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Mental health and psychosocial support in humanitarian settings: linking practice and research

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This review links practice, funding, and evidence for interventions for mental health and psychosocial wellbeing in humanitarian settings. We studied practice by reviewing reports of mental health and psychosocial support activities (2007–10); funding by analysis of the financial tracking service and the creditor reporting system (2007–09); and interventions by systematic review and meta-analysis. In 160 reports, the five most commonly reported activities were basic counselling for individuals (39%); facilitation of community support of vulnerable individuals (23%); provision of child-friendly spaces (21%); support of community-initiated social support (21%); and basic counselling for groups and families (20%). Most interventions took place and were funded outside national mental health and protection systems. 32 controlled studies of interventions were identified, 13 of which were randomised controlled trials (RCTs) that met the criteria for meta-analysis. Two studies showed promising effects for strengthening community and family supports. Psychosocial wellbeing was not included as an outcome in the meta-analysis, because its definition varied across studies. In adults with symptoms of post-traumatic stress disorder (PTSD), meta-analysis of seven RCTs showed beneficial effects for several interventions (psychotherapy and psychosocial supports) compared with usual care or waiting list (standardised mean difference [SMD] –0·38, 95% CI –0·55 to –0·20). In children, meta-analysis of four RCTs failed to show an effect for symptoms of PTSD (–0·36, –0·83 to 0·10), but showed a beneficial effect of interventions (group psychotherapy, school-based support, and other psychosocial support) for internalising symptoms (six RCTs; SMD –0·24, –0·40 to –0·09). Overall, research and evidence focuses on interventions that are infrequently implemented, whereas the most commonly used interventions have had little rigorous scrutiny.

The prevalence of mental health and psychosocial problems in humanitarian settings is high. These settings consist of a broad range of emergency situations, including armed conflicts, as well as natural and industrial disasters. Most frequently, mental health researchers in humanitarian settings have focused on identifying rates of post-traumatic stress disorder (PTSD) and other common mental disorders.[1-4] However, other mental health problems are important in these settings, including severe mental disorders (eg, psychotic disorders),[5] non-specific forms of psychological distress, and psychosocial problems specific to young people.[4] Evidence also exists of the effect of deteriorated environmental conditions on mental health and wellbeing in humanitarian settings, including undermined social support networks, opportunities for generating income, and respect for human rights.[6,7]

Meta-analysis of the most robust epidemiological surveys (those using random samples and diagnostic interviews) in conflict-affected populations showed average prevalences of 15·4% (30 studies) for PSTD and of 17·3 % (26 studies) for depression.[1] These prevalences are substantially higher than the average 7·6% (any anxiety disorder, including PTSD) and 5·3% (any mood disorder, including major depressive disorder) reported in 17 general populations participating in the World Mental Health Survey.[8] Prevalences of mental disorders vary widely between surveys of conflict-affected populations and are strongly affected by methodological and contextual factors, including the extent of exposure to adversity.[1] Compared with PTSD and depression, other issues have received less attention—eg, pre-existing and newly occurring severe disorders, the neuropsychiatric

> **Key messages**
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> Recommendations for mental health and psychosocial support (MHPSS) in humanitarian settings
>
> - Strengthen the evidence for MHPSS in humanitarian settings
> - Broaden outcomes aside from post-traumatic stress disorder and internalising symptoms
> - Stimulate collaboration between researchers and practitioners
> - Reduce the gap between science and practice
> - Prioritise research in to the most commonly implemented MHPSS, especially those in the bottom half of the intervention pyramid
> - Dependent on assessed needs, make empirically supported MHPSS widely available
> - Adapt the randomised controlled trial design where necessary, and apply innovative research designs when randomised controlled trials are not feasible
> - Ensure and assess interventions for people with severe mental disorders
> - Sustain MHPSS through their integration with national and local health, education, and social systems
> - Add a code for MHPSS to existing financial tracking databases and increase funding to match needs

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consequences of head injuries, and the role of culture in shaping distress and symptoms.[5,9,10] Despite these important gaps in knowledge, empirical evidence suggests that mental disorders and psychosocial problems are substantial public health concerns in humanitarian settings.

In recognition of the importance of mental health and psychosocial support (MHPSS), such activities are increasingly integrated into humanitarian assistance programmes (webappendix p 2).[11–13] Notwithstanding what seems to be an emerging consensus, there are still major disagreements about research and practice, particularly the dominant focus on PTSD,[14] and the appropriate timing and focus of interventions—eg, whether to prioritise reduction of trauma-related reactions and mental disorders, protection of wellbeing, or structural stressors (such as insecurity, livelihoods, and social exclusion in the recovery environment).[15–17] Differences in opinion are likely to continue because of the scarcity of studies that support particular MHPSS in humanitarian settings.[18]

We aim to provide recommendations for practice and research by linking practices that are commonly implemented with evidence from intervention evaluations.

MHPSS practices

To assess which MHPSS practices are common, we reviewed documents disseminated on the internet, within organisations, or to donors, to identify reports of implemented programmes (webappendix p 3). We selected countries that had had a humanitarian crisis (including natural or technological disasters, and armed conflicts) between Jan 1, 2007, and Sept 20, 2010, using four databases: the Uppsala Conflict Data Program,[19–21] the annual Conflict Barometer,[22–24] the Central Emergency Relief Fund,[25] and the UN database on the Consolidated Appeals Process.[26] From this list, we selected low-income and middle-income countries, as classified by the World Bank.[27] Deletion of duplicates resulted in 192 unique

humanitarian crises occurring in 81 territories. Using Google, we searched the internet domain of each territory with search terms of the name of the specific crises (eg, earthquake, flood, typhoon, drought, armed conflict) combined with "mental health" or "psychosocial" or "psychological", and "report" or "program", and restricted our searches to reports in English. When a territory did not have a separately listed internet domain (eg, Chechnya), we searched the country in which the territory is located (eg, Russia). We supplemented this information by hand-searching the websites of the 27 organisations that formed the Inter-Agency Standing Committee (IASC) Guidelines Taskforce[12] and four resource sites (Health and Human Rights Info, *Intervention*, the Mental Health and Psychosocial Support Network, and the Regional Psychosocial Support Initiative) and by contacting experts about 33 programmes listed in a database held by the IASC Reference Group for MHPSS. All identified documents were divided between three coders (two post-graduate public health students and WAT) and coded. They coded the "what" category of the "who does what where until when" (4Ws), a framework developed for coordination of MHPSS in humanitarian settings by the IASC Reference Group for MHPSS.[28] After 2 weeks of training, the coders achieved 85% agreement for coding three identical documents.

The 4Ws framework does not follow a structure specific to the IASC MHPSS guideline's recommended activities. The 4Ws categorises MHPSS according to self-described labels (ie, if a programme stated that it practises counselling or psychotherapy, it is categorised as such).

Webappendix pp 4–5 shows how frequently specific MHPSS were mentioned in activity reports between 2007, and 2009, in 81 territories according to the categories in the 4Ws.[28] The most often implemented activities were basic counselling for individuals; facilitation of community support for vulnerable individuals; child-friendly spaces; support of community-initiated social support; basic counselling for groups and families; increase of psychoeducation and awareness; structured recreational and creative activities; training of aid workers from diverse humanitarian sectors; psychosocial support for schoolchildren; and non-pharmacological management of mental disorders by general health-care providers. Additionally, general activities to aid MHPSS in humanitarian settings were often mentioned, including training; needs assessment and situation analysis; research, monitoring, and assessment; and technical or clinical supervision. Webappendix p 6 shows the percentage of reports that included any of the specific activities in the ten main categories of the 4Ws.

Additionally, as examples of MHPSS practices in humanitarian settings, we included data from pilot studies of the 4Ws in Haiti, Jordan, and Nepal. The pilot version of the 4Ws consisted of fewer categories than the version used to code activity reports from our review of the grey literature. In these countries, humanitarian

	% of total funding
Sexually transmitted infection control (mainly HIV/AIDS)	36·9%
Emergency and distress relief	13·3%
Social or welfare services	5·4%
Medical services	5·2%
Other or not reported	3·8%
Human rights	3·5%
Primary education	2·9%
Civilian peace-building, conflict prevention, and resolution	2·6%
Landmine clearance	2·6%
Population policy and administration management	2·4%
Total	78·6%

Table: Sectors that received the most mental health and psychosocial support funding between 2007 and 2009 in countries affected by humanitarian crises

workers (see acknowledgments) asked representatives of organisations providing MHPSS and attending humanitarian cluster meetings to provide details of the activities they implemented for coordination purposes. These organisations were subsequently approached at meetings, by telephone, or through follow-up visits to ensure complete registration of activities. The data were obtained in April, 2010 (Haiti), October–November, 2009 (Jordan), and December, 2009 (Nepal).

Webappendix p 7 shows a summary of the activities reported by organisations in Haiti, Jordan, and Nepal. In all three crises, counselling and case-management (27·7%, 24·5%, and 32·0%, respectively), as well as the integration of psychological and social considerations in other humanitarian sectors (eg, human rights advocacy and legal services, vocational training, and nutrition, and water and sanitation services) (27·6%, 25·1%, and 26·3%, respectively) made up more than 50% of the total reported activities. The provision of psychotropic drugs and psychotherapy made up a small portion (<5%) of services in all three settings. Additionally, structured social activities (eg, child-friendly spaces, recreational activities) were common activities in Haiti (32·2%) and Jordan (28·8%), whereas provision of information and raising awareness of mental health and psychosocial issues was commonly reported in Nepal (22·6%).

Financial tracking

We searched the Financial Tracking Service and Creditor Reporting System databases, in accordance with the approach used in other financial tracking efforts (for global health,[29] reproductive health in conflict-affected settings,[30] and maternal, newborn, and child health[31]). The databases provide specific codes for some health specialties (eg, reproductive health) but not for mental health. Using the list of countries affected by humanitarian crises identified in the grey literature review, we commissioned Brainmaven Inc (Vancouver, BC, Canada) to search with the words "mental health", "psychosocial", and "psychological" for funding recorded in these databases. For all identified programmes, total humanitarian and development funding per country for that year and specific project details (type of donor, project name or description, funding amount, and channel of delivery) were recorded. To avoid double counts, all entries were hand-checked and funding from only the most proximate channel—the channel closest to implementation of services—was included. For example, if a national government provided funding to a donor agency, and the agency then funded a community-based organisation, we only included the latter amount.

In total, countries affected by humanitarian crises between 2007, and 2009, received US$224·3 billion in funding (at 2008 values). At least $226·1 million was provided for programmes that included MHPSS activities. The ten areas that received the most funding for programmes that included MHPSS activities

accounted for 78·6% of the total funding (table). About half the funding was spent on programmes for sexually transmitted infection control (mainly HIV/AIDS; 36%) and emergency and distress relief (13%).

The evidence for MHPSS

To identify studies assessing MHPSS in humanitarian settings, we did a systematic review and meta-analysis separate from our review of the grey literature (panel). Studies were identified in accordance with the Preferred Reporting Items for Systematic reviews and Meta-Analyses (PRISMA) guidelines.[46] For the systematic review, randomised controlled trials (RCTs) or controlled clinical trials were included (ie, studies that compared any mental health or psychosocial support practice with either other active interventions or with standard
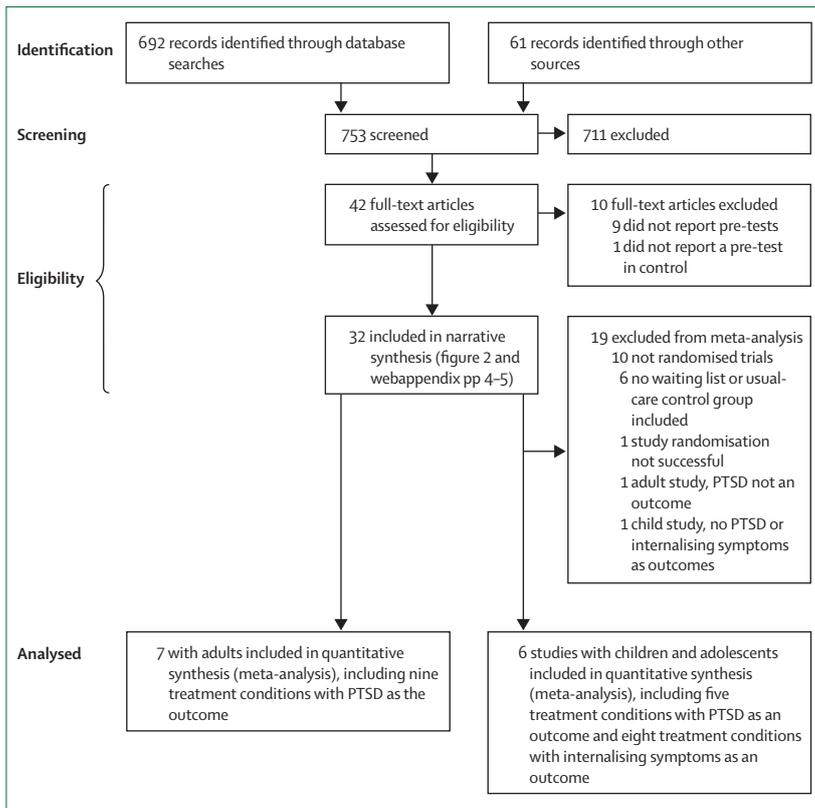
For more on the **Financial Tracking Service** see http://fts.unocha.org

For more on **Creditor Reporting System databases** see http://stats.oecd.org/Index.aspx

Figure 1: Studies included in systematic review and meta-analysis
We included studies according to the Preferred Reporting Items for Systematic reviews and Meta-Analyses guidelines.[46] PTSD=post-traumatic stress disorder.

treatment, waiting list, or no treatment). Participants were children, adolescents, and adults of both sexes who were survivors of humanitarian emergencies—including political violence (armed conflicts and wars) and disasters—in low-income and middle-income countries.

A subgroup of identified studies was included in a meta-analysis to assess whether interventions were effective compared with the natural course of illness, and included only RCTs comparing active interventions to waiting list or no treatment . We examined heterogeneity, risk of bias, and overall methodological quality of trials in our analysis.

Systematic review
Study selection
Figure 1 shows the selection criteria for the systematic review and meta-analysis (for selected characteristics of included studies see webappendix pp 8–15). All identified studies were categorised according to intervention goals (figure 2) as described in the intervention pyramid of the IASC MHPSS and Sphere guidelines.[73] We did not identify studies that assessed MHPSS at the lowest level of the IASC pyramid—social considerations in basic services and security (eg, promotion of participation by affected communities in the humanitarian response).

Strenghtening community and family supports
A controlled clinical trial in the occupied Palestinian territory of structured social activities (recreational and cultural) showed improvements in 6–16-year-olds in internalising and externalising problem scores, and the quality of parental support (in the West Bank only), but not in feelings of hope.[70] An RCT in northern Uganda of a school-based intervention (structured activities including drama, movement, music, and art), which aimed to increase resilience in 7–12-year-olds, showed improvements in those who received the intervention, as measured by a locally defined wellbeing questionnaire (self-rated and parent-rated, but not teacher-reported).[71] Another RCT of adolescents in northern Uganda noted no effects of creative play on psychological symptoms and functional impairment.[65] For adults bereaved by the 2004 tsunami, a home-visit befriending intervention delivered by trained volunteers in India recorded reduced PTSD and depressive symptoms, as well as reduced scores in a psychiatric screening measure, but did not cause improvements in a wellbeing index. However, the findings of this study should be interpreted with caution because intervention groups' baseline demographic characteristics differed.[72]

Focused, non-specialised supports
About two-thirds (20) of identified studies assessed focused MHPSSs targeting diverse forms of psychological distress and bereavement or enhancing specific coping mechanisms, and implemented by trained non-specialised personnel such as community workers, teachers, and school counsellors. Many of these studies examined school-based interventions and met the inclusion criteria for our meta-analysis.[57–60,62] Additionally, school-based interventions were assessed through clinical controlled trials in Armenia,[69] Bosnia and Herzegovina,[66] and Lebanon;[61] and an RCT comparing two active treatments in Bosnia and Herzegovina.[68] Goenjian and colleagues[69] assessed a classroom-based trauma and grief component therapy in adolescents 1·5 years after the 1988 earthquake in Armenia and reported that the intervention improved PTSD and maintained depression symptoms (both increased in the control group). In war-affected 13–18-year-olds in Bosnia and Herzegovina, a classroom-based skills and psychoeducation intervention (focused on trauma and loss and the traumatic stress and grief reactions they can cause) were compared with a combination of this intervention and a group-based trauma-focused and grief-focused treatment.[68] In both cohorts, PTSD and depression symptoms improved, with the largest effect in the group treatment cohort. Improvements in maladaptive grief were seen only in those receiving the additional group treatment. In another study of 12–15-year-olds in Bosnia and Herzegovina, improvements were recorded in PTSD symptoms in ethnically diverse schools taking part in a reconciliation and trauma healing project, but the
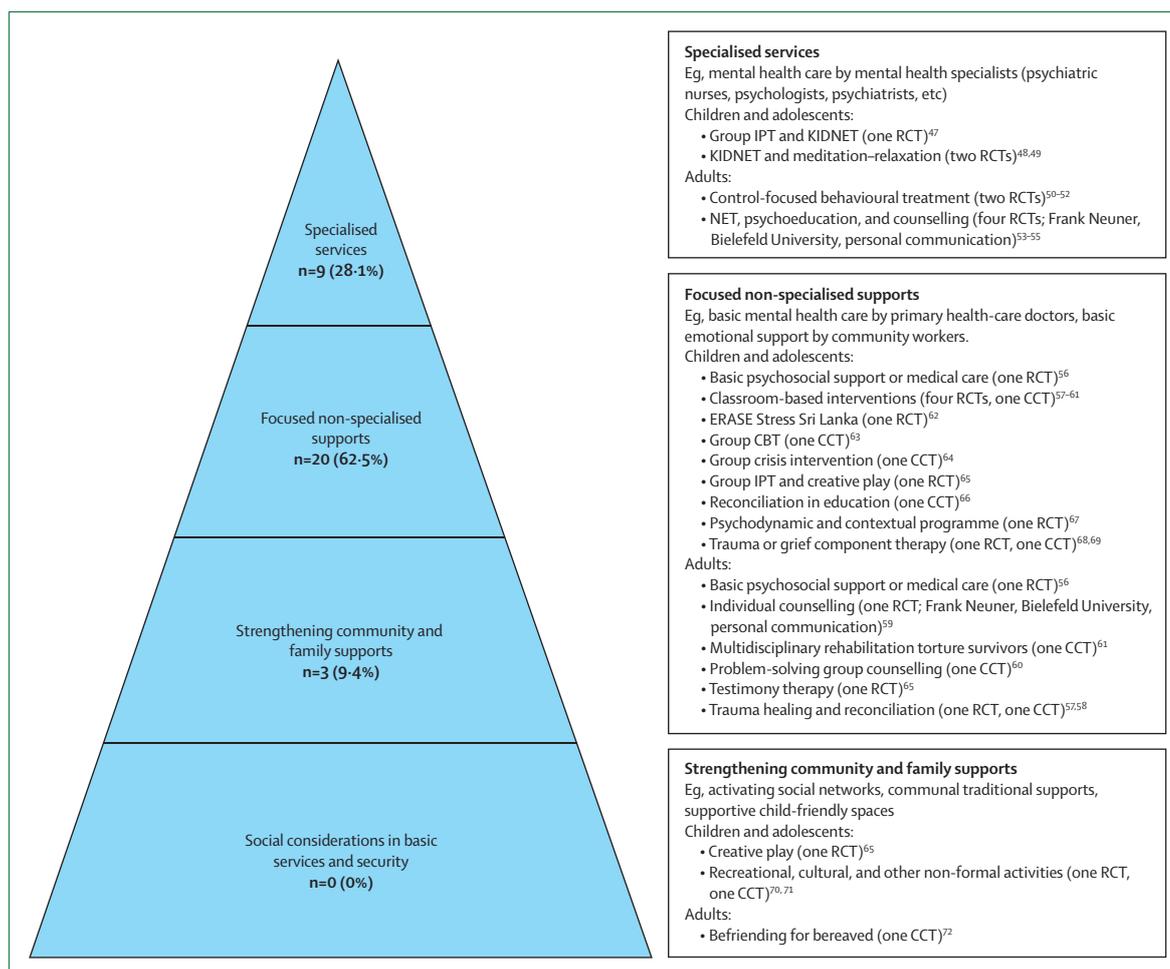
Figure 2: Studies included in the systematic review
The studies are classed according to the Inter-Agency Standing Committee mental health and psychosocial support pyramid.[73] RCT=randomised controlled trial. CCT=controlled clinical trial. IPT=interpersonal psychotherapy. CBT=cognitive behavioural therapy. ERASE=enhancing resiliency among students experiencing. NET=narrative exposure therapy. KIDNET=narrative exposure therapy for children.

findings were weakened by pre-treatment group differences in PTSD symptoms.[66] In another trial of a classroom-based intervention (consisting of 12 daily sessions implemented by teachers) with 6–18-year-olds residing in armed conflict-affected areas in Lebanon, no differences in depression, separation anxiety, and PTSD between study conditions were recorded.[61]

Additionally, of two clinical trials[63,64] and three RCTs[56,65,67] of interventions delivered in locations of displacement, two RCTs met our inclusion criteria.[57,65] Shooshtary and co-workers[63] assessed a group cognitive behavioural therapy 4 months after the 2003 Bam earthquake and reported improvements in PTSD symptoms in 11–12-year-olds but not in a non-randomised waiting list control group. A clinical controlled trial[64] with 9–15-year-olds done in the occupied Palestinian territory showed no effects for a debriefing intervention. A controlled study[67] with Sudanese refugee children in Ethiopia, in which randomisation was attempted but not achieved, compared

a contextual programme (addressing daily stressors and helplessness) with a psychodynamic programme (addressing traumatic memories), and reported improved outcomes for the contextual programme.

For adults, studies at the third level of the IASC pyramid included interventions such as testimony therapy (one RCT[74] included in our meta-analysis), trauma healing and reconciliation (one RCT[75] [included in the meta-analysis] and one clinical controlled trial[76]), and counselling (one RCT [Frank Neuner, Bielefeld University, personal communication] and two clinical controlled trials[77,78]). In a group approach[76] to trauma healing and reconciliation in post-genocide Rwanda, workshops led by trained workers improved PTSD symptoms and positive orientation to others compared with both workshops led by untrained workers and no treatment. Two clinical controlled trials assessed counselling; in villages in post-conflict areas in Aceh, Indonesia, and for torture survivors in Nepal. In Nepal, measures of general functioning and somatic

	Psychological support			Control			Weight (%)	Standard mean difference (95% CI)
	Mean	SD	Total	Mean	SD	Total		
Basoglu[51]	44·4	25·0	31	54·7	21·4	28	9·5%	−0·44 (−0·95 to 0·08)
Basoglu[50]	30·2	20·3	16	49·1	20·3	15	5·1%	−0·91 (−1·65 to −0·16)
Dybdahl[56]	56·1	20·4	42	59·2	17·4	45	13·2%	−0·16 (−0·58 to 0·26)
Igreja[72]	40·1	9·6	63	40·7	8·7	68	17·7%	−0·07 (−0·41 to 0·28)
Neuner[ ]	61·6	24·0	37	66·4	16·9	36	11·5%	−0·23 (−0·69 to 0·23)
(Bielefeld University, personal communication)								
Neuner[54]*	6·1	6·8	111	10·1	8·1	27	13·0%	−0·56 (−0·99 to −0·14)
Neuner[57]†	5·0	6·6	111	10·1	8·1	28	13·1%	−0·73 (−1·16 to −0·31)
Yeomans[73]‡	1·9	0·5	37	2·1	0·5	19	8·4%	−0·45 (−1·01 to 0·11)
Yoemans[73]§	2·0	0·5	38	2·1	0·5	19	8·5%	−0·29 (−0·84 to 0·27)
Total			486			285	100·0%	−0·38 (−0·55 to −0·20)

Heterogeneity: τ^2=0·01, χ^2=10·10, degrees of freedom=8 (p=0·26), I^2=21%
Test for overall effect: Z=4·21 (p<0·0001)

−2 −1 0 1 2
Favours psychological support — Favours control

Figure 3: Random-effects meta-analysis of psychological support for adults with post-traumatic stress disorder symptoms in humanitarian settings
*Narrative exposure therapy. †Trauma counselling. ‡Trauma healing and reconciliation without post-traumatic stress disorder psychoeducation. §Trauma healing and reconciliation with post-traumatic stress disorder psychoeducation.

symptoms improved more in torture survivors receiving a multidisciplinary programme (medical care, counselling, and legal services) than in a group offered psychoeducation sessions, but no improvement of PTSD, anxiety, and depressive symptoms was reported.[77] Similarl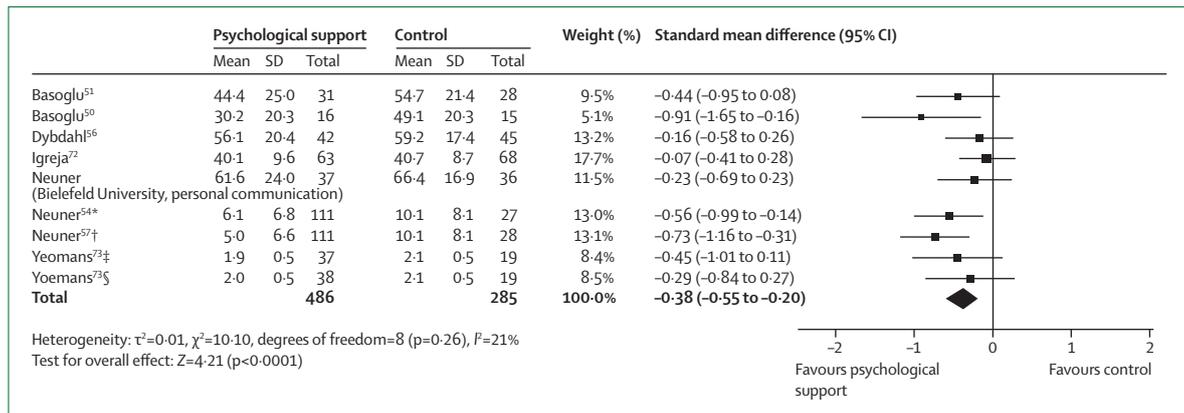y, in Indonesia, men receiving problem-solving counselling showed improved functioning, but anxiety, depressive, and somatic symptoms did not differ from a no-treatment group. Additionally, slightly improved coping behaviour was noted in both men and women receiving the intervention.[78] However, in an RCT in women in Afghanistan that applied a more structured approach to counselling, reduction in anxiety, depression, psychosocial stressors, and improved coping was seen (Frank Neuner, Bielefeld University, personal communication).

Specialised services
Our search identified two groups of studies; two RCTs[50,51] focusing on behavioural treatment for disaster-related PTSD; and seven of narrative exposure therapy (a combination of testimony and exposure psychotherapy) in war-affected populations (Frank Neuner, Bielefeld University, personal communication),[47–49,53–55] two of which were included in the meta-analysis. In a small study with torture survivors in Romania, PTSD and depression improved in those who had five sessions of narrative exposure therapy, but not in those who had one psychoeducation session.[53] For PTSD in Sudanese refugees in Uganda, narrative exposure therapy, delivered by German clinicians, was more effective than supportive counselling and psychoeducation, but no treatment effects were reported for anxiety, depression, or general psychological functioning.[55]

In Sri Lanka, children aged 8–14 years who were randomly assigned to receive either narrative exposure therapy or a meditation-relaxation treatment showed similar improvements of mental health indicators in an RCT (PTSD, functioning)[48] and in a cluster randomised trial (PTSD, depression, suicidality, functioning, and school grades).[49] In Rwanda, children receiving this treatment showed more improvement in PTSD and depressive symptoms than did children receiving interpersonal psychotherapy.[47]

Meta-analysis of RCTs
In total, 13 studies met the inclusion criteria: six in children and adolescents, and seven in adults (figure 1). The studies in children and adolescents focused mainly on two school-based interventions (ERASE Stress[62] and the classroom-based intervention[57–60]) that had PTSD as one of the primary outcomes. Other studies were of a parenting intervention and basic medical support for young children in Bosnia and Herzegovina (including both outcomes for parents and children)[56] and creative play and group interpersonal psychotherapy for adolescents in Uganda.[65] We did two meta-analyses of studies focusing on young people—one of PTSD symptoms and the other of internalising symptoms (anxiety or depression). The seven studies in adults consisted of a control-focused behavioural treatment of earthquake survivors in Turkey (self-exposure to earthquake-related fears and cessation of avoidance to increase their sense of control),[50–52] the aforementioned parenting intervention (weekly group meetings to discuss parent–child interactions and coping strategies),[56] testimony therapy for war-affected people in Mozambique (one session on average, detailing the trauma story via narrative),[74] trauma healing and reconciliation workshops in civil war-affected Burundi,[75] and narrative exposure therapy for refugees in Uganda and orphans and widows in Rwanda (which also included adolescents older than 14 years) (Frank Neuner, Bielefeld University, personal communication).[54]

The meta-analysis of RCTs with adults (nine comparisons, 486 individuals assigned to interventions, and 285 assigned to waiting list or usual care) showed a beneficial effect on PTSD symptoms (standardised mean difference [SMD] −0·38, 95% CI −0·55 to −0·20;

	Psychological support			Control			Weight (%)	Standard mean difference (95% CI)
	Mean	SD	Total	Mean	SD	Total		
Berger[62]	36·21	7·4	84	45·71	7·5	82	19·1%	–1·27 (–1·60 to –0·94)
Jordans[57]	17·71	4·83	164	18·62	5·26	161	20·2%	–0·18 (–0·40 to 0·04)
Khamis[60]*	30·69	12·37	136	29·85	13·01	122	20·0%	0·07 (–0·18 to 0·31)
Khamis[60]†	31·21	11·04	244	28·96	10·87	162	20·4%	0·20 (0·01 to 0·40)
Tol[59]	10·57	7·13	182	16·15	8·7	221	20·3%	–0·69 (–0·90 to –0·49)
Total			810			748	100·0%	–0·36 (–0·83 to 0·10)

Heterogeneity: τ^2=0·27, χ^2=80·99, degrees of freedom=4 (p<0·0001), I^2=95%
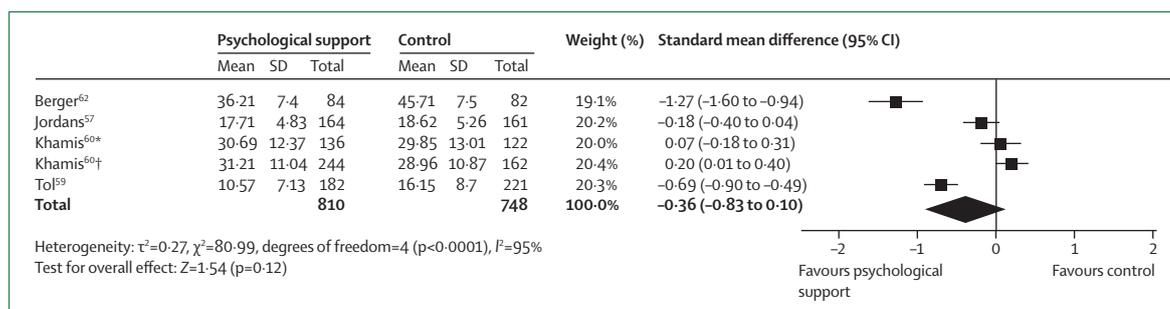Test for overall effect: Z=1·54 (p=0·12)

Figure 4: Random-effects meta-analysis of school-based interventions for children and adolescents with post-traumatic stress disorder symptoms in humanitarian settings
*A classroom-based intervention for 12–16 year olds. †A classroom-based intervention for 6–11 year olds.

	Psychological support			Control			Weight (%)	Standard mean difference (95% CI)
	Mean	SD	Total	Mean	SD	Total		
Berger[62]	2·55	2·3	84	3·7	3·0	82	11·4%	–0·43 (–0·74 to –0·12)
Bolton[65]*	27·8	17·2	105	37·3	15·9	52	10·4%	–0·56 (–0·90 to –0·23)
Bolton[65]†	40·6	15·7	105	37·3	15·9	52	10·6%	0·21 (–0·12 to 0·54)
Dybdahl[56]	0·47	0·65	42	0·66	0·46	45	8·1%	–0·34 (–0·76 to 0·09)
Jordans[57]	11·41	3·53	164	12·6	2·91	161	14·7%	–0·37 (–0·59 to –0·15)
Khamis[60]‡	12·84	5·12	136	13·03	6·14	122	13·7%	–0·03 (–0·28 to 0·21)
Khamis[60]§	14·08	5·98	244	14·66	5·16	162	15·5%	–0·10 (–0·30 to 0·10)
Tol[59]	11·47	3·44	182	12·72	3·85	221	15·5%	–0·34 (–0·54 to –0·14)
Total			1062			897	100·0%	–0·24 (–0·40 to –0·09)

Heterogeneity: τ^2=0·03, χ^2=18·95, degrees of freedom=7 (p= 0·008), I^2=63%
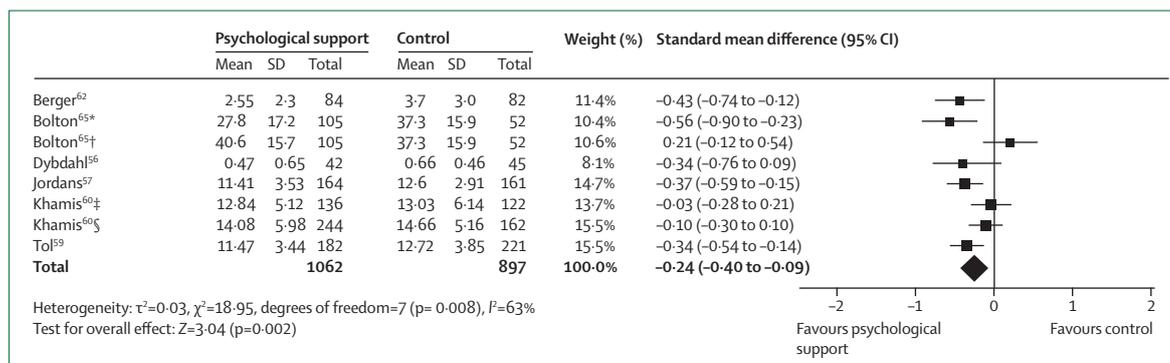Test for overall effect: Z=3·04 (p=0·002)

Figure 5: Random-effects meta-analysis of school-based and other psychosocial and psychological supports for children and adolescents with internalising symptoms in humanitarian settings
*Group interpersonal psychotherapy. †Creative play. ‡A classroom-based intervention for 6–11 year olds. §A classroom-based intervention for 12–16 year olds.

figure 3). There was no statistically significant between-study heterogeneity.

A meta-analysis of four RCTs in children exposed to mass trauma events (five comparisons, 810 children assigned to school-based interventions, and 748 assigned to waiting list or usual care) failed to show improvement in PTSD symptoms (SMD –0·36, 95% CI –0·83 to 0·10; figure 4), but showed a beneficial effect of psychological interventions (group interpersonal psychotherapy, group meetings with parents, and school-based interventions), for depressive or anxiety symptoms (six studies, eight comparisons, 1062 children assigned to psychological interventions, and 897 assigned to waiting list or usual care; –0·24, –0·40 to –0·09; figure 5). The meta-analyses with children showed very high heterogeneity, especially for the outcome of PTSD.

To aid in the interpretation of the SMDs reported in these meta-analyses, we standardised the analyses by multiplying the between-person SD of a scale used in one of the included studies.[44] Although imprecise, this extrapolation shows a difference of 2·32 points between experimental and control groups in PTSD outcomes for the meta-analysis of studies with adults (with the SD from the study by Igreja and colleagues[74]—ie, ranging from 19 to 76). For the meta-analysis of studies with children with internalising symptoms the difference is

0·82 points (with the SD from the study by Tol and colleagues[59]—ie, ranging from 0 to 36). Another approach that gives clinical meaning to the SMD is that one SMD corresponds to a three-point difference between intervention and control groups for the meta-analysis of studies with adults if PTSD symptoms are measured on a 100-point scale, and a 2·5-point difference for the meta-analysis of studies with children and adolescents if internalising symptoms are measured on a 100-point scale (data not shown).

The included studies had methodological shortcomings that might be a source of bias (webappendix p 18). Some did not provide full details of randomisation procedures, allocation concealment, masking, or other possible biases, including the choice of the control group (eg, waitlist design versus no-treatment). An overview of findings according to the grading of recommendations assessment, development and evaluation (GRADE) approach[44] is provided in webappendix pp 16–17. Overall, the quality of the evidence for psychological interventions for adults was judged moderate, with serious limitations in study design. The overall quality of evidence for the effectiveness of psychological interventions in children and adolescents was either low (for internalising symptoms) or very low (for PTSD symptoms) and also had serious limitations in study design.

Conclusion

The main strength of this review is that it provides a comprehensive overview of implemented practice, funding, and synthesis of evidence for psychological interventions with rigorous standards of systematic review and meta-analysis. Our findings had the following limitations. First, our grey literature search included only reports in English. Second, the financial tracking might provide an incomplete account of funding for MHPSS. No dedicated code for MHPSS funding exists in the relevant databases, and despite our efforts to search the narrative text of projects, some MHPSS projects might have been missed. Therefore, underestimation of the total amount of funding for MHPSS is a risk. Hence, our efforts at financial tracking should be treated as a first attempt that needs thorough investigation. We recommend that the two databases we tracked provide a dedicated code (as for reproductive health) to allow more thorough future financial tracking of funding for MHPSS. Third, the GRADE analyses of the meta-analyses showed methodological shortcomings that might have biased the findings (webappendix pp 16–17). Additionally, although not included as a GRADE criterion, few studies undertook procedures to validate outcome measures according to local culture, a direction for future study of importance for improvement of research in this specialty.[79] We grouped together diverse interventions in the meta-analyses for adults (eg, group and individual approaches, different lengths of interventions). Although most interventions are similar because they all address PTSD symptoms through a discussion of traumatic experiences and their consequences, the diversity of approaches and the different sociocultural and health system environments in which these interventions were implemented might have contributed to heterogeneity in results. Likewise, baseline severity of symptoms, symptom duration, and the length of time since trauma exposure might all affect outcomes. Because information about these variables was irregularly reported, we were not able to include them in our analyses.

A consistent impression of contemporary MHPSS practices emerged from various sources. The most commonly used interventions were counselling, providing and facilitating community-based social supports, structured social activities (including child-friendly spaces), provision of information, psychoeducation, and raising awareness. The findings suggest that MHPSS practices seem to be mainly implemented and funded outside formal national mental health, protection, and education systems, and with little emphasis on evidence-based practices.

A major finding of our review is the disconnection between research and practice. The focus of research and evidence relates to interventions that are infrequently implemented in MHPSS programmes. Outcome assessments have focused predominantly on PTSD, whereas humanitarian workers still disagree about the public health value of this disorder.[80,81] Despite limitations in study designs, evidence exists for the effectiveness of psychological interventions for adults to reduce PTSD, and—to a lesser extent—for school-based psychological and psychosocial interventions for children and adolescents with internalising symptoms. Very high statistical heterogeneity was recorded in school-based interventions for children and adolescents with PTSD symptoms in humanitarian settings. This heterogeneity is probably a result of weaknesses in study designs, differences in study setting (natural disaster *vs* armed conflict), and timing (immediate *vs* a long time after events). Also, heterogeneity might be related to the different forms of psychological distress targeted by the various interventions offered.

Psychoeducation, structured social activities, and counselling are frequently used in practice and were included in few evaluation studies, often with mixed results. Specifically, psychoeducation was not associated with improved mental health in two of three RCTs, structured social activities were associated with improved mental health in two of three RCTS, and counselling was associated with improved mental health in two of three studies. Absence of evidence does not necessarily indicate that these approaches are not effective; however, the limited and mixed results from research does argue for the importance of subjection of the most commonly used interventions to scientific scrutiny.

We have several recommendations. First, clearly, the evidence for MHPSS in humanitarian settings needs to be strengthened, which will require a concerted effort by researchers to increase the rigour of studies and broaden outcomes beyond PTSD and internalising symptoms. Although some studies have begun using locally constructed outcome measures to achieve this aim, reliance solely on local indicators limits possibilities for aggregation in a meta-analysis. This drawback might be partly overcome by application of the same instrument development process in different sociocultural contexts, as has been done to develop measures for function impairment—an important but often overlooked outcome measure.[82,83] Because of the gap between what types of MHPSS practices are implemented and what types of these practices have been assessed, an improved consensus between the interests of researchers and practitioners is needed. This approach might be encouraged by inclusion of practitioners in the development, design, and implementation of research projects and, likewise, by involvement of researchers in the development, design, and implementation of interventions.

An important strategy to strengthen the evidence for the effectiveness of MHPSS in humanitarian settings would be the systematic integration of rigorous monitoring and assessment procedures in humanitarian programmes. This integration will require humanitarian donors to fund monitoring and assessment of the long-term outcomes of their programmes (eg, improved

mental health and wellbeing), in addition to measuring immediate output and process indicators (eg, the number of training programmes). Geographically, few findings from humanitarian settings in Latin America exist, as well as from western and central Africa. Additionally, few studies assessed interventions for infants and young children.

Second, to reduce the gap between research and practice, more research is needed into the most frequently implemented psychosocial interventions, such as child-friendly spaces, counselling, and promotion of community supports. A particularly large gap in knowledge exists about MHPSS interventions at the bottom half of the intervention pyramid—ie, interventions aimed at preventing mental disorders, and promoting and protecting psychosocial wellbeing. Conversely, the interventions that have proven effective (eg, psychological interventions for adults with PTSD and children with internalising problems) should be made available to populations with these mental health problems.

Third, improvements of research methods are necessary. For example, further development of ways to capture mental disorders, wellbeing, and its determinants in culturally sensitive ways; increased validation of measures in different sociocultural contexts; and long-term follow-up measurements to establish whether early psychosocial interventions are able to prevent mental disorders in the long term, and have lasting effects on symptoms and functioning. Furthermore, although RCTs are the gold standard for assessments, a number of innovations and improvements in the application of this design might be necessary to strengthen evidence for MHPSS. These improvements would be: the use of multilevel statistics to disentangle contextual effects on individual wellbeing, especially for assessment of commonly implemented psychosocial interventions at the base of the intervention pyramid;[84] integration of the study of moderators and mediators in assessment studies to examine how interventions achieve their effects;[52,58] and time series analyses of the psychosocial effect of social interventions.[85]

Fourth, a greater number of assessments are needed of clinical and protective interventions for people with severe mental disorders, including psychotic disorders and substance dependence. The current pre-eminence of offering basic supports to overcome distress is probably partly caused by the tendency for MHPSS practices to be implemented and funded outside formal mental health systems. However, a study[5] in Timor-Leste showed that psychotic disorders were the most disabling condition. Further, alcohol and drug misuse are neglected issues that need a multisectoral—including health care—response.[86,87]

Fifth, most MHPSS practices are implemented and funded outside of local or national social services, mental health, or education systems (eg, 5·2% of MHPSS practice funding was spent as part of medical services and 2·9% through primary education). This funding mechanism raises questions about the sustainability of interventions, because humanitarian funding is generally time-bound.

A predominant focus on implementation of acute interventions or collaboration between MHPSS and HIV/AIDS care systems might divert attention from strengthening of formal mental health and psychosocial systems—eg, through the development of capacity to provide care for a range of mental health and psychosocial disorders in general health care, and the integration of psychosocial supports with governmental and community protection systems. Such a focus might also contribute to overlooking important sources of support. To improve the sustainability of MHPSS programmes, we recommend that specific funding is allocated to strengthen existing national and local health, education, and social service systems, to address mental health and psychosocial problems. Increased attention should be paid to translation of investments made during the emergency phase to sustainable systems of MHPSS care in the long term.

Finally, funding for MHPSS seems inadequately distributed in view of the increased burden of mental health and psychosocial disorders in humanitarian settings. Funding should be diversified beyond only emergency relief and should also be invested in early recovery—ie, investment in recovery from the first day of the crisis. Likewise, intervention research lacks information on cost-effectiveness, an essential source of information to plan scale-up of MHPSS.

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THE LANCET

Supplementary webappendix

Mental Health and Psychosocial Support in Humanitarian Settings: Linking Practice and Research – Web-appendix

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Panel A1. Global Policy on Mental Health and Psychosocial Support in Humanitarian Settings

The *Inter-Agency Standing Committee Guidelines on Mental Health and Psychosocial Support (MHPSS) in Emergencies*[12] define MHPSS as "any type of local or outside support that aims to protect or promote psychosocial wellbeing and/or prevent or treat mental disorder" (p.1). The guidelines were issued by the Inter-Agency Standing Committee (IASC), a committee of heads of United Nations (UN) and non-UN international humanitarian agencies responsible for humanitarian policy according to UN General Assembly resolution 46/182. The guidelines were developed by an IASC Task Force of staff of 27 agencies (co-chaired by WHO and InterAction). The guidelines focus on high-priority responses that should be implemented as soon as possible in emergencies. Instead of focusing only on specific mental disorders, only on psychosocial wellbeing or only on specific target groups, this document calls for the provision of multi-layered support systems that address the needs of a wide variety of target groups in a complementary fashion (see pyramid in Figure 3). The guidelines recommend that MHPSS is integrated as much as possible into existing systems of support (e.g. health, education, protection) for increased accessibility and sustainability, and that they are designed and implemented with active participation of affected populations.

The *Humanitarian Charter and Minimum Standards for Disaster Response*[11] is the influential handbook of the Sphere Project, a group governed by non-governmental organizations. The 2011 revision emphasizes the importance of understanding and supporting local responses to disasters. The standards contain 4 areas of particular relevance to MHPSS: (a) a new chapter outlining four protection principles, two of which emphasize psychosocial issues (Protection Principle 3: Protect people from physical and psychological harm arising from violence and coercion; Protection Principle 4: Assist people to claim their rights, access available remedies and recover from the effects of abuse) (b) a chapter with core standards - applicable throughout the handbook - that emphasizes building on community capacities and strengthening self-help (Core Standard 1: People-centered humanitarian response), (c) integration of psychosocial and social considerations as a formal cross-cutting issue in the writing of all standards throughout the handbook, and (d) a specific standard focused on mental health as a health sector activity (Essential Health Services - Mental health standard 1). The latter mental health standard emphasizes community self-help and social support, the provision of psychological first aid, capacity building of the primary health care system, care for people with mental disorders in institutions, minimizing harm related to substance use, and initiating plans for developing a community mental health system.

Figure A1. Review of the Grey Literature (>2007)

A. World Wide Web Searched internet domains of 81 territories for 192 crises: 7,561 documents screened	**B. Relevant organizations** Hand search of 29 websites: 1,423 documents screened	**C. Expert Consultation** IASC Reference Group projects approached: 31 documents screened (5 in Spanish)
86 reports included	**57 reports included**	**17 reports included**

160 reports coded using the 4Ws

Note: 4Ws = Who does What Where until When[28]

3

Table A1. Content of reported MHPSS programs: analysis of 160 reports

Activity	Reported in N (%):
Community-focused **(Any 1 - 6: 70.0%)**	
1. Information dissemination to the community at large	
1.1. Information on current situation	21 (13.1)
1.2. Psycho-education/ awareness raising	31 (19.4)
1.3. Other information provision	0 (0.0)
Any category 1	**43 (26.9)**
2. Facilitation of conditions for community mobilization, community organization, community ownership or community control over relief activities in general	
2.1. Supporting community-initiated humanitarian activities	13 (8.1)
2.2. Supporting community action through facilitating meetings/ spaces	17 (10.6)
2.3. Other community mobilization	5 (3.1)
Any category 2	**27 (16.9)**
3. Strengthening community and family support	
3.1. Supporting community-initiated social support	34 (21.3)
3.2. Strengthening parenting/ family support	23 (14.4)
3.3. Facilitation of community support to vulnerable individuals	37 (23.1)
3.4. Structured social activities	19 (11.9)
3.5. Structured recreational/ creative activities	27 (16.9)
3.6. Early childhood development activities	10 (6.3)
3.7. Facilitation of conditions for indigenous traditional, spiritual or religious supports	11 (6.9)
3.8. Other community/ family support	2 (1.3)
Any category 3	**77 (48.1)**
4. Safe spaces	
4.1. Child-friendly spaces	34 (21.3)
4.2. Other safe spaces	5 (3.1)
Any category 4	**38 (23.8)**
5. Psychosocial support in education	
5.1. Psychosocial support to teachers at schools	8 (5.0)
5.2. Psychosocial support to pupils at schools	25 (15.6)
5.3. Other psychosocial support in education	2 (1.3)
Any category 5	**27 (16.9)**
6. Supporting the inclusion of social/ psychological considerations in protection, health services, nutrition, food aid, shelter, site planning, or water and sanitation	
6.1. Orientation/ advocacy with aid workers	26 (16.3)
6.2. Other support for inclusion in sectors	2 (1.3)
Any category 6	**26 (16.3)**
Case-focused **(Any 7 – 10: 62.5%)**	
7. (Case-focused) psychosocial work	
7.1. Psychological First Aid	15 (9.4)
7.2. Lining vulnerable individuals to general humanitarian resources	18 (11.3)
7.3. Other case-focused psychosocial work	5 (3.1)
Any category 7	**32 (20.0)**
8. Psychological intervention	

8.1. Basic counseling for individuals	63 (39.4)
8.2. Basic counseling for groups/ families	32 (20.0)
8.3. Interventions for alcohol/ substance use	8 (5.0)
8.4. Psychotherapy	15 (9.4)
8.5. Individual or group psychological debriefing	5 (3.1)
8.6. Other psychological interventions	0 (0.0)
Any category 8	**78 (48.8)**
9. Clinical management of mental disorders by non-specialized health care providers (e.g. primary health care, post-surgery wards)	
9.1. Non-pharmacological management	5 (3.1)
9.2. Pharmacological management	4 (2.5)
9.3. Identification, referral, and follow-up by community workers	22 (13.8)
9.4. Other non-specialist clinical management	0 (0.0)
Any category 9	**28 (17.5)**
10. Clinical management of mental disorders by specialized health care providers (e.g. psychiatrists, psychiatric nurses, and psychologists working at primary health care/ general/ mental health facilities)	
10.1. Non-pharmacological management	24 (15.0)
10.2. Pharmacological management	10 (6.3)
10.3. Inpatient mental health care	8 (5.0)
10.4. Other specialist clinical management	2 (1.3)
Any category 10	**31 (19.4)**
General activities to support MHPSS (63.1%)	
11.1. Situation analysis/ assessment	34 (21.3)
11.2. Training/ orientation	81 (50.6)
11.3. Technical or clinical supervision	26 (16.3)
11.4. Psychosocial support for staff/ volunteers	12 (7.5)
11.5. Research, monitoring and evaluation	32 (20.0)
11.6. Other general activities	6 (3.8)
Any category 11	**101 (63.1)**

Figure A2. Mapping of reported MHPSS programs across 160 reports
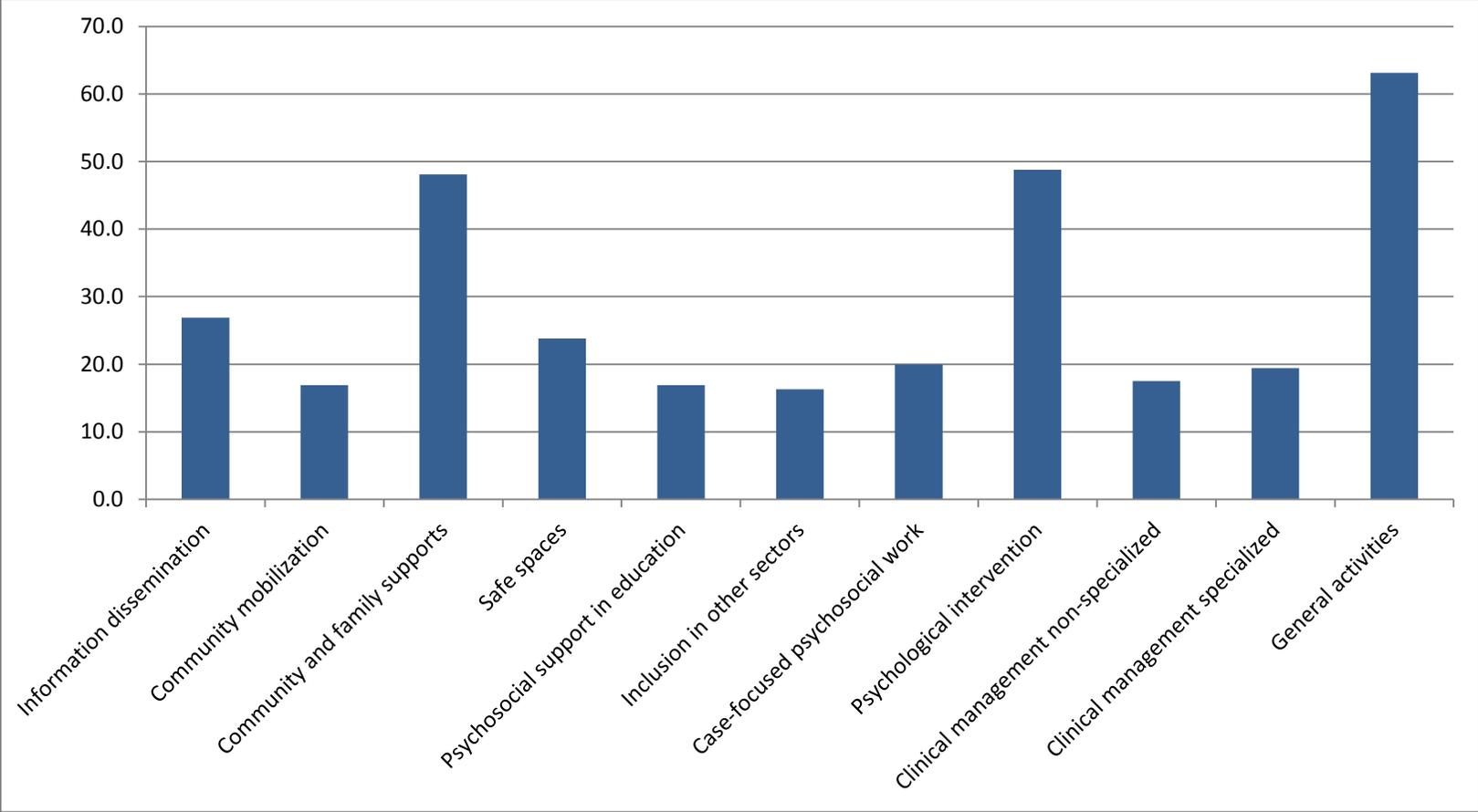
Figure A3. Mapping of MHPSS in Haiti, Jordan, and Nepal
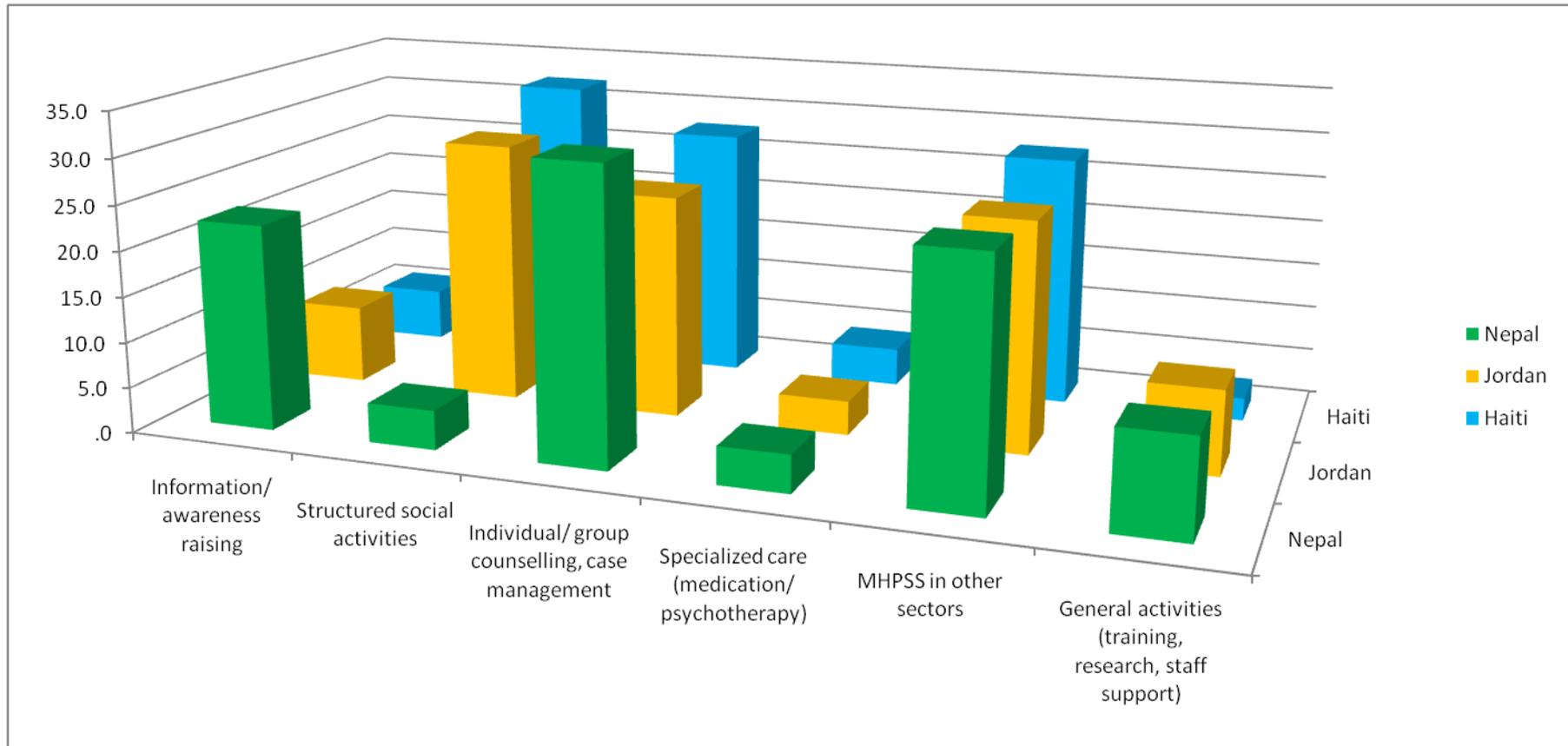
Table A2. Selected characteristics of studies meeting systematic review inclusion criteria

Location, Type of Crisis	Intervention	Design	Sample size	Age (years)	Gender (% female)	Outcome Measures	Pre-Intervention, Post-Intervention Time-Points	Included in Meta-Analysis
1. Social Considerations in Basic Services and Security								
1A. Children & Adolescents								
No studies identified								
1B. Adults								
No studies identified								
2. Strengthening Community and Family Supports								
2A. Children & Adolescents								
occupied Palestinian territory, political violence[75]	Recreational, cultural, and other non-formal activities	**Controlled**, psychosocial vs. general humanitarian assistance	300	6 – 16	50.8	- Externalizing and internalizing problems (c) - Parental support (s) - Hope (s)	0, 1 year	No
Uganda[76]	Structured activities	**Cluster randomized trial**, waitlist control	403	7 – 12 (10.2)	50.1	- Locally constructed indicators of wellbeing	0, 1 year	No
2B. Adults								
India, Tsunami[77]	Befriending for bereaved	**Controlled**, no-treatment control	102	>18	51.0	- PTSD (s) - Depression (s) - General health (s) - Wellbeing (s)	0, 1 year	No

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3. Focused Non-Specialized Supports								
3A. Children & Adolescents								
Armenia, earthquake[69]	Trauma/ Grief Component Therapy (TGCT)	**Controlled**, no-treatment control	64	13.2 (1.3)	48.5	- PTSD (s) - Depression (s)	0, 18 months	No
Bosnia and Herzegovina, political violence[68]	Classroom-based psycho-education and skills & TGCT	**Randomized Controlled Trial**, two treatment conditions	127	13 – 18	64.5	- PTSD (s) - Depression (s) - Maladaptive grief (s)	0, post, 4 months	No
Bosnia and Herzegovina[56]	Basic psychosocial support and medical care	**Randomized controlled trial**, medical care comparison	87	5.5 (.7)	55.2	Mothers: - Perceived social support (s) - PTSD (s) - General wellbeing (s) Children: - Psychological symptoms and resources (c, i) - Cognitive performance (s) - Depression (s) - Physical examination (i)	0, 1 month	Yes
Bosnia and Herzegovina, political violence[66]	Reconciliation in education	**Controlled**, waitlist control	408	12 – 15	NR	- PTSD (s)	0, 1 month	No
Ethiopia,	Psychodynamic	**Randomized**	105	10.3	41.7	- General psychological	0, 2-6	No

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political violence (Sudanese refugees)[67]	program, contextual program	**controlled trial**, two treatment conditions and no-treatment control Note: randomization not achieved; participants switched groups				functioning (s) - Posttraumatic stress symptoms (s) - Coping (s) - Social support (s) - Daily stressors (s)	weeks	
Indonesia, political violence[58-59]	Classroom-based intervention	**Cluster randomized trial**, waitlist control	403	7 – 15	48.6	- PTSD (s) - Trauma idiom (s) - Depression (s) - Anxiety (s) - Coping (s) - Social support (s) - Hope (s) - Functioning (s, c) - Aggression (c) - Family connectedness (c)	-1 week, 1 week, 6 months	Yes
Iran, earthquake[42]	Group cognitive behavioral psychotherapy (group CBT)	**Controlled**, waitlist control	168	11 – 12	52.6	- PTSD (s)	0, post	No
Lebanon, political violence[61]	Classroom-based intervention	**Controlled**, no-treatment control	209	6 – 18	49.0	- PTSD (s, c) - Major Depressive Disorder (s, c) - Separation Anxiety Disorder (s, c)	0, 1 year	No
Nepal,	Classroom-based	**Cluster**	325	11 –	48.6	- PTSD (s)	- 1 week, 1	Yes

political violence[57]	intervention	**randomized trial**, waitlist control		14		- Depression (s) - Anxiety (s) - Aggression (s) - Strengths and difficulties (s) - Hope (s) - Prosocial behavior (s) - Functioning (s)	week	
occupied Palestinian territory, political violence[60]	Classroom-based intervention	**Randomized controlled trial**, waitlist control	496	6 – 11	50.2	- PTSD (s) - Anxiety (s) - Strengths and difficulties (s) - Pro-social strengths (s) - Coping (s) - Attributions and perception (s) - Hope (s)	0, post	Yes
occupied Palestinian territory, political violence[60]	Classroom-based intervention	**Randomized controlled trial**, waitlist control	347	12 – 16	49.0	- PTSD (s) - Anxiety (s) - Strengths and difficulties (s) - Pro-social strengths (s) - Coping (s) - Hope (s) - Self-esteem (s)	0, post	Yes
occupied Palestinian territory, political violence[64]	Group crisis intervention/ debriefing	**Controlled**, no-treatment control	111	9 – 15	45.9	- PTSD (s) - Depression (s)	0, post	No
Sri Lanka,	ERASE Stress Sri Lanka (ERASE-	**Randomized controlled trial**,	166	9 – 15	47.6	- PTSD (s) - Function impairment (s)	0, 3 months	Yes

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Tsunami [43]	SL)	waitlist control				- Somatic complaints (s) - Hope (s) - Depression (s)		
Uganda, political violence [65]	Group-IPT and creative play	**Randomized controlled trial**, two treatment conditions and waitlist control	314	14 – 17	57.0	- Depression (s) - Anxiety (s) - Conduct problems (s) - Functioning (s)	0, 1 month	Yes
3B. Adults								
Afghanistan, political violence _{Ayoughi, personal communication}	Counseling vs. medical care	**Randomized controlled trial**, medical care comparison	61	14 – 60	100.0	- Anxiety (s, i) - Depression (s, i) - Psychosocial stressors (s) - Coping (s)	0, 3 months	No
Burundi, political violence [73]	Trauma healing/ reconciliation & PTSD psycho-education	**Randomized controlled trial**, two treatment conditions (trauma healing with/ without psycho-education), waitlist control	124	38.6 (12.8)	44.4	- PTSD (s) - Anxiety (s) - Depression (s) - Somatic symptoms (s)	-6, 2 weeks	Yes
Indonesia, political violence [71]	Problem-solving group counseling	**Controlled**, waitlist control	333	>18	57.7	- Anxiety (s) - Depression (s) - Somatic symptoms (s) - Functioning (s)	0, 1-4 weeks	No

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Mozambique, political violence[72]	Testimony therapy	**Randomized controlled trial**, no-treatment control	137	40.2 (14.1)	43.8	- PTSD (s) - Nightmares (s) - Mental health (s)	0, 2, 11 months	Yes
Nepal, political violence[70]	Multi-disciplinary rehabilitation torture survivors	**Controlled**, two treatment conditions	192	14 – 65+	26.2	- PTSD (s) - Anxiety (s) - Depression (s) - Somatic symptoms (s) - Wellbeing and general mental health status (s) - Functioning (s)	-2 – 0, 0 – 2 weeks	No
Rwanda, political violence[74]	Healing through Connection and Understanding Project (HCUP)	**Controlled**, two treatment conditions (with/ without training), and no-treatment control	194	NR	75	- PTSD/ trauma symptoms (s) - Functioning (s) - Readiness to reconcile and orientation to the other group (s)	0, post, 2 months	No
4. Specialized Services **4A. Children & Adolescents**								
Rwanda, political violence[47]	Group Inter-Personal psychotherapy (group-IPT) and Narrative Exposure Therapy for children (KIDNET)	**Randomized controlled trial**, two treatment conditions	26	14 – 28	61.5	- PTSD (i) - Depression (i)	0, 3, 6 months	No
Sri	KIDNET and	**Cluster**	47	11 –	61.7	- PTSD (s, i)	0, 5, 13	No

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Lanka, political violence[49]	Meditation-Relaxation	**randomized trial**, two treatment conditions		15 (13.1)		- Functioning (s) - School grades - Depression (s, i) - Suicidality (s, i)	months	
Sri Lanka, political violence and Tsnuami[48]	KIDNET and Meditation-Relaxation	**Randomized Controlled Trial**, two treatment conditions	31	8 – 14	NR	- PTSD (s) - Functioning (s) - Somatic symptoms (s)	0, 1, 6 months	No
4B. Adults								
Romania, political violence[53]	Narrative Exposure Therapy (NET) & psycho-education	**Randomized controlled trial**, two treatment conditions	18	Pooled: 69.4 (5.2)	5.6	- PTSD (s) - Depression (s)	0, 6 months	No
Rwanda, political violence[J acon, personal communicatio n]	NET with two IPT sessions Note: also includes adolescents >14	**Randomized controlled trial**, waitlist control	73	18 – 31	93.2	- PTSD - Function impairment	0, 3, 12 months	Yes
Turkey, earthquake[51, 52]	Single session Control-Focused Behavioral Treatment (CFBT)	**Randomized controlled trial**, waitlist control	59	18 - 65	84.7	Assessor-rated: - PTSD (i, s) - Depression (i, s) - Fear and avoidance (s) - Global improvement (CGI) (i, s)	0, 6, cross-over; 12, 24 weeks, 1-2 years	Yes
Turkey, earthqua	CFBT (exposure earthquake	**Randomized controlled trial**,	31	18 - 65	87.0	- PTSD (i) - Psychiatric disorders (i)	0, 4, 8, crossover;	Yes

ke[50]	simulation & self-exposure)	waitlist control				- Global improvement (i, s) - Fear and avoidance (s) - Depression (s) - Sense of control (s)	12 24 weeks, 1-2 years	
Uganda, refugees political violence[5] [5]	NET, supportive counseling and psycho-education	**Randomized controlled trial**, three treatment conditions	43	Pooled : 33.3 (7.2)	60.5	- PTSD (i, s) - Anxiety (s) - Depression (s) - Psychological functioning (s)	-2 – 0, 3 – 4 weeks, 4, 12 months	No
Uganda, refugees political violence[5] [4]	NET & trauma counseling	**Randomized controlled trial**, two treatment conditions and waitlist control	277	Pooled : 35.1 (13.0)	48.7	- PTSD (i, s) - Somatic symptoms (s)	0, 6, 9 months	Yes

Notes: Age reported as range in years where available. If not reported in mean (SD) in years; For outcome measures: s = self-rated, i = interviewer-rated c = caregiver-rated; NR = not reported

Table A3. Overview of meta-analysis results according to GRADE standards

No of studies	Design	Quality assessment Limitations	Inconsistency	Indirectness	Imprecision	Other considerations	No of patients psychological interventions	treatment as usual	Effect Relative (95% CI)	Absolute	Quality	Importance
PTSD symptoms in children/adolescents (Better indicated by lower values)												
4[1]	randomised trials	serious[2]	serious[3]	no serious indirectness	serious[4]	none	810	748	-	SMD 0.36 lower (0.83 lower to 0.1 higher)	☐☐☐☐ VERY LOW	IMPORTANT
Depressive/anxiety symptoms in children/adolescents (Better indicated by lower values)												
6[5]	randomised trials	serious[6]	serious[3]	no serious indirectness	no serious imprecision	none	1062	897	-	SMD 0.24 lower (0.4 to 0.09 lower)	☐☐☐☐ LOW	CRITICAL
PTSD symptoms in adults (Better indicated by lower values)												
7[5]	randomised trials	serious[7]	no serious inconsistency	no serious indirectness	no serious imprecision	none	449	249	-	SMD 0.38 lower (0.55 to 0.2 lower)	☐☐☐☐ MODERATE	CRITICAL

[1] Four studies including five comparisons

[2] Three studies were cluster randomized trials with some differences between treatment groups in terms of socio-demographic and clinical characteristics. Allocation concealment was not described and in two studies outcome assessors were not blind to treatment status

[3] I-squared indicates significant heterogeneity

[4] The confidence interval ranges from appreciable benefit of the experimental intervention to no benefit.

[5] Seven studies including nine comparisons

[6] Only in two studies it is reported that participants were assigned to experimental and control condition using computer-generated random numbers. Additionally, allocation concealment was not described.

[7] Only in two studies it is reported that participants were assigned to experimental or control condition using a computerized random-number generator, and only two studies described a procedure to conceal allocation.

Figure A4. Methodological quality graph of studies included in meta-analysis
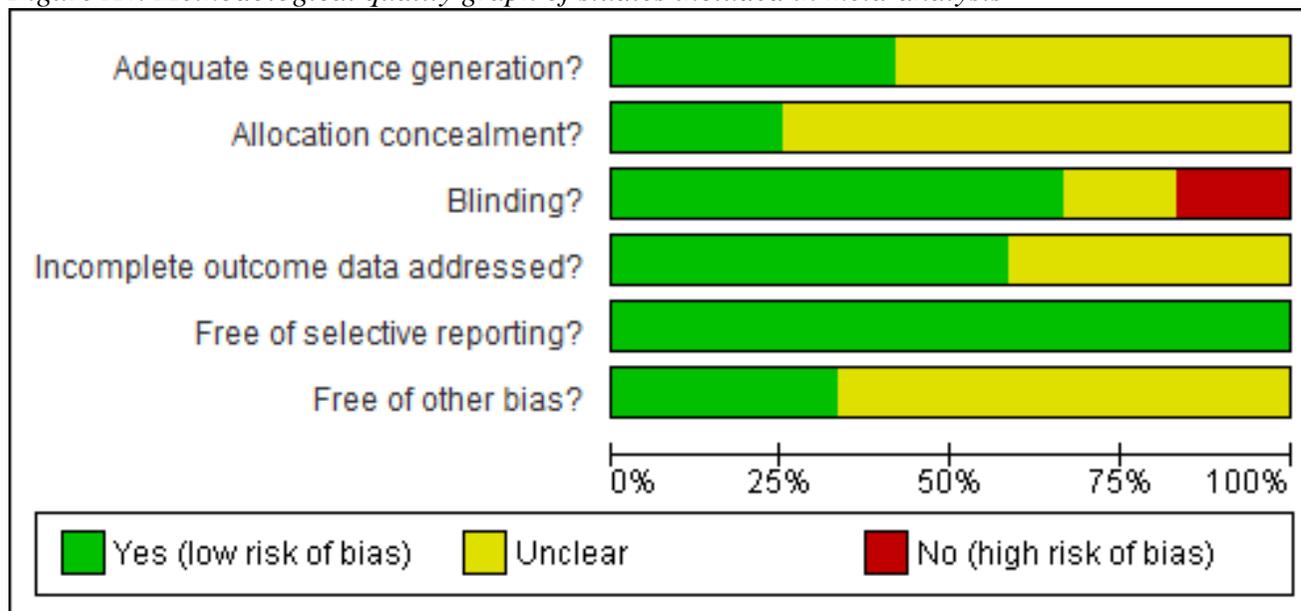
*Tables A4 and A5: Meta-analysis adjusted for cluster randomization (**WEB-APPENDIX**)*

Forest plot of comparison: Children, outcome: PTSD symptoms (Berger 2009, Jordan 2010, Tol 2008, sample size reduced to account for cluster design)

Study or Subgroup	Psychological support Mean	SD	Total	Control Mean	SD	Total	Weight	Std. Mean Difference IV, Random, 95% CI
Berger 2009	36.21	7.4	37	45.71	7.5	36	18.1%	-1.26 [-1.77, -0.76]
Jordans 2010	17.71	4.83	33	18.62	5.26	33	18.4%	-0.18 [-0.66, 0.31]
Khamis a 2004	30.69	12.37	136	29.85	13.01	122	21.7%	0.07 [-0.18, 0.31]
Khamis b 2004	31.21	11.04	244	28.96	10.87	162	22.1%	0.20 [0.01, 0.40]
tol 2008	10.57	7.13	52	16.15	8.7	54	19.8%	-0.70 [-1.09, -0.30]
Total (95% CI)			**502**			**407**	**100.0%**	**-0.34 [-0.80, 0.12]**

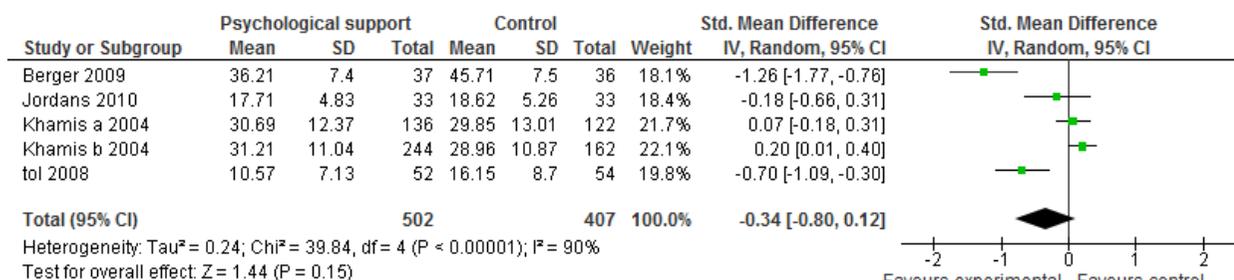Heterogeneity: Tau² = 0.24; Chi² = 39.84, df = 4 (P < 0.00001); I² = 90%
Test for overall effect: Z = 1.44 (P = 0.15)

Favours experimental Favours control

Forest plot of comparison: Children, outcome: Depression/anxiety symptoms (Berger 2009, Jordan 2010, Tol 2008, sample size reduced to account for cluster design)

Study or Subgroup	Psychological support Mean	SD	Total	Control Mean	SD	Total	Weight	Std. Mean Difference IV, Random, 95% CI
Berger 2009	2.55	2.3	37	3.7	3	36	8.9%	-0.43 [-0.89, 0.04]
Bolton a 2007	27.8	17.2	105	37.3	15.9	52	12.8%	-0.56 [-0.90, -0.23]
Bolton b 2007	40.6	15.7	105	37.3	15.9	52	13.0%	0.21 [-0.12, 0.54]
Dybdahl 2001	0.47	0.65	42	0.66	0.46	45	10.0%	-0.34 [-0.76, 0.09]
Jordans 2010	11.41	3.53	33	12.6	2.91	33	8.4%	-0.36 [-0.85, 0.12]
Khamis a 2004	12.84	5.12	136	13.03	6.14	122	16.7%	-0.03 [-0.28, 0.21]
Khamis b 2004	14.08	5.98	244	14.66	5.16	162	18.9%	-0.10 [-0.30, 0.10]
tol 2008	11.47	3.44	52	12.72	3.85	54	11.2%	-0.34 [-0.72, 0.04]
Total (95% CI)			**754**			**556**	**100.0%**	**-0.21 [-0.38, -0.04]**

Heterogeneity: Tau² = 0.03; Chi² = 14.91, df = 7 (P = 0.04); I² = 53%
Test for overall effect: Z = 2.38 (P = 0.02)

Favours experimental Favours control

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