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Mental health data available in representative surveys conducted in Latin America and the Caribbean countries: a scoping review

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ABSTRACT

Background Mental health data from Latin America and the Caribbean countries (LACC) national and international surveys are essential for public health surveillance. This review aimed to identify and describe available mental health survey data in LACC, providing access details for researchers.

Methods Our study was a scoping review. The search for available mental health survey data was conducted in PubMed and through grey literature searches, and the search dates were between 26 August 2021 and 15 October 2021. Included survey data were/had (1) nationally representative, (2) the latest version available from 2012 onward, (3) collected in at least one LACC and (4) at least one mental health variable or related factor. We accepted all written languages, including Spanish and English.

Results A total of 56 national and 13 international surveys were included, with data available on 95 mental health variables classified into 10 categories. Most national surveys were performed in upper-middle-income countries. Variables categorised as 'Substance use' and 'Violence' were the most frequent. Mexico and Colombia had the highest production in both the national and international surveys. The main target population was the adult population. However, there are several mental health topics and LACC yet unsurveyed.

Conclusion We identified a total of 69 representative surveys from LACCs since 2012. We categorised the available data on mental health variables into 10 categories, and provided technical details to facilitate the future selection and use of these surveys.

STRENGTHS AND LIMITATIONS OF THIS STUDY

⇒ We performed the first comprehensive review and characterisation of the mental health data available in representative surveys of Latin America and the Caribbean countries.
⇒ It is possible that some published studies using survey data and not indexed in PubMed were missed, although these data should be relatively young.
⇒ Although we tried to create consistent categories for classifying mental health variables across all surveys, they may not fully harmonise with the categories originally proposed in some surveys.

BACKGROUND

Mental health, whether considered a construct related to a state of well-being or as a mental, neurological or substance use disorder,[1] undeniably impacts people's quality of life. In Latin America, these and other mental health disorders contribute to one-third of the total years lived with disability and one-fifth of total disability-adjusted life years (DALYs) lost.[2]

Epidemiological surveillance of risk groups, redistribution of resources and evaluation of trends in mental health problems are the first steps to solving these issues.[3] In Latin American and Caribbean countries (hereafter LACCs), census data provide valuable information at the country level to identify research and policy priorities,[4] assess the impact of social programmes[5 6] and identify factors associated with mental health and substance abuse problems.[7] Moreover, national databases merged from LACCs allow more comprehensive studies of the global burden on mental health conditions.[7 8]

LACCs participate in national and international initiatives that seek to periodically develop census data to assess the health of their population. For example, the Demographic and Health Surveys (DHS) promoted by the United States Agency for International Development,[9] evaluations by the World Bank and other international institutions focused

on developing public policies to tackle mental health issues[10] and global observatories of health surveys, such as the Global Health Data Exchange (GHDx),[11] the Global Health Observatory data repository[12] or the LACCs' national institutions and observatories of health.[13] However, there is no systematic census and extensive description of which survey data on mental health topics are currently available in LACCs.

Consequently, we aimed to perform a scoping review on mental health data available from LACCs representative surveys, facilitating access to researchers, politicians and stakeholders committed to fighting against the burden of mental health diseases. The specific objectives were: (1) to identify national and international surveys which assess mental health variables (hereafter MHVs) and related; and (2) to describe the MHVs collected in these surveys, the type of assessment tools, data production by countries, sampling design and target populations. The information gathered will support the analysis of the challenges related to the construction of a Mental Health Observatory for LACCs based on open data.

METHODS

Protocol and registration

Our study is a scoping review, and we followed the Preferred Reporting Items for Systematic Reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR) guidelines for reporting findings.[14] The protocol was uploaded to the Open Science Framework platform: https://osf.io/cbgjs/.

Eligibility criteria

Included surveys met the following criteria:

- Nationally representative, even if the sample was a subpopulation (ie, women of childbearing age), or if the survey was conducted by either the government or an external organisation (eg, surveys performed by the WHO). National and International surveys that had country representativeness were included, as they are potential sources of information for health decision-making.
- The latest survey data version is from 2012 onwards.
- Collected data come from at least one LACCs—attending the World Bank country classification.[9]
- Presented data on at least one MHV or factor associated, even if this was not the survey's main objective (eg, national health surveys include mental health sections) (see online supplemental file 1). We did not collect other health outcomes that could be directly or indirectly related to mental health outcomes (eg, chronic diseases), as this was beyond the scope of our study. However, people interested can access data dictionaries and other technical information using the links provided in online supplemental tables 1 and 2.

We accepted all written languages on surveys and in its materials. In the selection process (ie, PRISMA flowchart) we excluded sources that did not achieve the eligibility criteria.

Information sources and search

We performed a two-stage search (see online supplemental figure 1). First, we examined the PubMed database to identify articles that could use relevant surveys for our study. Based on key terms in these articles, FR-B and DV-Z drafted the search strategy using keywords and Medical Subject Headings terms of mental health problems adapted from the Cochrane common mental disorders strategy[15] (see online supplemental file 2). Searches were undertaken on 7 July 2021. However, we performed a quick update on 1 July 2023, and found no differences. Identified records were uploaded into Mendeley V.1.19.8 reference management software, and duplicates were removed.

To select the articles from PubMed, FR-B uploaded records in software Rayyan[16] which were screened in duplicate and independently by MC-A, SO-A, GA-H, JA-M, ABR-C and AH-SC, who piloted 50 records and achieved a 90% agreement. Afterwards, blinded screening was applied, and FR-B or DV-Z solved any disagreement in team meetings. Then, surveys were compiled from the selected PubMed articles and listed with the results of the grey literature group.

Second, RV-V designed a grey literature search executed by a group of trained volunteers between 26 August and 15 October 2021 to detect national health surveys in LACCs. This search included a series of procedures: (1) search in Google with English and Spanish terms and Boolean operators and then check the first 10 results, (2) examine relevant sources on institutional web pages of each LACCs according to the official language of each one (eg, Ministry of Health, statistical institutes, national government, others) and (3) finally a look at global databases or repositories as GHDx, and the Global School-based Student Health Survey (GSHS).

Selection of sources of evidence

In the 'Step 2 Identification' (see online supplemental figure 1), RV-V removed duplicates from both search strategies results—PubMed and grey literature search—and led the group of volunteers to web search surveys documents as guides (manuals with instructions about the survey), reports (results communications of the survey) and databases. Also, FR-B and EC-H started to contact institutions in case of lacking information from surveys.

According to the 'Step 3 Selection' (see online supplemental figure 1), surveys were divided into national surveys (conducted by a country's government institution) and international surveys (a collaboration between countries or conducted by a non-governmental institution across two or more countries). Next, the selection by three reviewers was performed and consisted of an independently non-blinded review of each survey against the eligibility criteria. If the first reviewer rejected it, FR-B allocated a second reviewer to confirm the decision. Any

conflicts between the reviewers were resolved through a meeting discussion by FR-B or by a third-party reviewer who searched for more survey information in case missing. MC-A, SO-A, GA-H, JA-M, JF-Q, ABR-C, EC-H, MR-M, WS-V and CQ-C piloted procedures with four to six surveys, achieved a 90% agreement and then selected the surveys.

Data items

To complete the 'Step 4 Extraction' (see online supplemental figure 1), selected surveys were used to fill an extraction form created by DV-Z and refined by the research team after piloting three surveys per person. Extraction forms for national and international surveys (online supplemental files 3 and 4) had items related to general information (eg, survey name, country, year), population, sample design (to confirm it is representative at the national level: eg, survey weights), MHVs names and their items. Only in the national surveys' extraction forms was the option to select if the name written of the MHVs was (1) based on the information indicated by the survey, otherwise, due to unspecified survey information in its sources, (2) based on the extractor criteria (through examination of the survey's items or detecting the psychometric instrument).

The extraction forms for national surveys were filled independently by MC-A, SO-A, GA-H, JA-M and ABR-C; and for the international, by JF-Q, EC-H, MR-M, WS-V and CQ-C. Doubts arising were resolved by FR-B in team meetings. If the surveys did not have enough information to complete the extraction forms (eg, insufficient data about the sampling design or MHVs), they were sent to FR-B to contact official institutions via email. In the case of no response within 2 weeks, the survey was discarded.

Synthesis of results

With the extracted information, RV-V and SO-A analysed the MHVs. They grouped them into 10 major categories: Depression, anxiety and stress; general mental health problems; mental health services; neurocognitive and neurological; other mental disorders; psychosocial factors that affect mental health; quality of life; substance use; suicidal behaviour; and violence (see online supplemental file 8). First, the variables were grouped into categories based on International Classification of Diseases 11th Revision (ICD-11) diagnostic codes. For example, the categories of depression, anxiety and stress (F30–F48), neurocognitive and neurological (F70–F89), substance use (F10–F19) and suicidal behaviour (T83, T14.9, Z91.5). In addition, variables that appeared only once or twice combined into the category of other mental disorders. Second, we used the social determinants of health proposed by the WHO to define the categories related to the psychosocial context.[17] For example, mental health services, psychosocial factors affecting mental health, quality of life and violence. Finally, the non-specific MHVs were grouped under the category of general mental health problems.

Then, AH-SC, RV-V and DV-Z used Microsoft Excel 2021 to describe and visualise the data: trends in MHVs assessed in total and according to the countries' income level classification by World Bank—lower-middle-income country (LMIC), upper-middle-income country (UMIC) and higher-income country (HIC)—production of surveys by country, and comparisons of instruments and design samples. This classification was proposed by the World Bank and widely used in various international surveys such as the DHS or STEPwise approach to non-communicable disease risk factor surveillance (STEPS-WHO).

Patient and public involvement

Our study had no patients or members of the general population participating in the study.

RESULTS

Selection of sources of evidence

In the PubMed search, 5122 articles were identified, of which 200 articles used potentially eligible surveys. Also, in the grey literature search, we identified 221 potential surveys. We combined the results of both searches and after eliminating duplicates, we had a total of 258 surveys (see online supplemental table 2). Figure 1 shows the process of this scoping review and how we yielded a total of 56 national and 13 international surveys that met the inclusion criteria.

Characteristics of national and international surveys

In table 1, we summarised the main information of each survey identified as the country and its income level, name and MHVs. We observed that most national surveys were in UMICs (64%, n=36) than in HIC (27%, n=15) or LMICs (9%, n=5). Only five (7.2%) of the surveys have an annual periodicity, seven surveys have a periodicity of 2–10 years (10.1%) and the vast majority have an unclear periodicity (76.8%, n=53). All national and international surveys identified were cross-sectional (ie, surveys with more than one wave have different cross-sectional samples per wave) and no longitudinal surveys were found (ie, no individual level follow-up). Online supplemental table 2 shows the characteristics of each national and international survey included. The country distribution of the national and international surveys can be seen in figure 2.

Mental health variables

Table 2 shows the frequency of the 10 mental health categories we defined. A total of 95 MHVs were detected and assessed 222 times across surveys (ie, surveys evaluated more than one MHV, so we have more MHVs than the number of surveys). Categories assessed more often were 'Substance use' (n=91/222, 41.0%), whose MHVs more frequent were 'Tobacco consumption' (n=25/222, 11.3%), 'Alcohol consumption' (n=25/222, 11.3%), 'Consumption of psychoactive' (n=16/222, 7.2%); and the category of 'Violence' (n=42/222, 18.9%), whose MHVs more frequent were 'Sexual and intimate partner

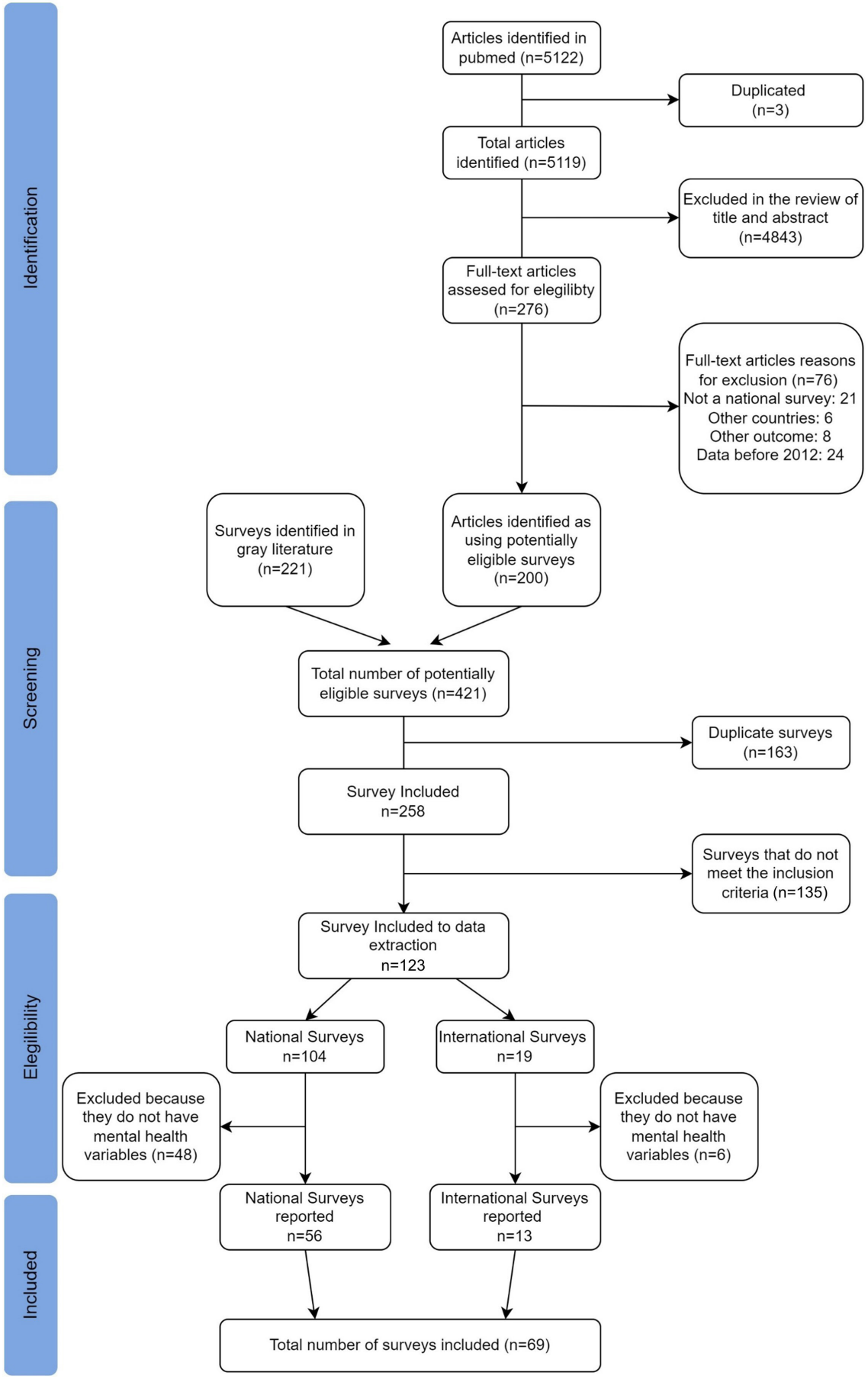

Figure 1 Selection process of the national and international surveys with available mental health variables.

Table 1 Characteristics of national and international surveys

		National		International	
Number of surveys		56		13	
Income	Lower-middle income	5	8.9%	7	53.8%
	Upper-middle income	36	64.3%	13	100.0%
	High income	15	26.8%	10	76.9%
	Unclear	0	0.0%	2	15.4%
Number of variables in mental health		187		35	
Categories	Depression, anxiety and stress	22	11.8%	1	2.9%
	General mental health problems	9	4.8%	2	5.7%
	Mental health services	4	2.1%	0	0.0%
	Neurocognitive and neurological	6	3.2%	0	0.0%
	Other mental disorders	5	2.7%	0	0.0%
	Psychosocial factors that affect mental health	17	9.1%	4	11.4%
	Quality of life	10	5.3%	4	11.4%
	Substance use	77	41.2%	14	40.0%
	Suicidal behaviour	5	2.7%	0	0.0%
	Violence	32	17.1%	10	28.6%
Assessment tools	Psychometric scale	14	7.5%	4	11.4%
	Set of items	54	28.9%	24	68.6%
	Single item	24	12.8%	7	20.0%
	Unclear	95	50.8%	0	0.0%

The information about each survey can be found in the data extracted from national and international surveys (online supplemental table 3).

violence' (n=7/222, 3.2%) and 'Family, domestic, and intra-family violence (everything that is not sexual and intimate partner violence)' (n=4/222, 1.8%) (for more details, see online supplemental table 4).

Assessment tools

The most commonly used MHV assessment tools consisted of set of items, single items and psychometric scales. Also, there is a difference in quantity between the number of assessment tools used (n=222) and the total number of times the surveys assessed the MHVs (n=95) (see table 3) because many surveys measure the same MHV with different assessment tools. Set of items (n=78/222, 35.1%), single items (n=31/222, 14.0%) and only 8.1% of the MHVs were assessed with psychometric scales with local evidence of validity and reliability (n=18/222). These psychometric instruments included the Patient Health Questionnaire (PHQ-9, depression), Apgar-family scale, Alcohol Use Disorders Identification Test-Concise (AUDIT-C) and AUDIT, the Alcohol, Smoking and Substance Involvement Screening Test, DISC (Dominance, Influence, Steadiness and Conscientiousness) Personality Profile, Composite International Diagnostic Interview in its computerised version (CIDI-CAPI) and Binge Eating Disorder Test (EAT-BULIT). Online supplemental table 2 shows which instrument was used in each national and international survey and the links to the official survey report, the survey manual or user guide and the link to download data sets.

Production by country

Mexico (n=15/69, 21.7%) and Colombia (n=11/69, 15.9%) have the highest production in both the national and international surveys. In terms of national surveys, Mexico (n=9/56, 16%), Colombia (n=7/56, 12.5%), Brazil (n=6/56, 10.7%) and Peru (n=5/56, 9%) were at the top. In terms of international surveys, the top countries were Uruguay (n=7/13, 53.8%), Mexico, Chile, Argentina and Honduras (n=6/13, 46.1% each) (see online supplemental table 5). Conversely, we could not find, collect or get access to surveys from the British Virgin Islands, Puerto Rico and St. Maarten.

Sampling design and population

The distribution of surveys' target populations was: general population or adults (n=32/69; 46.4%), adolescents (n=14/69; 20.3%) and women of childbearing age (n=7/69; 10.1%) (see table 3). Less evaluated subpopulations were older adults (n=4/69; 5.8%) and children (n=2/69; 2.9%), whereas other subgroups (n=14/69; 20.3%) included immigrants, inmates, parents with children and others.

For national surveys, the more frequent multistage samplings designs were 'Probabilistic stratified and

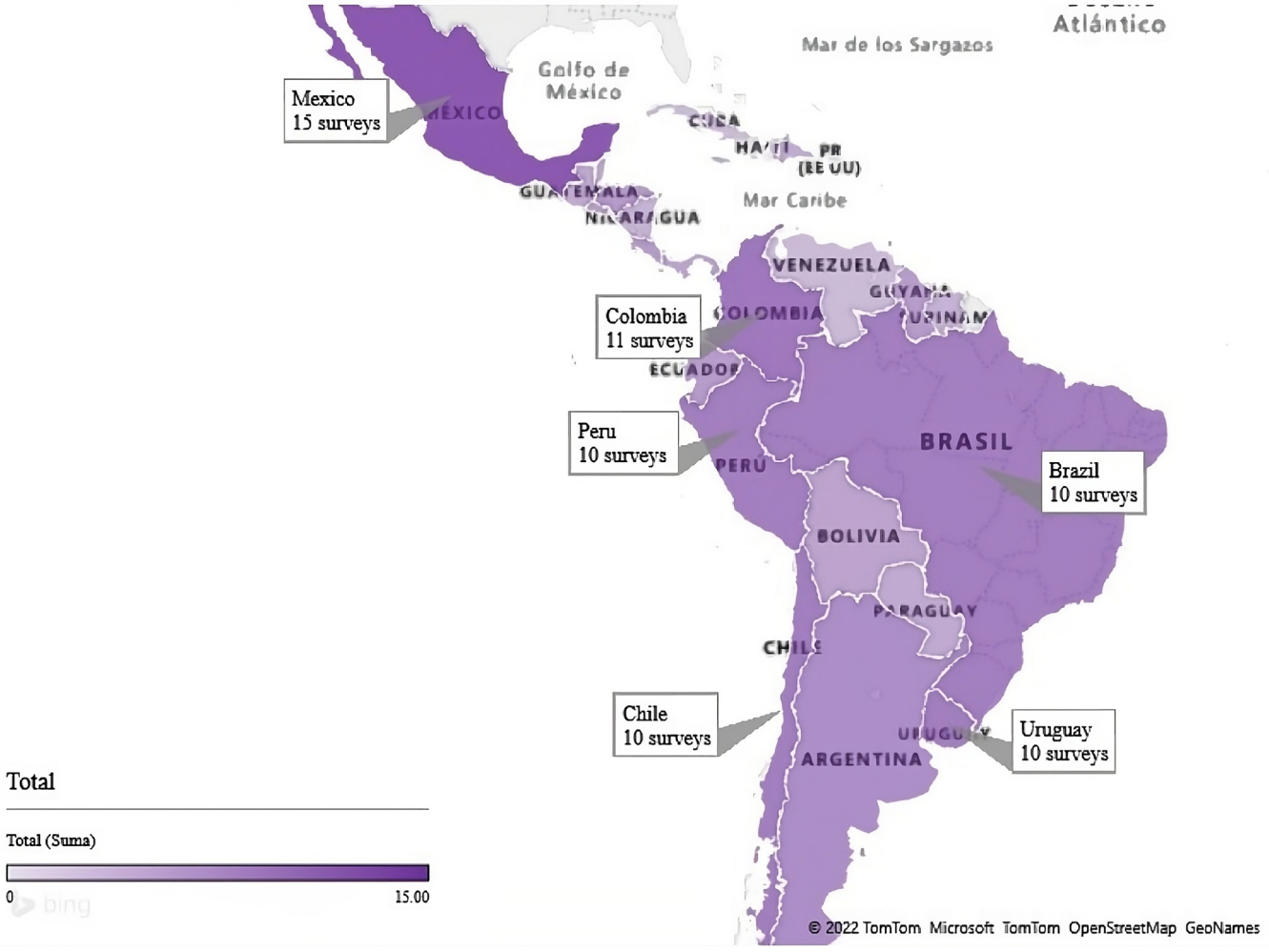

Figure 2 National and international surveys that evaluate mental health variables by country.

cluster sampling' (n=27/69; 39.1%), 'Stratified sampling' (n=17/69; 24.6%) and 'Cluster sampling' (n=8/69; 11.6%). Only one survey did not use census methodology (Her Majesty's Cayman Islands Prison Services Survey). The specific population, sampling design, links for data set and links of user manuals for each survey can be found in online supplemental table 2.

DISCUSSION

We identified a total of 69 representative surveys from LACCs (56 national and 13 international), with data available on 95 MHVs classified into 10 categories. 'Substance use' (assessed in 91 surveys) and 'Violence' (assessed in 42 surveys) were the most prevalent categories. Mexico (15 surveys) and Colombia (11 surveys) were the countries with the highest survey production (64.3%, 36/56 surveys), while the main target population was the adult population (46.4%, 32/69 surveys) and the most frequent sampling design was the 'stratified probability and cluster sampling' (39.1%, 27/69 surveys). Regardless of the evident effort, the monitoring of mental health problems is insufficient for the regional needs. These surveys are not fully in line with the implementation of the Comprehensive Mental Health Action Plan 2013–2030 proposed by the WHO.[18]

Violence and substance abuse are among the top priorities for global mental health. Investigations estimate that 19 million people will be involved in drug abuse by 2030, alerting young persons (between 15 and 34 years old) will be at the highest risk.[19] According to UNESCO's TERCE evaluation performed in 15 LACCs, 16% of parents believed that fighting with weapons was likely or highly likely to happen in their community near the school, while 40% of sixth-grade students reported being victims of at least one form of bullying as hits, threats or being afraid/teased/left out/forced.[20] Another study in 12 LACCs pointed out that most women have experienced physical or sexual violence despite their socioeconomic status.[8] These acts of violence range from occasional to severe long-term, while emotional abuse and controlling behaviours are linked to physical violence by partners. Furthermore, the same source mentions that alcohol consumption plays an important role in triggering intimate partner violence.

Nevertheless, the identified mental health survey data omit variables that are critical for LACCs public

Table 2 Frequency of the categories, MHVs and assessment tools in the identified surveys

N°	Categories	Nª of MHVs (a)	MHVs times assessed (b)	Assessment tools (c)	MHVs more frequent
1	Depression, anxiety and stress	9	National=22 International=1 Total=23	Psychometric scale=2 Set of items=7 Single item=2 Unclear=12	Depression (n=12) Anxiety (n=3) Depressive symptomatology (n=2)
2	General mental health problems	5	National=9 International=2 Total=11	Psychometric scale=1 Set of items=3 Single item=3 Unclear=4	Mental health (n=7)
3	Mental health services	4	National=4 International=0 Total=4	Psychometric scale=0 Set of items=2 Single item=0 Unclear=2	Need for professional help (n=1) Psychiatric care and assistance (mental health) (n=1) Quality of service (n=1) Treatment to reduce or stop the use of alcohol and/or other drugs (n=1)
4	Neurocognitive and neurological	6	National=6 International=0 Total=6	Psychometric scale=1 Set of items=1 Single item=0 Unclear=4	Attention deficit with hyperactivity disorder (n=1) Cognition (n=1) Cognitive exercises (n=1) Cognitive processing (n=1) Cognitive state (n=1) Cognitive evaluation (n=1)
5	Other mental disorders	5	National=5 International=0 Total=5	Psychometric scale=2 Set of items=3 Single item=0 Unclear=0	Body image (n=1) Eating behaviour (n=1) Personality assessment (n=1) Personality disorders (n=1) Schizophrenia (n=1)
6	Psychosocial factors that affect mental health	20	National=17 International=4 Total=21	Psychometric scale=3 Set of items=5 Single item=6 Unclear=7	Mental conditions to perform certain activities (n=2)
7	Quality of life	8	National=10 International=4 Total=14	Psychometric scale=1 Set of items=4 Single item=7 Unclear=2	Level of satisfaction with life (n=6) Psychological well-being (n=2)
8	Substance use	13	National=77 International=14 Total=91	Psychometric scale=6 Set of items=33 Single item=8 Unclear=44	Tobacco consumption (n=32) Alcohol consumption (n=29) Consumption of psychoactives (n=19)
9	Suicidal behaviour	4	National=5 International=0 Total=5	Psychometric scale=0 Set of items=0 Single item=0 Unclear=5	Suicide (n=2)
10	Violence	21	National=32 International=10 Total=42	Psychometric scale=2 Set of items=20 Single item=5 Unclear=15	Family, domestic and intrafamily violence (everything that is not sexual and intimate partner violence) (n=7) Sexual and intimate partner violence (n=9) Bullying (n=5)
	Total	95	National=187 International=35 Total=222	Psychometric scale=18 Set of items=78 Single item=31 Unclear=95	–

(a) MHVs=mental health variables per category. (b) Should be noted that MHVs times assessed is greater than the number of total surveys extracted in this study (n=69), because some surveys assessed more than one MHV. MHVs times assessed is the number of times which a determined MHVs appeared in one survey, we were not considered about how many types of assessment tools that survey used to assess that MHV. (c) Assessment tools is the number of the types of instruments used for MHVs across surveys, taking into account if an MHV in one survey was assessed with different types of instruments.

Table 3 Design of identified national and international surveys

Design	n	%	Probabilistic	Cluster- Stratification	Census
Bi-stage stratified probability sampling.	2	2.9	Yes	Yes	No
Cluster probability sampling.	8	11.6	Yes	Yes	No
Complex sample design (multistage, geographically stratified and probabilistic at all stages).	1	1.5	Yes	Yes	No
Modified probability sampling (the last stage/quota was non-probability).	1	1.5	Yes	Yes	No
Probabilistic area-based, stratified, multistage and independent in each study department.	1	1.5	Yes	Yes	No
Probabilistic stepwise sampling.	1	1.5	Yes	Yes	No
Probabilistic stratified and cluster sampling.	27	39.1	Yes	Yes	No
Probabilistic, multistage, stratified clustered sampling.	1	1.5	Yes	Yes	No
Probabilistic, multistage, stratified sampling.	1	1.5	Yes	Yes	No
Probability sampling by clusters, two-stage and stratified.	1	1.5	Yes	Yes	No
Probability sampling proportional to size (refers to small groups).	1	1.5	Yes	Yes	No
Probability, multistage, stratified, clustered and stratified sample.	1	1.5	Yes	Yes	No
Staggered, stratified and cluster sampling.	1	1.5	Yes	Yes	No
Stratified probability sampling.	17	24.6	Yes	Yes	No
Stratified probability sampling and clustering.	1	1.5	Yes	Yes	No
There was not sampling design, they used the entire population.	1	1.5	No	No	Yes
Tri-stage probability sampling.	2	2.9	Yes	Yes	No
Two-stage, probabilistic, balanced, stratified and independent sample, at the departmental level and by urban and rural area.	1	1.5	Yes	Yes	No

The design of each survey can be found in the data extracted from national and international surveys (online supplemental table 3).

health. Depression and anxiety are the MHVs provoking most disabling conditions in LACCs, being the most prioritised in research on mental health by LMICs.[1–3] Although suicide is the fifth-highest cause of DALYs in the Americas,[21] the category 'Suicidal behavior', which contains self-harm, ideation and others related to suicidal behaviour, was just assessed five times across the 69 surveys found in this study. In comparison with the rest of the world, mental health monitoring in LACCs is extremely limited due to a lack of data. In particular, the most critical mental health issues affecting the Latin American population in the near future (according to WHO and Pan American Health Organization (PAHO)[21]), such as severe mental illness or dementia, cannot be found in most of these surveys.

A solution to this problem depends on the political will and available funds to regularly implement and maintain mental health surveys. However, this interest is still very limited since, in 2020, only 51% of WHO member states reported having mental health policies or plans in line with international and regional human rights instruments—which is below the 80% goal.[18] On average, countries spend 2% of their public budget on public mental health, and the average in LACCs is even lower.[18] In most of the surveys we found, mental health is just a secondary outcome. This can affect data quality when partial or poor-quality measurements are used (eg, a single item). In sum, mental health is not on the agenda of LACC governments.

Surveys presented important differences in MHVs definitions and the evaluation methodology (eg, instrument type, sample design, target population), reducing the alternatives for merging or comparing data across surveys. For example, in most surveys, there were no cut-off points for mild-to-severe symptoms in several mental health disorders raw measures, and only 18/69 surveys used formal psychometric scales. Consequently, the quality of several surveys as reliable tools for mental health assessment is unclear.

Having said that, data harmonisation for regional studies—across several LACCs—is still challenging. Data harmonisation is generally complex and requires lengthy coordination between the different stakeholders. Some previous experiences with international collaborations have proven to be successful; for example, independent research teams ruled by data access agreements and data management committees.[22] With enough government support, private data harmonisation efforts can bring benefits by allowing decision-makers to make more realistic monitoring and evaluations of mental health problems and interventions.[22]

On the other hand, regional and multilateral cooperation play a fundamental role in health decision-making and responding to health threats.[23] Our study did not

evaluate regional surveys, international surveys conducted in specific regions or surveys conducted by HIC on LMIC territories which they have close ties with (eg, surveys conducted by the USA on Puerto Rico). However, there are currently regional efforts to assess the population health LACC, such as surveys in the border areas of Peru, Brazil and Colombia. It is necessary to strengthen such global health initiatives.

Limitations and strengths

Our study had a comprehensive search strategy and followed the recommendations from PRISMA's scoping review research methodology.[14] However, the study has some limitations. First, we performed our search on PubMed only, omitting some local databases such as SciELO, Latindex or LILACS. However, we did perform a grey literature search of institutional websites in each country and of international initiatives such as GHDx and GSHS to identify surveys potentially skipped by the search on PubMed. The grey literature search must equal SciELO, Latindex and LILACS search in terms of survey databases, or at least compensate it enough to ensure that most national databases have been identified and reported. Second, although we tried to create consistent categories for classifying MHVs across all surveys, they may not fully harmonise with the categories originally proposed in some surveys. Third, no data on sample size, sample demographics or missingness were extracted, therefore conclusions and inferences from the study should be cautious. Fourth, some LACCs benefit from close contact with the health, social and educational systems of HICs. For example, Puerto Rico is an organised unincorporated territory with commonwealth status within the USA. Therefore, it is very likely that national surveys in HICs will include assessments of MHVs from this type of LACC territory. However, this is beyond the original aims of the study, so these surveys were not included. Fifth, although we found and described a large number of national and international surveys and were able to characterise the MHVs assessed in them, we omitted some characteristics of the surveys that might be of interest; for example, sample size, demographics or data missingness. However, this information is usually available in the official technical manuals of each survey or can be explored by researchers interested in specific surveys. Regardless of these limitations, we believe the information summarised in this review is quite comprehensive and useful for future research in mental health.

Recommendations

We suggest the creation of multinational technical teams to agree on the common use of mental health tools across national and international surveys; for example, standardised tools for measuring depressive symptoms (Patient Health Questionnaire (PHQ) with 2 or 9 items),[24 25] anxiety (General Anxiety Disorder scale (GAD) with 2 or 7 items)[26] and sleep problems (Jenkins Sleep Scale (JSS) with 4 items).[27] This could be coordinated first among countries that already use standardised instruments, allowing other countries to adopt the same or similar instruments. This way, it is possible to avoid higher costs associated with data collection. An example of successful international cooperation on mental health issues is the Sino-German relationship, which includes legal, technical and ethical arrangements for the exchange of information on national surveys and health services.[28] This type of cooperation can help define standard practices for mental health data harmonisation in LACCs as, for example, the United Nations Economic Commission for Europe did for Time-Use surveys.[29]

We recommend that national and international surveys give priority to collecting data related to the gaps in mental, neurological and substance use disorders in non-specialised healthcare settings (mental health Gap Action Programme (mhGAP)), as proposed by the WHO.[30] For example, depression, psychoses, epilepsy, child and adolescent mental and behavioural disorders, dementia, disorders due to substance use or suicide are conditions that need more homogeneous and constant monitoring at the regional level. With a better follow-up, it will be possible to detect the priorities for national and regional public health measures, tackling those that cause the greatest disability while being able to perform proper evaluations on mental health interventions (eg, using survey data regularly collected).

As mentioned above, international cooperation is strongly recommended to allow future data harmonisation across national surveys, facilitating analyses and mental health monitoring at a regional level (ie, LACCs as a whole). An international commission could ensure not only data integration but also open access and technical support to strategic stakeholders (eg, World Bank, PAHO, WHO). This commission could take the shape of a Latin American mental health observatory, following models from other experiences such as the 'Observatory of Health Systems and Policies' in Europe,[31] or the 'National Mental Health Observatory' in Colombia.[32] These observatories provide reliable and on-time information on health by monitoring health indicators trends, performing impact evaluation of health policies and interventions and producing technical documents for decision-makers and reports for a bigger audience.

Researchers interested in analysing these data are encouraged to first download the official manuals and reports from the links provided in online supplemental table 3. When using more than one database at a time, consider differences in sampling procedures and weights, or that some variables are not directly comparable/fissionable (eg, raw scales from different depression tests). In general, a formal data harmonisation process is required.[33 34] Data harmonisation processes between different surveys, or between historical data from the same survey, would inform public and global mental health decision-making. We suggest reviewing the tutorial by Zhao *et al* as an example of data harmonisation with complex sampling.[35]

Conclusions

This scoping review identified a total of 69 representative surveys from LACCs (56 national and 13 international) since 2012, with data available on 95 MHVs classified into 10 categories. Among these categories, 'Substance use' (assessed in 91 surveys) and 'Violence' (assessed in 42 surveys) were the most prevalent. Mexico (15 surveys) and Colombia (11 surveys) were the countries with the highest survey production (64.3%, 36/56 surveys). The main target population was the adult population (46.4%, 32/69 surveys) and the most frequent sampling design was the 'stratified probability and cluster sampling' (39.1%, 27/69 surveys). We provide links to the providers of these survey data and technical information to facilitate future research in mental health at a regional level.

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Contributors DV-Z, FR-B and JCB-A had the idea. FR-B and RV-V wrote the protocol. FR-B and DV-Z designed the search strategy. FR-B conducted the search in PubMed, and MC-A, SO-A, GA-H, JA-M, ABR-C and AH-SC screened and selected the potentially relevant articles. RV-V and JF-Q searched for surveys with the volunteer team (including EC-H, MR-M, WS-V and CQ-C). MC-A, SO-A, GA-H, JA-M, ABR-C, AH-SC, EC-H, MR-M, WS-V and CQ-C selected and extracted the surveys. FR-B, RV-V, MC-A, SO-A, AH-SC, MR-M and WS-V collaborated in the formal analysis and visualisation. JA-M structured discussion ideas, while MC-A, GA-H, EC-H, RV-V, JF-Q and AH-SC provided the information required. GA-H and EC-H support the publication of the study through the search for a journal and its editorial politics. Finally, FR-B and RV-V wrote the first draft of the manuscript and edited tables, figures and supplementary materials. DV-Z and JCB-A performed multiple revisions and editions to improve the full manuscript. Additionally, FR-B primarily supervised activities, monitored due dates, updated the timeline and scheduled the meetings. All authors have critically reviewed the manuscript, contributed to subsequent iterations, and take responsibility for all content presented in this paper. DV-Z is responsible as guarantor for the entire content.

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SUPPLEMENTAL FILE 1: FULL ELIGIBILITY CRITERIA

Data available on mental health in national surveys in Latin American and Caribbean countries: A scoping review

SECTION 1 - IDENTIFICATION

SECTION 1.1 - DATABASE STRATEGY

Objective:

- Detect potentially relevant surveys through Pubmed articles.

Unit to be assessed: Study downloaded from Pubmed through the search strategy in ScR protocol

Stage 1.1.1. Screening (titles & abstracts)

- ***Inclusion:*** It has to be all the criteria for inclusion. If any of the criteria are not clear, include it for further revision at the full-text stage.
    1. The survey has been reported from 2012 onwards.
    2. The study uses data from a national survey - applied to a population or sub-population (geographic, age, or otherwise categorized groups), native or foreign - conducted by the national government or internationally aligned by a public or private entity.
    3. The national survey referred to in the article, pertains to one country in Latin America & the Caribbean (World Bank, 2020). The list is as follows: Antigua and Barbuda, Curacao, Paraguay, Argentina, Dominica, Peru, Aruba, Dominican Republic, Puerto Rico, Bahamas, Ecuador, Sint Maarten, Barbados, El Salvador, St. Kitts and Nevis, Belize, Grenada, St. Lucia, Bolivia, Guatemala, St. Martin, Brazil, Guyana, St. Vincent and the Grenadines, British Virgin Islands, Haiti, Suriname, Cayman Islands, Honduras, Trinidad and Tobago, Chile, Jamaica, Turks and Caicos Islands, Colombia, Mexico, Uruguay, Costa Rica, Nicaragua, Venezuela, Cuba, Panama, and the Virgin Islands.
    4. The article mentions variables from the national survey that are mental health or factors associated with mental health, such as quality of life, well-being, addictions, physical activity, family violence, developmental and mental dx, among others.
        1. In the protocol, this criterion appears "as a state of well-being (World Health Organization and Pan American Health Organization, 2014) or as mental, neurological, and substance use disorders (World Bank, 2016)".
- ***Exclusion:*** Fulfilling 1 or more criteria leads to exclusion…If any of the criteria are not clear, include them for further revision at the full-text stage.
    a. **Exclusion reasons in Rayyan:** Labels that have to be used in Rayyan.
        i. Not a national survey:
            1. The article does not mention a national survey. Other, the data collected from the survey is only at the departmental, district, regional, or any other level that is different from the national level.
            2. It is a global or international database that uses information from national surveys that could be relevant to the study, either because it mentions one or all of the

characteristics of the inclusion criteria of the previous stage (Screening Titles & Abs). In this case, before excluding the name is noted and sent to the grey literature search group via Francesca.

ii. Other countries: The survey is from other countries outside LA&C or has combined data.

iii. Other outcomes: the outcome mentioned in the survey is not related to mental health.

iv. Data before 2012: The data collected by the national survey mentioned is before 2012.

Stage 1.1.2. Full-text

- ***Inclusion:*** All the criteria

1. ***Inclusion:*** Must be all criteria for inclusion
    1. The study uses data from a national survey - applied to a population or sub-population, native or foreign - conducted by the national government or internationally aligned by a public or private entity.
    2. The national survey referred to in the article, pertains to one country in Latin America & the Caribbean (World Bank, 2020). The list is as follows: Vincent and the Grenadines, British Virgin Islands, Haiti, Suriname, Cayman Islands, Honduras, Trinidad and Tobago, Chile, Jamaica, Turks and Caicos Islands, Colombia, Mexico, Uruguay, Costa Rica, Nicaragua, Venezuela, Cuba, Panama, and the Virgin Islands.
    3. The article mentions variables from the national survey that are mental health or factors associated with mental health, such as quality of life, well-being, addictions, physical activity, family violence, developmental and mental dx, among others.
        1. In the protocol, this criterion appears as "as a state of well-being (World Health Organization and Pan American Health Organization, 2014) (27) or as mental, neurological and substance use disorders (World Bank, 2016)".
    4. The survey has been reported from 2012 onwards.

- ***Exclusion:*** 1 or more criteria lead to exclusion. If the criteria are not clear or are not mentioned in the study, identify the survey name to be reviewed at the next stage.

1. **Exclusion reasons in Rayyan:**
    1. Full text is not available.
    2. Not a national survey:
        1. The article does not mention a national survey. Another, the data collected from the survey is only at the departmental, district, regional, or any other level that is different from the national level.
        2. A global or international database that uses information from national surveys that could be relevant to the study, either because it mentions one or all of the characteristics of the inclusion criteria of the previous stage (Screening Titles & Abs). In this case, before the exclusion, the name is noted and sent to the grey literature search group via Francesca.
        3. The above-mentioned survey has combined data with countries outside LA&C in such a way that it is notorious that they cannot be separated.
    3. Other countries: The survey is from other countries outside LA&C or has combined data.
    4. Other outcomes: The outcome mentioned in the survey is not related to mental health.
    5. Data before 2012: The data collected by the above-mentioned national survey is before 2012.

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SECTION 1.2 – SEARCH GRAY LITERATURE

Objective:

- Looking directly for national surveys and then reviewing in more detail (in another block) whether they will be eligible for the study.

Unit to search and assess: National survey (grey literature): name, year, URL.

Stage 1.2.1. Search & screening procedures:

- In the gray literature search (composed by Google search of English terms, screening LCCs institutional pages, and searching in relevant databases) we look for only the description, name, keywords, and other relevant information to be reviewed.
- The filtering tool provided by the database is used.
- If the criteria are not clearly expressed, move the survey to the next stage for review.

1. ***Inclusion***: All the criteria
    a. The survey has been reported from 2012 onwards.
    b. Is a national survey - applied to a population or sub-population (geographic, age, or otherwise categorized groups), native or foreign - conducted by the national government or internationally aligned by a public or private entity.
    c. Conducted in at least 1 country in Latin America & the Caribbean (World Bank, 2021): Antigua and Barbuda, Curaçao, Paraguay, Argentina, Dominica, Peru, Aruba, Dominican Republic, Puerto Rico, Bahamas, Ecuador, Sint Maarten, Barbados, El Salvador, St. Vincent, and the Grenadines, British Virgin Islands, Haiti, Suriname, Cayman Islands, Honduras, Trinidad, and Tobago, Chile, Jamaica, Turks and Caicos Islands, Colombia, Mexico, Uruguay, Costa Rica, Nicaragua, Venezuela, Cuba, Panama, and the Virgin Islands.
    d. The survey measures variables that are mental health or factors associated with mental health, such as quality of life, well-being, addictions, physical activity, family violence, developmental and mental dx, among others.

2. ***Exclusion:*** One or more is considered an exclusion.
    a. Not a national survey. The survey only refers to the departmental, district, regional, or any other level that is different from the national level
    b. It has data combined with countries outside LA&C in such a way that it cannot be separated.
    c. Other countries. The survey is from other countries outside LA&C.
    d. Outcomes mentioned in the survey are not related to mental health, violence or drug abuse.
    e. Data before 2012.

Surveys will be detected from both search strategies. Subsequently, the materials (report/inform, manual guide, database) will be searched to select the surveys to be extracted.

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SECTION 2 - SELECTION

General procedures

- Surveys are divided into national and global surveys for their review, registered in different excel sheets.
- Additional research of materials and contact with institutions is done.
- The review process for selection was done by 3 reviewers to avoid mistakes and subjectivity of criteria related to variables.
- Additionally, a second review stage will be added for those surveys that have been rejected in the first review. This is to corroborate that the decision of the first reviewer was correct and to avoid false negatives.
- All surveys that meet the inclusion criteria pass the next stage.

- **Inclusion:** Must meet all criteria
    1. The survey collects data related to mental health or factors associated with mental health, such as quality of life, well-being, addictions, physical activity, family violence, developmental and mental dx, among others. The verification is also done through psychometric instruments used, questions adapted or created by the survey itself. For this criterion, the questions and/or answers of the survey are taken into account.
        a. Mental health refers to variables from the national survey that is mental health or factors associated with mental health, such as quality of life, well-being, addictions, physical activity, family violence, developmental and mental health dx, among others.
        b. In the protocol, this criterion appears "as a state of well-being (World Health Organization & Pan American Health Organization, 2014) or as Mental, Neurological, and Substance Use Disorders (The World Bank, 2016)".
    2. It is from 2012 onwards.
    3. Conducted in at least 1 country in Latin America & the Caribbean (World Bank, 2021): Antigua and Barbuda, Curaçao, Paraguay, Argentina, Dominica, Peru, Aruba, Dominican Republic, Puerto Rico, Bahamas, Ecuador, Sint Maarten, Barbados, El Salvador, St. Vincent, and the Grenadines, British Virgin Islands, Haiti, Suriname, Cayman Islands, Honduras, Trinidad, and Tobago, Chile, Jamaica, Turks and Caicos Islands, Colombia, Mexico, Uruguay, Costa Rica, Nicaragua, Venezuela, Cuba, Panama, and the Virgin Islands.
    4. Nationally government-led or internationally aligned by a public or private entity and refer to national population or sub-population (e.g. women of childbearing age in Peru, male drug users in Brazil, etc.).
- ***Exclusion:*** One or more is considered an exclusion.
    1. Despite contacting the appropriate person, none of the 3 documents - report, survey manual, and data set - are accessible (We cannot check if it assesses mental health if we cannot access the report, manual or data set or some document that gives an idea of what is in it).
    2. Mental health data collection is unclear or inconsistent, after discussion with the team.
    3. Not a national survey. The survey only refers to the departmental, district, regional, or any other level that is different from the national level
    4. It has data combined with countries outside LA&C in such a way that it cannot be separated.
    5. Other countries. The survey is from other countries outside LA&C.
    6. Outcomes mentioned in the survey are not related to mental health, violence, or drug abuse.
    7. Data before 2012.

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SECTION 3 - DATA EXTRACTION

General information

- Previous extraction and other reviewer procedures was done for complete missed information.
- Decision conflicts were solved for the team and team of reviewers.
- The final and approved version of the extraction sheet
    - For national surveys: https://docs.google.com/forms/u/1/d/1_SajrUjGXz2ol8Wr2DZ1u-TG2B3GTORDdR6aWFDWyLo/edit
    - For global surveys:
        - https://docs.google.com/forms/u/1/d/1TQ2LHe9BYmbmOwy1vVkLf6-7dgsv3kUp28ZkNc8RhaI/edit
- **Inclusion criteria:**
    1. Sufficient data for extraction forms:
        a. Nacional: Country name, survey name, year, URL, information about population and sampling, variables information (items, etc.)
        b. Global: institution and name of the survey, countries included, URL, information about population and sampling, variables information (items, etc.).
    2. All material complete or all necessary for extraction forms.
    3. Include all criteria of previous stages.
        a. Nacional representation: probability sampling design.
        b. Mental health, violence, substance use o associated variables.
        c. Data from 2012 onwards.
        d. Include at least one country in Latin America and the Caribbean.
- **Exclusion criteria:**
    1. Surveys with insufficient data for complete extraction form.
    2. Not have 1 or more criteria of previous stages:
        a. Not Nacional representation
        b. Not Mental health, violence, substance use o associated variables.
        c. Data before 2012.
        d. Not including at least one country in Latin America and the Caribbean.

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Supplemental file 2. Search strategy in Pubmed.

Date of search: July 7, 2021 - 10:22 hours (UTC -5)

N°	Search strategy	Records
#1	“mental health”[tiab] OR “psychological health”[tiab] OR “Mental health” [Mesh] OR "Behavioral Symptoms"[Mesh] OR "Mental Disorders"[Mesh] OR "Psychiatric disease"[tiab] OR "mental disorder*"[tiab]	1,666,505
#2	"eating disorder*"[tiab] OR "anorexia nervosa"[tiab] OR bulimi*[tiab] OR "binge eat*"[tiab] OR "self injur*"[tiab] OR "self mutilat*"[tiab] OR suicid*[tiab] OR parasuicid*[tiab] OR "mood disorder*"[tiab] OR "affective disorder*"[tiab] OR "bipolar*"[tiab] OR "adjustment disorder*"[tiab] OR "body dysmorphi*"[tiab] OR "conversion disorder*"[tiab] OR "chronic fatigue*"[tiab] OR "affective symptom*"[tiab] OR violence[tiab] OR Depress*[tiab] OR dysthymi*[tiab] OR melancholia*[tiab] OR anxiet*[tiab] OR Hypervigilance[tiab] OR Nervousness[tiab] OR Agoraphobia[tiab] OR Catastrophiz*[tiab] OR Phobi*[tiab] OR Panic*[tiab] OR Stress*[tiab] OR Distress*[tiab] OR Post-Traumatic[tiab] OR Posttraumatic[tiab] OR Emotional Adjustment[tiab] OR "Emotional Adaptation"[tiab] OR "Psychological Adjustment"[tiab] OR "Psychological Adaptation"[tiab] OR "Psychological Adaptation"[tiab] OR "Adaptive Behavior"[tiab] OR "Depressive Disorder"[mesh] OR "Anxiety Disorders"[mesh] OR "Anxiety"[mesh] OR "Agoraphobia"[mesh] OR "Phobic Disorders"[mesh] OR "Panic"[mesh] OR "Stress Disorders, Traumatic"[mesh] OR "Stress Disorders, Post-Traumatic"[mesh] OR "Stress, Psychological"[mesh] OR "Adaptation, Psychological"[mesh] OR "Psychological Distress"[mesh] OR "General Adaptation Syndrome"[mesh] OR "Adjustment Disorders"[mesh]	1,971,459
#3	“health survey*”[tiab] OR “national survey*”[tiab] OR “mental health survey*”[tiab] OR "Censuses"[Mesh] OR "Health Status"[Mesh] OR"Cross-Sectional Studies"[Mesh] OR "Health Surveys"[Mesh] OR "Behavioral Risk Factor Surveillance System"[Mesh] OR "Health Status Indicators"[Mesh] OR “Population Surveillance”[Mesh]	1,234,841
#4	“Caribbean island*”[tiab] OR “hispanic countr*”[tiab] OR “Central America*”[tiab] OR “South America*”[tiab] OR “Latin American and the Caribbean*”[tiab] OR "Indigenous Peoples"[Mesh] OR “Antigua and Barbuda”[tiab] OR Curacao[tiab] OR Paraguay[tiab] OR Argentina[tiab] OR Dominica[tiab] OR Peru[tiab] OR Aruba[tiab] OR “Dominican Republic”[tiab] OR “Puerto Rico”[tiab] OR Bahamas[tiab] OR Ecuador[tiab] OR “Sint Maarten”[tiab] OR Barbados[tiab] OR “El Salvador”[tiab] OR St. Kitts[tiab] OR Nevis[tiab] OR Belize[tiab] OR Grenada[tiab] OR St. Lucia[tiab] OR Bolivia[tiab] OR Guatemala[tiab] OR St. Martin[tiab] OR Brazil[tiab] OR Guyana[tiab] OR St. Vincent[tiab] OR “the Grenadines”[tiab] OR “British Virgin Islands”[tiab] OR Haiti[tiab] OR Suriname[tiab] OR “Cayman Islands”[tiab] OR Honduras[tiab] OR “Trinidad and Tobago”[tiab] OR Chile[tiab] OR Jamaica[tiab] OR Turks[tiab] OR “Caicos Islands”[tiab] OR Colombia[tiab] OR Mexico[tiab] OR Uruguay[tiab] OR Costa Rica[tiab] OR Nicaragua[tiab] OR Venezuela[tiab] OR Cuba[tiab] OR Panama[tiab] OR “Virgin Islands”[tiab] OR "Hispanic Americans"[Mesh] OR "Latin America"[Mesh]	296,687
#5	(#1 OR #2) AND #3 AND #4	8,460
#6	(#1 OR #2) AND #3 AND #4 AND (2012:2021[pdat])	5,122

Supplemental file 3. National surveys extraction tool

1. GENERAL INFORMATION

Extractor's name*
- Juan AM
- Milagros CA
- Guillermo
- Sharlyn
- Wildo
- Joel
- Camilo
- Esthefani
- Melanie
- Alejadra
- Others: _____

Country*: _____

Name of the surveys and institution responsible*: _____

Last year*
Indicate the last year in which the measurement was performed. For example: 2021, 2020, 2019. Only enter the last year of measurement being collected. If you have different years per survey, specify the year of the most recent survey.
_____

Language*
1. Spanish
2. Portuguese
3. English
4. French
5. Others: _____

Periodicity*
How often is the national survey conducted?
0. It is not clear (or if the periodicity is variable. E.g: every 2 years, then every 4 and every 3 years).
1. Biannual
2. Annual
3. Semiannual
4. Four-monthly
5. Three-monthly
6. Others: _____

Links*
Add, if available, the link to the manual, report, report, and database.
_____

Observations*

If you have any observation, precision, comment or detail that seemed important to you about the general characteristics of the survey, please mention it. If there is nothing, place a hyphen. Example: " - "

_____

2. POPULATION & DESIGN

Sample design*

0. Unclear
1. Stratified probability sampling
2. Probabilistic sampling by clusters (cluster)
3. Stratified probability sampling and clustering
4. Systematic probability sampling

Others: _____

Target population*

0. Unclear
1. General population
2. Subpopulation

Others: _____

If subpopulation, specify

Teenagers
Older adults
Population with physical disabilities
Women of childbearing age
Adult males only
Adult females onlys adultas
Others: _____

Observations*

If you have any observation, precision, comment or detail that seemed important to you about the population characteristics of the survey or data collection, mention it. If there is nothing, place a hyphen. Example: " - "

_____

3. MENTAL HEALTH VARIABLE(S)

The criterion for the mental health variable is based on...*

1. What the technical document of the survey states
2. Conceptualization of the person doing the extraction.

The variable is*

0. Unclear
1. Depression
2. Anxiety
3. Dementia
4. Sexual and intimate partner violence
5. Family, domestic and intra-family violence (not sexual and intimate partner violence).
6. Alcohol consumption
7. Tobacco use
8. Consumption of other psychoactive substances
9. Bullying
10. Psychological well-being

Others: _____

Type of assessment tool*

0. Unclear
1. Psychometric scale
2. Single item
3. Set of items
Others: _____

Observations*

If you have any observation, precision, comment or detail that seemed important to you about the Mental Health Variable or the type of assessment used, mention it. If there is nothing, place a hyphen. Example: " - "

Supplemental file 4. International surveys extraction tool

1. GENERAL INFORMATION

Name of the person extracting the data*

Wildo
Joel
Camilo
Esthefani
Melanie

Name of the survey and responsible institution*

_____

Country included in the assessment*

Antigua y Barbuda
Argentina
Aruba
Bahamas
Barbados
Belice
Bolivia
Brasil
Chile
Colombia
Costa Rica
Cuba
Curazao
Dominica
Ecuador
El Salvador
Granada
Guatemala
Guyana
Haití
Honduras
Islas Caimán
Islas Turcas y Caicos
Islas Vírgenes
Islas Vírgenes Británicas
Jamaica
México
Nicaragua
Panamá
Paraguay
Perú
Puerto Rico
República Dominicana
San Martín
San Vicente y las Granadinas
Santa Lucía
Sint Maarten
St. Kitts y Nevis
Surinam,
Trinidad y Tobago

Uruguay
Venezuela
Antigua y Barbuda
Argentina
Aruba
Bahamas
Barbados
Belice
Bolivia
Brasil
Chile
Colombia
Costa Rica
Cuba
Curazao
Dominica
Ecuador
El Salvador
Granada
Guatemala
Guyana
Haití
Honduras
Islas Caimán
Islas Turcas y Caicos
Islas Vírgenes
Islas Vírgenes Británicas
Jamaica
México
Nicaragua
Panamá
Paraguay
Perú
Puerto Rico
República Dominicana
San Martín
San Vicente y las Granadinas
Santa Lucía
Sint Maarten
St. Kitts y Nevis
Surinam,
Trinidad y Tobago
Uruguay
Venezuela

Language(s)*

1. Spanish
2. Portuguese
3. English
4. French

Others: _____

Periodicity*

0. Unclear (o si la periodicidad es variable. Pj cada 2 años, luego cada 4 y cada 3 años)

1. Biannual
2. Annual
3. Semiannual
4. Four-monthly
5. Three-monthly

Others: _____

Links*

Add, if available, the link to the manual, report, report, and database.

_____

Observations*

If you have any observation, precision, comment or detail that seemed important to you about the general characteristics of the survey, please mention it. If there is nothing, place a hyphen. Example: " - "

_____

2. POPULATION & DESIGN

Sample design*

0. Unclear
1. Stratified probability sampling
2. Probabilistic sampling by clusters (cluster)
3. Stratified probability sampling and clustering
4. Systematic probability sampling

Others: _____

Target population*

0. Unclear
1. General population
2. Subpopulation

Others: _____

If subpopulation, specify

Teenagers
Older adults
Population with physical disabilities
Women of childbearing age
Adult males only
Adult females onlys adultas

Others: _____

Observations*

If you have any observation, precision, comment or detail that seemed important to you about the population characteristics of the survey or data collection, mention it. If there is nothing, place a hyphen. Example: " - "

_____

3. MENTAL HEALTH VARIABLE(S)

The variable is

0. Unclear
1. Depression
2. Anxiety
3. Dementia
4. Sexual and intimate partner violence
5. Family, domestic and intra-family violence (not sexual and intimate partner violence).

6. Alcohol consumption
7. Tobacco use
8. Consumption of other psychoactive substances
9. Bullying
10. Psychological well-being

Others: _____

Type of assessment tool*

Señalar si la herramienta utilizada para la evaluación es

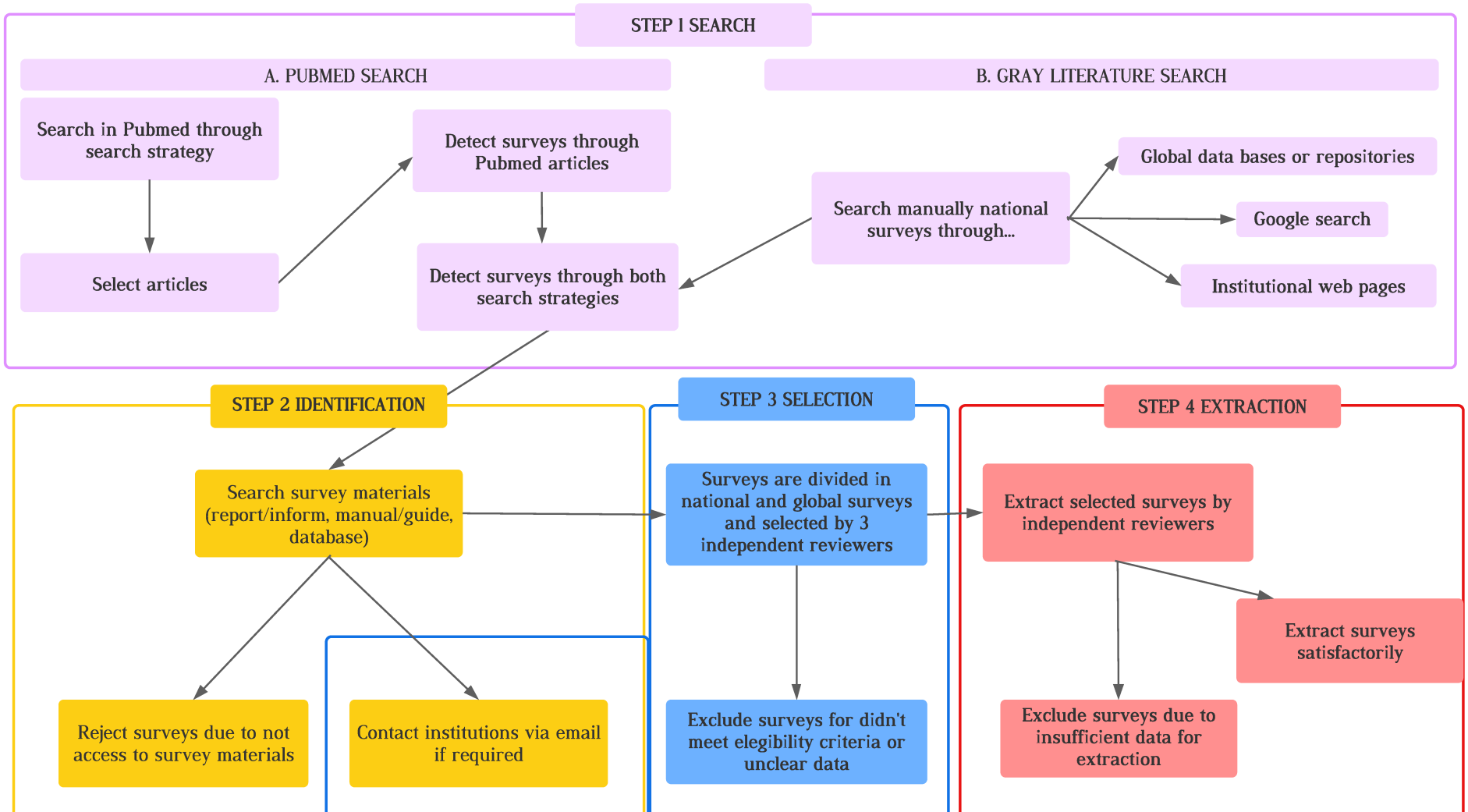
0. Unclear
1. Psychometric scale
2. Single item
3. Set of items

Others: _____

Observations*

If you have any observation, precision, comment or detail that seemed important to you about the Mental Health Variable or the type of assessment used, mention it. If there is nothing, place a hyphen. Example: "-"

_____


STEP 1 SEARCH
A. PUBMED SEARCH
B. GRAY LITERATURE SEARCH
Search in Pubmed through search strategy
Select articles
Detect surveys through Pubmed articles
Detect surveys through both search strategies
Search manually national surveys through...
Global data bases or repositories
Google search
Institutional web pages
STEP 2 IDENTIFICATION
Search survey materials (report/inform, manual/guide, database)
Reject surveys due to not access to survey materials
Contact institutions via email if required
STEP 3 SELECTION
Surveys are divided in national and global surveys and selected by 3 independent reviewers
Exclude surveys for didn't meet elegibility criteria or unclear data
STEP 4 EXTRACTION
Extract selected surveys by independent reviewers
Extract surveys satisfactorily
Exclude surveys due to insufficient data for extraction

Supplemental Table 3. Codebook mental health variables and categories.

N°	Category	Concept	Mental Health Variables
1	Depression, anxiety and stress	Refers to indicators of mood [affective] disorders, and indicators of anxiety, dissociative, stress-related, somatoform and other non-psychotic mental disorders. The indicators are consistent with ICD-10 codes F30 to F48.	Agoraphobia
			Anxiety
			Depression
			Depressive symptomatology
			Mania
			Perceived stress
			Postpartum depression
			Prevalence of Dx and treatment of epilepsy, anxiety, depression or other mental health disorders.
			Social phobia
2	General mental health problems	Refers to behavioral or mental patterns that cause significant distress or dysfunction. Most disorders described in diagnostic manuals are included.	General health (including physical and mental health)
			Mental health
			Mental health in children
			Mental illness
			Mental state
3	Mental health services	They refer to variables that mainly measure mental health service characteristics: screening, service attendance, interventions received or mention of some other procedure.	Need for professional help
			Psychiatric care and assistance (Mental Health)
			Quality of service
			Treatment to reduce or stop the use of alcohol and/or other drugs
4	Neurocognitive and neurological	Refers to cognitive assessment problems, intellectual disabilities, and pervasive and specific developmental disorders. The indicators are consistent with ICD-10 codes F70 to F89.	Attention deficit with hyperactivity disorder
			Cognition
			Cognitive exercises
			Cognitive processing
			Cognitive state
			Cognitve evaluation
5	Other mental disorders	Refers to other indicators of mental health problems that have been assessed only once or twice. This includes eating problems, personality problems or schizophrenia.	Body imagen
			Eating behavior
			Personality assessment
			Personality desorders
			Schizophrenia
6	Psychosocial factors that affect mental health	It refers to aspects that link the person with his or her environment at both micro and macro levels. It highlights those that may have an impact on mental health, such as vital or conjunctural events.	Assessment of children's socio-emotional development
			Assessment of family functioning
			Concern about being out of work
			Disability
			Discrimination
			Family integration
			Fear of covid
			Household coexistence in the context of the health emergency
			Interpersonal relationships
			Lifestyle (Physical activity)
			Mental conditions to perform certain activities
			Mental disability
			Psychological and/or physical disability
			Psychosocial
			Risk and protective factors for chronic non-communicable diseases
			Risk factors, processes of care in the health system and prevalence of the main NCDs
			Sexual and reproductive health
			Social support
			Stress-generating life events
			Supports, confidence, security, participation, participation, discrimination
7	Quality Of Life	Category that includes different aspects of a person's life. According to WHO (1994) it is defined as the person's perception of his or her position in life within a context. It may include the evaluation of personal aspects such as life satisfaction, health status and environmental aspects such as support networks. It also includes aspects of accessibility and others that may affect the quality of life in an integral way.	Accessibility (physical and/or intellectual disability, mental and behavioral disorders) -Quality of life
			Difficulty in performing activities
			Health satisfaction
			Level of satisfaction with life
			Limitations by thoughts, feelings, emotions or behaviors - Interpersonal relationships
			Psychological well-being
			Quality Of Life

			Self-perception, subjective wellbeing, quality of relationships
8	Substance use	Includes all variables that refer to the use of any substance, whether legal or not. The use or abuse of legal substances such as tobacco, alcohol or the use of medicines without medical prescriptions. It also includes the use of illegal substances and hallucinogens. The indicators are consistent with ICD-10 codes F10 to F19.	Alcohol consumption
			Cigarettes, alcohol and other drugs
			Cocaine use
			Consumption of basuco
			Consumption of ecstasy
			Consumption of glues, solvents and paints
			Consumption of LSD
			Consumption of marijuana
			Consumption of psychoactives
			Consumption of Tranquilizers and stimulants without medical prescription
			Perceived risk of drug use
			Tobacco consumption
			Use of tranquilizers and painkillers without a prescription
9	Suicidal behaviour	They include variables that refer to different behaviors aimed at harming or ending one's own life. These can range from suicidal ideation, suicide planning, suicide attempt and self-injury, and finally to death by suicide. The indicators are consistent with ICD-10 codes T83, T14.9, Z91.5	Family suicide attempt
			Suicidal ideation
			Suicide
			Suicide and self-harm
10	Violence	It includes variables that refer to violence as the deliberate use of physical force or power against another person, group or community that causes or is likely to cause harm, deprivation or death (WHO, 2002). This harm may be physical or psychological.	Abandonment and neglect by parents
			Abuse
			Abuse and violence
			Attitudes and experiences on violence, including intra-family violence,
			Being victim of a crime
			Bullying
			Child labor (Child violence)
			Child sexual abuse and violence
			Domestic violence, intimate partner violence and child discipline
			Emotional violence
			Family, domestic and intra-family violence (everything that is not sexual and intimate partner violence)
			Family, domestic and intra-family violence (everything that is not sexual and intimate partner violence).
			Inceidence of controlling behavior,emotional abuse
			Personal violence
			Physical and sexual abuse
			Physical violence
			Sexual and intimate partner violence
			Sexual violence
			Unspecified violence
			Violence
			Violence in prison

Supplemental Table 4. Mental health variables available identified.

N°	Category	Mental Health Variables	Number of variables in the national survey	Number of variables in the international survey	Total number of the variable
1	Depression, anxiety and stress (n=23)	Agoraphobia	1	0	1
		Anxiety	3	0	3
		Depression	12	0	12
		Depressive symptomatology	2	0	2
		Mania	1	0	1
		Perceived stress	1	0	1
		Postpartum depression	0	1	1
		Prevalence of Dx and treatment of epilepsy, anxiety, depression or other mental health disorders.	1	0	1
		Social phobia	1	0	1
2	General mental health problems (n=11)	General health (including physical and mental health)	0	1	1
		Mental health	6	1	7
		Mental health in children	1	0	1
		Mental illness	1	0	1
		Mental state	1	0	1
3	Mental health services (n=4)	Need for professional help	1	0	1
		Psychiatric care and assistance (Mental Health)	1	0	1
		Quality of service	1	0	1
		Treatment to reduce or stop the use of alcohol and/or other drugs	1	0	1
4	Neurocognitive and neurological (n=6)	Attention deficit with hyperactivity disorder	1	0	1
		Cognition	1	0	1
		Cognitive exercises	1	0	1
		Cognitive processing	1	0	1
		Cognitive state	1	0	1
		Cognitive evaluation	1	0	1
5	Other mental disorders (n=5)	Body imagen	1	0	1
		Eating behaviour	1	0	1
		Personality assessment	1	0	1
		Personality disorders	1	0	1
		Schizophrenia	1	0	1
6	Psychosocial factors that affect mental health (n=21)	Assessment of children's socio-emotional development	1	0	1
		Assessment of family functioning	1	0	1
		Concern about being out of work	0	1	1
		Disability	1	0	1
		Discrimination	1	0	1
		Family integration	1	0	1
		Fear of covid	0	1	1
		Household coexistence in the context of the health emergency	1	0	1
		Interpersonal relationships	0	1	1
		Lifestyle (Physical activity)	1	0	1
		Mental conditions to perform certain activities	1	1	2
		Mental disability	1	0	1
		Psychological and/or physical disability	1	0	1
		Psychosocial	1	0	1
		Risk and protective factors for chronic non-communicable diseases	1	0	1
		Risk factors, processes of care in the health system and prevalence of the main NCDs	1	0	1
		Sexual and reproductive health	1	0	1
		Social support	1	0	1
		Stress-generating life events	1	0	1
		Supports, confidence, security, participation, participation, discrimination	1	0	1

7	Quality Of Life (n=14)	Accessibility (physical and/or intellectual disability, mental and behavioural disorders)	1	0	1
		Difficulty in performing activities	1	0	1
		Health satisfaction	1	0	1
		Level of satisfaction with life	2	4	6
		Limitations by thoughts, feelings, emotions or behaviours -Interpersonal relationships	1	0	1
		Psychological well-being	2	0	2
		Quality Of Life	1	0	1
		Self-perception, subjective wellbeing, quality of relationships	1	0	1
8	Substance use (n=91)	Alcohol consumption	25	4	29
		Cigarettes, alcohol and other drugs	1	0	1
		Cocaine use	1	0	1
		Consumption of abuse	1	0	1
		Consumption of ecstasy	1	0	1
		Consumption of glues, solvents and paints	1	0	1
		Consumption of LSD	1	0	1
		Consumption of marijuana	1	0	1
		Consumption of psychoactive	16	3	19
		Consumption of Tranquilizers and stimulants without medical prescription	1	0	1
		Perceived risk of drug use	2	0	2
		Tobacco consumption	25	7	32
		Use of tranquilizers and painkillers without a prescription	1	0	1
9	Suicidal behaviour (n=5)	Family suicide attempt	1	0	1
		Suicidal ideation	1	0	1
		Suicide	2	0	2
		Suicide and self-harm	1	0	1
10	Violence (n=42)	Abandonment and neglect by parents	1	0	1
		Abuse	1	0	1
		Abuse and violence	1	0	1
		Attitudes and experiences on violence, including intra-family violence,	1	0	1
		Being victim of a crime	1	0	1
		Bullying	3	2	5
		Child labour (Child violence)	2	0	2
		Child sexual abuse and violence	1	0	1
		Domestic violence, intimate partner violence and child discipline	1	0	1
		Emotional violence	0	1	1
		Family, domestic and intra-family violence (everything that is not sexual and intimate partner violence)	1	0	1
		Family, domestic and intra-family violence (everything that is not sexual and intimate partner violence).	4	3	7
		Incidence of controlling behaviour, emotional abuse	1	0	1
		Personal violence	1	0	1
		Physical and sexual abuse	2	0	2
		Physical violence	0	1	1
		Sexual and intimate partner violence	7	2	9
		Sexual violence	1	0	1
		Unspecified violence	2	0	2
		Violence	0	1	1
		Violence in prison	1	0	1

Supplemental Table 5. National and international surveys identified by country.

Country	National surveys (57 surveys)	International surveys (13 surveys)	Total by country (69 survey)
Mexico	9	6	15
Colombia	7	4	11
Brazil	6	4	10
Chile	4	6	10
Peru	5	5	10
Uruguay	3	7	10
Argentina	2	6	8
Ecuador	2	4	7
Costa Rica	1	5	6
Guyana	2	4	6
Honduras	0	6	6
Jamaica	2	3	6
Bolivia	2	3	5
El Salvador	1	4	5
Panama	0	5	5
Trinidad and Tobago	1	4	5
Barbados	1	3	4
Belize	1	3	4
Guatemala	0	4	4
Paraguay	0	4	4
Saint Lucia	0	4	4
Aruba	3	0	3
Bahamas	0	3	3
Dominica	0	3	3
Nicaragua	1	2	3
Saint Vincent and the Grenadines	0	3	3
Suriname	0	3	3
Antigua and Barbuda	0	2	2
Cuba	0	2	2
Grenada	0	2	2
Haiti	0	2	2
Cayman Islands	2	0	2
Venezuela	0	2	2
Curaçao	0	1	1
Turks and Caicos Islands	0	1	1
St. Kitts and Nevis	1	1	2
British Virgin Islands	0	0	0
Puerto Rico	0	0	0
St. Maarten	0	0	0