(particularly among combat soldiers who are the children of liquidators and the *in utero* Chernobyl exposed cohort raised in an atmosphere tainted by Chernobyl stress) are similar to those reported for other countries. International cooperation in a study of the long-term health and mental health effects of Chernobyl may not only be relevant to settling disagreements about the neurocognitive outcomes of exposed children generally, but may shed light on whether their early life exposure to stress is a risk factor for maladaptive response to extreme stress later in life.

Johan M. Havenaar[1], Evelyn J. Bromet[2], Semyon Gluzman[3]
[1]North Coast Area Health Service, Lismore, Australia; [2]Departments of Psychiatry and Preventive Medicine, Stony Brook University, Stony Brook, NY, USA; [3]Ukrainian Psychiatric Association, Kiev, Ukraine

1. The Chernobyl Forum: 2003-2005. Chernobyl's legacy: health, environmental and socio economic impacts. Vienna: International Atomic Energy Agency, 2006.
2. Cardis E, Hatch M. Clin Oncol (R Coll Radiol) 2011;23:251-60.
3. Bromet EJ, Havenaar JM, Guey LT. Clin Oncol (R Coll Radiol) 2011;23:297-305.
4. Rahu K, Bromet EJ, Hakulinen T et al. BMJ Open 2014;4:e004516.
5. Laidra K, Rahu K, Tekkel M et al. Soc Psychiatry Psychiatr Epidemiol 2015; 11:1753-60.
6. Loganovsky KN, Zdanevich NA. CNS Spectrums 2013;18:95-102.
7. Lehmann H, Wadsworth J. J Health Econ 2011;30:843-57.
8. Danzer AM, Danzer N. J Public Econ (in press).

DOI:10.1002/wps.20335

Problem Management Plus (PM+): pilot trial of a WHO transdiagnostic psychological intervention in conflict-affected Pakistan

The mental health consequences of conflict and natural disaster are substantial and wide-ranging[1,2]. There is an urgent need for interventions by non-specialist workers that can address a range of mental health problems[3]. The World Health Organization (WHO)'s Problem Management Plus (PM+) is a brief transdiagnostic psychological intervention employing evidence-based strategies of problem solving, behavioural activation, strengthening social support, and stress management[4].

We adapted the individual treatment format of this intervention for conflict-affected Peshawar in Pakistan. It consisted of five face-to-face sessions, with a key feature of being affordable in most settings, because it can be offered not only by specialists but also by supervised non-specialists with no prior training or experience in mental health care delivery. We used an apprenticeship (on-the-job learning) model for training and supervising the non-specialists[5], which involved an initial 6-day training programme by a master trainer to local mental health specialists, who in turn provided an 8-day training programme to six non-specialists. Training of both supervisors and non-specialists was followed by four weeks of practice under supervision of the local trainers. The local trainers themselves were supervised 3-weekly through audio calls by the master trainer, building skills in the intervention as well as in training and supervision. All non-specialists were evaluated for their competency by independent assessors using a competency rating tool evaluating basic helping skills and use of PM+ strategies through observation of specially designed role plays. Competency was rated using a 5-point scale. In total, four out of six achieved scores indicating competency in all basic helping skills and five out of six achieved all competency scores on PM+ strategies. Following additional training and supervision, all non-specialists demonstrated adequate proficiency in requisite skills.

We conducted a single-blind pilot randomized controlled trial (RCT) to explore the feasibility and acceptability of the intervention in Peshawar. PM+ was compared to enhanced treatment as usual, consisting of management by primary care physician who received one day of basic training in treatment of common mental disorders. The study was conducted from March to May 2014 in two primary care centres in Gulbahar Union Council, a low-income peri-urban locality in Peshawar district. Participants were primary care attenders aged 18 or above, referred for screening by the primary care physician. Screening was conducted by trained members of the research team following informed consent to recruit persons with both marked distress *and* impairment. Invited participants scored: a) 2 or above on the General Health Questionnaire (GHQ-12)[6], a 12 item questionnaire of general psychological distress with a 4-point scale ranging from 0 to 3 scored bi-modally when used as a screener (possible range 0-12), and b) 17 or above on the WHO Disability Assessment Schedule (WHODAS 2.0)[7], a screener for functional impairment with 12 items measured on a scale ranging from 1 to 5 (possible range 12-60). We excluded individuals with imminent suicide risk, severe cognitive impairment (e.g., severe intellectual disability or dementia) or with expressed acute needs/protection risks (e.g., recent abandonment by husband and his family). We also excluded individuals who reported having experienced a major traumatic event during the past month and individuals with severe mental disorder (psychotic disorders, substance dependence). Individuals meeting the exclusion criteria were referred to specialist centres depending upon their needs.

Ethical approvals were obtained from the Ethics Review Board at the Lady Reading Hospital, Peshawar, and WHO's Ethical Review Committee. Approval was also obtained from the district primary care administration. Participants were interviewed after voluntary written consent.

Out of 1,286 people seen by a physician during the study period, 94 were referred for screening, 85 met study criteria, 81 were accessible, and 60 consented to participate in the trial. Randomization to the PM+ intervention or enhanced treatment as usual was performed by an independent researcher not involved in the project

using computerized software on a 1:1 basis, stratified for gender. Nine out of 60 (15%) – five from the intervention arm and four from the control arm – were lost to follow-up. The groups were well-balanced at baseline for demographic and clinical variables.

The primary outcome, assessed by independent raters, was psychological distress, measured by GHQ-12 with scores being the total sum across 12 items (possible range 0-36). Other outcomes included: functioning, measured using the 12-item interviewer-administered screener version of the WHODAS 2.0; and post-traumatic stress symptoms, measured using the PTSD Checklist for DSM-5 (PCL-5)[8], which is a 20-item checklist corresponding to the twenty DSM-5 PTSD symptoms in the last week, with items rated on a 0-4 scale (possible range 0-80).

The intervention had high uptake, with 22/30 (73%) completing all sessions. The intervention arm showed improvement in functioning (mean WHODAS 2.0 scores reduced from 17.7 ± 9.2 to 6.6 ± 6.1 vs. 17.0 ± 10.5 to 11.3 ± 10.4 in controls) and in post-traumatic stress symptoms (mean PCL-5 scores reduced from 34.2 ± 20.1 to 9.8 ± 9.1 vs. 32.3 ± 17.1 to 19.5 ± 18.5 in controls). Due to skewed distribution and variance heterogeneity of the outcome variable, log-linear regression was carried out. After adjustment of baseline scores, the results showed a reduction of 90% in geometric mean within the intervention group (95% CI: 90.4%-91.7%, p=0.04) in WHODAS 2.0 scores and a reduction of 92% (95% CI: 91.2%-92.3%, p=0.02) in post-traumatic stress symptoms. There was no significant change in GHQ-12 scores. On qualitative evaluation of a sub-sample of participants and primary care staff, we found that the intervention was perceived as useful, and was successfully integrated into primary care centres.

As this was a pilot study with a small sample size, recruited through primary care physician referral, and no power calculations were carried out, the findings and their generalizability warrant a cautious interpretation. However, a successful conduction in challenging settings, with adequate enrolment rate, a low drop-out, and balanced randomization provides evidence that RCTs are feasible in such settings. The intervention delivery through non-specialists with no prior mental health care experience and the encouraging results demonstrate the feasibility of the task shifting approach, and are consistent with previous reports[9,10]. The results of this pilot study should encourage further adaptation and large-scale fully-powered RCTs of this new, transdiagnostic psychological intervention[4].

Atif Rahman[1,2], Naila Riaz[3], Katie S. Dawson[4], Syed Usman Hamdani[2], Anna Chiumento[1], Marit Sijbrandij[5], Fareed Minhas[6], Richard A. Bryant[4], Khalid Saeed[7], Mark van Ommeren[8], Saeed Farooq[3]
[1]University of Liverpool, Liverpool, UK; [2]Human Development Research Foundation, Islamabad, Pakistan; [3]Lady Reading Hospital, Peshawar, Pakistan; [4]University of New South Wales, Sydney, Australia; [5]VU University Amsterdam, Amsterdam, The Netherlands; [6]Institute of Psychiatry, Rawalpindi, Pakistan; [7]Mental Health and Substance Abuse Unit, Regional Office for the Eastern Mediterranean Region, World Health Organization, Cairo, Egypt; [8]Department of Mental Health and Substance Abuse, World Health Organization, Geneva, Switzerland

The authors alone are responsible for the views expressed in this letter, which do not necessarily represent the views, decisions or policies of the institutions with which they are affiliated. The authors are grateful to M. Dherani and D. Wang for statistical advice. M. van Ommeren and S. Farooq are joint last authors. The study was funded by the Office of Foreign Disaster Assistance.

1. Steel Z, Chey T, Silove D et al. JAMA 2009;302:537-49.
2. Van Ommeren M, Saxena S, Saraceno B. BMJ 2005;330:1160-1.
3. World Health Organization. mhGAP Mental Health Gap Action Programme. Geneva: World Health Organization, 2008.
4. Dawson K, Bryant R, Harper M et al. World Psychiatry 2015;14:354-8.
5. Murray LK, Dorsey S, Bolton P et al. Int J Ment Health Syst 2011;5:30.
6. Goldberg DW. A user's guide to the General Health Questionnaire. Windsor: NFER-Nelson, 1988.
7. World Health Organization. Measuring health and disability: manual for WHO Disability Assessment Schedule WHODAS 2.0. Geneva: World Health Organization, 2010.
8. Weathers FW, Litz BT, Keane TM et al. The PTSD Checklist for DSM-5 (PCL-5). www.ptsd.va.gov.
9. van Ginneken N, Tharyan P, Lewin S et al. Cochrane Database Syst Rev 2013;11:CD009149.
10. Rahman A, Fisher J, Bower P et al. Bull World Health Organ 2013;91:593-601.

DOI:10.1002/wps.20312

Treating post-traumatic stress disorder by resource activation in Cambodia

There is a need for effective, low-threshold psychotherapeutic treatments in post-conflict settings[1]. However, systematic outcome research on site is still extremely rare. To address this problem we integrated rigorous research procedures into a humanitarian program, the so called Mekong Project, and conducted a randomized controlled trial for the treatment of post-traumatic stress disorder (PTSD) in Cambodia. In short, the Mekong Project aims at establishing independent psychotherapeutic services in several Southeast Asian countries via the systematic training of local health professionals and offering free of charge psychological help to traumatized civilians.

Cambodia is one of the least developed countries in Asia, facing many challenges (e.g., poor standards of health and education, rural exodus, and political instability). Mental health morbidity in Cambodia is high. It has been found that 53.4% of the Cambodian population suffer from a mental disorder, with anxiety and PTSD being the most frequent (40.0% and 28.4% respectively)[2]. Thus, although some stability has returned to the country during the past decades, there are urgent mental health care needs, including the need for individualized psychiatric services.

Our aim was to test the efficacy of a non-confrontational psychotherapeutic treatment for PTSD. The therapy includes two main treatment principles described in treatment manuals: resource-oriented trauma therapy and resource installation with eye movement desensitization and reprocessing