

Interventions to improve therapeutic communications between Black and minority ethnic patients and professionals in psychiatric services: systematic review

Bhui, K. S., Aslam, R. W., Palinski, A., McCabe, R., Johnson, M. R. D., Weich, S., Singh, S. P., Knapp, M., Ardino, V. & Szczepura, A.

Published PDF deposited in Coventry University's Repository

Original citation:

Bhui, KS, Aslam, RW, Palinski, A, McCabe, R, Johnson, MRD, Weich, S, Singh, SP, Knapp, M, Ardino, V & Szczepura, A 2015, 'Interventions to improve therapeutic communications between Black and minority ethnic patients and professionals in psychiatric services: systematic review' *British Journal of Psychiatry*, vol. 207, no. 2, pp. 95-103.

<https://dx.doi.org/10.1192/bjp.bp.114.158899>

DOI 10.1192/bjp.bp.114.158899

ISSN 0007-1250

ESSN 1472-1465

Publisher: Cambridge University Press

Copyright The Royal College of Psychiatrists 2015. This is an open access article distributed under the terms of the Creative Commons Attribution (CC BY) licence.

Copyright © and Moral Rights are retained by the author(s) and/ or other copyright owners. A copy can be downloaded for personal non-commercial research or study, without prior permission or charge. This item cannot be reproduced or quoted extensively from without first obtaining permission in writing from the copyright holder(s). The content must not be changed in any way or sold commercially in any format or medium without the formal permission of the copyright holders.

Review article

Interventions to improve therapeutic communications between Black and minority ethnic patients and professionals in psychiatric services: systematic review

Kamaldeep S. Bhui, Rabeea'h W. Aslam, Andrea Palinski, Rose McCabe, Mark R. D. Johnson, Scott Weich, Swaran P. Singh, Martin Knapp, Vittoria Ardino and Ala Szczepura

Background

Communication may be an influential determinant of inequality of access to, engagement with and benefit from psychiatric services.

Aims

To review the evidence on interventions designed to improve therapeutic communications between Black and minority ethnic patients and clinicians who provide care in psychiatric services.

Method

Systematic review and evidence synthesis (PROSPERO registration: CRD42011001661). Data sources included the published and the 'grey' literature. A survey of experts and a consultation with patients and carers all contributed to the evidence synthesis, interpretation and recommendations.

Results

Twenty-one studies were included in our analysis. The trials showed benefits mainly for depressive symptoms, experiences of care, knowledge, stigma, adherence to prescribed medication, insight and alliance. The effect sizes were smaller for better-quality trials (range of d 0.18–0.75)

than for moderate- or lower-quality studies (range of d 0.18–4.3). The review found only two studies offering weak economic evidence.

Conclusions

Culturally adapted psychotherapies, and ethnographic and motivational assessment leading to psychotherapies were effective and favoured by patients and carers. Further trials are needed from outside of the UK and USA, as are economic evaluations and studies of routine psychiatric care practices.

Declaration of interest

K.B. is Editor of the *British Journal of Psychiatry*. He played no part in the decision to publish this review. S.W. was a member of the National Institute of Health Research – Health Technology Assessment topic selection panel.

Copyright and usage

© The Royal College of Psychiatrists 2015. This is an open access article distributed under the terms of the Creative Commons Attribution (CC BY) licence.

Research highlights persistent inequalities in both experiences and outcomes for people from minority ethnic groups when compared with White British patients in contact with psychiatric services.^{1,2} There is a lack of engagement, poorer access to effective services and psychological interventions, more conflict between patients and staff, fears about reliance on emergency contacts with the police and the criminal justice system, and ethnic variations in the use of drug treatments.^{3–5} The overrepresentation of specific ethnic groups in specialist psychiatric care contrasts with lower use of primary care and public health interventions.^{1,2} These findings are mirrored in the USA, Canada, Australia and other European countries. One explanation for these inequalities is that the quality of therapeutic communication between patient and practitioner is poorer for minority ethnic groups. Therapeutic communication refers to any conversation (face-to-face or technology-assisted) that seeks to improve therapeutic outcomes through understanding and engagement. For example, communications can provide information to deal with uncertainty or reassurance and changes to the care to remedy dissatisfaction. Communications about diagnosis and assessment questions can also be helpful for patients who may fear what is happening and that no one can help. Therapeutic communications can also include discussion of treatment expectations, showing understanding and empathy as well as psychological interventions that rely on conversation and challenging cognitive bias. A stronger therapeutic alliance is one process through which good

communication can lead to improved outcomes for patients.⁶ Effective communication is central to psychiatric assessment, diagnosis, treatment adherence and recovery.^{7,8} Dissatisfaction among immigrants and ethnic minorities can emerge if there are cultural differences in expectations and health beliefs (also called explanatory models) between the patient and professional.^{9,10} For example, non-biological explanatory models for mental illness are associated with poorer therapeutic relationships and greater dissatisfaction.¹¹ In such circumstances professionals struggle to empathise, assess the patient's emotions^{12–16} and understand symbolic and metaphorical idioms of distress and these can compromise clinical decisions and accurate diagnosis, and lead to disengagement.^{7,11, 17–19}

These findings have led to calls for cultural competence in communications during clinical assessment, diagnosis and treatment.^{20,21} One approach to improve cultural competence is to explore patients' narratives about their illness during the assessment and use these to culturally adapt interventions.^{22–24} For example, adaptation can involve practical changes to the venue or the sequence in which components of an intervention are provided in order to improve access and uptake; other changes include modifications of the content of written materials and interventions in terms of language or metaphors, the philosophical aims of the treatment (tolerance or cure or recovery) can be renegotiated; and the proposed theories, often shared with the patient, of how the intervention works may need to be discussed

and modified as more research evidence emerges.^{24,25} So, interventions targeting therapeutic communications may reduce inequalities of experiences and outcomes from psychiatric care. Although many systematic reviews of devices or technologies seek out a single intervention and a single context, in this review we synthesise diverse types of evidence on the effectiveness of interventions designed to improve ‘therapeutic communication’ between Black and minority ethnic (BME) patients receiving specialist psychiatric care and the professionals who deliver that care (the THERACOM project). We identify and describe the elements of effective interventions and assess evidence from quantitative randomised and non-randomised trials as well as qualitative studies that help us understand what is an effective intervention.

Method

This paper is an accessible evidence summary of a National Institute for Health Research funded study; the full protocol and PROSPERO registration details are in the public domain (PROSPERO: CRD42011001661).²⁶

Inclusion and exclusion criteria

Eligible studies included all age groups and all ethnic groups known to be prominent in healthcare settings in the UK: people from Indian, Pakistani, Bangladeshi, Sri Lankan, Black Caribbean, Black British, Black African, Irish and Chinese backgrounds (see online supplement DS1). We included all evaluative methodologies. We amended the original protocol to include studies on diaspora and interventions judged to be of relevance to the UK. We excluded studies on interventions that were considered to be generic therapeutic communications themselves, such as psychological therapies or music therapies, rather than interventions that adapted and improved practice. For example, we looked for evidence of the elements of cultural adaptation recommended by Tseng, including philosophical, technical, theoretical or practical adaptations.²⁵ We excluded studies of translation or interpretation as there is already a strong evidence base.^{27,28}

Search strategy

An information scientist and a researcher jointly developed, iteratively tested and refined the search strategy to capture known seminal papers. The final search strategy was agreed following further discussion with all investigators, user and carer representatives (online supplement DS2). Separate data sources and search strategies were developed for distinct sources: published papers, grey literature, websites, special collections and theses. Experts were invited to comment on omissions in the searches and to put forward candidate papers and to volunteer research work that was unpublished or in progress. Community groups and charities were also contacted to identify materials in community-based collections. The search terms from previous reviews were adapted to reflect specific ethnic groups,^{21,29–31} and for different aspects of therapeutic communication, types of mental disorder, professional groups and measures of clinical outcome.

Selecting appropriate sources

Citations were downloaded into an Endnote library. Their relevance was assessed against the predetermined inclusion and exclusion criteria (online supplement DS1) by two researchers who independently screened all titles and abstracts. Forward and

backward citation tracking complemented the database searches. Full-text manuscripts were obtained for all studies entering the review. Any uncertainties about entering the review were resolved by consensus and, if necessary, by a third reviewer and examination of the full text.

The database searches yielded 7329 hits of which 3733 records were screened as potentially relevant after removing duplicates (Fig. 1). An extensive search for grey literature yielded 608 sources.

Quality assessment

To score methodological quality we used some core criteria for all papers, irrespective of study design, augmented by design-specific criteria (online supplement DS3).^{32–36} The scores for each element were summed to produce a total score, and then presented as percentages of the maximum score (for each of the items and the total overall quality score) (Table 1). These were then categorised into low, medium or high quality on the basis of percentage of the maximum score: <33% low, 33–66% medium and >66% high.

Data extraction, analysis and synthesis

Two reviewers extracted data directly to an Excel spreadsheet. Randomised trials provide the most definitive evidence of effectiveness.³⁷ Therefore, we separately report randomised controlled trials (RCTs) and non-randomised designs: comparative observational studies, case series, qualitative studies or qualitative elements of other studies and case studies. We contrasted narrative outcomes, effectiveness, and design strengths and weaknesses across the studies. Wherever possible for important quantitative findings, we give the measures of effect presented in the original publications (reported effects), and in the absence of such measures; wherever possible, we calculated the standardised mean difference ‘*d*’ and 95% confidence interval (calculated effects) from the published data. Calculations used the Campbell collaboration online calculator (http://www.campbellcollaboration.org/resources/effect_size_input.php).

Owing to the diversity of study settings, interventions and outcomes, the data were not suited to meta-analyses or meta-regressions. Instead, the results were subjected to a narrative synthesis that included four elements:³⁸ textual description, tabulation, grouping and thematic analysis. The effective components of each intervention were identified during the thematic analysis. As part of this analysis, we classified how interventions were culturally adapted using the framework originally proposed by Tseng.²⁵

Patients’ and carers’ views

We worked with the Afiya Trust, who recruited a panel of mental health service users and carers with experience of similar research, and from both genders, and diverse ethnic and religious groups. In three workshops, panel members discussed their perspectives on therapeutic communication, and then they commented on and ranked the interventions identified in the review as high or low priority. These judgements informed the synthesis and recommendations.

Results

In total, 21 publications met the inclusion criteria and were included in the review (online Tables DS1–4 give details of samples, settings, methods and findings). These included 12 randomised trials,^{39–50} 1 of which was from the grey literature;⁵⁰

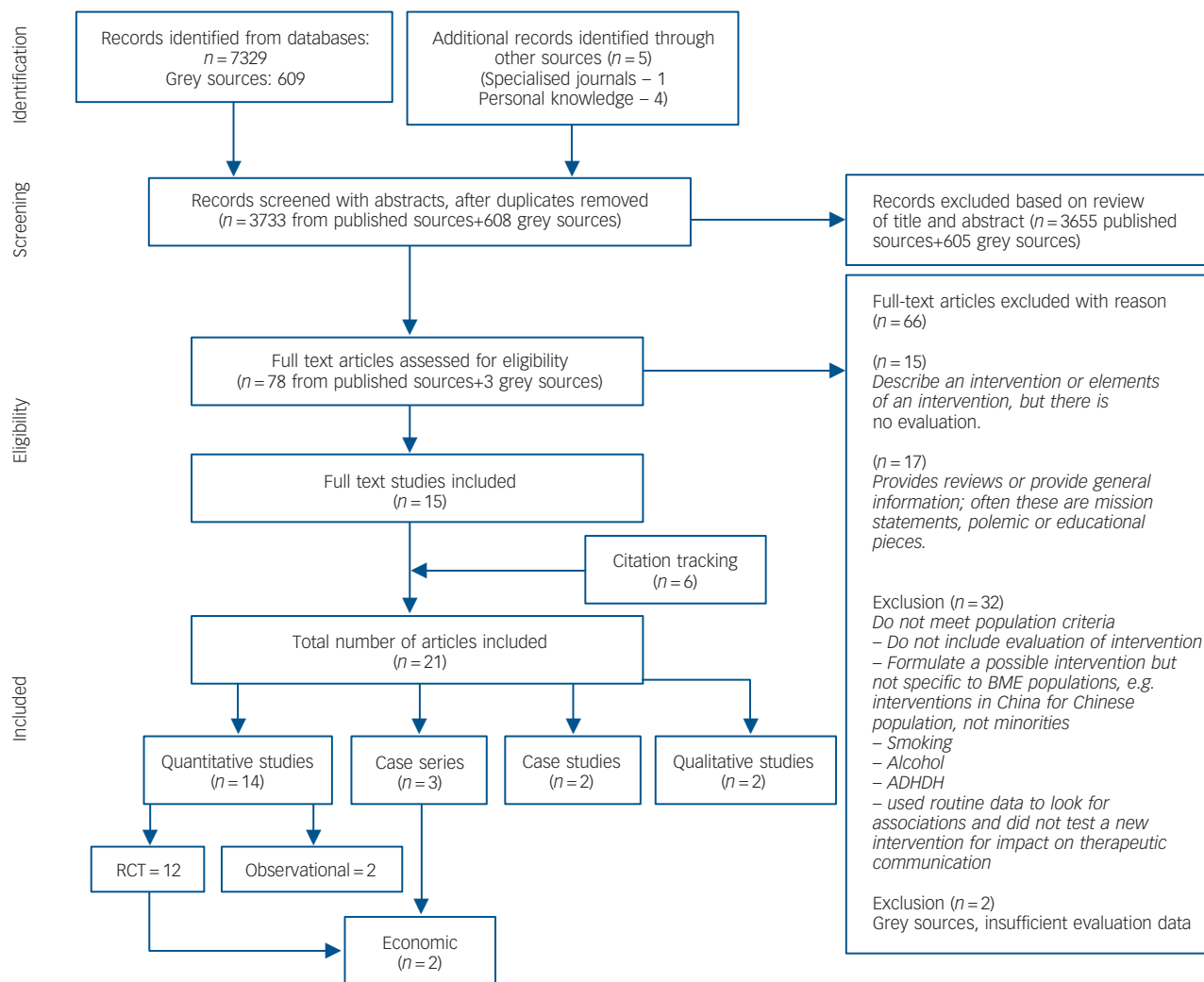


Fig. 1 PRISMA diagram showing selection of papers at each stage.

BME, Black and minority ethnic; ADHD, attention-deficit hyperactivity disorder.

2 non-randomised and comparative observational studies;^{51,52} 3 consecutive case series.^{8,53,54} One of the case series was identified from the grey literature⁵⁴ and the other was a qualitative substudy of a trial.⁵³ There were two qualitative studies that each included a case study,^{55,56} and two pure case studies.^{7,57} Two studies included preliminary economic evaluation.^{39,54} The summary findings are reported in Tables DS2 and DS4 and the effect sizes (calculated or reported) are given below.

RCTs

The RCTs examined interventions that fell into four broad types.

- Preparing patients or professionals for their expected role in a therapy before they received a therapeutic intervention.^{40,42,46,49,50}
- Enhancing and adapting existing therapies in terms of technical content and attention to cultural beliefs and idioms of distress.^{39,41,43,44,48}
- Influencing wider social systems (community agencies, family, social networks) before and during therapy.^{39,47}
- Ethnic matching of the professional and patient by the use of telepsychiatry.⁴⁵

Outcomes

Symptoms of anxiety, depression or psychosis were assessed in 8 of the 11 trials.^{39,41–45,47,48} Other outcomes were insight,⁴¹ impairment,⁴² functioning,^{39,47} adherence,^{41,45–49} patient experience,³⁹ perceived helpfulness,⁴⁶ patient satisfaction,^{45,49} knowledge and attitude towards treatment⁴⁰ and perceived stigma.⁴⁶ One study included working alliance as an outcome,⁴⁵ otherwise, the relationship between the intervention and improved therapeutic communications were inferred and not direct measures of therapeutic communication.

High-quality trials

A study of African and Black Caribbean patients with depression and anxiety, compared treatment as usual with flexible outreach from psychiatric services into community venues to encourage use of cognitive-behavioural therapy (CBT). The CBT was supplemented with ethnically matched therapists alongside advocacy, mentoring and rapid access. The intervention led to reductions in the General Health Questionnaire (GHQ-28) scores 3 months after the intervention (calculated effect size $d = -0.69$, 95% CI -1.31 to 0.11 , in favour of treatment; mean difference of reduction from baseline, unadjusted 4.19 , 95% CI -2.19 to 10.5 , $P = 0.49$; adjusted for age, past psychiatric history and baseline score 7.76 , 95% CI 0.86 to 14.65 , $P = 0.03$).³⁹ There were also gains

Table 1 Quality scores, given as percentages of maximum score possible

Study design and authors	Does intervention improve therapeutic communication?	Outcome as a measure of therapeutic communication	Ethnic groups	Quality of design	Economic evaluation	Total score
Randomised controlled trials (score range), percentage of maximum	(1–4)	(1–3)	(0–5)	(0–30)	(0–4)	(0–46)
Rathod <i>et al</i> (2013) ⁴¹	75	66.67	100	67.13	0	80.43
Acosta (1983) ⁴⁰	75	66.67	40	40	0	41.3
Afuwape <i>et al</i> (2010) ³⁹	100	66.67	100	56.67	75	67.39
Alvidrez <i>et al</i> (2009) ⁴⁶	75	66.67	20	50	0	45.65
Chong & Moreno (2012) ⁴⁵	50	100	20	53.33	0	47.83
Grote <i>et al</i> (2009) ⁴⁷	75	66.67	20	46.67	0	43.48
Kanter <i>et al</i> (2010) ⁴⁸	50	33.33	0	40	0	32.61
Hinton <i>et al</i> (2004) ⁴⁴	75	66.67	60	53.33	0	52.17
Hinton <i>et al</i> (2005) ⁴³	75	66.67	60	70	0	63.04
Lambert & Lambert (1984) ⁴⁹	50	66.67	0	26.67	0	26.09
Tom (1989) ⁵⁰	50	66.67	20	70	0	56.52
Wissow <i>et al</i> (2008) ⁴²	75	66.67	20	83.33	0	67.39
Quantitative studies (score range), percentage of maximum	(1–4)	(1–3)	(0–5)	(0–34)		(0–46)
Alvidrez <i>et al</i> (2005) ⁵²	75	66.67	20	26.47		32.61
Kohn <i>et al</i> (2002) ⁵¹	75	66.67	60	29.65		19.57
Case series (score range), percentage of maximum	(1–4)	(1–3)	(0–5)	(0–38)		(0–50)
Kirmayer <i>et al</i> (2003) ⁸	75	33.33	0	60.53		54
Palinski <i>et al</i> (2011) ⁵⁴	100	100	100	86.84		90
Chow <i>et al</i> (2010) ⁵³	75	66.67	20	78.95		72
Case studies and qualitative (score range), percentage of maximum	(1–4)	(1–3)	(0–5)	(0–87)		(0–99)
Bhui & Bhugra (2004) ⁷	75	33.33	100	63.22		64.65
Chu <i>et al</i> (2012) ⁵⁵	50	33.33	60	77.01		73.74
Schouler Ocak <i>et al</i> (2008) ⁵⁷	50	33.33	60	50.57		50.51
Grote <i>et al</i> (2007) ⁵⁶	75	66.67	20	52.87		52.53
Chow <i>et al</i> (2010) ⁵³	75	66.67	20	64.37		72.73

for the Short form (SF-12) mental component measure (adjusted mean difference -11.93 , 95% CI -21.99 to -1.88 , $P=0.02$).

Compared with usual treatment, Rathod *et al* showed that culturally adapted CBT reduced symptoms (on the Comprehensive Psychopathological Ratings Scale) for Black British, African Caribbean and South Asian Muslim patients with schizophrenia (post-treatment calculated effect size $d = -0.18$, 95% CI -0.94 to 0.58 ; 6 months follow-up, calculated effect size $d = 0.15$, 95% CI -0.57 to 0.86 ; unadjusted mean difference of reduction from baseline 11.31 , 95% CI 0.14 to 22.49 , $P=0.05$; adjusted mean difference from baseline 9.53 , 95% CI 1.85 to 20.91 , $P=0.01$).⁴¹ At 6 months follow-up, benefit was only seen for depressive symptoms (mean difference of reduction from baseline interval 5.26 , 95% CI 2.92 to 7.60 , $P<0.001$; adjusted mean difference of reduction from baseline 4.24 , 95% CI -0.44 to 8.94 , $P=0.07$).

Wissow *et al* trained paediatric professionals during three 1 h discussions using video examples of family/provider communication, followed by practise and self-evaluation.⁴² They recruited Black, Latin-American and other ethnicities in the USA. Parental symptoms on the GHQ diminished in the intervention group (reported effect size $d = (1.7/5.4) = 0.31$, mean difference -1.7 , 95% CI -0.32 to -0.11) and children from minority ethnic groups had less impairment at 6-month follow-up (score reduction of Strengths and Difficulties Questionnaire (SDQ) by 0.91 , 95% CI -1.8 to -0.01 , $P=0.05$). In subgroup analysis this was sustained only for Black children (mean difference SDQ score -1.1 , 95% CI -2.0 to -0.24 ; effect size $d = (1.1/2.5) = 0.44$).

Medium-quality trials

There were two RCTs of culturally adapted CBT compared with treatment as usual, for treatment-resistant post-traumatic stress

disorder (PTSD) and panic attacks in Vietnamese and Cambodian refugees in the USA.^{43,44} Adapted CBT led to significantly fewer anxiety symptoms at the end of the treatment of Vietnamese and Cambodian refugees (Anxiety Sensitivity Index, $d = -4.3$, 95% CI -6.32 to -2.22 , and -3.78 , 95% CI -4.82 to 2.75 , respectively). Improvement was also noted for post-traumatic symptoms measured on the Harvard Trauma Questionnaire (Vietnamese patients: calculated $d = -2.4$, 95% CI -3.88 to -0.92), the Clinician Administered PTSD severity scale (Cambodian patients: calculated $d = -2.17$, 95% CI -2.95 to -1.39), and on the Hopkins Symptoms Checklist anxiety subscale (Vietnamese patients: calculated $d = -2.21$, 95% CI -3.64 to -0.77) and depression subscale (Vietnamese patients: calculated $d = -1.99$, 95% CI -3.38 to -0.61). Anxiety and depression symptoms improved for Cambodians on the Symptom Checklist-90 scale (calculated $d = -2.8$, 95% CI -3.68 to -1.94). The original paper did not present confidence intervals, nor effect sizes for follow-up assessments that showed less difference and sometimes no differences. Culturally shaped symptoms of headache and panic also improved.

A randomised pilot study of a multicomponent intervention screened for depression in African American and White pregnant women in antenatal services.⁴⁷ The intervention elements were motivational and ethnographic interviewing to empower women to seek access to interpersonal therapy for depression.⁴⁷ These methods of clinical assessment allowed patients' cultures, identity and shared priorities to be the focus of engagement before offering therapy, choices and information. Those receiving the intervention had less severe depressive symptoms at 3 and 6 months after the baseline (Beck Depression Inventory (BDI): reported effect size of treatment and time interaction: Cohen's $d = 0.33$ and 0.47 , respectively; Edinburgh Postnatal Depression screening

tool: Cohen's $h = 0.71$ and 0.89 , respectively; Beck Anxiety Inventory Cohen's $d = 0.27$ and 0.24 , respectively; and on an outcome of 'no longer met diagnostic criteria for depression': Cohen's $h = 0.96$ and 1.22 , respectively; social and leisure functions: 0.26 and 0.46 , respectively; confidence intervals not reported, and Cohen's h calculated from χ^2).

A pilot randomised trial of a psychoeducational leaflet for older African Americans who were referred to out-patient psychotherapy had no effect on symptoms, attendance or stigma.⁴⁶ Those with high perceived need and those with the most uncertainty about treatment had lower levels of stigma following the intervention. In contrast, those with low perceived treatment need and low uncertainty about treatment had lower stigma scores after receiving the usual information sheet (data not reported to calculate interaction effects).

A study of psychoeducation for Chinese Americans with chronic mental disorders offered some lessons for UK Chinese populations.⁵⁰ This randomised study showed improved knowledge (calculated $d = 0.83$, 95% CI -0.01 to 1.66) about 'Western concepts' of mental disorder, treatment and professional roles following a psychoeducation intervention, but there was no impact on stigma, satisfaction with services or motivation. Younger and more educated people were more likely to show improvements in knowledge.

A pre-therapy trial used audiovisual instructions to prepare low-income, Black, Hispanic and White psychiatric out-patients to enter therapy.⁴⁰ This provided information about generic services. The intervention led to greater knowledge and more positive attitudes about therapy (reported analysis of variance: patient orientation, ethnicity, gender: $F(1,149) = 9.44$, $P < 0.01$; n values not available for calculation of effect sizes).⁴⁰

In a feasibility trial of telepsychiatry, low-income Hispanic patients in primary care were ethnically matched with psychiatrists.⁴⁵ Attendance and symptoms were unaffected, but there were improvements in working alliance (intervention calculated $d = 0.99$, 95% CI 0.63 – 1.36 ; follow-up $d = 1.64$, 95% CI 1.25 – 2.05 ; intervention and follow-up interaction not significant) and in satisfaction (calculated effect size for interaction between follow-up time and intervention: $d = 0.58$, 95% CI 0.23 – 0.93). There was greater adherence with antidepressants ($d = 0.35$, 95% CI 0 – 0.69) but no effect on the number of unproductive days because of depression. More patients using telepsychiatry were willing to pay for care.

Poorer-quality trials

Lambert & Lambert prepared immigrants for a future psychotherapy in treatment centres in Hawaii.⁴⁹ The patients receiving the intervention were more satisfied on several dimensions (for example experiencing change, calculated $d = 1.52$, 95% CI 0.53 – 2.52), recognising therapists' integrity, warmth and respect (calculated $d = 1.01$, 95% CI 0.08 – 1.95), attended a greater proportion of the total number of sessions offered (calculated $d = 1.07$, 95% CI 0.26 – 1.88) and dropping out less often (calculated $d = 0.75$, 95% CI 0.01 – 1.49).

Kanter *et al* conducted a pilot trial of a culturally and linguistically adapted version of CBT, and instigated behaviour change as a driver of emotional change (called behavioural activation) for Latin-American patients attending a bilingual clinic in USA. The intervention was to be applied during the course of the therapy.⁴⁸ There was a significant decrease of depression severity (BDI and Hamilton Rating Scale for Depression; reported $d = 1.07$, $d = 1.43$, respectively).

Non-randomised designs

The outcome measures used in the non-randomised designs included a mixture of standardised instruments, evaluation

questionnaires, evaluative statements and narrative findings (online Tables DS3 and DS4 shows the samples and designs; Table DS5 shows the intervention components).

Of two non-randomised and comparative observational studies,^{51,52} one involved enhancing CBT by improving the terminology and the manual content to address religion, identity, relationships and family values of African American women who were on low incomes and with depression.⁵¹ This produced a mean reduction of 12.5 points on the BDI for the adapted CBT group compared with 5.9 points for the usual unadapted CBT comparison group (no standard deviations were presented, so effect sizes were not calculated). The second non-randomised and comparative observational study included an intervention for older African American medical patients that aimed to promote adherence to a psychotherapy treatment through the use of peer-based psychoeducation before therapy.⁵² When compared with a historical comparison group, no differences were seen in the total number or the proportion of total number of sessions that were attended following intervention. And if two historical controls were removed as they had attended therapy in a previous year, there was a significant effect on the mean number of sessions attended ($d = 0.8$, 95% CI 0.30 – 1.30).

Three studies of consecutive patients examined peer-based family psychoeducation in Chinese and Tamil patients recruited from an assertive outreach team,⁵³ and referrals from in-patient and out-patient community psychiatric services to specialist cultural consultation services (one in Canada and one in the UK) in order to elicit illness narratives to aid decision-making.^{8,54} The family intervention led to more accepting attitudes towards patients (mean after 76.3 (s.d. = 14.72); mean before 64.2 (s.d. = 13.9), $P = 0.01$), and trends towards less stress and perceived burden alongside better mental health. The two cultural consultation studies were exploratory and demonstrated gains in knowledge and changes in clinical management for patients but no change in patient-reported outcomes (Table DS4).

There were two case studies of successful cultural adaptation of treatment. One reported enhancements of existing therapies in terms of content and attention to beliefs for trauma symptoms among Turkish patients;⁵⁷ and the other assessed culturally determined health beliefs (explanatory models) in Bangladeshi patients.⁷

There were two qualitative studies that also included evaluative single case studies. Grote *et al* assessed an evolving model of ethnographic and motivational interviewing using qualitative interviews with African American women with a low-income. This showed positive findings, but the main evaluation was in the form of a single case study,⁵⁶ which was then used to inform a trial that is also reported in this review.⁴⁷ Chu *et al* included qualitative focus groups to iteratively adapt problem-solving therapy for older Chinese adults, and this was proposed to be of value using a single case study.⁵⁵

Thematic analysis of interventions

The components of effective interventions were identified and contrasted across the studies using thematic analysis (Table 2). These also help to understand the elements of cultural adaptations, which were similar across randomised and non-randomised studies. Effective interventions in general included efforts to outreach to the wider community and social systems beyond hospital settings; an important aim of effective interventions was to engage or empower by increasing professional understanding of patients' belief systems about illness, either through formal training or through adapting the content and/or structure of treatment to accommodate ethnic and cultural difference. Compared with non-randomised studies, randomised studies were more likely to

Table 2 Components of interventions emerging from thematic analysis

Study design and authors	Patient					Patient and professional				Adaptation of therapy			Engages
	Causal explanations	Beliefs	Pre-therapy preparation	Accessibility	Training	Ethnic group specific	Matching	Interview structure and content	Modify content of materials	Adapt technical delivery/structure of therapy	Social systems	Empowers	
Randomised controlled trials													
Rathod <i>et al</i> (2013) ⁴¹	◆	◆		◆	◆				◆				◆
Wissow <i>et al</i> (2008) ⁴²					◆	◆							
Afuwape <i>et al</i> (2010) ³⁹		◆		◆	◆	◆	◆				◆	◆	◆
Hinton <i>et al</i> (2005) ⁴³	◆	◆							◆	◆			◆
Hinton <i>et al</i> (2004) ⁴⁴	◆	◆							◆	◆			◆
Chong & Moreno (2012) ⁴⁵					◆								
Alvidrez <i>et al</i> (2009) ⁴⁶		◆	◆	◆				◆	◆	◆	◆	◆	◆
Grote <i>et al</i> (2009) ⁴⁷	◆	◆	◆	◆									◆
Acosta (1983) ⁴⁰			◆	◆		◆							◆
Kanter <i>et al</i> (2010) ⁴⁸		◆	◆	◆									◆
Lambert & Lambert (1984) ⁴⁹		◆	◆	◆		◆	◆						◆
Tom (1989) ⁵⁰		◆	◆	◆		◆	◆						◆
Other designs													
Kohn <i>et al</i> (2002) ⁵¹	◆	◆				◆			◆	◆			
Alvidrez <i>et al</i> (2005) ⁵²			◆			◆							◆
Chow <i>et al</i> (2010) ⁵³	◆	◆	◆			◆							◆
Kimzayer <i>et al</i> (2003) ⁸	◆	◆											◆
Pallinski <i>et al</i> (2011) ⁵⁴	◆	◆			◆			◆		◆	◆	◆	◆
Chu <i>et al</i> (2012) ⁵⁵	◆	◆											◆
Grote <i>et al</i> (2007) ⁵⁶	◆	◆		◆									◆
Bhui & Bhugra (2004) ⁷	◆	◆				◆					◆	◆	◆
Schouler Ocak <i>et al</i> (2008) ⁵⁷	◆	◆				◆							◆

target multiple ethnic groups (2/10 and 5/12 respectively) and to focus on accessibility of treatment for patients (1/10 *v.* 4/12).

Patient and carer views

There was less support for approaches that provided 'briefing' or training in 'how to be a patient' (online Table DS5). Somewhat unexpectedly, the use of community workers providing advocacy and stepped-care (the second intervention in online Table DS5), despite attention to practical needs such as entitlement to benefits, was not well regarded. Members of the group felt stepped-care, gradually moving from community to more specialist hospital services, was overcomplicated and might lead to problems in communication between different professionals.

Discussion

This review identified several types of effective interventions evaluated in trials, including adapted cognitive-behavioural treatments,^{41,43,44} adapted psychotherapies more generally,^{39,47,48} complex interventions that engage with social systems (such as community groups) and stepped-care,³⁹ interviewing techniques such as ethnographic and motivational interviewing,⁴⁷ behavioural activation within an adapted cognitive-behavioural paradigm,⁴⁸ information and training for patients to make best use of their services and better use of encounters with professionals,^{40,49} and a telepsychiatry intervention.⁴⁵

Adapted CBT

Adapted CBT for several ethnic groups⁴¹ worked as well as CBT adapted for a single ethnic group.⁴⁴ Patients and carers reviewing the evidence were supportive of these interventions. Importantly, the methods of adaptation paid attention to technical, theoretical, philosophical and practical aspects.²⁵ These adapted interventions were promising as they showed benefit in terms of both symptoms and patient-reported outcomes, and were evolved by including culturally embedded styles of communications about distress within the CBT manual.

Complex interventions

Two trials evaluated complex interventions. Grote *et al* used ethnographic and motivational interviewing to empower pregnant African American single women with depression.⁴⁷ One of the key components of this intervention was the emphasis on empowerment through an understanding of personal stories before offering specialist interventions. This was similar to another complex intervention (Afuwape *et al*)³⁹ offering a stepped-care model of engaging in social venues and then offering an adapted CBT intervention for Black African, Black Caribbean and Black British people living in South London. Both of these were effective at reducing symptoms, yet a consultative panel of patients and carers favoured the USA intervention, because of its emphasis on personal stories and empowering interviews, rather than a stepped-care to access CBT. The stepped-care approach was perceived to be too difficult to negotiate because several professionals at different stages of care risked a failure of communication between them.⁵⁸

Training, education, communications skills

There was one study of a specialist psychiatric service that provided outreach into paediatric services.⁴² This led to less impairment in Black compared with White children and fewer parental symptoms overall. Of the two other trials that included an educational intervention, both included preparing patients for psychotherapy by education using written and audiovisual

materials.^{40,49} The first of these, a poor-quality study, was associated with higher premature drop-out, but more satisfaction in the intervention group and improvements in their expectations of what therapy might offer. The second, a medium-quality study, informed patients' about psychotherapy and improved attitudes so they expected more from therapy. Although less favoured by patients and carers, these preparatory interventions seem attractive to practitioners as a way of enhancing the benefit of existing interventions rather than developing new ones.

Despite the body of literature on cultural competence of professionals as a key way of improving health outcomes and communication between BME patients and professionals,²¹ none of the trials that entered the review tested a specific model of cultural competence. Cultural competence is a concept with a broad framework, so there were examples of interventions that fell under this rubric but differed in their elements and proposed mechanism. Future research might select specific components of interventions from those listed in Table 2, and test them either individually or in combinations. The list might also be valuable to assess against new interventions, and understand potential mechanisms of effect.

One randomised study of telepsychiatry where both patients and psychiatrists were from Hispanic minority groups living in the USA,⁴⁵ showed greater adherence to antidepressants, and improved the working alliance and satisfaction compared with the treatment as usual group. Patients were willing to pay more for this intervention, which suggests its convenience was valued, but the relative benefits of ethnic matching and a telepsychiatry intervention were not disentangled. Telepsychiatry can facilitate provision of services to geographically remote or scattered populations in need of professionals with a similar ethnic background and language skills. In contrast to this study, many studies of ethnic matching are often observational and show an association between ethnic matching and outcomes in administrative data-sets rather than testing an intervention in a trial.^{59,60} The wider issue of using e-technology and social media in order to engage and deliver interventions was not investigated in the studies that entered the review. There is an emerging evidence base on e-interventions for mental health promotion and the treatment of mental illnesses, in remote and varied populations who may be hard to reach, and across age groups.⁶¹⁻⁶⁵ More RCTs are needed among ethnic minorities and culturally diverse populations.

Other study designs

The non-randomised studies assessed psychoeducation, ways of adapting psychotherapies, including a family-oriented intervention, ethnographic interviewing and case studies concerning ethnographic principles. Given that these interventions were at an earlier stage of development, it is reasonable to suggest that their components, especially their ethnographic elements, may prove suitable for testing in trials.^{7,8,54,56,57} Two of these studies showed how to involve the community as a resource to help adapt interventions.^{53,55} Many excluded papers presented accounts of the cultural formulation (as described in the DSM-IV,⁶⁶ and now in modified form in DSM-5⁶⁷), and its use as part of the formal psychiatric assessment process, yet none evaluated the cultural formulation, or offered a sufficiently critical evaluative component for these studies to enter the review.^{68,69}

Intervention elements

Many elements of the interventions were not dissimilar when the trials and non-randomised designs were compared (see online Tables DS1 and DS3). The patient and carer rankings of interventions was instructive, in that these added an additional source of valuable information to the synthesis, alongside the

evidence with respect to effectiveness, and methodological strengths and weaknesses of each study. Their opinions were by no means unanimous but still shed light on which interventions might not suit all patients and why. To some extent the patient and carer perspectives also combated the academically focused research questions and setting. Patients and carers emphasised the personal experience and journey, giving a clear indication that the way professionals communicate and interact are as important as the intervention itself. Therefore, the interventions that encouraged understanding of patient beliefs and causal explanations about illness may not always lead to a direct symptomatic benefit, but nonetheless seem to be important in a recovery-oriented approach. In particular, ethnography, motivational interviewing, engaging with social systems, before and during therapy, and professional-centred interventions seem to warrant further research of their impact on positive professional–patient communication.

Strengths and weaknesses

The remit of this systematic review was specific, namely communications between professionals in psychiatric services and BME-origin patients using these services. However, the findings included multiple interventions with diverse outcomes, and diverse study design.

The effect of improved therapeutic communication was evaluated by assessing various outcomes such as symptoms and adherence. The quality scores were a helpful summary of a complex set of strengths and weaknesses, each of which was taken into consideration alongside the views of the patients and carers in drawing our overall conclusions. The majority of studies assessed entry into psychotherapy interventions rather than routine psychiatric care.

Only four studies were from the UK.^{7,39,41,54} The remaining 17 were from the USA, suggesting more research is needed in the UK and other countries within and outwith Europe. The review found only two studies offering weak economic evidence based on health and social care costs over a 3-month follow-up period.^{39,54} Palinksi *et al* published more detailed costs of accident and emergency attendance, and consultations with nurses and doctors.⁵⁴ Both studies can be described as exploratory rather than definitive, partly because of their small sample sizes, short follow-up periods, and recruitment from a single locality, but both studies offer encouraging economic evidence. There is a need for more economic research.

In conclusion, culturally adapted psychotherapies and ethnographic and motivational assessment leading to psychotherapy were effective and preferred by patients and carers. Further trials are needed from outside of the UK and USA, including studies of routine psychiatric practices, economic evaluations and some testing of the effectiveness of specific elements of interventions that were identified.

Kamaldeep S. Bhui, MD, FRCPSych, Centre for Psychiatry, Wolfson Institute of Preventive Medicine, Barts & The London School of Medicine, Queen Mary University of London, London; **Rabeea'h W. Aslam**, MSc, **Andrea Palinski**, Barts & The London School of Medicine, Queen Mary University of London, London; **Rose McCabe**, PhD, University of Exeter Medical School, Exeter; **Mark R. D. Johnson**, Mary Seacole Research Centre, De Montfort University, Leicester; **Scott Weich**, MD, **Swaran P. Singh**, MD, Warwick Medical School, University of Warwick, Coventry; **Martin Knapp**, PhD, **Vittoria Ardino**, PhD, London School of Economics, London; **Ala Szczepura**, PhD, Centre for Technology Enabled Health Research (CTEHR), Faculty of Health & Life Sciences, Coventry University, Coventry, UK

Correspondence: K. S. Bhui, Centre for Psychiatry, Wolfson Institute of Preventive Medicine, Barts & The London School of Medicine & Dentistry, Old Anatomy Building, Charterhouse Square, London EC1M 6Q, UK. Email: k.s.bhui@qmul.ac.uk

First received 13 Oct 2014, final revision 4 Dec 2014, accepted 4 Feb 2015

Funding

The study was funded by the National Institute of Health Research – Health Technology Assessment: evidence synthesis (10/141/02).

Acknowledgements

The Afya Trust for organising the patient and public involvement (PPI) group, Patrick Vernon, former Chief Executive Officer of Afya; Rampaul Chamba, former trustee at Afya and chair of the PPI group; Sola Afuape, Chair of Afya, and the service users and members of the public who commented, returned survey responses and participated in discussions and critical feedback over the lifetime of the project. Diana Clay (information scientist at Warwick Medical School) for constructing, testing and running the searches of the peer-reviewed literature; Josh Elliott (research assistant, Institute of Digital Healthcare, University of Warwick) for undertaking the grey literature and web searches, and running the survey of experts

References

- National Institute for Mental Health in England. *Inside Outside: Improving Mental Health Services for Black and Minority Ethnic Communities in England*. NIMHE, 2003.
- Department of Health. *Delivering Race Equality in Mental Health Care. An Action Plan for Reform Inside and Outside Services and the Government's Response to the Independent Inquiry into the Death of David Bennett*. Department of Health, 2005.
- Bansal N, Bhopal R, Netto G, Lyons D, Steiner MF, Sashidharan SP. Disparate patterns of hospitalisation reflect unmet needs and persistent ethnic inequalities in mental health care: the Scottish health and ethnicity linkage study. *Ethn Health* 2014; **19**: 217–39.
- Cooper C, Spiers N, Livingston G, Jenkins R, Meltzer H, Brugha T, et al. Ethnic inequalities in the use of health services for common mental disorders in England. *Soc Psychiatry Psychiatr Epidemiol* 2013; **48**: 685–92.
- Mangalore R, Knapp M. Income-related inequalities in common mental disorders among ethnic minorities in England. *Soc Psychiatry Psychiatr Epidemiol* 2012; **47**: 351–9.
- Priebe S, Richardson M, Cooney M, Adedeji O, McCabe R. Does the therapeutic relationship predict outcomes of psychiatric treatment in patients with psychosis? A systematic review. *Psychother Psychosom* 2011; **80**: 70–7.
- Bhui K, Bhugra D. Communication with patients from other cultures: the place of explanatory models. *Adv Psychiatr Treat* 2004; **10**: 474–8.
- Kirmayer LJ, Groleau D, Guzder J, Blake C, Jarvis E. Cultural consultation: a model of mental health service for multicultural societies. *Can J Psychiatry* 2003; **48**: 145–53.
- Szczepura A. Access to health care for ethnic minority populations. *Postgrad Med J* 2005; **81**: 141–7.
- Johnson MRD, Clark MD, Owen D, Szczepura A. *The Unavoidable Costs of Ethnicity: A Review of Evidence on Health Costs*. Centre for Health Services Studies, University of Warwick, 1999.
- McCabe R, Priebe S. Explanatory models of illness in schizophrenia: comparison of four ethnic groups. *Br J Psychiatry* 2004; **185**: 25–30.
- Shiomi T, Someya T, Helmeste D, Tang SW. Cultural difference in recognition of facial emotional expression: contrast between Japanese and American raters. *Psychiatry Clin Neurosci* 1999; **53**: 629–33.
- Shiomi T, Someya T, Helmeste D, Tang SW. Misinterpretation of facial expression: a cross-cultural study. *Psychiatry Clin Neurosci* 1999; **53**: 45–50.
- Elfenbein HA, Ambady N. On the universality and cultural specificity of emotion recognition: a meta-analysis. *Psychol Bull* 2002; **128**: 203–35.
- Elfenbein HA, Ambady N. When familiarity breeds accuracy: cultural exposure and facial emotion recognition. *J Personality Soc Psychol* 2003; **85**: 276–90.
- Elfenbein HA, Mandal MK, Ambady N, Harizuka S, Kumar S. Cross-cultural patterns in emotion recognition: highlighting design and analytical techniques. *Emotion* 2002; **2**: 75–84.
- Tesone JE. Multi-lingualism, word-presentations, thing-presentations and psychic reality. *Int J Psychoanal* 1996; **77**: 871–81.
- Rudell K, Bhui K, Priebe S. Concept, development and application of a new mixed method assessment of cultural variations in illness perceptions: Barts Explanatory Model Inventory. *J Health Psychol* 2009; **14**: 336–47.
- Bhui K, Bhugra D, Goldberg D. Causal explanations of distress and general practitioners' assessments of common mental disorder among Punjabi and English attendees. *Soc Psychiatry Psychiatr Epidemiol* 2002; **37**: 38–45.
- Bennett J KJ, Keating F. *Race Equality Training in Mental Health Services in England. Does One Size Fit All?* Sainsbury Centre for Mental Health, 2011.
- Bhui K, Warfa N, Edonya P, McKenzie K, Bhugra D. Cultural competence in mental health care: a review of model evaluations. *BMC Health Serv Res* 2007; **7**: 15.
- Kleinman A. *Patients and Healers in the Context of Culture*. University of California Press, 1980.

- 23 Smithbattle L, Lorenz R, Leander S. Listening with care: using narrative methods to cultivate nurses' responsive relationships in a home visiting intervention with teen mothers. *Nurs Inq* 2013; **20**: 188–98.
- 24 Chowdhary N, Jotheeswaran AT, Nadkarni A, Hollon SD, King M, Jordans MJ, et al. The methods and outcomes of cultural adaptations of psychological treatments for depressive disorders: a systematic review. *Psychol Med* 2014; **44**: 1131–46.
- 25 Tseng W. *Handbook of Cultural Psychiatry*. Academic Press, 2001.
- 26 Bhui K, McCabe R, Weich S, Singh S, Johnson M, Szczepura A. THERACOM: a systematic review of the evidence base for interventions to improve therapeutic communications between black and minority ethnic populations and staff in specialist mental health services. *Syst Rev* 2013; **2**: 15.
- 27 Cambridge J, Singh SP, Johnson M. The need for measurable standards in mental health interpreting: a neglected area. *Psychiatrist* 2012; **36**: 121–4.
- 28 Liu J, Davidson E, Bhopal R, White M, Johnson M, Netto G, et al. Adapting health promotion interventions to meet the needs of ethnic minority groups: mixed-methods evidence synthesis. *Health Technol Assess* 2012; **16**: 1.
- 29 Anderson LM, Scrimshaw SC, Fullilove MT, Fielding JE, Normand J. Culturally competent healthcare systems. A systematic review. *Am J Prev Med* 2003; **24** (suppl 3): 68–79.
- 30 Szczepura A, Clark MD, Johnson MRD, Owen D. *Assessment of the Costs to the NHS Arising from the Need for Interpreter, Advocacy and Translation Services*. Resource Allocation Series RARP. University of Warwick, 1999.
- 31 Bhui K, Stansfeld S, Hull S, Priebe S, Mole F, Feder G. Ethnic variations in pathways to and use of specialist mental health services in the UK: systematic review. *Br J Psychiatry* 2003; **182**: 105–16.
- 32 Moncrieff J, Drummond DC. The quality of alcohol treatment research: an examination of influential controlled trials and development of a quality rating system. *Addiction* 1998; **93**: 811–23.
- 33 Deeks J, Dinnes J, D'Amico R, Sowden A, Sakaravitch C, Song F, et al. Evaluating non-randomised intervention studies. *Health Technol Assess* 2003; **7**: 1–192.
- 34 Reisch JS, Tyson JE, Mize SG. Aid to the evaluation of therapeutic studies. *Pediatrics* 1989; **84**: 815–27.
- 35 Moga C, Guo B, Schopflocher D, Harstall C. *Development of a Quality Appraisal Tool for Case Series Studies Using a Modified Delphi Technique*. Institute of Health Economics, 2012.
- 36 Spencer L, Ritchie J, Lewis J, Dillon L. *Quality in Qualitative Evaluation: A framework for assessing research evidence. A Quality Framework*. The Cabinet Office, 2003.
- 37 Concato J, Shah N, Horwitz RI. Randomized, controlled trials, observational studies, and the hierarchy of research designs. *New Engl J Med* 2000; **342**: 1887–92.
- 38 Popay J, Roberts H, Sowden A, Petticrew M, Arai A, Rodgers R, et al. *Guidance on the Conduct of Narrative Synthesis in Systematic Reviews*. NSSR, Institute for Health Research, 2006.
- 39 Afuwape SA, Craig TK, Harris T, Clarke M, Flood A, Olajide D, et al. The Cares of Life Project (CoLP): an exploratory randomised controlled trial of a community-based intervention for black people with common mental disorder. *J Affect Disord* 2010; **127**: 370–4.
- 40 Acosta F. Preparing low-income hispanic, black, and white patients for psychotherapy. *J Clin Psychol* 1983; **39**: 872–7.
- 41 Rathod S, Phiri P, Harris S, Underwood C, Thagadur M, Padmanabi U, et al. Cognitive behaviour therapy for psychosis can be adapted for minority ethnic groups: a randomised controlled trial. *Schizophr Res* 2013; **143**: 319–26.
- 42 Wissow LS, Gadowski A, Roter D, Larson S, Brown J, Zachary C, et al. Improving child and parent mental health in primary care: a cluster-randomized trial of communication skills training. *Pediatrics* 2008; **121**: 266–75.
- 43 Hinton DE, Chhean D, Pich V, Safren SA, Hofmann SG, Pollack MH. A randomized controlled trial of cognitive-behavior therapy for Cambodian refugees with treatment-resistant PTSD and panic attacks: a cross-over design. *J Trauma Stress* 2005; **18**: 617–29.
- 44 Hinton DE, Pham T, Tran M, Safren SA, Otto MW, Pollack MH. CBT for Vietnamese refugees with treatment-resistant PTSD and panic attacks: a pilot study. *J Trauma Stress* 2004; **17**: 429–33.
- 45 Chong J, Moreno F. Feasibility and acceptability of clinic-based telepsychiatry for low-income Hispanic primary care patients. *Telemed J e-Health* 2012; **18**: 297–304.
- 46 Alvidrez J, Snowden LR, Rao SM, Boccellari A. Psychoeducation to address stigma in black adults referred for mental health treatment: a randomized pilot study. *Community Ment Health J* 2009; **45**: 127–36.
- 47 Grote NK, Swartz HA, Geibel SL, Zuckoff A, Houck PR, Frank E. A randomized controlled trial of culturally relevant, brief interpersonal psychotherapy for perinatal depression. *Psychiatr Serv* 2009; **60**: 313–21.
- 48 Kanter JW, Santiago-Rivera AL, Rusch LC, Busch AM, West P. Initial outcomes of a culturally adapted behavioral activation for Latinas diagnosed with depression at a community clinic. *Behav Modif* 2010; **34**: 120–44.
- 49 Lambert R, Lambert M. The effects of role preparation for psychotherapy on immigrant clients seeking mental health services in Hawaii. *J Community Psychol* 1984; **12**: 263–75.
- 50 Tom LM. *Psychoeducational Approach with Chronically Mentally Ill Chinese Americans: A Cultural Adaption Framework*. The City University of New York, 1989.
- 51 Kohn LP, Oden T, Muñoz RF, Robinson A, Leavitt D. Adapted cognitive behavioral group therapy for depressed low-income African American women. *Community Ment Health J* 2002; **38**: 497–504.
- 52 Alvidrez J, Areal P, Stewart A. Psychoeducation to increase psychotherapy entry for older African Americans. *Am J Geriatr Psychiatry* 2005; **13**: 554–61.
- 53 Chow W, Law S, Andermann L, Yang J, Leszcz M, Wong J, et al. Multi-family psycho-education group for assertive community treatment clients and families of culturally diverse background: a pilot study. *Community Ment Health J* 2010; **46**: 364–71.
- 54 Palinski A, Owiti JA, Ascoli M, De Jongh B, Archer J, Staples P, et al. *A Cultural Consultation Service in East London: Experiences and Outcomes from Implementation of an Innovative Service*. Queen Mary University of London, 2012.
- 55 Chu JP, Huynh L, Areal P. Cultural adaptation of evidence-based practice utilizing an iterative stakeholder process and theoretical framework: problem solving therapy for Chinese older adults. *Int J Geriatr Psychiatry* 2012; **27**: 97–106.
- 56 Grote N, Zuckoff A, Swartz H, Blesdoe SE, Geibel S. Engaging women who are depressed and economically disadvantaged in mental health treatment. *Social Work* 2007; **52**: 295–308.
- 57 Schouler-Ocak M, Reiske SL, Rapp MA, Heinz A. Cultural factors in the diagnosis and treatment of traumatised migrant patients from Turkey. *Transcult Psychiatry* 2008; **45**: 652–70.
- 58 Franx G, Oud M, de Lange J, Wensing M, Grol R. Implementing a stepped-care approach in primary care: results of a qualitative study. *Implement Sci* 2012; **7**: 8.
- 59 Cabral RR, Smith TB. Racial/ethnic matching of clients and therapists in mental health services: a meta-analytic review of preferences, perceptions, and outcomes. *J Couns Psychol* 2011; **58**: 537–54.
- 60 Maramba GG, Hall GC. Meta-analyses of ethnic match as a predictor of dropout, utilization, and level of functioning. *Cultur Divers Ethnic Minor Psychol* 2002; **8**: 290–7.
- 61 Lillevoll KR, Vangberg HC, Griffiths KM, Waterloo K, Eisemann MR. Uptake and adherence of a self-directed internet-based mental health intervention with tailored e-mail reminders in senior high schools in Norway. *BMC Psychiatry* 2014; **14**: 14.
- 62 Ruggiero KJ, Resnick HS, Acierno R, Coffey SF, Carpenter MJ, Ruscio AM, et al. Internet-based intervention for mental health and substance use problems in disaster-affected populations: a pilot feasibility study. *Behav Ther* 2006; **37**: 190–205.
- 63 Livingston JD, Cianfrone M, Korf-Uzan K, Coniglio C. Another time point, a different story: one year effects of a social media intervention on the attitudes of young people towards mental health issues. *Soc Psychiatry Psychiatr Epidemiol* 2014; **49**: 985–90.
- 64 Woolderink M, Smit F, van der Zanden R, Beecham J, Knapp M, Paulus A, et al. Design of an internet-based health economic evaluation of a preventive group-intervention for children of parents with mental illness or substance use disorders. *BMC Public Health* 2010; **10**: 470.
- 65 Blankers M, Nabitz U, Smit F, Koeter MW, Schippers GM. Economic evaluation of internet-based interventions for harmful alcohol use alongside a pragmatic randomized controlled trial. *J Med Internet Res* 2012; **14**: e134.
- 66 American Psychiatric Association. *Diagnostic and Statistical Manual of Mental Disorder (4th edn) (DSM-IV)*. APA, 1994.
- 67 American Psychiatric Association. *Diagnostic and Statistical Manual of Mental Disorder (5th edn) (DSM-5)*. APA, 2013.
- 68 Baarnhielm S. The meaning of pain: a cultural formulation of a Syrian woman in Sweden. *Transcult Psychiatry* 2012; **49**: 105–20.
- 69 Fortuna LR, Porche MV, Alegria M. A qualitative study of clinicians' use of the cultural formulation model in assessing posttraumatic stress disorder. *Transcult Psychiatry* 2009; **46**: 429–50.

