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Vidyasagaran, Aishwarya L orcid.org/0000-0002-9858-0685, McDaid, David, Faisal, Mehreen R orcid.org/0000-0002-2725-572X et al. (7 more authors) (2023) Prevalence of mental disorders in South Asia:A systematic review of reviews. Global Mental Health. e78. ISSN: 2054-4251

https://doi.org/10.1017/gmh.2023.72

Cambridge Prisms: Global Mental Health

www.cambridge.org/gmh

Prevalence of mental disorders in South Asia: A systematic review of reviews

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Research Article

Cite this article: Vidyasagaran AL, McDaid D, Faisal MR, Nasir M, Muliyala KP, Thekkumkara S, Wright J, Huque R, Benkalkar S and Siddiqi N (2023). Prevalence of mental disorders in South Asia: A systematic review of reviews. *Cambridge Prisms: Global Mental Health*, **10**, e78, 1–19
https://doi.org/10.1017/gmh.2023.72

Received: 17 April 2023
Revised: 24 August 2023
Accepted: 02 November 2023

Keywords:
mental disorders; intentional self-harm; epidemiology; umbrella review; South Asia

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Abstract

Mental disorders are increasing in South Asia (SA), but their epidemiological burden is under-researched. We carried out a systematic umbrella review to estimate the prevalence of mental disorders and intentional self-harm in the region. Multiple databases were searched and systematic reviews reporting the prevalence of at least one mental disorder from countries in SA were included. Review data were narratively synthesised; primary studies of common mental disorders (CMDs) among adults were identified from a selected subset of reviews and pooled. We included 124 reviews. The majority ($n = 65$) reported on mood disorders, followed by anxiety disorders ($n = 45$). High prevalence of mental disorders and intentional self-harm was found in general adult and vulnerable populations. Two reviews met our pre-defined criteria for identifying primary studies of CMDs. Meta-analysis of 25 primary studies showed a pooled prevalence of 16.0% (95% CI = 11.0–22.0%, $I^2 = 99.9\%$) for depression, 12.0% (5.0–21.0%, $I^2 = 99.9\%$) for anxiety, and 14.0% (10.0–19.0, $I^2 = 99.9\%$) for both among the general adult population; pooled estimates varied by country and assessment tool used. Overall, reviews suggest high prevalence for mental disorders in SA, but evidence is limited on conditions other than CMDs.

Impact statement

Our umbrella review provides the most comprehensive estimates for the prevalence of mental disorders and intentional self-harm in South Asia (SA) and highlights that large proportions of the population in the region (both general-adult and specific vulnerable groups) are affected by these adverse health conditions. Evidence is critically lacking beyond common mental disorders on several conditions including schizophrenia and psychotic disorders, behavioural syndromes, personality disorders and intellectual disabilities. Although limited by heterogeneity and methodological quality of included studies, our review findings show an urgent need for countries in SA to formulate and implement clinical and policy measures for the prevention and early treatment of mental disorders and intentional self-harm. The pooled prevalence estimated for depression and anxiety in the general-adult population could serve as a reference for policy-makers to take necessary action for curbing the growing burden of mental disorders in SA.

Introduction

Mental disorders are recognised to be increasing globally, and contribute to a growing health, social and economic burden (World Health Organization, 2021). From 1990 to 2019, they have gone from the 13th to the 7th leading cause of disease burden in the world, with the number of disability-adjusted life-years (DALYs) due to mental disorders increasing from 80.8 million to 125.3 million; they also remain the second largest contributor to years lived with disability (GBD Mental Disorders Collaborators, 2022). Intentional self-harm accounts for a further 34.1 million DALYs, with their burden being greatest in low- and middle-income countries (Knipe et al., 2022). In South Asia (SA) (Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan and Sri Lanka) (The World Bank, 2019), rapid demographic and lifestyle changes are said to be associated with an exponential rise in mental and substance-use disorders, which health systems and services are unable to adequately meet (World Health Organization, 2016b; Ambekar et al., 2019). This has resulted in a considerable mental health treatment gap, with more than 75% of people affected in

many countries not having access to the treatment they need (World Health Organization, 2016b; Gautham et al., 2020). Further, mental disorders have not been a policy priority among countries in the region, and their epidemiological and psychosocial burdens have been under-researched (Shidhaye et al., 2015). To address these issues and to improve the knowledge base for better planning and decision-making, an overall evaluation of the prevalence of mental disorders and intentional self-harm among countries in SA is needed.

Hossain et al. (2020) published an umbrella review, stating its advantages over a review of primary studies for understanding the population-level burden of mental disorders within the SA region. However, their inclusion criteria were limited to reviews solely conducted in SA (i.e., they excluded broader reviews, even if those reviews included some South Asian studies). We considered that expanding the scope of our umbrella review to identify all systematically conducted reviews, so long as they included evidence from at least one country in SA (whilst limiting our synthesis to South Asian studies), would provide a more complete picture of the prevalence of mental disorders and intentional self-harm in the region. In addition, a meta-analysis to provide an updated pooled estimate for the prevalence of mental disorders in the general adult population in SA would complement the overview provided by the umbrella review.

Methods

The review was registered with PROSPERO (CRD42021282957) (McDaid et al., 2021). We followed the Joanna Briggs Institute (JBI) method for conducting the review (Aromataris et al., 2015) and the PRISMA guidelines for reporting (Page et al., 2021; Supplementary Appendix 1).

Search strategy

We searched multiple electronic databases and research repositories, covering published and grey literature, on 29 September 2021 (Supplementary Appendix 2). Our searches included index terms, synonyms, and alternative phrases to cover mental disorders, South Asian countries, prevalence or epidemiology, and review types. We used the search strategies for 'prevalence' and 'South Asia' from Uphoff et al. (2019), and for 'mental disorders' from Mishu et al. (2021), adapting them to include all ICD-10 categories of mental disorders and intentional self-harm (World Health Organization, 2016a; Supplementary Appendix 3). Searches were developed by an information specialist (JW) and peer-reviewed by a second, using the PRESS checklist (McGowan et al., 2016). There were no limits for language or publication date. We also screened reference lists and forward citations of included studies. In addition, PROSPERO records were checked for any relevant ongoing or completed reviews. Retrieved records were de-duplicated in EndNote semi-automatically, using specified guidance (AUHE Information Specialists, 2016) and uploaded to COVIDENCE (www.covidence.org) for further evaluation.

Inclusion criteria and study selection

We included systematic reviews (with or without meta-analyses) that searched two or more databases, and provided keyword and/or search strategies, as per the quality criteria of the AMSTAR2 checklist (Shea et al., 2017). Reviews reporting the prevalence or incidence of mental disorders in one or more countries in the World Bank-defined SA region were eligible. This included reviews that had data from countries beyond SA, but where we could extract the SA data on their own. All populations and settings were eligible, except studies of international military forces based in SA. Reviews on any mental, behavioural, and neurodevelopmental disorders (ICD-10, F-codes), or on suicide and intentional self-harm (ICD-10, X60-X84 codes) were eligible (Supplementary Appendix 4). Two authors independently evaluated all records at title and abstract and full-text screening stages. Discrepancies in screening were addressed through discussion with a third author.

Data extraction and synthesis

A pre-piloted data extraction tool was uploaded to COVIDENCE. Two authors independently extracted data and performed quality appraisals for 10% of included reviews, with good agreement; discrepancies were identified and resolved through consensus. All remaining extractions were performed by a single author and checked by a second. Extraction items included objective and type of review, year of publication, name and timeframe of databases, originating countries of primary studies, sample size and characteristics, as well as reported prevalence or incidence of mental disorders. We used the AMSTAR2 tool for evaluating the methodological quality of included reviews (Shea et al., 2017).

Narrative synthesis was conducted according to the type of review (with or without meta-analysis) and mental disorders (ICD-10 categories), using tables and figures. For the reviews that went beyond SA, we only considered the pooled/range of estimates from the subgroup of studies that were relevant to the SA region. Next, we focused on the reviews with meta-analyses to summarise results for pooled prevalence of mental disorders in SA. Finally, to estimate prevalence for the common mental disorders (CMDs), depression and anxiety, we obtained data from primary studies in the included reviews. We limited this step to reviews with a pre-registered protocol (as a quality indicator), and those reporting on CMDs in the general adult population, given these conditions, which comprise the great majority of mental disorders, were the focus of the bulk of included reviews. Additional primary studies reporting CMD prevalence in SA were identified through forward citation screening of included reviews, to capture more recent studies.

Data extraction from primary studies was again performed by a single author and checked by a second on the following items: country, state or province of the study population, sample characteristics and sample size, and prevalence or incidence for each mental disorder. For quality assessment, we used the JBI Critical Appraisal Checklist for prevalence studies (Munn et al., 2014), but did not exclude ones at high risk of bias from further analysis. We created a 'summary of findings' table for primary studies and carried out meta-analyses using Stata (2007), Version 17.0 to produce a pooled estimate of prevalence for depression and anxiety among the general population in SA. Heterogeneity was assessed using I^2 statistics, and subgroup analyses based on country and outcome ascertainment tools were conducted to explore the sources. Evidence of publication bias was assessed using funnel plots and Egger's test.

Results

Our searches yielded 1,048 records, with 770 remaining after deduplication (Figure 1). Following title and abstract screening,

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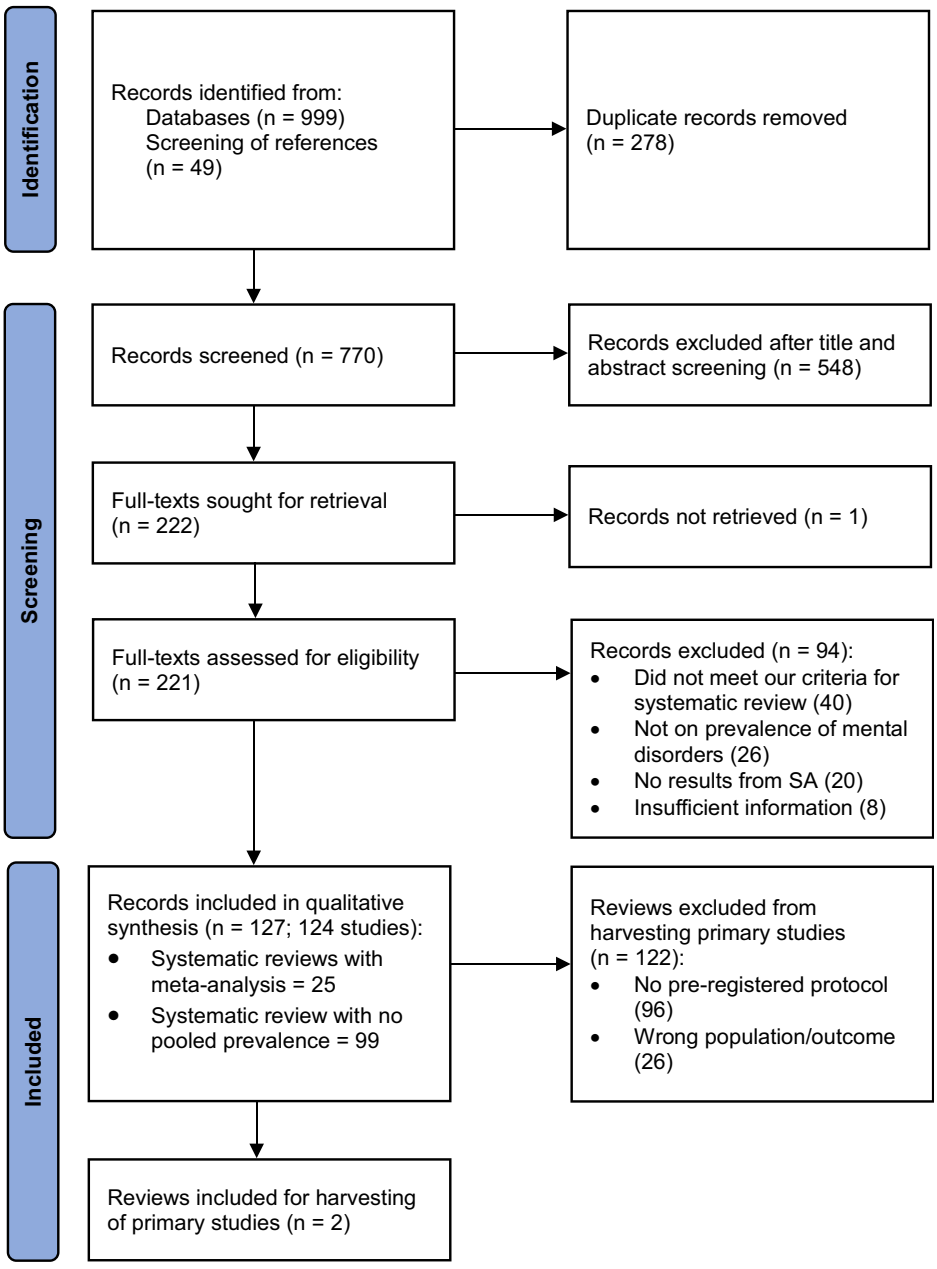

Figure 1. PRISMA flow chart for included reviews.

548 records were excluded, and all but one of the remaining 222 papers were obtained. Full-text screening resulted in the exclusion of 94 records (see Figure 1 and Supplementary Appendix 5 for details). 124 reviews (127 records) met our eligibility criteria and were included in the narrative synthesis. Three reports covering one review were merged (Barua et al., 2010; Barua et al., 2011a, 2011b); for another review, we merged and extracted data from both the original and updated reports (Oram et al., 2012; Ottisova et al., 2016).

For the meta-analyses of primary studies, we found only two reviews with pre-registered protocols, which reported on the prevalence of CMDs in the general adult population (Naveed et al., 2020; Zuberi et al., 2021). These provided 22 primary studies. Three additional studies were identified through forward citation screening of included reviews, resulting in 25 distinct primary studies for our meta-analyses (14 depression-only, three anxiety-only, and eight both) (see Supplementary Appendix 6 for flow chart of primary studies).

Characteristics of reviews included in the review of reviews

Table 1 provides the summary characteristics of all included reviews. Twenty-five reviews had conducted meta-analyses providing pooled estimates for mental disorders in SA. A further 99 reviews did not provide pooled estimates, either because no meta-analysis was conducted (n = 61), no pooled values limited to SA countries were presented (n = 37), or pooled prevalence was not estimated (n = 1).

The earliest review was published in 2004 (Mirza and Jenkins, 2004), with the majority (n = 116) published after 2010. The number

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Table 1. Summary characteristics of included reviews

Reference	South Asian countries represented in the review (number of primary studies), sample size	Population	Mental disorder(s) and Prevalence/other measure of burden reported	AMSTAR-2 grading
Systematic reviews with meta-analysis (*n* = 25); reporting pooled prevalence (95% CI) unless otherwise specified				
Barua et al. (2010, 2011a, 2011b)	India (6); *n* = 2,499	Older people	Depression 21.9% (11.6–31.1)	Critically low
Steel et al. (2014)	Afghanistan (1), Bangladesh (1), India (7), Pakistan (3); *n* = 17,524	General adult population	CMD 19.8% (10.3–34.7)	Critically low
Cho et al. (2016)	India (2), Pakistan (1), Sri Lanka (1); *n* = 327	People with suicidal behaviour	Any mental disorder among fatal suicide 90.4% (71.8–97.2)	Low
Ranjan and Asthana (2017)	Afghanistan (1), Bangladesh (5), Bhutan (1), India (20), Nepal (3), Pakistan (3), Sri Lanka (1); *n* = 158,555	General adult population	Any mental disorder (rate per 1000) 122.0 (8.0–252.0)	Critically low
Upadhyay et al. (2017)	India (38); *n* = 20,043	Postpartum women	Depression 22.0% (19.0–25.0)	Low
Hussain et al. (2018)	India (37); *n* = 10,270	People with type 2 diabetes	Depression 38.0% (31.0–45.0)	Moderate
Chauhan et al. (2019)	India (4); *n* = 130,599	Children	ASD 0.1% (0.0–0.2)	Low
Hendrickson et al. (2019)	India (22); *n* = 5,122	Adults with AUD	Mood disorder 18.0% (5.6–45.1), Anxiety disorder 2.4% (0.9–5.8)	Low
Mahendran et al. (2019)	Bangladesh (3), India (12), Maldives (1), Nepal (1), Pakistan (14), Sri Lanka (2); *n* = 13,087	Pregnant women	Depression 24.3% (19.0–30.5)	Moderate
Pilania et al. (2019)	India (51); *n* = 22,005	Older people	Depression 34.4% (29.3–39.7)	High
Prabhu et al. (2019)	Bangladesh (1), India (12), Maldives (1), Nepal (5), Pakistan (9); *n* = 15,345	Postnatal women	Depression 26.0% (21.0–30.0)	Critically low
Uphoff et al. (2019)	Bangladesh (5), India (60), Pakistan (30), Multi-country (1); *n* = NR	Adults with NCD	Depression 41.0% (37.0–44.0), Anxiety 29.0% (22.0–36.0)	Moderate
Ganesan et al. (2020)	India (10); *n* = 6,513	Children and adolescents	Suicide attempt past-year 0.6% (0.0–1.8), lifetime 17.1% (5.0–35.4)	Low
Khan et al. (2020)	Pakistan (26); *n* = 7,652	University students	Depression 42.7% (34.8–50.9)	Moderate
Naveed et al. (2020)[a]	Bangladesh (8), India (81), Nepal (20), Pakistan (33), Sri Lanka (12), Multi-country (6); *n* = NR for all studies, range: 250 to 863,657	Adults – general, students, older people	CMD 28.4% (13.9–49.3), Alcohol abuse 12.9% (8.8–18.6), Opiates misuse 0.8% (0.2–2.5), Drug abuse 2.5% (0.1–32.1), Depression 26.4% (23.6–29.4), Bipolar 0.6% (0.3–1.0), Anxiety 25.8% (19.4–33.5), Panic disorder 1.3% (0.5–3.4), Phobias 1.8% (0.4–7.1), OCD 1.6% (0.4–5.5), PTSD 17.2% (11.0–25.9), Suicidal behaviour 6.4% (3.1–12.4)	Moderate
Abraham et al. (2021)	Pakistan (15); *n* = 2,890	HCWs	Depression 31.7% (18.7–48.3)	High
Assariparambil et al. (2021)	Bangladesh (7), India (89), Nepal (12), Pakistan (6), Sri Lanka (6); *n* = 65,060	Older people	Depression 42.0% (38.0–46.0)	Low
Atif et al. (2021)	Pakistan (43); *n* = 17,544	Perinatal women	Depression antenatal 37.0% (30.0–44.0), postnatal 30.0% (25.0–36.0)	Low
Choudhary et al. (2021)	India (20); *n* = 86,312	Older people	Dementia 2.0% (2.0–3.0)	Critically low
Hossain et al. (2021)	Bangladesh (7), India (19), Nepal (3), Pakistan (5), Sri Lanka (1); *n* = 41,402	General population and HCWs, COVID-19	Depression 34.1% (28.9–39.4), Anxiety 41.3% (34.7–48.1)	Low
Hosseinnejad et al. (2021)	Pakistan (6); *n* = 3,403	General population, after earthquakes	PTSD 49.2% (39.4–59.0)	Low
Kalra et al. (2021)	India (27); *n* = 7,880	Antenatal women	CMD 21.9% (17.5–26.3)	Moderate
Patra et al. (2021)	India (15); *n* = 1,617	Stroke survivors	Depression 55.0% (43.0–65.0)	Low
Yadav et al. (2021)	India (10); *n* = 2,362	Peri-menopausal women	Depression 42.5% (28.7–57.5)	High

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Table 1. (*Continued*)

Reference	South Asian countries represented in the review (number of primary studies), sample size	Population	Mental disorder(s) and Prevalence/other measure of burden reported	AMSTAR-2 grading
Zuberi et al. (2021)[a]	Afghanistan (2), Pakistan (5); *n* = 19,314	General adult population	Afghanistan: SUD 0.0% (0.0–1.0), Depressive disorder 33.0% (7.0–75.0), Bipolar 0.0% (0.0–3.0), Anxiety disorder 25.0% (6.0–62.0), OCD 1.0% (0.0–5.0), Panic disorder 0.4% (0.1–2.0) PTSD 35.0% (4.0–87.0); Pakistan: SUD 32.0% (6.0–78.0), Depressive disorder 10.0% (4.0–25.0), Anxiety disorder 4.0% (0.0–27.0)	Moderate
Systematic reviews with no pooled estimates (*n* = 99), reporting prevalence/prevalence range unless otherwise specified				
Mirza and Jenkins (2004)	Pakistan (20); *n* = 9,170 for 17 relevant studies	General adult population	CMD 33.6%	Critically low
Mills et al. (2005)	India (5); *n* = 410	Tibetan refugee population	MDD 11.5–57.0%, Anxiety 25.0–77.0%, PTSD 11.0–23.0%	Low
Collins et al. (2006)	India (7), Nepal (1); *n* = 281	People with HIV/AIDS	Any mental disorder PWA 75.0% and HIVP 47.6%, Alcohol dependency 44.4%, Psychosis 5.0%, Depression 3.0–47.0%, Anxiety 25.0–36.0%, Adjustment disorder 27.8%, Suicidal intention/attempt 14.0%	Low
Lopes et al. (2007)	India (2); *n* = 2,603	Older people	Dementia 1.3–3.1%	Critically low
Mills et al. (2008)	Nepal (6); *n* = 4,712	Bhutanese refugee population	Depression 2.0%, Anxiety 4.0%, Phobia 18.5%, Dissociative disorder 8.0%, PTSD 25.0%, Somatoform pain 31.0%	Critically low
Klainin and Arthur (2009)	India (3), Nepal (1), Pakistan (3); *n* = 2,072	Postpartum women	Depression 4.9–56.0%	Critically low
Math and Srinivasaraju (2010)	India (16); *n* = 72,202	General adult population	Any disorder (rate per 1000) 9.5–102.0	Critically low
Das and Leibowitz (2011)	India (NR); *n* = NR	People with HIV/AIDS	Depression 33.0–70.0%, Anxiety 25.0–36.0%, Adjustment disorder 27.8%, Persistent suicidal intent/attempt 14.0%	Critically low
Maulik et al. (2011)	Bangladesh (2), India (1), Pakistan (2), Multi-country (1); *n* = 6,09,731	General population	Intellectual disability (rate per 1000) 0.9–156.0	Low
Fisher et al. (2012)	Bangladesh (4), India (4), Nepal (2), Pakistan (4); *n* = 5,126	Perinatal women	CMD antenatal 11.5–33.0% and postnatal 9.0–59.4%	Critically low
Hawton et al. (2013)	India (5); *n* = 649	Persons with self-harm	Depressive disorder 53.0–89.0%	Critically low
Jones and Coast (2013)	Bangladesh (1), India (3), Nepal (1), Pakistan (3); *n* = 2,479	Postpartum women	Depression 4.9–35.6%	Low
Nadkarni et al. (2013)	India (31); *n* = NR for all studies; range: 100 to 7,554	Over 50 years	AUD 1.1–70.0%	Critically low
Newman (2013)	Bangladesh (61); *n* = 12,021 for 16 relevant studies	General, 15 years and older	Depression 6.6–97.0%	Critically low
Rajapakse et al. (2013)	Sri Lanka (23); *n* = 74,482	General or clinical population	Intentional self-poisoning (rate per 100,000) 21.5–224.0	Low
Udina et al. (2013)	India (11), Sri Lanka (1); *n* = 799	Adult males	Dhat syndrome ~7% of patients seen at sexual health clinics; Depression 24.0–66.0%, Anxiety 13.0–37.0%	Critically low
Beckwith et al. (2014)	India (1), Pakistan (1); *n* = 16,318	Mental health outpatient	Personality disorder 1.0–60.0%	Critically low
de Bernier et al. (2014)	India (4); *n* = 5,616	General or clinical, adults	Personality disorders 1.3–52.0%	Critically low
Fuhr et al. (2014)	India (7), Nepal (1), Pakistan (1), Sri Lanka (2); *n* = NR	Perinatal women	Injury 1.1–17.9%, Suicide 1.0–10.7%	Moderate
Hossain et al. (2014)	Bangladesh (32); *n* = 25,767	General or clinical population	Any mental disorders 6.5–31.4%	Critically low
Jordans et al. (2014)	India (45), Bangladesh (26), Sri Lanka (18), Nepal (12), Pakistan (11), Afghanistan (1), Multi-country (1); *n* = NR	General or clinical population	Suicide (incidence per 100,000) 0.43–331.0	Moderate

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Table 1. (*Continued*)

Reference	South Asian countries represented in the review (number of primary studies), sample size	Population	Mental disorder(s) and Prevalence/other measure of burden reported	AMSTAR-2 grading
Medlow et al. (2014)	India (1); *n* = 150	Homeless adolescents	Depression 8.0%	Critically low
Mendenhall et al. (2014)	Bangladesh (3), India (8), Pakistan (3); *n* = NR	People with type 2 diabetes	Depression 14.7–84.0%	Critically low
Pearson et al. (2014)	Sri Lanka (149); *n* = NR	General or clinical population	Suicide (rate per 100,000, as figure) ~25.0	Low
Rane and Nadkarni (2014)	India (36); *n* = NR	General or clinical population	Suicide (rate per 100,000) 82.0–95.0	Critically low
Aggarwal and Berk (2015)	India (27); *n* = 36,838	Adolescents	Depression 0.5–60.0%, GAD 13.0%, Social anxiety disorder 12.8%, PTSD 29.0%, Behavioural problems 1.8–24.7%, Suicidal behaviour 3.9–25.4%	Critically low
Malakouti et al. (2015)	Pakistan (2); *n* = 2,663	General population	Suicide (rate per 100,000) 0.6–1.1	Critically low
Norhayati et al. (2015)	Bangladesh (3), India (2), Nepal (2), Pakistan (2); *n* = 2,545	Postpartum women	Depression 3.1–59.4%	Critically low
Evagorou et al. (2016)	India (2), Nepal (1), Pakistan (1); *n* = 826	Postpartum women	Depression 4.9–63.0%	Critically low
McKenzie et al. (2016)	India (1); *n* = 70,302	General population	Intellectual disability (as figure) 1.0–1.2%	Low
Ottisova et al. (2016)	Nepal (1); *n* = 164	Victims of human trafficking	Depression 86.0%, Anxiety 90.2%, PTSD 13.4%	Moderate
Sahu et al. (2016)	India (12); *n* = 547	Amputees	Depression 10.4–63.0%, GAD 3.4–10.0%, PTSD 3.3–56.3%	Critically low
Tanzil Jamali (2016)	Pakistan (8); *n* = NR	Children and adolescents	Learning disability 24.8%, Emotional or behavioural disorders 34.0%	Critically low
Aggarwal et al. (2017)	India (2); *n* = 1,675	12–25 year olds	Non-suicidal self-harm 31.2%, Suicidal behaviour 6.1%, Suicide attempt 3.5%	Critically low
Ahmed et al. (2017)	Bangladesh (1), India (12), Sri Lanka (3); *n* = 3,024	People with suicidal behaviour	Depression among those who died by suicide 6.9–37.1%, attempted 20.7–59.7%	Low
Dennis et al. (2017)	Bangladesh (2); *n* = 1,394	Perinatal women	Anxiety 38.3%, Trait anxiety 29.4%	Low
Hossain et al. (2017)	Bangladesh (3), India (2), Sri Lanka (1); *n* = 41,620	Children and adolescents	ASD 0.1–1.1%	Critically low
Kuppili et al. (2017)	India (73); *n* = 16,073	Children and adolescents	ADHD 4.7–29.2%	Critically low
Naskar et al. (2017)	India (41); *n* = 34,119	People with type 1&2 diabetes	Depression 2.0–84.0%	Critically low
Salmanian et al. (2017)	Afghanistan (1); *n* = 1,011	Children and adolescents	Conduct disorder 4.8%	Low
Singh and Balhara (2017)	India (52); *n* = NR	People with cannabis use and psychiatric disorders	High frequency of psychiatric symptoms with SUDs, preponderance of cannabis-associated psychotic & affective disorders	Critically low
Woody et al. (2017)	India (3), Nepal (1), Sri Lanka (1); *n* = NR	Perinatal women	Depression NR for countries in SA	Critically low
Yatan Pal Singh et al. (2017)	India (13), Nepal (3); *n* = 51,008	General or clinical population	AUD 3.9–100%, Depression 2.7–94.3%	Critically low
Halim et al. (2018)	Bangladesh (3), India (2), Nepal (2), Pakistan (3); *n* = 4,546	Perinatal women	Depression antenatal 18–33% and postnatal 5–36%, Antenatal anxiety 29%, CMD 16–42%, Suicide attempts 2–5%	Critically low
Hunt et al. (2018)	India (1), Sri Lanka (1); *n* = 412	People with psychosis	AUD 3.0–11.0%, CUD 20.0%	Low
Jha et al. (2018)	Bangladesh (1), India (4), Pakistan (2), Sri Lanka (1); *n* = 3,323	Antenatal women	Depression 1.9–65.0%, Anxiety 26.0–49.0%	Low
Morina et al. (2018)	Nepal (2), Sri Lanka (2); *n* = 2,950	Refugee and IDP	Depression 22.0–80.0%, MDD 5.0–8.0%, Anxiety 33.0–81.0%, PTSD 3.0–53.0%	Critically low

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https://doi.org/10.1017/gmh.2023.72 Published online by Cambridge University Press

Table 1. (*Continued*)

Reference	South Asian countries represented in the review (number of primary studies), sample size	Population	Mental disorder(s) and Prevalence/other measure of burden reported	AMSTAR-2 grading
Morina et al. (2018)	Afghanistan (1), India (1), Sri Lanka (1); *n* = 18,886	Civilian war survivors in area of conflict	Major depression 26.0–37.0%, PTSD 28.0–34.0%	Moderate
Shekhani et al. (2018)	Pakistan (110); *n* = NR for 2 relevant studies	General or clinical population	Suicide (incidence per 100,000) 0.43–2.86	Critically low
Shorey et al. (2018)	India (1), Nepal (1), Pakistan (3); *n* = 1,329	Postpartum women	Depression 5.0–62.0%	Moderate
Thapa et al. (2018)	Nepal (32); *n* = 4,152	Older people	Depressive disorders 4.4–53.2%, Anxiety 21.7–32.3%	Critically low
Arafat (2019)	Bangladesh (18); *n* = 14,942 for 3 relevant studies	General population	Suicide (rate per 100,000) 30.0–128.8	Critically low
Bhagavathula et al. (2019)	India (17), Pakistan (4); *n* = 4,441	People with hair dye poisoning	Suicide intent 75.0–99.9%	Critically low
Gilmoor et al. (2019)	India (56); *n* = 38,932	General or clinical population	PTSD 0.1–89.0%	Critically low
Knipe et al. (2019)	Bangladesh (2), India (28), Nepal (2), Pakistan (2), Sri Lanka (5); *n* = 9,888	People with suicidal behaviour	Any mental disorder among fatal suicide 48.0–96.0% and attempted 0.0–96.0%	High
Mytton et al. (2019)	Nepal (186); *n* = NR	General or clinical population	Self-harm NR for countries in SA	Critically low
Somrongthong et al. (2019)	India (8); *n* = 326 for 1 relevant study	Female sex workers 10–19 years	Suicidal attempts 41.0%	Critically low
Tay et al. (2019)	Bangladesh (1); *n* = 148	Rohingya refugee population	Depression 89.0%, PTSD 36.0%	Critically low
Vaidyanathan et al. (2019)	India (39); *n* = 6,663	General or clinical population	Probable ED 4.0–45.4%, ED 1.25%	Critically low
Abate et al. (2020)[a]	India (3), Pakistan (3); *n* = 1,312	People undergoing surgery with anaesthesia	Preoperative anxiety 24.0–88.0%	Moderate
Akhtar et al. (2020)	India (1), Nepal (2), Pakistan (1), Sri Lanka (1); *n* = 7,495	University students	Depression 9.3–53.1%	Moderate
Banerjee et al. (2020)	Bangladesh (1), India (11), Pakistan (1); *n* = 7,936	General or clinical, COVID-19	Depression 10.5–34.9%, Anxiety 38.2–39.5%	Critically low
Blackmore et al. (2020)	Nepal (1); *n* = 574	Adult refugees	Depression 1.9%, Anxiety 4.7%, PTSD 26.8%	Moderate
Devarapalli et al. (2020)	India (32); *n* = NR for all studies; range: 103 to 114,068	Tribal population	Depression 8.3%, Anxiety 6.4%, Adjustment disorder 9.0%, Somatoform pain 14.0%, PTSD 9.6%, Alcohol abuse 36.2%, Binge eating 6.4%, Bulimia nervosa 1.4%, Self-harm 11.2%, Suicide 14.2%	Critically low
Dua and Grover (2020)	India (33); *n* = 13,227	Clinical population (liaison psychiatry settings)	Delirium 2.8–43.4%, Dementia 0.9–3.8%, SUD 1.8–28.9%, Organic psychosis 0.6–25.5%, Psychotic illness 3.2–33.3%, Depression 1.5–24.4%, Bipolar 2.3–10.4%, Anxiety 1.1–13.1%, Adjustment 0.4–16.0%, Dissociation 0.9–8.3%, Psychosomatic 0.8–7.7%, Psychosexual 0.7%, Personality disorder 0.6–5.3%, Mental retardation 0.6–7.0%, Conduct disorder 0.8%, ADHD 0.4–0.8%, Self-harm 2.7–33.9%	Critically low
Fekadu Dadi et al. (2020)	NR; *n* = NR	Antenatal women	Depression NR for countries in SA	Moderate
Gilan et al. (2020)	India (1); *n* = 662	General or clinical, COVID-19	Hypochondriac fear 37.8%	Low
Hunt et al. (2020)	Sri Lanka (1); *n* = 109	People with MDD	AUD 21.1%, CUD 1.8%	Critically low

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Table 1. (*Continued*)

Reference	South Asian countries represented in the review (number of primary studies), sample size	Population	Mental disorder(s) and Prevalence/other measure of burden reported	AMSTAR-2 grading
Janse Van Rensburg et al. (2020)	India (11), Pakistan (3), Sri Lanka (1), Multi-country (1); *n* = NR	People with tuberculosis	AUD 4.0–58.0%, Depression 8.5–84.0%, Anxiety 2.0–47.2%,	Critically low
Kalra et al. (2020)	Bangladesh (8), India (24), Nepal (3), Pakistan (7); *n* = 12,650	Adults with type 2 diabetes	Depression 11.6–67.5%	Critically low
Karimi et al. (2020)	India (1); *n* = 133	People with migraine	Anxiety 16.54%	Low
Khunsa Junaid (2020)	India (2); *n* = 8,484	HCWs, COVID-19	Depression 34.8%	Low
Lasheras et al. (2020)	India (1); *n* = 250	Medical students, COVID-19	Anxiety 17.2%	Low
Liu et al. (2020)	Sri Lanka (1); *n* = 335	People with history of deliberate self-harm	Non-fatal repetition of self-harm (incidence) 3.0%	High
Qiu et al. (2020)	Bangladesh (1), India (1), Nepal (2); *n* = 43,401	Children and adolescents	ASD 0.1–0.3%	Low
Rahele et al. (2020)	Pakistan (1), Sri Lanka (1); *n* = 1,786	Perinatal women, COVID-19	CMD 14.3%, Depression 19.5%, Anxiety 17.5%	Critically low
Winsper et al. (2020)	Bangladesh (1); *n* = 766	12–18-year-olds	Personality disorder 0.5%	High
Yan et al. (2020)	Sri Lanka (1); *n* = 257	Perinatal women, COVID-19	Depression 28.0%, Anxiety 26.0%	Moderate
Al Falasi et al. (2021)	India (1); *n* = 426	HCWs, COVID-19	PTSD 7.3%	Low
Al Mamun et al. (2021)	Bangladesh (9); *n* = 18,201	General or clinical, COVID-19	Suicidal behaviour 6.1%	Critically low
Amiri and Behnezhad (2021)	Bangladesh (1), India (2), Nepal (1); *n* = 1,034	Postpartum women	Suicide attempt 4.0–18.0%	Critically low
David Franciole de Oliveira et al. (2021)	India (1); *n* = 100	Teachers, COVID-19	CMD NR for countries in SA	Low
Dong et al. (2021)	India (1); *n* = 50	People with COVID-19	Depression 24.0%, Anxiety 32.0%	Moderate
Dutta et al. (2021)	India (4), Nepal (1), Pakistan (2); *n* = 1,869	HCWs, COVID-19	Depression 28.2–72.3%, Anxiety 34.0–85.7%	Moderate
Fellmeth et al. (2021)	India (7); *n* = 1,003	Perinatal women	Depression 12.5–18.0%	High
Ghazanfarpour et al. (2021)	Pakistan (1), Sri Lanka (1); *n* = 1,786	Pregnant women, COVID-19	Depression 19.5%, Anxiety 14.3–17.5%	Critically low
Hosen et al. (2021)	Bangladesh (24); *n* = 49,806	General or clinical, COVID-19	Depression 12.1–82.4%, Anxiety 10.6–81.8%, PTSD/Stress 11.1–85.6%	Critically low
Jephtha and Jagadeesan (2021)	India (1); *n* = 15,981	HCWs, COVID-19	CMD NR for countries in SA	Critically low
Kar et al. (2021)[a]	Bangladesh (1) India (5) Pakistan (2); *n* = NR	Adult males	Dhat syndrome 64.6%	Critically low
Liu et al. (2021)	India (1); *n* = 662	General, COVID-19	Anxiety 58.5%	Moderate
Mahadevan et al. (2021)	Bangladesh (1), India (11), Sri Lanka (1); *n* = 2,013	Stroke survivors	Depression 13.8–100.0%, Anxiety 80.9%	Moderate
Mahmud et al. (2021)	Bangladesh (2), India (7), Nepal (1), Pakistan (3); *n* = 5,422	HCWs, COVID-19	Depression 37.5–53.6%, Anxiety 41.9–62.2%	Moderate
Mamun (2021)	Bangladesh (7); *n* = 21,534	Students, COVID-19	Depression 46.9–82.4%, Anxiety 26.6–96.8%	Critically low
Mohammadi et al. (2021)	India (3), Sri Lanka (1); *n* = 3,757	Children and adolescents	Conduct disorder 1.0–7.0%	High
Necho et al. (2021)	India (1); *n* = 662	General adult, COVID-19	CMD NR for countries in SA	Low
Panda et al. (2021)	Bangladesh (1), India (1); *n* = 505	Children, adolescents and caregivers, COVID-19	Anxiety, depression and/or sleep disturbance 57.0–68.0%	Low

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Table 1. (*Continued*)

Reference	South Asian countries represented in the review (number of primary studies), sample size	Population	Mental disorder(s) and Prevalence/other measure of burden reported	AMSTAR-2 grading
Santabárbara et al. (2021)[a]	Bangladesh (2), India (2); *n* = 4,092	General, COVID-19	Anxiety 28.0–43.0%	Moderate
Vanderkruik et al. (2021)	Bangladesh (4); *n* = NR	Adolescents	Depression during pregnancy 7.0–14.0% and postpartum 10.4–36.2%	Moderate
Wang et al. (2021)	Bangladesh (2); *n* = NR	College students, COVID-19	Depression 47.0–82.0%, Anxiety 33.0–84.0%	Critically low

Abbreviations: ADHD, attention deficit hyperactivity disorder; ASD, autism spectrum disorder; AUD, alcohol use disorder; CI, confidence interval; CMD, common mental disorder; CUD, cannabis use disorder; ED, eating disorder; GAD, generalised anxiety disorder; HCW, health care worker; HIVP, HIV positive; IDP, internally displaced population; MDD, major depressive disorder; NCD, non-communicable disease; NR, not reported; OCD, obsessive compulsive disorder; PTSD, post-traumatic stress disorder; PWA, people with AIDS; SA, South Asia; SUD, substance use disorder.[a]Reporting discrepancy noted.

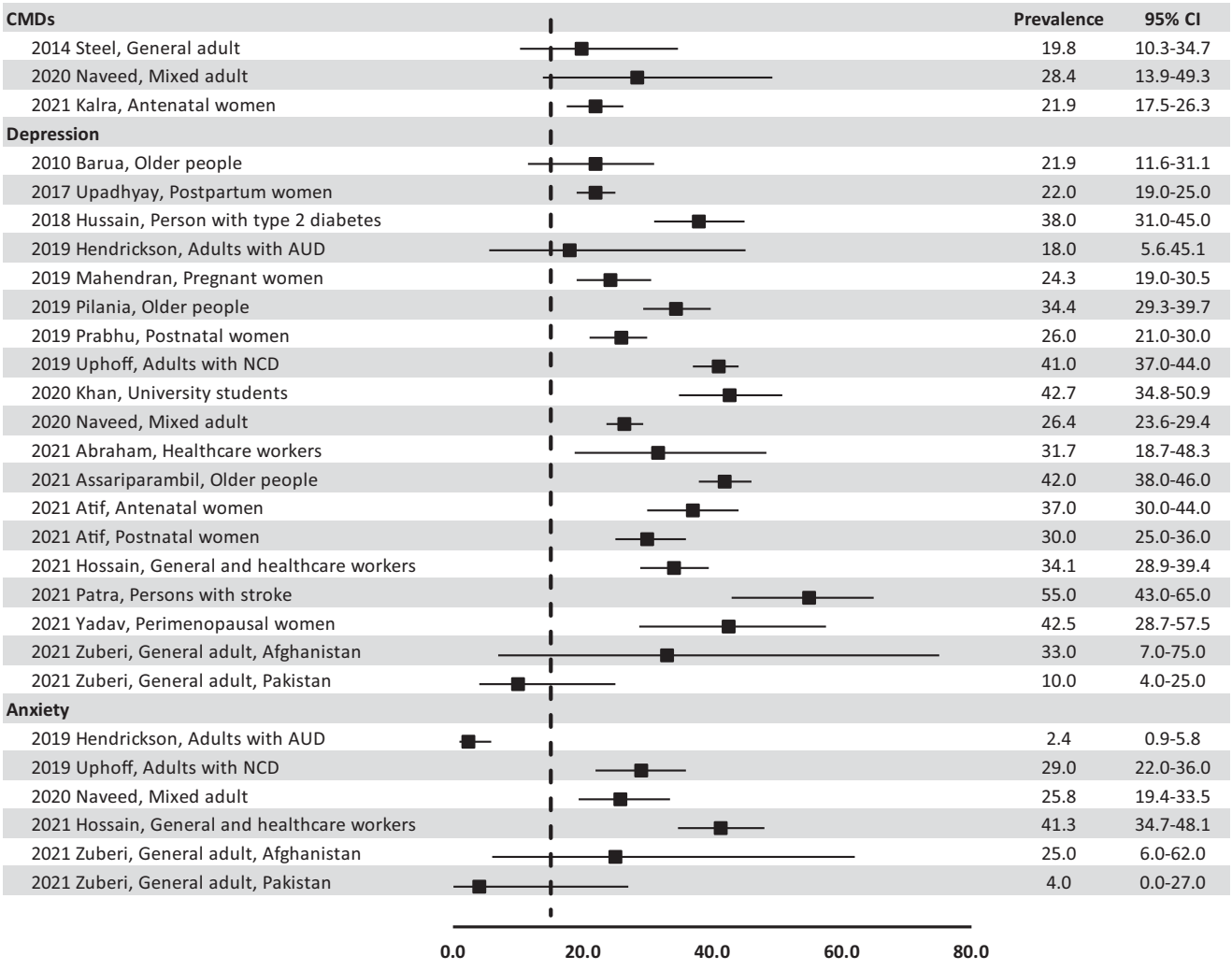

Figure 2. Pooled estimates of CMDs, depression and anxiety from meta-analytic reviews.
Note: Two studies (2021 Atif and 2021 Zuberi) provided two relevant estimates each for different population groups; the vertical dotted line denotes a pooled prevalence of 14.0% (drawn to correspond with the Figure 3 forest plot).

of databases searched ranged from two to fourteen, and the majority of reviews presented evidence from India (*n* = 90). The number of South Asian primary studies ranged from one to 149, and sample size ranged from 109 to 863,657 (not reported in 15 reviews). Reviews covered diverse populations, with participants recruited from a range of clinical and community-based settings. Only ten reviews were rated as 'high' quality, while most (61) were rated as 'critically low' (details in Supplementary Appendix 7).

A total of 65 reviews presented the prevalence of mood (affective) disorders including depressive and bipolar disorders, followed by 45 on anxiety disorders, and 10 on a combination of mood and anxiety disorders, grouped together as CMDs. A further nine

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reviews reported the prevalence of substance use disorders (SUDs), while others covered a range of other mental disorders: seven on behavioural and emotional disorders with usual onset in childhood and adolescence, including conduct disorder and attention-deficit hyperactivity disorder (ADHD), four on pervasive developmental disorders including autism spectrum disorder (ASD), three each on dementia, schizophrenia and psychotic disorder, personality disorder, and intellectual disabilities, and two on eating disorders. Of these, only one included a meta-analysis providing a pooled estimate of ASD prevalence among children in India. We also found six reviews that reported the prevalence of 'any mental disorder' and 23 that reported on suicide and intentional self-harm. Many identified reviews covered mental disorders in specific population subgroups including older people, perinatal women, students, healthcare workers (HCWs), and persons with comorbidities. Twenty-two reviews focused on the impact of COVID-19 on the psychosocial health of various population groups (Supplementary Appendix 8).

Summary of pooled prevalence from systematic reviews with meta-analysis

We now focus on the 25 reviews with meta-analyses on the prevalence of various mental disorders in SA. Eleven were exclusively of studies conducted in India, four in Pakistan, and the remaining 10 covered multiple countries in the region. The population comprised all adults (including perinatal women and older people, $n = 1$), general adults ($n = 3$), adults with specific conditions such as alcohol use disorders (AUD) or non-communicable disease (NCD) ($n = 6$), women ($n = 6$), older people ($n = 4$), children and adolescents ($n = 2$), HCWs ($n = 2$), and university students ($n = 1$). In general, these reviews reported high pooled prevalence of mental disorders among both general-adult (up to 33.0% for depression) (Naveed et al., 2020), and specific population subgroups (up to 55.0% for depression among stroke survivors) (Patra et al., 2021). The pooled prevalence of suicidal behaviours among adults was 6.4% (95% CI = 3.1–12.4) (Naveed et al., 2020), and among children and adolescents was 17.1% (5.0–35.4) (Ganesan et al., 2020), whereas the pooled prevalence of any mental disorder among victims of suicide was 90.4% (71.8–97.2) (Cho et al., 2016).

We identified 19 pooled estimates for mood disorders (17 studies), followed by six for anxiety disorders (5 studies), and three for CMDs (Figure 2). The pooled prevalence (range) for depressive disorders in the general population was 10.0% (4.0–25.0) to 33.0% (7.0–75.0). Estimates were generally higher for specific population subgroups, including older people (21.9% (11.6–31.1) to 42.0% (38.0–46.0)), perinatal women (22.0% (19.0–25.0) to 37.0% (30.0–44.0)), peri-menopausal women (42.5% (28.7–57.5)), university students (42.7% (34.8–50.9), HCWs = 31.7% (18.7–48.3) to 34.1% (28.9–39.4)), and adults with comorbidities (18.0% (5.6–45.1) to 55.0% (43.0–65.0)). Similarly, pooled prevalence (range) for anxiety disorders in the general population was 4.0% (0.0–27.0) to 25.8% (19.4–33.5); for adults with comorbidities, it was 2.4% (0.9–5.8) to 29.0% (22.0–36.0), and among all adults and HCWs during the COVID-19 pandemic it was 41.3% (34.7–48.1). Based on reviews covering multiple countries in SA, the pooled prevalence of CMDs in the general adult population alone was estimated to be 19.8% (10.3–34.7) (Steel et al., 2014), whereas it was higher (28.4% (13.9–49.3)) among adult populations that included older people and perinatal women (Naveed et al., 2020). One review from India reported a pooled value of 21.9% (17.5–26.3) for prevalence of CMDs among antenatal women (Kalra et al., 2021).

We also found one general-adult, population-based estimate for the pooled prevalence of any mental disorder, covering all countries in SA except Maldives and presented as a rate per 1000 (95% CI): 122.0 (8.0–252.0) (Ranjan and Asthana, 2017). In addition, we found two meta-analyses reporting SUDs prevalence of 0.0% (0.0–1.0) to 32.0% (6.0–78.0) (Naveed et al., 2020; Zuberi et al., 2021), one on dementia prevalence (2.0% (2.0–3.0)) (Choudhary et al., 2021) and one on ASD prevalence (0.1% (0.0–0.2)) (Chauhan et al., 2019). These are not presented in Figure 2.

Pooled prevalence of depression and anxiety in the general adult population from primary studies

We identified 25 primary studies reporting the prevalence of CMDs in the general adult population (Table 2): 16 from India, three from Nepal, one each from Pakistan, Sri Lanka, and Afghanistan, and three large, population-based studies that covered multiple countries in SA. Study quality overall was high. Meta-analyses found a pooled prevalence of 16.0% (95% CI = 11.0–22.0, $I^2 = 99.9\%$) for depression, 12.0% (5.0–21.0, $I^2 = 99.9\%$) for anxiety, and 14.0% (10.0–19.0, $I^2 = 99.9\%$) for depression and anxiety combined (Figure 3).

The pooled prevalence (95% CI) of depression varied notably by country, from 5.0% (4.0–6.0) in Afghanistan, 5.0% (5.0–6.0) in Sri Lanka and 6.0% (5.0–6.0) in Pakistan to 16.0% (10.0–24.0) in India, 25.0% (6.0–52.0) in Nepal, and 25.0% (24.0–25.0) in Bangladesh. Similarly, the pooled prevalence of anxiety varied between 3.0% (2.0–3.0) in Afghanistan, 4.0% (3.0–4.0) in Pakistan and 6.0% (2.0–14.0) in India, to 19.0% (16.0–23.0) in Nepal, 21.0% (20.0–22.0) in Bangladesh, and 65.0% (64.0–66.0) in Sri Lanka. The pooled values for both conditions also varied markedly according to whether (and which) diagnostic or screening tools were used to ascertain the presence of depression and/or anxiety. For depression, the pooled prevalence from estimates based on diagnostic tools (e.g., Composite International Diagnostic Interview (CIDI) and Mini International Neuro-psychiatric Interview (MINI)) was 5.0% (3.0–6.0), whereas it was 27.0% (13.0–44.0) based on screening measures. Similarly, the pooled prevalence for anxiety from estimates based on diagnostic tools was 1.0% (0.0–3.0), whereas it was 26.0% (19.0–34.0) based on screening measures. Funnel plot asymmetry was observed and Egger's test for meta-analysis of depression was statistically significant indicating publication bias. Forest plots for subgroup analyses and funnel plots can be found in Supplementary Appendix 9.

Discussion

This umbrella review has identified many reviews covering a range of mental disorders in SA, with the majority focusing on the prevalence of CMDs among different population groups. Our findings suggest a high prevalence of these conditions in the region, with greater burden among specific population groups, including perinatal women, older people, people with chronic physical illnesses, refugees, and other vulnerable groups. More than 20 reviews were identified on the prevalence of CMDs during COVID-19 and suggest a high burden of mental disorders among healthcare workers, teachers, and students in SA during the pandemic. In common with Hossain et al. (2020) we found that most studies were from India, while evidence from Afghanistan, Bhutan, and Maldives was particularly limited. The advantages

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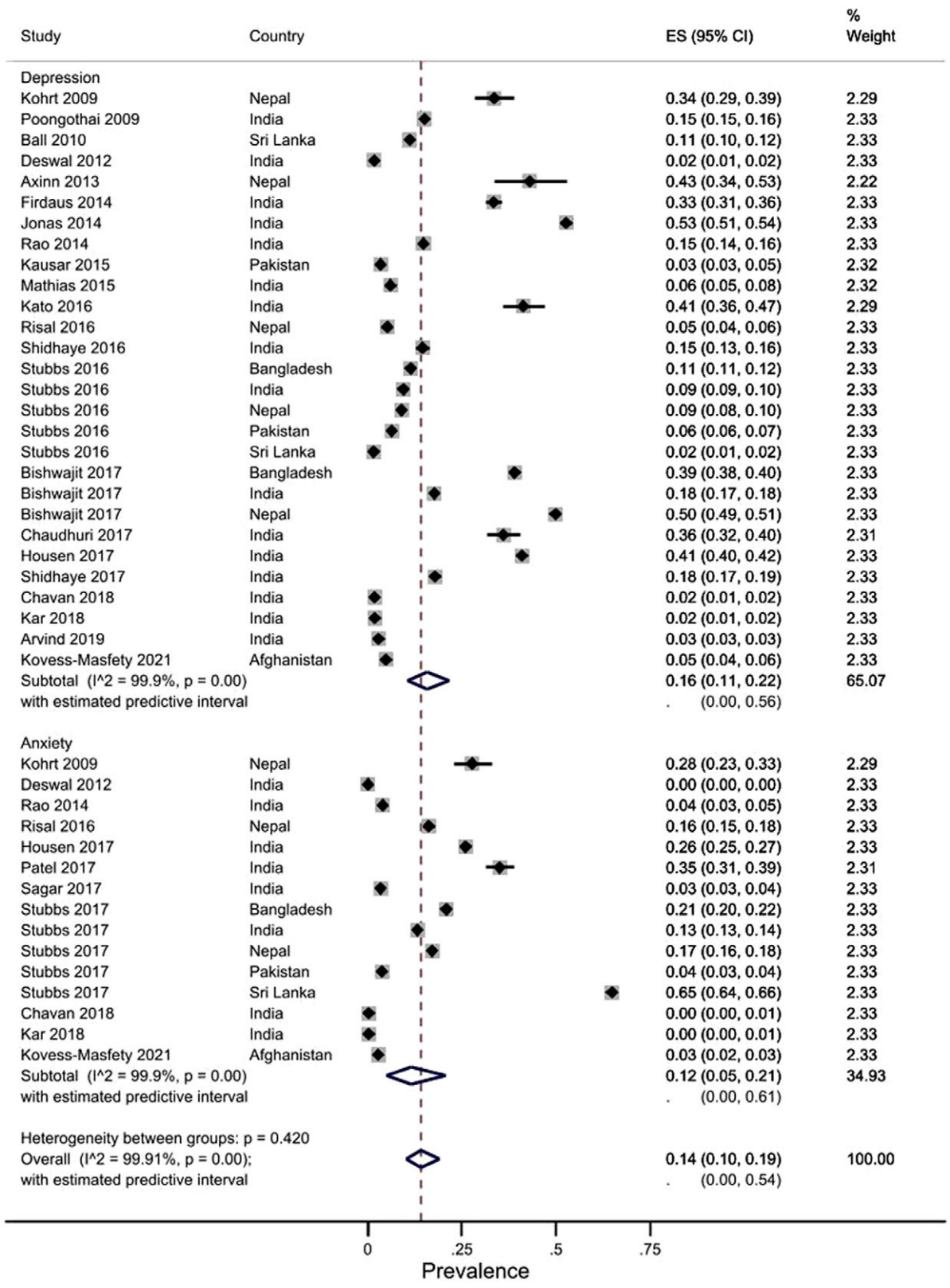

Figure 3. Forest plot of primary studies on the prevalence of depression and anxiety in South Asia.

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Table 2. Summary characteristics of primary studies included in meta-analyses

Study	Country	Setting	Study design	Sample size	Mental disorder(s) and assessment tools used	Quality score
Kohrt et al. (2009)	Nepal	Mixed	Cross-sectional for prevalence	307	Depression – Beck Depression Inventory (BDI); Anxiety – Beck Anxiety Inventory (BAI)	7
Poongothai et al. (2009)	India	Urban	Cross-sectional	25,455	Depression – Modified Patient Health Questionnaire (PHQ12)	9
Ball et al. (2010)	Sri Lanka	Mixed	Cross-sectional	5,973	Depression – Composite International Diagnostic Interview (CIDI)	9
Deswal and Pawar (2012)	India	Urban	Cross-sectional	3,023	Depression, Anxiety – CIDI	9
Axinn et al. (2013)	Nepal	Rural	Cross-sectional	400	Depression – CIDI	7
Firdaus and Ahmad (2014)	India	Urban	Cross-sectional	1,326 in 2003; 1,965 in 2013	Depression – Centre for Epidemiologic Studies Depression Scale (CES-D)	9
Jonas et al. (2014)	India	Rural	Cross-sectional	4,711	Depression – CES-D	8
Rao et al. (2014)	India	Rural	Cross-sectional	3,033	Depression, Anxiety – Mini international neuropsychiatric interview (MINI)	9
Kausar et al. (2015)	Pakistan	Urban	Cross-sectional	1,110	Depression – DSM-based questionnaire	7
Mathias et al. (2015)	India	Mixed	Cross-sectional	960	Depression – PHQ9	9
Kato (2016)	India	NR	Cross-sectional	300	Depression – PHQ9 and CES-D	6
Risal et al. (2016)	Nepal	Mixed	Cross-sectional	2,100	Depression, Anxiety – Hospital Anxiety and Depression Scale (HADS)	9
Shidhaye et al. (2016)	India	Rural	Cross-sectional	1,456	Depression – PHQ9	9
Stubbs et al. (2016)	Bangladesh, India, Nepal, Pakistan, Sri Lanka	Mixed	Cross-sectional	178,867	Depression – Based on DSM	8
Bishwajit et al. (2017)	Bangladesh, India, Nepal	Mixed	Cross-sectional	14,133	Depression – Self-reported	4
Chaudhuri et al. (2017)	India	Mixed	Cross-sectional	469	Depression – BDI	9
Housen et al. (2017)	India	Mixed	Cross-sectional	5,428	Depression, Anxiety – Hopkins Symptom Checklist (HSCL-25)	9
Patel et al. (2017)	India	Urban	Cross-sectional	605	Anxiety – State-Trait Anxiety Inventory (STAI) scale	6
Sagar et al. (2017)	India	Mixed	Cross-sectional	24,371	Anxiety – CIDI	9
Shidhaye et al. (2017)	India	Mixed	Cross-sectional	3,220	Depression – PHQ9	9
Stubbs et al. (2017)	Bangladesh, India, Nepal, Pakistan, Sri Lanka	Mixed	Cross-sectional	237,964	Anxiety – Self-reported	6
Kar et al. (2018)	India	Mixed	Cross-sectional	3,508	Depression, Anxiety – MINI, version 6.0.0	9
Chavan et al. (2018)	India	Mixed	Cross-sectional	2,895	Depression, Anxiety – MINI, version 6.0.0	9
Arvind (2019)	India	Mixed	Cross-sectional	34,802	Depression – MINI, version 6.0.0	9
Kovess-Masfety et al. (2021)	Afghanistan	Mixed	Cross-sectional	4,433	Depression, Anxiety – CIDI	8

and novelty of this review are in providing a more complete and updated picture of the prevalence of mental disorders in the region. But despite the broader inclusion criteria and the updated searches, we found no reviews with pooled estimates of prevalence for many conditions, including severe mental disorders such as schizophrenia and psychotic disorders, behavioural syndromes, personality disorders, or intellectual disabilities. Reviews without meta-analyses for these conditions were also limited. Further, most reviews scored 'low' or 'critically low' on quality assessment, with very few assessed as providing an accurate and comprehensive summary of available studies on the topic.

Our meta-analysis of primary studies provides pooled estimates for the prevalence of depression and anxiety in the general adult population in SA. We had originally planned to use a 2001 cut-off for the primary studies, set to correspond with the World Health Report on Mental Health (World Health Organization, 2001), but revised this to post-2009 studies, to keep in line with the search period followed by one of the reviews from which we harvested

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primary studies (Naveed et al., 2020). Similarly, whilst our protocol mentioned meta-analyses for all mental disorders, we limited this step to reviews on CMDs, given these conditions were the focus of the bulk of identified reviews. Both the reviews from which we harvested primary studies had also previously reported pooled estimates for these conditions in SA, but one included studies in all adult populations, including higher-risk perinatal women and older people (Naveed et al., 2020), while the other was limited to studies in Afghanistan and Pakistan (Zuberi et al., 2021). The inclusion of populations with greater disease burden in the former likely explained its higher prevalence compared to our estimates for both depression (26.4% vs. 16.0%) and anxiety (25.8% vs. 12.0%). With regard to the latter review, while reported country-specific pooled estimates are comparable to ours for Pakistan, its estimates are considerably higher for Afghanistan for both conditions (33.0% vs. 5.0% for depression and 25.0% vs. 3.0% for anxiety). This difference may be explained by the inclusion of two studies reporting high prevalence, which were excluded in our review on the basis of publication date (Scholte et al., 2004; Mufti et al., 2005). On the other hand, our searches identified results from a recent national survey on depression and anxiety disorders in Afghanistan, which we included in our meta-analyses (Kovess-Masfety et al., 2021), while the addition of the excluded primary studies from Afghanistan and Pakistan (Nisar et al., 2004) does not considerably change the region-specific pooled estimates for depression or anxiety (Supplementary Appendix 9).

In addition to mental disorders, our umbrella review included 23 reviews on suicide and intentional self-harm, including one review with meta-analysis among adults in SA, which reported a 6.4% pooled prevalence of suicidal behaviours (Naveed et al., 2020). Other reviews found adult suicide rates ranging from 0.43 to 331.0 per 100,000 population, which varied greatly across countries in the region, and in some cases are likely to be gross underestimations of actual rates (Jordans et al., 2014). An even higher prevalence of suicidal behaviours was found among specific population groups, including perinatal women (Fuhr et al., 2014; Amiri and Behnezhad, 2021), people with HIV/AIDS (Collins et al., 2006; Das and Leibowitz, 2011), female sex workers (Somrongthong et al., 2019) and tribal populations (Devarapalli et al., 2020). Three reviews on suicidal behaviours among children and adolescents were identified, all from India (Aggarwal and Berk, 2015; Aggarwal et al., 2017; Ganesan et al., 2020). Further, we found three reviews among suicide and self-harm populations, which reported a high prevalence of mental disorders, particularly depressive disorders (Cho et al., 2016; Ahmed et al., 2017; Knipe et al., 2019).

Our searches identified three reports based on the Global Burden of Disease studies, which we excluded on the basis of study design (Baxter et al., 2016; Liu et al., 2020; Sagar et al., 2020), and because analyses were either limited to just India or estimated annual percentage change in the burden of depression across the region, not directly comparable to the results of our analyses. Similarly, three reviews (Reddy and Chandrashekar, 1998; Ganguli, 2000; Arora and Aeri, 2019) included in the Hossain et al. (2020) umbrella review did not meet our eligibility criteria on study design, but those topics were covered in other included reviews. Our review includes all other reviews they included, but by going beyond geographically limited reviews and summarising the evidence from multi-country reviews that included at least one South Asian country, we have identified many more reviews, providing a more complete picture of the evidence regarding the prevalence of mental disorders in the region. Diverse terms were used to describe the reviews that were included (systematic, scoping, narrative, etc.), but we screened for studies that met our criteria to be considered systematic reviews, and thereby ensured consistency in our inclusions (Haddaway et al., 2022). In addition, our meta-analyses of primary studies on depression and anxiety provide important new information on the prevalence of these conditions among the general adult population in the region.

Some key limitations of the research should be acknowledged. First, our approach for identifying primary studies was through harvesting studies from included reviews and forward citation screening, rather than a systematic search and screening of databases. This may have missed studies and introduced a selection bias, but our pre-defined strategy on having a registered protocol likely protected against this. In addition, there are possibilities of publication bias, which our funnel plots suggested were likely. Our meta-analyses also found high heterogeneity, which could be explained to some extent by differences between countries and assessment tool used, demonstrated by subgroup analyses. The finding that studies using screening tools report higher prevalence than those using diagnostic interviews has been previously reported, which may have overestimated the prevalence of mental disorders (Zuberi et al., 2021). In the methodological literature on clinical trials, developing and adopting 'core outcome sets' has been advocated to address the heterogeneity that precludes meaningful synthesis of evidence across studies. Core outcomes sets mandate the inclusion of key outcomes to be measured in all trials of interventions for particular conditions and may also define the tools to be used to measure them (Chiarotto et al., 2017). A similar agreed set of defined measures for observational studies of various mental ill health conditions may be a way forward for better synthesis.

Next, although the majority of primary studies received overall high ratings, few were nationally representative surveys of the general adult population. Nonetheless, there were primary studies from most countries in the region, apart from Bhutan and Maldives. In contrast to the quality of primary studies in our meta-analyses, our narrative synthesis is largely based on reviews that scored 'low' or 'critically low'. We therefore limited our presentation of prevalence estimates solely to the meta-analytical reviews, while the overall narrative summary provides a broader mapping of identified evidence from all reviews by type of review and mental disorder. Finally, there is the possibility that our umbrella review may have missed some relevant reviews on mental disorders in SA, but we searched a large number of (including region-specific) databases and reviewed the literature as comprehensively as possible.

Overall, the findings of our research show a high burden of mental disorders among the general-adult population in SA, with even higher prevalence among specific population subgroups. These findings are also supported by reviews published since our searches were carried out (Manna et al., 2022; Palfreyman and Gazeley, 2022; Al-Mamun et al., 2023; Javan Biparva et al., 2023). Our results highlight an urgent need for countries in SA to formulate and implement both clinical and policy measures for the prevention and early treatment of mental disorders and intentional self-harm. The mapping of evidence according to the type of review and mental disorder (Supplementary Appendix 8) shows that population-level prevalence estimates are generally lacking beyond CMDs, including for schizophrenia and psychotic disorders, behavioural syndromes, personality disorders, and intellectual disabilities. These identified gaps are supported by other recent reviews (Russell et al., 2022; Bastien et al., 2023), and should be a focus of future research, along with the strengthening of epidemiological surveillance systems to better capture morbidity, mortality,

https://doi.org/10.1017/gmh.2023.72 Published online by Cambridge University Press

and economic burden of all mental disorders and intentional self-harm in the region.

Open peer review. To view the open peer review materials for this article, please visit http://doi.org/10.1017/gmh.2023.72.

Supplementary material. The supplementary material for this article can be found at https://doi.org/10.1017/gmh.2023.72.

Data availability statement. The details of data searches and extractions from the included studies are provided in the Supplementary Material. The review protocol, including the analysis plan, can be accessed freely from the PROSPERO database, using the registration number mentioned. We do not have any additional data to share.

Author contribution. Conceptualization: D.M.D., N.S.; Conducting literature searches: J.W.; Data analysis: A.L.V., M.R.F.; Data extraction and quality appraisal: A.L.V., D.M.D., M.N., K.P.M., S.T., M.R.F., R.H., J.W., S.B., N.S.; Data interpretation: A.L.V., D.M.D., M.R.F., N.S.; Design of literature search strategy: J.W.; Manuscript writing: A.L.V., M.R.F., S.B.; Revision of manuscript and editing: A.L.V., D.M.D., M.N., K.P.M., S.T., M.R.F., R.H., J.W., S.B., N.S.; Study design: D.M.D., N.S. All authors had full access to all the data in the study and had final responsibility for the decision to submit for publication.

Financial support. This research is funded by the National Institute for Health Research (NIHR) – Grant 17/63/130 NIHR Global Health Research Group: Improving Outcomes in Mental and Physical Multi-morbidity and Developing Research Capacity (IMPACT) in South Asia at the University of York, using UK aid from the UK Government to support global health research. The views expressed in this publication are those of the author(s) and not necessarily those of the NIHR or the UK government.

Competing interest. The authors declare none.

References

Abate SM, Chekol YA and Basu B (2020) Global prevalence and determinants of preoperative anxiety among surgical patients: A systematic review and meta-analysis. *International Journal of Surgery Open* **25**, 6–16. https://doi.org/10.1016/j.ijso.2020.05.010.

Abraham A, Chaabna K, Doraiswamy S, Bhagat S, Sheikh J, Mamtani R and Cheema S (2021) Depression among healthcare workers in the eastern Mediterranean region: A systematic review and meta-analysis. *Human Resources for Health* **19**(1), 1–18.

Aggarwal S and Berk M (2015) Evolution of adolescent mental health in a rapidly changing socioeconomic environment: A review of mental health studies in adolescents in India over last 10 years. *Asian Journal of Psychiatry* **13**, 3–12. https://doi.org/10.1016/j.ajp.2014.11.007

Aggarwal S, Patton G, Reavley N, Sreenivasan SA and Berk M (2017) Youth self-harm in low-and middle-income countries: Systematic review of the risk and protective factors. *International Journal of Social Psychiatry* **63**(4), 359–375. https://journals.sagepub.com/doi/10.1177/0020764017700175?url_ver=Z39.88-2003&rfr_id=ori%3Arid%3Acrossref.org&rfr_dat=cr_pub%3Dpubmed&.

Ahmed HU, Hossain MD, Aftab A, Soron TR, Alam MT, Chowdhury MWA and Uddin A (2017) Suicide and depression in the World Health Organization South-East Asia region: A systematic review. *WHO South-East Asia Journal of Public Health* **6**(1), 60–66. https://doi.org/10.4103/2224-3151.206167.

Akhtar P, Ma L, Waqas A, Naveed S, Li Y, Rahman A and Wang Y (2020) Prevalence of depression among university students in low and middle income countries (LMICs): A systematic review and meta-analysis. *Journal of Affective Disorders* **274**, 911–919. https://doi.org/10.1016/j.jad.2020.03.183.

Al Falasi B, Al Mazrouei M, Al Ali M, Al Dhamani M, Al Ali A, Al Kindi M, Dalkilinc M, Al Qubaisi M, Campos LA, Al Tunaiji H and Baltatu OC (2021) Prevalence and determinants of immediate and long-term PTSD consequences of coronavirus-related (CoV-1 and CoV-2) pandemics among healthcare professionals: A systematic review and meta-analysis. *International Journal of Environmental Research and Public Health* **18**(4), 23. https://doi.org/10.3390/ijerph18042182.

Al Mamun F, Hosen I, Misti JM, Kaggwa MM and Mamun MA (2021) Mental disorders of Bangladeshi students during the COVID-19 pandemic: A systematic review. *Psychology Research and Behavior Management* **14**, 645–654. https://doi.org/10.2147/PRBM.S315961.

Al-Mamun F, Hasan M, Quadros S, Kaggwa MM, Mubarak M, Sikder MT, Hossain MS, Muhit M, Moonajilin M and Gozal D (2023) Depression among Bangladeshi diabetic patients: A cross-sectional, systematic review, and meta-analysis study. *BMC Psychiatry* **23**(1), 1–14.

Ambekar A, Agrawal A, Rao R, Mishra AK, Khandelwal SK and Chadda R (2019) *Magnitude of substance use in India*. New Delhi: Ministry of Social Justice and Empowerment, Government of India.

Amiri S and Behnezhad S (2021) The global prevalence of postpartum suicidal ideation, suicide attempts, and suicide mortality: A systematic review and meta-analysis. *International Journal of Mental Health* **50**, 1–26.

Arafat SMY (2019) Current challenges of suicide and future directions of management in Bangladesh: A systematic review. *Global Psychiatry* **2**(1), 09–20.

Aromataris E, Fernandez R, Godfrey CM, Holly C, Khalil H and Tungpunkom P (2015) Summarizing systematic reviews: Methodological development, conduct and reporting of an umbrella review approach. *JBI Evidence Implementation* **13**(3), 132–140.

Arora P and Aeri BT (2019) Burden of antenatal depression and its risk factors in Indian settings: A systematic review. *Indian Journal of Medical Specialities* **10**(2), 55.

Arvind BA, Gururaj G, Loganathan S, Amudhan S, Varghese M, Benegal V, Rao GN, Kokane AM, Ram D, Pathak K, Singh LK, Sharma P, Saha PK, Mehta RY, and **NMHS collaborators** (2019) Prevalence and socioeconomic impact of depressive disorders in India: Multisite population-based cross-sectional study. *BMJ Open* **9**(6), e027250. https://doi.org/10.1136/bmjopen-2018-027250.

Assariparambil AR, Noronha JA, Kamath A, Adhikari P, Nayak BS, Shankar R and George A (2021) Depression among older adults: A systematic review of south Asian countries. *Psychogeriatrics* **21**(2), 201–219. https://doi.org/10.1111/psyg.12644.

Atif M, Halaki M, Raynes-Greenow C and Chow CM (2021) Perinatal depression in Pakistan: A systematic review and meta-analysis. *Birth Issues in Perinatal Care* **48**(2), 149–163. https://doi.org/10.1111/birt.12535.

AUHE Information Specialists, University of Leeds (2016) *Checking for Duplicates Guidance*. Leeds: Leeds Institute of Health Sciences, University of Leeds.

Axinn WG, Ghimire DJ, Williams NE and Scott KM (2013) Gender, traumatic events, and mental health disorders in a rural Asian setting. *Journal of Health and Social Behavior* **54**(4), 444–461. https://doi.org/10.1177/0022146513501518.

Ball HA, Siribaddana SH, Kovas Y, Glozier N, McGuffin P, Sumathipala A and Hotopf M (2010) Epidemiology and symptomatology of depression in Sri Lanka: A cross-sectional population-based survey in Colombo District. *Journal of Affective Disorders* **123**(1–3), 188–196. https://doi.org/10.1016/j.jad.2009.08.014.

Banerjee D, Vaishnav M, Rao TS, Raju M, Dalal PK, Javed A, Saha G, Mishra KK, Kumar V and Jagiwala MP (2020) Impact of the COVID-19 pandemic on psychosocial health and well-being in South-Asian (world psychiatric association zone 16) countries: A systematic and advocacy review from the Indian psychiatric society. *Indian Journal of Psychiatry* **62**(Suppl 3), S343–S353. https://doi.org/10.4103/psychiatry.IndianJPsychiatry_1002_20.

Barua A, Ghosh M, Kar N and Basilio M (2010) Distribution of depressive disorders in the elderly. *Journal of Neurosciences in Rural Practice* **1**(2), 67–73. https://doi.org/10.4103/0976-3147.71719.

Barua A, Ghosh MK, Kar N and Basilio MA (2011a) Depressive disorders in elderly: An estimation of this public health problem. *Journal International Medical Sciences Academy* **24**(4), 193–194. Available at http://www.imsaonline.com/oct-dec-2011/oct-dec-2011-final.pdf (accessed 1 April 2023).

Barua A, Ghosh MK, Kar N and Basilio MA (2011b) Prevalence of depressive disorders in the elderly. *Annals of Saudi Medicine* **31**(6), 620–624. https://doi.org/10.4103/0256-4947.87100.

Bastien RJ-B, Ding T, Gonzalez-Valderrama A, Valmaggia L, Kirkbride JB and Jongsma HE (2023) The incidence of non-affective psychotic disorders

in low and middle-income countries: A systematic review and meta-analysis. *Social Psychiatry and Psychiatric Epidemiology* **58**(4), 523–536.

Baxter AJ, **Charlson FJ**, **Cheng HG**, **Shidhaye R**, **Ferrari AJ and Whiteford HA** (2016) Prevalence of mental, neurological, and substance use disorders in China and India: A systematic analysis. *The Lancet Psychiatry* **3**(9), 832–841.

Beckwith H, **Moran PF and Reilly J** (2014) Personality disorder prevalence in psychiatric outpatients: A systematic literature review. *Personality and Mental Health* **8**(2), 91–101. https://doi.org/10.1002/pmh.1252.

Bhagavathula AS, **Bandari DK**, **Khan M and Shehab A** (2019) A systematic review and meta-analysis of the prevalence and complications of paraphenylenediamine-containing hair dye poisoning in developing countries. *Indian Journal Of Pharmacology* **51**(5), 302–315. https://doi.org/10.4103/ijp.IJP_246_17.

Bishwajit G, **O'Leary DP**, **Ghosh S**, **Sanni Y**, **Shangfeng T and Zhanchun F** (2017) Association between depression and fruit and vegetable consumption among adults in South Asia. *BMC Psychiatry* **17**(1), 15. https://doi.org/10.1186/s12888-017-1198-1.

Blackmore R, **Boyle JA**, **Fazel M**, **Ranasinha S**, **Gray KM**, **Fitzgerald G**, **Misso M and Gibson-Helm M** (2020) The prevalence of mental illness in refugees and asylum seekers: A systematic review and meta-analysis. *PLoS Medicine* **17**(9), e1003337. https://doi.org/10.1371/journal.pmed.1003337.

Chaudhuri SB, **Mandal PK**, **Chakrabarty M**, **Bandyopadhyay G and Bhattacherjee S** (2017) A study on the prevalence of depression and its risk factors among adult population of Siliguri subdivision of Darjeeling district, West Bengal. *Journal of Family Medicine and Primary Care* **6**(2), 351–355. https://doi.org/10.4103/jfmpc.jfmpc_326_16.

Chauhan A, **Sahu JK**, **Jaiswal N**, **Kumar K**, **Agarwal A**, **Kaur J**, **Singh S and Singh M** (2019) Prevalence of autism spectrum disorder in Indian children: A systematic review and meta-analysis. *Neurology India* **67**(1), 100–104. https://doi.org/10.4103/0028-3886.253970.

Chavan BS, **Das S**, **Garg R**, **Puri S and Banavaram AA** (2018) Prevalence of mental disorders in Punjab: Findings from National Mental Health Survey. *Indian Journal of Psychiatry* **60**(1), 121–126. https://doi.org/10.4103/psychiatry.IndianJPsychiatry_221_17.

Chiarotto A, **Ostelo RW**, **Turk DC**, **Buchbinder R and Boers M** (2017) Core outcome sets for research and clinical practice. *Brazilian Journal of Physical Therapy* **21**(2), 77–84.

Cho SE, **Na KS**, **Cho SJ**, **Im JS and Kang SG** (2016) Geographical and temporal variations in the prevalence of mental disorders in suicide: Systematic review and meta-analysis. *Journal of Affective Disorders* **190**, 704–713. https://doi.org/10.1016/j.jad.2015.11.008.

Choudhary A, **Ranjan JK and Asthana HS** (2021) Prevalence of dementia in India: A systematic review and meta-analysis. *Indian Journal of Public Health* **65**(2), 152–158. https://doi.org/10.4103/ijph.IJPH_1042_20.

Collins PY, **Holman AR**, **Freeman MC and Patel V** (2006) What is the relevance of mental health to HIV/AIDS care and treatment programs in developing countries? A systematic review. *AIDS (London, England)* **20**(12), 1571.

Das S and Leibowitz GS (2011) Mental health needs of people living with HIV/AIDS in India: A literature review. *AIDS Care* **23**(4), 417–425. https://doi.org/10.1080/09540121.2010.507752.

David Franciole de Oliveira S, **Ricardo Ney Oliveira C**, **Severina Carla Vieira Cunh L and Fabia Barbosa de A** (2021) *Prevalence of anxiety, depression, and stress among teachers during the COVID-19 pandemic: Systematic review. medRxiv.* https://doi.org/10.1101/2021.05.01.21256442.

de Bernier GL, **Kim YR and Sen P** (2014) A systematic review of the global prevalence of personality disorders in adult Asian populations. *Personality and Mental Health* **8**(4), 264–275. https://doi.org/10.1002/pmh.1270.

Dennis C-L, **Falah-Hassani K and Shiri R** (2017) Prevalence of antenatal and postnatal anxiety: Systematic review and meta-analysis. *The British Journal of Psychiatry* **210**(5), 315–323. Available at https://www.cambridge.org/core/services/aop-cambridge-core/content/view/9CF2AC0D36E9FF13A32022460FCBA7EE/S0007125000281361a.pdf/div-class-title-prevalence-of-antenatal-and-postnatal-anxiety-systematic-review-and-meta-analysis-div.pdf (accessed 1 April 2023).

Deswal BS and Pawar A (2012) An epidemiological study of mental disorders at Pune, Maharashtra. *Indian Journal of Community Medicine* **37**(2), 116–121. https://doi.org/10.4103/0970-0218.96097.

Devarapalli S, **Kallakuri S**, **Salam A and Maulik P** (2020) Mental health research on scheduled tribes in India. *Indian Journal of Psychiatry* **62**(6), 617–630. https://doi.org/10.4103/psychiatry.IndianJPsychiatry_136_19.

Dong F, **Liu HL**, **Dai N**, **Yang M and Liu JP** (2021) A living systematic review of the psychological problems in people suffering from COVID-19. *Journal of Affective Disorders* **292**, 172–188. https://doi.org/10.1016/j.jad.2021.05.060.

Dua D and Grover S (2020) Profile of patients seen in consultation-liaison psychiatry in India: A systematic review. *Indian Journal of Psychological Medicine* **42**(6), 503–512. https://doi.org/10.1177/0253717620964970.

Dutta A, **Sharma A**, **Torres-Castro R**, **Pachori H and Mishra S** (2021) Mental health outcomes among health-care workers dealing with COVID-19/severe acute respiratory syndrome coronavirus 2 pandemic: A systematic review and meta-analysis. *Indian Journal of Psychiatry* **63**(4), 335–347. https://doi.org/10.4103/psychiatry.IndianJPsychiatry_1029_20.

Evagorou O, **Arvaniti A and Samakouri M** (2016) Cross-cultural approach of postpartum depression: Manifestation, practices applied, risk factors and therapeutic interventions. *Psychiatric Quarterly* **87**(1), 129–154. https://link.springer.com/content/pdf/10.1007/s11126-015-9367-1.pdf.

Fekadu Dadi A, **Miller ER and Mwanri L** (2020) Antenatal depression and its association with adverse birth outcomes in low and middle-income countries: A systematic review and meta-analysis. *PLoS One* **15**(1), e0227323. https://doi.org/10.1371/journal.pone.0227323.

Fellmeth G, **Harrison S**, **Opondo C**, **Nair M**, **Kurinczuk JJ and Alderdice F** (2021) Validated screening tools to identify common mental disorders in perinatal and postpartum women in India: A systematic review and meta-analysis. *BMC Psychiatry* **21**(1), 1–10.

Firdaus G and Ahmad A (2014) Temporal variation in risk factors and prevalence rate of depression in urban population: Does the urban environment play a significant role? *International Journam of Mental Health Promotion* **16**(5), 279–288. https://doi.org/10.1080/14623730.2014.931068.

Fisher J, **Cabral de Mello M**, **Patel V**, **Rahman A**, **Tran T**, **Holton S and Holmes W** (2012) Prevalence and determinants of common perinatal mental disorders in women in low- and lower-middle-income countries: A systematic review. *Bulletin of the World Health Organization* **90**(2), 139–149H. https://doi.org/10.2471/BLT.11.091850.

Fuhr DC, **Calvert C**, **Ronsmans C**, **Chandra PS**, **Sikander S**, **De Silva MJ and Patel V** (2014) Contribution of suicide and injuries to pregnancy-related mortality in low-income and middle-income countries: A systematic review and meta-analysis. *The Lancet Psychiatry* **1**(3), 213–225. Available at https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4567698/pdf/nihms708669.pdf (accessed 1 April 2023).

Ganesan R, **Radhakrishnan S and Rajamanickam R** (2020) Prevalence and PREDICTORS of suicidal behaviour among adolescents in India: A systematic review and META-analyses. *Journal of Critical Reviews* **7**(19), 8754–8770.

Ganguli H (2000) Epidemiological findings on prevalence of mental disorders in India. *Indian Journal of Psychiatry* **42**(1), 14.

Gautham MS, **Gururaj G**, **Varghese M**, **Benegal V**, **Rao GN**, **Kokane A**, **Chavan BS**, **Dalal PK**, **Ram D and Pathak K** (2020) The National Mental Health Survey of India (2016): Prevalence, socio-demographic correlates and treatment gap of mental morbidity. *International Journal of Social Psychiatry* **66**(4), 361–372.

GBD Mental Disorders Collaborators (2022) Global, regional, and national burden of 12 mental disorders in 204 countries and territories, 1990–2019: A systematic analysis for the global burden of disease study 2019. *The Lancet Psychiatry* **9**(2), 137–150.

Ghazanfarpour M, **Bahrami F**, **Rashidi Fakari F**, **Ashrafinia F**, **Babakhanian M**, **Dordeh M and Abdi F** (2021) Prevalence of anxiety and depression among pregnant women during the COVID-19 pandemic: A meta-analysis. *Journal of Psychosomatic Obstetrics and Gynecology* **43**, 1–12. https://doi.org/10.1080/0167482X.2021.1929162.

Gilan D, **Röthke N**, **Blessin M**, **Kunzler A**, **Stoffers-Winterling J**, **Müssig M**, **Yuen KSL**, **Tüscher O**, **Thrul J**, **Kreuter F**, **Sprengholz P**, **Betsch C**, **Stieglitz RD and Lieb K** (2020) Psychomorbidity, resilience, and exacerbating and protective factors during the SARS-CoV-2 pandemic. *Deutsches Arzteblatt international* **117**(38), 625–630. https://doi.org/10.3238/arztebl.2020.0625.

Gilmoor AR, **Adithy A and Regeer B** (2019) The cross-cultural validity of post-traumatic stress disorder and post-traumatic stress symptoms in the Indian

context: A systematic search and review. *Frontiers in Psychiatry* **10**(439), 439. https://doi.org/10.3389/fpsyt.2019.00439.

Haddaway NR, Lotfi T and Mbuagbaw L (2022) Systematic reviews: A glossary for public health. *Scandinavian Journal of Public Health* **51**, 14034948221074998.

Halim N, Beard J, Mesic A, Patel A, Henderson D and Hibberd P (2018) Intimate partner violence during pregnancy and perinatal mental disorders in low and lower middle income countries: A systematic review of literature, 1990-2017. *Clinical Psychology Review* **66**, 117–135. https://doi.org/10.1016/j.cpr.2017.11.004.

Hawton K, Saunders K, Topiwala A and Haw C (2013) Psychiatric disorders in patients presenting to hospital following self-harm: A systematic review. *Journal of Affective Disorders* **151**(3), 821–830. https://doi.org/10.1016/j.jad.2013.08.020.

Hendrickson R, Nishanth J and Michael S (2019) Diagnostic prevalence of common psychiatric comorbidities of alcohol use disorders in India: A systematic review. *International Journal of Mental Health and Addiction* **17** (5), 1268–1296. https://doi.org/10.1007/s11469-018-9951-3.

Hosen I, Mamun F and Mamun M (2021) *Prevalence and risk factors of mental disorders during the COVID-19 pandemic in Bangladesh: a systematic review. ResearchSquare.* https://doi.org/10.21203/rs.3.rs-631435/v1.

Hossain MD, Ahmed HU, Chowdhury WA, Niessen LW and Alam DS (2014) Mental disorders in Bangladesh: A systematic review. *BMC Psychiatry* **14** (216), 216. https://doi.org/10.1186/s12888-014-0216-9.

Hossain MD, Ahmed HU, Jalal Uddin MM, Chowdhury WA, Iqbal MS, Kabir RI, Chowdhury IA, Aftab A, Datta PG, Rabbani G, Hossain SW and Sarker M (2017) Autism Spectrum disorders (ASD) in South Asia: A systematic review. *BMC Psychiatry* **17**(1), 281. https://doi.org/10.1186/s12888-017-1440-x.

Hossain MM, Purohit N, Sultana A, Ma P, McKyer ELJ and Ahmed HU (2020) Prevalence of mental disorders in South Asia: An umbrella review of systematic reviews and meta-analyses. *Asian Journal of Psychiatry* **51**, 102041.

Hossain MM, Rahman M, Trisha NF, Tasnim S, Nuzhath T, Hasan NT, Clark H, Das A, McKyer ELJ, Ahmed HU and Ma P (2021) Prevalence of anxiety and depression in South Asia during COVID-19: A systematic review and meta-analysis. *Heliyon* **7**(4), e06677. https://doi.org/10.1016/j.heliyon.2021.e06677.

Hosseinnejad M, Yazdi-Feyzabadi V, Hajebi A, Bahramnejad A, Baneshi R, Ershad Sarabi R, Okhovati M, Zahedi R, Saberi H and Zolala F (2021) Prevalence of posttraumatic stress disorder following the earthquake in Iran and Pakistan: A systematic review and meta-analysis. *Disaster Medicine* **16**, 1–8. https://doi.org/10.1017/dmp.2020.411.

Housen T, Lenglet A, Ariti C, Shah S, Shah H, Ara S, Viney K, Janes S and Pintaldi G (2017) Prevalence of anxiety, depression and post-traumatic stress disorder in the Kashmir Valley. *BMJ Global Health* **2**(4), e000419. https://doi.org/10.1136/bmjgh-2017-000419.

Hunt GE, Large MM, Cleary M, Lai HMX and Saunders JB (2018) Prevalence of comorbid substance use in schizophrenia spectrum disorders in community and clinical settings, 1990-2017: Systematic review and meta-analysis. *Drug and Alcohol Dependence* **191**, 234–258. https://doi.org/10.1016/j.drugalcdep.2018.07.011.

Hunt GE, Malhi GS, Lai HMX and Cleary M (2020) Prevalence of comorbid substance use in major depressive disorder in community and clinical settings, 1990–2019: Systematic review and meta-analysis. *Journal of Affective Disorders* **266**, 288–304. Available at https://www.sciencedirect.com/science/article/abs/pii/S0165032719327429?via%3Dihub (accessed 1 April 2023).

Hussain S, Habib A, Singh A, Akhtar M and Najmi AK (2018) Prevalence of depression among type 2 diabetes mellitus patients in India: A meta-analysis. *Psychiatry Research* **270**, 264–273. https://doi.org/10.1016/j.psychres.2018.09.037.

Janse Van Rensburg A, Dube A, Curran R, Ambaw F, Murdoch J, Bachmann M, Petersen I and Fairall L (2020) Comorbidities between tuberculosis and common mental disorders: A scoping review of epidemiological patterns and person-centred care interventions from low-to-middle income and BRICS countries. *Infectious Diseases of Poverty* **9**(1), 4. https://doi.org/10.1186/s40249-019-0619-4.

Javan Biparva A, Raoofi S, Rafiei S, Masoumi M, Doustmehraban M, Bagheribayati F, Vaziri Shahrebabak E s, Noorani Mejareh Z, Khani S and Abdollahi B (2023) Global depression in breast cancer patients: Systematic review and meta-analysis. *PLoS One* **18**(7), e0287372.

Jephtha MC and Jagadeesan (2021) Insomnia, depression and anxiety among healthcare workers during Covid-19 pandemic – An evidence-based review. *Journal of Pharmaceutical Research* **13**(2), 605. Available at http://www.episteminikos.org/documents/acc5ff0fe81af2f857fbd3eb4274f35feb3ab85c (accessed 1 April 2023).

Jha S, Salve HR, Goswami K, Sagar R and Kant S (2018) Burden of common mental disorders among pregnant women: A systematic review. *Asian Journal of Psychiatry* **36**, 46–53. https://doi.org/10.1016/j.ajp.2018.06.020.

Jonas JB, Nangia V, Rietschel M, Paul T, Behere P and Panda-Jonas S (2014) Prevalence of depression, suicidal ideation, alcohol intake and nicotine consumption in rural Central India. *The Central India Eye and Medical Study. PLoS One* **9**(11), e113550. https://doi.org/10.1371/journal.pone.0113550.

Jones E and Coast E (2013) Social relationships and postpartum depression in South Asia: A systematic review. *The International Journal of Social Psychiatry* **59**(7), 690–700. https://doi.org/10.1177/0020764012453675.

Jordans MJD, Kaufman A, Brenman NF, Adhikari RP, Luitel NP, Tol WA and Komproe I (2014) Suicide in South Asia: A scoping review. *BMC Psychiatry* **14**(1), 358. https://doi.org/10.1186/s12888-014-0358-9.

Kalra G, Gill S and Tang TS (2020) Depression and diabetes distress in south Asian adults living in low- and middle-income countries: A scoping review. *Canadian Journal of Diabetes* **44**(6), 521–529.e521. https://doi.org/10.1016/j.jcjd.2020.06.007.

Kalra H, Tran TD, Romero L, Chandra P and Fisher J (2021) Prevalence and determinants of antenatal common mental disorders among women in India: A systematic review and meta-analysis. *Archives of Women's Mental Health* **24**(1), 29–53. https://doi.org/10.1007/s00737-020-01024-0.

Kar SK, Menon V, Arafat SY, Singh A, Das A, Shankar A, Sharma P and Perera S (2021) Dhat syndrome: Systematic review of epidemiology, nosology, clinical features, and management strategies. *Asian Journal of Psychiatry* **65**, 102863. https://doi.org/10.1016/j.ajp.2021.102863.

Kar SK, Sharma E, Agarwal V, Singh SK, Dalal PK, Singh A, Gopalkrishna G and Rao GN (2018) Prevalence and pattern of mental illnesses in Uttar Pradesh, India: Findings from the National Mental Health Survey 2015–16. *Asian Journal of Psychiatry* **38**, 45–52. https://doi.org/10.1016/j.ajp.2018.10.023.

Karimi L, Crewther SG, Wijeratne T, Evans AE, Afshari L and Khalil H (2020) The prevalence of migraine with anxiety among genders. *Frontiers in Neurology* **11**, 569405. https://doi.org/10.3389/fneur.2020.569405.

Kato T (2016) Relationship between coping flexibility and the risk of depression in Indian adults. *Asian Journal of Psychiatry* **24**, 130–134. https://doi.org/10.1016/j.ajp.2016.09.008.

Kausar N, Akram B and Khan SD (2015) Major depression in Jalal Pur Jattan, district Gujrat, Pakistan: Prevalence and gender differences. *Journal of Pakistan Medical Association* **65**(3), 292–295. Available at https://www.ncbi.nlm.nih.gov/pubmed/25933564 (accessed 1 April 2023).

Khan MN, Akhtar P, Ijaz S and Waqas A (2020) Prevalence of depressive symptoms among university students in Pakistan: A systematic review and meta-analysis. *Frontiers in Public Health* **8**, 603357. https://doi.org/10.3389/fpubh.2020.603357.

Khunsa Junaid HARN (2020) Depression among healthcare workers during the COVID-19 pandemic in low and middle-income countries: A systematic review. *Annals of King Edward Medical University* **26**, 252–258. Available at https://www.pakmedinet.com/44058 (accessed 1 April 2023).

Klainin P and Arthur DG (2009) Postpartum depression in Asian cultures: A literature review. *International Journal of Nursing Studies* **46**(10), 1355–1373. https://doi.org/10.1016/j.ijnurstu.2009.02.012.

Knipe D, John A, Padmanathan P, Eyles E, Dekel D, Higgins JP, Bantjes J, Dandona R, Macleod-Hall C and McGuinness LA (2022) Suicide and self-harm in low-and middle-income countries during the COVID-19 pandemic: A systematic review. *PLOS Global Public Health* **2**(6), e0000282.

Knipe D, Williams AJ, Hannam-Swain S, Upton S, Brown K, Bandara P, Chang SS and Kapur N (2019) Psychiatric morbidity and suicidal behaviour in low- and middle-income countries: A systematic review and meta-analysis. *PLoS Medicine* **16**(10), e1002905. https://doi.org/10.1371/journal.pmed.1002905.

Kohrt BA, **Speckman RA**, **Kunz RD**, **Baldwin JL**, **Upadhaya N**, **Acharya NR**, **Sharma VD**, **Nepal MK and Worthman CM** (2009) Culture in psychiatric epidemiology: Using ethnography and multiple mediator models to assess the relationship of caste with depression and anxiety in Nepal. *Annals of Human Biology* **36**(3), 261–280. https://doi.org/10.1080/03014460902839194.

Kovess-Masfety V, **Keyes K**, **Karam E**, **Sabawoon A and Sarwari BA** (2021) A national survey on depressive and anxiety disorders in Afghanistan: A highly traumatized population. *BMC Psychiatry* **21**(1), 1–12.

Kuppili PP, **Manohar H**, **Pattanayak RD**, **Sagar R**, **Bharadwaj B and Kandasamy P** (2017) ADHD research in India: A narrative review. *Asian Journal of Psychiatry* **30**, 11–25. https://doi.org/10.1016/j.ajp.2017.07.022.

Lasheras I, **Gracia-Garcia P**, **Lipnicki DM**, **Bueno-Notivol J**, **Lopez-Anton R**, **de la Camara C**, **Lobo A and Santabarbara J** (2020) Prevalence of anxiety in medical students during the Covid-19 pandemic: A rapid systematic review with meta-analysis. *International Journal of Environmental Research and Public Health* **17**(18), 1–12. https://doi.org/10.3390/ijerph17186603.

Liu Q, **He H**, **Yang J**, **Feng X**, **Zhao F and Lyu J** (2020) Changes in the global burden of depression from 1990 to 2017: Findings from the global burden of disease study. *Journal of Psychiatric Research* **126**, 134–140.

Liu B-P, **Lunde KB**, **Jia C-X and Qin P** (2020) The short-term rate of non-fatal and fatal repetition of deliberate self-harm: A systematic review and meta-analysis of longitudinal studies. *Journal of Affective Disorders* **273**, 597–603. https://doi.org/10.1016/j.jad.2020.05.072.

Liu X, **Zhu M**, **Zhang R**, **Zhang J**, **Zhang C**, **Liu P**, **Feng Z and Chen Z** (2021) Public mental health problems during COVID-19 pandemic: A large-scale meta-analysis of the evidence. *Translational Psychiatry* **11**(1), 384. https://doi.org/10.1038/s41398-021-01501-9.

Lopes MA, **Hototian SR**, **Reis GC**, **Elkis H and Bottino CMC** (2007) Systematic review of dementia prevalence 1994 to 2000. *Dementia & Neuropsychologia* **1**(3), 230–240. https://doi.org/10.1590/S1980-57642008DN10300003.

Mahadevan S, **Chan MF**, **Moghadas M**, **Shetty M**, **Burke DT**, **Al-Rasadi K and Al-Adawi S** (2021) Post-stroke psychiatric and cognitive symptoms in west asia, south asia and africa: A systematic review and meta-analysis. *Journal of Clinical Medicine* **10**(16), 3655. https://doi.org/10.3390/jcm10163655.

Mahendran R, **Puthussery S and Amalan M** (2019) Prevalence of antenatal depression in South Asia: A systematic review and meta-analysis. *Journal of Epidemiology and Community Health* **73**(8), 768–777. https://doi.org/10.1136/jech-2018-211819.

Mahmud S, **Hossain S**, **Muyeed A**, **Islam MM and Mohsin M** (2021) The global prevalence of depression, anxiety, stress, and, insomnia and its changes among health professionals during COVID-19 pandemic: A rapid systematic review and meta-analysis. *Heliyon* **7**(7), e07393. https://doi.org/10.1016/j.heliyon.2021.e07393.

Malakouti SK, **Davoudi F**, **Khalid S**, **Ahmadzad Asl M**, **Moosa Khan M**, **Alirezaei N**, **Mirabzadeh A and DeLeo D** (2015) The epidemiology of suicide Behaviors among the countries of the eastern Mediterranean region of WHO: A systematic review. *Acta Medica Iranica* **53**(5), 257–265. Available at https://www.ncbi.nlm.nih.gov/pubmed/26024698 (accessed 1 April 2023).

Mamun MA (2021) Suicide and suicidal behaviors in the context of COVID-19 pandemic in Bangladesh: A systematic review. *Psychology Research and Behavior Management* **14**, 695–704. https://doi.org/10.2147/PRBM.S315760.

Manna S, **Tripathy S**, **Sah RK**, **Padhi BK**, **Kaur S**, **Nowrouzi-Kia B and Chattu VK** (2022) The burden of non-communicable diseases (NCDs) among prisoners in India: A systematic review and meta-analysis. *Healthcare* **10**, 2046.

Math SB and Srinivasaraju R (2010) Indian psychiatric epidemiological studies: Learning from the past. *Indian Journal of Psychiatry* **52**(Suppl 1), S95–S103. https://doi.org/10.4103/0019-5545.69220.

Mathias K, **Goicolea I**, **Kermode M**, **Singh L**, **Shidhaye R and Sebastian MS** (2015) Cross-sectional study of depression and help-seeking in Uttarakhand, North India. *BMJ Open* **5**(11), e008992. https://doi.org/10.1136/bmjopen-2015-008992.

Maulik PK, **Mascarenhas MN**, **Mathers CD**, **Dua T and Saxena S** (2011) Prevalence of intellectual disability: A meta-analysis of population-based studies. *Research in Developmental Disabilities* **32**(2), 419–436. https://doi.org/10.1016/j.ridd.2010.12.018.

McDaid D, **Wright J**, **Nasir M**, **Siddiqi N**, **Vidyasagaran A**, **Huque R**, **Muliyala KP and Nair S** (2021) The incidence and prevalence of mental disorders in South Asia: A systematic review of reviews. Available at https://www.crd.york.ac.uk/prospero/display_record.php?ID=CRD42021282957 (accessed 1 April 2023).

McGowan J, **Sampson M**, **Salzwedel DM**, **Cogo E**, **Foerster V and Lefebvre C** (2016) PRESS peer review of electronic search strategies: 2015 guideline statement. *Journal of Clinical Epidemiology* **75**, 40–46.

McKenzie K, **Milton M**, **Smith G and Ouellette-Kuntz H** (2016) Systematic review of the prevalence and incidence of intellectual disabilities: Current trends and issues. *Current Developmental Disorders Reports* **3**(2), 104–115.

Medlow S, **Klineberg E and Steinbeck K** (2014) The health diagnoses of homeless adolescents: A systematic review of the literature. *Journal of Adolescence* **37**(5), 531–542. https://doi.org/10.1016/j.adolescence.2014.04.003.

Mendenhall E, **Norris SA**, **Shidhaye R and Prabhakaran D** (2014) Depression and type 2 diabetes in low- and middle-income countries: A systematic review. *Diabetes Research and Clinical Practice* **103**(2), 276–285. https://doi.org/10.1016/j.diabres.2014.01.001.

Mills EJ, **Singh S**, **Holtz TH**, **Chase RM**, **Dolma S**, **Santa-Barbara J and Orbinski JJ** (2005) Prevalence of mental disorders and torture among Tibetan refugees: A systematic review. *BMC International Health and Human Rights* **5**, 7.

Mills E, **Singh S**, **Roach B and Chong S** (2008) Prevalence of mental disorders and torture among Bhutanese refugees in Nepal: A systemic review and its policy implications. *Medicine, Conflict and Survival* **24**(1), 5–15. https://doi.org/10.1080/13623690701775171.

Mirza I and Jenkins R (2004) Risk factors, prevalence, and treatment of anxiety and depressive disorders in Pakistan: Systematic review. *BMJ* **328**(7443), 794.

Mishu MP, **Uphoff E**, **Aslam F**, **Philip S**, **Wright J**, **Tirbhowan N**, **Ajjan RA**, **Al Azdi Z**, **Stubbs B and Churchill R** (2021) Interventions for preventing type 2 diabetes in adults with mental disorders in low-and middle-income countries. *Cochrane Database of Systematic Reviews* **2**, CD013281.

Mohammadi M-R, **Salmanian M and Keshavarzi Z** (2021) The global prevalence of conduct disorder: A systematic review and meta-analysis. *Iranian Journal of Psychiatry* **16**(2), 205. Available at https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8233559/pdf/IJPS-16-205.pdf (accessed 1 April 2023).

Morina N, **Akhtar A**, **Barth J and Schnyder U** (2018) Psychiatric disorders in refugees and internally displaced persons after forced displacement: A systematic review. *Frontiers in Psychiatry* **9**, 433. Available at https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6160546/pdf/fpsyt-09-00433.pdf (accessed 1 April 2023).

Morina N, **Stam K**, **Pollet TV and Priebe S** (2018) Prevalence of depression and posttraumatic stress disorder in adult civilian survivors of war who stay in war-afflicted regions. A systematic review and meta-analysis of epidemiological studies. *Journal of Affective Disorders* **239**, 328–338. https://doi.org/10.1016/j.jad.2018.07.027.

Mufti KA, **Naeem F**, **Ayub M**, **Saifi F**, **Haroon A and Kingdon D** (2005) Psychiatric problems in an afghan village. *Journal of Ayub Medical College Abbottabad* **17**(3), 19.

Munn Z, **Moola S**, **Riitano D and Lisy K** (2014) The development of a critical appraisal tool for use in systematic reviews addressing questions of prevalence. *International Journal of Health Policy and Management* **3**(3), 123.

Mytton JA, **Bhatta S**, **Thorne M**, **Pant PR and Gao Y** (2019) Understanding the burden of injuries in Nepal: A systematic review of published studies. *Cogent Medicine* **6**(1), 1673654. https://doi.org/10.1080/2331205x.2019.1673654.

Nadkarni A, **Murthy P**, **Crome IB and Rao R** (2013) Alcohol use and alcohol-use disorders among older adults in India: A literature review. *Aging & Mental Health* **17**(8), 979–991.

Naskar S, **Victor R and Nath K** (2017) Depression in diabetes mellitus-a comprehensive systematic review of literature from an Indian perspective. *Asian Journal of Psychiatry* **27**, 85–100. https://doi.org/10.1016/j.ajp.2017.02.018.

Naveed S, **Waqas A**, **Chaudhary AMD**, **Kumar S**, **Abbas N**, **Amin R**, **Jamil N and Saleem S** (2020) Prevalence of common mental disorders in South Asia: A systematic review and meta-regression analysis. *Frontiers in Psychiatry* **11**, 573150. https://doi.org/10.3389/fpsyt.2020.573150.

Necho M, **Tsehay M**, **Birkie M**, **Biset G and Tadesse E** (2021) Prevalence of anxiety, depression, and psychological distress among the general population during the COVID-19 pandemic: A systematic review and meta-analysis. *International Journal of Social Psychiatry* **67**, 207640211003121. https://doi.org/10.1177/00207640211003121.

Newman MS (2013) Review of studies of mental health in Bangladesh, with a focus on depression. *International Journal of Mental Health* **42**(4), 48–77.

Nisar N, **Billoo N and Gadit A** (2004) Prevalence of depression and the associated risks factors among adult women in a fishing community. *Journal of Pakistan Medical Association* **54**(10), 519–525.

Norhayati MN, **Hazlina NH**, **Asrenee AR and Emilin WM** (2015) Magnitude and risk factors for postpartum symptoms: A literature review. *Journal of Affective Disorders* **175**, 34–52. https://doi.org/10.1016/j.jad.2014.12.041.

Oram S, **Stockl H**, **Busza J**, **Howard LM and Zimmerman C** (2012) Prevalence and risk of violence and the physical, mental, and sexual health problems associated with human trafficking: Systematic review. *PLoS Medicine* **9**(5), e1001224. https://doi.org/10.1371/journal.pmed.1001224.

Ottisova L, **Hemmings S**, **Howard LM**, **Zimmerman C and Oram S** (2016) Prevalence and risk of violence and the mental, physical and sexual health problems associated with human trafficking: An updated systematic review. *Epidemiology and Psychiatric Sciences* **25**(4), 317–341. Available at https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7137602/pdf/S2045796016000135a.pdf (accessed 1 April 2023).

Page MJ, **McKenzie JE**, **Bossuyt PM**, **Boutron I**, **Hoffmann TC**, **Mulrow CD**, **Shamseer L**, **Tetzlaff JM**, **Akl EA and Brennan SE** (2021) The PRISMA 2020 statement: An updated guideline for reporting systematic reviews. *Systematic Reviews* **10**(1), 1–11.

Palfreyman A and Gazeley U (2022) Adolescent perinatal mental health in South Asia and sub-Saharan Africa: A systematic review of qualitative and quantitative evidence. *Social Science & Medicine* **313**, 115413.

Panda PK, **Gupta J**, **Chowdhury SR**, **Kumar R**, **Meena AK**, **Madaan P**, **Sharawat IK and Gulati S** (2021) Psychological and behavioral impact of lockdown and quarantine measures for COVID-19 pandemic on children, adolescents and caregivers: A systematic review and meta-analysis. *Journal of Tropical Pediatrics* **67**(1), 29. https://doi.org/10.1093/tropej/fmaa122.

Patel PA, **Patel PP**, **Khadilkar AV**, **Chiplonkar SA and Patel AD** (2017) Impact of occupation on stress and anxiety among Indian women. *Women & Health* **57**(3), 392–401. https://doi.org/10.1080/03630242.2016.1164273.

Patra A, **Nitin K**, **Devi NM**, **Surya S**, **Lewis MG and Kamalakannan S** (2021) Prevalence of depression among stroke survivors in India: A systematic review and meta-analysis. *Frontiers in Neurology* **2**, 100008. https://doi.org/10.51956/FNNR.100008.

Pearson M, **Zwi AB**, **Rouse AK**, **Fernando R**, **Buckley NA and McDuie-Ra D** (2014) Taking stock – What is known about suicide in Sri Lanka: A systematic review of diverse literature. *Crisis* **35** (2), 90–101. https://doi.org/10.1027/0227-5910/a000244.

Pilania M, **Yadav V**, **Bairwa M**, **Behera P**, **Gupta SD**, **Khurana H**, **Mohan V**, **Baniya G and Poongothai S** (2019) Prevalence of depression among the elderly (60 years and above) population in India, 1997–2016: A systematic review and meta-analysis. *BMC Public Health* **19**(1), 832. https://doi.org/10.1186/s12889-019-7136-z.

Poongothai S, **Pradeepa R**, **Ganesan A and Mohan V** (2009) Prevalence of depression in a Large urban south Indian population—The Chennai urban rural epidemiology study (cures – 70). *PLoS One* **4**(9), e7185. https://doi.org/10.1371/journal.pone.0007185.

Prabhu S, **George LS**, **Shyamala G**, **noronha JA and Hebbar S** (2019) Prevalence and associated risk factors of postnatal depression in south Asian region—A systematic review. *Indian Journal of Public Health Research & Development* **10**(5), 329–333. https://doi.org/10.5958/0976-5506.2019.01022.2.

Qiu S, **Lu Y**, **Li Y**, **Shi J**, **Cui H**, **Gu Y**, **Zhong W**, **Zhu X**, **Liu Y**, **Cheng Y and Qiao Y** (2020) Prevalence of autism spectrum disorder in Asia: A systematic review and meta-analysis. *Psychiatry Research* **284**, 112679. https://doi.org/10.1016/j.psychres.2019.112679.

Rahele R, **Zari D**, **Somayeh M**, **Sara B**, **Neda Fakhr G**, **Rana T and Malihe K** (2020) A systematic review of the prevalence of mental health disorders in pregnant women during the COVID-19 pandemic. *International Journal Of Pediatrics* **8**(11), 12397. https://doi.org/10.22038/IJP.2020.52315.4155.

Rajapakse T, **Griffiths KM and Christensen H** (2013) Characteristics of non-fatal self-poisoning in Sri Lanka: A systematic review. *BMC Public Health* **13** (1), 331. https://doi.org/10.1186/1471-2458-13-331.

Rane A and Nadkarni A (2014) Suicide in India: A systematic review. *Shanghai Archives of Psychiatry* **26**(2), 69–80. https://doi.org/10.3969/j.issn.1002-0829.2014.02.003.

Ranjan JK and Asthana HS (2017) Prevalence of mental disorders in India and other south Asian countries. *Asian Journal of Epidemiology* **10**(2), 45–53. https://doi.org/10.3923/aje.2017.45.53.

Rao TS, **Darshan MS**, **Tandon A**, **Raman R**, **Karthik KN**, **Saraswathi N**, **Das K**, **Harsha GT**, **Krishna VST and Ashok NC** (2014) Suttur study: An epidemiological study of psychiatric disorders in south Indian rural population. *Indian Journal of Psychiatry* **56**(3), 238–245. https://doi.org/10.4103/0019-5545.140618.

Reddy VM and Chandrashekar C (1998) Prevalence of mental and behavioural disorders in India: A meta-analysis. *Indian Journal of Psychiatry* **40**(2), 149.

Risal A, **Manandhar K**, **Linde M**, **Steiner TJ and Holen A** (2016) Anxiety and depression in Nepal: Prevalence, comorbidity and associations. *BMC Psychiatry* **16**, 102. https://doi.org/10.1186/s12888-016-0810-0.

Russell PSS, **Nagaraj S**, **Vengadavaradan A**, **Russell S**, **Mammen PM**, **Shankar SR**, **Viswanathan SA**, **Earnest R**, **Chikkala SM and Rebekah G** (2022) Prevalence of intellectual disability in India: A meta-analysis. *World Journal of Clinical Pediatrics* **11**(2), 206.

Sagar R, **Dandona R**, **Gururaj G**, **Dhaliwal R**, **Singh A**, **Ferrari A**, **Dua T**, **Ganguli A**, **Varghese M and Chakma JK** (2020) The burden of mental disorders across the states of India: The global burden of disease study 1990–2017. *The Lancet Psychiatry* **7**(2), 148–161.

Sagar R, **Pattanayak RD**, **Chandrasekaran R**, **Chaudhury PK**, **Deswal BS**, **Lenin Singh RK**, **Malhotra S**, **Nizamie SH**, **Panchal BN**, **Sudhakar TP**, **Trivedi JK**, **Varghese M**, **Prasad J and Chatterji S** (2017) Twelve-month prevalence and treatment gap for common mental disorders: Findings from a large-scale epidemiological survey in India. *Indian Journal of Psychiatry* **59**(1), 46–55. https://doi.org/10.4103/psychiatry.IndianJPsychiatry_333_16.

Sahu A, **Sagar R**, **Sarkar S and Sagar S** (2016) Psychological effects of amputation: A review of studies from India. *Indian Psychiatry Journal* **25**(1), 4–10. https://doi.org/10.4103/0972-6748.196041.

Salmanian M, **Asadian-Koohestani F and Mohammadi MR** (2017) A systematic review on the prevalence of conduct disorder in the Middle East. *Social Psychiatry and Psychiatric Epidemiology* **52**(11), 1337–1343. https://doi.org/10.1007/s00127-017-1414-9.

Santabárbara J, **Lasheras I**, **Lipnicki DM**, **Bueno-Notivol J**, **Pérez-Moreno M**, **López-Antón R**, **De la Cámara C**, **Lobo A and Gracia-García P** (2021) Prevalence of anxiety in the COVID-19 pandemic: An updated meta-analysis of community-based studies. *Progress in Neuro-Psychopharmacology and Biological Psychiatry* **109**, 110207. Available at https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7834650/pdf/main.pdf (accessed 1 April 2023).

Scholte WF, **Olff M**, **Ventevogel P**, **de Vries G-J**, **Jansveld E**, **Cardozo BL and Crawford CAG** (2004) Mental health symptoms following war and repression in eastern Afghanistan. *JAMA* **292**(5), 585–593.

Shea BJ, **Reeves BC**, **Wells G**, **Thuku M**, **Hamel C**, **Moran J**, **Moher D**, **Tugwell P**, **Welch V and Kristjansson E** (2017) AMSTAR 2: A critical appraisal tool for systematic reviews that include randomised or non-randomised studies of healthcare interventions, or both. *BMJ* **358**, j4008.

Shekhani SS, **Perveen S**, **Hashmi DE**, **Akbar K**, **Bachani S and Khan MM** (2018) Suicide and deliberate self-harm in Pakistan: A scoping review. *BMC Psychiatry* **18**(1), 44. https://doi.org/10.1186/s12888-017-1586-6.

Shidhaye R, **Gangale S and Patel V** (2016) Prevalence and treatment coverage for depression: A population-based survey in Vidarbha, India. *Social Psychiatry and Psychiatric Epidemiology* **51**(7), 993–1003. https://doi.org/10.1007/s00127-016-1220-9.

Shidhaye R, **Lyngdoh T**, **Murhar V**, **Samudre S and Krafft T** (2017) Predictors, help-seeking behaviour and treatment coverage for depression in adults in Sehore district, India. *BJPsych Open* **3**(5), 212–222. https://doi.org/10.1192/bjpo.bp.116.004648.

Shidhaye R, **Sikander S**, **Jordans M**, **De Silva P and Chatterjee S** (2015) Mental health programs and policies in South Asia: Initiatives and obstacles. In *Mental Health in South Asia: Ethics, Resources, Programs and Legislation*. Dordrecht: Springer, pp. 95–111.

Shorey S, **Chee CYI**, **Ng ED**, **Chan YH**, **San Tam WW and Chong YS** (2018) Prevalence and incidence of postpartum depression among healthy mothers: A systematic review and meta-analysis. *Journal of Psychiatric Research* **104**, 235–248. Available at https://www.sciencedirect.com/science/article/abs/pii/S0022395618304928?via%3Dihub (accessed 1 April 2023).

Singh S and Balhara YPS (2017) A review of Indian research on co-occurring cannabis use disorders & psychiatric disorders. *Indian Journal of Medical Research* **146**(2), 186–195. https://doi.org/10.4103/ijmr.IJMR_791_15.

Somrongthong R, **Panza A**, **Alam A**, **Sultana S**, **Jiayu L**, **Huda FA**, **Zaman S and Wahed T** (2019) A narrative review of the literature on the reproductive health of female sex workers having age below twenty years. *Bangladesh Journal of Medical Science* **19**(1), 17–31. https://doi.org/10.3329/bjms.v19i1.43870.

StataCorp LP (2007) Stata data analysis and statistical software.

Steel Z, **Marnane C**, **Iranpour C**, **Chey T**, **Jackson JW**, **Patel V and Silove D** (2014) The global prevalence of common mental disorders: A systematic review and meta-analysis 1980-2013. *International Journal of Epidemiology* **43**(2), 476–493. https://doi.org/10.1093/ije/dyu038

Stubbs B, **Koyanagi A**, **Hallgren M**, **Firth J**, **Richards J**, **Schuch F**, **Rosenbaum S**, **Mugisha J**, **Veronese N**, **Lahti J and Vancampfort D** (2017) Physical activity and anxiety: A perspective from the world health survey. *Journal of Affective Disorders* **208**, 545–552. https://doi.org/10.1016/j.jad.2016.10.028.

Stubbs B, **Koyanagi A**, **Schuch FB**, **Firth J**, **Rosenbaum S**, **Veronese N**, **Solmi M**, **Mugisha J and Vancampfort D** (2016) Physical activity and depression: A large cross-sectional, population-based study across 36 low- and middle-income countries. *Acta Psychiatrica Scandinavica* **134**(6), 546–556. https://doi.org/10.1111/acps.12654.

Tanzil Jamali ST (2016) Child mental health research in Pakistan; major challenges and pitfalls: A systematic review. *Pakistan Journal of Public Health* **6**, 18–23. Available at https://www.pakmedinet.com/33840 (accessed 1 April 2023).

Tay AK, **Riley A**, **Islam R**, **Welton-Mitchell C**, **Duchesne B**, **Waters V**, **Varner A**, **Moussa B**, **Mahmudul Alam ANM**, **Elshazly MA**, **Silove D and Ventevogel P** (2019) The culture, mental health and psychosocial wellbeing of Rohingya refugees: A systematic review. *Epidemiology and Psychiatric Sciences* **28**(5), 489–494. https://doi.org/10.1017/S2045796019000192.

Thapa DK, **Visentin D**, **Kornhaber R and Cleary M** (2018) Prevalence of mental disorders among older people in Nepal: A systematic review. *Kathmandu University Medical Journal* **16**(62), 181–190. Available at https://www.ncbi.nlm.nih.gov/pubmed/30636762 (accessed 1 April 2023).

The World Bank (2019) The World Bank in South Asia. Available at https://www.worldbank.org/en/region/sar (accessed 1 April 2023).

Udina M, **Foulon H**, **Valdés M**, **Bhattacharyya S and Martín-Santos R** (2013) Dhat syndrome: A systematic review. *Psychosomatics* **54**(3), 212–218. https://doi.org/10.1016/j.psym.2012.09.003.

Upadhyay RP, **Chowdhury R**, **Aslyeh S**, **Sarkar K**, **Singh SK**, **Sinha B**, **Pawar A**, **Rajalakshmi AK and Kumar A** (2017) Postpartum depression in India: A systematic review and meta-analysis. *Bulletin of the World Health Organization* **95**(10), 706–717C. https://doi.org/10.2471/BLT.17.192237.

Uphoff EP, **Newbould L**, **Walker I**, **Ashraf N**, **Chaturvedi S**, **Kandasamy A**, **Mazumdar P**, **Meader N**, **Naheed A**, **Rana R**, **Wright J**, **Wright JM**, **Siddiqi N**, **Churchill R and Impact NGHRG** (2019) A systematic review and meta-analysis of the prevalence of common mental disorders in people with non-communicable diseases in Bangladesh, India, and Pakistan. *Journal of Global Health* **9**(2), 020417. https://doi.org/10.7189/jogh.09.020417.

Vaidyanathan S, **Kuppili PP and Menon V** (2019) Eating disorders: An overview of Indian research. *Indian Journal of Psychological Medicine* **41**(4), 311–317. https://doi.org/10.4103/IJPSYM.IJPSYM_461_18.

Vanderkruik R, **Gonsalves L**, **Kapustianyk G**, **Allen T and Say L** (2021) Mental health of adolescents associated with sexual and reproductive outcomes: A systematic review. *Bulletin of the World Health Organization* **99**(5), 359–373K. https://doi.org/10.2471/BLT.20.254144.

Wang C, **Wen W**, **Zhang H**, **Ni J**, **Jiang J**, **Cheng Y**, **Zhou M**, **Ye L**, **Feng Z and Ge Z** (2021) Anxiety, depression, and stress prevalence among college students during the COVID-19 pandemic: A systematic review and meta-analysis. *Journal of American College Health* **71**, 1–8.

Winsper C, **Bilgin A**, **Thompson A**, **Marwaha S**, **Chanen AM**, **Singh SP**, **Wang A and Furtado V** (2020) The prevalence of personality disorders in the community: A global systematic review and meta-analysis. *British Journal of Psychiatry* **216**(2), 69–78. https://doi.org/10.1192/bjp.2019.166.

Woody CA, **Ferrari AJ**, **Siskind DJ**, **Whiteford HA and Harris MG** (2017) A systematic review and meta-regression of the prevalence and incidence of perinatal depression. *Journal of Affective Disorders* **219**, 86–92. Available at https://www.sciencedirect.com/science/article/abs/pii/S0165032717307231?via%3Dihub (accessed 1 April 2023).

World Health Organization (2001) *The world health report 2001: Mental health: New understanding, new hope*. Geneva: World Health Organization.

World Health Organization (2016a) *International Classification of Diseases*, 10th Revision (ICD10). Geneva: World Health Organization.

World Health Organization (2016b) *mhGAP Intervention Guide for Mental, Neurological and Substance Use Disorders in Non-specialized Health Settings: Mental Health Gap Action Programme (mhGAP)*. Geneva: World Health Organization.

World Health Organization (2021) *Mental Health Atlas 2020*. Geneva: World Health Organization.

Yadav V, **Jain A**, **Dabar D**, **Goel AD**, **Sood A**, **Joshi A**, **Agarwal SS and Nandeshwar S** (2021) A meta-analysis on the prevalence of depression in perimenopausal and postmenopausal women in India. *Asian Journal of Psychiatry* **57**, 102581. https://doi.org/10.1016/j.ajp.2021.102581.

Yan H, **Ding Y and Guo W** (2020) Mental health of pregnant and postpartum women during the coronavirus disease 2019 pandemic: A systematic review and meta-analysis. *Frontiers in Psychology* **11**, 3324

Yatan Pal Singh B, **Prashant G and Deeksha E** (2017) Co-occurring depression and alcohol-use disorders in South-East Asia: A narrative review. *WHO South-East Asia Journal of Public Health* **6**(1), 50–59. Available at https://apps.who.int/iris/handle/10665/329601 (accessed 1 April 2023).

Zuberi A, **Waqas A**, **Sadiq N**, **Hossain M**, **Rahman A**, **Saeed K and Fuhr D** (2021) Prevalence of mental disorders in the WHO Eastern Mediterranean Region: A systematic review and meta-analysis. *Frontiers in Psychiatry* **12**, 665019.

https://doi.org/10.1017/gmh.2023.72 Published online by Cambridge University Press