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FULL/LONG TITLE OF THE STUDY

Prescribing Antidepressants in Primary care: Ethnic inequalities in tReatment

SHORT STUDY TITLE / ACRONYM

The PAPER Study

PROTOCOL VERSION NUMBER AND DATE

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STUDY SUMMARY

Study Title	Prescribing Antidepressants in Primary care: Ethnic inequalities in tReatment
Internal ref. no. (or short title)	The PAPER Study
Study Design	Cross-sectional, qualitative
Study Participants	Patients, healthcare professionals, stakeholders in South Asian mental health.
Planned Size of Sample (if applicable)	Max total N = 159
Follow up duration (if applicable)	Not applicable
Planned Study Period	01/05/2023 – 31/12/2026
Research Question/Aim(s)	To understand inequalities in antidepressant prescribing in primary care for the South Asian diaspora.

INVESTIGATORS

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STUDY PROTOCOL

The PAPER Study

1 BACKGROUND

Depression

An estimated 300 million people word-wide are thought to live with depression and major depressive disorder (MDD) is recognised as a leading cause of years lived with disability globally [1]. Heterogeneity in presenting symptoms contributes to under- and mis-diagnosis within primary care [2]. While modern day pharmacological treatments are thought to be efficacious compared to placebo [3], treatment resistant depression affects one in three patients with depression [4]. Furthermore, there are no clinically reliable predictors of treatment response to existing antidepressant treatments, leading to a process of trial-and-error in prescribing [5].

The Quality and Outcomes Framework (QOF) previously incentivised the measurement of depression severity in primary care using validated questionnaires such as the Patient Health Questionnaire (PHQ)-9 [6] and the Hospital Anxiety Depression Scale (HADS) [7]. The PHQ-9 comprises nine items on a four-point Likert scale. It has good sensitivity and specificity for identifying cases of depression as well as being sensitive to change over time [8,9]. HADS [7] comprises seven items, notably excluding questions related to somatic disorders such as appetite and fatigue. HADS was found to perform well in assessing the symptom severity and caseness of anxiety disorders and depression in both somatic, psychiatric and primary care patients and in the general population [10]. The use of such screening tools frequently precedes the prescription of antidepressants, and higher severity scores are associated with higher prescribing and onward referral rates [11].

NICE recommends antidepressant medication in steps 2 to 4 of the stepped-care model of depression, encompassing treatment for subthreshold depressive symptoms through to severe and complex illness presentations [12]. Antidepressant prescribing is often a first-line treatment for depression, despite efforts to increase access to non-pharmacological treatment [13]. The issue of antidepressant prescribing has been hotly debated with some proponents advocating interpretation of the evidence in line with a case for overprescribing, while others are against, saying prescription rates are proportional to need [14,15]. Regardless, rates of antidepressant prescriptions consistently increase year on year in the UK [16]. Qualitative research [17] has shown that General Practitioners (GPs) prefer to take the approach of ‘wait and see’ but if symptoms are perceived to be persistent, unresolving, severe and ‘classic’, antidepressants will be prescribed earlier. These authors also found that decisions to prescribe are shaped by organisational constraints of time, lack of accessible alternative management options, cost of prescribing and perceived patient attitude [17]. Others [18] have similarly reported that when treating patients presenting with moderate to severe depression, GPs were confident prescribing Selective Serotonin Reuptake Inhibitors (SSRIs) which they considered safe and effective, and ethically and professionally appropriate. However, many GPs in this study were unaware that higher doses lacked greater efficacy and onset of action occurred within two weeks, preferring to wait between eight and twelve weeks before making prescription adjustments. Fear of depression recurrence, alongside lack of safety concerns regarding medication taking and lack of proactive medication review (e.g. patients only present in crisis), were all thought to drive antidepressant prescribing growth over time [18].

Understanding antidepressant prescribing practices requires an understanding of appropriate prescribing, in which recognition is given to the doctor-patient relationship, the treatment preferences of the patient, as well as the potential for therapeutic benefit. This is particularly important for individuals from a minority ethnic background whose views have not been well-represented in research to date.

Depression and minority ethnicity

Depression epidemiology in minority ethnic groups living in the UK has been poorly characterised. South Asians comprise the largest minority ethnic group in the UK [19]. Data regarding the prevalence of depression by minority ethnic status is mixed. Some data has shown higher levels of common mental disorders among South Asians (i.e. of Indian and Pakistani origin), with findings moderated by age and sex [20]. However, results from the UK Biobank study suggests a higher prevalence of depression *history* among White individuals (22.1%) compared to Asian (12.9%) and Black (13.8%) individuals [21]. Little is known about depression prevalence within specific subgroups of minority ethnic categories. Variable control for confounders in statistical models, particularly comorbidities known to be prevalent in South Asians (such as heart disease and diabetes) and socioeconomic position, may contribute to this mixed evidence base [22]. Other research suggests that depression screening tools are less reliable at detecting cases of depression among UK South Asians, possibly due to differences in preferred language and/or diction for emotions [23]. While translated versions of standardised screening tools exist, for example in Urdu [24] and Sinhala [25], these approaches focus on item-by-item translation, without taking cross-cultural differences in symptom perception and reporting into account. As acknowledged by this latter study [25] "instruments and diagnostic criteria may need to be adapted for use in primary care" (p.4).

Differences in depressive symptom experiences by ethnicity have been reported; notably lower recording of symptoms of guilt, hopelessness and suicidal ideation have been observed in British South Asian patients [26]. A comprehensive review of qualitative studies looking at differences in depression symptoms across the world found the most prevalent symptoms reported in South Asian countries were related to somatic experiences [27]. These authors noted that only one of the two cardinal symptoms of major depressive disorder according to DSM-V, i.e., sadness but not anhedonia, was consistently ranked above fatigue, sleep, social isolation and weight/appetite across all world regions. It is not clear to what extent acculturation may affect symptom heterogeneity by ethnicity; however, differences in presentation in primary care could contribute to diagnosis and treatment inequalities by ethnicity.

Data on mental health service use and treatment preferences among ethnic minorities in the UK is based on a small evidence base which is now out of date and needs further stratification by mental illness condition and ethnicity subgroup [28]. Language, feelings of isolation, and lack of adherence to mental health treatment regimens, which are often seen as unnecessary, can inhibit treatment [29]. Social stigma can also impede help-seeking [30]. Healthcare professionals' own attitudes act to compound the complex decision-making process around depression management, including beliefs that a diagnosis may be stigmatising for some patients [31]. Institutional racism and cultural dissonance may marginalise South Asian communities from access to mental healthcare [28]. Combined, these findings reflect the difficulties in diagnosing depression in this population.

Treatment of depression also intersects with ethnicity. Data from a 2008 study found that Pakistani women living in the UK consulted with their GP more frequently than their White

counterparts, but were less likely to receive depression treatment [32]. But given the upward trend in antidepressant prescribing overall, the lack of recent data considering the post COVID-19 milieu, and the lack of data from individual South Asian groups, further research is urgently needed. In the US, differences in antidepressant adherence (a measure of treatment acceptability) have been reported by ethnicity [33], but less is known about how this is reflected in UK data.

2 RATIONALE

Ethnic inequalities in health represent a matter of ongoing public enquiry in the UK [34]. It is therefore imperative to understand access and delivery of care from the perspective of patients, healthcare professionals and stakeholders in minority ethnic mental health. Moreover, The NHS Long-Term Plan [35] brings to the fore the need for reform for both adult mental health care for common mental illnesses (such as depression) as well as health inequalities (including those by ethnicity).

This research is important for improving the health and wellbeing of patients for several reasons:

- Depression heterogeneity in presenting symptoms contributes to under- and mis-diagnosis in primary care [2]; currently there is a lack of knowledge about (a) how this applies to South Asian minorities and (b) how this maps on to prescribing practices.
- While depression is the most common mental illness [36], antidepressants are not consistently efficacious [37] leading to trial-and-error in prescribing [5]; the acceptability and prescribing patterns of antidepressants for ethnic minority groups are not well-understood.
- Community initiatives such as ‘Chai and Chat’ organised by the South Asian Health Foundation (SAHF) represent a call for action to tackle the stigma around mental health among South Asians. SAHF is a charity whose mission is to promote good health among UK South Asian communities (https://www.sahf.org.uk/).

This research will also contribute to improving healthcare services:

- Primary care practitioners base decisions on antidepressant prescribing on patient responses to standardised screening tools (e.g. PHQ-9) in addition to patient characteristics and medical history [11]; little is known about the cultural competency of current screening tools’ wording and the administration/delivery of such tools by practitioners with regards to South Asian minority patients presenting with depressive symptoms.
- Depression treatment involves collaborative decision making between primary care practitioners and their patients to ensure patients are being prescribed a treatment they are willing to take. It is not clear how such decision-making takes place in the context of minority ethnic patients due to differences in clinical (e.g. heterogeneity in depression symptom presentation) and functional signs (e.g. language, stigma, diction, mental health literacy, advocacy).
- Diagnosis of depression presents a critical moment in prescribing antidepressants for numerous reasons, including: the chronic course of depression for many patients, the risk of drug dependency, difficulties tapering treatment and/or terminating prescriptions [38].

3 RESEARCH QUESTION/AIM(S)

Using the Patient-Centred Access to Care Framework [39] as a conceptual guide, the purpose of this research is to reduce ethnic disparities in the recognition and treatment of depression. This project aims to understand the treatment of depression in South Asian patients, with specific reference to factors affecting appropriate prescribing in this patient group. A secondary aim is to understand the intersection between ethnicity, age, and deprivation within this context.

3.1 Objectives

1. To estimate the prevalence of depressive symptoms and antidepressant prescribing among minority ethnic individuals in the UK, using a scoping review and quantitative analyses of UK Biobank.

2. To understand the presentation of depression in South Asians and if existing depression screening tools in primary care are culturally competent, using a scoping review and qualitative data collection.

3. To identify aspects of the consultation that affect antidepressant prescribing at the point of diagnosis/first-ever antidepressant prescription among South Asian patients, using qualitative data collection.

4. To use mixed methods to synthesise results across the work packages (WPs) to co-produce practice-relevant resources aimed at improving treatment of depression for South Asians in primary care.

3.2 Outcomes

To understand the extent to which primary care is adequately equipped to appropriately diagnose (and therefore subsequently treat) depression in the South Asian diaspora.

To describe perspectives on factors in the consultation process that affect antidepressant prescribing.

To produce a toolkit of resources related to depression in South Asians, suitable for use in primary care.

4 STUDY DESIGN and METHODS of DATA COLLECTION AND DATA ANALYIS

4.1 Study design

We have chosen to use a quantitative and qualitative approach, using both primary and secondary data analysis. In addition, we will conduct two scoping reviews of the literature. Recruiting primarily through the NHS and specifying inclusion and exclusion criteria, will enable a diverse group of people to be recruited so that comparisons can be made.

4.2 Study methods

We plan to have six empirical sub-studies, to capture a range of voices, experiences, and perspectives; These are summarised in Table 1. In addition, two scoping reviews of the existing literature will aid us in the interpretation of our findings (see Table 2 and Appendices 2 and 3 for

further details of the reviews). Each sub-study maps onto one of our work packages. Methods for the empirical studies will include secondary data analysis of UK Biobank data (see Appendix 1), and interviews and focus group discussions to generate rich, in-depth data from participants. We plan to recruit up to 159 participants in total for the qualitative sub-studies (B-F). Participants will take part in a single interview/focus group discussion. Interviews will last approximately 60 minutes; focus groups will last approximately 90 minutes.

Table 1: An overview of the six empirical studies we will be conducting.

A	WP1	Secondary data analysis of UK Biobank	See Appendix 1; statistical analysis plan.	
B	WP2	Interviews – patient sample – 'Think Aloud' study	(n=48-60) in patients with depression to understand the relevance of existing screening tools for capturing the experience of depression in the South Asian diaspora.	NHS ethical approval ref. 24/WA/0087
C	WP2	Interviews – key informant sample	(n = 15-18) those working with the South Asian community around problems with mental health to capture a range of perspectives in understanding depression presentation.	NHS ethical approval ref. 24/WA/0087
D	WP2	Interviews – community sample – active case finding study	(n = 12-15) those from a South Asian background who may experience symptoms of depression but have not sought help or advice, or who have made past attempts to seek help but subsequently disengaged.	NHS ethical approval ref. 24/WA/0087
E	WP3	Interviews – patients and GPs sample – dyad study	(n=18-21 pairs, i.e., n=36-42 individuals) with GPs and patients to understand the process of diagnosis and decision to treat depression from the perspective of both patient and healthcare professional.	NHS ethical approval ref. 24/WA/0087
F	WP3	Focus Group discussion – primary care professionals sample – case history study	(three sets, each n=6-8, i.e., 18-24 individuals) with healthcare professionals from primary care with an interest in mental health, to understand diagnostic and treatment decision-making processes.	NHS ethical approval ref. 24/WA/0087

Table 2: An overview of the two literature reviews we will be conducting.

WP1	Scoping review of depression symptom heterogeneity.	See Appendix 2; review 1 protocol.	Protocol registration DOI. https://doi.org/10.17605/OSF.IO/5E6ZK
WP2	Scoping review of existing culturally adapted screening tools and resources.	See Appendix 3, review 2 protocol.	Protocol registration DOI. https://doi.org/10.17605/OSF.IO/EBHWX

Specific methods will be used with the six empirical sub-studies as detailed below.

Study A: This study involves secondary data analysis of the UK Biobank (40). UK Biobank provides comprehensive health, genetic and biomarker data on a sample of over 500,000 adults aged 40-69 years in the UK. There are approximately 26,000 individuals from a non-White background in UK Biobank, including approximately 10,000 identifying as South Asian ethnicity. We will focus on examining trends across minority ethnic groups to enable us to examine differences in depression reporting and prescribing specific to South Asian participants. These analyses are important so that we can better understand the extent to which South Asians are under- or over-represented in the data, as well as any differences by intersecting measures of inequality such as age, sex, socioeconomic position and country of birth. A comprehensive data analysis plan is included in Appendix 1.

Study B: This study aims to understand the relevance of existing screening tools for capturing the experience of depression in the South Asian diaspora. Accordingly, participants (n = 48-60) will have lived experience of depression, indicated either by a history of depression or a current diagnosis of depression. Participants will be invited to share their experience of depression symptoms and help-seeking. The 'Think Aloud' method [40] will additionally be used to prompt participants to reflect on the relevance of PHQ-9 and HADS questionnaire items to their own experiences of living with depression. Half of participants will discuss the PHQ-9 and the other half will discuss the HADS. This method has been successfully applied to evaluate how patients make sense of other screening tools previously [41] and will allow us to make recommendations for how these screening tools can be improved and identify any symptoms that they do not adequately address.

Study C: This study aims to ensure we represent a range of perspectives in understanding depression presentation. We will recruit (n = 15-18) individuals who work with South Asian communities. Interviews will seek to understand the discourses around depression and mental illness, cultural taboos in help-seeking and challenges in communicating symptoms of depression that may influence the diagnostic process of depression in primary care.

Study D: We will engage with community organisations who will be briefed to identify individuals (n=12-15) from a South Asian background who may experience symptoms of depression but have not sought help or advice, or who have made past attempts to seek help but subsequently disengaged, from primary care or other NHS services. Participants will be invited to interviews (conducted in their preferred languages) to discuss their experiences, management approaches, and barriers to access to primary care. We will work with the community organisations to signpost individuals identified via this route to appropriate support (e.g., advocacy and interpretation to access NHS services, or community mental health and wellbeing activities).

Study E: The purpose of this study is to understand the process of diagnosis and decision to treat depression from the perspective of both patient and healthcare professional. We will conduct a qualitative study using the critical incident technique [42] in which we will interview healthcare professionals (n = 15-21) and the corresponding South Asian patients (n = 15-21) to ask them to relive the consultation in which the patient was diagnosed with depression, and a decision for management was taken (e.g. prescribing, social prescribing, talking therapies, lifestyle management). This study will be informed by prior research using the critical incident technique to explore behaviour in nurse-patient dyads [43]. This study will allow us to explore issues around presentation of depression symptoms, chronicity and severity of presenting symptoms, treatment advice sought and provided, communication challenges, and stigma. Interviews will be conducted with health care professionals and patients separately, to ensure that both groups feel comfortable to share their views and to maintain confidentiality. To reduce recall bias, we will concentrate on consultations that took place in the previous month.

Study F: The purpose of this study is to explore the decision-making process with primary care consultations involving South Asian patients presenting with depressive symptoms. We will conduct online focus groups with primary care practitioners and primary care mental health workers (N= 18-24; 3 groups of 6-8 participants in each) in which we will present patient case-studies to understand the factors affecting antidepressant prescribing practices for a variety of depression presentations. We will use these focus groups to explore experiences of cases where depression diagnosis is uncertain (e.g. subthreshold symptoms, or acute and event specific symptoms), differential diagnosis, contraindications to prescribing first-line antidepressants, onward referral decision-making, exploration of depression history and prior trauma, as well as issues around language, cultural taboos and health literacy.

Data collection (sub-studies B - F)

The researcher will arrange the interview/focus group at a mutually convenient time with the participants. Interviews/focus groups will be conducted primarily online via Microsoft Teams. Online interviews/focus groups will be the preferred method to reduce travel time and to increase the geographical reach of the study. However, if online access is a problem, telephone and face-to-face interviews will be offered. Interpreters will be made available for those participants with limited spoken English; alternatively, participants will be invited to use an informal interpreter (e.g., family member or friend).

At the start of the interview/focus group, the purpose of the study will be explained, and a brief description will be given to the participants about what to expect. The right to withdraw, and limits to confidentiality will be reiterated. Focus groups will begin by setting some ground-rules to ensure everyone gets the opportunity to speak. Participants will have the chance to ask any

remaining questions at the start and the end of the interview. Questions will follow the topic guide for each sub-study. A debrief will also be provided at the end of the interview and everyone will be reminded of the contact details for the researchers if they have any questions following the interview. All participants will be signposted to suitable sources of further support.

Data analysis

The Study A analysis plan is included in Appendix 1.

For studies B to F, audio-recordings will be made of all interviews/focus group discussions and will be transcribed verbatim. Data will be de-identified prior to analysis. Data will be analysed using reflexive thematic analysis [44] in order to capture the experiences between and within participants. Data analysis steps include data familiarisation, coding, familiarisation with the data, generating initial codes, searching for themes, reviewing themes, defining themes and writing up. We will use NVivo software to aid analysis.

5 STUDY SETTING (STUDIES B – F)

Participants will be recruited from a range of settings in line with the requirements of each sub-study. We will recruit from multiple sites, and we will put Participant Identification Centre (PIC) agreements in place with individual sites. Further details are provided below.

Study B: Participants will be patients identified through electronic searches of medical records at participating GP practices established as PIC sites. PIC sites will be responsible for conducting searches according to our broad inclusion criteria and signposting patients to further study information. We will work closely with individual sites to refine search criteria for medical record screening. Screening of patients will be performed by the medical team. The research team will not have access to medical records.

Study C: Key informants will be recruited via Local Authority PIC sites (e.g., community organisations, social services) and through social media advertisements and emails distributed via the research teams' professional networks.

Study D: Participants will be recruited via Local Authority PIC sites (e.g., community organisations, social services) along with community organisations we have established working relationships with to actively identify probable depression cases to be signposted to the research team for recruitment into the study. Community organisations we have worked with previously include SubCo Trust, Equality Action and South Asian Health Action.

Study E: Patient participants will be recruited as detailed for Study A above. To recruit GPs, we will work closely with GP practices during the PIC site set-up to explain the recruitment approach. Participant information sheets will be circulated to all practice GPs at each site. Written consent will be sought for GPs in which a patient on their caseload has been successfully recruited into the study.

Study F: Primary care health care practitioners will be recruited to take part in focus groups via participating PIC sites and through social media advertisements and emails distributed via the research teams' professional networks.

6 SAMPLE AND RECRUITMENT (STUDIES B - F)

6.1 Eligibility Criteria

6.1.1 Inclusion criteria

a) Across all studies (B to F), participants must be:

- Aged 18 years and older.
- Able to provide written informed consent.
- Able to communicate in spoken English either themselves or via an interpreter.

b) In **Study B, D, and E,** patients/community participants must, in addition to criteria listed under part (a), be:

- From a South Asian ethnic background (self-defined).
- Have received:
    - A doctor diagnosis of depression in the past 5 years (**Study B**)
    - Experiencing undiagnosed symptoms of depression (**Study D**).
    - A doctor diagnosis of depression in the past month (**Study E**)

c) In **Study E and F**, healthcare professional participants must, in addition to criteria listed under part (a), be:

- Working in a UK-based NHS primary care site.
- Be employed as a HCPC registered:
    - GP **(Study E and F)**
    - Primary care mental health worker **(Study F)**

6.1.2 Exclusion criteria

If inclusion criteria listed above are not met, individuals will be excluded from the study.

In addition, in **Study B, D, and E**, we will exclude individuals:

- With a life-limiting long-term condition such as advanced stage cancer or dementia as this represents a distinct patient group who may experience depression with different care needs.
- Individuals with severe mental illness including schizoaffective disorders.

In **Study D**, we will additionally exclude:

- Individuals currently seeking help for mental health difficulties.

6.2 Recruitment

<u>Sampling size and sampling frame</u>

Purposive sampling will be used since we wish to target individuals who meet our selective inclusion criteria. In qualitative research, sample size increases as the diversity of the population increases. Prior work indicates that samples of ~12 participants are appropriate for relatively homogenous populations [45]. However, we will remain mindful of information power principles [46]. Participants will be selected using a multilevel sampling matrix of characteristics including age, migration generation, ethnicity, language, socioeconomic factors, gender identity, to support the secondary aim of understanding intersectional impacts on antidepressant prescribing. Recruiting

sites will include a range of primary care practices from across the UK to ensure geographical spread of participants.

Study B: Participants will be recruited from different South Asian minority ethnic groups across the UK e.g., Indian (n=12-15), Pakistani (n=12-15), Bangladeshi (n=12-15), which map onto ONS categories and patient records in primary care to aid recruitment. A fourth group (n = 12-15) will be identified through key informant interviews (e.g., based on language, religion, or other characteristics South Asian individuals may identify through); this bottom-up approach will allow us to be responsive to the emerging data.

Study C: We have inflated the N for the key informant interviews (i.e., N= 15-18), to allow us the opportunity to recruit additional informants in response to gaps in knowledge we identify during data collection. Stakeholders will be identified through our Local Authority PIC sites, professional networks and via our PPI panel. Participants may include charities (n= 3), community organisations (n= 3), religious leaders (n= 3), local healthcare commissioners (n= 3), and health and care practitioners (n= 3). The constant comparison method will be used to adapt recruitment and suggest additional groups or viewpoints as findings emerge and gaps are identified, such as including the views of informal caregivers.

Study D: Our active case finding approach will specifically seek to recruit seldom heard voices who might not be engaging with primary care. We anticipate that this approach will allow us to recruit older individuals, with limited English, and who we would not be able to reach via recruitment through health services. Training will be provided by the research team to ensure the community organisations understand the types of individuals we are looking to identify. We will work with these organisations to tailor a checklist of symptoms that use non-diagnostic, culturally relevant, language that indicates mental distress e.g. 'sinking heart' (dil ghirda hat) for Punjabis. We will also discuss differential diagnosis to mitigate the risk of recruiting individuals with severe mental illness such as psychotic-like symptoms/episodes who will be excluded from our study. Signposting to relevant services will be provided regardless of study participation to all individuals identified via this approach.

Study E: our N for our GP-patient dyad study has been inflated to 15-21 to allow us to purposively sample a range of dyad combinations (i.e., concordant and discordant dyads in terms of ethnicity/languages spoken, and across a range of geographical regions).

Study F: Focus groups are ideally conducted on a group of between 6 and 8 individuals to allow each participant the opportunity to speak and to contribute to the group discussion [47]. Therefore, we will recruit 6-8 healthcare professionals to take part in one of three focus groups. By holding three focus groups we will be able to sample across geographical area and professional group (e.g., GPs, primary care mental health service staff) to ensure a diversity in experience and opinion.

Recruitment

Across all sub-studies, interested individuals will be asked to contact the research team to ask questions about the study. Both paper and online versions of study documents will be available. Translated versions of all study materials will be made available for patients with limited English.

Because the studies are cross-sectional in design, attrition is expected to be low (i.e., <10%). In the event of a participant withdrawing, we will keep recruitment to new participants open to ensure adequate data collection.

We will use Qualtrics to host all online versions of study participant information sheets, screening questions to check eligibility, consent form and demographic information. Paper copies can be sent via post with a FREEPOST envelope for free return to the research team.

For GP identified participants: Eligible patients will be sent either a text message/letter including the study team's phone number, email and link to the Qualtrics site, encouraging participants to find out more about how to take part in the study via their preferred method. Exact wording will be decided with input from individual PIC sites to ensure they meet local preferences. Patients will be informed that should they wish to take part; contact should be made with the research team within 1 week. If response to the study is not enough to recruit the initial sample size, a second invitation will be sent after approximately 1 week to all participants who have not responded.

For poster/media/professional network identified participants: Interested individuals will respond to adverts and invited to contact the research team via email or telephone. A QR code on posters can be scanned to direct individuals to the online Qualtrics website. Weblinks to the Qualtrics website will also be provided.

For all participants: On receipt of a signed consent form a member of the research team will telephone the participant to answer any questions and to re-check eligibility. A time and location for the interview will be arranged during this phone call. The researcher will contact patients within one week of receiving their consent form. All participants, including clinicians, will be reimbursed with a £50 retail voucher (e.g. Amazon, Tesco, M&S) for taking part in the study. Reasonable travel expenses up to £20 can be reimbursed if interviews are conducted in person.

6.2.1 Participant identification

Potential participants in **Study B and E** and will be identified as follows:

1. Researchers will work with our PICs (GP surgeries) to determine the search terms to be used to identify eligible patients based on the study inclusion and exclusion criteria. Searches will be conducted of patient medical notes by an NHS staff member. Only a member of the patient's existing clinical care team will have access to patient records prior to participants consenting to take part in the research study. These NHS staff members will identify potential participants and make the initial approach to patients. If GP surgeries use a text-messaging system, a short text message will be prepared signposting participants to contact the researchers and to access study information on Qualtrics. Electronic copies of invitation letters can be provided if GP surgeries prefer to use postal mail. GP surgeries can use DocMail to assist with this. Hard copies of the participant information sheet will also be provided for GPs to hand-out during consultations with eligible patients. A simple screening log will be kept for all ineligible participants to tally the reasons for exclusion.

Potential participants in **Study B** (in addition to approach 1 above) **and D** will self-identify through community channels:

2. Posters and leaflets will be displayed in a variety of settings including participating GP surgery waiting areas, in community settings including mental health and minority health-related charity buildings. Interested individuals will be invited to contact the research team via email, telephone or to visit the Qualtrics website.
3. Recruitment via media: we will advertise the study poster on social media (e.g., Twitter, Instagram) and via South Asian media channels such as print and radio aimed at South Asians in the UK. Radio recruitment will involve a short blurb being prepared to signpost individuals to contact the research team via email or telephone for more information.

Healthcare professionals in **Study E and F** will be identified via our participating PIC sites and via circulating messages to our professional networks and via social media.

Stakeholders in **Study C** will be identified via circulating messages to our professional networks and using our lead CRN's contacts to set up PICs with local authorities and other community organisations.

6.2.2 Consent

Informed consent will be obtained from all participants. On receipt of the participant information sheet, participants will be asked to contact the researchers to ask any questions they may have before making a decision about whether or not to participate. Participants will have 1 week, or as long as the individual feels is appropriate, to make an initial approach to participate. Fully informed written consent will be sought in person prior to the interview/focus group takes place. Participants will be reminded they are free to withdraw at any point without giving reasons why. Only participants who meet our inclusion and exclusion criteria will be eligible to participate in the study. Participants will not be eligible to take part if they do not have capacity to give fully informed written consent.

As we anticipate that a number of participants in the patient/public interviews may not speak English as a first language, written participant information will be made available in South Asian languages (Bengali, Hindi, Gujarati, Punjabi, and Urdu) with further languages available on request. The research team will speak to interested participants on the phone to explain the information and answer any questions they may have. Additionally, potential participants will be given time through the recruitment process to consider their involvement and consult with family or friends.

In Study B, PIC sites will be primed for the study recruitment procedure and given the time sensitive nature of recruitment following a diagnosis having being made, verbal agreement in principle from GPs working in participating PICs will be ascertained. However, patients will be recruited (and consented) first, and the corresponding GP approached subsequently to provide written consent.

6.2.2 Withdrawal of Consent

Participants will be informed at the start of the study that they may withdraw at any point before, during or up to one month after the interview/focus group. If participants choose to withdraw within these time frames, we will seek prior consent to retain information collected up to the point

of withdrawal. If the participant refuses, all previously collected data will be deleted. No consequences to either participant or study are expected, and withdrawal will not affect participants' health care in relation to their diagnosis or any other healthcare need.

7 ETHICAL AND REGULATORY CONSIDERATIONS (STUDIES B - F)

When completing this study, adherence to the principles outlined in the British Psychological Society Code of Ethics and Conduct (2018) and Code of Human Research Ethics (2014) will be followed. Participants will be provided with a clear information sheet that details participation within the research is voluntary and they have the right to withdraw. It will be clearly outlined that any refusal or withdrawal from the study would not interfere with any care that they receive. Within the participant information sheet, individuals will also be provided with full information about the study and what participation will entail. It will be explained that any information shared will be kept anonymous and confidential unless it involves harm from or to others. Whilst a reminder call or email will be made after 1 week, participants will be given as much time as they need to read and reflect on the information provided before giving written consent. There will also be contact details for individuals to contact the researcher if they have any questions relating to the study. The study will end after the recruitment of the final participant and the collection of all data related to their participation in the study.

7.1 Assessment and management of risk

Participants – harm to themselves

If participants were to become upset we have put several mechanisms in place to protect participants:

- The University of Surrey safeguarding procedure will be adhered to at all times and any concerns reported immediately for escalation to the Wellbeing Centre. https://www.surrey.ac.uk/sites/default/files/2022-03/safeguarding-procedures.pdf
- Interviews will only take place during normal working hours so that a referral to the Wellbeing Centre can be made and actioned as required.
- We will only recruit outpatients to participate.
- We will fully inform participants prior to taking part about the nature of the research.
- Before the start of the interview/focus group discussion, participants will be told that they can stop the discussion at any time (without giving a reason). If the participant appears to become distressed during the discussion, the researcher will offer support and ask directly if they would like to take a break, carry on or postpone.
- In a safeguarding emergency we will call 999.
- We will gain prior consent from participants for the research team to notify their GP if they identify themselves as needing further medical assistance during the course of their discussion, so additional professional support can be provided.
- Please note, the provision of GP details will be optional for those in Study E, who are less likely to be engaging with healthcare services. For these participants we will follow the same safeguarding policy but gain advice from the Safeguarding Officer about the appropriate service with which to break confidentiality (social services, police, etc.) on a case-by-case basis.

- Contact details of further support services, such as the Samaritans, will be given to all participants.
- The researcher will ensure time is given to participants at the end of the interview to reflect on the interview impact, ensure that the interview remains focused on the research topic and maintains a boundary between the research interview/ topic and any intervention for their mental health.

Harm to researchers

There is minimal risk to the researchers. Interviews will be conducted online wherever possible. In a small number of cases we may offer to conduct face-to-face interviews. However, these will be arranged to be held in a public setting wherever possible (e.g. community setting or within University of Surrey). These will take place during normal office hours. We will follow the University of Surrey's lone working policy to minimise any risks. A colleague within the University of Surrey will be informed of the interview location along with the estimated start and finish time for the interview. The researcher will confirm their arrival and departure with his colleague via phone call or text.

7.2 Research Ethics Committee (REC) and other Regulatory review and reports

7.2.1 Approvals. Before the study commences a favourable opinion on the protocol and associated documents will be sought from the UK Health Departments Research Ethics Service, the HRA, and confirmation of capability and capacity from NHS sites where necessary. All correspondence with the REC will be retained.

7.2.2 Amendments. Should any amendments to the protocol be required the researcher will contact the University RIGO office (Sponsor) to determine if its substantial or non-substantial, upon clarification of the amendment categorisation, the researcher will submit the amendment as per current HRA practice, the amendment will not be implemented until all approvals have been completed.

7.2.3 Annual Progress reports. An annual progress report (APR) will be submitted to the REC within 30 days of the anniversary date on which the favourable opinion was given, and annually until the study is declared ended following HRA current practice

7.2.4 The researcher will notify the REC of the end of the study with 90 days of the last data collection point using HRA current practice.

7.2.5 End of study report. Within one year after the end of the study, the researcher will submit a final report with the results, including any publications/abstracts, to the REC.

7.3 Peer review

The Sponsor considers the procedure for obtaining funding from NIHR to be of sufficient rigour and independence to be considered an adequate peer review. The study design has undergone rigorous independent, anonymous, review at several stages of the funding process.

7.4 Patient & Public Involvement

PPI representatives sit on both the research team and steering committee. The PPI members will inform PPI strategy and have been involved in the study design (including inclusion/exclusion criteria), development of written and verbal communication for participants, interpretation of findings, and development of policy recommendations.

7.5 Protocol compliance, adverse events reporting and breaches

Protocol deviations, non-compliances, or breaches are departures from the approved protocol.

7.5.1 Minor protocol deviations will be documented on the relevant forms and reported to the Chief Investigator or supervisor and Sponsor.

7.5.2 Adverse events will be discussed with the researcher's supervisor and the sponsor, adverse events will be documented in the trial files. Serious adverse events will be reported to the Sponsor as per the sponsor SOP.

7.5.3 Serious Breaches of the protocol, where a participant has been put at risk by a deviation from the approved protocol will be reported to the sponsor as per SOP.

7.6 Data protection and patient confidentiality

The study is compliant with the requirements of General Data Protection Regulation (2016/679) and the UK Data Protection Act (2018). All investigators and study site staff will comply with the requirements of the UK Data Protection Act (2018) with regards to the collection, storage, processing and disclosure of personal information, and will uphold the Act's core principles. The University of Surrey is the data controller; the University of Surrey Data Protection Officer is contactable at dataprotection@surrey.ac.uk. The data processors are the PI, co-Is and researchers employed by the grant. The study will be collecting the following personal data: name, email address, home address, phone number, month and year of birth.

- The research team will not have access to patient's medical records. Data from consent forms, the sociodemographic questionnaire and the interview will be collected at a place of the participant's choice (usually their home).
- All paper copies of personal identifiable data (e.g., consent forms) will be scanned and then stored as electronic copies. All original paper copies will be securely destroyed after scanning.
- All electronic copies of personal identifiable data (e.g., consent forms) will be downloaded from Qualtrics and stored on the University of Surrey's secure server, the Trusted Research Environment.
- Personal data of individuals expressing interest in participating (name, address, phone number, email), but who do not consent, will be retained for up to 2-months after initial contact and reminder letters have been sent, prior to being deleted.
- All self-completed questionnaire data will be anonymous and identifiable only by a unique identification number.
- The linking code and media files will be stored digitally on the Trusted Research Environment.
- Only researchers directly involved in the study will have access to the anonymised raw data.
- Audio data will be recorded on an encrypted handheld device for in-person interviews or via in-built video recording software for online interviews and uploaded directly to the Trusted Research Environment. Interviews will be recorded with consent. Interviews will be

transcribed by an external transcription company using an existing supplier for University of Surrey (TP Transcriptions Ltd). Data sharing agreements are in place. Once interviews have been transcribed, audio recordings will be kept for up to 12 months prior to being deleted; this is to allow cross-checks to take place between researchers during the analysis phase.

- Research data will be stored securely for at least 10 years following their last access, and project data (related to the administration of the project, e.g. consent forms) for at least 6 years in line with the University of Surrey policies.
- Participants will not be identified in any report or publication that arises from this study.
- All data will be fully anonymised (including the removal of any personal identifiable information from transcripts) to ensure the confidentiality of data will be preserved when the data are transferred between co-investigators. Collaboration agreements are in place between University of Surrey and co-investigator institutions.
- In line with the Open Access research agenda prior consent will be sought from participants to archive newly generated data on a public data repository following study completion. Only fully anonymised data will be archived.

7.6 Indemnity and Insurance

The sponsor has in place relevant insurance for the design, conduct and the management of the study. The sponsor has arrangements in place for payment of compensation in the event of harm to the research participants where no legal liability arises.

7.7 Access to the final study dataset

The PI, co-Is and the researchers employed on grant will have access to the final dataset. Only the fully anonymised dataset will be shared with those in the study team outside of the University of Surrey. A collaboration agreement is in place to govern the use of the data. No other investigators will be given access to the dataset during the lifetime of the project. In line with the Open Access research agenda, prior consent will be sought from participants to archive *newly generated* data on a public data repository following study completion. Only fully anonymised data will be archived.

8 DISSEMINIATION POLICY

8.1 Dissemination policy

The University of Surrey will retain intellectual property on the data produced and have responsibility for its exploitation. The research will comply with the copyright requirements according to University of Surrey policy and the Copyright, Designs and Patents Act, 1988. On completion of the study, the data will be analysed and tabulated and a Final Study Report prepared.

All the participating investigators will have rights to publish the study data, though publications will be planned and overseen by the PI.

The NIHR are funders of this study and will be acknowledged in all publications. They will not hold any rights over the data arising from the study.

Participants will be informed of the results of the outcome of the study website and via a specially prepared newsletter.

The data may be presented in conferences, seminars and other presentations.

With prior consent, original data arising from the study will be archived following study completion in a public data repository.

8.2 Authorship eligibility guidelines and any intended use of professional writers

Authors who have contributed to the study design, analysis and/or interpretation of findings, will be given authorship on all publications arising from this study as per guidelines laid out by The International Committee of Medical Journal Editors. No professional writers will be used.

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List of Appendices

Appendix 1: Detailed statistical plan for UK Biobank analyses (WP1)

Appendix 2: Scoping review 1 protocol (WP1)

Appendix 3: Scoping review 2 protocol (WP2)

Appendix 1

The PAPER Study: Statistical Analysis Plan for Work Package 1

Primary Research question: How can we reduce ethnic disparities in the recognition and treatment of depression?

Work package 1: Scoping review and UK Biobank analysis

Objective: To estimate the (a) prevalence and heterogeneity of depressive symptoms and (b) antidepressant prescribing among minority ethnic individuals in the UK.

Aim 1

To determine the prevalence of (a) depression and (b) antidepressant prescriptions across minority ethnic groups compared to White individuals

Determining the prevalence of depression

Defining the study sample

Prevalence analyses will be carried out on the entire sample, i.e. the ~500,000 participants who completed the UK Biobank baseline assessment between 2006 and 2010. All UK Biobank participants will have linked Hospital Episode Statistic data available. A subgroup of participants will have linked primary care data available. A further subgroup of participants completed mental health follow-up questionnaires in 2016/17 and 2022 (see Figure 1 in the Appendix).

Defining depression in the UK Biobank

Due to the possible chronic or episodic nature of depression, in the current study we will be assessing lifetime prevalence of depression (i.e. depression ever recorded). Lifetime prevalence of depression will be measured in three ways:

1. For the 206,823 participants who completed at least one mental health follow-up questionnaire (see Figure 1 in Appendix), we will use the Composite International Diagnostic Interview Short Form (CIDI-SF)[1] to measure probable lifetime history of major depressive disorder (MDD). Depression cases will be defined as having[2]:
    - At least one core symptom of depression (persistent sadness (Data-field 20446) or a loss of interest (Data-field 20441)) for most or all days over a two-week period which were present 'most of the day' or 'all of the day'.
    - Plus at least another four non-core depressive symptoms with some or a lot of impairment experienced during the worst 2-week period of depression or low mood.
    - The non-core depressive symptoms include: Feelings of tiredness (Data-field 20449), weight change (Data-field 20536), did your sleep change? (Data-field 20532), difficulty concentrating (Data-field 20435), feelings of worthlessness (Data-field 20450), and thoughts of death (Data-field 20437).

2. For the UK Biobank participants who did not complete a mental health follow-up questionnaire, we will define depression caseness using an algorithm created by

Glanville et al[3]. Using this algorithm, for a person to be considered to have ever had depression they will need to have at least 2 of the criteria in Table 1.

3. Primary care data is available for approximately 45% of the UK biobank cohort. People with a primary care diagnosis of depression ever recorded will also be considered to have a lifetime history of depression.

Proposed analysis

The prevalence (%) of depression will be presented for each ethnic group (see Table 2). We will also stratify depression prevalence by age group, gender, and neighbourhood deprivation (Index of Multiple Deprivation (IMD) quintile).

Table 1. Criteria for defining depression in UK Biobank participants who have not completed a mental health follow-up questionnaire. To meet the criteria for depression, participants will need to have at least two of the measures below.

1. Help-seeking	A positive response to either of these questions asked at baseline: 'Have you ever seen a general practitioner for nerves, anxiety, tension or depression?' 'Have you ever seen a psychiatrist for nerves, anxiety, tension or depression?' (Data-Field: 2090 and Data-Field: 2100)
2. Self-reported depression	Reporting having experienced depression (past or present) during the verbal interview at baseline (Data-field: 20002 (non-cancer illness code))
3. Antidepressant usage	Reporting taking antidepressant medications during the verbal interview at baseline (Data-field: 20003 (Treatment/medication code))
4. Depression (Smith et al[4])	During the last two years of recruitment, questions on depressive symptoms were added to the assessment protocol (n=172,751). Items assessing depression are based on the PHQ-7 (see figure 3 and supplementary material in Smith et al). Three types of depression are defined: - Single probable episode of major depression (Data-field 20123) - Probably recurrent major depression (moderate) (Data-field 20124) - Probable recurrent major depression (severe) (Data-field 20125)
5. Hospital (ICD-10)	Linked hospital episode statistics: a primary or secondary International Classification of Diseases (ICD)-10 diagnosis of a depressive mood disorder from linked hospital admission records. (Data-Field: 41202 and Data-Field: 41204).

We will use logistic regression to determine whether ethnic differences in the prevalence of depression are statistically significant. The white ethnic group will be used as the reference category as it is the largest group. These logistic regressions will be adjusted for age, gender, and index of multiple deprivation (IMD).

We will also explore whether there are ethnic differences in the way depression caseness has been determined in the cohort. Specifically, we will see if there are ethnic differences in whether depression is determined by the CIDI-SF, Glanville et al's algorithm, or primary care records. Amongst participants with depression determined using Glanville et al's algorithm, we will explore whether there are ethnic differences in the combinations of criteria used to determine depression.

Table 2. Ethnic groups in the UK Biobank	
Ethnic group	**Ethnic subgroup**
White	White British; White Irish; Any other white background
Mixed	White and Black Caribbean; White and Black African; White and Asian; Any other mixed background
Asian or Asian British	Indian; Pakistani; Bangladeshi; Any other Asian background
Black or Black British	Caribbean; African; Any other Black background
Chinese	
Other ethnic group	

Determining the prevalence of antidepressant prescribing

Defining antidepressant prescribing in the UK Biobank

In order to maximise sample size, the prevalence of self-reported antidepressant prescribing will be examined using data from the baseline assessment carried out 2006-2010 (Data-field: 20003). At the baseline assessment, participants were asked 'Do you regularly take any other prescription medications?' on a touchscreen questionnaire. If they responded 'yes', they were later asked to list these medications by the nurse practitioner during the interview assessment.

We will focus on ten of the most commonly prescribed antidepressants in England between 2005 and 2015[5].We will also include escitalopram seeing as it is one of the most prescribed antidepressants in the UK according to the NHS (https://www.nhs.uk/mental-health/talking-therapies-medicine-treatments/medicines-and-psychiatry/antidepressants/overview/).

- Amitriptyline
- Citalopram (Selective serotonin reuptake inhibitor (SSRI) 1140921600)
- Escitalopram (SSRI 1141180212)
- Dosulepin
- Duloxetine (Selective noradrenaline reuptake inhibitor (SNRI) 1141200564)
- Fluoxetine (SSRI 1140879540)
- Mirtazapine (Noradrenaline and specific serotonergic antidepressant (NASSA) 1141152732)
- Paroxetine (SSRI 1140867888)
- Sertraline (SSRI 1140867878)
- Trazodone (Serotonin antagonists and reuptake inhibitor (SARI) 1140879634)
- Venlafaxine (SNRI 1140916282)

We will perform a sensitivity analysis where we exclude amitriptyline (often prescribed for sleep problems or pain in low doses) and dosulepin (not recommended for use in current UK national depression NICE [National Institute of Care and Health Excellence] guidelines)[6].

Proposed analysis

The overall prevalence (%) of antidepressant usage will be presented for each ethnic group (see Table 2). We will also stratify antidepressant use prevalence by age group, gender, neighbourhood deprivation (IMD quintile) and lifetime depression status.

We will use logistic regression to determine whether ethnic differences in the prevalence of antidepressant usage are statistically significant. The white ethnic group will be used as the

reference category as it is the largest group. These logistic regressions will be adjusted for age, gender, and IMD.

We will also assess whether there are ethnic differences in the prevalence of the type of antidepressant prescribed (SSRI vs SNRI vs NASSA vs SARI).

Aim 2

To determine the prevalence of a) individual depressive symptoms and b) the clustering of specific symptoms in minority ethnic groups compared to White individuals.

Define sample

In order to understand ethnic differences in depressive symptoms, we will include participants who have completed the most recent mental health follow-up questionnaire (N=169,124, see Figure 1). We will also repeat all analyses on a subsample of participants with a lifetime history of depression using the criteria described in Aim 1.

Measures

The mental health follow-up questionnaire comprises both the Patient Health Questionnaire-9 (PHQ-9)[7] and the CIDI-SF. These measures will be used to examine ethnic differences in how depression symptoms present. Specifically, the PHQ-9 contains nine items which will allow us to tap into both somatic (problems with sleep, fatigue/loss of energy, appetite, psychomotor agitation/retardation) and non-somatic depressive symptoms (depressed mood, anhedonia, worthlessness, and suicidal ideation). Using established algorithms we will be able to use the CIDI-SF to look at rates of atypical depression. Participants will be considered to have atypical depression if they meet the CIDI-SF criteria for probable lifetime MDD and report both hypersomnia and weight gain[8].

Proposed analysis

The prevalence of different depressive symptoms will be presented for each ethnic group. We will also present the prevalence of somatic symptoms, non-somatic symptoms, and atypical depression across ethnicities. We will explore stratification by age group, gender, neighbourhood deprivation (IMD quintile) and lifetime depression status.

As well as looking at somatic, non-somatic, and atypical depression, we will also examine how individual symptoms cluster together. To do this we will use a clustering technique (i.e. cluster analysis, latent class analysis, exploratory factor analysis) which will be determined once some preliminary tests are run on the data. We will perform this analysis within each ethnic group to determine whether differences emerge in how depressive symptoms present and combine.

Aim 3

To examine the interaction between ethnicity and other indicators of inequalities such as age, sex, and deprivation in relation to (1) and (2).

When reporting prevalence data (i.e. depression, antidepressant prescribing, depressive symptoms), moderation analyses will be performed to examine the extent outcomes vary according to age, gender, and IMD quintile. Interaction terms between ethnicity and age, sex and IMD will be included in all regression models to assess effect modification. If there is evidence that any of these indicators of equality modify the effect, we will stratify analyses

accordingly. We will also investigate the moderating effect of physical health status. Self-report diagnoses of long-term conditions from the baseline assessment will allow us to create a measure of multiple long-term conditions and to assess the presence of conditions particularly relevant to depression (i.e. cardiometabolic conditions). The moderating effect of physical health status on outcomes will be examined. Moreover, if appropriate (i.e. if the data supports it), we will use a 'syndemic' approach to understand how social and clinical determinants (i.e. age, gender, physical health status) interact to impact outcomes. We will do this using both count and synergistic approaches[9].

Aim 4

To examine trends in antidepressant prescribing by ethnicity, in terms of frequency and duration of prescriptions and number of medication changes

Study sample and study design

In order to gain an in-depth understanding of ethnic differences in antidepressant prescribing, we will use data from individuals in the UK Biobank where linkage with primary care records is available. Based on a previous UK Biobank publication we can assume a sample size of approximately 400,000 people, i.e. all UK Biobank participants resident in England registered at a practice using TPP or EMIS as their data system supplier[10].

This retrospective cohort study period will cover 1st June 1991 to the 31st May 2016. We will create an incidence cohort where we include all patients who were free of a primary care diagnosis of depression up to the study start date and then received a primary care diagnosis of depression within the study period. Only those with at least five years of follow-up post-diagnosis will be included to allow the assessment of chronic antidepressant prescribing. Therefore, the incidence cohort will comprise those who received their first primary care diagnosis of depression between 1st June 1991 and the 31st May 2011.

Measures

Based on a previous paper which assessed antidepressant prescribing over time in the UK[11], we will assess the following outcomes:

i. Chronic treatment: The number of patients who received a prescription in the year of first depression diagnosis and in every year after that, for 5 years.
ii. Intermittent treatment: The number of patients who received a prescription in the year of first depression diagnosis, and at least one subsequent year.
iii. Short-term treatment: The number of patients who received a prescription in the year of first depression diagnosis, but not in any subsequent years.
iv. Delayed treatment: The number of patients who received no prescription in the year of first diagnosis but did receive a prescription in any subsequent year of up to five years of follow-up.
v. No treatment: The patients with depression who never received a prescription within five years of diagnosis.

We will also look at prescribing of antidepressant types (e.g. SSRIs versus other) across the five-year follow-up period. A change in antidepressant type in patients who received intermittent or chronic antidepressant prescriptions will also be assessed.

Proposed analysis

The number (%) of patients who received chronic, intermittent, short-term, delayed, or no antidepressant treatment will be presented for each ethnic group. If possible, we will also stratify descriptive statistics by age group, gender, and IMD. We will also report trends in

prescribing of antidepressant types (SSRIs versus other) across ethnic groups. The likelihood of change in antidepressant type over the follow-up period will also be assessed in each ethnic group.

We will use logistic regression models to determine whether any ethnic differences in the receipt of antidepressant prescriptions over the study follow-up period are statistically significant. The white ethnic group will be used as the reference category as it is the largest group. These logistic regressions will be adjusted for age, gender, and IMD. Where necessary, we will also segment analyses according to policy and/or guideline changes around antidepressant prescribing in the UK.

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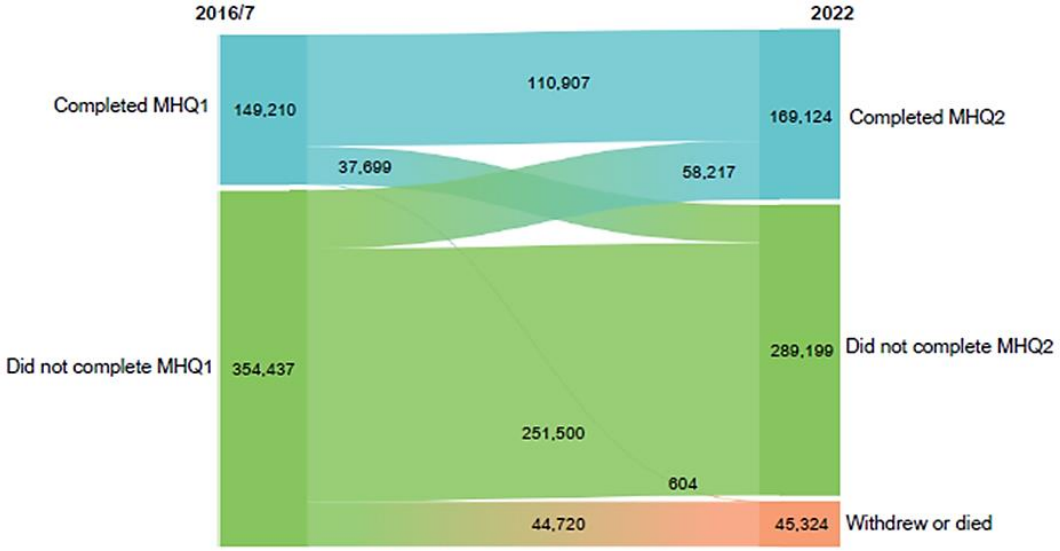

Figure 1. UK Biobank participants who completed the mental health questionnaire in 2016 and/or 2022.

Appendix 2

Understanding depression symptom heterogeneity in South Asian minority groups: A scoping review

Authors: Rachel Francois-Walcott, Mel Ramasawmy, Lydia Poole for the Prescribing Antidepressants in Primary care: Ethnic inequalities in tReatment (PAPER) study

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Structured Summary

Depression is the most common mental illness globally, affecting over 300 million people world-wide. It is therefore recognised as a leading cause of years lived with disability globally. However, depression epidemiology in minority groups has been poorly characterised and the cultural appropriateness of screening tools and diagnostic indicators have been questioned and critiqued.

Within the existing evidence base, differences in depressive symptoms by ethnicity have been reported. This heterogeneity in symptoms contributes to under- and misdiagnosis within primary care; however, despite South Asian groups comprising the largest UK minority, there is limited understanding on how this applies to South Asian minority groups. Therefore, it is crucial we explore reporting of depression symptoms and how this compares to diagnostic frameworks such as the DSM-V. A scoping review will be conducted to explore the reporting of depressive symptoms by individuals in the South Asian diaspora, considering intergenerational differences and differences by acculturation.

Rationale

Depression is the most common mental illness globally, affecting over 300 million people world-wide (Liu et al., 2020; Vos et al., 2017). It is therefore recognised as a leading cause of years lived with a disability globally, contributing to impaired functioning and reduced quality of life (Vos et al., 2017). Research suggests that the manifestation of depressive symptoms can vary across ethnic groups, often influenced by cultural notions of distress, religious beliefs, social norms, and language (Shafi & Shafi, 2014). Nonetheless, despite its prevalence, depression epidemiology within minority groups is inadequately characterised, with the appropriateness of screening tools and diagnostic frameworks questioned and critiqued. Such critiques and considerations apply to the understanding of depression symptoms within South Asian groups (Williams et al., 1997); this is the largest minority group living in the UK (ONS, 2021).

The evidence base concerning depressive symptoms within ethnic minorities points to differences in presentation across groups. For example, a quantitative systematic review found higher rates of depressive symptoms for South Asian groups living in the UK, compared to White British groups (Rees et al., 2016). Moreover, within older adults, fewer symptoms of guilt, hopelessness, and suicidal ideation have been observed in British South Asian patients compared with other ethnic groups (Mansour et al., 2020). However, it is not clear to what extent the experiences of South Asians within the UK are similar to patterns of depressive

symptomology reported in countries where South Asians represent the majority population. Haroz et al. (2017) conducted a qualitative systematic review exploring depression symptoms across the world and found individuals living in South Asian countries had a higher prevalence of somatic, rather than psychological symptoms. Furthermore, the authors note that only 1 of the 2 cardinal symptoms within the DSM-V were consistently ranked above fatigue, sleep, social isolation, and weight/appetite across all world regions (Haroz et al., 2017). As this research was focused on ethnic groups which comprised the majority population, acculturation was not considered.

Such research leads to questions on the validity and reliability of diagnostic frameworks and screening tools. This may represent a barrier to accurate diagnosis and treatment whereby individuals are under- and misdiagnosed if symptoms do not align with current diagnostic tools. Gater et al. (2009) noted that despite consulting with their GP more frequently than their White counterparts, Pakistani women in the UK were less likely to receive treatment for depression. Amongst a number of explanations for such findings, the inaccuracy of diagnostic tools for this group may be key. As noted by Haroz et al. (2017) it appears that diagnostic frameworks such as the DSM-5 may not suitably capture culturally specific manifestations of depression among south Asian populations; however, due to limited research, it is unclear of the extent to which this applies to all South Asian groups living in the UK. While Hussain and Cochrane (2004) conducted a literature review concerning how South Asian people living in the UK experience depression, this review was limited to women and may reflect a now out of data evidence base. As such, a review is needed to explore depression symptoms within South Asian groups living in the UK, alongside a consideration of diagnostic frameworks such as the DSM-5.

Left untreated, depression can have physical and psychological effects. These include a worsening of symptoms which make it increasingly challenging to engage in daily activities and maintain relationships (Kraus et al., 2019). It can also increase the risk of developing chronic health conditions and carries a heightened risk of self-harm and suicide, highlighting the critical need for appropriate diagnosis to enable suitable treatment (Voinov et al., 2013). Identifying gaps in current diagnostic practices is therefore crucial for enhancing mental health care and delivery. For clinicians, this work will ensure effective screening and diagnosis of depression. For policymakers this review can inform the development of culturally competent mental health policies and intervention.

A scoping review will be conducted to explore the reporting of depressive symptoms by individuals in the South Asian diaspora, taking into account intergenerational differences and differences by acculturation. This will provide insights into the cultural appropriateness of screening and diagnostic practices within this group.

Objectives

This review will take a mixed-methods approach to examine depression symptom heterogeneity in South Asian diaspora. Through taking a mixed-methods approach, the objective of this research is to examine depression symptom heterogeneity in South Asian diaspora and to explore how depression has been conceptualised, reported, and experienced. These experiences of depression and corresponding symptoms will be compared to the DSM-V.

Methods

Protocol and registration

This protocol is registered on OSF.

Eligibility criteria

The criteria will be reviewed during the literature identification process to ensure that appropriate literature is included/excluded. In line with JBI scoping review guidance (Tricco et al., 2018), the inclusion criteria has been outlined in Table 1.

Table 1: Inclusion Criteria

Participants/Sample	Individuals from the South Asian diaspora (Limited to 18+)
Concept	Experiences of depression
Context	English speaking countries (UK, USA, Canada, Australia, New Zealand)
Type of evidence sources	Quantitative, qualitative and mixed-methods primary research studies. Grey literature including local NHS trust reports and guides, government reports and briefings, and educational theses.
Exclusion Criteria	
Non-English Articles	
Quantitative research not reporting symptoms on an item-by-item level	
Samples which include those outside of South Asian diaspora where data from South Asian individuals cannot be individually extracted	
Comorbidity research where depression symptoms have been considered alongside another condition e.g., depression with physical condition*	

*N.B. Comorbidity research will initially be excluded; however, this will be reviewed dependent on the evidence base.

Information sources

The following bibliographic databases will be searched electronically: SCOPUS, PubMed, PsychInfo, Web of Science and Embase. A search of Web Search Engine “Google Scholar” will also be conducted; only the first 100 hits as sorted by relevance by Google will be screened. Grey literatures sources will include ProQuest Dissertations and theses; the Kings Fund; and the Patient Experience Library.

Search strategy

A wide range of key terms will be used to enhance our sensitivity and enable suitable breadth of the literature. Search terms for South Asian individuals proposed within Gupta-Dame et al. (2023) will be applied and modified to our study (Table 2). The expanded search terms can be found Table 3. There will be an iterative search process in which we first focus on the UK, prior to expanding to other English-speaking countries (US, Canada, Australia, New Zealand) if there

are insufficient papers in a UK context (N<15). Records will be kept of the search strategies used on each database.

Table 2: Search Strategy

1. **Key word searches**
South Asian Diaspora • South Asian: south asia* or ethnic* minorit*or BME or BAME or Bangladesh* or india* or sri lanka* or Pakistan* or Nepal* or Maldives*or Bhutan*
Depression • Depression: depress*/ "low mood"/ distress/ depressive disorder/ melancholia/ "mood disorder"/ "affective disorder"/ affective symptoms/ major depress/ dysphori*
UK • UK: United Kingdom/Great Britain/Channel Islands/England/Northern Ireland/Scotland/ Wales.
2. Expanded search: sources Include records identified through other sources
3. Reference list search Reference lists of included articles will be hand searched for additional studies
4. Expanded search: countries • US: United States or Alabama or Alaska or Arizona or Arkansas or California or Colorado or Connecticut or Delaware or Florida or Georgia or Hawaii or Idaho or Illinois or Indiana or Iowa or Kansas or Kentucky or Louisiana or Maine or Maryland or Massachusetts or Michigan or Minnesota or Mississippi or Missouri or Montana or Nebraska or Nevada or "New Hampshire" or "New Jersey" or "New Mexico" or "New York" or "North Carolina" or "North Dakota" or Ohio or Oklahoma or Oregon or Pennsylvania or "Rhode Island" or "South Carolina" or "South Dakota" or Tennessee or Texas or Utah or Vermont or Virginia or Washington or "West Virginia" or Wisconsin or Wyoming • Canada: Canad*/ Alberta/ "British Columbia"/Manitoba/ "New Brunswick"/ Newfoundland/ "Labrador"/ "Northwest Territories"/ "Nova Scotia"/ Nunavut/ Ontario/ Prince Edward Island/ Quebec/ Saskatchewan/ Yukon • Australia: Australia*/"New South Wales"/"Northern Territory"/ "Queensland"/ Victoria*/ "Western Australia"/ "South Australia" • New Zealand: New Zealand/ "Bay of Plenty"/ Canterbury/ Gisborne/ Hawke's Bay/ Marlborough/ Nelson/ Northland/ Otago/ Southland/ Taranaki/ Waikato/ Wellington/ "West Coast"/ Whanganui

Selection of sources of evidence process

De-duplicated search results will be imported into the collaborative online tool Rayyan. Titles and abstracts will be screened for eligibility by RFW and a research assistant. Any disagreement in study selection will be resolved by consensus. Studies that meet the inclusion criteria will be reviewed in full. Reasons for exclusion at the full text stage will be recorded.

Data charting

Following selection, data will be extracted using a data charting form. Proposed categories for data collection will be derived from the JBI Scoping review manual and include:

- Citation details (e.g., author/s; date; title; journal; volume; issue; pages)
- Population and sample size (e.g., South Asian, Pakistani women, SES status)
- Country
- Context (e.g., depression and a physical health condition, health professional such as GP)
- Evidence type and methods (e.g., quantitative peer-reviewed research article, survey, interview)
- Findings/results extracted (e.g., screening tool if used, reported symptoms, time with depressive symptoms).

This charting table will be further refined and updated at the review stage.

Analysis

A qualitative and descriptive quantitative analysis will be conducted, and findings will be reported in keeping with the PRISMA-ScR (Tricco et al., 2018).

Questions that will be considered in the analysis of the data:

- What are the common themes and experiences of depression across South Asian diaspora?
- To what extent do these experiences map the symptoms of depression outlined in the DSM-V?
- Are there common intergenerational or acculturation differences in depression symptoms?

Table 3: Expanded search terms for South Asian diaspora

punjab* or kashmir* or sindhi* or gujarat* or marathi* or Bengal* or Tamil* or Telugu* or Tulu or Muslim* or Sunni* or Shia* or Islam* or Guyanese or Fiji* or Trinidad* or Urdu* or Hindu* or Sikh* or Kannada* or Assamese or Awadhi* or Banjara* or Bhojpuri* or Bhil* or Chakma* or Chitrali* or Deccani* or Dhivehi* or Dogra* or Garhwali* or Haryanvi* or Kalash* or Kamrupi* or Khas or Konkani* or Kumaoni or Kutchi* or Maithil* or Maldivian* or Magahi* or Nagpuri* or Odia or Pahari or Rajasthani* or Marwari* or Rohingya* or Sindhi* or Memon* or Saraiki* or Saurashtra* or Sinhal* or Shina* or Sylheti* or Tanchangya* or Tharu* or Baloch* or Hazara* or Irani* or Pashtun* or Nuristani* or Badagas* or Tibet* or “Bodo-Kachari*“ or “Bodo*“ or Dimasa* or Garo* or Hajong* or “Sonowal*“ or Sutiya* or Chepang* or Gurung* or Khowa* or Kirati* or Rai or Limbu* or Yakkha* or Sunuwar* or Lepcha* or Magar* or Memba* or Naga* or Newar* or Nishi* or Tamang* or Thakali* or Tripuri* or Meitei* or Kuki* or Halam* or Hrangkhol* or “Cochin Jew*“ or “Malayali Jew*“ or “Bene Israel*“ or “Marathi Jew*“ or “Baghdadi Jew*“ or “Arab Jew*“ or “Bnei Menashe*“ or “Mizo Jew*“ or “Kuki Jew*“ or “Bene Ephraim*“ or “Telugu Jew*“ or “Paradesi Jew*“ or Knanaya* or “Syrian Malabar Nasrani*“ or Chaush** or Boras* or “Mappila Muslim*“ or “Konkani Muslim*“ or Labbay* or “Iraqi Biradri*“ or “Tai people*“ or “Ahom*“ or “Tai Aiton*“ or “Tai Phake*“

Bawm* or Khumi* or Chakma* or Marma* or Tripura* or Tanchangya* or Mrus* or Santal* or Khasi* or Manipuri* or Hajong* or Keot* or Pangal* or Pangan* or Kuki* or Jaintia* or Garos*

Sinhal* or Tamil* or “Creole Malay*“ or Burgher* or (Moor* or Malay*) and “sri lanka”

Maithili* or Bhojpuri* or “Tharu Tamang*“ or “Nepal Bhasa*“ or Bajjika* or Magar* or Doteli* or Urdu* or Awadhi* or Sunwar*

Chhetree* or “Brahman-Hill*“ or Magar* or Tharu* or Tamang* or Newar* or Kami* or Gorkhali*

Tshangla* or Sharchop* or Ngalop* or Lhotshampa*

Drukpa*

Dzongkha*

Lakha* or Brokkat* or Brokpa* or Laya*

Bumthang* or Dzala* or Nyen or Dakpa* or Chali*

Gongduk* or Lepcha* or Lhokpu* or Lhop* or Toto* or Sikkimese* or Assamese*

Punjabi* or Pashtun* or Sindhi* or Saraiki* or Muhajir* or Baloch* or Hindkowan* or Pothohari* or Pahari* or Brahuis* or Kashmir* or Chitralis* or Shina* or Balti* or Kohistani* or Torwali* or Hazara* or Burusho* or Wakhi* or Kalash* or Siddi*

Balti* or Bashkarik* or Badeshi* or Bateri* or Bhadravahi* or Brahui* or Burushaski* or Chilisso* or Dameli* or Domaaki* or Gawar-Bati* or Gowro** or Jad or Kalasha* or Kalkoti* or Kati or Kamkata-viri* or Kata-vari* or Kamviri* or Khowar* or “Kundal Shahi*“ or Maiya* or Ormuri* or Phalura* or Purik* or Savi or Spiti or Torwali or Ushojo* or Wakhi* or Yidgha* or Zangskari* or Punjabi or Pashto* or Sindhi* or Saraiki* or Balochi* or Hindko* or Brahui*

Maldivian* or Malikun* or Minicoy* or Mahl* or Giraavaru*

Dhivehin*

Rajasthani* or Magadhi* or Magahi* or Chhattisgarhi* or Haryanvi* or Marwari* or Malvi* or Mewari* or Khorth* or Khotta* or Bundeli* or Bagheli* or Pahari* or Laman* or Lambadi* or Harauti* or Nimadi* or Sadan* or Sadri* or Kumauni* or Dhundhari* or Surgujia* or Banjari* or Bagri* or Nagpuria* or Surajpuri* or Kangri* or Kashmiri* or Bodo* or Dogri* or Kannada* or Konkani* or Malayalam* or Maitei* or Manipuri* or Nepali* or Sanskrit*

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Appendix 3

Understanding the Cultural Adaptation and Validation of Depression Screening Tools for South Asians: A Scoping Review Protocol

Prescribing Antidepressants in Primary care: Ethnic inequalities in tReatment (PAPER) Study

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Background and Rationale

The World Health Organisation (WHO) estimates that 280 million people worldwide are living with depression (WHO, 2022). Depression is considered the leading cause of global disability, contributing to 7.5% of total years lived with disability (WHO, 2017). In South Asia, the prevalence of depression is around 3.9%, which is slightly higher than the global prevalence of 3.8% (Ogbot et al, 2018; WHO, 2023) and higher than that of the United Kingdom's (UK's) prevalence of 3.3% (Baker & Kirk- Wade, 2024).
Although depression is common, it manifests differently across cultures, each with its own unique experiences and expressions (Bailey et al., 2019). Amongst South Asians, cultural, social, and linguistic factors significantly influence how depression is perceived and expressed (Mooney et al., 2016; Sharan et al., 2017; Naveed et al., 2020). For example, studies show that depression in South Asians often manifests through physical symptoms like headaches, fatigue, sleep disturbances, and bodily pains (Karasz et al., 2019; Haroz et al., 2017). This somatisation of depressive symptoms may in part be influenced by cultural stigma associated with mental health.

Social relationships significantly influence how depression is experienced and managed amongst South Asian groups (Bhattacharya et al., 2019). For example, the concept of "izzat" (honour) in many South Asian cultures may lead individuals to conceal their mental health issues to avoid bringing shame to the family (Mafura &

Charura, 2022; Chhina, 2017). Consequently, this can discourage individuals from seeking professional help or discussing their mental health issues openly (Sultana et al., 2023; Prajapati & Liebling, 2021). Language also affects how South Asians describe their symptoms using culturally specific idioms of distress that do not directly translate into Western diagnostic criteria (Wahid et al., 2022; Weaver & Karasz, 2022). This can make it

more challenging for healthcare providers to recognise and accurately diagnose depression in these communities (Karasz et al., 2019; Ruprai, 2016).

Thus, it is important to consider cultural nuances when diagnosing and treating depression in South Asian groups. Cultural stigma, linguistic diversity, and different health beliefs can disproportionately affect the way depression screening tools are both accepted and used (Sultana et al., 2023; Prajapati & Liebling, 2021). Unfortunately, many assessment tools for mental health diagnosis are developed in Western contexts and may not fully capture the cultural nuances of South Asian communities (Ali, Ryan & De Silva, 2016; Roy & Lloyd, 2013). For instance, the expression of depression through somatic symptoms may not be accurately captured by Western screening instruments (Karasz et al., 2019; Haroz et al., 2017). Moreover, Western screening tools for depression often rely on self-report questionnaires and are less effective for populations with low literacy and unfamiliar with filling out such forms (Sharna et al., 2023; Kohrt et al., 2016).

There is a need to develop, adapt and validate depression screening tools tailored to South Asian communities to ensure that they are relevant (Fotheringham et al., 2022; Bhui & Bhugra, 2001). This involves the processes of cultural adaptation and validation. Cultural adaptation entails modifying existing tools to align with the cultural, linguistic, and contextual nuances of the target group (Cruchinho et al., 2024). This ensures that the screening questions and their underlying concepts are culturally appropriate and resonate with the lived experiences of the target population (Kaiser et al., 2019; Sidani et al., 2010). Validation, on the other hand, involves the systematic evaluation of these adapted tools to ensure that they accurately and reliably measure depression within the target population (Ali et al., 2016; Kohrt et al., 2011).

Despite the recognition of the importance of culturally adapted and validated depression screening tools, there is a lack of comprehensive reviews that map the development, adaptation, and validation processes specifically for South Asian populations. This scoping review aims to fill this gap by examining available assessment tools, methods and techniques used in their cultural adaptation and validation, as well as the evidence supporting their effectiveness and validity. Given the possibility of mis and/or underdiagnosis of depression in South Asians due to a lack of culturally sensitive tools, this review addresses a critical gap in mental health research and practice. This review is important for informing future research, guiding clinical practice, and shaping mental health policies aimed at improving the diagnosis and treatment of depression among South Asians and the South Asian diasporas.

Objectives:

This scoping review has several specific objectives:

1. To identify depression screening tools that have been developed, culturally adapted, and validated for South Asians.
2. To examine the strategies and processes used in the development, cultural adaptation, and validation of depression screening tools for South Asians.
3. To map out the available evidence on the development, cultural adaptation, and validation of depression screening tools for South Asians.

Methods

Eligibility criteria

To ensure a comprehensive and relevant scope, this scoping review will include studies that meet the following inclusion criteria:

Inclusion criteria

Population	Studies involving South Asian individuals from countries such as India, Pakistan, Bangladesh, Sri Lanka, Nepal, Afghanistan, Bhutan, and the Maldives, as well as South Asian diaspora communities globally.
Concept	Cultural adaptation and validation strategies for depression screening tools specific to South Asians.
Context	Studies conducted in clinical, community, and research settings.
Types of evidence sources	Peer-reviewed journal articles. Grey literature such as book chapters, conference papers, thesis/dissertations, reports and guidelines for recognised institutions or governmental bodies with comprehensive information on cultural adaptation and validation of depression screening tools for South Asians. Any type of study design such as qualitative, quantitative, and mixed-method studies, systematic reviews, meta-analyses, and scoping reviews. Published in English.

Exclusion criteria
Non-English articles.
Studies that refer to the cultural adaptation of tools for measuring general mental well-being or common mental disorders without a specific focus on depression.
Multi-culture/multi-ethnic/multi-country studies where data from South Asian samples cannot be individually extracted.
Editorials, commentaries, opinion articles, and brief reports lacking comprehensive data on the cultural adaptation process and outcome measures.

Information Sources

A systematic search of the literature will be performed in the following bibliographic databases to find the studies that meet the eligibility criteria: PubMed, Medline (Ovid), CINAHL (EBSCO), PsycInfo (EBSCO), Scopus and EMBASE (Ovid). Hand searching by perusing the pages of key journals and checking the reference lists of identified articles will also be conducted to further identify relevant studies. Their full-text format will be retrieved through Google Scholar and Citation Gecko.

Search Strategy

The search terms will include population terms (e.g., “South Asian”, “Indian”, “Pakistani”, “Bangladeshi,” “Nepalese” etc.), concept terms (e.g., “depression”, “depressive disorder”), cultural adaptation terms (e.g., “cultural adaptation”, “culturally adapted”), and screening tools terms (e.g., “screening tool”, “assessment tool”, “PHQ-9”, “Beck Depression Inventory”). Search terms will be expanded to include synonyms and word variants (e.g., acronyms such as PHQ-9 for Patient Health Questionnaire) to ensure comprehensive coverage by capturing all relevant literature and identifying studies that might use different terminology or phrases (e.g., “depression” may have been termed “affective disorder” in different studies). Boolean operators (i.e., AND, OR, and NOT), truncation (*) and wildcards (?) to combine terms and account for variation in word endings and spellings, will also be used in the search process. These search strings will be tested in a few databases and refined based on the initial results of the search.

Search terms for the South Asian population will include the names of countries as well as national languages and languages of instruction (and their alternative names) used in South Asian countries. Examples include Dari, Pashto, and Uzbek in Afghanistan; Bengali in Bangladesh; Dzongkha in Bhutan; Hindi, Punjabi, Gujarati, and others in India; Maldivian in the Maldives; Nepali in Nepal; Urdu in Pakistan; and Sinhala and Tamil in Sri Lanka (Eberhard et al., 2024). In addition, search terms for depression screening tools will include commonly used instruments such as the Patient Health Questionnaire (PHQ-9), Beck Depression Inventory (BDI), and Hospital Anxiety and Depression Scale (HADS), among others identified in systematic reviews of

psychometric properties of common tools used in primary healthcare settings (El-Den et al., 2018).

The search process will depend on each database, as each has its own unique search strategy, including indexing category or controlled vocabulary. For PubMed, Medline and Embase databases, the search strategy will involve identifying the relevant Medical Subject Headings (MeSH) terms. The use of MeSH terms ensures that the search captures all relevant studies, regardless of the specific terms used by authors. Keywords will also be used to capture articles that may not be indexed under specific MeSH terms but are still relevant, alongside search instructions such as exploding the terms, using multiple fields or finding these key words in titles or abstracts of the articles. In CINAHL, subject headings found in its database will be used, together with Boolean operators, wildcards, truncation words and searches in abstracts and titles. For PsycInfo, we will utilise its thesaurus to find relevant terms and headings. In Scopus, since it does not use subject headings in the same way as other databases, the final search string will be entered in the advanced search. We will use braces { } for true exact word or phrase search (e.g., cultural adaptation). Scopus also automatically searches for word variations, including plural terms.

The complete search terms that will be used in each database are listed in the Appendix of this protocol.

Screening and Selection Process

Search results will be imported into EndNote to conduct the de-duplication process. Afterwards the complete de-duplicated list of search results will be transferred to Rayyan Citation, a collaborative online reference management system. Preliminary screening of titles and abstracts will be done to remove editorials, commentaries and opinion articles. Furtherscreening of titles and abstracts will be conducted using the inclusion/exclusion criteria. Full-text papers of relevant studies will be retrieved and will be screened for eligibility by at least two reviewers. Any divergent opinions on the results of eligibility screening will be deliberated and any further disagreement will be resolved by the third reviewer. The results of the literature search will be reported using the PRISMA flow diagram. A protocol for this review will be registered at Open Science Framework.

Data Extraction

Once eligible studies are identified, data will be extracted by the first reviewer and will be crosschecked by another reviewer. A data extraction table with thematic headings will be developed for this scoping review and will be pilot tested in at least 20% of the eligible studies to check for data comparability and for further refinement. The following data will be extracted:

(1) Study information (e.g., author/s, publication date, title, sample size, study location, setting, study design, type of publication).
(2) Population (e.g., socio-demographic characteristics of participants such as age,

gender, nationality, South Asian ethnicity, etc.).

(3) Key information and overarching themes on cultural adaptation and validation of depression screening tools (e.g., type/name of depression screening tool used, methods and strategies of cultural adaptation, process and results of screening tool validation, etc.).

Strategy for Data Analysis and Synthesis

This scoping review will use descriptive quantitative analysis and qualitative narrative synthesis in data analysis. Qualitative data will be coded using both predetermined and emerging codes and will then be tabulated, analysed, categorised into themes in an iterative process and integrated into the narrative synthesis. Author interpretations will also be used to support the narrative synthesis. Results will be presented using
diagrams and tables (as applicable) and in descriptive format that aligns with the review objectives.

The review will seek to answer the following research questions in the data analysis:

1. What depression screening tools have been developed, culturally adapted, and validated for South Asians?
   - What are the characteristics of these tools?
   - How widespread is the use of these newly developed, culturally adapted, and/or validated depression screening tools in clinical and research settings?
2. What strategies are used in the development and/or cultural adaptation of depression screening tools for South Asians?
   - What specific methodologies and approaches are employed to develop and/or culturally adapt these tools?
   - What are the common challenges and best practices in the development and/or cultural adaptation process?
3. What are the characteristics of culturally adapted depression screening tools that are deemed appropriate and acceptable for South Asians?
   - What criteria are used to determine the appropriateness and acceptability of these tools?
   - How do these tools address linguistic, cultural, and contextual nuances specific to South Asian populations?
4. What evidence is available on the development, cultural adaptation, and validation of depression screening tools for South Asians?
   - What are the key findings and gaps in the existing literature?
   - How robust is the evidence supporting the effectiveness, appropriateness, and validity of these newly developed and/or culturally adapted tools?

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Appendix A. Search Strategy

PubMed Database

Concept 1: Depression	
Mesh Terms	"depression"[mesh] OR "depressive disorder"[mesh] OR "mood disorders"[mesh] OR "dysthymic disorder"[mesh] OR "psychological distress"[mesh] OR "depressive disorder, major"[mesh] OR "stress, psychological"[mesh]
Keywords	"depressi*"[tiab] OR "depressive disorder"[tiab] OR "mood disorder"[tiab] OR "mood disorder*"[tiab] OR "psychological distress"[tiab] OR "dysthymi*"[tiab] OR "melancholi*"[tiab] OR "psychological stress"[tiab] OR "emotional stress"[tiab] OR "emotional distress"[tiab] OR "persistent depression"[tiab] OR "chronic depression"[tiab] OR "depression, emotional"[tiab] OR "depression, neurotic"[tiab] OR "mental depression"[tiab] OR "depressed mood"[tiab] OR "depressive symptom*"[tiab] OR "clinical depression"[tiab] OR "major depressive disorder*"[tiab] OR "mild depression"[tiab] OR "severe depression"[tiab] OR "acute depression"[tiab]
Concept 2: Screening tools	
Mesh Terms	"Patient Health Questionnaire"[Mesh] OR "psychometrics"[mesh] OR "psychological tests"[mesh] OR "symptom assessment"[mesh] OR "diagnosis"[mesh]
Keywords	"screening"[tiab] OR "tool*"[tiab] OR "assessment"[tiab] OR "scale*"[tiab] OR "questionnaire*"[tiab] OR "inventor*"[tiab] OR "test*"[tiab] OR "instrument*"[tiab] OR "measure*"[tiab] OR "checklist*"[tiab] OR "psychometric*"[tiab] OR "evaluation"[tiab] OR "symptom checklist"[tiab] OR "rating scale*"[tiab] OR "self-assessment"[tiab] OR "self-report*"[tiab] OR "self-rating"[tiab] OR "structured interview*"[tiab] OR "diagnos*"[tiab] OR "Patient Health Questionnaire*"[tiab] OR "PHQ"[tiab] OR "Hospital Anxiety and Depression Scale"[tiab] OR "HADS"[tiab] OR "Beck Depression Inventory"[tiab] OR "BDI"[tiab] OR "Clinical Interview Schedule-Revised"[tiab] OR "CIS-R"[tiab] OR "Center for Epidemiological Studies Depression Scale"[tiab] OR "CES-D"[tiab] OR "General Health Questionnaire"[tiab] OR "GHQ"[tiab] OR "Hamilton Depression Rating Scale"[tiab] OR "HDRS"[tiab] OR "Hamilton Rating Scale for Depression"[tiab] OR "HRSD"[tiab] OR "Clinical Outcomes in Routine Evaluation"[tiab] OR "CORE-10"[tiab] OR "CORE-OM"[tiab] OR "Self-Rating Depression Scale"[tiab] OR "Brief Symptom Inventory"[tiab] OR "Symptom Checklist-90-Revised"[tiab]
Concept 3: Cultural adaptation	
Mesh Terms	"Cross-Cultural Comparison"[mesh]
Keywords	"cultural adaptation"[tiab] OR "culturally adaptive"[tiab] OR "cross-cultural adaptation"[tiab] OR "cultural validation"[tiab] OR "culturally valid"[tiab] OR "cultural translation"[tiab] OR "culturally appropriate"[tiab] OR "culturally sensitive"[tiab] OR "linguistic validation"[tiab] OR "language translation"[tiab] OR "linguistic translation"[tiab] OR "culturally relevant"[tiab] OR "cultural competence"[tiab] OR "culturally competent"[tiab] OR "cultural application"[tiab] OR "culturally applicable"[tiab] OR "cultural acceptability"[tiab] OR "culturally acceptable"[tiab] OR "feasibility"[tiab] OR "reliability"[tiab] OR "valid*"[tiab] OR "adapt*"[tiab] OR "cross-cultural comparison"[tiab] OR "instrument adaptation"[tiab] OR "cultural sensitivity"[tiab]
Concept 4: South Asia	
Mesh Terms	"South Asian people"[mesh] OR "West Asian people"[mesh] OR "India"[mesh] OR "Pakistan"[mesh] OR "Bangladesh"[mesh] OR "Afghanistan"[mesh] OR "Nepal"[mesh] OR "Bhutan"[mesh] OR "Sri Lanka"[mesh] OR "Maldives"[mesh] OR "Asia, Western"[mesh] OR "Asia, Southern"[mesh] OR "Sikkim"[mesh]
Keywords	"South Asia*"[tiab] OR "West Asia*"[tiab] OR "Afghan*"[tiab] OR "Bangladesh*"[tiab] OR "Bhutan*"[tiab] OR "India*"[tiab] OR "Maldiv*"[tiab] OR "Nepal*"[tiab] OR "Pakistan*"[tiab] OR "Sri Lanka*"[tiab] OR "Dari"[tiab] OR "Pashto"[tiab] OR

	"Uzbek"[tiab] OR "Bengal*"[tiab] OR "Dzongkha"[tiab] OR "Hindi"[tiab] OR "Assamese"[tiab] OR "Punjabi"[tiab] OR "Garo"[tiab] OR "Gujarati"[tiab] OR "Kannada"[tiab] OR "Kashmiri"[tiab] OR "Khasi"[tiab] OR "Konkani"[tiab] OR "Maithili"[tiab] OR "Malayalam"[tiab] OR "Marathi"[tiab] OR "Meitei"[tiab] OR "Odia"[tiab] OR "Telugu"[tiab] OR "Urdu"[tiab] OR "Sinhal*"[tiab] OR "Tamil"[tiab] OR "Hindustani"[tiab] OR "Dhivehi"[tiab] OR "Persian"[tiab] OR "Hazara*"[tiab] OR "Santhali"[tiab] OR "Sindhi"[tiab] OR "Newar*"[tiab] OR "Limbu"[tiab] OR "Tamang"[tiab] OR "Balochi"[tiab] OR "Makrani"[tiab]
PubMed Combined Search	
"depression"[mesh] OR "depressive disorder"[mesh] OR "mood disorders"[mesh] OR "dysthymic disorder"[mesh] OR "psychological distress"[mesh] OR "depressive disorder, major"[mesh] OR "stress, psychological"[mesh] OR"depressi*"[tiab] OR "depressive disorder"[tiab] OR "mood disorder"[tiab] OR "mood disorder*"[tiab] OR "psychological distress"[tiab] OR "dysthymi*"[tiab] OR "melancholi*"[tiab] OR "psychological stress"[tiab] OR "emotional stress"[tiab] OR "emotional distress"[tiab] OR "persistent depression"[tiab] OR "chronic depression"[tiab] OR "depression, emotional"[tiab] OR "depression, neurotic"[tiab] OR "mental depression"[tiab] OR "depressed mood"[tiab] OR "depressive symptom*"[tiab] OR "clinical depression"[tiab] OR "major depressive disorder*"[tiab] OR "mild depression"[tiab] OR "severe depression"[tiab] OR "acute depression"[tiab] AND "Patient Health Questionnaire"[Mesh] OR "psychometrics"[mesh] OR "psychological tests"[mesh] OR "symptom assessment"[mesh] OR "diagnosis"[mesh] OR "screening"[tiab] OR "tool*"[tiab] OR "assessment"[tiab] OR "scale*"[tiab] OR "questionnaire*"[tiab] OR "inventor*"[tiab] OR "test*"[tiab] OR "instrument*"[tiab] OR "measure*"[tiab] OR "checklist*"[tiab] OR "psychometric*"[tiab] OR "evaluation"[tiab] OR "symptom checklist"[tiab] OR "rating scale*"[tiab] OR "self-assessment"[tiab] OR "self-report*"[tiab] OR "self-rating"[tiab] OR "structured interview*"[tiab] OR "diagnos*"[tiab] OR "Patient Health Questionnaire*"[tiab] OR "PHQ"[tiab] OR "Hospital Anxiety and Depression Scale"[tiab] OR "HADS"[tiab] OR "Beck Depression Inventory"[tiab] OR "BDI"[tiab] OR "Clinical Interview Schedule-Revised"[tiab] OR "CIS-R"[tiab] OR "Center for Epidemiological Studies Depression Scale"[tiab] OR "CES-D"[tiab] OR "General Health Questionnaire"[tiab] OR "GHQ"[tiab] OR "Hamilton Depression Rating Scale"[tiab] OR "HDRS"[tiab] OR "Hamilton Rating Scale for Depression"[tiab] OR "HRSD"[tiab] OR "Clinical Outcomes in Routine Evaluation"[tiab] OR "CORE-10"[tiab] OR "CORE-OM"[tiab] OR "Self-Rating Depression Scale"[tiab] OR "Brief Symptom Inventory"[tiab] OR "Symptom Checklist-90-Revised"[tiab] AND "Cross-Cultural Comparison"[mesh] OR "cultural adaptation"[tiab] OR "culturally adaptive"[tiab] OR "cross-cultural adaptation"[tiab] OR "cultural validation"[tiab] OR "culturally valid"[tiab] OR "cultural translation"[tiab] OR "culturally appropriate"[tiab] OR "culturally sensitive"[tiab] OR "linguistic validation"[tiab] OR "language translation"[tiab] OR "linguistic translation"[tiab] OR "culturally relevant"[tiab] OR "cultural competence"[tiab] OR "culturally competent"[tiab] OR "cultural application"[tiab] OR "culturally applicable"[tiab] OR "cultural acceptability"[tiab] OR "culturally acceptable"[tiab] OR "feasibility"[tiab] OR "reliability"[tiab] OR "valid*"[tiab] OR "adapt*"[tiab] OR "cross-cultural comparison"[tiab] OR "instrument adaptation"[tiab] OR "cultural sensitivity"[tiab] AND "South Asian people"[mesh] OR "West Asian people"[mesh] OR "India"[mesh] OR "Pakistan"[mesh] OR "Bangladesh"[mesh] OR "Afghanistan"[mesh] OR "Nepal"[mesh] OR "Bhutan"[mesh] OR "Sri Lanka"[mesh] OR "Maldives"[mesh] OR "Asia, Western"[mesh] OR "Asia, Southern"[mesh] OR "Sikkim"[mesh] OR "South Asia*"[tiab] OR "West Asia*"[tiab] OR "Afghan*"[tiab] OR "Bangladesh*"[tiab] OR "Bhutan*"[tiab] OR "India*"[tiab] OR "Maldiv*"[tiab] OR "Nepal*"[tiab] OR "Pakistan*"[tiab] OR "Sri Lanka*"[tiab] OR "Dari"[tiab] OR "Pashto"[tiab] OR "Uzbek"[tiab] OR "Bengal*"[tiab] OR "Dzongkha"[tiab] OR "Hindi"[tiab] OR "Assamese"[tiab] OR "Punjabi"[tiab] OR "Garo"[tiab] OR "Gujarati"[tiab] OR "Kannada"[tiab] OR "Kashmiri"[tiab] OR "Khasi"[tiab] OR "Konkani"[tiab] OR "Maithili"[tiab] OR "Malayalam"[tiab] OR "Marathi"[tiab] OR "Meitei"[tiab] OR "Odia"[tiab] OR "Telugu"[tiab] OR "Urdu"[tiab] OR "Sinhal*"[tiab] OR "Tamil"[tiab] OR "Hindustani"[tiab] OR "Dhivehi"[tiab] OR "Persian"[tiab] OR "Hazara*"[tiab] OR "Santhali"[tiab] OR "Sindhi"[tiab] OR "Newar*"[tiab] OR "Limbu"[tiab] OR "Tamang"[tiab] OR "Balochi"[tiab] OR "Makrani"[tiab]	

Medline (Ovid) Database

Concept 1: Depression	
Mesh	exp Depression/ OR exp Depressive Disorder/ OR exp Dysthymic Disorder/ OR exp Mood Disorders/ OR exp depressive disorder, major/ OR exp psychological distress/ OR

Terms	exp stress, psychological/
Keywords	depress*.mp. OR depressive disorder.mp. OR mood disorder.mp. OR mood disorder*.mp. OR psychological distress.mp. OR dysthymi*.mp. OR melancholi*.mp. OR psychological stress.mp. OR emotional stress.mp. OR emotional distress.mp. OR persistent depression.mp. OR chronic depression.mp. OR depression, emotional.mp. OR depression, neurotic.mp. OR mental depression.mp. OR depressed mood.mp. OR depressive symptom*.mp. OR clinical depression.mp. OR major depressive disorder*.mp. OR mild depression.mp. OR severe depression.mp. OR acute depression.mp.
Concept 2: Screening tools	
Mesh Terms	exp Patient Health Questionnaire/ OR exp Psychometrics/ OR exp Psychological tests/ OR exp Symptom assessment/ OR exp diagnosis/
Keywords	screening.mp. OR tool*.mp. OR assessment.mp. OR scale*.mp. OR questionnaire*.mp. OR inventor*.mp. OR test*.mp. OR instrument*.mp. OR measure*.mp. OR checklist*.mp. OR psychometric*.mp. OR evaluation.mp. OR symptom checklist.mp. OR rating scale*.mp. OR self-assessment.mp. OR self-report*.mp. OR self-rating.mp. OR structured interview*.mp. OR diagnos*.mp. OR Patient Health Questionnaire*.mp. OR PHQ.mp. OR Hospital Anxiety and Depression Scale.mp. OR HADS.mp. OR Beck Depression Inventory.mp. OR BDI.mp. OR Clinical Interview Schedule-Revised.mp. OR CIS-R.mp. OR Center for Epidemiological Studies Depression Scale.mp. OR CES-D.mp. OR General Health Questionnaire.mp. OR GHQ.mp. OR Hamilton Depression Rating Scale.mp. OR HDRS.mp. OR Hamilton Rating Scale for Depression.mp. OR HRSD.mp. OR Clinical Outcomes in Routine Evaluation.mp. OR CORE-10.mp. OR CORE-OM.mp. OR Self-Rating Depression Scale.mp. OR Brief Symptom Inventory.mp. OR Symptom Checklist-90-Revised.mp.
Concept 3: Cultural adaptation	
Mesh Terms	exp Cross-Cultural Comparison/
Keywords	cultural adaptation.mp. OR culturally adaptive.mp. OR cross-cultural adaptation.mp. OR cultural validation.mp. OR culturally valid.mp. OR cultural translation.mp. OR culturally appropriate.mp. OR culturally sensitive.mp. OR linguistic validation.mp. OR language translation.mp. OR linguistic translation.mp. OR culturally relevant.mp. OR cultural competence.mp. OR culturally competent.mp. OR cultural application.mp. OR culturally applicable.mp. OR cultural acceptability.mp. OR culturally acceptable.mp. OR feasibility.mp. OR reliability.mp. OR valid*.mp. OR adapt*.mp. OR cross-cultural comparison.mp. OR instrument adaptation.mp. OR cultural sensitivity.mp.
Concept 4: South Asia	
Mesh Terms	exp South Asian people/ OR exp West Asian people/ OR exp India/ OR exp Pakistan/ OR exp Bangladesh/ OR exp Afghanistan/ OR exp Nepal/ OR exp Bhutan/ OR exp Sri Lanka/ OR exp Maldives/ OR exp Asia, Western/ OR exp Asia, Southern/ OR exp Sikkim/
Keywords	"South Asia*"[tiab] OR "West Asia*"[tiab] OR "Afghan*"[tiab] OR "Bangladesh*"[tiab] OR "Bhutan*"[tiab] OR "India*"[tiab] OR "Maldiv*"[tiab] OR "Nepal*"[tiab] OR "Pakistan*"[tiab] OR "Sri Lanka*"[tiab] OR "Dari"[tiab] OR "Pashto"[tiab] OR "Uzbek"[tiab] OR "Bengal*"[tiab] OR "Dzongkha"[tiab] OR "Hindi"[tiab] OR "Assamese"[tiab] OR "Punjabi"[tiab] OR "Garo"[tiab] OR "Gujarati"[tiab] OR "Kannada"[tiab] OR "Kashmiri"[tiab] OR "Khasi"[tiab] OR "Konkani"[tiab] OR "Maithili"[tiab] OR "Malayalam"[tiab] OR "Marathi"[tiab] OR "Meitei"[tiab] OR "Odia"[tiab] OR "Telugu"[tiab] OR "Urdu"[tiab] OR "Sinhal*"[tiab] OR "Tamil"[tiab] OR "Hindustani"[tiab] OR "Dhivehi"[tiab] OR "Persian"[tiab] OR "Hazara*"[tiab] OR "Santhali"[tiab] OR "Sindhi"[tiab] OR "Newar*"[tiab] OR "Limbu"[tiab] OR "Tamang"[tiab] OR "Balochi"[tiab] OR "Makrani"[tiab]
Medline (Ovid) Combined Search	
(exp Depression/ OR exp Depressive Disorder/ OR exp Dysthymic Disorder/ OR exp Mood Disorders/ OR exp depressive disorder, major/ OR exp psychological distress/ OR exp stress, psychological/ OR depressi*.mp. OR depressive disorder.mp. OR mood disorder.mp. OR mood disorder*.mp. OR psychological distress.mp. OR dysthymi*.mp. OR melancholi*.mp. OR psychological stress.mp. OR emotional stress.mp.	

OR emotional distress.mp. OR persistent depression.mp. OR chronic depression.mp. OR depression, emotional.mp. OR depression, neurotic.mp. OR mental depression.mp. OR depressed mood.mp. OR depressive symptom*.mp. OR clinical depression.mp. OR major depressive disorder*.mp. OR mild depression.mp. OR severe depression.mp. OR acute depression.mp.) AND (exp Patient Health Questionnaire/ OR exp Psychometrics/ OR exp Psychological tests/ OR exp Symptom assessment/ OR exp diagnosis/ OR screening.mp. OR tool*.mp. OR assessment.mp. OR scale*.mp. OR questionnaire*.mp. OR inventor*.mp. OR test*.mp. OR instrument*.mp. OR measure*.mp. OR checklist*.mp. OR psychometric*.mp. OR evaluation.mp. OR symptom checklist.mp. OR rating scale*.mp. OR self-assessment.mp. OR self-report*.mp. OR self-rating.mp. OR structured interview*.mp. OR diagnos*.mp. OR Patient Health Questionnaire*.mp. OR PHQ.mp. OR Hospital Anxiety and Depression Scale.mp. OR HADS.mp. OR Beck Depression Inventory.mp. OR BDI.mp. OR Clinical Interview Schedule-Revised.mp. OR CIS-R.mp. OR Center for Epidemiological Studies Depression Scale.mp. OR CES-D.mp. OR General Health Questionnaire.mp. OR GHQ.mp. OR Hamilton Depression Rating Scale.mp. OR HDRS.mp. OR Hamilton Rating Scale for Depression.mp. OR HRSD.mp. OR Clinical Outcomes in Routine Evaluation.mp. OR CORE-10.mp. OR CORE-OM.mp. OR Self-Rating Depression Scale.mp. OR Brief Symptom Inventory.mp. OR Symptom Checklist-90-Revised.mp.) AND (exp Cross-Cultural Comparison/ OR cultural adaptation.mp. OR culturally adaptive.mp. OR cross-cultural adaptation.mp. OR cultural validation.mp. OR culturally valid.mp. OR cultural translation.mp. OR culturally appropriate.mp. OR culturally sensitive.mp. OR linguistic validation.mp. OR language translation.mp. OR linguistic translation.mp. OR culturally relevant.mp. OR cultural competence.mp. OR culturally competent.mp. OR cultural application.mp. OR culturally applicable.mp. OR cultural acceptability.mp. OR culturally acceptable.mp. OR feasibility.mp. OR reliability.mp. OR valid*.mp. OR adapt*.mp. OR cross-cultural comparison.mp. OR instrument adaptation.mp. OR cultural sensitivity.mp.) AND (exp South Asian people/ OR exp West Asian people/ OR exp India/ OR exp Pakistan/ OR exp Bangladesh/ OR exp Afghanistan/ OR exp Nepal/ OR exp Bhutan/ OR exp Sri Lanka/ OR exp Maldives/ OR exp Asia, Western/ OR exp Asia, Southern/ OR exp Sikkim/ OR South Asia*.mp. OR West Asia*.mp. OR Afghan*.mp. OR Bangladesh*.mp. OR Bhutan*.mp. OR India*.mp. OR Maldiv*.mp. OR Nepal*.mp. OR Pakistan*.mp. OR Sri Lanka*.mp. OR Dari.mp. OR Pashto.mp. OR Uzbek.mp. OR Bengal*.mp. OR Dzongkha.mp. OR Hindi.mp. OR Assamese.mp. OR Punjabi.mp. OR Garo.mp. OR Gujarati.mp. OR Kannada.mp. OR Kashmiri.mp. OR Khasi.mp. OR Konkani.mp. OR Maithili.mp. OR Malayalam.mp. OR Marathi.mp. OR Meitei.mp. OR Odia.mp. OR Telugu.mp. OR Urdu.mp. OR Sinhal*.mp. OR Tamil.mp. OR Hindustani.mp. OR Dhivehi.mp. OR Persian.mp. OR Hazara*.mp. OR Santhali.mp. OR Sindhi.mp. OR Newar*.mp. OR Limbu.mp. OR Tamang.mp. OR Balochi.mp. OR Makrani.mp.)

CINAHL (EBSCO) Database

Concept 1: Depression	
Subject Headings	(MH "depression/DI/PF/RF/SS/TH+") OR (MH "Dysthymic disorder+") OR (MH "Psychological Distress+") OR (MH "symptom distress+")
Keywords	AB("depressi*") OR TI("depressi*") OR AB("depressive disorder") OR TI("depressive disorder") OR AB("mood disorder") OR TI("mood disorder") OR AB("mood disorder*") OR TI("mood disorder*") OR AB("psychological distress") OR TI("psychological distress") OR AB("dysthymi*") OR TI("dysthymi*") OR AB("melancholi*") OR TI("melancholi*") OR AB("psychological stress") OR TI("psychological stress") OR AB("emotional stress") OR TI("emotional stress") OR AB("emotional distress") OR TI("emotional distress") OR AB("persistent depression") OR TI("persistent depression") OR AB("chronic depression") OR TI("chronic depression") OR AB("depression, emotional") OR TI("depression, emotional") OR AB("depression, neurotic") OR TI("depression, neurotic") OR AB("mental depression") OR TI("mental depression") OR AB("depressed mood") OR TI("depressed mood") OR AB("depressive symptom*") OR TI("depressive symptom*") OR AB("clinical depression") OR TI("clinical depression") OR AB("major depressive disorder*") OR TI("major depressive disorder*") OR AB("mild depression") OR TI("mild depression") OR AB("severe depression") OR TI("severe depression") OR AB("acute depression") OR TI("acute depression")
Concept 2: Screening tools	
Subject	(MH "Scales+") OR (MH "Questionnaires+") OR (MH "Psychological Tests+") OR (MH

Headings	"Beck Depression Inventory, Revised Edition+") OR (MH "Self-Rating Depression Scale+") OR (MH "Hamilton Rating Scale for Depression+") OR (MH "Diagnosis, Psychosocial+") OR (MH "Psychometrics+") OR (MH "Self-assessment+") OR (MH "Brief Symptom Inventory+") OR (MH "symptom distress+") OR (MH "Symptom Distress Scale+") OR (MH "Symptom Checklist-90-Revised+") OR (MH "Instrument validation+") OR (MH "Validation studies+") OR (MH "Structured interview+") OR (MH "Center for Epidemiological Studies Depression Scale+") OR (MH "Validity+") OR (MH "Checklists+")
Keywords	AB("screening") OR TI("screening") OR AB("tool*") OR TI("tool*") OR AB("assessment") OR TI("assessment") OR AB("scale*") OR TI("scale*") OR AB("questionnaire*") OR TI("questionnaire*") OR AB("inventor*") OR TI("inventor*") OR AB("test*") OR TI("test*") OR AB("instrument*") OR TI("instrument*") OR AB("measure*") OR TI("measure*") OR AB("checklist*") OR TI("checklist*") OR AB("psychometric*") OR TI("psychometric*") OR AB("evaluation") OR TI("evaluation") OR AB("symptom checklist") OR TI("symptom checklist") OR AB("rating scale*") OR TI("rating scale*") OR AB("self-assessment") OR TI("self-assessment") OR AB("self-report*") OR TI("self-report*") OR AB("self-rating") OR TI("self-rating") OR AB("structured interview*") OR TI("structured interview*") OR AB("diagnos*") OR TI("diagnos*") OR AB("Patient Health Questionnaire*") OR TI("Patient Health Questionnaire*") OR AB("PHQ") OR TI("PHQ") OR AB("Hospital Anxiety and Depression Scale") OR TI("Hospital Anxiety and Depression Scale") OR AB("HADS") OR TI("HADS") OR AB("Beck Depression Inventory") OR TI("Beck Depression Inventory") OR AB("BDI") OR TI("BDI") OR AB("Clinical Interview Schedule-Revised") OR TI("Clinical Interview Schedule-Revised") OR AB("CIS-R") OR TI("CIS-R") OR AB("Center for Epidemiological Studies Depression Scale") OR TI("Center for Epidemiological Studies Depression Scale") OR AB("CES-D") OR TI("CES-D") OR AB("General Health Questionnaire") OR TI("General Health Questionnaire") OR AB("GHQ") OR TI("GHQ") OR AB("Hamilton Depression Rating Scale") OR TI("Hamilton Depression Rating Scale") OR AB("HDRS") OR TI("HDRS") OR AB("Hamilton Rating Scale for Depression") OR TI("Hamilton Rating Scale for Depression") OR AB("HRSD") OR TI("HRSD") OR AB("Clinical Outcomes in Routine Evaluation") OR TI("Clinical Outcomes in Routine Evaluation") OR AB("CORE-10") OR TI("CORE-10") OR AB("CORE-OM") OR TI("CORE-OM") OR AB("Self-Rating Depression Scale") OR TI("Self-Rating Depression Scale") OR AB("Brief Symptom Inventory") OR TI("Brief Symptom Inventory") OR AB("Symptom Checklist-90-Revised") OR TI("Symptom Checklist-90-Revised")
Concept 3: Cultural adaptation	
Subject Headings	(MH "instrument adaptation+") OR (MH "cultural competence+") OR (MH "cultural sensitivity+")
Keywords	AB("cultural adaptation") OR TI("cultural adaptation") OR AB("culturally adaptive") OR TI("culturally adaptive") OR AB("cross-cultural adaptation") OR TI("cross-cultural adaptation") OR AB("cultural validation") OR TI("cultural validation") OR AB("culturally valid") OR TI("culturally valid") OR AB("cultural translation") OR TI("cultural translation") OR AB("culturally appropriate") OR TI("culturally appropriate") OR AB("culturally sensitive") OR TI("culturally sensitive") OR AB("linguistic validation") OR TI("linguistic validation") OR AB("language translation") OR TI("language translation") OR AB("linguistic translation") OR TI("linguistic translation") OR AB("culturally relevant") OR TI("culturally relevant") OR AB("cultural competence") OR TI("cultural competence") OR AB("culturally competent") OR TI("culturally competent") OR AB("cultural application") OR TI("cultural application") OR AB("culturally applicable") OR TI("culturally applicable") OR AB("cultural acceptability") OR TI("cultural acceptability") OR AB("culturally acceptable") OR TI("culturally acceptable") OR AB("feasibility") OR TI("feasibility") OR AB("reliability") OR TI("reliability") OR AB("valid*") OR TI("valid*") OR AB("adapt*") OR TI("adapt*") OR AB("cross-cultural comparison") OR TI("cross-cultural comparison") OR AB("instrument adaptation") OR TI("instrument adaptation") OR AB("cultural sensitivity") OR TI("cultural sensitivity")
Concept 4: South Asia	
Subject	(MH "Asia, southern+") OR (MH "South Asians+") OR (MH "India+") OR (MH "Tamils+") OR (MH "Asian Indians+") OR (MH "Gujarati Persons+") OR (MH "Afghanistan+") OR (MH

Headings	"Afghan Persons+") OR (MH "Bangladesh+") OR (MH "Bangladeshi Persons+") OR (MH "Bhutan+") OR (MH "Himalayas+") OR (MH "Maldives+") OR (MH "Nepal+") OR (MH "Nepali Persons+") OR (MH "Pakistan+") OR (MH "Pakistanis+") OR (MH "Sri Lanka+") OR (MH "Sri Lankans+")
Keywords	AB("South Asia*") OR TI("South Asia*") OR AB("West Asia*") OR TI("West Asia*") OR AB("Afghan*") OR TI("Afghan*") OR AB("Bangladesh*") OR TI("Bangladesh*") OR AB("Bhutan*") OR TI("Bhutan*") OR AB("India*") OR TI("India*") OR AB("Maldiv*") OR TI("Maldiv*") OR AB("Nepal*") OR TI("Nepal*") OR AB("Pakistan*") OR TI("Pakistan*") OR AB("Sri Lanka*") OR TI("Sri Lanka*") OR AB("Dari") OR TI("Dari") OR AB("Pashto") OR TI("Pashto") OR AB("Uzbek") OR TI("Uzbek") OR AB("Bengal*") OR TI("Bengal*") OR AB("Dzongkha") OR TI("Dzongkha") OR AB("Hindi") OR TI("Hindi") OR AB("Assamese") OR TI("Assamese") OR AB("Punjabi") OR TI("Punjabi") OR AB("Garo") OR TI("Garo") OR AB("Gujarati") OR TI("Gujarati") OR AB("Kannada") OR TI("Kannada") OR AB("Kashmiri") OR TI("Kashmiri") OR AB("Khasi") OR TI("Khasi") OR AB("Konkani") OR TI("Konkani") OR AB("Maithili") OR TI("Maithili") OR AB("Malayalam") OR TI("Malayalam") OR AB("Marathi") OR TI("Marathi") OR AB("Meitei") OR TI("Meitei") OR AB("Odia") OR TI("Odia") OR AB("Telugu") OR TI("Telugu") OR AB("Urdu") OR TI("Urdu") OR AB("Sinhal*") OR TI("Sinhal*") OR AB("Tamil") OR TI("Tamil") OR AB("Hindustani") OR TI("Hindustani") OR AB("Dhivehi") OR TI("Dhivehi") OR AB("Persian") OR TI("Persian") OR AB("Hazara*") OR TI("Hazara*") OR AB("Santhali") OR TI("Santhali") OR AB("Sindhi") OR TI("Sindhi") OR AB("Newar*") OR TI("Newar*") OR AB("Limbu") OR TI("Limbu") OR AB("Tamang") OR TI("Tamang") OR AB("Balochi") OR TI("Balochi") OR AB("Makrani") OR TI("Makrani")

CINAHL (EBSCO) Combined Search

((MH "depression/DI/PF/RF/SS/TH+") OR (MH "Dysthymic disorder+") OR (MH "Psychological Distress+") OR (MH "symptom distress+") OR AB("depressi*") OR TI("depressi*") OR AB("depressive disorder") OR TI("depressive disorder") OR AB("mood disorder") OR TI("mood disorder") OR AB("mood disorder*") OR TI("mood disorder*") OR AB("psychological distress") OR TI("psychological distress") OR AB("dysthymi*") OR TI("dysthymi*") OR AB("melancholi*") OR TI("melancholi*") OR AB("psychological stress") OR TI("psychological stress") OR AB("emotional stress") OR TI("emotional stress") OR AB("emotional distress") OR TI("emotional distress") OR AB("persistent depression") OR TI("persistent depression") OR AB("chronic depression") OR TI("chronic depression") OR AB("depression, emotional") OR TI("depression, emotional") OR AB("depression, neurotic") OR TI("depression, neurotic") OR AB("mental depression") OR TI("mental depression") OR AB("depressed mood") OR TI("depressed mood") OR AB("depressive symptom*") OR TI("depressive symptom*") OR AB("clinical depression") OR TI("clinical depression") OR AB("major depressive disorder*") OR TI("major depressive disorder*") OR AB("mild depression") OR TI("mild depression") OR AB("severe depression") OR TI("severe depression") OR AB("acute depression") OR TI("acute depression")) AND ((MH "Scales+") OR (MH "Questionnaires+") OR (MH "Psychological Tests+") OR (MH "Beck Depression Inventory, Revised Edition+") OR (MH "Self-Rating Depression Scale+") OR (MH "Hamilton Rating Scale for Depression+") OR (MH "Diagnosis, Psychosocial+") OR (MH "Psychometrics+") OR (MH "Self-assessment+") OR (MH "Brief Symptom Inventory+") OR (MH "symptom distress+") OR (MH "Symptom Distress Scale+") OR (MH "Symptom Checklist-90-Revised+") OR (MH "Instrument validation+") OR (MH "Validation studies+") OR (MH "Structured interview+") OR (MH "Center for Epidemiological Studies Depression Scale+") OR (MH "Validity+") OR (MH "Checklists+") OR AB("screening") OR TI("screening") OR AB("tool*") OR TI("tool*") OR AB("assessment") OR TI("assessment") OR AB("scale*") OR TI("scale*") OR AB("questionnaire*") OR TI("questionnaire*") OR AB("inventor*") OR TI("inventor*") OR AB("test*") OR TI("test*") OR AB("instrument*") OR TI("instrument*") OR AB("measure*") OR TI("measure*") OR AB("checklist*") OR TI("checklist*") OR AB("psychometric*") OR TI("psychometric*") OR AB("evaluation") OR TI("evaluation") OR AB("symptom checklist") OR TI("symptom checklist") OR AB("rating scale*") OR TI("rating scale*") OR AB("self-assessment") OR TI("self-assessment") OR AB("self-report*") OR TI("self-report*") OR AB("self-rating") OR TI("self-rating") OR AB("structured interview*") OR TI("structured interview*") OR AB("diagnos*") OR TI("diagnos*") OR AB("Patient Health Questionnaire*") OR TI("Patient Health Questionnaire*") OR AB("PHQ") OR TI("PHQ") OR AB("Hospital Anxiety and Depression Scale") OR TI("Hospital Anxiety and Depression Scale") OR AB("HADS") OR TI("HADS") OR AB("Beck Depression Inventory") OR TI("Beck Depression Inventory") OR AB("BDI") OR TI("BDI") OR AB("Clinical Interview Schedule-Revised") OR TI("Clinical Interview Schedule-Revised") OR AB("CIS-R") OR TI("CIS-R") OR

AB("Center for Epidemiological Studies Depression Scale") OR TI("Center for Epidemiological Studies Depression Scale") OR AB("CES-D") OR TI("CES-D") OR AB("General Health Questionnaire") OR TI("General Health Questionnaire") OR AB("GHQ") OR TI("GHQ") OR AB("Hamilton Depression Rating Scale") OR TI("Hamilton Depression Rating Scale") OR AB("HDRS") OR TI("HDRS") OR AB("Hamilton Rating Scale for Depression") OR TI("Hamilton Rating Scale for Depression") OR AB("HRSD") OR TI("HRSD") OR AB("Clinical Outcomes in Routine Evaluation") OR TI("Clinical Outcomes in Routine Evaluation") OR AB("CORE-10") OR TI("CORE-10") OR AB("CORE-OM") OR TI("CORE-OM") OR AB("Self-Rating Depression Scale") OR TI("Self-Rating Depression Scale") OR AB("Brief Symptom Inventory") OR TI("Brief Symptom Inventory") OR AB("Symptom Checklist-90-Revised") OR TI("Symptom Checklist-90-Revised")) AND ((MH "instrument adaptation+") OR (MH "cultural competence+") OR (MH "cultural sensitivity+") OR AB("cultural adaptation") OR TI("cultural adaptation") OR AB("culturally adaptive") OR TI("culturally adaptive") OR AB("cross-cultural adaptation") OR TI("cross-cultural adaptation") OR AB("cultural validation") OR TI("cultural validation") OR AB("culturally valid") OR TI("culturally valid") OR AB("cultural translation") OR TI("cultural translation") OR AB("culturally appropriate") OR TI("culturally appropriate") OR AB("culturally sensitive") OR TI("culturally sensitive") OR AB("linguistic validation") OR TI("linguistic validation") OR AB("language translation") OR TI("language translation") OR AB("linguistic translation") OR TI("linguistic translation") OR AB("culturally relevant") OR TI("culturally relevant") OR AB("cultural competence") OR TI("cultural competence") OR AB("culturally competent") OR TI("culturally competent") OR AB("cultural application") OR TI("cultural application") OR AB("culturally applicable") OR TI("culturally applicable") OR AB("cultural acceptability") OR TI("cultural acceptability") OR AB("culturally acceptable") OR TI("culturally acceptable") OR AB("feasibility") OR TI("feasibility") OR AB("reliability") OR TI("reliability") OR AB("valid*") OR TI("valid*") OR AB("adapt*") OR TI("adapt*") OR AB("cross-cultural comparison") OR TI("cross-cultural comparison") OR AB("instrument adaptation") OR TI("instrument adaptation") OR AB("cultural sensitivity") OR TI("cultural sensitivity")) AND ((MH "Asia, southern+") OR (MH "South Asians+") OR (MH "India+") OR (MH "Tamils+") OR (MH "Asian Indians+") OR (MH "Gujarati Persons+") OR (MH "Afghanistan+") OR (MH "Afghan Persons+") OR (MH "Bangladesh+") OR (MH "Bangladeshi Persons+") OR (MH "Bhutan+") OR (MH "Himalayas+") OR (MH "Maldives+") OR (MH "Nepal+") OR (MH "Nepali Persons+") OR (MH "Pakistan+") OR (MH "Pakistanis+") OR (MH "Sri Lanka+") OR (MH "Sri Lankans+") OR AB("South Asia*") OR TI("South Asia*") OR AB("West Asia*") OR TI("West Asia*") OR AB("Afghan*") OR TI("Afghan*") OR AB("Bangladesh*") OR TI("Bangladesh*") OR AB("Bhutan*") OR TI("Bhutan*") OR AB("India*") OR TI("India*") OR AB("Maldiv*") OR TI("Maldiv*") OR AB("Nepal*") OR TI("Nepal*") OR AB("Pakistan*") OR TI("Pakistan*") OR AB("Sri Lanka*") OR TI("Sri Lanka*") OR AB("Dari") OR TI("Dari") OR AB("Pashto") OR TI("Pashto") OR AB("Uzbek") OR TI("Uzbek") OR AB("Bengal*") OR TI("Bengal*") OR AB("Dzongkha") OR TI("Dzongkha") OR AB("Hindi") OR TI("Hindi") OR AB("Assamese") OR TI("Assamese") OR AB("Punjabi") OR TI("Punjabi") OR AB("Garo") OR TI("Garo") OR AB("Gujarati") OR TI("Gujarati") OR AB("Kannada") OR TI("Kannada") OR AB("Kashmiri") OR TI("Kashmiri") OR AB("Khasi") OR TI("Khasi") OR AB("Konkani") OR TI("Konkani") OR AB("Maithili") OR TI("Maithili") OR AB("Malayalam") OR TI("Malayalam") OR AB("Marathi") OR TI("Marathi") OR AB("Meitei") OR TI("Meitei") OR AB("Odia") OR TI("Odia") OR AB("Telugu") OR TI("Telugu") OR AB("Urdu") OR TI("Urdu") OR AB("Sinhal*") OR TI("Sinhal*") OR AB("Tamil") OR TI("Tamil") OR AB("Hindustani") OR TI("Hindustani") OR AB("Dhivehi") OR TI("Dhivehi") OR AB("Persian") OR TI("Persian") OR AB("Hazara*") OR TI("Hazara*") OR AB("Santhali") OR TI("Santhali") OR AB("Sindhi") OR TI("Sindhi") OR AB("Newar*") OR TI("Newar*") OR AB("Limbu") OR TI("Limbu") OR AB("Tamang") OR TI("Tamang") OR AB("Balochi") OR TI("Balochi") OR AB("Makrani") OR TI("Makrani"))

APA PyscInfo (EBSCO) Database

Concept 1: Depression	
PsycInfo Thesaurus terms/ headings	(MH "depression+") OR (MH "major depressive disorder*+") OR (MH "clinical depression+") OR (MH "depression, mental+") OR (MH "dysthymi*+") OR (MH "mood disorder*+") OR (MH "psychological distress+") OR (MH "depressive symptom*+") OR (MH "dysthymic disorder*+") OR (MH "melancholi*+") OR (MH "major depression+")
Keywords	AB("depress*") OR TI("depress*") OR AB("depressive disorder") OR TI("depressive disorder") OR AB("mood disorder") OR TI("mood disorder") OR AB("mood disorder*") OR TI("mood disorder*") OR AB("psychological distress") OR TI("psychological

	distress") OR AB("dysthymi*") OR TI("dysthymi*") OR AB("melancholi*") OR TI("melancholi*") OR AB("psychological stress") OR TI("psychological stress") OR AB("emotional stress") OR TI("emotional stress") OR AB("emotional distress") OR TI("emotional distress") OR AB("persistent depression") OR TI("persistent depression") OR AB("chronic depression") OR TI("chronic depression") OR AB("depression, emotional") OR TI("depression, emotional") OR AB("depression, neurotic") OR TI("depression, neurotic") OR AB("mental depression") OR TI("mental depression") OR AB("depressed mood") OR TI("depressed mood") OR AB("depressive symptom*") OR TI("depressive symptom*") OR AB("clinical depression") OR TI("clinical depression") OR AB("major depressive disorder*") OR TI("major depressive disorder*") OR AB("mild depression") OR TI("mild depression") OR AB("severe depression") OR TI("severe depression") OR AB("acute depression") OR TI("acute depression")
Concept 2: Screening tools	
PsycInfo Thesaurus terms/ headings	(MH "screening tool*+") OR (MH "Patient Health Questionnaire+") OR (MH "PHQ-9+") OR (MH "Hospital Anxiety and Depression Scale+") OR (MH "HADS+") OR (MH "Beck Depression Inventory+") OR (MH "BDI+") OR (MH "psychometrics+") OR (MH "inventor*+") OR (MH "diagnos*+") OR (MH "Symptom assessment+") OR (MH "Hamilton Depression Rating Scale+") OR (MH "scale*+")
Keywords	AB("screening") OR TI("screening") OR AB("tool*") OR TI("tool*") OR AB("assessment") OR TI("assessment") OR AB("scale*") OR TI("scale*") OR AB("questionnaire*") OR TI("questionnaire*") OR AB("inventor*") OR TI("inventor*") OR AB("test*") OR TI("test*") OR AB("instrument*") OR TI("instrument*") OR AB("measure*") OR TI("measure*") OR AB("checklist*") OR TI("checklist*") OR AB("psychometric*") OR TI("psychometric*") OR AB("evaluation") OR TI("evaluation") OR AB("symptom checklist") OR TI("symptom checklist") OR AB("rating scale*") OR TI("rating scale*") OR AB("self-assessment") OR TI("self-assessment") OR AB("self-report*") OR TI("self-report*") OR AB("self-rating") OR TI("self-rating") OR AB("structured interview*") OR TI("structured interview*") OR AB("diagnos*") OR TI("diagnos*") OR AB("Patient Health Questionnaire*") OR TI("Patient Health Questionnaire*") OR AB("PHQ") OR TI("PHQ") OR AB("Hospital Anxiety and Depression Scale") OR TI("Hospital Anxiety and Depression Scale") OR AB("HADS") OR TI("HADS") OR AB("Beck Depression Inventory") OR TI("Beck Depression Inventory") OR AB("BDI") OR TI("BDI") OR AB("Clinical Interview Schedule-Revised") OR TI("Clinical Interview Schedule-Revised") OR AB("CIS-R") OR TI("CIS-R") OR AB("Center for Epidemiological Studies Depression Scale") OR TI("Center for Epidemiological Studies Depression Scale") OR AB("CES-D") OR TI("CES-D") OR AB("General Health Questionnaire") OR TI("General Health Questionnaire") OR AB("GHQ") OR TI("GHQ") OR AB("Hamilton Depression Rating Scale") OR TI("Hamilton Depression Rating Scale") OR AB("HDRS") OR TI("HDRS") OR AB("Hamilton Rating Scale for Depression") OR TI("Hamilton Rating Scale for Depression") OR AB("HRSD") OR TI("HRSD") OR AB("Clinical Outcomes in Routine Evaluation") OR TI("Clinical Outcomes in Routine Evaluation") OR AB("CORE-10") OR TI("CORE-10") OR AB("CORE-OM") OR TI("CORE-OM") OR AB("Self-Rating Depression Scale") OR TI("Self-Rating Depression Scale") OR AB("Brief Symptom Inventory") OR TI("Brief Symptom Inventory") OR AB("Symptom Checklist-90-Revised") OR TI("Symptom Checklist-90-Revised")
Concept 3: Cultural adaptation	
PsycInfo Thesaurus terms/ headings	(MH "cultural adaptation+") OR (MH "cross-cultural translation+") OR (MH "culturally appropriate+") OR (MH "culturally sensitive+") OR (MH "culturally relevant+") OR (MH "culturally adapted+") OR (MH "cultural valid*+") OR (MH "cultural translation+") OR (MH "cultural relevance+") OR (MH "translation and validation+")
Keywords	AB("cultural adaptation") OR TI("cultural adaptation") OR AB("culturally adaptive") OR TI("culturally adaptive") OR AB("cross-cultural adaptation") OR TI("cross-cultural adaptation") OR AB("cultural validation") OR TI("cultural validation") OR AB("culturally valid") OR TI("culturally valid") OR AB("cultural translation") OR TI("cultural translation") OR AB("culturally appropriate") OR TI("culturally appropriate") OR AB("culturally sensitive") OR TI("culturally sensitive") OR AB("linguistic validation") OR

	TI("linguistic validation") OR AB("language translation") OR TI("language translation") OR AB("linguistic translation") OR TI("linguistic translation") OR AB("culturally relevant") OR TI("culturally relevant") OR AB("cultural competence") OR TI("cultural competence") OR AB("culturally competent") OR TI("culturally competent") OR AB("cultural application") OR TI("cultural application") OR AB("culturally applicable") OR TI("culturally applicable") OR AB("cultural acceptability") OR TI("cultural acceptability") OR AB("culturally acceptable") OR TI("culturally acceptable") OR AB("feasibility") OR TI("feasibility") OR AB("reliability") OR TI("reliability") OR AB("valid*") OR TI("valid*") OR AB("adapt*") OR TI("adapt*") OR AB("cross-cultural comparison") OR TI("cross-cultural comparison") OR AB("instrument adaptation") OR TI("instrument adaptation") OR AB("cultural sensitivity") OR TI("cultural sensitivity")
Concept 4: South Asia	
PsycInfo Thesaurus terms/ headings	(MH "South Asia+") OR (MH "India*+") OR (MH "Bangladesh*+") OR (MH "Pakistan*+") OR (MH "Nepal*+") OR (MH "Maldives+") OR (MH "Bhutan*+") OR (MH "Sri Lanka*+") OR (MH "Afghan*+") OR (MH "South Asian Cultural groups+") OR (MH "+")
Keywords	AB("South Asia*") OR TI("South Asia*") OR AB("West Asia*") OR TI("West Asia*") OR AB("Afghan*") OR TI("Afghan*") OR AB("Bangladesh*") OR TI("Bangladesh*") OR AB("Bhutan*") OR TI("Bhutan*") OR AB("India*") OR TI("India*") OR AB("Maldiv*") OR TI("Maldiv*") OR AB("Nepal*") OR TI("Nepal*") OR AB("Pakistan*") OR TI("Pakistan*") OR AB("Sri Lanka*") OR TI("Sri Lanka*") OR AB("Dari") OR TI("Dari") OR AB("Pashto") OR TI("Pashto") OR AB("Uzbek") OR TI("Uzbek") OR AB("Bengal*") OR TI("Bengal*") OR AB("Dzongkha") OR TI("Dzongkha") OR AB("Hindi") OR TI("Hindi") OR AB("Assamese") OR TI("Assamese") OR AB("Punjabi") OR TI("Punjabi") OR AB("Garo") OR TI("Garo") OR AB("Gujarati") OR TI("Gujarati") OR AB("Kannada") OR TI("Kannada") OR AB("Kashmiri") OR TI("Kashmiri") OR AB("Khasi") OR TI("Khasi") OR AB("Konkani") OR TI("Konkani") OR AB("Maithili") OR TI("Maithili") OR AB("Malayalam") OR TI("Malayalam") OR AB("Marathi") OR TI("Marathi") OR AB("Meitei") OR TI("Meitei") OR AB("Odia") OR TI("Odia") OR AB("Telugu") OR TI("Telugu") OR AB("Urdu") OR TI("Urdu") OR AB("Sinhal*") OR TI("Sinhal*") OR AB("Tamil") OR TI("Tamil") OR AB("Hindustani") OR TI("Hindustani") OR AB("Dhivehi") OR TI("Dhivehi") OR AB("Persian") OR TI("Persian") OR AB("Hazara*") OR TI("Hazara*") OR AB("Santhali") OR TI("Santhali") OR AB("Sindhi") OR TI("Sindhi") OR AB("Newar*") OR TI("Newar*") OR AB("Limbu") OR TI("Limbu") OR AB("Tamang") OR TI("Tamang") OR AB("Balochi") OR TI("Balochi") OR AB("Makrani") OR TI("Makrani")
APA PsycInfo (EBSCO) Combined Search	
((MH "depression+") OR (MH "major depressive disorder*+") OR (MH "clinical depression+") OR (MH "depression, mental+") OR (MH "dysthymi*+") OR (MH "mood disorder*+") OR (MH "psychological distress+") OR (MH "depressive symptom*+") OR (MH "dysthymic disorder*+") OR (MH "melancholi*+") OR (MH "major depression+") OR AB("depress*") OR TI("depress*") OR AB("depressive disorder") OR TI("depressive disorder") OR AB("mood disorder") OR TI("mood disorder") OR AB("mood disorder*") OR TI("mood disorder*") OR AB("psychological distress") OR TI("psychological distress") OR AB("dysthymi*") OR TI("dysthymi*") OR AB("melancholi*") OR TI("melancholi*") OR AB("psychological stress") OR TI("psychological stress") OR AB("emotional stress") OR TI("emotional stress") OR AB("emotional distress") OR TI("emotional distress") OR AB("persistent depression") OR TI("persistent depression") OR AB("chronic depression") OR TI("chronic depression") OR AB("depression, emotional") OR TI("depression, emotional") OR AB("depression, neurotic") OR TI("depression, neurotic") OR AB("mental depression") OR TI("mental depression") OR AB("depressed mood") OR TI("depressed mood") OR AB("depressive symptom*") OR TI("depressive symptom*") OR AB("clinical depression") OR TI("clinical depression") OR AB("major depressive disorder*") OR TI("major depressive disorder*") OR AB("mild depression") OR TI("mild depression") OR AB("severe depression") OR TI("severe depression") OR AB("acute depression") OR TI("acute depression")) AND ((MH "screening tool*+") OR (MH "Patient Health Questionnaire+") OR (MH "PHQ-9+") OR (MH "Hospital Anxiety and Depression Scale+") OR (MH "HADS+") OR (MH "Beck Depression Inventory+") OR (MH "BDI+") OR (MH "psychometrics+") OR (MH "inventor*+") OR (MH "diagnos*+") OR (MH "Symptom assessment+") OR (MH "Hamilton Depression Rating Scale+") OR (MH "scale*+") OR AB("screening") OR TI("screening") OR AB("tool*") OR TI("tool*") OR AB("assessment") OR	

TI("assessment") OR AB("scale*") OR TI("scale*") OR AB("questionnaire*") OR TI("questionnaire*") OR AB("inventor*") OR TI("inventor*") OR AB("test*") OR TI("test*") OR AB("instrument*") OR TI("instrument*") OR AB("measure*") OR TI("measure*") OR AB("checklist*") OR TI("checklist*") OR AB("psychometric*") OR TI("psychometric*") OR AB("evaluation") OR TI("evaluation") OR AB("symptom checklist") OR TI("symptom checklist") OR AB("rating scale*") OR TI("rating scale*") OR AB("self-assessment") OR TI("self-assessment") OR AB("self-report*") OR TI("self-report*") OR AB("self-rating") OR TI("self-rating") OR AB("structured interview*") OR TI("structured interview*") OR AB("diagnos*") OR TI("diagnos*") OR AB("Patient Health Questionnaire*") OR TI("Patient Health Questionnaire*") OR AB("PHQ") OR TI("PHQ") OR AB("Hospital Anxiety and Depression Scale") OR TI("Hospital Anxiety and Depression Scale") OR AB("HADS") OR TI("HADS") OR AB("Beck Depression Inventory") OR TI("Beck Depression Inventory") OR AB("BDI") OR TI("BDI") OR AB("Clinical Interview Schedule-Revised") OR TI("Clinical Interview Schedule-Revised") OR AB("CIS-R") OR TI("CIS-R") OR AB("Center for Epidemiological Studies Depression Scale") OR TI("Center for Epidemiological Studies Depression Scale") OR AB("CES-D") OR TI("CES-D") OR AB("General Health Questionnaire") OR TI("General Health Questionnaire") OR AB("GHQ") OR TI("GHQ") OR AB("Hamilton Depression Rating Scale") OR TI("Hamilton Depression Rating Scale") OR AB("HDRS") OR TI("HDRS") OR AB("Hamilton Rating Scale for Depression") OR TI("Hamilton Rating Scale for Depression") OR AB("HRSD") OR TI("HRSD") OR AB("Clinical Outcomes in Routine Evaluation") OR TI("Clinical Outcomes in Routine Evaluation") OR AB("CORE-10") OR TI("CORE-10") OR AB("CORE-OM") OR TI("CORE-OM") OR AB("Self-Rating Depression Scale") OR TI("Self-Rating Depression Scale") OR AB("Brief Symptom Inventory") OR TI("Brief Symptom Inventory") OR AB("Symptom Checklist-90-Revised") OR TI("Symptom Checklist-90-Revised")) AND ((MH "cultural adaptation+") OR (MH "cross-cultural translation+") OR (MH "culturally appropriate+") OR (MH "culturally sensitive+") OR (MH "culturally relevant+") OR (MH "culturally adapted+") OR (MH "cultural valid*+") OR (MH "cultural translation+") OR (MH "cultural relevance+") OR (MH "translation and validation+") OR AB("cultural adaptation") OR TI("cultural adaptation") OR AB("culturally adaptive") OR TI("culturally adaptive") OR AB("cross-cultural adaptation") OR TI("cross-cultural adaptation") OR AB("cultural validation") OR TI("cultural validation") OR AB("culturally valid") OR TI("culturally valid") OR AB("cultural translation") OR TI("cultural translation") OR AB("culturally appropriate") OR TI("culturally appropriate") OR AB("culturally sensitive") OR TI("culturally sensitive") OR AB("linguistic validation") OR TI("linguistic validation") OR AB("language translation") OR TI("language translation") OR AB("linguistic translation") OR TI("linguistic translation") OR AB("culturally relevant") OR TI("culturally relevant") OR AB("cultural competence") OR TI("cultural competence") OR AB("culturally competent") OR TI("culturally competent") OR AB("cultural application") OR TI("cultural application") OR AB("culturally applicable") OR TI("culturally applicable") OR AB("cultural acceptability") OR TI("cultural acceptability") OR AB("culturally acceptable") OR TI("culturally acceptable") OR AB("feasibility") OR TI("feasibility") OR AB("reliability") OR TI("reliability") OR AB("valid*") OR TI("valid*") OR AB("adapt*") OR TI("adapt*") OR AB("cross-cultural comparison") OR TI("cross-cultural comparison") OR AB("instrument adaptation") OR TI("instrument adaptation") OR AB("cultural sensitivity") OR TI("cultural sensitivity")) AND ((MH "South Asia+") OR (MH "India*+") OR (MH "Bangladesh*+") OR (MH "Pakistan*+") OR (MH "Nepal*+") OR (MH "Maldives+") OR (MH "Bhutan*+") OR (MH "Sri Lanka*+") OR (MH "Afghan*+") OR (MH "South Asian Cultural groups+") OR (MH "+") OR AB("South Asia*") OR TI("South Asia*") OR AB("West Asia*") OR TI("West Asia*") OR AB("Afghan*") OR TI("Afghan*") OR AB("Bangladesh*") OR TI("Bangladesh*") OR AB("Bhutan*") OR TI("Bhutan*") OR AB("India*") OR TI("India*") OR AB("Maldiv*") OR TI("Maldiv*") OR AB("Nepal*") OR TI("Nepal*") OR AB("Pakistan*") OR TI("Pakistan*") OR AB("Sri Lanka*") OR TI("Sri Lanka*") OR AB("Dari") OR TI("Dari") OR AB("Pashto") OR TI("Pashto") OR AB("Uzbek") OR TI("Uzbek") OR AB("Bengal*") OR TI("Bengal*") OR AB("Dzongkha") OR TI("Dzongkha") OR AB("Hindi") OR TI("Hindi") OR AB("Assamese") OR TI("Assamese") OR AB("Punjabi") OR TI("Punjabi") OR AB("Garo") OR TI("Garo") OR AB("Gujarati") OR TI("Gujarati") OR AB("Kannada") OR TI("Kannada") OR AB("Kashmiri") OR TI("Kashmiri") OR AB("Khasi") OR TI("Khasi") OR AB("Konkani") OR TI("Konkani") OR AB("Maithili") OR TI("Maithili") OR AB("Malayalam") OR TI("Malayalam") OR AB("Marathi") OR TI("Marathi") OR AB("Meitei") OR TI("Meitei") OR AB("Odia") OR TI("Odia") OR AB("Telugu") OR TI("Telugu") OR AB("Urdu") OR TI("Urdu") OR AB("Sinhal*") OR TI("Sinhal*") OR AB("Tamil") OR TI("Tamil") OR AB("Hindustani") OR TI("Hindustani") OR AB("Dhivehi") OR TI("Dhivehi") OR AB("Persian") OR TI("Persian") OR AB("Hazara*") OR TI("Hazara*") OR AB("Santhali") OR TI("Santhali") OR AB("Sindhi") OR TI("Sindhi") OR AB("Newar*") OR TI("Newar*") OR AB("Limbu") OR TI("Limbu") OR AB("Tamang") OR TI("Tamang") OR AB("Balochi") OR TI("Balochi") OR AB("Makrani") OR TI("Makrani"))

Scopus Database

Concept 1: Depression	
Keywords	TITLE-ABS-KEY("depression") OR TITLE-ABS-KEY("{major depressive disorder}") OR TITLE-ABS-KEY("{clinical depression}") OR TITLE-ABS-KEY("dysthymi*") OR TITLE-ABS-KEY("melancholi*") OR TITLE-ABS-KEY("{psychological distress}") OR TITLE-ABS-KEY("{major depression}") OR TITLE-ABS-KEY("{mood disorder}") OR TITLE-ABS-KEY("{depressive disorder}") OR TITLE-ABS-KEY("{mood disorders}") OR TITLE-ABS-KEY("{dysthymic disorder}") OR TITLE-ABS-KEY("{psychological distress}") OR TITLE-ABS-KEY("{depressive disorder}") OR TITLE-ABS-KEY("{psychological stress}") OR TITLE-ABS-KEY("{emotional stress}") OR TITLE-ABS-KEY("{emotional distress}") OR TITLE-ABS-KEY("{persistent depression}") OR TITLE-ABS-KEY("{chronic depression}") OR TITLE-ABS-KEY("depression, emotional") OR TITLE-ABS-KEY("depression, neurotic") OR TITLE-ABS-KEY("{mental depression}") OR TITLE-ABS-KEY("depress*") OR TITLE-ABS-KEY("{depressive symptom}") OR TITLE-ABS-KEY("{clinical depression}") OR TITLE-ABS-KEY("{mild depression}") OR TITLE-ABS-KEY("{severe depression}") OR TITLE-ABS-KEY("{acute depression}")
Concept 2: Screening tools	
Keywords	TITLE-ABS-KEY("screening") OR TITLE-ABS-KEY("tool*") OR TITLE-ABS-KEY("assessment") OR TITLE-ABS-KEY("scale*") OR TITLE-ABS-KEY("questionnaire*") OR TITLE-ABS-KEY("inventor*") OR TITLE-ABS-KEY("test*") OR TITLE-ABS-KEY("instrument*") OR TITLE-ABS-KEY("measure*") OR TITLE-ABS-KEY("checklist*") OR TITLE-ABS-KEY("psychometric*") OR TITLE-ABS-KEY("evaluation") OR TITLE-ABS-KEY("symptom checklist") OR TITLE-ABS-KEY("rating scale*") OR TITLE-ABS-KEY("self-assessment") OR TITLE-ABS-KEY("self-report*") OR TITLE-ABS-KEY("self-rating") OR TITLE-ABS-KEY("{structured interview}") OR TITLE-ABS-KEY("diagnos*") OR TITLE-ABS-KEY("{Patient Health Questionnaire}") OR TITLE-ABS-KEY("PHQ") OR TITLE-ABS-KEY("{Hospital Anxiety and Depression Scale}") OR TITLE-ABS-KEY("HADS") OR TITLE-ABS-KEY("{Beck Depression Inventory}") OR TITLE-ABS-KEY("BDI") OR TITLE-ABS-KEY("{Clinical Interview Schedule-Revised}") OR TITLE-ABS-KEY("CIS-R") OR TITLE-ABS-KEY("{Center for Epidemiological Studies Depression Scale}") OR TITLE-ABS-KEY("CES-D") OR TITLE-ABS-KEY("{General Health Questionnaire}") OR TITLE-ABS-KEY("GHQ") OR TITLE-ABS-KEY("{Hamilton Depression Rating Scale}") OR TITLE-ABS-KEY("HDRS") OR TITLE-ABS-KEY("{Hamilton Rating Scale for Depression}") OR TITLE-ABS-KEY("HRSD") OR TITLE-ABS-KEY("{Clinical Outcomes in Routine Evaluation}") OR TITLE-ABS-KEY("CORE-10") OR TITLE-ABS-KEY("CORE-OM") OR TITLE-ABS-KEY("{Self-Rating Depression Scale}") OR TITLE-ABS-KEY("{Brief Symptom Inventory}") OR TITLE-ABS-KEY("{Symptom Checklist-90-Revised}")
Concept 3: Cultural adaptation	
Keywords	TITLE-ABS-KEY("{cultural adaptation}") OR TITLE-ABS-KEY("{cross-cultural validation}") OR TITLE-ABS-KEY("{culturally adapted}") OR TITLE-ABS-KEY("{culturally relevant}") OR TITLE-ABS-KEY("{culturally appropriate}") OR TITLE-ABS-KEY("{culturally sensitive}") OR TITLE-ABS-KEY("{cultural translation}") OR TITLE-ABS-KEY("{cultural adaptation and translation}") OR TITLE-ABS-KEY("{cross-cultural adaptation}") OR TITLE-ABS-KEY("culturally adapt*") OR TITLE-ABS-KEY("{cross-cultural adaptation}") OR TITLE-ABS-KEY("cultural valid*") OR TITLE-ABS-KEY("{culturally valid}") OR TITLE-ABS-KEY("linguistic validation") OR TITLE-ABS-KEY("{language translation}") OR TITLE-ABS-KEY("{linguistic translation}") OR TITLE-ABS-KEY("{cultural competence}") OR TITLE-ABS-KEY("{culturally competent}") OR TITLE-ABS-KEY("{culturally applicable}") OR TITLE-ABS-KEY("{cultural application}") OR TITLE-ABS-KEY("{cultural acceptability}") OR TITLE-ABS-KEY("{culturally acceptable}") OR TITLE-ABS-KEY("feasibility") OR TITLE-ABS-KEY("reliability") OR TITLE-ABS-KEY("valid*") OR TITLE-ABS-KEY("adapt*") OR TITLE-ABS-KEY("{cross-cultural comparison}") OR TITLE-ABS-KEY("{instrument adaptation}") OR TITLE-ABS-KEY("{cultural sensitivity}")

Concept 4: South Asia	
Keywords	TITLE-ABS-KEY("South Asia*") OR TITLE-ABS-KEY("West Asia*") OR TITLE-ABS-KEY("Afghan*") OR TITLE-ABS-KEY("Bangladesh*") OR TITLE-ABS-KEY("Bhutan*") OR TITLE-ABS-KEY("India*") OR TITLE-ABS-KEY("Maldiv*") OR TITLE-ABS-KEY("Nepal*") OR TITLE-ABS-KEY("Pakistan*") OR TITLE-ABS-KEY("Sri Lanka*") OR TITLE-ABS-KEY("Dari") OR TITLE-ABS-KEY("Pashto") OR TITLE-ABS-KEY("Uzbek") OR TITLE-ABS-KEY("Bengal*") OR TITLE-ABS-KEY("Dzongkha") OR TITLE-ABS-KEY("Hindi") OR TITLE-ABS-KEY("Assamese") OR TITLE-ABS-KEY("Punjabi") OR TITLE-ABS-KEY("Garo") OR TITLE-ABS-KEY("Gujarati") OR TITLE-ABS-KEY("Kannada") OR TITLE-ABS-KEY("Kashmiri") OR TITLE-ABS-KEY("Khasi") OR TITLE-ABS-KEY("Konkani") OR TITLE-ABS-KEY("Maithili") OR TITLE-ABS-KEY("Malayalam") OR TITLE-ABS-KEY("Marathi") OR TITLE-ABS-KEY("Meitei") OR TITLE-ABS-KEY("Odia") OR TITLE-ABS-KEY("Telugu") OR TITLE-ABS-KEY("Urdu") OR TITLE-ABS-KEY("Sinhal*") OR TITLE-ABS-KEY("Tamil") OR TITLE-ABS-KEY("Hindustani") OR TITLE-ABS-KEY("Dhivehi") OR TITLE-ABS-KEY("Persian") OR TITLE-ABS-KEY("Hazara*") OR TITLE-ABS-KEY("Santhali") OR TITLE-ABS-KEY("Sindhi") OR TITLE-ABS-KEY("Newar*") OR TITLE-ABS-KEY("Limbu") OR TITLE-ABS-KEY("Tamang") OR TITLE-ABS-KEY("Balochi") OR TITLE-ABS-KEY("Makrani")
SCOPUS Combined Search	
(TITLE-ABS-KEY("depression") OR TITLE-ABS-KEY("{major depressive disorder}") OR TITLE-ABS-KEY("{clinical depression}") OR TITLE-ABS-KEY("dysthymi*") OR TITLE-ABS-KEY("melancholi*") OR TITLE-ABS-KEY("{psychological distress}") OR TITLE-ABS-KEY("{major depression}") OR TITLE-ABS-KEY("{mood disorder}") OR TITLE-ABS-KEY("{depressive disorder}") OR TITLE-ABS-KEY("{mood disorders}") OR TITLE-ABS-KEY("{dysthymic disorder}") OR TITLE-ABS-KEY("{psychological distress}") OR TITLE-ABS-KEY("{depressive disorder}") OR TITLE-ABS-KEY("{psychological stress}") OR TITLE-ABS-KEY("{emotional stress}") OR TITLE-ABS-KEY("{emotional distress}") OR TITLE-ABS-KEY("{persistent depression}") OR TITLE-ABS-KEY("{chronic depression}") OR TITLE-ABS-KEY("depression, emotional") OR TITLE-ABS-KEY("depression, neurotic") OR TITLE-ABS-KEY("{mental depression}") OR TITLE-ABS-KEY("depress*") OR TITLE-ABS-KEY("{depressive symptom}") OR TITLE-ABS-KEY("{clinical depression}") OR TITLE-ABS-KEY("{mild depression}") OR TITLE-ABS-KEY("{severe depression}") OR TITLE-ABS-KEY("{acute depression}")) AND (TITLE-ABS-KEY("screening") OR TITLE-ABS-KEY("tool*") OR TITLE-ABS-KEY("assessment") OR TITLE-ABS-KEY("scale*") OR TITLE-ABS-KEY("questionnaire*") OR TITLE-ABS-KEY("inventor*") OR TITLE-ABS-KEY("test*") OR TITLE-ABS-KEY("instrument*") OR TITLE-ABS-KEY("measure*") OR TITLE-ABS-KEY("checklist*") OR TITLE-ABS-KEY("psychometric*") OR TITLE-ABS-KEY("evaluation") OR TITLE-ABS-KEY("symptom checklist") OR TITLE-ABS-KEY("rating scale*") OR TITLE-ABS-KEY("self-assessment") OR TITLE-ABS-KEY("self-report*") OR TITLE-ABS-KEY("self-rating") OR TITLE-ABS-KEY("{structured interview}") OR TITLE-ABS-KEY("diagnos*") OR TITLE-ABS-KEY("{Patient Health Questionnaire}") OR TITLE-ABS-KEY("PHQ") OR TITLE-ABS-KEY("{Hospital Anxiety and Depression Scale}") OR TITLE-ABS-KEY("HADS") OR TITLE-ABS-KEY("{Beck Depression Inventory}") OR TITLE-ABS-KEY("BDI") OR TITLE-ABS-KEY("{Clinical Interview Schedule-Revised}") OR TITLE-ABS-KEY("CIS-R") OR TITLE-ABS-KEY("{Center for Epidemiological Studies Depression Scale}") OR TITLE-ABS-KEY("CES-D") OR TITLE-ABS-KEY("{General Health Questionnaire}") OR TITLE-ABS-KEY("GHQ") OR TITLE-ABS-KEY("{Hamilton Depression Rating Scale}") OR TITLE-ABS-KEY("HDRS") OR TITLE-ABS-KEY("{Hamilton Rating Scale for Depression}") OR TITLE-ABS-KEY("HRSD") OR TITLE-ABS-KEY("{Clinical Outcomes in Routine Evaluation}") OR TITLE-ABS-KEY("CORE-10") OR TITLE-ABS-KEY("CORE-OM") OR TITLE-ABS-KEY("{Self-Rating Depression Scale}") OR TITLE-ABS-KEY("{Brief Symptom Inventory}") OR TITLE-ABS-KEY("{Symptom Checklist-90-Revised}")) AND (TITLE-ABS-KEY("{cultural adaptation}") OR TITLE-ABS-KEY("{cross-cultural validation}") OR TITLE-ABS-KEY("{culturally adapted}") OR TITLE-ABS-KEY("{culturally relevant}") OR TITLE-ABS-KEY("{culturally appropriate}") OR TITLE-ABS-KEY("{culturally sensitive}") OR TITLE-ABS-KEY("{cultural translation}") OR TITLE-ABS-KEY("{cultural adaptation and translation}") OR TITLE-ABS-KEY("{cross-cultural adaptation}") OR TITLE-ABS-KEY("culturally adapt*") OR TITLE-ABS-KEY("{cross-cultural adaptation}") OR TITLE-ABS-KEY("cultural valid*") OR TITLE-ABS-KEY("{culturally valid}") OR TITLE-ABS-KEY("linguistic validation") OR TITLE-ABS-KEY("{language translation}") OR TITLE-ABS-KEY("{linguistic translation}") OR TITLE-ABS-KEY("{cultural competence}") OR TITLE-ABS-KEY("{culturally competent}") OR TITLE-ABS-KEY("{culturally applicable}") OR TITLE-ABS-KEY("{cultural application}") OR TITLE-ABS-KEY("{cultural acceptability}") OR TITLE-ABS-KEY("{culturally acceptable}") OR TITLE-ABS-KEY("feasibility") OR TITLE-	

ABS-KEY("reliability") OR TITLE-ABS-KEY("valid*") OR TITLE-ABS-KEY("adapt*") OR TITLE-ABS-KEY("{cross-cultural comparison}") OR TITLE-ABS-KEY("{instrument adaptation}") OR TITLE-ABS-KEY("{cultural sensitivity}")) AND (TITLE-ABS-KEY("South Asia*") OR TITLE-ABS-KEY("West Asia*") OR TITLE-ABS-KEY("Afghan*") OR TITLE-ABS-KEY("Bangladesh*") OR TITLE-ABS-KEY("Bhutan*") OR TITLE-ABS-KEY("India*") OR TITLE-ABS-KEY("Maldiv*") OR TITLE-ABS-KEY("Nepal*") OR TITLE-ABS-KEY("Pakistan*") OR TITLE-ABS-KEY("Sri Lanka*") OR TITLE-ABS-KEY("Dari") OR TITLE-ABS-KEY("Pashto") OR TITLE-ABS-KEY("Uzbek") OR TITLE-ABS-KEY("Bengal*") OR TITLE-ABS-KEY("Dzongkha") OR TITLE-ABS-KEY("Hindi") OR TITLE-ABS-KEY("Assamese") OR TITLE-ABS-KEY("Punjabi") OR TITLE-ABS-KEY("Garo") OR TITLE-ABS-KEY("Gujarati") OR TITLE-ABS-KEY("Kannada") OR TITLE-ABS-KEY("Kashmiri") OR TITLE-ABS-KEY("Khasi") OR TITLE-ABS-KEY("Konkani") OR TITLE-ABS-KEY("Maithili") OR TITLE-ABS-KEY("Malayalam") OR TITLE-ABS-KEY("Marathi") OR TITLE-ABS-KEY("Meitei") OR TITLE-ABS-KEY("Odia") OR TITLE-ABS-KEY("Telugu") OR TITLE-ABS-KEY("Urdu") OR TITLE-ABS-KEY("Sinhal*") OR TITLE-ABS-KEY("Tamil") OR TITLE-ABS-KEY("Hindustani") OR TITLE-ABS-KEY("Dhivehi") OR TITLE-ABS-KEY("Persian") OR TITLE-ABS-KEY("Hazara*") OR TITLE-ABS-KEY("Santhali") OR TITLE-ABS-KEY("Sindhi") OR TITLE-ABS-KEY("Newar*") OR TITLE-ABS-KEY("Limbu") OR TITLE-ABS-KEY("Tamang") OR TITLE-ABS-KEY("Balochi") OR TITLE-ABS-KEY("Makrani"))

Embase (Ovid) Database

Concept 1: Depression	
Mesh Terms	exp Depression/ OR exp Depressive Disorder/ OR exp Dysthymic Disorder/ OR exp Mood Disorders/ OR exp depressive disorder, major/ OR exp psychological distress/ OR exp stress, psychological/
Keywords	depress*.mp. OR depressive disorder.mp. OR mood disorder.mp. OR mood disorder*.mp. OR psychological distress.mp. OR dysthymi*.mp. OR melancholi*.mp. OR psychological stress.mp. OR emotional stress.mp. OR emotional distress.mp. OR persistent depression.mp. OR chronic depression.mp. OR depression, emotional.mp. OR depression, neurotic.mp. OR mental depression.mp. OR depressed mood.mp. OR depressive symptom*.mp. OR clinical depression.mp. OR major depressive disorder*.mp. OR mild depression.mp. OR severe depression.mp. OR acute depression.mp.
Concept 2: Screening tools	
Mesh Terms	exp Patient Health Questionnaire/ OR exp Psychometrics/ OR exp Psychological tests/ OR exp Symptom assessment/ OR exp diagnosis/
Keywords	screening.mp. OR tool*.mp. OR assessment.mp. OR scale*.mp. OR questionnaire*.mp. OR inventor*.mp. OR test*.mp. OR instrument*.mp. OR measure*.mp. OR checklist*.mp. OR psychometric*.mp. OR evaluation.mp. OR symptom checklist.mp. OR rating scale*.mp. OR self-assessment.mp. OR self-report*.mp. OR self-rating.mp. OR structured interview*.mp. OR diagnos*.mp. OR Patient Health Questionnaire*.mp. OR PHQ.mp. OR Hospital Anxiety and Depression Scale.mp. OR HADS.mp. OR Beck Depression Inventory.mp. OR BDI.mp. OR Clinical Interview Schedule-Revised.mp. OR CIS-R.mp. OR Center for Epidemiological Studies Depression Scale.mp. OR CES-D.mp. OR General Health Questionnaire.mp. OR GHQ.mp. OR Hamilton Depression Rating Scale.mp. OR HDRS.mp. OR Hamilton Rating Scale for Depression.mp. OR HRSD.mp. OR Clinical Outcomes in Routine Evaluation.mp. OR CORE-10.mp. OR CORE-OM.mp. OR Self-Rating Depression Scale.mp. OR Brief Symptom Inventory.mp. OR Symptom Checklist-90-Revised.mp.
Concept 3: Cultural adaptation	
Mesh Terms	exp Cross-Cultural Comparison/
Keywords	cultural adaptation.mp. OR culturally adaptive.mp. OR cross-cultural adaptation.mp. OR cultural validation.mp. OR culturally valid.mp. OR cultural translation.mp. OR culturally appropriate.mp. OR culturally sensitive.mp. OR linguistic validation.mp. OR language translation.mp. OR linguistic translation.mp. OR culturally relevant.mp. OR cultural competence.mp. OR culturally competent.mp. OR cultural application.mp. OR culturally applicable.mp. OR cultural acceptability.mp. OR culturally acceptable.mp. OR

	feasibility.mp. OR reliability.mp. OR valid*.mp. OR adapt*.mp. OR cross-cultural comparison.mp. OR instrument adaptation.mp. OR cultural sensitivity.mp.
Concept 4: South Asia	
Mesh Terms	exp South Asian people/ OR exp West Asian people/ OR exp India/ OR exp Pakistan/ OR exp Bangladesh/ OR exp Afghanistan/ OR exp Nepal/ OR exp Bhutan/ OR exp Sri Lanka/ OR exp Maldives/ OR exp Asia, Western/ OR exp Asia, Southern/ OR exp Sikkim/
Keywords	"South Asia*"[tiab] OR "West Asia*"[tiab] OR "Afghan*"[tiab] OR "Bangladesh*"[tiab] OR "Bhutan*"[tiab] OR "India*"[tiab] OR "Maldiv*"[tiab] OR "Nepal*"[tiab] OR "Pakistan*"[tiab] OR "Sri Lanka*"[tiab] OR "Dari"[tiab] OR "Pashto"[tiab] OR "Uzbek"[tiab] OR "Bengal*"[tiab] OR "Dzongkha"[tiab] OR "Hindi"[tiab] OR "Assamese"[tiab] OR "Punjabi"[tiab] OR "Garo"[tiab] OR "Gujarati"[tiab] OR "Kannada"[tiab] OR "Kashmiri"[tiab] OR "Khasi"[tiab] OR "Konkani"[tiab] OR "Maithili"[tiab] OR "Malayalam"[tiab] OR "Marathi"[tiab] OR "Meitei"[tiab] OR "Odia"[tiab] OR "Telugu"[tiab] OR "Urdu"[tiab] OR "Sinhal*"[tiab] OR "Tamil"[tiab] OR "Hindustani"[tiab] OR "Dhivehi"[tiab] OR "Persian"[tiab] OR "Hazara*"[tiab] OR "Santhali"[tiab] OR "Sindhi"[tiab] OR "Newar*"[tiab] OR "Limbu"[tiab] OR "Tamang"[tiab] OR "Balochi"[tiab] OR "Makrani"[tiab]
Embase (Ovid) Combined Search	
(exp Depression/ OR exp Depressive Disorder/ OR exp Dysthymic Disorder/ OR exp Mood Disorders/ OR exp depressive disorder, major/ OR exp psychological distress/ OR exp stress, psychological/ OR depressi*.mp. OR depressive disorder.mp. OR mood disorder.mp. OR mood disorder*.mp. OR psychological distress.mp. OR dysthymi*.mp. OR melancholi*.mp. OR psychological stress.mp. OR emotional stress.mp. OR emotional distress.mp. OR persistent depression.mp. OR chronic depression.mp. OR depression, emotional.mp. OR depression, neurotic.mp. OR mental depression.mp. OR depressed mood.mp. OR depressive symptom*.mp. OR clinical depression.mp. OR major depressive disorder*.mp. OR mild depression.mp. OR severe depression.mp. OR acute depression.mp.) AND (exp Patient Health Questionnaire/ OR exp Psychometrics/ OR exp Psychological tests/ OR exp Symptom assessment/ OR exp diagnosis/ OR screening.mp. OR tool*.mp. OR assessment.mp. OR scale*.mp. OR questionnaire*.mp. OR inventor*.mp. OR test*.mp. OR instrument*.mp. OR measure*.mp. OR checklist*.mp. OR psychometric*.mp. OR evaluation.mp. OR symptom checklist.mp. OR rating scale*.mp. OR self-assessment.mp. OR self-report*.mp. OR self-rating.mp. OR structured interview*.mp. OR diagnos*.mp. OR Patient Health Questionnaire*.mp. OR PHQ.mp. OR Hospital Anxiety and Depression Scale.mp. OR HADS.mp. OR Beck Depression Inventory.mp. OR BDI.mp. OR Clinical Interview Schedule-Revised.mp. OR CIS-R.mp. OR Center for Epidemiological Studies Depression Scale.mp. OR CES-D.mp. OR General Health Questionnaire.mp. OR GHQ.mp. OR Hamilton Depression Rating Scale.mp. OR HDRS.mp. OR Hamilton Rating Scale for Depression.mp. OR HRSD.mp. OR Clinical Outcomes in Routine Evaluation.mp. OR CORE-10.mp. OR CORE-OM.mp. OR Self-Rating Depression Scale.mp. OR Brief Symptom Inventory.mp. OR Symptom Checklist-90-Revised.mp.) AND (exp Cross-Cultural Comparison/ OR cultural adaptation.mp. OR culturally adaptive.mp. OR cross-cultural adaptation.mp. OR cultural validation.mp. OR culturally valid.mp. OR cultural translation.mp. OR culturally appropriate.mp. OR culturally sensitive.mp. OR linguistic validation.mp. OR language translation.mp. OR linguistic translation.mp. OR culturally relevant.mp. OR cultural competence.mp. OR culturally competent.mp. OR cultural application.mp. OR culturally applicable.mp. OR cultural acceptability.mp. OR culturally acceptable.mp. OR feasibility.mp. OR reliability.mp. OR valid*.mp. OR adapt*.mp. OR cross-cultural comparison.mp. OR instrument adaptation.mp. OR cultural sensitivity.mp.) AND (exp South Asian people/ OR exp West Asian people/ OR exp India/ OR exp Pakistan/ OR exp Bangladesh/ OR exp Afghanistan/ OR exp Nepal/ OR exp Bhutan/ OR exp Sri Lanka/ OR exp Maldives/ OR exp Asia, Western/ OR exp Asia, Southern/ OR exp Sikkim/ OR South Asia*.mp. OR West Asia*.mp. OR Afghan*.mp. OR Bangladesh*.mp. OR Bhutan*.mp. OR India*.mp. OR Maldiv*.mp. OR Nepal*.mp. OR Pakistan*.mp. OR Sri Lanka*.mp. OR Dari.mp. OR Pashto.mp. OR Uzbek.mp. OR Bengal*.mp. OR Dzongkha.mp. OR Hindi.mp. OR Assamese.mp. OR Punjabi.mp. OR Garo.mp. OR Gujarati.mp. OR Kannada.mp. OR Kashmiri.mp. OR Khasi.mp. OR Konkani.mp. OR Maithili.mp. OR Malayalam.mp. OR Marathi.mp. OR Meitei.mp. OR Odia.mp. OR Telugu.mp. OR Urdu.mp. OR Sinhal*.mp. OR Tamil.mp. OR Hindustani.mp. OR Dhivehi.mp. OR Persian.mp. OR Hazara*.mp. OR Santhali.mp. OR Sindhi.mp. OR Newar*.mp. OR Limbu.mp. OR Tamang.mp. OR Balochi.mp. OR Makrani.mp.)	