



Monitoring access barriers to health services in the Americas: a mapping of household surveys

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ABSTRACT

Objective. To map the range of access barriers indicators for which data can be derived from household surveys in the Americas.

Methods. A systematic mapping review study was conducted to identify access dimensions and indicators of access barriers for general health services already described in the literature; and identify whether data for those indicators could be derived from household surveys in the Americas and what was the methodology used in these surveys.

Results. The study found 49 eligible surveys (287 datasets) from 31 countries in the Americas from which 23 measures of access barriers could be generated. These indicators measure self-reported access barriers for unmet healthcare needs through forgone care, as well as delayed care, dissatisfaction with care and experiences during health service provision. Multiple barriers could be identified, although there was marked heterogeneity in variables included and how barriers were measured.

Conclusions. This study identified tracer indicators that countries in the Americas could use to monitor the population that experience healthcare needs but fail to seek and obtain appropriate healthcare, and what the main barriers are. The surveys identified are well validated and allow the disaggregation of these indicators by equity stratifiers. Given the variability of the methodologies used in these surveys, comparability across countries could be limited. As such, their virtue lies in helping stakeholders compare levels of access barriers over time for a given country or a group of countries. Country buy-in will directly affect the extent to which access barriers data are collected, reported, and used.

Keywords

Health services accessibility; universal health coverage; sustainable development; Americas

Since the 1978 Declaration of Alma Ata on Primary Health Care countries across the globe have made major efforts to ensure universal and equitable access to health services and thereby meet the health needs of the population (1). Within this context, the global health community embraced the concept of universal health coverage as early as 2005 and renewed this commitment with the adoption of the political declaration of the high-level meeting on universal health coverage in 2019 (2,3). Regional resolutions and goals for the Americas have also been endorsed with the view of achieving universal access to health and universal health coverage, including the approval of resolution CD53.R14 by Member States of the Pan American

Health Organization (PAHO) (4); PAHO's Regional Compact on Primary Health Care, PHC 30-30-30, which establishes the goal to reduce by 30% access barriers to health services by 2030 (5); and PAHO's Strategic Plan for the period 2020-2025 (6).

Despite efforts made towards achieving universal access to health and remarkable health gains, the world is still facing challenges around issues related to the inadequacy of national health systems and persistent unmet health needs that threaten the health-related targets of the Sustainable Development Goals (SDG). The substantial gap between the need for healthcare and the level of access is well established. In 2017, the World Health Organization (WHO) estimated that at least half of the

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world's population lacks access to needed health services; if the current trends continue, up to one third of the world's population will remain underserved by 2030, with no access to health services (3,7).

Access was defined by PAHO Member States as "the capacity to use comprehensive, appropriate, timely, quality health services when they are needed" (3). While there is variability on the conceptualization of access across authors, most concur that realized access implies that individuals have achieved actual use of services, and that this is a function of multiple factors or characteristics influencing the process of seeking and obtaining health services (8). Such factors pertain to both the health system (e.g., resources, procedures, institutions) and the population (e.g., perception of illness, language, cultural beliefs) (8). Accessibility is a notion that reflects the functional relationship between population and health system factors and highlights their central role with regards to facilitating or impeding the use of services by potential users (8,9). Barriers that hinder the population from appropriate use of health services stem from the many factor contributing to the accessibility of health services (9). Therefore, measuring what segments of the population are unable to seek and use health services and what the main barriers are is a first fundamental step towards determining future sustainable solutions.

Attractive ways to measure access barriers are conceptually those that accurately capture the multiple factors influencing the ways in which access is realized (8). Available tools for measuring access barriers typically rely on explicitly asking survey respondents whether there was a time they needed healthcare but did not receive it or whether they had to forgo healthcare, and what the main barriers were (10).

Researchers and policy makers are increasingly recognizing the importance of communicating actionable data on self-reported access barriers to understand the reasons for unmet health needs. Indeed, there is a growing series of reports and studies using available survey instruments to analyze self-reported access barriers (through forgone or delayed care) (10, 11). However, countries included in such analyses are generally limited to high-income countries. For example, among European and Member States of the Organization for Economic Cooperation and Development (OECD) alone, there are three regularly conducted international surveys that collect information on unmet needs (10). In addition, most quantitative analyses draw on tailored-made surveys designed for the study and as a result, the specific indicators used for the assessment of access barriers are diverse, in most cases taking the form of responses to tailored-made questionnaires (11). Moreover, quantitative analysis of access barriers based on population surveys are almost nonexistent for the region of the Americas (12) with most examples coming from Canada, Brazil and the United States (10-12). There is one multicounty study assessing self-reported access barriers to primary care in six Latin American and Caribbean (LAC) countries (13), and a couple of cross-sectional studies based on available national surveys that examined progress in trends and inequalities in access barriers in eight LAC countries (14,15).

Therefore, additional work is needed to operationalize measurable indicators for tracking progress in reducing access barriers to health services. This would require more clarity of concepts and subdimensions of access and its determinants (8-11), and determine whether it is possible to measure access barriers with existing data available from household surveys

across countries in the Americas. Drawing on these reasons, the objective of this study is to map the range of access barriers indicators for which data can be derived from household surveys in the Americas, reflecting upon the strengths and weaknesses of the methodology used in these potential data sources.

METHODS

This was a systematic mapping review study. The approach was used to (1) identify access dimensions and indicators of access barriers for general health services already described in the literature; and (2) identify whether data for those indicators could be derived from household surveys in the Americas, and what was the methodology used in these surveys.

Access dimensions and indicators of access barriers

Identifying operational measures of access barriers requires the disaggregation of access into broad dimensions that aid the study of specific determinants of access to healthcare (8). Therefore, an initial search of the Pubmed database was conducted to identify conceptual tools that could guide the assessment of access barriers. The search included literature published in English and Spanish since 2000 using the key words "access", "barriers", "utilization", "health services" and "coverage", alone or in combination with "framework" or "model". The terms "framework" and "model" were selected because the purpose of the search was to identify conceptual approaches. Studies were screened and selected by an author in the team and reviewed by a second author if they presented a unique conceptual proposal that clearly identified dimensions or determinants of access. Studies referring to a previously published manuscripts were excluded, and the authors referred to the original publications. Studies that explored access barriers for specific health conditions or subpopulations were also excluded. The most cited frameworks served as a basis to develop a list of common dimensions of access.

To determine an appropriate scope of this study, a second search of quantitative studies and reports that included indicators for access barriers in the Americas was conducted. Literature published in English and Spanish since 2000 was collected from Pubmed. The search was conducted using the words "forgone care", "unmet need", "delayed care", "access", "access barriers", "report", "indicators" or "Latin America". Articles were eligible for inclusion in this search if they included analyses of indicators that could be produced using household survey data. If an article was eligible for inclusion in this study, information on definitions, numerators, denominators and original data sources were recorded on an data extraction form and synthesized in summary format.

Data availability and approaches in household surveys

To assess whether data was available for access barriers indicators described in the literature, a mapping of international and national surveys was conducted. These included Demographic Health Surveys (DHS), Multiple Indicator Cluster Surveys (MICS), Living Standards Measurement Study Surveys (LSMS), Household Budget Surveys (HBS) and Household Income

and Expenditure Surveys (HIES). These surveys were selected because they are conducted on nationally representative samples and are the main source of data to inform most SGD indicators and progress towards achieving health equity (16).

Datasets, questionnaires and reports were downloaded from national statistics offices and international institutions' websites. Candidate datasets were included if they met the following criteria: had at least one question on whether the household member had encountered unmet needs, had at least one question on the reasons for unmet needs, were publicly available, had a nationally representative sample size, were implemented in at least one of PAHO Member States over the period 2000 to 2019, contained sociodemographic information that allowed disaggregated analyses of access barriers, and included information on the methodology used to construct the dataset and/or reported good reliability and validity for countries used.

If a survey was eligible for inclusion, data related to access barriers presented in the questionnaires were extracted and entered into a data extraction record form developed in Microsoft Excel (Microsoft Corp., Seattle). The following information was recorded on this form: definition of unmet need used in the survey (i.e., delayed or forgone care), wording and sequencing of the questions, range of health services covered, choices of reasons for unmet needs and the population considered. This information was employed to collate, summarize and report the methodology used in each survey to measure access barriers.

RESULTS

The access barriers metric: dimensions and indicators

From an original total of 116 articles, 86 articles were excluded for failing to meet inclusion criteria after reading title and abstract, and 19 articles were excluded after they were fully read. Eleven articles were selected for inclusion in this study because they presented conceptual tools that classify access dimensions and facilitate the analysis of access barriers. Eight of these articles referred to previously published frameworks. Of the 11 included articles, 13 unique models were identified (Table 1).

Most models found are now relatively old, but there has been renewed interest in using them as a tool to understand aspects of equity in access, particularly the Tanahashi model of health service coverage developed in 1978 (28-30). Each model presents distinctive dimensions of access (i.e., availability or geographic accessibility) and highlights the existence of barriers and facilitator within each dimension, although there is considerable overlap between them (Table 1). Three dimensions appear to be almost universally acknowledged: availability, accessibility, and acceptability. Accessibility and acceptability are usually further decomposed into specified dimensions. For accessibility, the three dimensions are geographic accessibility, financial accessibility/barriers (or affordability), and organizational accessibility (or accommodation). For acceptability, the two subdimensions are acceptability (user's attitudes and health services characteristics) and contact (or cognitive barriers). On the other hand, effective coverage (timely and quality access) appears to be a distinctive dimension of the Tanahashi model.

Based on the review findings, the most commonly referenced dimensions that constitute the basis of the access barriers metric are: availability, geographic accessibility, financial accessibility, accommodation, acceptability, contact and effective coverage. These are presented and described in the first column of Table 2 along with examples of types of barriers identified in the literature.

The secondary search conducted on quantitative studies of access barriers based on population surveys in the Americas yielded a total of 69 articles, 10 of which met inclusion criteria. From these studies, 24 indicators that could theoretically be produced using household survey data were identified. These indicators measure self-reported access barriers for unmet healthcare needs through delayed and forgone care, as well as dissatisfaction with care and experiences during health service provision (Table 3).

Data availability and approaches from household surveys

This study found 49 eligible surveys (287 datasets) from 31 countries in the Americas that provide data for access barriers

TABLE 1. Conceptual tools used for assessing barriers along dimensions of access

Authors	Dimensions of access
Aday and Andersen, 1974	Predisposing factors, Enabling factors, Need for health care
Salkever, 1976	Financial accessibility, Physical accessibility
Tanahashi, 1978	Availability (of resources), Accessibility (geographical, financial accessibility, organizational and informational), Acceptability, Contact, Effective coverage
Penchansky and Thomas, 1981	Availability (of resources), Accessibility (geographical), Affordability, Accommodation (of service provision), Acceptability
Dutton, 1986	Financial, Time, Organizational factors
Margolis et al., 1995	Financial, Personal, Structural
Haddad and Mohindra, 2002	Availability, Affordability, Acceptability, Adequacy, Physical access, Resource availability
Shengelia et al., 2003	Cultural acceptability, Financial affordability, Quality of care
Ensor and Cooper, 2004	Supply barriers (input price, availability, location); Demand and supply side (price of service, waiting time), Demand barriers (individual and community factors)
Peters et al., 2008	Availability (resources), Accessibility, Affordability, Acceptability
Carrillo et al., 2011	Structural barriers (resources, location, service hours, waiting time), Financial barriers; Cognitive barriers
Jacobs et al., 2012	Geographic accessibility, Availability, Affordability, Acceptability
Lavesque et al., 2013	Approachability, Acceptability, Availability and Accommodation, Affordability, Appropriateness

Source: prepared by the authors from references 8, 9, 17-27.

TABLE 2. Dimensions of access and examples of access barriers to health services

Dimensions	Examples of types of barrier	Source
Availability (availability and sufficiency of resources for delivering comprehensive health services)	<ul style="list-style-type: none"> • Insufficient number or density of health facilities • Unavailable health workers, staff absenteeism • Stock outs of drugs and equipment 	30,31
Geographic accessibility (availability of quality health services within reasonable reach to those who need them)	<ul style="list-style-type: none"> • Health facilities are too far from user's home • Long and slow travel to facilities • Lack of transport 	30
Financial accessibility (Ability to pay for services without financial hardship)	<ul style="list-style-type: none"> • People can't afford medications or copayments • Opportunity costs and transport costs • Health insurance status and type 	27,30-32
Accommodation (Adequate service organization and delivery that allow people to obtain the services when they need them).	<ul style="list-style-type: none"> • People are unable to take time off to attend appointments • Inadequate schedules/opening hours • Complex appointment systems and administrative requirements • Long waiting times 	27,30
Acceptability (Willingness to seek services when they are perceived to be effective or when social and cultural factors do not discourage people from seeking services).	<ul style="list-style-type: none"> • Lack of trust in health providers or prescribed treatment • Language, culture or religion • Gender norms, roles and relations • Negative perceptions of service quality • Provider's attitudes and practice 	25, 27, 30
Contact (Willingness to contact health services when they are available, accessible and acceptable)	<ul style="list-style-type: none"> • Health literacy • Lack of awareness of available health services • Insufficient understanding of the value of seeking services. • lack of health awareness, apparent unmet need or lack of opportunity 	25, 30
Effective coverage (Ability to use health services when needed in a timely manner and at a level of quality necessary to obtain desired effect and potential health gains)	<ul style="list-style-type: none"> • Users seek inappropriate care such as drug sellers • Diagnostic inaccuracy • Late referral or non-referral • Low treatment adherence • Impoverishing or catastrophic health expenditures 	30

Sources: Prepared by the authors based on desk review.

TABLE 3. Dimensions of access and access barriers indicators included in quantitative studies

Dimension of access and variables included in the studies	Unmet needs for healthcare				
	Delayed care	Forgone care		Self-reported barriers	Healthcare experiences
	% of people with a perceived healthcare need not receiving timely care, or not at all	% of people with a perceived healthcare need not seeking appropriate care, or not at all	% of children under age 5 with suspected pneumonia and/or diarrhea not taken to an appropriate provider	% of women who self-report problems in accessing healthcare.	% of people not satisfied with the attention/treatment received
Availability	% delaying care due to inadequate availability of resources	% forgoing care due to inadequate availability of resources	Not included	% Self-reporting problems due to inadequate availability of resources	% Not satisfied due to inadequate availability of resources
Geographic accessibility	% delaying care due to location, distance or transport	% Forgoing care due to location, distance or transport	Not included	% Self-reporting problems due to location, distance or transport	
Financial accessibility	% delaying care due to financial reasons	% Forgoing care due to financial reasons	Not included	% Self-reporting problems due to financial reasons	% Not satisfied due to financial reasons
Accommodation	% delaying care due to issues with organization and delivery of health services	% Forgoing care due to issues with organization and delivery of health services	Not included		% Not satisfied due to issues related to organization and delivery of health services
Acceptability		% Forgoing care due to provider's responsiveness and quality of care	Not included	% Self-reporting problems due to getting permission to go for treatment or not wanting to go alone.	
Contact		% Forgoing care due to personal perceptions of illness	Not included		
Effective coverage		% Seeking inappropriate healthcare (e.g. pharmacy)	Not included		% Not satisfied with experience with primary care provider.
Sources of data	National surveys, surveys designed for the study	National surveys, surveys designed for the study	MICS, surveys designed for the study	DHS	National surveys, surveys designed for the study

Source: Prepared by the authors based on desk review

(Table 4). The main surveys found were LSMS-type surveys, DHS and MICS, followed by HIES-type surveys.

The analysis further showed that 23 access barriers indicators can be sourced from these household surveys

(Figure 1). All questionnaires allow for a distinction between people who did not have healthcare needs and those who had care needs (the full description of questions and indicators included in each survey is available with the authors upon

TABLE 4. Surveys and sources, by country

Country	Survey	Years of survey ^a
Antigua & Barbuda	Survey of Living Conditions and Household Budgets (SLCHBS)	2005-06.
Argentina	Multiple Indicator Cluster Survey (MICS)	2011-12, 2019-20
Barbados	Barbados Survey of Living Conditions (BSLC)	2016
	MICS	2012
Belize	MICS	2006, 2011, 2015-16
Bolivia	Encuesta Continua de Hogares, Programa de Mejoramiento de Condiciones de Vida (MECOVI)	2000-2002
	Encuesta Continua de los Hogares	2003_2004
	Encuesta de Hogares	2005-2009, 2011 to 2018
	Demographic Health Survey (DHS)	2003, 2008
	MICS	2000
Brazil	Pesquisa Nacional de Saúde (PNS)	2013
Chile	Encuesta de Caracterización Socioeconómica Nacional (Casen)	2006, 2009, 2011, 2013, 2015, 2017
Canada	Canadian Community Health Survey (CCHS)	2000-01, 2003, 2005, 2007 to 2020
Colombia	Encuesta Nacional de Calidad de Vida (ECV)	1997, 2003, 2007, 2008, 2010 to 2018
	DHS	2000, 2005, 2010, 2015
Costa Rica	Encuesta Nacional de Salud en Costa Rica (ENSA)	2006
	MICS	2011, 2018
Dominica	Survey of Living Conditions and Household Expenditure and Income	2007_2008
Ecuador	Encuesta de Condiciones de Vida (ECV)	2013-14
El Salvador	Encuesta de Hogares de Propósitos Múltiple (EHPM)	2005-2018
	MICS	2014, 2020
United States of America	Medical Expenditure Panel Survey (MEPS)	1996-2018
Guatemala	Encuesta Nacional de Condiciones de Vida (ENCOVI)	2000, 2006, 2011, 2014
	DHS	2014-15, 2020
Guyana	MICS	2006-07, 2014, 2019-20
	DHS	2009
Haiti	DHS	2000, 2005-06, 2012, 2016-17
Honduras	DHS	2005-06, 2011-12
	MICS	2019
Jamaica	MICS	2005, 2011, 2020
Mexico	Encuesta Nacional de Ingresos y Gastos de los Hogares (ENIGH)	2000 to 2016, biannual.
	MICS	2015
Nicaragua	DHS	2001
	Encuesta Nacional de Hogares sobre Medición de Niveles de Vida	2001, 2005, 2009, 2014
Panama	MICS	2013
Paraguay	Encuesta Permanente de Hogares (EPH)	1999, 2002 to 2018
	MICS	2016
Peru	Encuesta Nacional de Hogares sobre Condiciones de Vida y Pobreza (ENAHO)	1997 to 2019
	Demographic Health Survey (DHS)	2000, 2004-06 to 2014
Dominican Republic	Demographic Health Survey (DHS)	2002, 2007, 2013
	MICS	2000, 2014, 2019
Saint Lucia	MICS	2012, 2020
Suriname	Suriname Survey of Living Conditions	2016-2017
	MICS	2006, 2010, 2018
Trinidad & Tobago	Trinidad and Tobago Survey of Living Conditions	2014
	MICS	2000, 2006, 2011, 2020
Turks & Caicos	MICS	2019-20
Uruguay	Encuesta Continua de Hogares (ECH)	1990-2005, 2006 to 2018
	MICS	2012-13
Venezuela	MICS	2000

^a Surveys that had information only prior to the year 2000 were excluded from the analysis.

FIGURE 1. Availability of access barriers indicators in 31 countries of the Americas

Dimension	Indicator	Number of countries	Antigua & Barbuda	Argentina	Barbados	Belize	Bolivia	Brazil	Chile	Canada	Colombia	Costa Rica	Dominica	Ecuador	El Salvador	United States	Guatemala	Guyana	Haiti	Honduras	Jamaica	Mexico	Nicaragua	Panama	Paraguay	Peru	Dominican Republic	Saint Lucia	Suriname	Trinidad & Tobago	Turks & Caicos	Uruguay	Venezuela	
Unmet needs for healthcare	% of people not receiving timely care, or not at all	4																																
	% of people not seeking appropriate care, or not all	23																																
	% of children under 5 not taking to an appropriate provider	19																																
	% of women who self-report access barriers	8																																
Availability	% of people not satisfied with the attention/treatment received	4																																
	% of people not receiving timely care, or not at all	3																																
	% of people not seeking appropriate care, or not all	9																																
	% of women who self-reported access barriers	4																																
Geographic accessibility	% of people not satisfied with the attention/treatment received	4																																
	% of people not receiving timely care, or not at all	2																																
	% of women who self-reported access barriers	8																																
Financial accessibility	% of people not seeking appropriate care, or not all	16																																
	% of people not receiving timely care, or not at all	4																																
	% of women who self-reported access barriers	8																																
Accommodation	% of people not seeking appropriate care, or not all	18																																
	% of people not receiving timely care, or not at all	4																																
	% of people not seeking appropriate care, or not all	14																																
Acceptability	% of people not satisfied with the attention/treatment received	4																																
	% of people not seeking appropriate care, or not all	15																																
	% of women who self-reported access barriers	7																																
Contact	% of people not satisfied with the attention/treatment received	4																																
	% of people not seeking appropriate care, or not all	13																																
Effective coverage	% of people not seeking appropriate care, or not all	11																																

Source: Prepared by the authors.

request). The functional definition of need differed between surveys, but in most cases it was defined as a set of diseases, symptoms or health problems that occurred simultaneously and that may or may not have led people to seek healthcare. Most surveys measured access barriers through forgone care. In those cases, unmet need referred to at least one episode when the person had a medical problem but did not consult an appropriate provider, or did not consult at all, due to any reason.

Indicators on barriers for forgone healthcare were available from 28 of the 49 surveys identified, which were conducted in 23 countries in the Americas (Figure 1). There was country-specific variation in the variables included in these surveys for the assessment of barriers for forgone healthcare. The most common quantifiable variables were: inability to pay for health services (21 surveys), negative perceptions on provider’s receptiveness and quality of care (17 surveys), household and facility location (17 surveys), inadequacy in the organization and delivery of health services (15 surveys), unwillingness to seek

healthcare (14 surveys); seeking inappropriate healthcare (13 surveys), and inadequate availability of resources (11 surveys).

Compared to forgone care, far fewer surveys measured access barriers for delayed care and dissatisfaction with care received (4 surveys in each case) (Figure 1). Apart from this, a total of 8 DHS surveys provided data for perceived access barriers among women ages 15-49, although not consistently. For instance, 8 country-specific DHS surveys provided data on perceived access barriers due to costs of health service and distance, while 7 countries measured perceived barriers due to getting permission to go for treatment or not wanting to go alone; and only 4 countries measured perceived access barriers due to concerns with availability of health providers or drugs (Figure 1).

Indicators on care seeking for child pneumonia and diarrhea were available from 19 country-specific MICS surveys. Nevertheless, such surveys did not provide further data for the reasons why caregivers forgone appropriate healthcare for their children illnesses. On the other hand, no indicators related to

the effective coverage dimension of access were found in the surveys studied, except for “seeking inappropriate healthcare” (i.e., going to the pharmacy without a prescription instead of seeking appropriate healthcare). It is worth noting, however, that a good number of surveys (10) collected information on people’s experiences during health service provision, including on distance and time taken to get to health facilities, cost paid for services and waiting time (data not shown).

DISCUSSION

The results from this study contribute to the identification of metrics and indicators that can be used to measure progress towards the reduction of access barriers to unmet needs for healthcare in the Region of the Americas. There are advantages and disadvantages to the use of these indicators. One important advantage is that they provide information on the population that fail to seek and obtain care and the reasons why they are unable to obtain it. This is particularly meaningful as most of the data collected to monitor progress on health access goals have focused on intervention coverage (people using services they need) and financial hardship indicators, which fail to capture those who are too vulnerable to even seek healthcare when needed in the first place (33). Therefore, the surveys studied provide data that aids the diagnosis of access barriers problems.

A main challenge that applies to both intervention coverage and access barriers indicators is, however, the accuracy of self-reported need for healthcare (34). Questions included in the surveys assessed in this study estimate the need for healthcare based on a few questions on signs and symptoms. Challenges of this approach are the quality of self-reports when people do not have knowledge about medical conditions and the need for care. A recent assessment concluded that such questions generate only crude measures of population needs, but currently there are no better alternatives (33). Therefore, self-reported unmet needs may be used as a proxy when no other sources different than household surveys are available.

Another problem with access barriers indicators is that they do not relate to specific health conditions or services and target setting is therefore difficult. Quantifying access barriers for specific health conditions, such as non-communicable diseases, injuries, disability, and others, is a critical challenge for access barriers measurement going forward. A new generation of surveys could collect information on the whole range of access barriers and health interventions, as most countries now face a wide spectrum of health challenges beyond those included in the SDGs.

Moreover, most measures identified in this study only relate to initial contact with health services and reasons for forgoing healthcare, even though access barriers are found along the entire care seeking pathway and may differ across health conditions. Furthermore, the questionnaires used to collect information on the individual factors that discourage people from seeking healthcare tended to be presented as closed questions, which limited users’ responses and does not allow them to explain the circumstances behind the reasons for forgoing care. Addressing these problems will require data from alternative sources, such as facility-based surveys and qualitative information, that can provide context to the statistical information captured by household surveys.

Despite such concerns, the use of household surveys remains advantageous because they are nationally representative population-based surveys with large sample sizes. In addition, the surveys assessed in this study are widely available and easy-to-access sources of data. Most surveys are also commonly implemented every three to five years. Moreover, the indicators can be distributed across population subgroups such as those defined by age, education, and economic status, among others. Disaggregating these indicators by equity stratifiers offers a proxy for universal access monitoring and equity.

Some of the reported surveys may provide information on access barriers that is comparable across countries or across years within a country; however, country-specific questionnaires do vary by country in the types of access barriers indicators included, which can make international comparisons problematic. This speaks to the need for countries to internally promote access barriers monitoring, in line with their identified national health priorities, as well as to ensure that this information feeds into local policy and practice. Furthermore, because access is a complex and multidimensional concept, comprehensive analyses that incorporate alternative data sources (e.g., qualitative and administrative data) and knowledge of countries context will be necessary to interpret the indicators found in this study. As such, their virtue lies in helping decision makers compare levels of access barriers over time for a given country or a group of countries.

The methodological approach used in this study has limitations. First, the literature search was limited to Spanish and English publications, which prevented the inclusion of studies published in other languages. Second, while household survey mapping enables the critical review of a range of data sources for measuring access barriers in the Americas, this approach is limited in the appraisal of the quality and comparability of the data, and lacks the capacity to identify all potential data sources and metrics and indicators for measuring access barriers. Future studies exploring these gaps are necessary. Despite these limitations, this study allowed the identification of a set of regional tracer indicator that countries in the Americas could monitor.

Finally, while this study focused on the measurement of access barriers indicators, future research is necessary to identify the different interventions designed to address access barriers in the Americas. It is also worth mentioning that tracking progress towards universal access to health and universal health coverage requires the use of a range of indicators that measure health sector inputs such as human resources, finances, and technologies, and outputs such as use and quality of services and coverage of interventions. Impact indicators on health status are also indicative of universal health progress even though they are influenced by socioeconomic, cultural, political, and other factors. A regional framework for monitoring universal health in the Americas was previously discussed (35).

Conclusions

This study offers information about the availability of 23 indicators that can be obtained from 49 existing household surveys in the Americas to monitor gaps and gains for universal access to health goals. These are well-validated household surveys, recognized for their quality and reliability and are widely available. These indicators allow to measure self-reported access

barriers for unmet healthcare needs through delayed and foregone care, as well as dissatisfaction with care and experiences during health service provision. Multiple barriers can be identified, including people forgoing care because they cannot afford to do so, because of inadequacies in the availability of resources for healthcare delivery and in the organization and delivery of healthcare, because of the location of their household or the facility, or because of cultural and personal reasons.

It is worth noting that the access barriers measures identified vary in the dimensions of access that are being captured by these indicators. This suggests that cross-country comparability is likely to be a problem and difficult to correct for. As national health systems continue to struggle to address access barriers, better ways of capturing access barriers for all health conditions will require data from sources other than household surveys, such as facility-based surveys, routine health information systems and qualitative data. Involving country stakeholders in the identification of indicators of access barriers is critical, as country buy-in will directly affect the extent to which access barriers data are collected, reported, and used.

Authors' contributions. NH, EB and ADR participated in the design of the study and interpretation of the results. NH carried out the calculations and took the lead in writing the manuscript, in consultation with EB and ADR. Overall direction and planning were overseen by ADR. All authors provided critical feedback and helped shape the research, analysis, and manuscript. All authors reviewed and approved the final version.

Conflicts of interest. None declared.

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REFERENCES

- Greene J, Guanais F. An examination of socioeconomic equity in health experiences in six Latin American and Caribbean countries. *Rev Panam Salud Publica*. 2018;42:e127.
- Carrin G, Mathauer I, Xu K, Evans DB. Universal coverage of health services: tailoring its implementation. *Bull World Health Organ*. 2008; 86(11): 857–63.
- United Nations. Political Declaration on the high-level meeting on universal health coverage. 74th Session of the United Nations General Assembly, 18 October 2019; New York: UN; 2019. Available from: <https://undocs.org/en/A/RES/74/2> Accessed 13 March 2020.
- Pan American Health Organization. Strategy for universal access to health and universal health coverage. 53rd Directing Council, 29 September – 3 October 2014; Washington, DC: PAHO; 2014. Available from: <http://iris.paho.org/xmlui/handle/123456789/7652> Accessed 16 January 2020.
- Pan American Health Organization. PHC 30-30-30, PAHO's new Regional Compact on Primary Health Care for Universal Health. Washington, DC: PAHO; 2017.
- Pan American Health Organization. Compendium of Outcome Indicators - PAHO Strategic Plan 2020-2025. Washington, DC: PAHO; 2019. Available from: https://www.paho.org/hq/index.php?option=com_docman&view=download&alias=50465-strategic-plan-of-the-pan-american-health-organization-2020-2025-compendium-of-outcome-indicators&category_slug=planning-budget-9000&Itemid=270&lang=en Accessed 12 February 2020.
- World Health Organization. Primary health care on the road to universal health coverage: 2019 monitoring report. Geneva: WHO; 2019. Available from: <https://apps.who.int/iris/bitstream/handle/10665/328913/WHO-HIS-IHG-19.1-eng.pdf?ua=1> Accessed 12 March 2020.
- Levesque J, Harris MF, Russell G. Patient-centred access to health care: conceptualising access at the interface of health systems and populations. *Int J Equity Health*. 2013; 12(18). <https://doi.org/10.1186/1475-9276-12-18>.
- Jacobs B, Ir P, Bigdeli M, Annear PL, Van Damme W. Addressing access barriers to health services: an analytical framework for selecting appropriate interventions in low-income Asian countries. *Health Policy Plann*. 2012;27(4):288-300.
- Organization for Economic Cooperation and Development. Unmet needs for health care: comparing approaches and results from international surveys. Paris: OECD; 2020. Available from <http://www.oecd.org/health/health-systems/Unmet-Needs-for-Health-Care-Brief-2020.pdf>. Accessed 8 June 2020.
- De Paz C, Valentine NB, Hosseinpoor AR, Koller TS, Gerecke M. Intersectoral factors influencing equity-oriented progress towards Universal Health Coverage: results from a scoping review of literature. Geneva: WHO; 2017. Available from <https://apps.who.int/iris/bitstream/handle/10665/255607/9789241512329-eng.pdf;jsessionid=C2C2039F87DC1F195030796B971BC010?sequence=1> Accessed 8 June 2020.
- Garcia-Subirats I, Vargas I, Mogollón-Pérez AS, De Paepe P, da Silva MRF, Unger JP, et al. Barriers in access to healthcare in countries with different health systems. A cross-sectional study in municipalities of central Colombia and north-eastern Brazil. *Soc Sci Med*. 2014; 106:204–13.
- Guanais F, Regalia F, Peres-Cuevas R, Anaya M. From the patient's perspective: experiences with primary health care in Latin America and the Caribbean. Washington, DC: IDB; 2018. Available from: <https://publications.iadb.org/en/patients-perspective-experiences-primary-health-care-latin-america-and-caribbean>. Accessed 20 January 2020.
- Báscolo E, Houghton N, Del Riego A. Lógicas de transformación de los sistemas de salud en América Latina y resultado en acceso y cobertura de salud. *Rev Panam Salud Publica*. 2018;42:e126. <https://doi.org/10.26633/RPSP.2018.126>.
- Houghton N, Bascolo E, del Riego A. Socioeconomic inequalities in access barriers to seeking health services in four Latin American countries. *Rev Panam Salud Publica*. 2020; 44:e11. <https://doi.org/10.26633/RPSP.2020.11>
- United Nations. Report of the intersecretariat working group on household surveys. 79th Session of the United Nations Economic and Social Council, 20 December 2017; New York: UN; 2019. Available from: <https://unstats.un.org/unsd/statcom/49th-session/documents/2018-7-HouseholdSurveys-EE.pdf> \ Accessed 12 March 2020.
- Aday LA, Andersen RA. A framework for the study of access to medical care. *Health Serv Res*. 1974; 9(3):208-20.
- Salkever DS. Accessibility and the demand for preventive care. *Soc Sci Med*. 1976; 10(9-10): 469-75.
- Tanahashi T. Health service coverage and its evaluation. *Bull World Health Organ*. 1978; 56(2):295–303.
- Penchansky R, Thomas JW. The concept of access: definition and relationship to consumer satisfaction. *Med Care*. 1981;19(2):127–40.

21. Dutton D. Financial, organizational and professional factors affecting health care utilization. *Soc Sci Med*. 1986, 23(7): 721-35.
22. Margolis PA, Carey T, Lannon CM, Earp JL, Leininger L. The rest of the access-to-care puzzle. Addressing structural and personal barriers to health care for socially disadvantaged children. *Arch Pediatr Adolesc Med*. 1995; 149(5): 541-45.
23. Haddad S, Mohindra K. Access, opportunities and communities: ingredients for health equity in the South. Paper presented at the Public Health and International Justice Workshop. New York: Carnegie Council on Ethics and International Affairs; 2002.
24. Shengelia B, Murray CJL, Adams OB. Beyond access and utilization: defining and measuring health system coverage. In *Health Systems Performance Assessment. Debates, methods and empiricism*. Edited by Murray CJL, Evans DB. Geneva: WHO; 2003:221-234.
25. Ensor T, Cooper S. Overcoming barriers to health service access: influencing the demand side. *Health Policy Planning*. 2004; 19(2): 69-79.
26. Peters DH, Garg A, Bloom G, Walker DG, Brieger WR, Rahman MH. Poverty and access to healthcare in developing countries. *Ann NY Acad Sci*. 2008; (1136): 161-71.
27. Carrillo JE, Carrillo VA, Perez HR, Salas-Lopez D, Natale-Pereira A, Byron AT. Defining and Targeting Health Care Access Barriers. *J Health Care Poor Underserved*. 2011; 22(2):562-75.
28. McCollum R, Taegtmeier M, Otiso L, Mireku M, Muturi N, Martineau T, et al. Healthcare equity analysis: applying the Tanahashi model of health service coverage to community health systems following devolution in Kenya. *Int J Equity Health*. 2019; 18(65). doi:10.1186/s12939-019-0967-5T. O'Connell and A. Sharkey, "Reaching Universal Health Coverage through District Health System Strengthening: Using a modified Tanahashi model sub-nationally to attain equitable and effective coverage," *Matern. Newborn Child Heal. Work. Pap. UNICEF Heal. Sect.*, no. 2013.T. O'Connell and A. Sharkey, "Reaching Universal Health Coverage through District Health System Strengthening: Using a modified Tanahashi model sub-nationally to attain equitable and effective coverage," *Matern. Newborn Child Heal. Work. Pap. UNICEF Heal. Sect.*, no. 2013.
29. O'Connell T, Sharkey A. Reaching Universal Health Coverage through District Health System Strengthening: Using a modified Tanahashi model sub-nationally to attain equitable and effective coverage. New York: UNICEF; 2013.
30. World Health Organization. Handbook for conducting an adolescent health services barrier assessment (AHSBA) with a focus on disadvantaged adolescents. Geneva: WHO; 2019. Available from: <https://apps.who.int/iris/bitstream/handle/10665/310990/9789241515078-eng.pdf?ua=1> Accessed 15 March 2020.
31. Hirmas Aday M, Poffald Angulo L, Jasmen Sepúlveda AM, Aguilera Sanhueza X, Delgado Becerra I, Vega Morales J. Barreras y facilitadores de acceso a la atención de salud: una revisión sistemática cualitativa. *Rev Panam Salud Pública*. 2013; 33:223-9.
32. Pacific Northwest Evidence-based Practice Center. Achieving Health Equity in Preventive Services. Rockville (MD): Agency for Healthcare Research and Quality (US); 2019. Available from: <https://www.ncbi.nlm.nih.gov/books/NBK550958/> Accessed 13 March 2020.
33. Boerma T, AbouZahr C, Evans D, Evans T. Monitoring Intervention Coverage in the Context of Universal Health Coverage. *PLoS Med*. 2014; 11(9):e1001728. doi:10.1371/journal.pmed.1001728.
34. Short ME, Goetzel RZ, Pei X, Tabrizi M, Ozminkowski RJ, Gibson T, et al. How accurate are self-reports? Analysis of self-reported health care utilization and absence when compared with administrative data. *J Occup Environ Med*. 2009; 51(7):786-796.
35. Báscolo E, Houghton N, del Riego A. Construcción de un marco de monitoreo para la salud universal. *Rev Panam Salud Pública*. 2018;42:e81. <https://doi.org/10.26633/RPSP.2018.81>

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Monitoreo de las barreras al acceso a los servicios de salud en las Américas: mapeo de las encuestas de hogares

RESUMEN

Objetivo. Mapear el rango de indicadores de barreras al acceso para los que se pueden obtener datos a partir de las encuestas de hogares en las Américas.

Métodos. Se llevó a cabo un estudio de revisión con un mapeo sistemático para identificar las dimensiones de acceso y los indicadores de las barreras al acceso a los servicios de salud en general descritos en la literatura; e identificar si los datos para esos indicadores podían obtenerse a partir de las encuestas de hogares en las Américas y cuál era la metodología utilizada en esas encuestas.

Resultados. Se encontraron 49 encuestas elegibles (287 conjuntos de datos) de 31 países de las Américas, a partir de las cuales se pudieron generar 23 medidas de barreras al acceso. Estos indicadores miden las barreras al acceso autoinformadas para las necesidades de atención sanitaria insatisfechas debido a atención no prestada, retraso en la atención, insatisfacción con la atención y experiencias durante la prestación de servicios de salud. Se identificaron múltiples barreras, aunque hubo una marcada heterogeneidad en las variables incluidas y en la forma en que se midieron las barreras.

Conclusiones. Se identificaron indicadores específicos que los países de las Américas podrían utilizar para monitorear a la población que experimenta necesidades de atención de salud pero no busca ni obtiene la atención sanitaria adecuada, y cuáles son las principales barreras. Las encuestas identificadas están bien validadas y permiten desagregar estos indicadores por estratificadores de equidad, pero dada la variabilidad de las metodologías utilizadas en las encuestas la comparabilidad entre los países podría ser limitada. Su principal valor radica en que ayudan a las partes interesadas a comparar los niveles de las barreras al acceso a lo largo del tiempo para un país determinado o un grupo de países. La aceptación de los países afectará de manera directa la medida en que se reúnan, notifiquen y utilicen los datos sobre las barreras al acceso.

Palabras clave

Accesibilidad a los servicios de salud; cobertura universal de salud; desarrollo sostenible; Américas.