TECHNICAL COMMENTARY

Cultural differences

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Introduction

Cultural differences may influence the course and outcome of illness for people with schizophrenia. These may be the result of differences in understanding of mental illness, or different treatment approaches and attitudes towards the disorder. For example, some cultures may improve outcomes more so than others by providing more accessible pathways to care, including ready access to treatment and family and social support, which can all assist the individual to better deal with symptoms and any associated distress. Negative cultural attitudes towards mental illness may also exacerbate stigma and social isolation, and some cultures may focus more on "abnormal" behaviour than other cultures.

Method

We have included only systematic reviews (systematic literature search, detailed methodology with inclusion/exclusion criteria) published in full text, in English, from the year 2000 that report results separately for people with a diagnosis of schizophrenia, schizoaffective disorder, schizophreniform disorder or first episode schizophrenia. Reviews were identified by searching the databases MEDLINE, EMBASE, CINAHL, Current Contents, PsycINFO and the Cochrane library. Hand searching reference lists of identified reviews was also conducted. When multiple copies of reviews were found, only the most recent version was included. Reviews with pooled data are given priority for inclusion.

Review reporting assessment was guided by the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) checklist that describes a preferred way to present a meta-analysis[1]. Reviews rated as having less than 50% of items checked have been excluded from the library. The PRISMA flow diagram is a suggested way of providing information about studies included and excluded with reasons for exclusion. Where no flow diagram has been presented by individual reviews, but identified studies have been described in the text, reviews have been checked for this item. Note that early reviews may have been guided by less stringent reporting checklists than the PRISMA, and that some reviews may have been limited by journal guidelines.

Evidence was graded using the Grading of Recommendations Assessment, Development and Evaluation (GRADE) Working Group approach where high quality evidence such as that gained from randomised controlled trials (RCTs) may be downgraded to moderate or low if review and study quality is limited, if there is inconsistency in results, indirect comparisons, imprecise or sparse data and high probability of reporting bias. It may also be downgraded if risks associated with the intervention or other matter under review are high. Conversely, low quality evidence such as that gained from observational studies may be upgraded if effect sizes are large, there is a dose dependent response or if results are reasonably consistent, precise and direct with low associated risks (see end of table for an explanation of these terms)[2]. The resulting table represents an objective summary of the available evidence, although the conclusions are solely the opinion of staff of NeuRA (Neuroscience Research Australia).

Results

We found five systematic reviews that met our inclusion criteria[3-7].

- Moderate quality evidence suggests rates of mortality, remission, relapse, social disability, marital status, and employment vary across studies conducted in different countries, both in the developing and the developed world.

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- Moderate quality evidence shows a small increased risk of compulsory psychiatric admissions in migrant groups compared to native populations.
- Compared to white ethnic groups, there was a small increased risk of compulsory psychiatric admissions in Black Caribbean, Black African, South Asian, East Asian, and other minority groups. Black people in the UK were less likely to be hospitalised on first presentation to services, or to be referred to specialist services, but were more likely to have had involvement with the police during admission to hospital. The most common explanations for these findings include having psychotic symptoms, perceived risk of violence, police contact, absence of or mistrust of general practitioners, and ethnic disadvantages.
- Moderate to low quality evidence indicates there may be fewer compulsory admissions for Asians in Canada with first-episode psychosis than for Whites, Blacks, or those of other ethnic backgrounds.

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Barnett P, Mackay E, Matthews H, Gate R, Greenwood H, Ariyo K, Bhui K, Halvorsrud K, Pilling S, Smith S

Ethnic variations in compulsory detention under the Mental Health Act: a systematic review and meta-analysis of international data

The Lancet Psychiatry 2019; 6: 305-17

View review abstract online

Comparison	**Ethnic variations in compulsory psychiatric admissions.**
Summary of evidence	**Moderate quality evidence (large samples, mostly inconsistent, imprecise, direct) shows a small effect of increased compulsory psychiatric admissions in migrant groups compared to native groups. Compared to white ethnic groups, there were small effects of increased compulsory psychiatric admissions in Black Caribbean, Black African, South Asian, East Asian, and other minority groups. Authors report that the most common explanations for the increased risk of detainment in these groups included psychotic symptoms, perceived risk of violence, having police contact, absence of or mistrust of general practitioners, and ethnic disadvantages.**

Hospital admissions

71 studies, N = 1,953,135

A small effect showed migrant groups in general were more likely to be compulsorily admitted to hospital than native groups;

OR = 12 studies, 1.50, 95%CI 1.21 to 1.87, $p = 0.0003$, $I^2 = 87\%$

Small effects showed Black Caribbean, Black African, South Asian, East Asian, and other minority ethnicity patients were more likely to be compulsorily admitted to hospital than white ethnic groups;

Black Caribbean: 25 studies, OR = 2.53, 95%CI 2.03 to 3.16, $p < 0.0001$, $I^2 = 72\%$

Black African: 10 studies, OR = 2.27, 95%CI 1.62 to 3.19, $p < 0.0001$, $I^2 = 71\%$

South Asian: 20 studies, OR = 1.33, 95%CI 1.07 to 1.65, $p = 0.0091$, $I^2 = 83\%$

East Asian: 3 studies, OR = 2.17, 95%CI 1.47 to 3.22, $p = 0.0001$, $I^2 = 9\%$

Other minority groups: 13 studies, OR = 1.66, 95%CI 1.29 to 2.14, $p < 0.0001$, 81%

A small effect showed black Caribbean patients were also more likely to be readmitted to hospital than white ethnic groups;

OR = 7 studies, 2.30, 95%CI 1.22 to 4.34, $p = 0\ 0102$, $I^2 = 82\%$

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Authors report that the most common explanations for the increased risk of detainment in these groups included psychotic symptoms, perceived risk of violence, having police contact, absence of or mistrust of general practitioners, and ethnic disadvantages. Subgroup analyses showed UK-based studies reported increased odds of compulsory admission in black ethnic groups compared with international studies. More women in the samples was also a significant predictor of compulsory admission to hospital in black, unspecified, and black Caribbean groups. Recent publication date was a significant predictor of compulsory admission to hospital only in black Caribbean groups. There were no moderating effects of age, study quality, or whether data were adjusted.

Consistency in results‡	Mostly inconsistent
Precision in results§	Imprecise
Directness of results‖	Direct

Bhui K, Stansfeld S, Hull S, Priebe S, Mole F, Feder G

Ethnic variations in pathways to and use of specialist mental health services in the UK. Systematic review

British Journal of Psychiatry 2003; 182: 105-116

View review abstract online

Comparison	**Ethnic variations in access to care, continuity of contact, and voluntary and compulsory psychiatric in-patient admissions.**
Summary of evidence	**Moderate quality evidence (large samples, unable to assess consistency, imprecise, direct) suggests a large effect that black people are more likely to have had compulsory hospital admissions than white people. Black people may also be less likely to be referred to specialist services, and police may be more likely to have been involved during hospital admission.**

Hospital admissions

A significant, medium to large effect size of increased rates of compulsory hospital admission in black people compared to white people in the UK;

12 studies, N = 6,753, OR = 4.31, 95%CI 3.33 to 5.58, $p < 0.05$

Continuity of contact
Compared with white people, services were less likely to maintain contact with black and South Asian people in one part of south London (Norwood, 1 study) but not in other areas of London (2 studies), suggesting variation in local service provision. Compared with white people, black people were more likely to be in contact with services at 5- and 18-year follow-up, respectively (2 studies).
Pathways to care in the UK
1 study reported that compared with white patients, black patients had more complex routes to specialist care, including contact with multiple carers before access to a specialist. A greater proportion of black patients had some contact with a helping agency the week before psychiatric service contact (1 study), and hospital admission was more likely to follow a home visit (1 study). Compared with white and South Asian patients who visited their GP, black people were less likely to be referred to specialist services (3 studies). However, among patients presenting to general practice who are recognised to have a mental health problem, black patients were more likely to be found in specialist services (2 studies). The police were more likely to be involved in admissions or readmissions of black people (3 studies), though police involvement before admission was explained by a lack of GP involvement rather than ethnic origin of the patients (1 study). Black people were most likely to present in crisis, often seeing the duty psychiatrist as a first point of contact with services (2 studies). Specialist referral following primary care assessments appeared to be equally common among white and South Asian patients (1 West London study), but hospital admission was more likely among South Asians following a home visit (2 studies). South Asians had the highest community rates of mental disorder, were the most frequent consulters in primary care but were less likely than white people to have their mental disorder recognised (2 Birmingham studies).

Consistency in results	Unable to assess; no measure of consistency is reported.
Precision in results	Imprecise where CIs are reported.
Directness of results	Direct

Chorlton E, McKenzie K, Morgan C, Doody G

Course and outcome of psychosis in black Caribbean populations and other ethnic groups living in the UK: A systematic review

International Journal of Social Psychiatry 2011; 58(4): 400-408

View review abstract online	
Comparison	**Outcomes in black Caribbean and other ethnic groups in the UK.**
Summary of evidence	**Moderate quality evidence (large samples, unable to assess consistency or precision, direct) suggests no consistent differences in outcome between black Caribbean people with schizophrenia and other ethnic groups.**

Forensic involvement

4 studies (N = 463) reported increased police contact, imprisonment or convictions in black Caribbean people compared to white people.

2 studies (N = 530) reported no association between imprisonment or police escort to hospital and ethnicity.

Service use

Contact with community services

1 study (N = 62) reported that black Caribbean people were significantly more likely to miss more than 1 outpatient appointment in the first 6 months after discharge than other ethnic groups.

2 studies (N = 261) reported no significant differences in the number of people who were in contact with services at 1 to 5 year follow-up (white British, black, black Caribbean, Asian); 1 study (N = 140) reported no significant differences in the level of service use at 2 year follow-up (white, black Caribbean).

Involuntary admissions

3 studies (N = 368) reported that black Caribbean people showed increased likelihood of involuntary admission to hospital compared to white British participants, while black Caribbean people were also twice as likely to have multiple involuntary hospitalisations compared to white British.

2 studies (N = 259) reported no association between ethnicity and involuntary admissions however the ethnic categories were not as strictly defined in these studies (e.g. using only ‘black’ vs. ‘white’ categories).

Number and length of hospital admissions

1 study (N = 75) reported that black people had significantly more readmissions than white people; 1 study (N = 93) reported that white people were significantly more likely to have been readmitted than other ethnicities at 1 year follow-up, but not 5 year follow-up; 2 studies (N = 275) reported longer length of hospital stay for black Caribbean people compared to white people.

2 studies (N = 257) reported no significant differences in the number of admissions; 6 studies (N = 1040) reported no differences in the length of hospital stay.

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Symptoms
Clinical course 3 studies (N = 413) reported no association between course of illness and ethnicity. 1 study (N = 437) reported that black Caribbean people were 40% less likely to have a continuous course of illness than white British people after controlling for diagnosis, age, length of illness, and education; 1 study (N = 168) reported a trend for black Caribbean people to have a non-continuous course of illness, and to be significantly more likely to be given a rating of 'recovered' compared to white people. *Positive symptoms* 4 studies (N = 461) reported no significant association between positive symptoms and ethnicity 1 study (N = 78) reported significantly more 'hallucinatory behaviour' in people from a 'Caribbean-born' background than white people. *Negative symptoms* 6 studies (N = 677) reported no significant association between negative symptoms and ethnicity. 1 study (N = 91) reported higher rates of 'loss of interest' and 'concentration' in white people. *Depression* 2 studies (N = 603) reported no significant association between depression and ethnicity. *Self-harm and suicide* 2 studies (N = 605) reported reduced likelihood of self-harm or suicide in black Caribbean people (particularly over 35 years old) compared to white people.
Social functioning and employment
7 studies (N = 1120) reported no association between social functioning, employment, type of accommodation and ethnicity. 1 study (N = 109) reported that black Caribbean people scored significantly worse on symptom-related dysfunction and limited leisure activity than white people; no differences were reported for impairment in global social functioning. 1 study (N = 154) reported higher levels of employment in black Caribbean people than Asian and white people.
Police involvement
4 studies (N = 463) reported increased police contact, imprisonment or convictions in black Caribbean people compared to white people. 2 studies (N = 530) reported no association between imprisonment or police escort to hospital and ethnicity.
Global outcome

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1 study (N = 100) reported that 'poor outcome' was significantly higher in black Caribbean people compared to either white or Asian people. Poor outcome was defined as people whose first episode did not show remission, who improved and then relapsed within the follow-up period, or who committed suicide.	
Consistency in results	Unable to assess; no measure of consistency is reported.
Precision in results	Unable to assess; no measure of consistency is reported.
Directness of results	Direct

Cohen A, Patel V, Thara R, Gureje O

Questioning an Axiom: Better Prognosis for Schizophrenia in the Developing World?

Schizophrenia Bulletin 2008; 34(2): 229-44

View review abstract online

Comparison	**Outcomes in low and middle income countries (as defined by the World Bank).**
Summary of evidence	**Moderate quality evidence (large samples, unable to assess consistency, precision, direct) suggests rates of mortality in people with schizophrenia vary considerably across the developing world, with long-term rates ranging from 3% in Bulgaria over 16 years to 30% in India over 26 years. Rates of remission and relapse, and the severity of social disability also vary, with better outcomes in India and Indonesia and poorer outcomes in China, Brazil and Ethiopia. Employment rates vary between 13 to 80%, and the marital status vary between 16 to 73%. Divorce rates range from 6% to 39%, and the percentage of single people with schizophrenia ranges from 26% to 65%.**

Mortality

Authors report that throughout the world, persons with schizophrenia have rates of mortality that are higher than general population.

1 Brazilian study reported 5.6% mortality over 2 years, and 4.3% suicides.

2 Chinese studies reported between 19.2% and 22.5% mortality over 10 to 12 years, and 2.2% to 4.2% suicides.

1 Ethiopian study reported 10.3% mortality over 1 to 4 years.

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9 Indian studies reported between 2.7% and 30.7% mortality over 1.5 to 26 years, with 2.1% to 7.8% suicides. 2 Indonesian studies reported between 11.9% to 20.3% mortality over 5 to 11 years. 1 Jamaican study reported 0.9% mortality over 1 year. 1 Nigerian studies reported 7.8% mortality over 3 years, and 0.9% suicides. 1 Bulgarian study reported 3% mortality over 16 years, and 3.6% suicides. 1 Colombian study reported 11.9% mortality over 26 years, and 1% suicides.
Relapse
Authors state that there is wide variation across studies in relapse rates. 2 Chinese studies reported 6.9-8.3% relapse rate over 2-12 years. 1 Colombian study reported 18.1% ≥1 relapses over 26 years. 1 Jamaican study reported 13% relapses over 1 year. 3 Indian studies reported between 23% and 83.6% relapses over 2 to 20 years.
Remission
Authors state that there is wide variation across studies in remission rates. 5 Indian studies reported between 8.2% and 77% remission rates. 2 Chinese studies reported between 22.1% to 34.5% remission rates. 1 Indonesian study reported 23.9% remission rates. 2 Nigerian studies reported between 45.7% and 81.7% remission rates. 1 Colombian study reported 31% had no or minimal symptoms over the previous month.
Disability and social outcomes
There was considerable variation in the reported rates among many countries worldwide, possibly due to differences in social and disability support. *Authors state that in India and Indonesia disability and social outcomes tend to be good, while those in China, Brazil, and Ethiopia tend to be poor.* Chennai, India: Prospective study: 1 year follow up, 73% had moderate to severe global disability (compared to 98% at baseline); 34% had no impairment in social function; 51% had no impairment in occupational function. Rural Karnataka, India: Prospective study: 1.5 year follow up, overall group showed significant reduction from baseline disability ($p < 0.001$). Sào Paulo, Brazil: Prospective study: 2 year follow up, 54% showed social withdrawal (compared to 74% at baseline); 37% showed impaired self-care (compared to 55% at baseline); 52% show impaired interest and information (compared to 68% at baseline).

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Sichuan, China: Prospective study: 2 year follow up, social function was mildly impaired in 20.9%; moderately impaired in 10.9% and seriously impaired in 68.2%.

Multisite, India: Prospective study: 2 year follow up, social function was not impaired in 33.7%; moderately impaired in 53.6% and seriously impaired in 12.7%

Ilesa, Nigeria: Prospective study: 2 year follow up, social relationships were satisfactory in 43.6%; moderate problems in 23.4% and serious problems in 22.3%. 10.6% had no social relationships.

Butajira, Ethiopia: Prospective study: 1-4 year follow up, functional status was reportedly poorer than industrialised countries.

Bali, Indonesia: Prospective study: 11 year follow up, 39% were self-supportive; 13% were semi self-supportive; 15% were socially adjusted to family or community; 32% were maladjusted.

Bali, Indonesia: Retrospective study: 5 year follow up, 34.8% were self-supportive; 19.6% were semi self-supportive; 30.4% were socially adjusted to family or community; 15.2% were maladjusted.

Madras Longitudinal Study: Prospective study: 20 year follow up, 73.8% had little impairment in GAF social and occupational domains.

Sofia, Bulgaria: Prospective study: 16 year follow up, 32.7% had minimal social disability on GAF-D; 36.4% had poor functioning on GAF-D. 32.7% had minimal disability on DAS; 36.4% had poor functioning on DAS.

China: Prospective study: 12 year follow up, 32.8% had good social functioning on GAF-D; 39.6% had serious impairment in social functioning on GAF-D.

Cali, Colombia: Prospective study: 26 year follow up, social disability on GAF-D was minimal in 45.8%; mild in 27.8%; moderate in 23.6%; severe in 2.8%. Social functioning on DAS was excellent in 52%; poor in 9% and severe in 0%.

Agra, India: Prospective study: 25 year follow up, GAF-D functioning was improved in 48.7% of men and 81.8% of women. DAS functioning was excellent in 60%; fairly good in 19% and not measured in 21%.

Chandigarh (rural), India: Prospective study: 15 year follow up, GAF-D social functioning was excellent in 71%; and serious impairment in 5%.

Chandigarh (urban), India: Prospective study: 15 year follow up, GAF-D social functioning was excellent in 63%; and serious impairment in 14%.

Ibadan, Nigeria: Prospective study: 2 year follow up. No results reported.

Ibadan, Nigeria: Retrospective study: 7-26 year follow up, women had poorer social outcomes following a first episode than men.

Abeokuta, Nigeria: Retrospective study: 13 year follow up, social function was unimpaired in 22%, mild in 19%, moderate in 23% and severe in 36%.

Marital status

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Data is quoted for percentage of people with a diagnosis of schizophrenia who are currently or have ever been married, separated, divorced, or otherwise; *Marriage rates are considerably below general population levels for all countries reported.* Saõ Paulo, Brazil: 16.9% married, 65.3% single, 15.4% separated/divorced, 2.4% widowed. Sichuan, China: 41.7% with a partner, 58.3% have no partner. Butajira, Ethiopia: 30% married, 52.1% never married, 17.9% separated/divorced/widowed. Madras Longitudinal study, India: 68.7% ever married and 31.3% never married at 10 year assessment; 73.7% currently married and 26.3% single at 20 years. Chennai, India: 60.9% ever married, 39.6% ever divorced/separated. Kamataka, India: around 50% currently married. Bali, Indonesia: at 5 year assessment, 51% currently married and 49% single; at 11 year assessment 63% ever married. Ilesa, Nigeria: 16% satisfactorily married, 7.4% married, with problems reported, 16% separated/divorced, 51% never married, 9.6% widowed. Abeokuta, Nigeria: 28.3% married, 27.5% separated/divorced, 39.2% never married, 5% widowed. Ibadan, Nigeria: 48.5% married or cohabitating, 44.4% single 5.8% divorced/separated/widowed, 1.2% other/not known.
Unemployment
Data is quoted for percentage of people with a diagnosis of schizophrenia who are not working in any sense at baseline and follow up (if reported). Employment measures varied between full, part time and domestic work, which is an influencing factor in many societies, particularly for women. *There was considerable variation in the reported rates among countries, possibly due to differences in social support, as well as the proportion engaged in household or domestic work;* Sào Paulo, Brazil: 41.1% had no occupation at baseline. Sichuan, China: 22.4% had no work at baseline. Butajira, Ethiopia: 45.3% were unemployed at baseline. Chandigarh, India: 44% were not working at follow up (time not reported). Multisite, India: 17.2% at 2 years, 17.8% at 5 years follow up were not working. Madras Longitudinal Study: men 47.5%, women 33.3% at 10 years, men 24%, women 75% at 20 years had poor occupation/housework function. Chennai, India: 49% were impaired in job/housework function at follow up (time not reported). Rural Karnataka, India: 87% were not regularly employed at baseline. Bali, Indonesia: 41.3% were unemployed at 11 years follow up. Jamaica: 43% were not gainfully employed at follow up (time not reported).

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Ilesa, Nigeria: 52.3% were not working at follow up (time not reported). Lagos, Nigeria: 43.4% did not maintain employment at follow up (time not reported). Abeokuta, Nigeria: 13% were totally incapacitated and 25% had significant work disruptions at follow up (time not reported). Trinidad: 34.8% were unemployed at baseline. Sofia, Bulgaria: 41.6% were not employed or were not engaged in full time household work in previous 2 years. Agra, India: 9.8% were unemployed at baseline. Chandigarh (rural), India: 0% were engaged in some paid work or housework in the past 2 years. Chandigarh (urban), India: 8% were engaged in some paid work or housework in the past 2 years. Unable to calculate unemployment estimates for China or Cali, Colombia.	
Consistency in results	Unable to assess; no measure of consistency is reported.
Precision in results	Unable to assess; no measure of consistency is reported.
Directness of results	Direct

Mann F, Fisher HL, Johnson S

A systematic review of ethnic variations in hospital admission and compulsory detention in first-episode psychosis

Journal of Mental Health 2014; 23(4): 205-211

View review abstract online

Comparison	**Rates of hospital admissions and involuntary admissions in first-episode psychosis patients according to ethnic minority vs. native populations.**
Summary of evidence	**Moderate to low quality evidence (small to medium-sized samples, unable to assess consistency or precision, direct) indicates African Caribbean men, and Black African people with first-episode psychosis in the UK may be more likely to have compulsory hospital admissions than white people with first-episode psychosis. White people in the UK are more likely to be hospitalized on first presentation than Black people or those of other ethnic backgrounds. There may be fewer compulsory admissions for Asians with first-episode psychosis in Canada**

	than for Whites, Blacks or those of other ethnic backgrounds.
Hospital admissions and involuntary admissions	
1 English study (N = 93) showed Whites were six times more likely to be hospitalized at first presentation compared with Black people and ‘‘others’’. Another English study (N = 462) reported African Caribbean men had over 3.5 times the odds, and Black African people had 4 times the odds of being compulsorily detained than White people. However, 2 English studies (N = 100 and 93) reported no differences in rates of compulsory detention between Whites, Blacks (incl. African Caribbeans) Asians or others. 1 Dutch study (N = 257) reported no overall differences in rates of compulsory detention between Whites, Moroccan, Surinamese, Turkish or Antellean people, although Surinamese women were more likely to be detained. 1 Canadian study (N = 81) reported fewer compulsory admissions for Asians compared with Whites, Blacks or ‘Others’. This study reported no differences in rates of hospitalization according to ethnic groupings. 1 New Zealand study (N = 200) showed no differences in rates of hospitalizations in Maori compared with non-Maori service users. Authors report that the majority of studies scored weak to moderate on quality.	
Consistency in results	Unable to assess; no measure of consistency is reported.
Precision in results	Unable to assess; no measure of consistency is reported.
Directness of results	Direct

Explanation of acronyms

CI = Confidence Interval, GP = general practitioner, I^2 = the percentage of the variability in effect estimates that is due to heterogeneity rather than sampling error (chance), N = number of participants, OR = odds ratio, *p* = statistical probability of obtaining that result ($p < 0.05$ generally regarded as significant)

Explanation of technical terms

* Bias has the potential to affect reviews of both RCT and observational studies. Forms of bias include; publication bias - trials that are not formally published tend to show less effect than published trials, further if there are statistically significant differences between groups in a trial, these trial results tend to get published before those of trials without significant differences; language bias – only including English language reports; funding bias - source of funding for the primary research with selective reporting of results within primary studies; outcome variable selection bias; database bias - including reports from some databases and not others; citation bias - preferential citation of authors. Trials can also be subject to bias when evaluators are not blind to treatment condition and selection bias of participants if trial samples are small.

† Different effect measures are reported by different reviews.

Reliability and validity refers to how accurate the instrument is. Sensitivity is the proportion of actual positives that are correctly identified (100% sensitivity = correct identification of all actual positives) and specificity is the proportion of negatives that are correctly identified (100% specificity = not identifying anyone as positive if they are truly not).

Weighted mean difference scores refer to mean differences between treatment and comparison groups after treatment (or occasionally pre to post treatment) and in a randomised trial there is an assumption that both groups are comparable on this measure prior to treatment. Standardised mean differences are divided by the pooled standard deviation (or the standard deviation of one group when groups are homogenous) that allows results from different scales to be combined and compared. Each study's mean difference is then given a weighting depending on the size of the sample and the variability in the data. 0.2 represents a small effect, 0.5 a medium effect, and 0.8 and over represents a large treatment effect[8].

Odds ratio (OR) or relative risk (RR) refers to the probability of a reduction (< 1) or an increase (> 1) in a particular outcome in a treatment group, or a group exposed to a risk factor, relative to the comparison group. For example, a RR of 0.75 translates to a reduction in risk of an outcome of 25% relative to those not receiving the treatment or not exposed to the risk factor. Conversely, an RR of 1.25 translates to an increased risk of 25% relative to those not receiving treatment or not having been exposed to a risk factor. An RR or OR of 1.00 means there is no difference between groups. A medium effect is considered if RR > 2 or < 0.5 and a large effect if RR > 5 or < 0.2[9] lnOR stands for logarithmic OR where an lnOR of 0 shows no difference between groups. Hazard ratios measure the effect of an explanatory variable on the hazard or risk of an event.

Correlation coefficients indicate the strength of association or relationship between variables. They are an indication of prediction, but do not confirm causality due to possible and often unforseen confounding variables. An r^2 of 0.10 represents a weak association, 0.25 a medium association and 0.40 and over represents a strong association. Unstandardised (*b*) regression coefficients indicate the average change in the dependent variable associated with a 1 unit change in the dependent variable, statistically controlling for the other independent variables. Standardised regression coefficients represent the change

being in units of standard deviations to allow comparison across different scales.

Prevalence refers to how many existing cases there are at a particular point in time. Incidence refers to how many new cases there are per population in a specified time period. Incidence is usually reported as the number of new cases per 100,000 people per year. Alternatively some studies present the number of new cases that have accumulated over several years against a person-years denominator. This denominator is the sum of individual units of time that the persons in the population are at risk of becoming a case. It takes into account the size of the underlying population sample and its age structure over the duration of observation.

‡ Inconsistency refers to differing estimates of treatment effect across studies (i.e. heterogeneity or variability in results) that is not explained by subgroup analyses and therefore reduces confidence in the effect estimate. I^2 is the percentage of the variability in effect estimates that is due to heterogeneity rather than sampling error (chance) - 0% to 40%: heterogeneity might not be important, 30% to 60%: may represent moderate heterogeneity, 50% to 90%: may represent substantial heterogeneity and 75% to 100%: considerable heterogeneity. I^2 can be calculated from Q (chi-square) for the test of heterogeneity with the following formula;

$$I^2 = \left(\frac{Q - df}{Q}\right) \times 100\%$$

§ Imprecision refers to wide confidence intervals indicating a lack of confidence in the effect estimate. Based on GRADE recommendations, a result for continuous data (standardised mean differences, not weighted mean differences) is considered imprecise if the upper or lower confidence limit crosses an effect size of 0.5 in either direction, and for binary and correlation data, an effect size of 0.25. GRADE also recommends downgrading the evidence when sample size is smaller than 300 (for binary data) and 400 (for continuous data), although for some topics, this criteria should be relaxed[10].

‖ Indirectness of comparison occurs when a comparison of intervention A versus B is not available but A was compared with C and B was compared with C that allows indirect comparisons of the magnitude of effect of A versus B. Indirectness of population, comparator and or outcome can also occur when the available evidence regarding a particular population, intervention, comparator, or outcome is not available so is inferred from available evidence. These inferred treatment effect sized are of lower quality than those gained from head-to-head comparisons of A and B.

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