Empirical evidence also suggests that a lack of organizational support and inadequate communication with friends and relatives increases the risk of depression and nonspecific psychiatric problems in national aid workers in Kosovo (Lopes Cardozo et al., 2005).

Investigating the specific context of assisting Iraqi refugees in Jordan requires consideration of how variables of traumatic and chronic stress exposure, social support, and demographic variables might be relevant to the Jordanian setting. Research with Jordanian nurses has identified the problem of workplace violence in Jordanian hospitals; 22.5% of nurses surveyed indicated they had been the victim of a violent incident (AbuAllRub & Al-Asmar, 2011). Chronic stressors for Iraqi refugees in Jordan center
on financial stressors and work issues, lack of medical and educational resources, need for psychosocial services for trauma survivors, and worry for family members who remain in Iraq (International Rescue Committee, 2010). Other studies of Jordanian nurses have identified the positive relationship of support from coworkers with self-report of effectiveness in job performance (Amarneh, Abu Al-Rub, & Abu Al-Rub, 2010) and social support from family and colleagues as a buffer to occupational stress (Hamaideh, 2012b). Finally, Hamaideh (2012a) reported a gender difference in experience of stressors, with female Jordanian college students reporting higher perceptions of stressors and higher emotional responses to stress than males.

Based on the research, the proposed model for considering risk and resilience factors in locally recruited aid workers in Jordan assessed three specific domains of variables: (a) personal and work-related background, (b) support during employment, and (c) exposure to chronic and traumatic stressors. The goal of the assessment was to provide evidence regarding mental health outcomes and background for stress management programs for NGOs working in Jordan with Iraqi refugees. Specific objectives included measuring the prevalence of psychological adjustment and identifying factors associated with elevated risk of poor mental health (e.g., depression, anxiety, and post-traumatic stress disorder [PTSD]) and burnout in locally recruited staff working with Iraqi refugees.

METHOD

Participants
Locally recruited aid workers were defined as staff who were hired by an international or national humanitarian organization from the host population or as volunteer staff among Iraqi refugees. We obtained a list of all humanitarian organizations in Amman, Jordan that included international NGO, national NGO, and United Nations (UN) or Red Cross/Red Crescent (RC) organizations. Inclusion criteria for organizations were (a) operating with the primary task of providing humanitarian assistance, (b) providing direct assistance to Iraqi refugees, and (c) having a minimum of 20 local staff working directly with Iraqi refugees. Participants were required to be over the age of 18 and have worked with the NGO at least 3 months.

Measures
Key cultural informants within the local organizations were interviewed about work stressors and existing support structures for locally recruited staff. This information was incorporated into survey measures that were translated into Arabic and then back-translated. A local psychiatrist reviewed the
questionnaire to provide expert validation of the translation. All participants provided written informed consent. The survey was reviewed and approved as nonresearch by the U.S. Centers for Disease Control and Prevention.

BACKGROUND AND EMPLOYMENT

Participants provided sociodemographic information as well as information regarding their type of work or volunteer responsibilities, type of organization (e.g., international NGO, national NGO, Red Cross or Red Crescent, UN agency, or governmental), and length of time working in the humanitarian sector. The participants were also asked a series of questions regarding the organizational support and policy, based on the guidelines for supporting humanitarian workers put forth by the Antares Foundation (2012). Participants were asked whether they had access to psychological support, such as counseling services, and about their overall satisfaction with staff support services.

EXPOSURE TO STRESSORS

The survey included three measures of stressors salient to humanitarian work. First, a measure was adapted to assess for traumatic experiences associated with the Iraq conflict and life in Jordan (Eriksson, Vande Kemp, Gorsuch, Hoke, & Foy, 2001; Lopes Cardozo et al., 2005). Participants were asked to indicate whether or not they had personally experienced an event, and the number of events was summed to create a total personal exposure to trauma scale score. Participants were also asked to indicate whether they had experienced the event during their current employment or previously. For the logistic regression analyses, personal exposure to trauma during any time point was categorized into three groups (no exposure, exposure to one to four events, and exposure to five or more events).

Exposure to and prevention of secondary traumatic stress in aid workers was measured through participants’ report of listening to trauma stories in their current employment, and their receipt of supervision for this experience. Participants’ responses to hearing trauma stories were organized into three categories for logistic regression analyses (not at all, some of the time, and most of the time). A measure of the daily hassles of humanitarian work and its context (chronic stressors) was adapted for use with locally recruited staff in Jordan (Eriksson, Bjorck, & Abernethy, 2003). Items were added that represented key chronic stressors for local staff in this context (e.g., “problems due to temporary status in Jordan” and “economical/financial problems”). Each item was scored to represent whether the participant was currently experiencing that particular stressor, and a sum score was created to reflect total exposure to chronic stressors.
SUPPORT AND TEAM RELATIONSHIPS

Participants were asked to report their perception of giving and receiving social support using 12 items of the Social Provisions Scale (Cutrona, 1989; Cutrona & Russell, 1987). Participants rated their level of agreement from 1 (strongly disagree) to 4 (strongly agree) with statements regarding respect from others, offering support to others, common interests, feeling supported by others, and feeling close to others. Support within the work setting was assessed using a team cohesion scale based on previous research with work and military teams (Bliese & Halverson, 1996; Whealin et al., 2007). Participants indicated their agreement with statements regarding their relationships with organizational leadership and teammates or work peers using a Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree), with 3 (neither) as midpoint.

MENTAL HEALTH AND OCCUPATIONAL ADJUSTMENT OUTCOMES

The Los Angeles Symptom Checklist (King, King, Leskin, & Foy, 1995) was used to measure symptoms associated with PTSD. An item was considered clinically significant within one of the PTSD symptom clusters (avoidance, hyperarousal, or reexperiencing) if rated as a “serious problem” by the participant. Consistent with the Diagnostic and Statistical Manual of Mental Disorders (4th ed, text revision [DSM–IV–TR]; American Psychiatric Association, 2000), clinically significant levels in all three symptom clusters were considered suggestive of PTSD.

Symptoms of depression (15 items) and anxiety (10 items) were measured by the Hopkins Symptom Checklist (HSCL; Derogatis, Lipman, Rickels, Uhlenhuth, & Covi, 1974; Mollica, Wyshak, de Marneffe, Khuon, & Lavelle, 1987). Participants rated their experience of the symptoms using a 4-point Likert scale ranging from 1 (not at all) to 4 (extremely). Clinically significant symptom levels for both anxiety and depression were determined by using the normed and validated cutoff score of 1.75 for both subscales.

The Maslach Burnout Inventory–Human Services Survey (MBI–HSS; Maslach & Jackson, 1996), consisting of subscales for emotional exhaustion (EE), depersonalization (DP), and reduced personal accomplishment (PA), measured burnout. The EE subscale measures general fatigue and a sense of exhaustion related to one’s work. The DP subscale assesses a sense of disconnection or distance from the people offered services. PA measures the participants’ experiences of mastery, accomplishment, and success in their work. The cutoff scores indicating high risk for burnout in EE, DP, and PA were 27 or higher, 13 or higher, and 31 or lower, respectively. Cronbach’s alphas estimating internal consistency of the survey scales were in general .70 or higher. Only the DP MBI subscale was somewhat lower at $\alpha = .67$. 
Procedure
Nine local assistants were hired to facilitate administration of the pencil-and-paper survey in group contexts. These bilingual assistants were able to answer participants’ questions, monitor for any distress, and translate any questions directed to the research team.

MISSING DATA
To utilize all appropriate cases for inferential statistics, cases with missing values in the three mental health variables were assessed for both the quantity of missing items and possible patterns of missing data. Nine participants were missing all items for mental health variables and another 20 were missing more than 10% of the items for the combined set of mental health outcomes. All 29 were dropped from the data set.

The remaining 229 participants were included in the logistic regression modeling. However, a subset of these participants still contained missing responses for one or more factors. Therefore, any participant reporting a sum score equal to or above the cutoff score of severe symptoms for a PTSD symptom category was considered a “case” for that category, even if that individual had an item response missing from that scale. For continuous variables, scores were calculated as the mean of all viable responses (up to 10% missing).

STATISTICAL ANALYSES
Chi-square statistics and univariate analysis of variance were used to assess group differences across categorical and continuous variables. Logistic regression models were developed to assess factors potentially associated with depression, anxiety, PTSD, and the three subscales of burnout. Jordanian staff and Iraqi volunteers were combined in the sample for analyses, and the following factors were included for consideration in the logistic models: age, sex, nationality (Jordan, Iraq), type of organization, length of humanitarian service, education level, managerial responsibility, number of personal trauma events, exposure to others’ traumatic stories, satisfaction with staff support services, religious participation, exposure to chronic stressors, perceived social support, team cohesion, and access to psychological staff support services. We used a forward stepwise variable selection in each logistic regression analysis. For each variable, an $F$ statistic was calculated that reflects the variable’s contribution to the model. Any variable with a $p$ value of 0.5 from the $F$ test was entered into the model. This relatively high $p$ value helped retaining the maximum number of records for analysis and providing a more efficient model with the most important variables.
RESULTS

The research team contacted 43 organizations, which included international and national NGOs and UN organizations. Of those, 11 organizations met the inclusion criteria for participation, and 9 agreed to participate. Within the 9 organizations, 254 Jordanian and 230 Iraqi locally recruited staff were eligible, and 165 (65%) Jordanian and 90 (39%) Iraqi staff members consented to participate. There was no additional information regarding characteristics of nonrespondents. The low response rate for Iraqi participants might be related to concerns about “guest” or worker status.

Descriptive Statistics of Sample and Key Variables

Of the total sample, 73.2% were female and 26.8% were male; the mean age of the respondents was 32.3 years. See Table 1 for additional demographic information. Comparisons between Iraqi and Jordanian participants indicated significant differences in age, marital status, and education.

ORGANIZATIONAL POLICY AND SUPPORT

The majority of participants were satisfied with staff support services provided by their organization (56.3% of Iraqi volunteers and 60.1% of Jordanian staff). As might be expected due to work status, job-related benefits were different for Jordanian staff and Iraqi volunteers; 77.8% of Jordanian staff received medical insurance, compared to only 36.8% of Iraqi participants. Eighty-three percent of Jordanian staff had access to vacation benefits,

| Table 1: Demographic Characteristics among Locally Recruited Aid Workers Assisting Iraqi Refugees in Amman, Jordan, 2008 |
|-------------------------------------------------|-----------------|-----------------|-----|
| Characteristic                                | Jordanian n/N (%) | Iraqi n/N (%) | p   |
| Gender                                        |                  |                |     |
| Male                                          | 43/163 (26.4)    | 24/88 (27.3)   | .90 |
| Female                                        | 120/163 (73.6)   | 64/88 (72.7)   |     |
| Age (M)                                       | 28.9             | 38.7           |     |
| Marital status                                |                  |                |     |
| Single                                        | 80/160 (50.0)    | 16/87 (18.4)   | <.001|
| Married/In a committed relationship           | 77/160 (41.9)    | 62/87 (71.3)   |     |
| Education                                     |                  |                |     |
| High school/Vocational training               | 23/156 (14.8)    | 43/86 (50.0)   | <.0001|
| University/Postgraduate                        | 130/156 (83.4)   | 43/86 (50.0)   |     |
| Religion                                      |                  |                |     |
| Islam                                         | 122/160 (76.3)   | 64/76 (84.2)   | .14 |
| Christian                                     | 37/160 (23.1)    | 12/76 (15.8)   |     |

Note. Differences determined by chi-square analyses for categorical variables, and univariate analysis of variance for continuous variables.
whereas only 29.5% of Iraqi volunteers could take vacation breaks. Less than half of the participants reported that they received stress management training (43.8% of Iraqis and 35.7% of Jordanians).

Both Iraqi and Jordanian participants reported experiencing cohesion with their leaders and coworkers. Ninety-one percent of participants reported that they have close relationships with colleagues, and that they could go to a coworker when they had a problem. There was a significant difference between the Iraqi and Jordanian participants in their report of general perceived social support, $F(1, 230) = 15.63, p < .001, \eta^2_p = .064$, with the Jordanian staff reporting higher mean scores ($M = 36.98, SD = 4.85$) than the Iraqi volunteers ($M = 34.36, SD = 4.61$). Most participants reported currently living with family (89.7%) and indicated that they would go to their family for support (71.8%). More Iraqi staff and volunteers (73%) were the main breadwinner in the family than Jordanian staff (23.6%).

**Report of Exposure to Stressors**

The most common chronic stressors for all locally recruited aid workers were economical and financial problems (93.7%), and an excessive workload expected by the organization (91.9%). Iraqis experienced more travel difficulties and restriction in movement (87.5%) compared to Jordanian staff (63.5%), $\chi^2(1, 223) = 11.17; p = .0009$. See Table 2 for a list of the 10 most frequently reported chronic stressors.

As would be expected, Iraqi volunteers suffered significantly more overall exposure to personal traumatic events ($M = 6.65, SD = 5.90$) than their Jordanian coworkers ($M = 1.55, SD = 2.04$). Nationality accounted for 29% of the variance in total personal trauma exposure, $F(1, 215) = 87.11, p < .0001, \eta^2_p = .288$. For Iraqi volunteers, the most common traumatic events were experiencing gunfire nearby (44.9%) and unexpected or premature death of family member(s) (43.8%). The most common traumatic events for Jordanian staff were related to unexpected death of family (27.6%) and unexpected death of friends (24.5%). Only 18.4% of Iraqi participants had experienced no traumatic events compared to 44.9% of Jordanian participants. Twenty-six percent of Iraqi volunteers had experienced 10 or more traumatic events compared to 1.3% of Jordanian staff. Twenty-three percent of all workers had experienced trauma events during their current employment ($M = .39, SD = .90$, observed range = 0–6 events). There was no statistical difference between Jordanian staff and Iraqi volunteers in report of trauma exposure during current employment, $F(1, 219) = 0.56, p = .46, \eta^2_p = .003$.

Secondary exposure to trauma was ubiquitous. Ninety-four percent of the total sample indicated that their work involved listening to trauma stories of Iraqi refugees. However, only 38% reported receiving supervision for this work.
TABLE 2 Ten Chronic Stressors Most Frequently Reported by Locally Recruited Aid Workers Assisting Iraqi Refugees in Amman, Jordan

<table>
<thead>
<tr>
<th>Stressor</th>
<th>Jordanian</th>
<th>Rank</th>
<th>n/N (%)</th>
<th>Iraqi</th>
<th>Rank</th>
<th>n/N (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Economical or financial problems</td>
<td>1</td>
<td>137/149 (91.9)</td>
<td>1</td>
<td>75/77 (97.4)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Workload expected by organization is too high</td>
<td>2</td>
<td>135/147 (91.8)</td>
<td>3/4</td>
<td>68/75 (90.7)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Excessive heat, cold, or noise</td>
<td>3</td>
<td>132/149 (88.6)</td>
<td>3/4</td>
<td>68/75 (90.7)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lack of recognition from the beneficiary community for work accomplished</td>
<td>4</td>
<td>130/148 (87.8)</td>
<td>2</td>
<td>67/73 (91.8)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lack of recognition from organization management for work accomplished</td>
<td>5</td>
<td>128/149 (85.9)</td>
<td>5</td>
<td>66/73 (90.4)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Feeling powerless to change the situation of the beneficiary community</td>
<td>6</td>
<td>127/148 (85.8)</td>
<td>6</td>
<td>64/73 (87.7)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Conflicts or misunderstandings between coworkers</td>
<td>7</td>
<td>125/150 (83.3)</td>
<td>9</td>
<td>61/76 (80.3)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Travel difficulties, restrictions on movement, threatening checkpoints,</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>7</td>
<td>66/77 (85.7)</td>
<td></td>
</tr>
<tr>
<td>rough roads</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Being asked to perform duties that are outside of one's professional training</td>
<td>8</td>
<td>124/149 (83.2)</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td></td>
</tr>
<tr>
<td>Separation from close relatives due to work responsibilities</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>8</td>
<td>65/76 (85.5)</td>
<td></td>
</tr>
<tr>
<td>Problems due to temporary status in Jordan</td>
<td>9/10</td>
<td>123/150 (82.0)</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td></td>
</tr>
<tr>
<td>Feeling hostility from the environment for reasons other than religious affiliation</td>
<td>9/10</td>
<td>123/150 (82.0)</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td></td>
</tr>
<tr>
<td>Lack of direction from organization management</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>10</td>
<td>57/74 (77.0)</td>
<td></td>
</tr>
</tbody>
</table>

OUTCOME VARIABLES

Participants were determined to reflect a level of distress consistent with or suggestive of PTSD if they reported a severe problem with the appropriate number of symptoms in each of the three PTSD symptom categories (reexperiencing, hyperarousal, and avoidance). Within this sample, 41 persons (19.2%) met symptom criteria in all three categories suggestive of PTSD. An additional 19.7% of the sample reported severe distress in two of the three PTSD symptom categories. However, these rates should not be confused with diagnoses, as the symptoms are not specifically linked with the experience of one or more traumatic events consistent with the DSM-IV Criterion A for PTSD (American Psychiatric Association, 2000). There was not a statistically significant difference between the rate of clinical levels of post-traumatic distress reported by Iraqi and Jordanian workers. The HSCL measured elevated symptoms associated with anxiety and depression. Using the 1.75 normed and validated cutoff score, 50.4% of participants reported elevated anxiety symptoms (63.6% Iraqi and 43.3% Jordanian), and 55.2% reported elevated depression symptoms (68.8% Iraqi and 48.3% Jordanian).
Iraqi volunteers accounted for a higher proportion of cases of both depression, $\chi^2(1, 225) = 8.64, p = .003$, and anxiety, $\chi^2(1, 226) = 8.39, p = .004$, than Jordanian staff.

High scores on the EE and DP subscales and low scores on the PA subscale of the MBI–HSS reflect a higher risk for the experience of burnout. Nearly 25% of participants had high risk levels of EE (27.9% Jordanian and 15.1% Iraqi), and 17.5% reported high risk of DP (20.7% Jordanian and 9.2% Iraqi). Thirty-two percent of participants (32.9% Jordanian and 33.3% Iraqi) were in a high risk level for burnout by reporting low scores on PA. A higher proportion of Jordanian participants reported high risk levels of EE, $\chi^2(1, 219) = 4.44, p = .035$, and DP, $\chi^2(1, 225) = 4.73, p = .030$, compared to Iraqi participants. Of all participants, only 5.8% met the criteria for high risk in all three burnout subscales.

Results of Logistic Regression Modeling

The Hosmer and Lemeshow goodness-of-fit statistics indicated that each logistic regression model demonstrated a fit. The results of the logistic regression models for mental health outcomes are presented in Table 3, and the odds ratios are adjusted for all other variables in the regression. Odds ratios for significant risk are presented in the inverse in the narrative when this aids interpretation.

PREDICTORS OF REPORTED MENTAL HEALTH DISTRESS

The logistic regression examining anxiety revealed several significant predictors. Gender was significant, with females 4.3 times more likely than males to be in the group reporting clinical levels of anxiety ($p = .001$). Time spent on the humanitarian field was also an important variable, with higher risk associated with less time on the field. For example, those reporting humanitarian aid work for 6 months or less were 1.5 times more likely to be in the anxious group than those reporting that they had been doing humanitarian work for 7 to 12 months ($p = .04$). Exposure to personal trauma was also a very significant risk factor for anxiety, as those who had one to four experiences of trauma and those who had five or more reported experiences of personal trauma exposure were 4.7 times and 8.3 times more likely, respectively, to be in the clinical anxiety group than the group with no trauma exposure ($p = .0002$ for both). Finally, perceived social support was a significant resilience factor for anxiety, as those reporting higher scores of perceived social support were less likely to be reporting clinical levels of anxiety ($p = .021$). For example, for every point lower on mean perceived social support, a participant was 3.2 times more likely to be in the anxious group.

Time spent in the humanitarian field again was independently and significantly related to clinical levels of depression. Those reporting being in
TABLE 3 Factors Independently\(^a\) Associated with Mental Health Outcomes among Locally Recruited Aid Workers Assisting Iraqi Refugees in Amman, Jordan, 2008

<table>
<thead>
<tr>
<th>Factor</th>
<th>Depression</th>
<th>Anxiety</th>
<th>PTSD</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>AOR 95% CI</td>
<td>AOR 95% CI</td>
<td>AOR 95% CI</td>
</tr>
<tr>
<td>Female (as compared to male)</td>
<td>2.14 [0.80, 5.71]</td>
<td>4.31 [1.81, 10.26]</td>
<td>—</td>
</tr>
<tr>
<td>Time on humanitarian field(^b)</td>
<td>0.66 [0.44, 0.97]</td>
<td>0.69 [0.48, 0.98]</td>
<td>1.08 [0.71, 1.64]</td>
</tr>
<tr>
<td>Type of organization(^c)</td>
<td>0.312 [0.368]</td>
<td>0.69 [0.48, 0.98]</td>
<td>0.126</td>
</tr>
<tr>
<td>UN/RC</td>
<td>1.00 [1.00]</td>
<td>1.00 [1.00]</td>
<td>1.00</td>
</tr>
<tr>
<td>INGO</td>
<td>0.51 [0.17, 1.55]</td>
<td>0.54 [0.20, 1.47]</td>
<td>0.36 [0.11, 1.18]</td>
</tr>
<tr>
<td>NNGO</td>
<td>0.91 [0.30, 2.78]</td>
<td>0.84 [0.31, 2.22]</td>
<td>0.85 [0.28, 2.54]</td>
</tr>
<tr>
<td>High school/vocational training (as compared to university or graduate training)</td>
<td>3.80 [1.54, 10.75]</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Manager (as compared to nonmanager)</td>
<td>2.55 [0.68, 9.41]</td>
<td>2.25 [0.67, 7.56]</td>
<td>1.60 [0.33, 7.77]</td>
</tr>
<tr>
<td>Iraqi (as compared to Jordanian)</td>
<td>0.28 [0.08, 0.97]</td>
<td>0.94 [0.39, 2.24]</td>
<td>0.86 [0.32, 2.31]</td>
</tr>
<tr>
<td>Regular religious practice(^c)</td>
<td>0.28 [0.08, 0.97]</td>
<td>0.94 [0.39, 2.24]</td>
<td>0.86 [0.32, 2.31]</td>
</tr>
<tr>
<td>Strongly agree</td>
<td>1.00 [1.00]</td>
<td>1.00 [1.00]</td>
<td>1.00</td>
</tr>
<tr>
<td>Disagree</td>
<td>4.22 [0.95, 18.70]</td>
<td>1.79 [0.57, 5.63]</td>
<td>0.50 [0.14, 1.85]</td>
</tr>
<tr>
<td>Slightly agree and agree</td>
<td>0.91 [0.38, 2.16]</td>
<td>1.54 [0.61, 2.91]</td>
<td>0.45 [0.17, 1.17]</td>
</tr>
<tr>
<td>Team cohesion(^b)</td>
<td>—</td>
<td>—</td>
<td>0.43 [0.17, 1.09]</td>
</tr>
</tbody>
</table>

(Continued)
<table>
<thead>
<tr>
<th></th>
<th>Depression</th>
<th>Anxiety</th>
<th>PTSD</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>AOR 95% CI  p</td>
<td>AOR 95% CI  p</td>
<td>AOR 95% CI  p</td>
</tr>
<tr>
<td>Social support(^b)</td>
<td>0.33 [0.10, 1.04] .058</td>
<td>0.31 [0.11, 0.84] .021</td>
<td>0.29 [0.08, 1.04] .057</td>
</tr>
<tr>
<td>Satisfaction with organizational support (as compared to unsatisfied)</td>
<td>—</td>
<td>1.12 [0.90, 1.40] .309</td>
<td>1.27 [0.94, 1.73] .125</td>
</tr>
<tr>
<td>Availability of staff support (as compared to no staff support)</td>
<td>1.58 [0.71, 3.50] .261</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Exposure to chronic stressors(^b)</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Hearing trauma stories in work(^c)</td>
<td>6.28 [0.90, 43.96] .064</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Not at all</td>
<td>1.00</td>
<td>1.00</td>
<td>—</td>
</tr>
<tr>
<td>Some of the time</td>
<td>0.25 [0.05, 1.29] —</td>
<td>1.29 [0.31, 5.43] —</td>
<td>—</td>
</tr>
<tr>
<td>Most of the time</td>
<td>0.24 [0.04, 1.30] —</td>
<td>1.71 [0.41, 7.19] —</td>
<td>—</td>
</tr>
<tr>
<td>Personal experience of trauma events(^c)</td>
<td>&lt;.0001</td>
<td>&lt;.0001</td>
<td>0.035</td>
</tr>
<tr>
<td>0 events</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
</tr>
<tr>
<td>1 to 4 events</td>
<td>2.12 [0.89, 5.03] .09</td>
<td>4.70 [2.10, 10.54] .0002</td>
<td>2.83 [0.96, 8.37] .058</td>
</tr>
<tr>
<td>5 or more events</td>
<td>37.92 [7.73, 186.11] &lt;.0001</td>
<td>8.32 [2.71, 25.48] .0002</td>
<td>5.30 [1.48, 19.02] .010</td>
</tr>
</tbody>
</table>

Note. Depression \( n = 175 \); Anxiety \( n = 190 \); PTSD \( n = 183 \). PTSD = post-traumatic stress disorder; AOR = adjusted odds ratio; CI = confidence interval; N/A = variable did not meet the required cutoff to be included in the regression; UN/RC = United Nations or Red Cross/Red Crescent; INGO = international nongovernmental organization; NNGO = national nongovernmental organization. Depression Hosmer and Lemeshow goodness-of-fit statistic \( \chi^2 = 9.694, p = .287 \); Anxiety Hosmer and Lemeshow goodness-of-fit statistic \( \chi^2 = 7.752, p = .458 \); PTSD Hosmer and Lemeshow goodness-of-fit statistic \( \chi^2 = 3.882, p = .868 \).

\(^a\)Adjusted odds ratios reported are adjusted for all other variables in the model. \(^b\)Variables with no reference are included as continuous scores. \(^c\)P values for variables with more than two categories are first reported from Type III analyses. If this analysis is significant, between-group \( p \) values are reported.
humanitarian work longer are less likely to report clinically significant levels of depression ($p = .037$). It can be estimated that a worker reporting 6 months or less in the field is 1.5 times more likely to be significantly depressed, as compared to an aid worker reporting 7 to 12 months in the field. Education level was also significant; a participant with a high school or vocational training education was 3.8 times more likely to be in the depression group than someone with a university or graduate degree ($p = .011$). In addition, nationality demonstrated a unique risk for depression. In this regression, a Jordanian participant was 3.6 times more likely to be in the depressed group ($p = .045$). Personal exposure to trauma was also significantly related to the likelihood of reporting clinically significant depression. Those reporting five or more personal trauma experiences were 37.9 times more likely to be in the depressed group than participants reporting no personal trauma exposure ($p < .0001$).

It is not surprising that personal exposure to trauma is the primary predictor of clinically significant levels of PTSD. The overall analysis indicates that categories of personal traumatic exposure contribute significantly to PTSD ($p = .04$). Participants with five or more personal trauma experiences are 5.3 times as likely to be in the PTSD positive group ($p = .01$).

**Predictors of Job-Related Burnout**

The logistic regression analyses support the hypothesis that those in management are at increased risk for the experience of EE. In this sample, a manager is 5.2 times more likely than a nonmanager to be in the EE high risk for burnout group, adjusted odds ration (AOR) = 5.23, $p = .03$, 95% CI [1.14, 23.98]. In addition, as team cohesion increases, subjects are less likely to be reporting significant levels of EE, AOR = 0.34, $p < .01$, 95% CI [0.15, 0.76]. Specifically, a participant is 2.9 times more likely to be in the EE group for each point his or her mean score drops, such as moving from an average of 5 (strongly agree) to 4 (agree), or from 4 (agree) to 3 (neither). Personal exposure to trauma was also a significant risk factor for EE; participants reporting one to four trauma events were 5.1 times more likely to be in the EE high-risk group than those reporting no trauma exposure, AOR = 5.09, $p < .01$, 95% CI [1.64, 15.79].

In the analysis of DP, those reporting higher levels of team cohesion were less likely to be reporting high risk levels of DP, AOR = 0.22, $p < .001$, 95% CI [0.10, 0.50]. A participant would be 4.6 times more likely to be in the risk level of DP for each point lower on his or her mean score of team cohesion. Although the variables entered into the model for PA met the inclusion criteria and the Hosmer and Lemeshow goodness-of-fit statistic indicated a model fit, none of the variables demonstrated unique risk or resilience relationships with risk for lack of PA while holding the other variables at a constant.
DISCUSSION

Mental Health Outcomes

DEPRESSION AND ANXIETY

Over two thirds of the Iraqi sample and almost half of the Jordanian participants reported clinically significant levels of depression. This suggests that it is common for locally recruited aid workers to experience symptoms of fatigue, hopelessness, worry, and blame. It is interesting to note that although there was a significantly higher proportion of Iraqi participants in the depression case group, when controlling for other variables such as gender and trauma exposure, Jordanians were more than three times more at risk for clinical depression than the Iraqi sample. Previous research has suggested that depression is a common concern in Jordan, as a random sample of Jordanian women in a primary care setting elicited a rate of up to 31% reporting clinically significant levels of depression (Hamid et al., 2004). Jordanian healthcare providers associate the depressed mood with financial difficulties, family stress, limited autonomy for women, and struggles to find employment for men (Nasir & Al-Qutob, 2005). However, it is not clear how these issues uniquely affect Jordanian aid workers, as compared to Iraqi aid workers. One possible explanation, and limitation of the study, might be the lower response rate for Iraqi participants. The 39% of Iraqi volunteers who completed the survey might represent a group of Iraqis with access to additional resources or strengths. This confusing finding deserves further research and should not be considered as a general finding regarding nationality.

Lower levels of education were also associated with higher risk of depression in this sample of locally recruited aid workers. Those who have less education might be particularly vulnerable to the stressors outlined by Nasir and Al-Qutob (2005).

Half of the locally recruited aid workers also reported clinically significant anxiety symptoms such as nervousness, headaches, tension, fear, or moments of terror. Similar to research with Jordanian university students (Hamaideh, 2012a), being female was a risk factor for clinical anxiety in this sample, with women more than four times more likely to be in the anxiety case group than men. These symptoms could be associated with excessive stress, current security risks, financial strains, and other context and conflict-related issues. Although an aid organization might not be able to remove these stressors, there might be ways to reduce organizational stress, increase support, and develop stress management programs. There is evidence for the efficacy of cognitive-behavioral types of interventions to reduce stress and depression and increase coping skills in Jordanian college students (Hamdan-Mansour, Puskar, & Bandak, 2009). Similar models that teach positive coping and stress management could also contribute to a decrease of symptoms in locally recruited aid workers.
Participants who reported spending more time at their humanitarian post were less likely to report clinical levels of depression and anxiety. This finding appears counterintuitive to the idea of cumulative stress and strain of aid work. However, it might be that those who have been doing aid work for years have a different level of training and established support system, and newer recruits need to develop successful coping. In addition, research has demonstrated the importance of job insecurity as a predictor of work-related stress and major depression (Wang, 2004). It could be that locally recruited workers in Jordan who have been in their positions longer feel more secure in their employment, which could act as an important buffer to chronic financial stress. Longitudinal analysis is needed to clarify the complexity of this finding.

**Trauma exposure and PTSD**

The results suggest that both Iraqi and Jordanian workers might have histories of exposure to trauma, which can contribute to the development of posttraumatic stress symptoms. In particular, both Iraqi and Jordanian participants frequently reported the unexpected deaths of family members and friends. Traumatic loss has been associated with PTSD in Guatemalan aid workers (Putman et al., 2009). The losses in this sample of national staff might also contribute to the experience of depression and anxiety.

The results of the logistic regressions reveal that the primary risk associated with the mental health outcomes was exposure to traumatic events. In addition to the expected relationship with PTSD (Ozer, Best, Lipsey, & Weiss, 2008), personal traumatic exposure was a significant risk factor for anxiety and depression in this population of national aid workers in Jordan, which is consistent with previous research with aid workers in Kosovo (Lopes Cardozo et al., 2005). It is important to note that the trauma exposure was the key variable, rather than being Iraqi or Jordanian. Although Iraqis in general were reporting a higher average number of trauma exposure events, the risk for clinical levels of PTSD and anxiety was not predicted by being Iraqi as compared to Jordanian when trauma exposure was held constant. In addition, exposure to trauma events during the current employment was not significantly different for Jordanian and Iraqi workers.

**Chronic stressors**

Financial concerns were the highest chronic stressor in the sample. In addition, the majority of Iraqi staff and volunteers were the primary breadwinners for their family. This has practical implications in terms of general financial stress and worry, but it might also have relational and cultural stress implications if the main breadwinner is someone who is not typically in that role.
(e.g., the wife or child). Previous research has emphasized the salience of financial stress for Jordanian women, as the perception of financial strain was significantly related to depression (Hamid et al., 2004). The importance of financial stress is also supported by previous research with Iraqi refugees, where more respondents stated that their mental health problems were caused by financial stress, rather than by traumatic experiences in Iraq (Salem-Pickartz, 2009).

The finding that less than half of the workers received supervision for hearing refugees’ traumatic stories is paralleled in other research. Gilbert (2009) identified that many national aid workers in Jordan had titles of “counselor,” but were actually involved in assessment and evaluation for financial assistance. The counselors who did have the opportunity to listen to Iraqi refugees describe their relational and emotional well-being did not have sufficient training and supervision.

Chronic stressors and exposure to secondary trauma have been linked to the experience of burnout in aid workers (Musa & Hamid, 2008). Although these variables were not unique risk factors in the logistic regressions for this sample, other factors of direct trauma exposure and background characteristics were significant.

**Burnout**

Very few locally recruited aid workers reported high risk for burnout in all three areas: emotional exhaustion, depersonalization, and personal accomplishment. A lack of personal accomplishment was the most frequently endorsed aspect of burnout in the sample. This might be associated with the frequent report from both Jordanian and Iraqi participants of a lack of recognition for work accomplished from the organization and from the beneficiary community. In the logistic regression analysis, being in a managerial position was significantly associated with increased risk of emotional exhaustion. It is not surprising that the responsibility of managing others or directing projects can contribute to more fatigue and exhaustion in the work setting.

**Importance of Support Variables**

Similar to previous research with aid workers (Eriksson et al., 2009; Eriksson et al., 2001; Lopes Cardozo et al., 2005), team cohesion and social support are key resilience factors for both mental health outcomes and occupational burnout. Social support was an important protective factor for anxiety, as those reporting higher social support were less likely to be in the group with clinically significant anxiety scores. Team cohesion was particularly salient for the burnout scales, as those with higher scores on cohesion were less likely to report high risk of emotional exhaustion and depersonalization. This
is consistent with research that has identified poor team cohesion as a risk factor for burnout in groups of military medical and support staff (Whealin et al., 2007). This highlights the importance of capitalizing on the supportive relationships occurring within the team, community, and family.

Implications for Organizations

Several key factors have been identified that can directly inform the development of staff support services. First is the profound importance of supportive relationships for both Jordanian and Iraqi workers, with nearly all participants reporting close relations with coworkers. This provides a useful opening to develop more formal methods of stress management, such as peer support networks, whereby the support that the staff and volunteers already give each other could be maximized. Closely related to peer support is the effectiveness of teams and management. Managers can be trained in skills to develop stronger teams, and this might allow some protection from their own exhaustion as well as increasing the functionality of the teams. However, managers would also benefit from the opportunity to have time off. It might be difficult for managers to choose to “get away,” and the urgency of the work reinforces the choice not to leave.

Although the Jordanian staff and Iraqi volunteers are working for the same agencies and doing similar work, it is important for the organizations to note the key differences in the experience of these populations. Iraqi volunteers were less likely to have access to medical insurance and vacation, and they also reported significantly more anxiety and depression than their Jordanian colleagues. Although the Iraqi volunteers reported higher levels of personal experience of trauma, there was not a significant difference between Iraqi and Jordanian participants in the report of clinical levels of posttraumatic distress. Due to the critical influence of exposure to personal trauma, organizational psychological support should create avenues for all staff and volunteers to seek interventions for exposure-related distress, whether related to current employment or previous history. The services might be through mental health care, or through other supportive community relationships. Coworkers and managers can also normalize the challenges associated with surviving high numbers of trauma events.

Limitations and Further Research

Using a quantitative survey method to assess the stress and distress of locally recruited aid workers in Jordan did create notable limitations. First, samples might not be representative for all humanitarian aid workers working with Iraqi refugees in Jordan. In particular, the smaller response rate for Iraqi participants might have biased the results. For example, workers represented in
the sample might be those with more resources, or conversely those with more distress, than the remainder of the population. Second, the stressors were limited by the predetermined list of stressors. An open-ended question at the end of the questionnaire did allow for additional responses, and several participants emphasized issues such as management concerns and access to health care within this section. In-depth interviews would have provided more nuanced understanding of the well-being of national humanitarian aid staff in Jordan, but the survey method allows for the potential of comparison across national and cultural contexts. In addition, the timing of the survey administration also influences the importance of certain stressors. Financial strain was at a critical point at the time of the survey in Fall 2008. However, issues of travel might have been even greater if the survey had been administered just a few months later during an increase in political tensions in the region. Another limitation is the cross-sectional design of the survey. Although associations can be highlighted between variables, we cannot assert any causal relationships.

Further longitudinal research can investigate causal relationships and evaluate the effectiveness of staff support and stress management programs implemented in Jordan and Iraq. In addition, research and organizational policy should consider the well-being of local aid workers’ families. The unique experience of both Iraqi and Jordanian workers within the context of Jordan requires additional attention to clarify the specific risks and distress levels for each.

REFERENCES


Salem-Pickartz, J. (2009). Iraqi refugees in Jordan research their own living conditions: “We only have our faith and families to hold on to.” *Intervention, 7*, 34–49. doi:10.1097/WTF.0b013e32832ad378


