**The nature and efficacy of culturally-adapted psychosocial interventions for schizophrenia: a systematic review and meta-analysis**

**SUPPLEMENTARY MATERIAL**

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**Appendix 1: Search strategy**

**TOTAL = CINAHL, PsycINFO, Medline & EMBASE = 4695**

**PsycINFO [ovid] = 846**

**[PsycINFO 1806 to March Week 1 2016]**

1. exp schizophrenia/ or exp psychosis/
2. (psychotic or schizo\* or psychosis or psychoses).sh.ti.ab.hw.id [subject heading, title, abstract, heading word, key concepts]
3. ((chronic\* or sever\*) adj5 mental\* adj5 (ill\* or disorder\*)). sh.ti.ab.hw.id.
4. or/1-3
5. exp ethnology/ or exp culture (Anthropological) / or exp racial and ethnic groups/ or exp racial and ethnic differences/ or exp cross-cultural differences/ exp sociocultural factors/ or exp cultural sensitivity/ or exp acculturation/ or exp minority groups
6. (ethnic\* or ethnolog\* or cultur\* or acculturation or rac\* or minorit\* or transcultur\* or sociocultur\*).sh.ti.ab.hw.id.
7. ((cultur\* adj3 (identity or cross or specific or sensiti\* or relevant or adapt\* or competen\* or divers\*)).sh.ti.ab.hw.id.
8. ((ethnic or racial) adj3 (identity or group or minorit\* or difference or variation or divers\*)). sh.ti.ab.hw.id.
9. or/5-8
10. exp cross-cultural treatment/ or exp psychosocial rehabilitation/ or exp mental health services/ or exp psychotherapy/ or exp behaviour therapy/ or exp sociotherapy
11. ((psychological or psychosocial or psychiat\* or clinical) adj5 (intervention or therap\* or rehabilitation or treatment or care)).sh.ti.ab.hw.id.
12. ((cognitive or behav\* or famil\* or systemic or social\* or education\*) adj5 (intervention or therap\* or rehabilitation or treatment or training or skill\*)).sh.ti.ab.hw.id.
13. ((cognitive or behav\*) adj5 (remediat\*).sh.ti.ab.hw.id.
14. ((evidence based or empirically supported) adj5 (intervention or therap\* or treatment)). sh.ti.ab.hw.id.
15. or/10-14
16. exp clinical trials/ or exp treatment effectiveness evaluation/
17. exp experimental controls
18. (controlled or clinical) adj3 (trial). sh.ti.ab.hw.id.
19. (random\* or control\* or trial or condition or assigned or group). sh.ti.ab.hw.id.
20. or/ 16-19
21. 4 and 9 and 15 and 20

**Medline [ovid] = 763**

**[Ovid MEDLINE(R) 1946 to February Week 4 2016]**

1. exp schizophrenia/ or exp psychotic disorders/
2. (psychotic or schizo\* or psychosis or psychoses).ab.hw.kf.ti.kw [abstract, subject heading word, keyword heading word, title, keyword heading]
3. ((chronic\* or sever\*) adj5 mental\* adj5 (ill\* or disorder\*)).ab.hw.kf.ti.kw
4. or/1-3
5. exp culture/ or exp ethnology/ or exp acculturation/ or exp cross-cultural comparison/ or exp cultural characteristics/ or exp cultural diversity/ or exp ethnic groups/ or minority groups
6. (ethnic\* or ethnolog\* or cultur\* or accultur\* or rac\* or minorit\* or transcultur\* or sociocultur\*).ab.hw.kf.ti.kw
7. (cultur\* adj3 (identity or cross or specific or sensiti\* or relevant or adapt\* or competen\* or divers\*)). ab.hw.kf.ti.kw
8. ((ethnic or racial) adj3 (identity or group\* or minorit\* or difference or variation or divers\*)). ab.hw.kf.ti.kw
9. or/5-8
10. exp rehabilitation/ or exp mental health services/ or exp psychotherapy/ or exp behaviour therapy
11. ((psychological or psychosocial or psychiat\* or clinical) adj5 (intervention or therap\* or rehabilitation or treatment or care)). ab.hw.kf.ti.kw
12. ((cognitive or behav\* or famil\* or systemic or social\* or education\*) adj5 (intervention or therap\* or rehabilitation or treatment or training or skill\*)). ab.hw.kf.ti.kw
13. ((cognitive or behav\*) adj5 (remediat\*). ab.hw.kf.ti.kw
14. ((evidence based or empirically supported) adj5 (intervention or therap\* or treatment)). ab.hw.kf.ti.kw
15. or/10-14
16. exp clinical trial/ or exp controlled clinical trial/ or exp randomized controlled trial
17. exp random allocation/ or exp double-blind method/ or exp single blind method/ or exp control groups
18. (controlled or clinical) adj3 (trial). ab.hw.kf.ti.kw
19. (random\* or control\* or trial or condition or assigned or group). ab.hw.kf.ti.kw
20. exp feasibility studies/ exp pilot projects/ exp intervention studies
21. or/16-20
22. 4 and 9 and 15 and 21

**Embase [ovid] = 1737**

**[Embase 1980 to 2016 Week 10]**

1. exp schizophrenia/ or exp psychosis/
2. (psychotic or schizo$ or psychoses or psychosis).ti.hw.ab.kw.sh [title, heading words, abstract, key word, subject headings]
3. ((chronic$ or sever$) adj5 mental$ adj5 (ill$ or disorder$)).ti.hw.ab.kw.sh [title, heading words, abstract, key word, subject headings]
4. or/1-3
5. exp ethnology/ or exp ethnic group/ or exp cultural factor/ or exp minority group/ or exp cultural anthropology/ exp ethnic and racial groups/ exp cultural competence
6. (ethnic$ or ethnolog$ or cultur$ or accultur$ or rac$ or minorit$ or transcultur$ or sociocultur$).ti.hw.ab.kw.sh
7. (cultur$ adj3 (identity or cross or specific or sensiti$ or relevant or adapt$ or competen$ or divers$)).ti.hw.ab.kw.sh
8. ((ethnic or racial) adj3 (identity or group$ or minorit$ or difference or variation or divers$)).ti.hw.ab.kw.sh
9. or/5-9
10. exp psychiatric treatment/ or exp psychotherapy/ or exp sociotherapy/ or exp mental health services/ or exp psychosocial rehabilitation/ or exp behaviour therapy
11. ((psychological or psychosocial or psychiat$ or clinical) adj5 (intervention or therap$ or rehabilitation or treatment or care)). ti.hw.ab.kw.sh
12. ((cognitive or behav$ or famil$ or systemic or social$ or education$) adj5 (intervention or therap$ or rehabilitation or treatment or training or skill$)). ti.hw.ab.kw.sh
13. ((cognitive or behav$) adj5 (remediat$). ti.hw.ab.kw.sh
14. (evidence based or empirically supported) adj5 (intervention or therap$ or treatment). ti.hw.ab.kw.sh
15. or/10-14
16. exp clinical trials (topic)/ or exp controlled clinical trial/ or exp randomized controlled trial
17. exp randomisation/ or exp control group
18. (controlled or clinical) adj3 (trial). ti.hw.ab.kw.sh
19. (random$ or control$ or trial or condition or assigned or group).ti.ab
20. exp intervention study/ exp pilot study/ exp feasibility study
21. or/ 16-20
22. 4 and 9 and 15 and 21

**CINAHL [EBSCO host] = 1349**

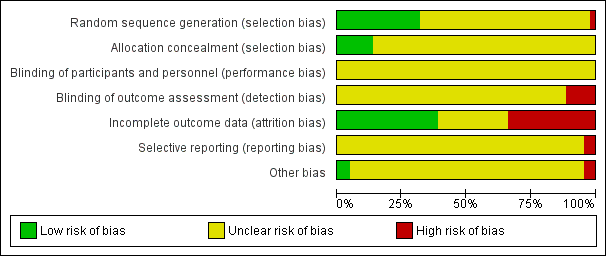
**MH = exact subject heading, MM = exact major subject heading**

**TX = keyword**

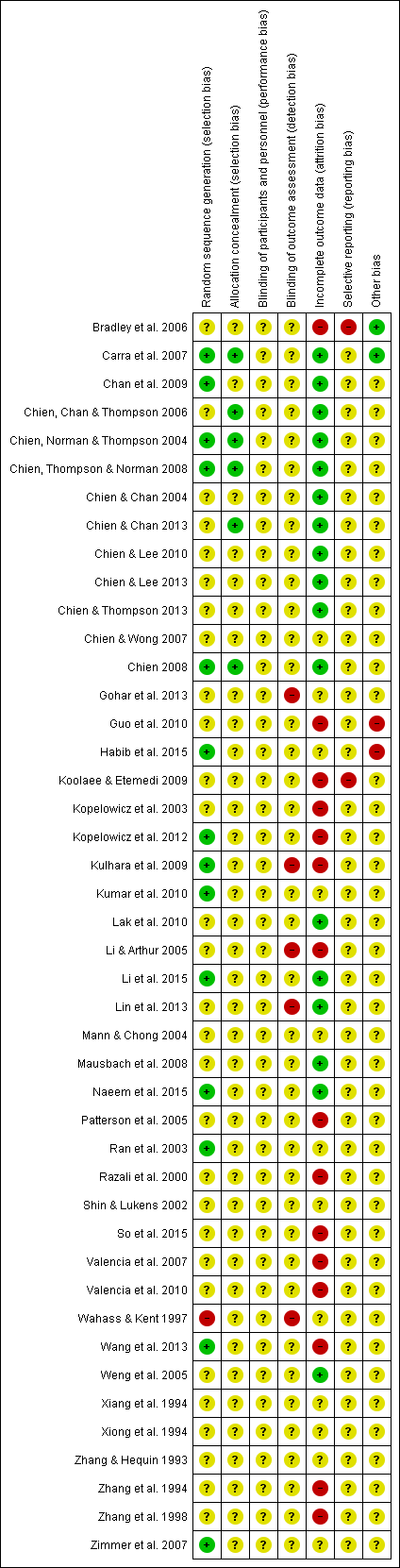
1. (MH “Schizophrenia+”) OR (MH “Psychotic Disorders+”)
2. TX=(psychotic OR schizo\* OR psychosis OR psychoses)
3. TX=((chronic\* OR sever\*) N5 mental\* N5 (ill\* OR disorder\*))
4. OR/1-3
5. (MH "Culture+") OR (MM "Acculturation") OR (MM "Cultural Diversity") OR (MM "Ethnic Groups") OR (MM "Ethnology") OR (MM "Minority Groups") OR (MM "Cultural Competence")
6. TX=(ethnic\* OR ethnolog\* OR cultur\* OR accultur\* OR rac\* OR minorit\* OR transcultur\* ORsociocultur\*)
7. TX=(cultur\* N3 (identity OR cross OR specific OR sensiti\* OR relevant OR adapt\* OR competen\* OR divers\*))
8. TX=((ethnic OR racial) N3 (identity OR group\* OR minorit\* OR difference OR variation OR divers\*))
9. OR/5-8
10. (MH "Rehabilitation, Psychosocial+") OR (MH "Mental Health Services+") OR (MH "Psychotherapy+") OR (MH "Behavior Therapy+")
11. TX= ((psychological OR psychosocial OR psychiat\* OR clinical) N5 (intervention OR therap\* OR rehabilitation OR treatment OR care))
12. TX=((cognitive OR behav\* OR famil\* OR systemic OR social\* OR education\*)N5 (intervention OR therap\* OR rehabilitation OR treatment OR training OR skill\*))
13. TX=((cognitive OR behav\*) N5 (remediat\*))
14. TX=((“evidence based” OR “empirically supported”) N5 (intervention OR therap\* OR treatment))
15. OR/10-14
16. (MH "Clinical Trials+") OR (MM "Double-Blind Studies") OR (MM "Intervention Trials") OR (MM "Triple-Blind Studies") OR (MM "Therapeutic Trials") OR (MM "Single-Blind Studies") OR (MM "Randomized Controlled Trials")
17. (MM "Random Assignment") OR (MM "Control Group")
18. TX=((controlled OR clinical) N3 (trial))
19. TX=(random\* OR control\* OR trial OR condition OR assigned OR group)
20. TX= (“intervention study” OR “pilot study” OR “feasibility study”) OR MH “Feasibility Study”
21. OR/16-20
22. 4 and 9 and 15 and 21

**Appendix 2: Risk of bias assessments**

**A2.1: Risk of bias graph**

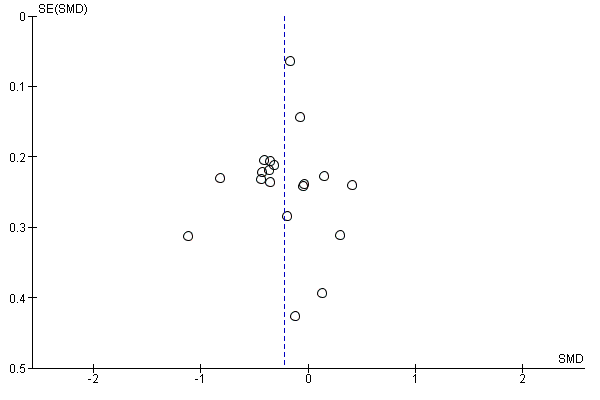


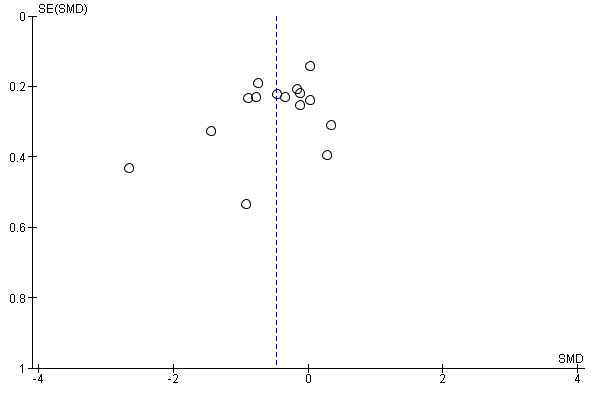
**A2.2: Risk of bias summary**



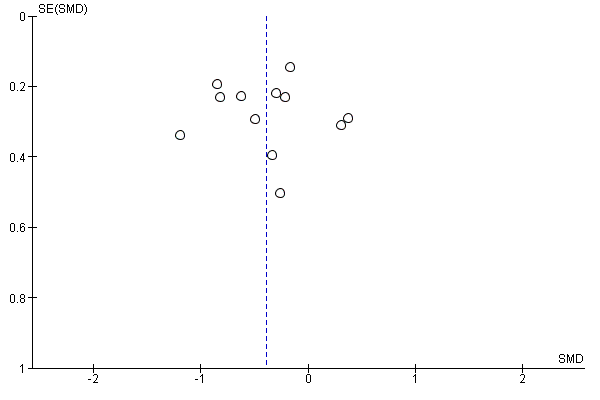
**Appendix 3: Funnel plots**

**A3.1: Culturally-adapted intervention vs control. Total symptoms post-treatment (0-3 months)**

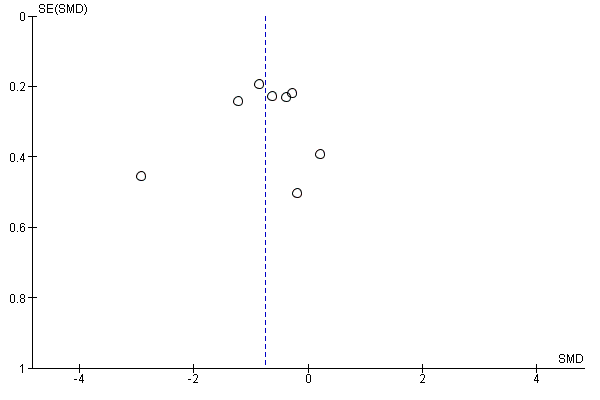
****

**A3.2: Culturally-adapted intervention vs control. Positive symptoms post-treatment (0-3 months)**

**A3.3: Culturally-adapted intervention vs control. Negative symptoms post-treatment**



**A3.4: Culturally-adapted intervention vs control. General symptoms post-treatment**



|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Appendix 4**  **Table A4:*****Characteristics of studies included in the systematic review of culturally-adapted interventions (n=46)*** | | | | | | | | | | | |
| Author  (year) | Study arms (N) | | Sample characteristics | | | | Study setting | Study design | Patient outcome  measures  (time point) | Attrition: timepoint  N(%) | Key findings |
| Adapted intervention(s) | Comparison group(s) | Gender  N (M/F) | Mean age | Diagnosis (diagnostic tool) | Chronicity/ duration illness (yrs) |
| **Bradley et al. (2006)** | MFGT: 30 | Standard care – enhanced: 29 | Total: 50 (15/35);  MFGT: 25 (7/18);  CG: 25 (8/17) | MFGT: 33.6; CG: 34 | DSM-IV  outpatient diagnosis schizophrenia by psychiatrist | HAs 12 mths pre-intervention:  MFG: 0.60;  CG: 0.29 | Community mental health programme of the inner west mental health service- royal Melbourne hospital and participant home | RCT | BPRS; SANS; HoNOS; QOL (B, P-I);  Relapse rates (P-I, 18 mth P-I) | 18 mth P-I: Total:  9/59 (15.3)  MFGT: 5/30 (16.7)  CG: 4/29 (13.8) | Sig reduction found between baseline and P-I BPRS symptom scores for MFGT but no difference for CG  Relapse rates at end and 18 months P-I were sig lower for MFGT compared to CG. |
| Carra et al. (2007) | IG: 50;  IG+SG: 26 | Standard care: 25 | Total: 101 (73/28);  IG: 50 (35/15); IG + SG: 26 (22/4);  CG: 25 (16/9) | IG: 29.9;  IG + SG: 29.6;  CG: 29.9 | DSM-IV schizophrenia casenotes screened by RAs | IG: 9.6;  IG + SG: 11.3;  CG: 10.3 | Family advocacy and support agency, association for research on schizophrenia (ARS), Milan. | RCT | Treatment compliance; relapse rates, HA rates  GAS; employment rates (B, 12 mth & 24 mth P-I) | 24 mth P-I: Total: 6/101(5.9); IG: 3/50 (6); IG + SG: 2/26 (8); CG: 1/25 (4) | Compliance with standard community care sig higher at 12 month P-I in the IG+SG group than CG. |
| **Chan et al. (2009)** | PE: 36 | Standard care – enhanced: 37 | Total: 73 (48/25);  PE: 36 (26/10);  CG: 37 (22/15) | PE: 34.2;  CG: 36.3 | DSM-IV  outpatient diagnosis schizophrenia by psychiatrist | PE: 10.2;  CG: 10.5 | Psychiatric out-patient department of a regional mental health hospital in Hong Kong | Cluster RCT | BPRS; ROMI; ITAQ; SES (B, P-I, 6 mth & 12 mth P-I) | No attrition | Sig improvements over time found for the PE group in BPRS, ROMI, and ITAQ scores. Sig group differences were found for BPRS at 6 mth, ROMI at P-I and at 6 mth P-I, and the ITAQ at 6 & 12-mths P-I. |
| Chien (2008) | PESG: 34 | Standard care – enhanced: 34 | Total: 68  NR | PESG: 37.3;  CG: 28.8 | DSM-IV  schizophrenia diagnosis | 2.5 | Two psychiatric outpatient clinics, Hong Kong | Cluster  RCT | SLOF (B , 1 & 12 mths P-I)  No. & duration HA (6 mth pre-intervention, over 9 mth intervention period, 12-mth P-I) | 12 mth P-I: Total: 5/68 (7.4); PESG: 3/34 (8.8); CG: 2/34 (5.9) | PESG showed sig improved level of functioning (SLOF) from B to 6 mth P-I when compared to CG. |
| **Chien & Chan (2004)\*** | MSG: 32;  PE: 33 | Standard care – enhanced: 31 | Total: 96 (62/34);  MSG: 32 (20/12);  PE: 33 (20/13); CG: 31 (22/9) | MSG: 32.3;  PE: 29.1;  CG: 33.8 | DSM-IV  schizophrenia diagnosis | Just over two years (range: 6mths-5yrs) | Two psychiatric outpatient clinics, Hong Kong | Cluster  RCT | BPRS; SLOF; (B, 1wk & 12 mth P-I)  No. & duration of HA (pre-intervention, over 6 mth intervention period, 12 mth P-I) | 12 mth P-I:  Total: 7/96 (7.3); MSG: 4/32 (12.5); PG: 2/33 (6.1); CG: 1/31 (3.2) | MSG participants reported sig reduction in rehospitalisation compared to the PE and CG groups and greater improvement in all three subscales of SLOF (self-maintenance, social functioning, and community living skills) |
| **Chien & Chan (2013)** | MSG: 45;  PE: 45 | Standard care – enhanced: 45 | Total: 135 (84/51);  MSG: 45 (28/17);  PE: 45 (27/18);  CG: 45 (29/16) | MSG: 24.3;  PE: 25.2;  CG: 26.2 | DSM-IV  schizophrenia diagnosis | Majority 1-2 yrs for all 3 groups | Two psychiatric outpatient clinics, Hong Kong | Cluster  RCT | BPRS; SLOF (B, 1 wk, 12 & 24 mth P-I) No. & duration of HA (9 mth pre-intervention, 1 wk, 12 & 24 mth P-I). | 24 mth P-I:  Total: 7/135 (5.2); MSG: 2/45 (4.4); PG: 3/45 (6.7); CG: 2/45 (4.4) | At 12 mth and 24 mth P-I time points compared with the CG group, BPRS score decreased sig and the SLOF score for the MSG increased sig. Scores also decreased at 12 mth and 24 mth P-I when compared with PE group. The average length of re-hospitalisations was sig lower in the MSG than CG at all P-I time points. |
| **Chien, Chan & Thompson (2006)\*** | MSG: 32;  PE: 33 | Standard care – enhanced: 31 | Total: 96 (64/32);  MSG: 32 (20/12);  PE: 33 (22/11);  CG: 31 (22/9) | MS: 27.3;  PE: 27.8;  CG: 28.8 | DSM-IV  outpatients casenote diagnosis schizophrenia | About 2 yrs (range: 6 mths-3 yrs) | Two psychiatric outpatient clinics, Hong Kong | Cluster  RCT | BPRS; SLOF; (B, 6 mth & 18 mth P-I)  No. and duration of HA (6 mth pre-intervention, 6 mth & 18 mth P-I) | 18 mth P-I: Total: 7/96 (7.3); MSG: 2/32 (6.3); PE: 2/33 (6.1); CG 3/31 (9.7) | Readmissions to hospital in the MSG reduced sig more than the other two groups from baseline to 18 mths P-I. Level of functioning in MSG improved sig from baseline to 18 mth P-I compared to the other two groups. Patient functioning in the PE group also improved over time and sig more than the CG group. |
| **Chien & Lee (2010)** | SCMP: 46 | Standard care – enhanced: 46 | Total: 92  NR | NR | DSM-IV  schizophrenia diagnosis | NR | Three psychiatric outpatient clinics, Hong Kong | RCT | BPRS; SLOF; (B, 1 mth & 15 mth P-I)  No. & duration of HA (6 mth preceding intervention, 1 mth & 15 mth P-I) | 15 mth P-I: Total: 3/92 (3.3) SCMP: 2/46 (4.3); CG: 1/46 (2.2) | There were sig differences between the SCMP and CG with patients’ functioning and number and length of re-hospitalisations at 1 mth and 15 mth P-I, although patients’ functioning and no. and length of re-hospitalisations in the SCMP group only sig improved at 15 mth P-I timepoint. |
| **Chien & Lee (2013)** | MBPP: 48 | Standard care – enhanced: 48 | Total: 96 (53/43) | 25.8 | DSM-IV  schizophrenia diagnosis | NR | Three psychiatric outpatient clinics, Hong Kong | RCT | BPRS; SLOF; SSQS; ITAQ (baseline, 3 mth & 18 mth P-I)  No. & duration HA (6 mths preceding intervention, 3 mth & 18 mth P-I) | 18 mth P-I:  Total: 6/96 (6.3); MBPP: 3/48 (6.3); CG: 3/48 (6.3) | There were sig differences between MBPP and CG related to patients’ insight into illness, symptom severity, functioning and number and length of rehospitalisation at 3 mth and 18 mth P-I. MBPP participants’ symptom severity, illness insight and length of rehospitalisation improved sig at 3 mth and 18 mth P-I but functioning and number of rehospitalisation only sig improved 18 mth P-I. |
| Chien, Norman & Thompson (2004) | MSG: 24 | Standard care – enhanced: 24 | Total: 48 (27/21);  MSG: 24 (14/10);  CG: 24 (13/11) | MSG: 39.9;  CG: 36.3 | DSM-IV  schizophrenia diagnosis | Approx 2 yrs | Two psychiatric outpatient clinics | Cluster  RCT | Duration of HA (3 mths preceding intervention, over the 3-mth intervention period & 3 mth P-I) | No attrition | In the MSG there was a sig decrease in the duration of patient rehospitalisation at 3 mth P-I compared to the CG. |
| **Chien & Thompson (2013)** | FPGP: 35 | CG1: Standard care – enhanced: 35;  CG2: psycho-education: 36 | Total: 106 (66/40);  FPGP: 35 (21/14);  CG1: 36 (23/13);  CG2: 35 (22/13) | FPGP: 26.3;  CG1: 28.2;  CG2: 27.2 | DSM-IV  schizophrenia diagnosis | 2.5 yrs (range: 6 mths -6 yrs) | Three psychiatric outpatient clinics, Hong Kong | RCT | BPRS; SLOF; (B, 1 wk, 18 mth & 36 mth P-I)  No. & duration of HA (6 mths preceding intervention, 1 wk, 18 mth & 36 mth P-I) | 36 mth P-I: 12/106 (11.3); FPGP: 4/35 (11.4); CG1: 3/36 (8.3); CG2: 5/35 (14.3) | Functioning improved sig at 1 wk and 18 mth P-I. Re-hospitalisation of FPGP patients decreased sig at the three respective time points in number and duration compared with CG1 and decreased sig at 1 wk and 18 mth P-I when compared with CG2. In the FPGP there was a sig difference between patients SLOF score compared to PE & CG. |
| **Chien, Thompson & Norman (2008)** | MSG: 38 | Standard care – enhanced: 38 | Total: 76 (32/44);  MSG: 38 (17/21);  CG: 38 (15/23) | MSG: 25.3;  CG: 25.6 | DSM-IV  schizophrenia diagnosis | MSG: 2.7;  CG: 2.6 | Two psychiatric outpatient clinics, Hong Kong | RCT | BPRS (B, 1 wk & 12 mth P-I)  No.& duration of HA (6 mths preceding intervention, 1 wk & 12 mth P-I) | No attrition | In the MSG the duration of patients’ rehospitalisation decreased sig at 12 mth P-I. |
| **Chien & Wong (2007)** | PE: 42 | Standard care – enhanced: 42 | Total: 84 (51/33) | 28.8 | DSM-IV  schizophrenia diagnosis | 3.6 | Two psychiatric outpatient clinics, Hong Kong | RCT | BPRS; SLOF; (B, 1 wk & 12 mth P-I)  No. & duration of HA (6 mths preceding intervention, 1 wk & 12 mth P-I) | 12 mths P-I: Total: 7/84 (8.3); PE: 3/42 (7.1); CG: 4/42 (9.5) | In the PE group number of patients’ rehospitalisation improved sig at 1 wk and 12 mth P-I. However patients’ functioning and length of rehospitalisation only sig improved at 12 mth P-I. |
| **Gohar et al. (2013)** | SCST: 22 | Non-adapted SCST | Total: 42 (34/8);  SCST: 22 (16/6);  CG: 20 (18/2) | SCST: 33.0;  CG: 31.0 | DSM-IV SCID I schizophrenia diagnosis | SCST: 11.8;  CG: 8.4 | Outpatient clinic of the psychiatry and addiction hospital of Kasr Al-Ainy hospitals, Cairo university, Egypt | RCT | PANSS; MSCEIT; TMT Part A and Digit Symbol Substitution Test; The Digit span task from the Wechsler Memory Scale; The Proteus Mazes task; (B, P-I) | NR – but tables suggest no attrition | SCST showed sig improvements in social cognition compared to CG. On the MSCEIT, the SCST group showed sig improvements on the total score and Branches 1 (Emotion perception) and 4 (Managing emotions) |
| **Guo et al. (2010)** | CT: 633 | Medication: 635 | Total: 1268 (698/570);  CT: 633 (344/289);  CG: 635 (354/281) | CT: 26.1;  CG: 26.4 | DSM-IV SCID I schizophrenia /schizophreniform diagnosis rated by investigators or trained staff; PANSS total score <60 | CT: 2.1;  CG: 2 | Ten clinical sites in China (six university clinics  and four province mental health agencies). | RCT | PANSS; ITAQ, GAS, ADL, SF-36 (B; 3 mth & 6 mth P-I)  Rates of treatment discontinuation (assessed every 2 wks by a RA and monthly by a psychiatrist) | 12 mth P-I: Total: 524/1268 (41.3); CT: 227/633 (35.9); CG: 338/635 (46.8) | Risk of relapse and readmission was lower in CT group. Change in ITAQ scores was greater in the CT group than CG. GAS and ADL scores were also greater over time for CT. CT also scored higher on 4 domains of the SF-36 (role-physical, general health, vitality, and role-emotional.) |
| **Habib et al. (2015)** | CaCBTp: 21 | Standard care – medical consultation: 21 | Total 42 (25/17);  CaCBTp: 21(11/10);  CG: 21 (14/7) | CaCBTp: 33.5;  CG: 30.2 | DSM-IV-TR inpatient diagnosis schizophrenia | CaCBTp: 8.8;  CG: 8.6 | Psychiatric inpatient clinic, Lahore Pakistan | RCT | PANSS; PSYRATS; SAI (B, P-I) | NR | CaCBTp group demonstrated sig greater improvement on PANSS pos, neg and general symptoms and PSYRATS hallucinations, delusions and insight P-I |
| **Koolaee & Etemadi**  **(2009)** | BFM: 21  PE : 21 | Standard care – enhanced: 20 | Total: 55 (40/15) | NR | DSM-IV schizophrenia diagnosis | 3 yrs or less | Psychiatric outpatient clinic in Tehran, Iran | RCT | BPRS (B, 3 & 6 mths P-I)  Number & duration of HA(preceding 3 mths, B, 3 & 6 mths P-I) | P-I:  Total: 7/62 (11.3)  BFMG: 3/21 (14.3)  PE: 2/21 (9.5)  CG: 2/20 (10). | PE and BFM groups exhibited sig greater reduction in pos symptoms at 3 and 6 mths P-I compared to CG. PE pos symptoms reduced sig from B to 6 mths P-I when compared to BFM. Hospitalisation data NR. |
| **Kopelowicz et al. (2003)** | ST: 45 | Standard care: 47 | Total: 92 (62/30);  ST: 45 (30/15);  CG: 47 (32/15) | ST: 37.6;  CG: 39.1 | DSM-IV  schizophrenia/ schizoaffective diagnosis; ≥1 episode of treatment in an inpatient facility ≥1 wk duration in previous 12 mths | NR | Community mental health centre, Los Angeles | RCT | PANSS; HA rates; ILSS; QOLI; ROMI; MMM + generalisation assessments; SMM + generalisation assessments  (B, P-I & 6 mth P-I)  Medication adherence (monthly) | 6 mth P-I:  Total: 8/102 (7.8) ST: 6/45 (13.3); CG: 2/47 (4.3) | ST participants showed sig reduced pos, negative and total symptoms post intervention which were maintained at 6-mth P-I. In the ST group there was also a sig main effect on skill acquisition for medication and symptom management skills. ST showed sigly improved level of functioning compared to CG at P-I. There was also sig lower rehospitalisation rates in the ST group from B to follow-up compared to the CG. |
| **Kopelowicz et al. (2012)** | MFG-A: 64  MFG-S: 54 | Standard care: 60 | Total: 174 (114/60);  MFG-A: 64 (43/21);  MFG-S: 53 (36/17);  CG: 57 (35/22) | MFG-A: 32.6;  MFG-S: 29.6  CG: 32.8 | DSM-IV structured clinical interview schizophrenia/ schizoaffective diagnosis | NR | Two community mental health centres, Los Angeles | RCT | BPRS (B, P-I & 12-mth P-I; medication compliance (B, 4 mth & 8 mth P-B, P-I, 6 mth & 12 mth P-I)  HA rates (4 mth & 8 mth P-B, P-I, 6 mth & 12 mth P-I) | 12 mth P-I? Total: 33/178 (18.4) MFG-A: 10/64 (15.6); MFG-S: 13/54 (24.1); CG: 10/60 = (16.7) | At P-I, MFG-A demonstrated sig higher medication adherence than MFG-S or the CG. The MFG-A participants had a longer time to first hospitalization and were less likely to be hospitalized than those in MFG-S and the CG. |
| **Kulhara et al. (2009)** | PE: 38 | Standard care – enhanced: 38 | Total: 76 (42/34);  PE: 38 (17/21);  CG: 38 (25/13) | PE: 31.1;  CG: 31.6 | DSM-IV  structured interview schizophrenia diagnosis | PE: 4.7;  CG: 5.1 | Department of psychiatry of a tertiary-care  hospital in north-India | RCT | PANSS; WHODAS (B, 1, 2, 3, 4, 5, 6 & 7 mth P-B; P-I)  Relapse (over the 9 mth intervention period). | P-I:  Total: 33/76 (43.4) PE: 15/38 (39.5); CG: 18/38 (47.4). | There was a sig greater decline in monthly PANSS scores in the PE group on all three subscales in comparison to the CG group. The only patient outcome showing a sig difference from B to P-I was disability level, with the PE group showing sig lower levels of disability at P-I than the CG group. |
| **Kumar et al. (2010)** | HMCT: 8 | Standard care: 8 | Total: 16/0  HMCT: 8/0;  CG: 8/0 | HMCT: 31.5;  CG: 34.1 | ICD-10 patient diagnosis paranoid schizophrenia | HMCT: 7.6;  CG: 6.5 | Inpatient hospital, central institute of psychiatry, Ranchi, India | RCT | PANSS; (B, 2 wk P-B, P-I) | NR | The HMCT group demonstrated a sig greater reduction in positive symptoms P-I compared to CG. |
| Kung et al. (2012) | FP | ‘Comparison group’- no details | Total: 12;  FP: 9;  CG: 3 | MFPG: 34.2;  CG: 50.6 | ‘schizophrenic form of disorder’ | NR | Psychiatric outpatient clinics | Non-RCT | BPRS; SANS; SLOF; WQOL) (baseline, 3 mth post-baseline, post-intervention; 3 mth post-intervention) | No attrition | In the MFPG group BPRS and SANS scores showed sig improvement at post-intervention and 3mth post-intervention. The SLOF score was in the opposite direction than expected which was consistent with the previous within group baseline, 3 mth baseline, post-intervention and 3 mth post-intervention. |
| **Lak et al. (2010)** | CBCSM + SGT: 35  CBCSM: 35 | ‘Placebo’ education & rehab programme: 36 | Total 106 (53/53);  CBCSM + SGT: 35 (18/17);  CBCSM: 35 (17/18);  CG: 36 (18/18) | CBCSM + SGT: 38.3;  CBCSM: 44.5;  CG: 43.2 | ICD-10 schizophrenia diagnosis, free from positive symptoms as indicated by  (BPRS score > 72) | CBCSM + SGT: 15.6;  CBCSM: 18.3;  CG: 18.9 | NR | RCT | BPRS; GAF; VSSS; ASSEI; PWI (B, P-I , 3 mth & 6 mth P-I) | 6 mth P-I:  Total: 10/106 (9.4); CBCSM + SGT: 4/35 (11.4); CBCSM: 6/35 (17.1);  CG: 0/36 (0) | P-I, the CBCSM + SGT and the CBCSM group scored sig higher than the CG in social skills. At 6 mth P-I, social skill of CBCSM + SGT was better than the CBCSM group and the CG. |
| **Li & Arthur (2005)** | FE: 46 | Standard care: 55 | Total: 101 (43/58);  FE: 46 (18/28);  CG: 55 (25/30) | NR | CCMD-II-R  inpatient diagnosis schizophrenia | NR | Non-acute Inpatient hospital, Beijing, China | Cluster RCT | BPRS; GAS; KASI; NOSIE; relapse rates; medication compliance (B, P-I, 3 mth & 9 mth P-I) | 9 mth P-I:  12/101 (11.9); FE 3/46 (6.5); CG: 9/55 (16.4) | FE group showed sig greater improvements in symptom severity, knowledge and overall functioning at 9 mth P-I compared to the CG. |
| **Li et al. (2015)** | CBT: 96 | Supportive therapy (TE): 96 | Total: 192 (72/120);  CBT: 96 (32/64);  CG: 96 (40/56) | CBT: 29.3;  CG: 33.4 | SCID DSM-IV Axis I schizophrenia by research psychiatrists | CBT: 7.6;  CG: 8.8 | Three specialised psychiatric hospitals, Beijing | Cluster RCT | PANSS; SAI; PSP (B, 12, 24, 36, 60 & 84 wk P-B) | 84 wk P-B:  Total: 25/192 (14.6); CBT: 11/96 (11.5); CG: 14/96 (14.6) | Both groups had sig decrease in all PANSS symptoms, SAI insight and PSP social functioning P-I (24 wks) which were maintained up to 84 wks P-B. Compared with CG, CBT showed sig greater reductions in PANSS total and pos symptoms and PSP functioning scores from 36 wk P-B. |
| **Lin et al. (2013)** | IMR: 48 | Standard care: 49 | Total: 97 (62/35);  IMR: 48 (30/18);  CG: 49 (32/17) | IMR: 35.3;  CG: 35.2 | DSM-IV -  schizophrenia/ schizoaffective diagnosis | IMR: 11.8;  CG: 11.2 | Acute inpatient ward in two hospitals in Taiwan | RCT | BPRS; KI; DAI-30; SAI-E;. (B, P-I & 1 mth P-I) | 1 mth P-I:  Total: 14/97 (14.4); IMR: 4/48 (8.3); CG 10/49 (20.4) | The IMR group showed sig greater improvements at P-I and 1-mth P-I than the CG in BPRS neg symptoms, insight, illness-management knowledge and attitudes toward medication. |
| Lin et al. (2013) | IMR | NA | Total:  IMR: 26 (18/8) | 36.38 | DSM-IV schizophrenia/ schizoaffective diagnosis | NR | Six psychiatric acute wards at a psychiatric hospital in the department of psychiatry, Taiwan | Non-RCT | BPRS; KFI; DAI-30; SAI-E (B, P-I) | NR | Participants improved in each psychopathology domain P-I, however only the change in the affective domain was sig. |
| Mann & Chong (2004) | SCP: 25 | Education programme: 25 | Total: 50 (38/12) | 44.4 | DSM-IV –schizophrenia diagnosis with active positive psychotic symptoms ≥1 yr assessed by psychiatrist | Average length of stay in hospital: 26.2 (range: 12-68 mths) | Inpatient psychiatric hospital, Hong Kong | RCT | PANSS & LSP (B, P-I & 1 mth P-I) | NR | At P-I there was a sig. improvement between SCP and CG in PANSS scores. However this returned back to baseline level at 1 mth P-I. |
| Mausbach et al. (2008)+ | PEDAL: 21 | CG1: FAST (non-adapted PEDAL): 15  CG2: Support group (TE): 23 | Total: 59 (35/24);  PEDAL: 21 (11/10);  CG1: 15 (10/5);  CG2: 23 (14/9) | PEDAL: 50.7;  CG1: 47.4;  CG2: 47.3 | DSM-IV diagnosis schizophrenia, schizoaffective or psychotic mood disorder | PEDAL: 23.5;  CG1: 24.5;  CG2: 23.8 | Board & care (B&C) facilities, San Diego country and mental health clinics near the USA-Mexico border | Block RCT | PANSS; UPSA; SSPA; MMAA;; QWB (B, P-I) | P-I:  Total: 10/59 (16.9) PEDAL: 3/21 (14.3); CG1: 2/15 (13.3); CG2: 5/23 (21.7) | PEDAL group showed a sig improvement on the UPSA compared to those in CG1 and CG2 groups. The PEDAL group had sig higher SSPA scores at P-I compared with the CG1but not the CG2.The PEDAL group also made sig fewer medication errors at P-I than the CG2 group. |
| **Naeem et al. (2015)** | CaCBTp: 59 | Standard care: 57 | Total: 116 (70/46);  CaCBTp: 57 (39/18);  CG: 59 (31/28) | CaCBTp: 31.7;  CG: 31.1 | ICD-10 RDC diagnosis schizophrenia or related disorder | CaCBTp: 4.7;  CG:5.8 | Psychiatric outpatient clinics, Karachi | RCT | PANSS; PSYRATS; SAI (B, P-I) | P-I  Total: 14/116 (12.1); CaCBT: 6/ 59 (10.1); CG: 8/57 (14) | At P-I the CaCBTp group showed sig greater improvements compared with the CG in PANSS pos and neg symptoms and general psychopathology, PSYRATS delusions and hallucinations and insight. |
| **Patterson et al. (2005)+** | PEDAL: 21 | Support group (TE): 8 | Total: 29 (14/15);  PEDAL: 21 (11/10);  CG: 8 (3/5) | PEDAL: 46.8;  CG: 57.3 | DSM-IV case note diagnosis schizophrenia/ schizoaffective disorder | Age of illness onset (yrs): PEDAL: 28.3;  SG: 43.5 | Psychiatric clinics, San Diego | Cluster RCT | PANSS; UPSA; MMAA; SSPA;; QWB (B, P-I, 6 mth & 12 mth P-I) | 12 mth P-I: Total: 5/21 (23.8) PEDAL: 5/21 (23.8); CG: No attrition | At 6 mth P-I the PEDAL had a sig greater UPSA score than the CG. However no sig differences were found between the groups at 6 mth and 12 mth P-I. At 12 mth P-I, the PEDAL group performed sig better than the CG. CG also had sig lower PANSS ratings than the PEDAL group at 12 mth P-I. |
| Ran et al. (2003) | FIG: 132 | CG1: Medication treatment: 110  CG2: No intervention: 115 | Total: 326 (128/198);  FIG: 126 (44/82);  CG1: 103 (48/55);  CG2: 97 (36/61) | FIG: 43.5;  CG1: 42.4;  CG2: 44.8 | ICD-10 & CCMD-2-R schizophrenia diagnosis | FIG: 11.6;  CG1: 10.6;  CG2: 12.3 | NR | Cluster  RCT | PSE; GPISS; SDSS; medication compliance; relapse rate (B, P-I) | P-I:  Total: 22/326 (6.7); FIG: 1/127 (0.8): CG1: 2/105 (1.9); CG2: 18/115 (15.7) | At P-I, FIG treatment compliance was sig higher than that in the CG1 and CG2. There was no sig difference of clinical outcomes between FIG group and the CG1 while the percentage of full recovery and sig improvement in FIG & CG1 was sig higher than that in the CG2. The relapse rate in FI was sig lower than CG1. |
| Razali et al. (2000) | CMFT: 80 | BFT: 86 | NR | NR | DSM-IV diagnosis schizophrenia | CMFT: 13.7;  CG:14.2 | Outpatient hospital, University Hospital (USM) Kota Bharu, West Malaysia | RCT | BPRS; GAF; SBS; relapse rates; HA rates; medication compliance (B, 6 mth & 12 mth P-B) | 6 & 12 mth P-B  Total:  23/166 (13.9)  CMFT: 6/80 (7.5); CG: 17/86 (19.8) | At 12 mth P-B the CMFT group showed sig improvements in all variables compared to the CG. |
| **Shin & Lukens (2002)** | PE: 24 | Supportive therapy (TE): 24 | Total: 48 (20/28);  PE: 24 (7/17);  CG: 24 (13/11) | PE: 39.5;  CG: 34.7 | DSM-IV diagnosis schizophrenia, schizoaffective, or shizophreniform disorder rated by psychiatrist | Number of hospitalisations: PE: 2.7;  CG: 1.2  Time since last hospitalisation (mths):  PE: 7.2;  CG: 12.7 | Outpatient mental health clinic, Queens | RCT | BPRS; SDS (B, P-I) | NR (tables suggest no attrition) | At P-I, the PE group demonstrated sig reduced symptom severity and perception of stigma in comparison to the CG group. |
| **So et al. (2015)** | MCTd: 23 | Standard care - medication consultations: 21 | Total: 44 (24/20);  MCTd: 23 (12/11);  CG: 21 (12/9) | MCTd: 32.4;  CG: 35.6 | Casenote diagnosis schizophrenia, ≥4 PANSS delusions items | Number of hospitalisations: MCTd: 1.6;  CG: 0.9 | Outpatient clinic, Hong Kong | RCT | PANSS; PSYRATS;  (B, P-I & 1 mth P-I) WAIS (B or pre-intervention only) | 1 mth P-I:  Total: 18/44 (40.9) MCTd: 10/23 (43.5); CG: 8/21 (38.1) | At P-I there was a large effect size of improvement for the MCTd group’s PANSS pos scores, PANSS delusions score, PSYRATS delusions and PSYRATS delusional conviction. |
| **Valencia et al. (2007)** | PSST: 49 | Standard care - medication consultations: 49 | Total: 82 (64/18);  PSST: 43 (31/12);  CG: 39 (33/6) | PSST: 29.7;  CG: 30.1 | DSM-IV  & CIDI schizophrenia diagnosis with clinically stable psychotic symptoms (>60 PANSS score) | Age of illness onset (yrs): PSST: 21.3;  CG: 21.2 | Psychiatric outpatient hospital, Mexico | RCT | PANSS; PSFS; GAF (B, P-I)  Relapse rates; HA rates; medication compliance; therapeutic adherence (Over 12 mth intervention period) | P-I:  Total: 16/98 (16.3) PSST: 6/49 (12.2); CG: 10/49 (20.4) | At P-I, the PSST group showed sig improved symptomatology scores on total score, pos and neg symptoms and GPS compared with the CG, with large effect sizes for both groups. Sig. improvements were also observed in the PSST group for all areas of psychosocial functioning and in the GPFS compared with the CG and also with global functioning. During the intervention the PSST group had a sig higher level of compliance with medication, therapeutic adherence and sig lower relapse rate than the CG. |
| **Valencia et al. (2010)** | PSST: 54 | Standard care - medication consultations: 53 | Total: 83 (60/23);  PSST: 47 (34/13);  CG: 36 (26/10) | PSST: 29.9;  CG: 29.5 | DSM-IV  & CIDI schizophrenia diagnosis | Age of illness onset (yrs) PSST: 22.4;  CG: 21.1 | National institute of psychiatry outpatient clinic, Mexico city | RCT | PANSS; GAF (B, P-I)  Relapse rates; HA rates, adherence to medication (over 12 mth intervention period) | P-I:  Total: 24/108 (22.2); PSST: 7/54 (13); CG 17/54 (31.5) | At P-I, the PSST group exhibited sig improved symptomatology, adherence to medication, attendance at appointments, social functioning, relapse and rehospitalisation rates. |
| Wahass & Kent (1997) | MPI: 3 | Standard care - medication consultations: 3 | Total: 6 (6/0);  MPI: 3 (3/0);  CG: 3 (3/0) | MPI: 31.3;  CG: 34.0 | ICD-10 schizophrenia diagnosis | Experiencing persistent auditory hallucinations for at least 4 yrs | NR | RCT | SAHI; 10cm VAS to measure hallucination severity; Two VAS to measure anxiety and depression in response to voices (B, P-I, 3 mth P-I) | NR – tables suggest no attrition | Symptom ratings improved for two participants in the MPI group but there were no changes in the third participant. The third patient also reported that the loudness of his voices increased over time. |
| Wang et al. (2013) | SCIT: 22 | Standard care - medication consultations: 17 | Total: 39 (20/19);  SCIT: 22 (12/10); CG: 17 (8/9) | SCIT: 43.9;  CG: 40.9 | DSM-IV schizophrenia diagnosis | NR | NR | RCT | PANSS; WAIS; PSP; FEIT; Computerised version of the Eyes Task; Attributional Style Questionnaire (B, 6 mth P-I) | 6 mth P-I: Total: 4/43 (9.3) SCIT: 0/22 (0); CG: 4/21 (19) | The SCIT group showed a sig improvement in emotion perception, theory of mind, attributional style and social functioning compared with the CG. |
| Weng et al. (2005) | MRP: 62 | Standard care – enhanced: 62 | Total: 124;  MRP: NR;  CG: NR | NR | DSM-III-R schizophrenia diagnosis | NR | An-ding psychiatric hospital inpatient ward, Beijing | RCT | BPRS; NOSIE; SDSS; relapse & HA rates (every 2 wks during intervention; monthly P-I up to 12 P-I) | 12 mth P-I: Total: 2/124 (1.6) MRP: 1/62 (1.61); CG: 1/62 (1.61) | BPRS, NOSIE, SDSS relapse and rehospitalisation rates improved sig in the MRP group from B to P-I and from P-I to 12 mth P-I. |
| Xiang et al. (1994) | PFI: 36 | Medication treatment: 41 | Total: 77  PFI: 36;  CG: 41 | PFI: 40.5;  CG: 41.2 | Schizophrenia & affective psychoses | 15.3 | Three rural townships of Xinjin county, China | RCT | PSE; SDSS; med compliance rates (B, P-I | NR | Med compliance sig higher in the PFI group than in the CG P-I, in addition the total rate of improvement in clinical state and level of social functioning was sig higher in the PFI group than in the CG group P-I. |
| Xiong et al. (1994) | FIG: 34 | Standard care - medication treatment: 29 | Total: 63 (43/20) | 31 | DSM-III-R schizophrenia assessed on admission | 7.5 | Psychiatric outpatient clinic & home visits | RCT | BPRS; SAPS; SANS; GAF; SDSS; no. & duration of HA; relapse rates; meds compliance (B, 6, 12 & 18 mths P-I) | 18 mths P-I: Total: 4/63 (6.3)  FIG: 2/34 (5.9)  CG: 2/29 (6.9) | Duration of rehospitalisation sig shorter for FIG group at 12 and 18 mths, and fewer relapsed at 12 mths than CG. BPRS, GAF and SDSS scores at 12 mths and SAPS, BPRS, GAF and SDSS scores at 18 mths showed sig greater improvements in FIG group. |
| Zhang & Yan (1993) ^ | FE: 2076 | Standard care: 1016 | Total: 3,082 (1,821/1,261); FE: 2,076 (1,239/837);  CG: 1,016 (582/424) | FE: 40.3;  CG: 40.8 | CCMD-2 schizophrenia diagnosis | FE: 15.1;  CG: 15.5 | NR | Cluster  RCT | Study-specific questionnaire; symptoms, recovery, relapse & duration hospitalisation; WHO- DAS (B, 6 & 12 mth P-I) | NR | At P-I, participants in the FE group showed a higher rate of recovery or stabilization of condition; a greater reduction in exacerbation of both pos and neg symptoms, relapse rates, number institutionalized, duration of hospitalization, plus total and factor score on the DAS. |
| **Zhang et al. (1994)** | FIG: 42 | Standard care: 41 | NR | FIG: 23.5;  CG: 24.1 | Chinese medical association (1985) first admission patients with a diagnosis of schizophrenia | NR | Psychiatric outpatient clinic and family home | RCT | BPRS; GAS; HA rates (baseline; P-I, 3, 6, 9, 12, 15 & 18 mth P-I) | 18 mth post-intervention  Total: 5/83 (6); FIG: 3/42 (7.1) ; CG: 2/41 (4.9) | At 18 mth P-I, participants in the FI group who were not readmitted had less severe psychiatric functioning and higher overall functioning compared to members of the CG who were not readmitted. The proportion of patients who were readmitted to hospital was sig greater among those in the CG in comparison to participants who received the FI. |
| Zhang et al. (1998) ^ | FE: 682 | Standard care: 355 | Total: 1037 (642/395);  FE: 682 (420/262);  CG: 355 (222/133) | FE: 38.3;  CG: 39.0 | CCMD-2 schizophrenia diagnosis | FE: 7.3;  CG: 7.7 | NR | Cluster  RCT | Study-specific questionnaire; to assess severity of the illness and symptoms, relapse, duration of HA; WHO-DAS (B, 6, 12 & 24 mth P-B) | 24 mth P-B  Total: 236/ 1284 (18.4) FE: 169/851 (19.9); CG: 67/433 (15.5). | At 24 mth P-B, those in the FE group showed a higher rate of recovery and stabilisation of the condition; a lower rate of exacerbation of symptoms and a reduction in annual relapse rates and annual times institutionalised in comparison to the CG. |
| Zimmer et al. (2007) | IPT: 23 | Standard care - medication consultation: 43 | Total: 56 (42/14);  IPT: 20 (17/3);  CG: 36 (25/11) | IPT: 36.1;  CG: 39.3 | ‘Schizophrenia outpatient database’ | IPT: 15.3;  CG: 17.1 | Schizophrenia outpatient program of the hospital de clinicas de porto alegre (HCPA) | RCT | MMSE; GAF; SOFAS; WHOQOL-BREF; SAS (B, P-I) | Total: 4/56 (7.1) NR by group | At P-I, the IPT group demonstrated sig improved scores on cognition in the domains of spatiotemporal orientation, memory, social adjustment, leisure/social life, family relations, overall functioning, social occupational functioning and quality of life in the psychological domain |

*Note:*

\* Same sample – Chien, Chan & Thompson. (2006) reports 18 follow-up data for participants in Chien & Chan (2004)

+ Same sample – Mausbach et al. (2008) uses same participants as Patterson et al. (2005) in addition to participants from a second wave of recruitment (SG: n=15; FAST: n=15)

^ Same sample – Zhang et al. (1998) reports 24 month follow-up for subsample of participants (2/5 catchment areas) in Zhang & Yan (1993)

Standard care = usual care package with case management/care coordinator and psychiatrist visits to monitor medication

Standard care enhanced = offered additional education or counselling to usual case management intervention.

Timepoints: B = baseline; P-I= post-intervention; P-B = post-baseline; RA = research assistant; HA = hospital admission; TE = time equivalent

**Bold text** = included in meta-analysis on symptoms

*Study arms*: BCSM = Basic conversation skills module; BFM = Behavioural family management; BFT = Behaviour family therapy; CaCBTp = Culturally-adapted cognitive-behavioural therapy for psychosis; CBCSM = Chinese basic conversation skill module; CBT = Cognitive-behavioural therapy; CMFT = Culturally modified family therapy; CSPE = Culturally-sensitive psychoeducational group program; CT = Combined treatment; FAST = Functional adaptation skills training; FE= Family education programme; FIG = Psychoeducational family intervention group; FPGP = Family-led peer support group programme; HMCT=Hindi meta-cognitive training; IG + SG = Information group programme and additional support programme; IMR = Adapted illness management and recovery programme; IPT = Integrated psychological therapy; IST = Individual supportive therapy; MBPP = Mindfulness-based psychoeducation programme; MCTd= Metacognitive training for delusions; MFG = Multiple-family group; MFG-A = Adherence-focused MFG therapy; MFG-S = Standard MFG therapy; MFGT = Multiple-family group intervention; MFPG = Family psychoeducation programme; MPI = Modified psychological intervention; MRP = Multimodal rehabilitation program; MSG = Mutual support group family intervention; PE = Psychoeducation programme; PFI = Psychoeducational family intervention; PEDAL = Programa de entrenamiento para el desarrollo de aptitudes para latinos; PESG = Psychoeducation and mutual support group program; PSST = Psychosocial skills training; SCIT = Social cognition and interaction training; SCP = Symptoms coping programme; SCMP = Schizophrenia care management programme; SCST = Social cognitive skills training; SST = Social skills training; ST = Skills training; TIPSS = Training in interpersonal problem-solving skills

*Diagnostic criteria:* CCMD = Chinese classification and diagnostic criteria of mental disorders; CIDI = The Composite International Diagnostic Interview; ICD = International statistical classification of diseases and related health Problems; DSM = Diagnostic and Statistical Manual of Mental Disorder; PANSS = The positive and negative syndrome scale; SCID I = Structured clinical interview for DSM-IV disorders

*Outcome measures:* ADL = Activities of Daily Living Scale; ASSEI = Adult Sources of Self-Esteem Inventory; BPRS = Brief Psychiatric Rating Scale; DAI-30 = Drug Attitude Inventory-30; DAS = The Psychiatric Disability Assessment Schedule; FEIT = Face Emotion Identification Task; GAF = Global Assessment of Functioning Scale; GAS = Global Assessment Scale; GPISS = General Psychiatric Interview Schedule and Summary Form; HoNOS = Health of the Nation Outcome Scale; ILSS = Independent Living Skills Survey; ITAQ = Insight and Treatment Attitudes Questionnaire; KASI = Knowledge About Schizophrenia Interview; KFI = Knowledge of Illness Scale; LSP = The Life Skill Profile; MMAA = Medication Management Ability Assessment; MMM = Medication Management Module; MMSE = Mini-Mental State Examination; MSCEIT = Mayer–Salovey–Caruso Emotional Intelligence Test 2.0; NOSIE = Nurses’ Observation Scale; PANSS = The Positive and Negative Syndrome Scale; PSE = Present State Examination; PSFS = Psychosocial Functioning Scale; PSP = Personal and Social Performance Scale; PSYRATS = Psychotic Symptom Rating Scales; PWI = Personal Wellbeing Index; QOL = Quality of Life Scale; QOLI = Quality of Life Interview; QWB = Quality of Well-Being Scale; ROMI = The Rating of Medication Influences; SAHI = Structured Auditory Hallucinations Interview; SAI = Schedule for Assessment of Insight; SAI-E = Schedule for Assessment of Insight-Expanded Version (including treatment adherence); SANS = Scale for Assessment of Negative Symptoms; SAPS = Scale for Assessment of Positive Symptoms; SAS = Social Adjustment Scale; SBS = Social Behaviour Schedule; SDS = Stigma-Devaluation Scale; SDSS = Social Disability Screening Schedule; SES = The General Perceived Self-Efficacy Scale; SF-36 = 36-Item Short Form Health Survey; SLOF = Specific Level of Functioning Scale; SMM = Symptom Management Module; SOFAS = Social and Occupational Assessment Scale; SSPA = Social Skills Performance Assessment; UPSA= UCSD Performance-Based Skills Assessment; VAS = Visual Analogue Scale; VSSS = Vocational Social Skill Assessment Scale; WAIS = Wechsler Adult Intelligence Scale;WHO-DAS = World Health Organisation Psychiatric Disability Assessment Schedule; WQOL = Wisconsin Quality of Life Index; WHOQOL-BREF = World Health Organisation Brief Quality of Life Assessment Instrument

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| **Appendix 5**  **Table *A5. Characteristics of interventions included in the systematic review of culturally-adapted psychosocial interventions for psychosis (n=46)*** | | | | | | | | | | | |
|  | Target population | | | Intervention model | | Intervention delivery | | | | | |
| Author (year) | Country | Adapted for (minority/  majority) | Subculture | Adapted from (western model/theory) | Intervention type | Intervention attendees | Modality (individual/ group) | Number of sessions, frequency, & duration | Duration of intervention | Therapy setting | Therapist training |
| Bradley et al. (2006) | Australia | Minority | Vietnamese | Multiple-family psychoeducational group treatment manual (McFarlane et al., 1991) | Family intervention (MFGT) | Caregivers and patients | Group | 26 sessions,  every 2 wks | 12 mths | Clinical + community | Primary therapists & support facilitators. Training initially provided by a three-day national workshop conducted by William McFarlane |
| Carrà et al (2007) | Italy | Majority | Italian | Psychoeducational multifamily groups (McFarlane et al. 2002) | Family intervention (IG; IG + SG) | Caregivers | Group | IG:  24 wkly meetings (1.75 hrs duration); SG:  48 wkly sessions (1.5 hrs duration) | 24 mths | Community | Two specifically trained psychiatrists not involved in patients’ community standard care |
| Chan et al. (2009) | China | Majority | Chinese | Care management in early psychosis handbook (Early psychosis prevention and intervention centre, 2001) | Family intervention  (PE) | Family caregivers and patients | Group | 10 wkly sessions | 3 mths | Clinical | A mental health nurse with more than 15 years of working experience in community mental health setting. |
| Chien (2008) | China | Majority | Chinese | Psychoeducation: family psychoeducational support groups (Posner, 1992); Mutual support: support groups theory & practise (Galinsky & Schopler,1995) & how to work with self-help group guidelines (Wilson, 1995) | Family intervention  (PESG) | Primary caregiver, patient and other family members | Group | 18 sessions (2 hrs duration) | 9 mths | Clinical | Research psychiatric nurse, psychiatrist, research nurse, clinical psychologist & nurse researcher |
| Chien & Chan (2004)\* | China | Majority | Chinese | Psychoeducation: Multiple-family groups and psychoeducation (McFarlane et al. 1995)  Mutual support: Family intervention for Asian Americans (Bae & Kung, 2000) | Family intervention  (MSG; PE) | Family caregivers and patients | Group | MSG:  12 sessions every 2 wks (2 hrs duration);  PE: 12 sessions bi wkly (2 hrs duration) | 6 mths | Clinical | MSG: peer leader trained by researchers;  PE: Two psychiatric nurses experienced in psychiatric rehabilitation programs. |
| Chien & Chan (2013)\* | China | Majority | Chinese | Psychoeducation: Multiple-family groups and psychoeducation (McFarlane et al. 1995);  Mutual support: Family intervention for Asian Americans (Bae & Kung, 2000). | Family intervention  (MSG; PE) | Family caregivers and patients | Group | MSG, PE:  14 sessions, every 2-3 wks (2 hrs duration) | 9 mths | Clinical | MSG: A peer leader trained by researchers;  PE: psychiatric nurse experienced in psychoeducation and group therapy or guest speakers (i.e. mental health professionals) |
| Chien, Chan & Thompson (2006)\* | China | Majority | Chinese | Psychoeducation: Practitioner’s guide to Psychoeducation & management (Anderson et al., 1986); Mutual support: support groups theory & practise (Galinsky & Schopler, 1994) Family intervention for Asian Americans (Bae & Kung, 2000) | Family intervention  (MSG; PE) | MSG: Family caregivers;  PE: family caregivers and patients | Group | MSG; PE:  12 bi-wkly sessions  (2 hrs duration) | 6 mths | Clinical | MSG: family carer assisted by a group facilitator (a trained psychiatric nurse) PE: two trained psychiatric nurses |
| Chien & Lee (2010) | China | Majority | Chinese | Multifamily groups (McFarlane, 2002) | Family intervention  (SCMP) | Family caregivers and patients | Individual | 14 sessions, every 2 wks (2 hrs duration) | 7 mths | Clinical | A case manager who received three days of formal training from the researchers. |
| Chien & Lee (2013) | China | Majority | Chinese | Meditation-based stress reduction program (Kabat-Zinn et al., 1992); Practise guidelines (Lehman & Lieberman, 2004) | Psychoeducation – mindfulness based  (MBPP) | Patients | Group | 12 sessions bi-wkly (2 hrs duration) | 4 mths | Clinical | NR |
| Chien, Norman & Thompson (2004)\* | China | Majority | Chinese | Support group intervention studies for family caregivers (Galinsky and Schopler, 1995; Meissen and Volk, 1995; Toseland and Rossiter, 1989), with the phased development reflecting accepted good practice (Powell, 1994; Wilson, 1995). | Family intervention  (MSG) | Family caregivers and patients | Group | 12 wkly sessions (2 hrs duration) | 3 mths | Clinical | The principal researcher, an experienced psychiatric nurse and group worker and a peer leader, elected by the group participants |
| Chien & Thompson (2013) | China | Majority | Chinese | Modified from author's previous work (Chien & Chan, 2004; Chien, Thompson & Norman, 2008; Chien, Chan & Thompson, 2006). | Family intervention  (FPGP) | Family caregivers and patients | Group | 14 sessions every 2-3 wks (2 hrs duration) | 9 mths | Clinical | Trained research nurse |
| Chien, Thompson & Norman\* (2008b) | China | Majority | Chinese | Support groups theory & practise (Galinsky & Schopler, 1994); how to work with self-help group guidelines (Wilson, 1995) | Family intervention  (MSG) | Family caregivers and patients | Group | 12 sessions (2 hrs duration) | 6 mths | Clinical | Two family carers. One researcher who was a registered psychiatric nurse and an experienced group worker, acted as a participant and resource person for the group |
| Chien & Wong (2007) | China | Majority | Chinese | Multifamily groups (McFarlane, 2002) | Family intervention  (FPGP) | Family caregivers and patients | Group | 18 sessions every 2 wks (2 hrs duration) | 9 mths | Clinical | Psychiatric nurse trained in a three-day workshop that was held by a family therapist and the researchers |
| Gohar et al. (2013) | Egypt | Majority | Egyptian | Social cognitive skills training (Horan, 2011) | Social cognitive skills training  (SCST) | Patients | Group | 16 sessions, twice per wk (1 hr duration-separated by a break) | 2 mths | Clinical | Group leader (first author) who received in-person, supervised training from the developers of SCST in the United States |
| Guo et al. (2010) | China | Majority | Chinese | The schizophrenia patient outcomes research team (PORT) manual (Lehman et al. 2004) | Combined intervention - family  (CT) | Family caregivers and patients | Group | 48 sessions, once per mth. 4 group treatments on the same day (1 hr duration) | 12 mths | Clinical | Therapists, MD or PhD qualified with clinical experience |
| Habib et al. (2015)\* | Pakistan | Majority | Pakistani | Cognitive-behavioural therapy manual (Kingdon & Turkington, 1994) | Cognitive - family  (CaCBTp) | Patients and family members | Individual | 16 sessions, once or twice per wk (approx. 1 hr duration) | 4-6 mths | Clinical | The first author, a psychologist with a post-graduate diploma and training in CBTp |
| Koolaee & Etemadi  (2009) | Iran | Majority | Iranian | Psychoeducation guidelines (Anderson et al.,1986; Stengard, 2003); Behavioural family management group intervention adapted from communication and problem-solving skills training (Falloon,1981) | Family intervention  (BFM; PE) | Mothers of the patients | Group | BFM; PE:  12 sessions, once per wk (2 hrs duration) | 3 mths | Clinical | A researcher |
| Kopelowicz et al. (2003) | USA | Minority | Mexican- American, other Central American, Caribbean | Social skills training (Liberman and Corrigan 1993; Liberman et al. 1993) | Skills training - family  (ST) | Family members and patients | Group | 4 sessions per wk. (1 hr 30 mins duration) | 3 mths | Community  (CMHC) | Trainers (whose disciplines included nursing,psychology, and social work) |
| Kopelowicz et al. (2012) | USA | Minority | Mexican-American | Multifamily groups (McFarlane, 2002); Theory of planned behaviour (Ajzen, 1991) | Family intervention  (MFG-S; MFG-A) | Family members and patients | Group | 2 sessions per mth (1 hr 30 mins duration) | 12 mths | Community  (CMHC) | Bilingual/ bicultural clinicians. psychiatrists, psychologists, or social workers with 1 year of experience conducting family groups and trained in the standard MFG and the MFG-A manual |
| Kulhara et al. (2009) | India | Majority | Indian | Family psychoeducational interventions (e.g. Leff, 2000) | Family intervention  (PE) | Caregivers | Group | 1 session per mth (40-60 mins. duration) | 9 mths | Clinical | Two mental health professionals trained for 2 months by consultant psychiatrists, by didactic lectures and ‘hands-on’ experience with patients and their families |
| Kumar et al. (2010) | India | Majority | Indian | Metacogntitive training (MCT) manual (Moritz & Woodward, 2007a) | Cognitive  (HMCT) | Patients | Group | 2 sessions per wk.  (45-60 mins duration) | 1 mth | Clinical | NR |
| Kung et al. (2012)\*\* | USA | Minority | Chinese | Family psychoeducation model (Anderson et al., 1986) & Problem-solving multifamily group (McFarlane, 2002) | Family intervention  (MFPG) | Caregivers | Group | 12 sessions once every 2 wks (2 hrs duration) | 6 mths | Clinical | One agency employer with a master’s degree in counselling psychology and 4 years of full-time clinical experience and the PI and first author, with a master’s and a doctorate in social work and 9 years of full-time clinical experience. |
| Lak et al. (2010) | China | Majority | Chinese | UCLA social and independent living skills: basic conversation skills module (Liberman, 1990) | Skills training (CBCSM;  CBCSM + SGT) | Patients | Group | 15 sessions, 3 per wk (1 hr duration) | 5 wks | NR | Trainer who followed the instructions and guidelines  of the trainer’s manual |
| Li & Arthur (2005) | China | Majority | Chinese | Family psychoeducational interventions (e.g. Anderson et al. 1986; Falloon, 1984; Leff, 1985; Goldstein et al., 1986; Barrowclough & Tarrier, 1994) | Family intervention  (FE) | Patient and family | Individual | 8 hrs with the patient and 36 hrs with the family.  2 hrs per mth for 3 mths for patient & family together | NR | Clinical | First author, a nurse with experience in family intervention and experienced registered nurse research assistants educated to diploma or degree level |
| Li et al. (2015) | China | Majority | Chinese | Cognitive therapy (Kingdon & Turkington, 2004) | Cognitive  (CBT) | Patients | Individual | 12 sessions in first 12 wks, 3 booster sessions in subsequent 12 wks (40-50 mins duration) | 6 mths | Clinical | Six experienced therapists (psychiatrists or psychologists) experienced using psychotherapy; trained in the application of cognitive therapy for psychosis and had expertise in the application of CBT for psychosis using a translated Kingdon and Turkington manual. |
| Lin et al. (2013)\*\* | Taiwan | Majority | Taiwanese | The united states substance abuse and mental health administration’s evidence-based illness management and recovery (IMR) progam | Illness management and recovery programme (IMR) | Patients | Group | 6 sessions twice per wk (1 hr 30 mins duration) | 3 wks | Clinical | The first author, an assistant professor and affiliated head nurse |
| Lin et al. (2013)\* | Taiwan | Majority | Taiwanese | Illness management and recovery implementation resource kit (Gingerich & Mueser, 2010) | Illness management and recovery programme (IMR) | Patients | Group | 2 sessions per wk (1 hr 30 mins duration) | 3 wks | Clinical | A clinician |
| Mann & Chong (2004) | China | Majority | Chinese | Delusional verbalization (Alford et al., 1982); Cognitive behavioural therapy (Garety et al.,1994); Thought stopping (Lamontague et al., 1983); Attentional control Meichenbaum & Cameron, 1973) | Combined intervention  (SCP) | Patients | Group | 6 sessions | NR | Clinical | NR |
| Mausbach et al. (2008)\* | USA | Minority | Latino | Social cognitive theory (Bandura, 1989) | Social cognitive skills training  (PEDAL) | Patients | Group | Sessions once per wk (approx. 2 hrs duration) | 6 mths | Community - Board & care faciilities | NR |
| Naeem et al. (2015)\* | Pakistan | Majority | Pakistani | Cognitive-behavioural therapy manual (Kingdon & Turkington, 1994) | Cognitive - family  (CaCBTp) | Family members & patients | Individual | 6 sessions for the patient (plus their carer who acted as a co-therapist) plus one session for the whole family. | Approx. 4 mths | Clinical | Three experienced psychology graduates trained by the first author. |
| Patterson et al. (2005)\* | USA | Minority | Latino | Social cognitive theory (Bandura, 1989) | Social cognitive skills training  (PEDAL) | Patients | Group | 24 semi-wkly, sessions (2 hrs duration) | 6 mths | Clinical | Bilingual/bicultural group leader (with masters or doctorate level degree) |
| Ran et al. (2003) | China | Majority | Chinese | The psychoeducational family approach (Anderson et al.1986) & the vulnerability-stress model (Lalonde, 1995) | Family intervention  (FIG) | Family & Patients ‘encouraged’ to attend | Individual & group. Family education: once per month. Multiple family workshops:once every 3 months | Sessions once per mth (approx. 1.5-3 hrs duration)  . | 9 mths | Community | Trained psychiatrists and village doctors. Village doctors did not get the same training as psychiatrists, but assisted with the interventions. |
| Razali et al. (2000) | Malaysia | Majority | Malaysian | Behavioural family therapy (Falloon et al., 1984) | Family intervention  (CMFT) | Family members & patients | Individual | 30–45 min  sessions. Two additional home-visits every 6 mths. | 12 mths | Clinical + community. (outpatient hospital and two additional home visits) | Experienced research Psychiatrist/first author with specialised training |
| Shin & Lukens (2002) | USA | Minority | Korean American | Psychoeducation and family therapy studies (Anderson et al., 1986; McFarlane et al., 1995; Bernheim & Lehman, 1985; Lukens & Thorning, 1998; Falloon et al., 1984) | Family intervention  (CSPE) | Patients & family members (were offered parallel sessions) | Group | 10 sessions, once per wk (90 min duration) | 10 wks | NR | First author, a Korean-speaking psychiatric social worker |
| So et al. (2015) | China | Majority | Chinese | Metacognitive training ( Moritz & Woodward, 2007) | Cognitive  (MCTd) | Patients | Group | 4 sessions, once per wk (1 hr duration) | 1 mth | NR | A clinical psychologist who specialises in psychosis and received MCT training from the original authors of MCT. |
| Valencia et al. (2007)\* | Mexico | Majority | Mexican | Psychosocial treatments (Liberman & Corrigan, 1993); social and instrumental skills modules (Wallace et al., 1992) | Skills training + FI  (PSST) | Patients & family members | Group | 48 sessions (time limit of 1 hr 15 per wk) | 12 mths | NR | Two psychologists (postgraduates in clinical psychology) |
| Valencia et al. (2010)\* | Mexico | Majority | Mexican | Psychosocial treatments (Liberman & Corrigan, (1993) & Liberman (2008) | Skills training + FI  (PSST) | Patients & family members | Group | 40 sessions (1 hr 30 mins duration) | 12 mths | Clinical | Two clinical psychologists at the master’s and doctorate levels |
| Wahass & Kent (1997) | Saudi Arabia | Majority | Saudi Arabian | Coping strategy enhancement (e.g. Barrowclough & Tarrier, 1992); Focusing strategy (e.g. Bentall & Slade, 1996); distraction techniques (e.g. Nelson et al., 1991) | Combined intervention  (MPI) | Patients | Individual | Maximum of 25 sessions, 3 times per wk. (1 hr duration) | 9 wks | NR | A therapist who has attended several courses and workshops organised in the UK |
| Wang et al. (2013) | China | Majority | Chinese | Social Cognition and Interaction Training Manual (Roberts et al., 2015). | Social cognitive skills training  (SCIT) | Patients | Group | 20 sessions, once per wk | 20 wks | NR | Six qualified psychiatric counsellors who had been trained by one of SCIT’s developers (DR) |
| Weng et al. (2005) | China | Majority | Chinese | Social skills training for psychiatric patients (Liberman et al., 1989) | Skills training  (MRP) | Patients & key family members (for some sessions) | Group | NR | 2 mths | Clinical | NR |
| Xiang et al. (1994) | China | Majority | Chinese | Family interventions (e.g. Brown et al, 1972; Leff et al., 1985; Falloon et al. 1987) | Family intervention  (PFI) | Family members | Group | NR | 4 mths | Community | Village doctors |
| Xiong et al. (1994) | China | Majority | Chinese | Educational approaches (Abramowitz & Coursey, 1989); relatives' groups (Vaughan et al, 1992); family therapy (Leff et al,  1990); behavioural treatments (Falloon et al, 1985; Tarrier et al, 1989); multi-component psychosocial treatment (Leff et al, 1985). | Family intervention  (FIG) | Family members & patients (if clinical condition stable enough) | Individual and group | Counselling sessions, once per mth (45 mins duration);  Family group, once per mth (90 mins duration);  Plus individual sessions with patient, leaders of patient work staff & family members | 12-24 mths | Clinical and community (clinic + home visits) | A therapist |
| Zhang & Yan (1993)\* | China | Majority | Chinese | Family psychoeducation approaches (e.g. Brown et al., 1972; Leff et al. 1982; Vaughn & Leff, 1976) | Family intervention  (FE) | Family members | Group | First 5 wks: 4 lectures & one group discussion (wkly); 2-6 mths: 4 lectures and one group discussion. (mthly) 7-12 mths: 2 lectures and one group discussion (every 2 mths) | 24 mths | NR | Trained psychiatrists or nurses |
| Zhang et al. (1994) | China | Majority | Chinese | Family psychoeducation approaches (e.g. McFarlane, 1982; Goldstein, 1984) | Family intervention  (FIG) | Family members & patients | Individual & group | Family group session: 3 mths after discharge; Families subsequently offered individual or group sessions every 3 mths depending on whether they had ‘complex or common problems’ | 18 mths | Clinical and community (clinic + home visits) | Counsellors |
| Zhang et al. (1998)\* | China | Majority | Chinese | Family psychoeducation approaches (e.g. Brown et al., 1972; Leff et al. 1982; Vaughn & Leff, 1976) | Family intervention  (FE) | Family members | Group | 14 sessions (1 hr duration) 10 in the first year, 4 in the second year | 24 mths | NR | Trained psychiatrists or nurses |
| Zimmer el al. (2007) | Brazil | Majority | Brazilian | Integrated Psychological Therapy (Muller et al., 2005) | Cognitive  (IPT) | Patients | Group | 12 sessions, once per wk (1 hr duration) | 3 mths | NR | A clinical psychologist previously trained by the IPT author |

*Note:*

*\*Studies with the same culturally-adapted intervention(s):*

PE + MSG: Chien & Chan (2004); Chien & Chan (2013); Chien Chan & Thompson (2006); Chien, Norman & Thompson (2004); Chien, Thompson & Norman (2008)

CaCBTp: Habib et al. (2015) & Naeem et al. (2015)

IMR: Lin et al. (2013) pilot study & Lin et al. (2013) RCT

PEDAL: Mausbach et al. (2008) & Patterson et al. (2005)

PSST: Valencia et al. (2007) & Valencia et al. (2010)

FE: Zhang & Yan (1993) & Zhang et al. (1998)

*\*\* Non-RCT pilot studies:* Kung et al. (2012); Lin et al. (2013)

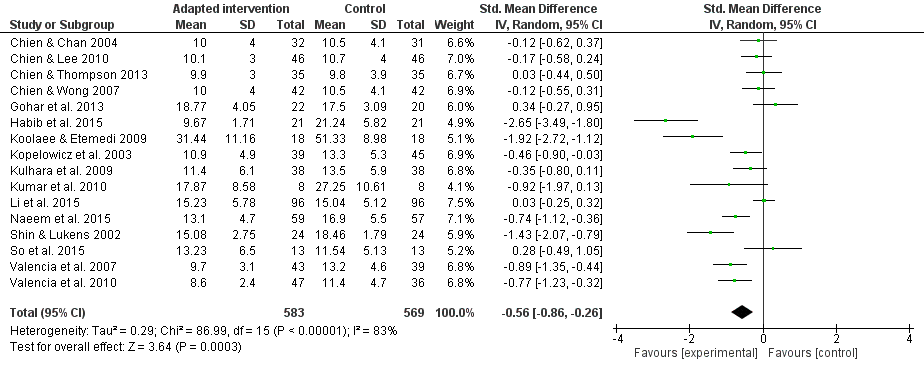
*Study arms:* BCSM = Basic conversation skills module; BFM = Behavioural family management; CaCBTp = Culturally-adapted cognitive-behavioural therapy for psychosis; CBCSM = Chinese basic conversation skill module; CBT = Cognitive-behavioural therapy; CMFT = Culturally modified family therapy; CMHC = Community mental health centre; CSPE = Culturally-sensitive psychoeducational group program; CT = Combined treatment; FE= Family education programme; FIG = Psychoeducational family intervention group; FPGP= Family-led peer support group programme; HMCT=Hindi meta-cognitive training; IG + SG = Information group programme and additional support programme; IMR = Adapted illness management and recovery programme; IPT = Integrated psychological therapy; MBPP = Mindfulness-based psychoeducation programme; MCTd= Metacognitive training for delusions; MFG = Multiple-family group; MFG-A = Adherence-focused MFG therapy; MFG-S = Standard MFG therapy; MFGT = Multiple-family group intervention; MFPG = Family psychoeducation programme; MPI = Modified psychological intervention; MRP = Multimodal rehabilitation program; MSG = Mutual support group family intervention; PE = Psychoeducation programme; PFI = Psychoeducational family intervention; PEDAL = Programa de entrenamiento para el desarrollo de aptitudes para latinos; PESG = Psychoeducation and mutual support group program; PSST = Psychosocial skills training; SCIT = Social cognition and interaction training; SCP= Symptoms coping programme; SCMP = Schizophrenia care management programme; SCST = Social cognitive skills training; SGT = Skills generalisation training; SST = Social skills training; ST = Skills training; TIPSS = Training in interpersonal problem-solving skills

**Appendix 6**

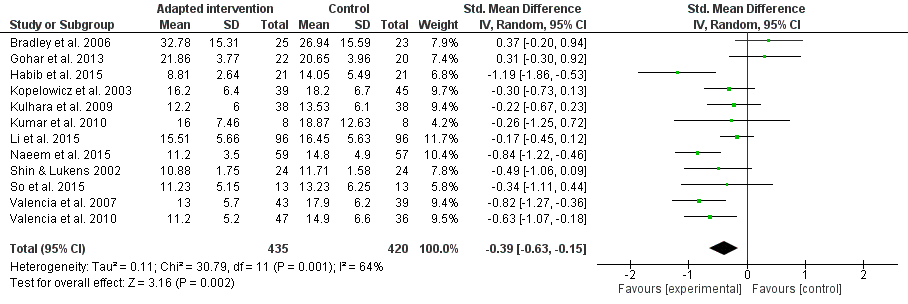
**Table A6: *Description and examples of themes of cultural adaptation***

|  |  |  |  |
| --- | --- | --- | --- |
| **Theme** | **Sub-themes** | **Description** | **Examples** |
| **Language**  Incorporating literal translation and culturally-specific forms of expression and dialect | **Direct translation** | Translation of materials into national language or use of interpreters | ‘The plain-language statement and consent form was translated for Vietnamese- speaking consumers and caregivers.’ (Bradley et al., 2006, p.523)  Use of an interpreter: ‘Because 20 of the Vietnamese consumer-caregiver participants (80 percent) were not fluent in English and an interpreter was required for basic communication, the sample was considered to have a low level of acculturation.’ (Bradley et al., 2006, p.523)  The intervention: ‘was translated into Chinese language and validated by the researchers.’ (Chien, 2008, p.32)  ‘The training sessions were translated and adapted into Arabic by the first author who received in-person, supervised training from the developers of SCST (WPH, MFG) in the United States.’ (Gohar et al., 2013, p.13)  ‘Translated into Persian with a high level of equivalence to the original English version.’ (Koolaee & Etemadi, 2009, p.5)  The intervention: ‘was conducted in elementary school–level Spanish by 2 clinicians and one of us (A.K.).’ (Kopelowicz et al., 2012, p.267)  ‘The original MCT has been translated in Hindi and adapted for Hindi speaking patients at the Central Institute of Psychiatry, Ranchi.’ (Kumar et al., 2010, p.153)  ‘All materials were translated into Spanish and back-translated by two different persons of Mexican origins.’ (Patterson et al., 2005, p.925)  ‘All written material was provided in both Korean and English, and the oral presentations were in Korean.’ (Shin & Lukens, 2002, p.1127)  ‘The SCIT manual was translated into Chinese by one of the authors (MY) who is a native speaker of Chinese and has been living in England for 3 years.’ (Wang et al., 2013, p.752) |
|  | **Local dialect** | Incorporating local, dialect, colloquialisms and idioms | ‘For exercises involving written vignettes, some translational adjustments were made to better fit the local vernacular (e.g., using the term “girlfriend” or “boyfriend” instead of “fiancée”)’ (Gohar et al., 2013, p.14)  Adaptations included: ‘Integrating culture-specific icons and idioms in the materials.’ (Mausbach et al., 2008, p.66)  ‘Urdu equivalents of CBT jargons were used in the therapy.’ (Naeem et al., 2015, p. 146)  ‘Adaptations made to substitute formal wordings on presentations and handouts for more colloquial Cantonese words.’ (So et al., 2015, p.5)  ‘We did not use the term module because this word in Spanish is never used in clinical and therapeutic environments. As an equivalent of ‘modules’ we used the term ‘treatment areas’’ (Valencia et al., 2007, p.1400) |
| **Concepts and illness models**  Culturally-appropriate presentation of concepts, with consideration of culture-specific belief systems, mental health stigma and levels of education | **Explanatory models** | Adapting intervention to work with culture-specific explanatory models of mental illness | ‘Psychoeducation sessions acknowledged common ethnospecific explanatory models of illness before the biopsychosocial model of illness was outlined.’ (Bradley et al., 2006, p.525)  'Each topic was also specifically related to the local culture. For example, when discussing early intervention for schizophrenia, some caregivers attributed the cause of their relatives’ mental illness to their delay in accompanying the client to see a doctor and/or to the client’s eating too much meat, which had led to an imbalance of yin and yang forces during adolescence. These beliefs were clarified by the researcher.’ (Chan et al., 2009, p.74)  ‘One of the patients in our study said that his illness was because of excess of phlegm (Greek concept), while another believed his illness was due to excessive heat in liver (Chinese concept). Therapy therefore included spiritual factors in formulation and understanding of locally held beliefs related to health, religion and culture.’ (Habib et al., 2015, p.205)  ‘Iranian families see mental illness from the perspective of determinism – i.e. as predestination and fate. There are few attempts in Iran to follow up therapeutic interventions (Khodabakhshi & Koolaee, 2009); hence the reluctance of many mothers to participate in the study’ (Koolaee & Etemadi, 2009, p.11)  ‘Iranian people think that one of the reasons of mental illness in their children was bad fate or wrongdoing in life so God was punishing them with their ill children. Therefore, in psychoeducation model, I added the knowledge of illness and emphasized biological aspects.’ (Koolee & Etemadi, 2009, author email)  ‘Pictorial representations were used with illiterate relatives. The use of praise was thoroughly explained, modelled, and practiced using role-plays.’ (Kopelowicz et al., 2003, p.214)  ‘Patients often denied the value of medications, commonly expressing folk explanations (e.g, supernatural causes) and corresponding remedies (eg, prayer) for psychotic symptoms. The MFG-A clinicians sensitively addressed these attitudes by inviting relatives and other patients in the group, who initially may have held the same folk beliefs, to describe their salutary experiences with antipsychotic medications (eg, symptom reduction and preventing hospitalizations). This approach was instrumental in facilitating their consideration of alternative beliefs in a non-confrontational, peer to peer manner.’ (Kopelowicz et al., 2012, p.268)  ‘The content of the intervention also reflected issues that are felt to be more relevant for Indian families such as belief in supernatural causation, the role of indigenous treatments, cultural attitudes towards medication, marriage etc. On the other hand, there was a much less emphasis on constructs such as expressed emotions.’ (Kulhara et al. 2009, author email)  ‘Also, since the caregivers subscribe highly to both stress and biological illness of the illness, it is fitting to adopt a vulnerability-stress framework instead of a strictly biological explanatory model adopted by many other models.’ (Kung et al. 2012, p.388)  ‘The content was developed on the basis of; cognitive behavioural coping strategies, modifications of beliefs and psycho-educational approach.’ (Mann & Chong, 2010, p.72)  ‘A spiritual dimension was included in formulation, understanding and in therapy plan.’ (Naeem et al., 2015, p.146)  ‘The lack of a correct recognition of mental illness is a serious problem for relatives of persons with schizophrenia in rural areas. They usually believe in witchcraft, and accept the notion that mental illness cannot be cured and that medication has no effect on the illness and only wastes family money.’ (Ran et al., 2003, p.69)  ‘Effective patient and family education is needed in Malaysia as many patients attribute mental illness to supernatural agents, and they cannot accept explanations based on the Western Model.’ (Razali et al., 2000, p.284).  ‘In addition, discussion of traditional disease concepts was integrated into the sessions. For example, Korean perspectives on shamanism, ailments, distress, diseases, fortune and misfortune, and life and death were discussed in the context of psychiatric illness. Psyche and soma were presented as two complementary aspects of life to encourage participants to understand how emotional functioning is related to physiological functioning.’ (Shin & Lukens, 2002, p.1126-1127)  ‘Zafar et al. (2008) reported that one-third (30%) of the participants of a survey in Karachi, Pakistan, attributed “mental illness” as the main cause of psychotic symptoms. Other causes included “God’s will” (32.3%), “superstitious ideas” (33.1%), “loneliness” (24.8%) and “unemployment” (19.3%) (Zafar et al., 2008)’ (Habib et al., 2015; Naeem et al., 2015) as cited in Naeem et al., (2016) p.44.  ‘All the psychologists said therapy needs adapting according to local needs, taking into consideration cultural and religious factors. They also said religious and local beliefs have an effect on patients’ understanding of illness and their views on causes and treatment of the illness. Although one psychologist highlighted the positive impact religion can have on patients’ mental health, the rest considered it to be a barrier. Some psychologists also talked about keeping therapy separate from religion.’ (Habib et al., 2015; Naeem et al., 2015) as cited in Naeem et al., (2016) p.44.  ‘Patients and their families in Pakistan use a bio-psycho-social model of management of psychosis with additional emphasis on spiritual and religious causes. This can possibly be termed as bio-psycho-spiritual-social model of psychosis.’ (Habib et al., 2015; Naeem et al., 2015) as cited in Naeem et al., (2016) p.52.  Participants ‘preferred their beliefs in witchcraft; did not regard mental illness as disease which needed medical treatment.’ (Xiang et al., 1994, p.545) |
|  | **Stigma** | Addressing issues of mental health stigma in culturally-appropriate ways (e.g. avoiding western/psychiatric diagnostic labels, sharing personal stories for normalisation) | ‘Specific Chinese and Asian cultural characteristics were emphasized during each group session. These included the high social stigma associated with mental illness and seeking mental health services’ (Chien, 2008., p.32)  The intervention included: ‘discussion of a taboo area (sharing of secret and internal psychological conflicts), commonality or a situation of ‘all-in-the-same boat’ (feeling in similar situation and working against a common plight), mutual help (reciprocal giving and receiving help and support among members)’ (Chien, 2008, p.34)  ‘Emphasis given to specific Chinese cultural characteristics and issues, including a strong social stigma associated with mental illness and seeking mental health services’ (Chien & Chan, 2004, p.1278 )  ‘Mutual support groups may potentially be appropriate for Chinese families, who are often reluctant to seek help due to strong perceptions of stigma and an unwillingness to expose family weaknesses or disgrace (‘saving face’) to outside people (Bae and Kung, 2000; Fung and Ma, 1997).’ (Chien & Chan, 2013., p. 1328)  Chinese cultural characteristics were considered and discussed, including the stigma towards people with mental illness, and being aware and accepting it. (Chien and Chan, 2013., p. 1331)  Intervention included: ‘Open sharing and mutual understanding about individual concerns; exploration of cultural issues in families’ (Chien & Thompson, 2013, p.1000)  This group provided a forum in which to discuss concerns and obtain support from the group to reduce the stigma of mental illness (Guo et al. 2010, p897)  ‘Many of the people with mental health illness in Asia still combat internal and external stigmatization from deep-rooted negative cultural beliefs about mental illness’ (Lin et al, 2013, p.274)  Most of those recovery narratives were initiated by inviting people to share their story of living with psychiatric illness. (Lin et al., 2013, author email)  ‘The greater stigma attached to mental illness, especially schizophrenia, by Latinos in the United States, Mexico, and Central and South America may require alterations in the form and process of evidence-based practices to make them acceptable to patients and their relatives.’ (Valencia et al., 2010, p.249)  ‘Seminars were held for health workers and family members to discuss any issues and suggestions, and to share their experiences of the patients’ (Xiang et al., 1994, p.545) |
|  | **Mental health knowledge and education** | Adapting intervention to acknowledge low education levels and lack of mental health education in different cultural contexts (e.g. due to cultural group norms; and tendencies for lack of schooling and education in local area) | ‘Interventions are more likely to be more effective if they put more emphasis on the provision of knowledge about schizophrenia, using simple language that can be understood by the families who are in majority from lower social class (Castle Peak Hospital, 1999), than on abstract theoretical concepts of schizophrenia.’ (Chien & Chan, 2004; Chien & Chan, 2013; Chien Chan & Thompson, 2006; Chien, Norman & Thompson, 2004; Chien, Thompson & Norman, 2008, author email)  ‘The mothers lacked knowledge about mental illness. Psychoeducation intervention increased knowledge about schizophrenia with most participants acquiring new information.’ (Koolaee & Etemadi, 2009, p.11)  ‘The clinicians’ systematic assessment of the beliefs, attitudes, and resources of each patient, and the integration of those factors in treatment, played a central role in the success of the MFG-A. For example, many of the patients who did not have or were ineligible for medical benefits did not take their medications because they could not afford to purchase them. These patients and their families did not realize they could receive antipsychotic medications at no cost through an indigent medication program available at the mental health center.’ (Kopelowicz et al., 2012, author email)  ‘However, since the majority of Chinese in the United States are immigrants (61%, U.S. Census Bureau, 2010), the caregiver burden would be aggregated when their knowledge of the health care system is limited while they themselves are still adjusting to this migrated land (Chu & Sue, 2011). Thus, the burden of care for these relatives is likely to be greater compared to Caucasian-American families for at least five reasons: (1) intense involvement in the caregiving process; (2) the lack of knowledge of access to resources due to immigrant status; (3) language barrier to negotiate with service systems; (4) limited knowledge about mental disorders and their treatment; and (5) racial discrimination due to minority status (Kung, 2001, 2003, 2004; Sue, 2002). Thus, it is of great importance to educate and support these caregivers to both alleviate their stress and improve treatment outcome of their ill relatives.’ (Kung et al., 2012, p.387)  ‘Psychoeducation materials were given to caregivers throughout the multifamily group sessions instead of a day-long workshop. Due to the lack of knowledge about mental illness and medication, and the lower educational background of many immigrant Chinese-Americans loading them with too much information at the beginning could be overwhelming.’ (Kung et al. 2012, p.388)  ‘Lower educational background of many immigrant Chinese Americans, loading them with too much information at the beginning could be overwhelming, and the retention of the materials limited (Bae & Kung, 2000).’ (Kung et al., 2012, p.388)  ‘The concept of recovery from psychiatric disorders is still relatively new in Taiwan.’ (Lin, Kopelowicz, Chan, & Hsiung, 2008).’ (Lin et al., 2013, author email)  ‘Written communication was altered to accommodate lower educational backgrounds, and in the transportation module education and materials about public transportation services for disabled persons were provided, due to a lack of knowledge because of previous reliance on family members.’ (Patterson et al. 2005, p.525)  ‘Financial management and written communication were altered to accommodate lower educational backgrounds.’ (Patterson et al. 2005, p.925)  The intervention was: ‘modified to take account of the characteristics of Chinese rural areas, such as dispersed residences and a generally low level of education.’ (Ran et al. 2003., p.70)  ‘We also employed health education through the village wired radio network.’ (Xiang et al., 1994, p.545)  ‘Compared with Western interventions, in the early stages of family intervention in China much more effort needs to be placed on transforming family members' perception of the role of the physician from that of a pill-provider to that of an informed family advisor.’ (Xiong et al., 1994, p.239-240)  ‘Some families identify social factors as the cause of the problems and try to protect the patient from the influence of these factors by being too controlling and overprotective. Other families do not believe that the patient has a mental illness and think that the bizarre behaviour is under voluntary control; these families tend to be hostile towards the patient.’ (Zhang et al., 1994, p.101)  What we did was a reduction in the number of steps, given the complexity of the tasks of the Social Communication subprogram. The stages of this subprogram require a language domain and semantic, grammar, cultural knowledge. In Brazil we have a considerable number of patients with schizophrenia who though illiterate, have little schooling, making it difficult to carrying out steps this subprogram (Zimmer et al. 2007, author email) |
| **Family**  Consideration of family involvement, structure and dynamics and specific roles and expectations | **Family involvement** | Acknowledging the importance of the family unit in the recovery process and encouraging their active and continued involvement throughout the intervention (e.g. provision extra sessions, extra efforts to engage and maintain contact) | ‘In Asian cultures the family is a crucial social structure, and the burden of illness becomes a joint family obligation, with multiple members engaged in treatment. In contrast, Western cultural values emphasize individualism—for example, protection of the rights of the individual to privacy and confidentiality as well as independent living.’ (Bradley et al., 2006, p.529)  ‘Family joining sessions were conducted informally on an outreach basis in the homes of the Vietnamese families to maximize the likelihood that families would engage with the service and to provide an opportunity to include as many family members as possible.’ (Bradley et al., 2006, p.525)  ‘In Italy, since the deinstitutionalization of the ‘70s (de Girolamo and Cozza 2000), the key issue in implementing effective treatment systems for severe psychiatric disorders has been balancing community-and hospital-based mental health care (Thornicroft and Tansella 2004). There has been an increasing acknowledgment of the importance of families in terms of the care they give, their therapeutic potential and the burden they carry.’ (Carra et al., 2007, p.24)  ‘The content of the program was designed according to the preference and perceived needs of patient-caregiver dyads, and the case managers put much emphasis on addressing their cultural issues in family caregiving role.’ (Chien & Lee, 2010, p.318.)  ‘Family members are actively involved in patient care in Pakistan, and therefore the intervention involved the family members in the treatment plan from the beginning.’ (Habib et al., 2015, p.203)  ‘We chose a family approach because living with supportive relatives increases medication adherence, and interventions that give relatives information about the illness and teach them coping and problem-solving skills reduce relapses and rehospitalizations.’ (Kopelowicz et al., 2012, p.265-266)  ‘This high level of involvement of Indian families in the patients care is partly because of their preference, and partly because of the inadequacy of the mental-health set-up.’ (Kulhara et al., 2009, p.473)  ‘Most families actively want to be involved in all aspects of their relatives wellbeing and problems.’ (Kulhara et al., 2009) as cited in Shankar & Menon, (1993)  ‘To engage families, especially in the initial stage, in-home single-family sessions were offered in order to involve more relatives.’ (Kung et al., 2012, p.388-389)  ‘Over 80% of Latinos with schizophrenia live with their famailies (Guarnaccia & Parra, 1996)… therefore, including families was relevant to the task of maximizing the generalization of skills to the home environment’ (Kopelowicz et al., 2003; Kopelowicz et al., 2012) as cited in Lopez & Kopelowicz (2002) p.15.  ‘After completing these sessions, skills trainers visited patients and families at their homes to review progress and help solve problems that arose’ (Kopelowicz et al., 2003; Kopelowicz et al., 2012) as cited in Lopez & Kopelowicz (2002) p.15.  ‘Because of the importance of la familia (the family) in Mexican-American culture, the PEDAL intervention was adapted to help individuals work with family members for transportation needs rather than help them to utilize public transportation or to travel independently’ (Mausbach et al., 2008, p.72-73)  ‘The ultimate social goal of family members of people with schizophrenia in china is to develop a sustainable family-based support system for the dysfunctional individual (Xiong et al., 1994), problem solving and communication skills education was emphasized in this study. In this study the aim was to finish the main content of the education programme in the hospital, and connect with the families after the patients were discharged because few nurses work in community settings and the community mental health services were not sufficiently well developed.’ (Li & Arthur, 2005) as cited in Li (2003) thesis.  ‘To reinforce the interventions, parallel sessions, also conducted in Korean, were offered to family members of all participants’ (Shin & Lukens., 2002, p.1127)  ‘Nearly 80% of Hispanic Americans with Schizophrenia live with their families (Guarnaccia & Parra, 1996) in Mexico city, it is over 90%’ (Valencia et al., 2003)  ‘Because of the importance of family cohesion and joint decision making in China, the key family members of patients were involved in some of the training sessions with patients when the topics were use of medication and an emergency plan for relapse prevention.’ (Weng et al., 2005, p.402)  ‘The cultural and legal obligations of parents towards disabled children continue until the child is married, when the responsibility is transferred to the patient's spouse. Disabled children who never marry are usually cared for by their parents until the parents die.’ (Xiang et al., 1994, p.240)  ‘Attention must be paid to the needs of family members, for whom care of a mentally ill person may constitute a considerable burden. They need community support, appropriate education, accessibility to professional consultation, and, in some cases, financial aid.’ (Zhang & Yan, 1993, p.48)  ‘In China, unlike the West, the societal and legal expectations are that the family members will care for these disabled individuals indefinitely, regardless of the emotional and economic burden.’ (Zhang et al., 1994, p101) |
|  | **Family structure** | Adapting for culture-specific family structures. nuclear/individualistic or extended/collectivist family structures | ‘In treating Chinese families, it is important to recognize, respect and utilize the culture-specific family structures, functions and processes, such as the extended family structure with close linkage and interrelationships, interdependence and a strong sense of filial responsibility, collective identity and tangible support.’ (Chien, 2008, p.30)  ‘The program adopted a few strategies to address traditional Chinese cultural tenets. The first stage (orientation and engagement) focused on understanding strong interdependence, collective actions and decisions about family issues, acceptance of roles, and filial obligation of caregiving, respect for elders, and other traditional Chinese beliefs’ (Chien & Lee, 2010, p.318)  ‘The MBPP also adopted several strategies to address traditional Chinese cultural tenets. For instance, the first stage focuses on understanding strong interdependence.’ (Chien & Lee, 2013, p.377)  ‘The program used a culturally sensitive family intervention model, which considered many of the cultural tenets that were taught by Confucius (for example, valuing collectivism over individualism and giving great importance during the needs assessment to family and kinship ties) in respect to family relationships and value orientation.’ (Chien & Wong, 2007, p. 1004)  ‘Given the centrality of the family unit in decision making for Mexican Americans, (Sabogal et al., 1987) the focus was on the approval or disapproval of family members for taking medication and the patient’s motivation to comply with those perceived wishes.’ (Kopelowicz et al., 2012, p. 268)  ‘All 3 groups reinforced the importance of Mexican cultural values and concepts, such as familismo (i.e., placing family over the individual), respeto (i.e., respect for older persons)’ (Patterson et al., 2005. p.925)  ‘In medication management sessions, handling medications involved a sense of ‘orgullo’ (i.e., pride) for many patients, owing to a desire to alleviate symptoms in order to contribute to the family. Thus, information on adhering to and understanding treatment regimens was modified to include the potential benefits of medication adherence to the family system (versus the benefits of independence)’ (Patterson et al., 2005 p.926)  ‘The success of our programme may also be attributed to the extended family system among the Malays’ (Yusof, 1976)’ (Razali et al., 2000, p.288)  ‘Equating mental well-being with autonomy or self-actualization is often vitiated among rural Mexican families in favour of social and family obligation and cohesion (Gonzalez et al., 2001). Commitment to the extended family is often valued more than individual autonomy among first and second generation Mexican-American families. The higher value placed on interdependence by Latinos may clash with the norms inherent in evidence-based practices designed in the United States.’ (Valencia et al., 2010, p.249) |
|  | **Family roles and responsibilities** | Demonstrating an awareness of culture-specific family roles and responsibilities (.e.g. hierarchical roles, respect for elders, gender roles, expectations of specific family members) | ‘Chinese families suggested that the younger generations are not supposed to question or challenge the decisions of their elders, which appear to run contrary the purpose of family intervention in promoting collaboration through mutual concern and discussion. This typical strong parental power in Chinese family may produce resentment and un-cooperation from the elder family member, who would perceive the younger group members or the therapist as a threat to their authority (Fung & Ma, 1997). There is a need to consider and adopt the specific Chinese culture for establishing a helping relationship in family interventions, for example, emphasis on mutual respect and equal position but not be rigidly confined to the passive reception of teaching and information by the families.’ (Chien & Chan, 2004; Chien & Chan, 2013; Chien Chan & Thompson, 2006; Chien, Norman & Thompson, 2004; Chien, Thompson & Norman, 2008, author email)  ‘Mothers were the focus of this study because, in Iranian families, it is usually the mothers who show most interest in patient care. Even when patients are married and then divorce, mothers again take responsibility for the patients and sometimes the grandchildren.’ (Koolaee & Etemadi, 2009, p.3)  ‘In all modules, gender-appropriate activities were substituted, and modifications were made with regard to culturally expected roles in our scenarios and examples (cooking and house chores for women; working on the car and yard maintenance for men).’ (Patterson et al., 2005, p.926)  ‘Proper distance and respectfulness were employed to address the participants who were older than the group facilitators due to Latinos emphasis on respect and hierarchies.’ (Patterson et al., 2005, p.926)  ‘Consideration of Malay cultural values e.g. ‘training to communicate assertively and establishing eye contact with the elderly (especially one’s parents) are regarded as disrespectful in the Malay culture.’ (Razali et al., 2000, p.288)  ‘Fathers with traditional values and expectations also hew to the macho image as well as to the stigma of mental illness; hence, it takes special efforts, such as phone calls and home visits, by leaders of skills-training groups to gain the support of fathers in reinforcing homework assignments.’ (Valencia et al., 2007; Valencia et al., 2010) as cited in Valencia et al., (2015) p.236. |
| **Cultural norms and practices**  Adapting for cultural-specific values and social norms, religious/ spiritual beliefs and practices, and incorporating culturally-relevant social activities | **Culturally-specific practices and coping methods** | Adapting intervention to accommodate cultural-specific beliefs, local practices and traditions, and coping methods (e.g. local remedies, prayer, spiritual/ religious leaders, places of worship, experiences of symptoms) | ‘Traditional alternative healing practices, such as herbal treatments and use of religious leaders, were acknowledged alongside Western approaches.’ (Bradley et al., 2006, p. 525)  ‘It is therefore not surprising that they consult healers from more than one system, for example, faith/spiritual healers and traditional healers as well as consulting doctors. It is also interesting that even those who believed in physical causes contacted different traditional healers, for example faith healers or spiritual healers. Some traditional healers (for example Hakims) use a mixture of Indian, Greek and Chinese medicines.’ (Habib et al., 2015, p.204)  ‘Folk stories and examples from the life of the Prophet Muhammad and Quran were used to clarify issues.’ (Habib et al., 2015; Naeem et al., 2015) as cited in Naeem et al., 2010, p.168.  Guidelines for therapists: ‘Their belief in supernatural causes of mental illness is not challenged; Emphasis on symptomatic treatment regardless of etiology; Counsellor to have positive attitude toward drugs and have confidence in modern treatment rather than traditional healers.’ (Razali et al., 2000, p.285)  ‘Azhar, Varma and Hakin (1993) examined phenomenological differences in hallucinations between schizophrenic patients in various areas of Malaysia. There were significant differences in the experiences of the Malays of Penang and of Kelantan, indicating that culture affects the phenomenology of hallucinations, even among people of the same race but from different regions.’ (Wahass & Kent, 1997, p.352)  ‘The content of the voices was influenced by the patients' cultural background. Most Saudi patients reported that their voices involved religious and superstitious themes, while the British patients were most likely to report the giving of instructions.’ (Wahass & Kent, 1997, p.352)  ‘Considering the important role that religion plays in Islamic cultures, only those strategies that are in harmony with religious beliefs may be accepted by patients and their families. In Islam, for instance, listening to music is not always allowed, so that alternatives may be required for Muslim believers.’ (Wahass & Kent, 1997, p.353)  Designing the intervention to accommodate religious practice: ‘While other strategies required modification, being adapted and enhanced to be appropriate for Islamic patients. These coping strategies mostly involved religious beliefs. Under Islamic doctrine, Muslims are required to engage in prayer on five occasions each day, prayers that involve both physical and mental activities. They are also required to perform ablutions before each prayer session, and they must concentrate on their activities. Before, during and after prayer, Muslims read verses of the Quran. If these requirements are fulfilled, believers will be rewarded by god either in this life, in the hereafter, or both.’ (Wahass & Kent, 1997, p.355)  ‘The therapist encouraged greater engagement with methods such as using prayer, reading the Quran, and regular use of religious practices, as coping methods to control the content and characteristics of the voices. This provided distractions and aided attention switching.’ (Wahass & Kent, 1997, p.355-356).  ‘Coping strategies were based on traditional Islamic beliefs, as held by many people from Islamic backgrounds, which are consistent with the teaching of the Quran. Patients used portable audiocassette players with headphones to listen to a person who was reading the Quran or giving reminders of religious subjects.’ (Wahass & Kent, 1997, p.355-356) |
|  | **Culturally relevant activities and scenarios** | Incorporating culturally-relevant activities and scenarios (e.g. social activities, local stories, traditional characters) | ‘For 5 sessions, relaxation exercises, including the Chinese Eight Elegant Movements (Baduanjin) were introduced and practiced at the end of the session.’ (Kung et al., 2012, p.390)  ‘The CBCSM used local cultural scenarios as role-play activities and had video demonstrations performed by local actors. For example, “yum cha” (tea gathering at the Chinese restaurant) was used to replace the party situation as it is a common local gathering activity for practicing conversation.’ (Lak et al., 2010, p.140).  ‘Participants were encouraged to participate in culturally relevant activities like playing Mahjon, doing Tai Chi and singing Karaoke.’ (Mann & Chong, 2010, p.73)  ‘Identified scenarios that were deemed culturally neutral or more relevant to the local Hong Kong Chinese service users.’ (So et al., 2015, p.5) |
|  | **Community and social networks** | Building social networks and actively encouraging social and community support inside and outside of the therapeutic setting (e.g. engaging families through social gatherings and offerings; use of peer led sessions; providing opportunities for bonding). | ‘Addition of a module to emphasize mutual support and consists of deliberate efforts to mould the group into a social network that can persist for an extended period and satisfy family needs for social contact, support, and on-going monitoring.’ (Carra et al. 2007, author email)  ‘Expansion of the families’ social networks occurs through problem solving, direct emotional support, and out-of-group socializing, all involving members of different families in the group.’ (Carra et al., 2007, p.24)  ‘To work effectively for mutual support in the later sessions, the group instructor continuously reinforced the principles of strengthening social support among the participants’ (Chien, 2008, p.32)  The intervention included: ‘discussion of a taboo area (sharing of secret and internal psychological conflicts), commonality or a situation of ‘all-in-the-same boat’ (feeling in similar situation and working against a common plight), mutual help (reciprocal giving and receiving help and support among members).’ (Chien, 2008, p.34)  The use of ‘peer leaders’: family members from the group who were facilitated by a trained mental health professional (Chien & Chan, 2004; Chien & Chan, 2013; Chien Chan & Thompson, 2006; Chien, Norman & Thompson, 2004; Chien, Thompson & Norman, 2008, author email) this increased social support, resulting in an enhanced sense of control over interpersonal skills and family care, and a shared-experience, “all in the same boat” belief, providing effective social learning of patient care for other group members. (Chien, Chan & Thompson, 2006, p.43)  The intervention focussed on: ‘inviting more practical assistance among group members.’ (Chien & Lee, 2013, p.377)  ‘Family intervention included developing collaboration with the family, socializing about non–illness-related topics, monthly updates on each family’s situation, enhancing family communication, teaching patients and their families to cope with stressful situations and the illness’ (Guo et al., 2010, p.897)  ‘Skills trainers used an informal, personal style with patients and relatives that included the sharing of food and encouragement of 'small talk' before and after training sessions, made to encourage warm interactions between trainers, patients and relatives, thereby increasing retention in the study and increasing effectiveness.’ (Kopelowicz, 2003, p.214)  ‘Dinner was provided before multifamily group meetings because food is important in Chinese culture, and many working caregivers came directly after work. The meal together provided group members a natural opportunity for informal socializing and bonding.’ (Kung et al., 2012, p.388-389)  ‘Multiple family workshops were held once every 3 months. During the workshop, general questions were discussed, and relatives shared the experiences of caring for patients.’ (Ran et al., 2003, p.70)  ‘Particularly in the earlier sessions, the clinician played an active role in facilitating the group discussion to encourage and support exchange and sharing.’ (Shin & Lukens, 2002, p.1127)  ‘Refreshments were served at every session to encourage attendance’ (Shin & Lukens, 2002, p.1127) |
| **Communication**  Culturally-specific forms of communication, problem solving and learning styles | **Openness & disclosure** | Adapting for cultural differences in open expression of emotion and/or disclosure of patient’s private information (e.g. sharing confidential information, reassurance to openly discuss problems) | ‘Chinese are less likely to express affection to each other through words and touch, than people from Western countries. They tend to show their concern and feelings for each other through action, for example, by taking care of actual needs rather than communicating those feelings verbally (Hsu, 1995). Therefore, it may be difficult to build rapport between the therapist and the family in the traditional family therapy session (Fung & Ma, 1997).’ (Chien & Chan, 2004; Chien & Chan, 2013; Chien Chan & Thompson, 2006; Chien, Norman & Thompson, 2004; Chien, Thompson & Norman, 2008, author email)  Group instructor reinforced: ‘the principles of strengthening social support among the participants, including: sharing personal data (ensuring confidentiality and disclosing information with trust.’ (Chien et al., 2008, p.32-33)  ‘Chinese families are reluctant to openly disclose their thoughts and feelings in the presence of a therapist, and that intense emotion should be controlled and hidden, not openly discussed.’ (Chien & Chan, 2013, p.1328)  Intervention consisted of: ‘educational workshop, caregiving role, and therapeutic communication, learning about home management and effective communication among family members.’ (Chien & Lee, 2010, p.318)  ‘They are also assisted in reducing their self-consciousness and need to “save face” (to preserve one’s dignity and avoid any disgrace), reconstruction of their self-image, and improving their insights into schizophrenia.’ (Chien & Lee, 2013., p.377)  ‘Due to the close nature of Mexican families, therapists did not uphold participant confidentiality and freely shared information about the participants problems and progress with family members.’ (Valencia et al. 2007; Valencia et al., 2010, author email) |
|  | **Strategies for conflict resolution and problem solving** | Adapting for cultural-specific ways of communicating to resolve problems (e.g. preferences for direct/ reparative actions vs. emotional reassurance; practical assistance vs. talking; avoiding confrontation; assertiveness). | ‘There is a need to adapt the family intervention that has originated in the West to take into account Chinese ways of communication (as characterized by an emphasis on mutual respect and positive action for family members rather than talking.’ (Chien, 2008., p.30)  ‘The content of the program was designed according to the preference and perceived needs of patient-caregiver dyads, and the case managers put much emphasis on addressing their cultural issues in family caregiving role, effective communication, and resolving conflicts, as well as hands-on practical experiences.’ (Chien & Lee, 2010, p.318.)  ‘Chinese people tend to show their mutual concern and support by seeking to meet each other's actual needs (Chan et al., 2006) they are reluctant to seek professional help. Therefore, they tend to value care-giving and therapies which emphasize practical assistance and problem solving rather than psychological reassurance and opportunities for expression of feelings.’ (Chien, Thompson & Norman, 2008, p.123)  ‘Family involvement, differing patterns of communications (for example concept of assertiveness outside the West) should be important in adapting therapy for local clients in Pakistan.’ (Habib et al., 2015, p.206)  ‘Patients were excluded from the multifamily group, since caregivers are likely to be inhibited in discussing their frustrations about their ill member due to cultural tendencies to avoid direct family confrontation in front of many non-family members.’ (Kung et al., 2012, p.388)  ‘Problem solving and communication skills education was emphasized in this study.’ (Li & Arthur, 2005) as cited in Li (2003) thesis.  ‘Emphasis on assertiveness in these modules struck a careful balance between respeto/formalidad (i.e., respect and formality) and encouraging patients to clearly state their needs.’ (Patterson et al., 2005., p.926)  ‘The programme such as training to communicate assertively and establishing eye contact with the elderly (especially one’s parents) are regarded as disrespectful in the Malay culture.’ (Razali et al., 2000, p.288)  Addition of coping strategies consistent with Islamic doctrine to the coping strategy enhancement component (Tarrier et al., 1990) of the intervention (Wahass & Kent, 1997, p.355) |
|  | **Teaching and learning styles** | Adopting approach to teaching and delivery that accommodates culture-specific ways of learning (e.g. directive vs. collaborative; didactic vs. dialectic; active vs. passive) | ‘Given the Chinese caregivers tendency to prefer a more hands-on and practical experience, they were invited to conduct behavioural rehearsals of coping strategies and skills in resolving conflicts within the family.’ (Chien & Lee, 2010, p.318)  ‘The active-directive teaching style that is the *sine que non* of social skills training was modified to allow for more spontaneity on the part of the patients. Because many patients do not respond to direct questions with direct answers, trainers were instructed to ‘stick with the patient’ longer that in conventional training sessions.’ (Kopelowicz et al., 2003) as cited in Lopez & Kopelowicz (2002) p.14-15.  ‘Also, the need to be an active participant in treatment was encouraged to overcome the tendency for members of a patriarchal culture to accept without question the counsel of authority figures like physicians (Zea et al., 1997).’ (Kopelowicz, 2003; Kopelowicz et al., 2012) as cited in Lopez & Kopelowicz (2002) p.15.  ‘This study integrated Chinese cultural values and practices into the use of CBT. For example, the more hierarchical approach to the doctor–patient relationship could be geared to the therapist’s advantage in the early phase of engagement in CBT. However, the emphasis then needed to shift to a more collaborative relationship, with encouragement of the patient contributing to the therapy’ (Ng, 2006) (Li et al., 2015, p.1901)  ‘One of the psychologists talked about patients not being comfortable with downward arrow technique and Socratic dialogue. Most of them said cultural adaptation of CBT for psychosis patients expect a directive style rather than collaborative style.’ (Habib et al., 2015; Naeem et al., 2015) as cited in Naeem et al., 2016, p.50-51.  ‘Patients also like a directive style and probably don’t feel comfortable when a collaborative style is used.’ (Habib et al., 2015; Naeem et al., 2015) as cited in Naeem et al., 2010, p.171.  ‘Korean clients are likely to feel more comfortable with a didactic format than with an interactive situation, because the former is less conducive to experiential types of sharing that require self-disclosure. Their culturally determined respect for experts and authority may help facilitate both the educational process and the therapeutic alliance.’ (Shin & Lukens, 2002, p.1126)  ‘Visual aids, including charts and handouts, were used to reinforce the didactic materials.’ (Shin & Lukens 2002, p.1127)  ‘Family members reported that their ill relatives were uncomfortable with written material, such as writing exercises during sessions or for homework assignments. Instead, patients considered that therapy was for talking and learning but not for written activities that reminded them of school activity that they believed had nothing to do with therapy. Therefore, the skills trainers switched to oral exercises and assignments, which the patients readily accepted.’ (Valencia et al., 2007; Valencia et al., 2010) as cited in Valencia et al., (2015) p.222. |
| **Context and delivery**  Adapting the delivery of the intervention to accommodate , contextual issues (e.g. lack of commitment, funding or resources) to facilitate feasibility in particular cultural context | **Location of intervention** | Delivery of sessions at accessible and culturally appropriate location | ‘Additional adaptations were made because all of the programs were not delivered within standard CMHTs but to overcome organisational barriers we provided these outside.’ (Carra et al., 2007, author email)  ‘Unlike in the United States, the number of psychiatric beds per capita is on the increase in China, and community-based services are extremely limited. It is our belief that active promotion of psychiatric rehabilitation in Chinese psychiatric hospitals at the present time will pave the way for large-scale implementation of community-based rehabilitation in the future.’ (Weng et al., 2005, p.402)  ‘In this study the aim was to finish the main content of the education programme in the hospital, and connect with the families after the patients were discharged because few nurses work in community settings and the community mental health services were not sufficiently well developed.’ (Li & Arthur, 2005) as cited in Li (2003) thesis.  ‘Providing psychological treatment during the inpatient phase might offer improved opportunities, especially in a developing country; this is especially important because the distance from health care facility was reported to be one of the major barriers to receiving therapy regularly (since in Pakistan most patients and their carers travel long distances to see therapists in psychiatric centres, which are mainly in large urban areas) (Naeem, Gobbi, Ayub and Kingdon, 2010)’ (Habib et al., 2015, p.201)  Delivering the intervention in patients’ homes ‘as the psychotic patients in the Chinese rural community reside dispersedly and have different individual problems, they need more specifically tailored intervention methods conducted in their homes.’ (Ran et al., 2003, p.74)  ‘The shortage of mental health care in rural China might be tackled by community care.’ (Xiang et al., 1994, p.544)  ‘Intervention is provided by hospital-based physicians and nurses since these are the only mental health professionals available in China.’ (Xiong et al., 1994, p.240) |
|  | **Flexibility in scheduling sessions** | Flexibility in scheduling of therapy sessions to accommodate culture (e.g. frequency, time, intensity) | ‘To encourage participation, all of the clients and caregivers were phoned once a week to keep them engaged during the 3 months of the PEP. All of the participants were further reminded to attend the next session 1 day in advance; repeat sessions were made available to them; and the program was conducted on the weekends.’ (Chan et al., 2009, p.68)  ‘We designed this comprehensive psychosocial intervention to be delivered on the same day once a month mainly owing to the care structure in China, the potential time and cost burden to patients and their family members, and the feasibility of adoption by other care settings. In China, most patients with schizophrenia live with their family members because of limited social welfare for severely mentally ill patients. Many of these family members also work full time, so it is not convenient for them to take time off every week and bring the patients for therapy. In addition, all our psychosocial interventions were group based, so having many patients and their family members come in once a week at the same time was not feasible or practical.’ (Guo et al., 2010, p.897)  ‘Providing psychological treatment during the inpatient phase might offer improved opportunities’ (Naeem, Gobbi, Ayub and Kingdon, 2010)’ (Habib et al., 2015, p.201)  ‘Attendance was facilitated by presentation, in each neighbourhood, of each lecture twice, once during the day and the other in the evening. Unlimited time was allowed for discussion and questions after each lecture. (Zhang & Yan, 1993, p.50) |
|  | **Mode of intervention** | Modality of treatment to accommodate culture (e.g. group or individual; patient and/or caregiver attendees) | We didn't include the patient, as Italian culture hardly allows an open expression of feelings re the ill relative in front of other people not belonging to the family (Carra et al., 2007, author email)  ‘Traditional therapist-led single-family therapy that focuses on the psychological problems of the patient or family members may not be easily accepted by Chinese families because of their reluctance to reveal private thoughts and feelings in front of others, especially a therapist or someone not familiar to them…. Therefore, it may be difficult to build rapport between the therapist and the family in the traditional family therapy session (Fung & Ma, 1997).’ (Chien & Chan, 2004; Chien & Chan, 2013; Chien Chan & Thompson, 2006; Chien, Norman & Thompson, 2004; Chien, Thompson & Norman, 2008, author email)  ‘Multiple family sessions gave them the opportunity to speak about their children with each other, which they felt was needed.’ (Koolaee & Etemadi, 2009, p.11)  ‘Patients were excluded from the multifamily group, which was different from McFarlane’s (2002) model since caregivers are likely to be inhibited in discussing their frustrations about the ill member due to cultural tendencies to avoid direct confrontation within family in front of many “outsiders” (Bae & Kung, 2000)’ (Kung et al., 2012, p.388)  ‘Patients were addressed separately, they were not required to attend the intervention sessions, because some caregivers felt that they would be unable to discuss their problems freely in the patient’s presence.’ (Kulhara et al., 2009, p.474) |
|  | **Length of intervention** | Duration of treatment to accommodate cultural or contextual barriers | ‘Although the multiple-family group intervention is generally used for two years, funding constraints necessitated a briefer intervention.’ (Bradley et al., 2006, p.524)  ‘The number of sessions had been reduced from 18 to 14 two-hour sessions.’ (Chien & Lee, 2010, p.318)  ‘Psychosocial interventions have become more popular in recent decades in China, but the number of well-trained therapists remains limited in many Chinese psychiatric settings. More frequent therapy sessions could be not only difficult for patients and family members but also hard for many psychiatric settings to adopt.’ (Guo et al., 2010, p. 897)  ‘The final adaptation was that the duration of the intervention was only 6 months in comparison to the usual 9- 24 months. This is because many Chinese immigrants are reluctant to commit to long-term psycho-social treatments primarily because many of them are involved in low paying jobs with long work hours.’ (Kung et al., 2012, p.388-389).  ‘A similar contextual barrier was the particular difficulty in organisations that are not fully committed to recovery, because IMR redistributes power to clients within a wider recovery paradigm, they suggested that this barrier should be the key priority in IMR implementation. Therefore, instead of fully complying with the standardized 9-month toolkit, a brief IMR was pragmatically developed to benefit patients living with various degrees of deinstitutionalization and cultural stigmatization.’ (Lin et al., 2013, author email)  ‘The intervention is ongoing rather than time limited, because stopping it would mean the termination of any regular follow-up care.’ (Xiong et al., 1994, p.240) |
| **Content**  Addition or removal of specific content | **Addition of specific content** | Adding culturally-relevant content /materials to the intervention manual | Adapted model by adding a further phase for the 'SG' programme for cultural reasons (Carra et al., 2007, author email)  Chan et al., (2009) incorporated sessions about diagnostic labels & biochemical factors and laws in relation to mental health care in Hong Kong : ‘Session 3: Causes of psychosis, labels and diagnosis; Explore the need for diagnosis, its procedure, complexity, and relationship to treatment. Causes such as genetics, neurological, environmental, psychological, and biochemical factors. Session 8: Laws related to mental health care in Hong Kong Mental Health Ordinance in Hong Kong; Ways of admission to mental hospital.’ (p.75)  Chien (2008) added a module to their mutual support intervention for family members to discuss ‘Chinese culture of family and mental illness’ (p.33)  Chien & Chan (2013) added ‘Discussion about Chinese culture of family and mental illness’ (p.1332)  Chien, Chan & Thompson (2006) added ‘Sharing and understanding of individual concerns and cultural issues’ component to the mutual support group programme (p.43)  Chien & Thompson (2013) added ‘information sharing about schizophrenia and its related illness behavior; discussion about Chinese culture of family and mental illness’ (p.1000)  ‘Finally, we incorporated additional role play exercises to compensate for the absence of Arabic video materials, especially in the mentalizing section.’ (Gohar et al., 2013, p.14)  The intervention included a session to address ‘other cause of mental disorders such as supernatural causes, magico-religious treatments; other issues such as marriage, pregnancy, childbirth, and substance abuse’ and emphasised marriage as a primary concern because ‘myths prevail that marriage could cure the patient.’ ‘Therapists dispelled these beliefs and advised the family to wait until the patient is stable before considering marriage.’ (Kulhara et al., 2009) as cited in Shankar & Menon (1993) p.10-11.  ‘The content of the intervention also reflected issues that are felt to be more relevant for Indian families such as belief in supernatural causation, the role of indigenous treatments, cultural attitudes towards medication, marriage etc. On the other hand, there was a much less emphasis on constructs such as expressed emotions.’ (Kulhara et al. 2009, author email)  ‘Accordingly, with permission from the MCT developers (Moritz & Woodward, 2007a), some of the slides were removed and a few changes were introduced.’ (Kumar et al., 2010, p.153)  ‘Falloon et al.’s (1984) BFT model was modified for this study. This culturally modified model included the sociocultural approach of patient and family education and the addition of a new component to tackle poor drug compliance while retaining an emphasis on problem solving skill training.’ (Razali et al., 2000, p.284)  ‘The materials used in the SCIT intervention program (i.e. videos and photographs) were remade using Chinese actors following the original scripts.’ (Wang et al., 2013, p. 753) |
|  | **Removal of specific content** | Removing culturally- irrelevant content/ materials from the intervention manual | ‘Modified some written vignettes describing emotions as they relate to pets, as it is not common in Egyptian culture to have a dog or cat in one's home.’ (Gohar et al., 2013, p.14)  ‘We used most of the picture (e.g., faces, social scenarios), video, and auditory stimuli from the original version but excluded some that were not well suited to Egyptian culture. For example, we excluded pictures and videos that depicted unfamiliar recreational activities (e.g., American football or drinking alcohol beverages)’ (Gohar et al., 2013., p.13)  ‘We omitted communication skills training as this is the least important among the three core components of the standard model. This is supported by the finding that generally the carers of Malay schizophrenic patients could tolerate negative symptoms of schizophrenia (Salleh, 1994)’ (Razali et al., 2000, p.284)  ‘For example, JTC was illustrated in the original MCT using the conspiracy theory about Paul McCartney's death. This was substituted by a classic local myth about keeping pregnancy secretive during the first trimester so as to avoid a miscarriage.’ (So et al., 2015, p.5)  ‘Only six of the seven learning activities used in the united states were used for Mexican patients. Video-assisted modelling was not used since skills training technology in Spanish had not been developed in Mexico. To overcome this obstacle, therapists demonstrated the skills to be learned during sessions.’ (Valencia et al., 2007; Valencia et al., 2010) as cited in Valencia et al. (2015) p.222.  ‘Another adaptation was the images used, as in Brazil, they do not have snow, trains and a very small number of patients can travel by plane.’ (Zimmer et al., 2007, author email) |
| **Therapeutic alliance**  Consideration of therapist qualities/ characteristics, approach and cultural competency training to improve engagement and alliance | **Therapists and client matched for characteristics** | Therapists matched for characteristics (e.g. ethnicity, age, gender, language spoken etc.) | ‘Vietnamese primary therapists were consistent for two intakes of the two cultural groups’ (Bradley et al., 2006, p.524)  ‘Cultural adaptations of the program included the use of Vietnamese speaking staff for all aspects of service provision within the program.’ (Bradley et al., 2006, p.525)  Use of a female therapist for Iranian intervention designed for mothers (Koolaee & Etemadi, 2009, author email)  ‘Additional cultural adaptations included the use of indigenous, bilingual, and bicultural staff of the community mental health center as skills trainers, the participation of family members (rather than clinicians) as "generalization aides"’ (Kopelowicz et al., 2003, p.214)  ‘As the participants in the study spoke either Mandarin or Cantonese, and some were more fluent in English, trilingual clinicians were sought.’ (Kung et al., 2012, p.390) |
|  | **Therapist ‘cultural competency’ training** | Therapists received some form of cultural competency training and supervision | Trainers ‘were all trained to meet cultural sensitivity standards outlined by the State of California and based on sound empirically-based principles (Rogler et al., 1987; Wallen, 1992). (Kopelowicz et al., 2003; Kopelowicz et al., 2012) as cited in Lopez & Kopelowicz (2002) p.24.  ‘Facilitators of these treatments should be educated and familiar with the relevant cultural values of the consumer.’ (Mausbach et al., 2008, p.73)  ‘The treating clinicians needed special training because psychiatrists and psychiatric nurses in China have no experience in the evaluation and management of the family and social problems faced by mentally ill patients.’ (Xiong et al., 1994, p.240) |
|  | **Therapeutic approach** | Therapeutic approach adapted to build rapport and trust between therapist and patient/family unit (e.g. informal, warm up activities/ice breakers, personalised, general conversation, self-disclosure) | ‘Skills trainers used an informal, personal style with patients and relatives that included the sharing of food and encouragement of 'small talk' before and after training sessions, made to encourage warm interactions between trainers, patients and relatives, thereby increasing retention in the study and increasing effectiveness.’ (Kopelowicz, 2003, p.214)  ‘During the engagement, phase attempts were made to build a positive therapeutic alliance with the family. Preliminary information (oral ⁄printed) about schizophrenia was provided. All this was done in a no fault atmosphere i.e. without attaching blame to anyone, especially the family.’ (Kulhara et al., 2009, p.474)  ‘Intervention focused on establishing trust relationship with patient and family, before identifying their individual needs.’ (Li & Arthur, 2005, p.340)  Accepting the patient’s interpretation of his or her illness to strengthen the therapeutic relationship. (Razali et al., 2000, p.288)  ‘Adaptations to Mexican culture included the therapists beginning the sessions by engaging in platica (small talk) with the patients which built trust.’ (Valencia et al., 2010, p.253)  ‘In addition, therapists offered their patients appropriate forms and amounts of self-disclosure from their own lives which generated a sense of personalismo or a personal orientation to therapeutic relationships that has been shown to improve the effectiveness of interventions with Latinos (Sue et al., 1991)’ (Valencia et al., 2010, p.253)  ‘Each session began with a short warm-up activity (about 5 min), which was designed to create a more relaxed atmosphere’ (Wang et al, 2013, p.753) |
| **Treatment goals**  Formulating treatment goals and encouraging outcomes that are realistic, culturally relevant and tailored to the family | **Intervention goals and expectations of outcome** | Ensuring treatment expectations are realistic and modifying treatment goals to ensure culturally relevant (e.g. collaborative/shared goals; cultural values emphasised) | ‘Emphasis was given to specific Chinese cultural characteristics and issues, including a strong tendency to expect immediate and practical help’ (Chien & Chan, 2004 p.1278)  ‘Specific Chinese cultural characteristics were emphasised during each group session including the ‘high expectation of immediate and practical help from other family members.’ (Meredith et al., 1994; Bae & Kung, 2000). (Chien, Chan & Thompson, 2006, p.44)  ‘Emphasis was given to specific Chinese cultural issues, such as their ‘high tendency to expect immediate practical help.’ (Chien & Thompson, 2013, p.999)  ‘Given the centrality of the family unit in decision making for Mexican Americans, (Sabogal et al., 1987) the focus was on the approval or disapproval of family members for taking medication.’ (Kopelowicz et al., 2012, p.268)  Content of sessions included: ‘ realistic goal setting’ (Kulhara et al., 2009, p.474)  ‘Basing format, content, and treatment goals on Mexican cultural values such as simpatı´a (the use of polite social relations (Diaz-Guerraro, 1994; Gloria & Peregoy, 1996) and personalismo (emphasizing warm relationships) (Gloria & Peregoy, 1996; Marin, 1989)’ (Mausbach et al., 2008, p.66)  The treatment goals were based on: ‘Mexican values and cultural scripts’ (Patterson et al, 2005., p.925)  ‘Cultural adaptations were made through the identification of personally relevant goals that often concerned improving relationships with family members’ (Valencia et al., 2007; Valencia et al., 2010) as cited in Valencia et al., (2015) p.230. |

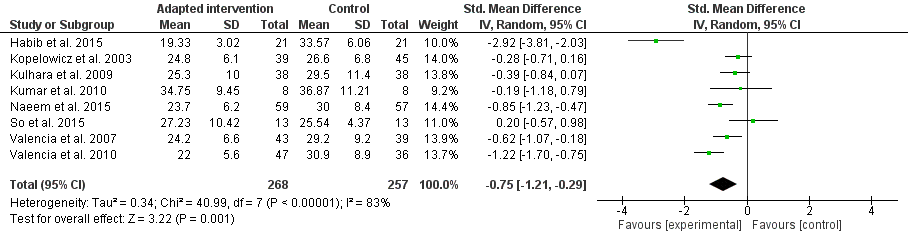
**Appendix 7: Forest plots**



**A7.1. Forest plot of effect of culturally-adapted psychosocial interventions compared to control on positive symptoms post-treatment**

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**A7.2. Forest plot of effect of culturally-adapted psychosocial interventions compared to control on negative symptoms post-treatment**

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**A7.3. Forest plot of effect of culturally-adapted psychosocial interventions compared to control on general symptoms post-treatment**

**Appendix 8**

**Table A8.1: *Positive symptoms POST-INTERVENTION 0-3 months (n=16)***

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Theme** | **SMDs** | | | **Heterogeneity** | | | | **Number of studies** | **Total sample size** |
| **Effect size** | **95% CI** | ***p*** | **Chi2** | **df** | ***I*2 (%)** | ***p*** |
| **Intervention type**  FI  Cognitive (CBT, MCT)  Skills training (ST, ST + FI)  **OR**  Skills training (ST, ST + FI) + SCST  Other: (ST, ST + FI, SCST, CBT and MCT) | -0.51  -0.75  -0.70  -0.48  -0.60 | -0.94 to -0.08  -1.55 to 0.05  -0.96 to -0.45  -0.95 to -0.01  -1.04 to -0.16 | **0.02**  **0.06**  **0.00001**  **0.009**  **0.008** | 30.78  42.99  1.92  11.51  55.61 | 6  4  2  3  8 | 81  91  0  74  86 | **0.0001**  **0.00001**  0.38  **0.05**  **0.008** | 7  5  3  4  9 | 469  392  249  291  683 |
| **Control**  Standard care/meds  Enhanced standard care  Active control | -0.84  -0.35  -0.33 | -1.29 to -0.38  -0.74 to 0.03  -1.24 to 0.58 | **0.0003**  0.07  0.47 | 28.15  18.82  19.53 | 6  5  2 | 79  73  90 | **0.0001**  **0.002**  **0.0001** | 7  6  3 | 449  421  282 |
| **Region/ Population**  Western country/ Minority  Non-western country/Majority | -0.84  -0.45 | -1.19 to -0.49  -0.81 to -0.09 | **0.00001**  **0.01** | 6.21  66.72 | 3  11 | 52  84 | 0.10  **0.00001** | 4  12 | 297  855 |
| **Attendees**  Patient only  Family only  Patient & family | 0.05  -1.10  -0.66 | -0.31 to 0.41  -2.64 to 0.44  -1.02 to -0.31 | 0.78  0.16  **0.0003** | 4.53  11.15  50.92 | 3  1  9 | 34  91  82 | 0.21  **0.0008**  **0.00001** | 4  2  10 | 726  112  764 |
| **Intervention modality**  Group  Individual  Both | -0.53  -0.28  -0.83 | -0.98 to -0.07  -0.75 to 0.19  -1.15 to -0.51 | **0.02**  0.24  **0.00001** | 56.10  10.46  0.13 | 9  2  1 | 84  81  0 | **0.00001**  **0.005**  0.72 | 10  3  2 | 539  400  165 |
| **Attrition**  Below 15%  Above 15% | -0.40  -0.51 | -0.73 to -0.07  -0.93 to -0.08 | **0.02**  **0.02** | 46.43  8.29 | 9  3 | 81  64 | **0.00001**  **0.04** | 10  4 | 827  267 |
| **ITT analyses**  Yes/ no attrition  No/ ‘as treated’ | -0.45  -0.70 | -0.82 to -0.07  -1.38 to -0.03 | **0.02**  **0.04** | 59.77  16.11 | 9  3 | 85  81 | **0.00001**  **0.0001** | 10  4 | 825  229 |
| **Design**  RCT  Cluster RCT | -0.65  -0.00 | -0.98 to -0.31  -0.25 to 0.24 | **0.0002**  0.97 | 73.04  0.29 | 13  1 | 82  0 | **0.00001**  0.59 | 14  2 | 897  255 |
| **Country**  Chinese  Not Chinese | -0.07  -0.82 | -0.29 to 0.14  -1.23 to -0.41 | 0.51  **0.0001** | 1.28  72.03 | 4  10 | 0  86 | 0.87  **0.00001** | 5  11 | 335  817 |
| **Pre-treatment differences**  No  Yes | -0.65  -0.29 | -1.01 to -0.29  -0.64 to 0.07 | **0.0005**  0.11 | 83.72  2.74 | 12  2 | 86  27 | **0.00001**  0.25 | 13  3 | 966  186 |
| **Measure**  PANSS  BPRS | -0.57  -0.55 | -0.96 to -0.18  -1.07 to -0.03 | **0.005**  **0.04** | 55.78  30.78 | 9  5 | 84  84 | **0.00001**  **0.0001** | 10  6 | 759  393 |

*Note: Bold text = significant at p< .05*

*CBT=Cognitive Behavioural Therapy; MCT=Metacognitive Therapy; SCST=Social Cognitive Skills Training; IMR=Illness Management and Recovery Programme; ITT = ‘intention to treat’; PE=Psychoeducation; ST=Skills Training; FI=Family Intervention; PANSS=Positive and Negative Symptom Scale; BPRS=Brief Psychiatric Rating Scale;*

**Table A8.2: *Negative symptoms POST-INTERVENTION 0-1 months (n=12)***

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Theme** | **SMDs** | | | **Heterogeneity** | | | | **Number of studies** | **Total sample size** |
| **Effect size** | **95% CI** | ***p*** | **Chi2** | **df** | ***I*2 (%)** | ***p*** |
| **Intervention type**  FI  Other (CBT, MCT, SCST, ST, ST +FI)  **OR**  Cognitive (CBT, MCT)  Skills training (ST, ST + FI)  Skills training (ST, ST + FI) + SCST | -0.12  -0.48  -0.57  -0.56  -0.39 | -0.58 to 0.35  -0.76 to -0.21  -1.00 to -0.14  -0.79 to -0.33  -0.82 to 0.03 | 0.62  **0.0007**  **0.01**  **0.00001**  0.07 | 4.61  22.53  12.98  2.76  9.52 | 2  8  4  3  3 | 57  64  69  0  68 | 0.10  **0.004**  **0.01**  0.43  **0.02** | 3  9  5  3  4 | 172  683  392  297  291 |
| **Control**  Standard care/ meds  Enhanced standard care  Active control | -0.66  0.05  -0.14 | -0.89 to -0.44  -0.53 to 0.63  -0.50 to 0.22 | **0.00001**  0.86  0.46 | 7.79  2.52  3.52 | 6  1  2 | 23  60  43 | 0.25  0.11  0.17 | 7  2  3 | 449  124  282 |
| **Region/ Population**  Western country/ Minority  Non-western country/Majority | -0.39  -0.39 | -0.76 to -0.02  -0.74 to -0.04 | **0.04**  **0.03** | 11.51  19.10 | 4  6 | 65  69 | **0.02**  **0.004** | 5  7 | 345  510 |
| **Attendees**  Patient only  Patient & family | -0.09  -0.54 | -0.34 to 0.16  -0.84 to -0.24 | **0.48**  **0.0004** | 2.02  18.92 | 2  7 | 1  63 | 0.36  0.008 | 3  8 | 250  529 |
| **Intervention modality**  Group  Individual  Both | -0.34  -0.49  -0.38 | -0.66 to -0.03  -1.15 to 0.17  -1.04 to 0.28 | **0.03**  0.15  0.26 | 11.32  7.81  11.07 | 6  1  2 | 47  87  82 | **0.08**  **0.005**  **0.004** | 7  2  3 | 334  308  213 |
| **Attrition**  Below 15%  Above 15% | -0.32  -0.35 | -0.67 to 0.02  -0.75 to 0.05 | 0.07  0.09 | 12.77  11.92 | 4  4 | 69  66 | **0.01**  **0.02** | 5  5 | 482  315 |
| **ITT analyses**  Yes/ no attrition  No/ ‘as treated’ | -0.42  -0.24 | -0.79 to -0.05  -0.66 to 0.18 | **0.03**  0.26 | 19.20  7.37 | 5  3 | 74  59 | **0.002**  **0.06** | 6  4 | 516  241 |
| **Country**  Chinese  Not Chinese | -0.19  -0.42 | -0.45 to 0.08  -0.71 to -0.14 | 0.17  **0.004** | 0.17  27.56 | 1  9 | 0  67 | 0.68  **0.001** | 2  10 | 218  637 |
| **Pre-treatment differences**  No  Yes | -0.43  -0.27 | -0.75 to -0.10  -0.56 to 0.02 | **0.009**  0.06 | 29.87  0.10 | 8  2 | 73  0 | **0.0002**  0.95 | 9  3 | 669  186 |
| **Measure**  PANSS  BPRS + SANS | -0.45  -0.06 | -0.70 to -0.20  -0.90 to 0.79 | **0.004**  0.89 | 23.51  4.34 | 9  1 | 62  77 | **0.005**  **0.04** | 10  2 | 759  96 |

*Note: Bold text = significant at p< .05*

*CBT=Cognitive Behavioural Therapy; MCT=Metacognitive Therapy; SCST=Social Cognitive Skills Training; IMR=Illness Management and Recovery Programme; ITT = ‘intention to treat’; PE=Psychoeducation; ST=Skills Training; FI=Family Intervention; PANSS=Positive and Negative Symptom Scale; BPRS=Brief Psychiatric Rating Scale;*

**Table A8.3: *General symptoms POST-INTERVENTION 0-1 months (n=8)***

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Theme** | **SMDs** | | | **Heterogeneity** | | | | **Number of studies** | **Total sample size** |
| **Effect size** | **95% CI** | ***p*** | **Chi2** | **df** | ***I*2 (%)** | ***p*** |
| **Intervention type**  Cognitive (CBT, MCT)  Other (FI, ST, ST + FI)  OR  Skills training (ST, ST + FI) | -0.93  -0.62  -0.70 | -2.05 to 0.19  -1.02 to 0.22  -1.23 to -0.17 | 0.10  **0.003**  **0.01** | 29.55  9.65  8.48 | 3  3  2 | 90  69  76 | **0.00001**  **0.02**  **0.01** | 4  4  3 | 200  325  249 |
| **Region/ Population**  Western country/ Minority  Non-western country/Majority | -0.70  -0.81 | -1.23 to -0.17  -1.60 to -0.02 | **0.01**  **0.05** | 8.48  32.46 | 2  4 | 76  88 | **0.01**  **0.00001** | 3  5 | 249  276 |
| **Attendees**  Patient only  Patient & family | 0.05  -1.08 | -0.55 to 0.66  -1.68 to -0.48 | 0.86  **0.0004** | 0.39  30.86 | 1  4 | 0  87 | 0.53  **0.00001** | 2  5 | 112  407 |
| **Intervention modality**  Group  Individual & Group | -0.68  -0.92 | -1.50 to 0.14  -1.50 to -0.33 | 0.11  **0.002** | 33.09  3.26 | 4  1 | 88  69 | **0.00001**  0.07 | 5  2 | 224  165 |
| **Attrition**  Below 15%  Above 15% | -0.57  -0.56 | -1.13 to -0.01  -1.07 to -0.05 | **0.05**  **0.03** | 3.84  11.59 | 1  3 | 74  79 | **0.05**  **0.009** | 2  4 | 200  267 |
| **ITT analyses**  Yes/ no attrition  No/ ‘as treated’ | -1.30  -0.47 | -2.36 to -0.23  -1.26 to 0.32 | **0.02**  0.25 | 24.60  12.95 | 2  2 | 92  85 | **0.00001**  **0.002** | 3  3 | 234  193 |
| **Pre-treatment differences**  No  Yes | -1.12  -0.25 | -1.74 to -0.50  -0.54 to 0.04 | **0.0004**  0.09 | 24.52  1.70 | 4  2 | 84  0 | **0.0001**  0.43 | 5  3 | 339  186 |

*Note: Bold text = significant at p< .05*

*CBT=Cognitive Behavioural Therapy; MCT=Metacognitive Therapy; SCST=Social Cognitive Skills Training; IMR=Illness Management and Recovery Programme; ITT = ‘intention to treat’; PE=Psychoeducation; ST=Skills Training; FI=Family Intervention; PANSS=Positive and Negative Symptom Scale; BPRS=Brief Psychiatric Rating Scale;*

**Appendix 9:**

**Table A9: *Cultural-adaptations emerging from thematic analysis of psychosocial interventions for psychosis (n=46)***

| **Author/Theme** | **Language** | **Concepts & illness models** | **Family** | **Cultural norms & practices** | **Communication** | **Context & delivery** | **Content** | **Therapeutic alliance** | **Treatment goals** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Bradley et al. (2006) | x | x | x | x |  | x |  | x |  |
| Carrà et al. (2006) | x |  | x | x |  | x | x |  |  |
| Chan et al. (2009) | x | x | x |  |  | x | x |  |  |
| Chien (2008) | x | x | x | x | x |  | x |  | x |
| Chien & Chan (2004)\* | x | x | x | x | x |  | x |  | x |
| Chien & Chan (2013)\* | x | x | x | x | x |  | x |  | x |
| Chien et al. (2006)\* | x | x | x | x | x |  | x |  | x |
| Chien & Lee (2010) | x | x | x |  | x | x |  |  |  |
| Chien & Lee (2013) | x |  |  | x | x |  |  |  |  |
| Chien et al. (2004)\* | x | x | x | x | x |  | x |  | x |
| Chien & Thompson (2013) | x | x | x | x | x |  | x |  | x |
| Chien et al. (2008)\* | x | x | x | x | x |  | x |  | x |
| Chien & Wong (2007) | x | x | x |  |  |  |  |  |  |
| **Author/Theme** | **Language** | **Concepts & illness models** | **Family** | **Cultural norms & practices** | **Communication** | **Context & delivery** | **Content** | **Therapeutic alliance** | **Treatment goals** |
| Gohar et al. (2013) | x |  |  | x |  | x | x |  |  |
| Guo et al. (2013) | x | x | x | x |  | x |  |  |  |
| Habib et al. (2015)\* | x | x | x | x | x | x |  |  |  |
| Koolaee & Etemadi (2009) | x | x | x | x |  | x |  | x |  |
| Kopelowicz et al. (2003) | x | x | x | x | x |  |  | x |  |
| Kopelowicz et al. (2012) | x | x | x | x | x |  |  | x | x |
| Kulhara et al. (2009) | x | x | x |  |  | x | x | x | x |
| Kumar et al. (2012) | x |  |  |  |  |  | x |  |  |
| Kung et al. (2012)\*\* | x | x | x | x | x | x |  | x |  |
| Lak et al. (2010) | x |  |  | x |  |  |  |  |  |
| Li & Arthur (2005) | x | x | x |  | x | x |  |  |  |
| Li et al. (2015) | x |  | x |  | x |  |  |  |  |
| Lin et al. (2013)\* | x | x |  |  |  | x | x |  |  |
| Lin et al. (2013)\*\* | x | x |  |  |  | x | x |  |  |
| **Author/Theme** | **Language** | **Concepts & illness models** | **Family** | **Cultural norms & practices** | **Communication** | **Context & delivery** | **Content** | **Therapeutic alliance** | **Treatment goals** |
| Mann & Chong (2004) | x | x |  | x |  |  |  |  |  |
| Mausbach et al. (2008)\* | x | x | x | x | x |  |  | x | x |
| Naeem et al. (2015)\* | x | x | x | x | x | x |  |  |  |
| Patterson et al. (2005)\* | x | x | x | x | x |  |  | x | x |
| Ran et al. (2003) | x | x | x |  |  | x |  |  |  |
| Razali et al. (2000) | x | x | x | x | x |  | x | x |  |
| Shin & Lukens (2002) | x | x | x | x | x |  |  |  |  |
| So et al. (2015) | x |  |  | x |  |  | x |  |  |
| Valencia et al. (2007)\* | x | x | x |  | x | x | x | x | x |
| Valencia et al. (2010)\* | x | x | x |  | x | x | x | x | x |
| Wahass & Kent (1997) | x |  |  | x |  |  |  |  |  |
| Wang et al. (2013) | x |  |  |  |  |  | x | x |  |
| Weng et al. (2005) | x |  | x | x |  | x |  |  |  |
| Xiang et al. (1994) | x | x | x |  |  | x |  |  |  |
| **Author/Theme** | **Language** | **Concepts & illness models** | **Family** | **Cultural norms & practices** | **Communication** | **Context & delivery** | **Content** | **Therapeutic alliance** | **Treatment goals** |
| Xiong et al. (1994) | x | x | x |  |  | x |  | x |  |
| Zhang & Yan (1993)\* | x | x | x |  |  | x |  |  |  |
| Zhang et al. (1994) | x | x | x |  |  |  |  |  |  |
| Zhang et al. (1998)\* | x | x | x |  |  | x |  |  |  |
| Zimmer et al. (2007) | x | x |  |  |  |  | x |  |  |
| **Total** | 46 | 36 | 35 | 27 | 22 | 22 | 20 | 13 | 13 |