

THE DISABILITY DATA REPORT 2021: Method Briefs

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METHOD BRIEF 1: DISABILITY DEFINITION

Disability can be defined in a variety of ways. Different conceptual models have been developed to define disability (Cobley 2018; Goodley 2016). In the medical model, disability is defined as caused by a disease, an injury or other health conditions and it is considered intrinsic to the individual. Under this model, addressing disability requires medical treatment and rehabilitation and an individual with any impairment is considered disabled, regardless of whether the person experiences limitations in his or her life activities due to the impairment.

In the social model, disability is understood as a social construct; disability is not a characteristic of the individual, instead it is created by the social environment and addressing it requires social change. For instance, a person with a physical impairment may be unable to work because workplaces lack ramps and elevators and, thus, are inaccessible.

Since the 2000s, disability has often been defined as an interactional notion, one that results from an individual with a health condition interacting with the environment. The analysis in this study needs to be based on concepts that are in line with human rights and sustainable development approaches to disability. Disability is not understood as a purely medical or social phenomenon, let alone through a charity or moral lens (Goodley 2016). In this study, disability is understood as resulting from a person's health condition interacting with structural factors and resources. There are several interactional models of disability that this study can be used as conceptual frameworks for this study.

First, the human rights model is an interactional model and frames the CRPD (Degener 2016). As

noted by Degener and Quinn (2016), “human dignity is the anchor norm of human rights. Each individual is deemed to be of inestimable value and nobody is insignificant. People are to be valued not just because they are economically or otherwise useful but because of their inherent self-worth <...> The human rights model focuses on the inherent dignity of the human being and subsequently, but only if necessary, on the person's medical characteristics. It places the individual centre stage in all decisions affecting him/her and, most importantly, locates the main ‘problem’ outside the person and in society.”

Second, the International Classification of Functioning, Disability and Health (ICF) developed by the WHO in 2001 is an integration of the medical and social models into a biopsychosocial model (WHO 2001, p. 20). According to the ICF, “disability is an umbrella term for impairments, activity limitations and participation restrictions. It denotes the negative aspects of the interaction between an individual (with a health condition) and that individual's contextual factors (environmental and personal factors)” (WHO 2001, p. 213). Thus, this model starts with a health condition (for example, diseases, health disorders, injuries, and other health-related conditions) which in interaction with contextual factors may result in impairments, activity limitations, and participation restrictions.

Also apt for this study is the human development model of disability, health, and well-being, an application of Amartya Sen's capability approach (Mitra 2018). In this framework, human development is framed as an expansion of practical opportunities (capabilities) and achievements (functionings) for all, including for persons with health conditions and functional difficulties. Diversity is

central to the approach: it does not exclude anyone from the theory and personal and structural factors shape capabilities, including how resources may be converted into capabilities. With this model, say to frame an intervention providing social services to persons

who had polio, then the outcomes of interest will be individuals' capabilities or functionings. Policy or service provision is a mean toward human development, i.e., a way to expand relevant capabilities or functionings.

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METHOD BRIEF 2: DISABILITY QUESTIONS AND MEASURES

This method brief is adapted from materials in Mitra, Chen et al (2021).

There are various options when it comes to methods for data collection and measurement on disability. One option is to collect information on environmental barriers to identify changes that are required in terms of physical and social barriers (Goodley 2016). Another data collection option is to have a qualitative and participatory exercise involving multiple stakeholders

including persons with the lived experience of a disability. It may go a long way in understanding the situation of persons with disabilities and informing policy and advocacy efforts at one place and one point in time. However, it would not provide nationally representative or internationally-comparable data that are needed to ensure that persons with disabilities worldwide are not left behind post-2015. This method brief focuses on ways to collect data on disability through questions in household surveys and censuses.

2.1 DISABILITY QUESTIONS IN HOUSEHOLD SURVEYS AND CENSUSES

With surveys, an option is to develop a national disability survey with a battery of questions to measure disability and identify service needs and barriers, as well as to understand the factors leading to disability related inequalities. This is suitable provided significant resources and capacity for data collection are available and have the potential to provide very rich information to inform national or even subnational policy and advocacy efforts. The World Bank and the World Health Organization have developed a Model Disability Survey to this end (Cieza et al 2018; Groce 2019; WHO 2020). Few countries may, however, have the capacity or resources needed to develop and implement the stand-alone survey or include the brief version in an existing survey, let alone repeat this over time for monitoring the situation of persons with disabilities post-2015 and in the context of the CRPD.

Another option consists of using a few questions to measure disability in a population census as well as in general or mainstream household surveys, such as the Living Standards Measurement Study. A population census or a mainstream survey makes it possible to measure

prevalence as well as inequalities across disability status for general indicators such as employment rates and educational attainment. Unlike the participatory and disability surveys above, it will not allow for an in-depth analysis of disability-specific barriers or challenges, nor facilitate understanding of the drivers of inequalities. Nevertheless, it may give very useful information when it comes to tracking the situation of persons with disabilities in different aspects of their lives. Of course, measuring disability with a few questions is challenging, especially if it has to be done in an internationally-comparable manner for global SDG and CRPD related monitoring efforts.

Measuring disability through household surveys and population censuses is a very complicated task and there is not a gold standard approach. How disability is measured depends on the objective of the measurement exercise. The goal might be to document disability prevalence and incidence, assess inequalities associated with disabilities, or evaluate service needs as well as policies and laws.

Besides varying underlying measurement objectives and conceptual definitions, there are different ways to collect disability data. These are “self-perceived and observed” data (Murray and Chen 1992). Self-perceived measures give an individual’s own perception of limitations, while observed measures rely on an external party’s assessment. Both types of measures provide complementary and valuable information (Murray and Chen 1992). There is typically no observed data in surveys and censuses in low- and middle-income countries. Thus, self-reported measures are used in this study and are therefore the focus of this report.

As can be anticipated, there are different ways to measure disability through self-reports (Mitra 2018; Palmer and Harley 2012). We describe below the different types of questions that have been commonly used in surveys and censuses: functional difficulties, activities of daily living, broad activity limitations, general disability/impairment questions and other questions.

FUNCTIONAL DIFFICULTIES

Functional difficulties refer to difficulties experienced with particular bodily functions such as seeing and hearing. The term is used to also include basic activities such as walking and daily activities such as feeding oneself. The United Nations Statistical Commission (United Nations 2015, 2017) adopted revised guidelines for the collection of disability data in national censuses. “It is suggested that only those domains that have satisfied a set of selection criteria be eligible for inclusion in a short set of questions recommended for use in censuses. Criteria for inclusion include cross-population or cross-cultural comparability, suitability for self-reporting and space on the census form. Other suggested criteria include the importance of the domain in terms of public health problems”

(United Nations 2017). The Commission recommends that the following four functional domains be considered essential in determining disability status in a way that can be reasonably measured using a census and that would be appropriate for international comparison: (a) Walking; (b) Seeing; (c) Hearing; (d) Cognition. It also notes that two other domains, self-care and communication, have been identified for inclusion, and if possible, upper-body functioning is another domain that should be considered for inclusion. There have been efforts to generate internationally comparable and tested questions, notably by the Washington Group.

WASHINGTON GROUP SHORT SET

Specifically, the Washington Group has developed and tested a set of six questions, also known as the Washington Group Short Set (WGSS). The WGSS’ strength is in its brevity and is well-suited for use in censuses and national surveys. In conjunction with other data collected on outcome indicators (access to education or employment), it additionally helps to inform policy on equalization of opportunities. It starts with an optional introduction as follows: “The next questions ask about difficulties you may have doing certain activities because of a health problem.” It then has questions covering six different domains as follows: 1. Do you have difficulty seeing, even if wearing glasses? 2. Do you have difficulty hearing, even if using a hearing aid? 3. Do you have difficulty walking or climbing steps? 4. Do you have difficulty remembering or concentrating? 5. Do you have difficulty with self-care (such as washing all over or dressing)? 6. Do you have difficulty communicating? The WGSS uses a four-level scale (no difficulty, some difficulty, a lot of difficulty, or cannot do entirely) to capture individuals’ degree of functional difficulty in each of the six domains.

The WGSS has undergone extensive cognitive and field testing in multiple languages and locations (Madans, Loeb and Altman, 2011, Miller 2016). It is an internationally tested and widely accepted tool (Groce and Mont 2017). The UN Statistical Commission and the UN's Economic Commission for Europe's Council of European Statistics recommended the WGSS for collection of disability information for the 2020 round of censuses.

These questions on functional difficulties are not without limitations. Although tested in 14 countries (Miller 2016), an understanding of functional difficulties in the WGSS may be limited in a context with limited access to health care and may lead to underreporting (Schneider 2016). The WGSS covers only a few domains and may well under-identify people with psychological difficulties, a concern that may be alleviated to some extent in the WGSS-Enhanced, which is the short set and four additional questions on anxiety and depression, and another two on upper body mobility.

OTHER FUNCTIONAL DIFFICULTY QUESTIONS

Functional difficulty questions may be found in questions that are different from those in the WGSS and in other international questionnaires. First, although the WG recommends that the WGSS be adopted as is, some data sets have included selected questions only, changed the answer scale or the wording of questions, and/or altered the introduction to the questions. There are thus data sets that have questions somewhat similar to the WGSS.

In addition, there are functional difficulty questions that are independent of the WGSS. Some internationally tested survey tools such as the Model Disability Survey (Cieza et al. 2018) or WHO-DAS 2.0 (WHO 2020) and other recent

tools (e.g. Trani et al. 2015, Eide et al. 2006) do include functional difficulty questions. For instance, WHO-DAS 2.0 has questions on cognition, mobility, and self-care.

ACTIVITIES OF DAILY LIVING

Disability has been measured using difficulties in Activities of Daily Living (ADL). There are different types of ADLs, including basic and intermediate. Basic ADLs are fundamental for body functioning (e.g. walking a specific distance) and include self-care activities such as feeding oneself, going to the bathroom without help, and dressing without help, bathing, eating, walking, toileting, urination and defecation. Intermediate ADLs are more complex tasks such as shopping, housekeeping, food preparation, and managing money.

ADL questions were initially developed to capture the physical effects of aging, and, as such, in some surveys the questions are only administered to respondents above a certain age (e.g. 45 and above). Intermediate ADLs include role activities, such as caring for others, that can be broad (Stewart and Ware 1992). In an international context, a limitation of such questions is in how daily activities, especially beyond basic ones, may vary considerably across contexts, and thus, one drawback of ADLs in international studies is their potential lack of comparability.

BROAD ACTIVITY LIMITATION

A broad activity limitation question asks the respondent if he/she is limited in their usual activities due to a chronic health condition or an impairment, such as work or housework for adults or attending school for children. It relates to role functioning, the extent to which an individual performs or has the capacity to perform activities typical for a specific age and

social responsibility (Stewart and Ware 1992). Because it is only one question, it is easy to insert in a survey. Similar to intermediate ADLs, usual activities vary in an international context, and answers may thus not be comparable across countries. A broad activity limitation question has additional drawbacks (Mitra 2018). Conceptually, such a question gets at a health condition or impairment as well as a potential resulting deprivation. Thus, it tries to get the causal link from the health condition/impairment to the deprivation, as perceived by the respondent. Respondents may not be aware of the ways that their health condition or impairment affects their broad activities. Responses may also be subject to different types of biases. For instance, the rationalization bias may encourage a person who does not work to report a health condition as the primary reason for non-employment, even if it is not. Another example is when people have adapted to their impairment in such a way that they no longer perceive how it affects their employment.

A broad activity limitation question makes it difficult to monitor disability over time. As an example, using a broad activity limitation question related to schooling among children: ‘is your child limited in the amount or the type of schooling you can have due to a physical, mental or emotional condition?’ Such a question does identify persons with perceived limited schooling opportunities due to a health condition. This question does not identify children with health conditions who have been able to access schooling, which is problematic. It is problematic that the outcome (employment or education) is part of the question. That makes it impossible to disaggregate across disability status. Using such a question, say in an environment where education becomes more inclusive through the provision of accommodations in schools, one would get a decline in the prevalence of disability over time

but the negative correlation between schooling attendance and disability may persist or worsen as disability may include people with the more severe health conditions.

GENERAL DISABILITY

Censuses and surveys sometimes have a general disability question such as “*Do you have a disability?*” This general question has sometimes been used with answers about disability types or impairments (e.g. blindness, deafness, paralysis) or with a yes/no answer as a screen for a follow-up question asking about disability type or impairment. Such a general question was very common in the censuses of the 1970s, 1980s, 1990s and 2000s (e.g. United Nations 1990).

The general disability question is problematic in terms of the validity of what it measures. First, it is unclear what such a general question measures as disability may mean different things to different interviewees. Additionally, impairments may be unknown to respondents, especially in the context of populations with limited access to health care or information. Furthermore, disability and impairments may be stigmatized and thus interviewees may not feel comfortable self-reporting. Finally, the general disability question tends to lead to underestimates of disability prevalence (Mont, 2007) as they capture severe impairments and tend to miss disabilities associated with old age as older people may not think of themselves as disabled but simply as older persons. For these reasons, it is not considered good practice to use the general disability question, let alone for the purpose of producing internationally-comparable statistics on disability.

Yet, likely due to its conciseness and a lack of awareness on its drawbacks, this question can still be found in some surveys and censuses and this paper examines in the next section to what

extent this has continued to be the case in the past decade.

OTHER DISABILITY-RELATED QUESTIONS

There are many other types of disability questions beside functional difficulties, ADL, broad activity limitations, and general disability questions. Some surveys such as the Model Disability Survey have questions on barriers

people may face in their environment, whether physical, social, or attitudinal. These are particularly useful in understanding the drivers of difficulties or deprivations people may experience. In some countries, surveys or censuses ask respondents if they are part of an official registry of people with disabilities which would give them access to services or benefits. More often, surveys have questions on impairments and on specific health conditions.

BOX 1: WASHINGTON GROUP SHORT SET OF QUESTIONS ON DISABILITY

The next questions ask about difficulties you may have doing certain activities because of a health problem.

- (a) Do you have difficulty seeing even if wearing glasses?
- (b) Do you have difficulty hearing even if using a hearing aid?
- (c) Do you have difficulty walking or climbing steps?
- (d) Do you have difficulty remembering or concentrating?
- (e) Do you have difficulty with self-care such as washing all over or dressing?
- (f) Using your usual language, do you have difficulty communicating, for example understanding or being understood?

For each question, respondents are asked to answer with one of the following options: 1-no difficulty, 2-some difficulty, 3-a lot of difficulty, or 4-unable to do.

For a proxy respondent, each of the six questions starts with “does <person > have difficulty...?”

Source: <http://www.washingtongroup-disability.com/>

Finally, while the WGSS was initially developed for use in censuses among those 5 years of age and older, it may not be adequate to capture

disability among children (Adans et al 2018) . We therefore calculate disability indicators only for adults who are 15 years old and older, and their households.

2.2 DISABILITY MEASURES

In order to determine prevalence or identify a specific ‘functional difficulty status’ group, a threshold needs to be set on the answer scale of functional difficulties. The WG recommends “a lot of difficulty” as the threshold: persons who report “a lot of difficulty” or “unable to do” for at least one domain are considered to have a disability, and persons with ‘no difficulty’ or ‘some difficulty’ to all six questions are deemed as not having a disability.

Different thresholds for the WGSS produce vastly different prevalence estimates (e.g. Bourke et al 2021; Mitra 2018). In addition, if persons with some difficulty are potentially more disadvantaged than persons with no difficulty, this categorization will underestimate the extent of inequalities between persons with and without disability. There is mounting evidence that having ‘some difficulty’ is significantly associated with economic and social deprivations with a gradient from no difficulty to some difficulty to at least a lot of difficulty (Banks et al 2014; Clausen and Barrantes 2020; Mitra 2018). Besides, several censuses under study use yes/no answers to the functional difficulty questions, making the breakdown recommended by the WG impossible. Hence, this study categorizes individuals in three ways.

- A. First, for all data sets, it groups individuals into two categories:
 - (1) No functional difficulty in all domains;
 - (2) Any functional difficulty in at least one

domain (answer Yes for data sets with yes/no answers, or reports at least ‘some’ difficulty for graded scales).

- B. For data sets with graded scales, we partition individuals into three categories:
 - (a) No difficulty for all domains;
 - (b) Some difficulty in at least one domain but no “a lot of difficulty” or “unable to do”.
 - (c) A lot of difficulty or unable to do in at least one domain.
- C. Following the recommendation of the WG for data sets that have a graded answer scale, we group individuals as follows:
 - (i) A lot of difficulty or unable to do in at least one domain;
 - (ii) No difficulty or ‘some’ difficulty for all domains

Categorization B is more granular than A and C and may be able to identify a possible gradient in socioeconomic disadvantage with the severity of functional difficulties. It moves away from a binary understanding and measure of disability.

The analysis conducted at the household level categorizes households depending on the functional difficulty status of its members age 15 and older along the three ways of partitioning the population described above.

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METHOD BRIEF 3: DISABILITY DISAGGREGATION

3.1 DISAGGREGATION BASED ON DISABILITY

We compare indicators across groups by disability status. Disaggregating an indicator (e.g. ever attended school rate) by disability status aims to establish the size of the gap that may be associated with disability, i.e. the disability gap or inequalities associated with disability.

Disability is measured by functional difficulty questions and measures (Method brief 2). When functional difficulty questions have yes/no answers, disaggregation is done for persons with no difficulty vs any difficulty (disaggregation A). When functional difficulty questions have a graded answer scale, disaggregation is done in two additional ways: persons with no difficulty vs some difficulty vs at least a lot of difficulty (disaggregation B); persons with no difficulty and some difficulty vs at least a lot of difficulty (disaggregation C).

In tables, the difference between groups and its statistical significance is typically noted in a separate column. A disability gap represents a statistically significant disadvantage for persons with functional difficulties compared to persons

with no functional difficulty. Statistical significance is based on a t-test (*, **, and *** at the 10%, 5% and 1% levels respectively). As indicators reflect achievements (e.g. employment population ratios) or deprivations (food insecurity, exposure to shock), a disability gap may be reflected in a positive or a negative difference.

This study uses national household surveys and censuses. Censuses typically include all people in a country, irrespective of their disability status. In contrast, household surveys are constructed out of sampling from censuses with complex sampling design. It should be noted that none of the household surveys under study is sampled to be representative of persons with disabilities. Censuses are thus better able to represent the situation of persons with disabilities than household surveys, which may not be representative of all persons with disabilities due to their sampling. At the same time, interestingly this study finds patterns in the results on disability gaps with census data and with survey data.

3.2 DISAGGREGATION BASED ON DISABILITY AND DEMOGRAPHIC CHARACTERISTICS

There may be patterns of intersectional disadvantage that affect subgroups of people with disabilities and their households, such as women or rural residents. For each data set under consideration, we tried to disaggregate results at the individual level based on disability as well as sex, age group, rural/urban residence and at the household level based on rural/urban residence. Double disaggregation tables by disability and a demographic characteristic (sex,

rural/urban, age group) are available in Results Tables.

For data sets with the full population or random sampling, disaggregation is feasible based on sex, age groups, rural/urban as long as information on sex, age and rural/urban residence is available. For data sets with complex survey design, disaggregation based on sex, age groups, rural/urban is feasible if sex,

age, rural/urban residence were used as part of the stratification of the survey.

Besides, for each data set and indicator, we set 100 observations as the minimum required to produce estimates for subgroups following common practice (e.g. Duerto Valero 2019). Hence, for a given data set, disaggregation may be possible for some indicators but not others,

especially when some indicators are constructed particularly for subsamples: for instance, for employment, for men and women separately, we were able to disaggregate the employment population ratio across both disability and sex, while this was not feasible for the idle rate for youths (individuals ages 15-24) as the sample sizes for disaggregated samples were often fewer than 100 observations.

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METHOD BRIEF 4: PREVALENCE

We use basic proportions to calculate the prevalence of functional difficulties in each country based on the A categorization above for all data sets and based on the B and C categorizations for countries with a graded answer scale. Prevalence rates for a country

reflect the country's own population structure and are not adjusted for age and sex.

The prevalence rates at the individual and household (HH) levels are calculated using the formulas:

$$\text{Prevalence rate}_c = \frac{\text{Number of adults with functional difficulty}_c}{\text{Total population}_c}$$

where c denotes a country.

$$\begin{aligned} \text{HH Prevalence rate}_c \\ = \frac{\text{Number of Households with at least one adult with functional difficulty}_c}{\text{Number of households}_c} \end{aligned}$$

The difference between the individual and the household level prevalence rates depends on

household size and the extent to which there might be more than one adult with functional difficulty in a household.

This method brief describes each of the indicators used in this study to capture human rights or development. They come under four

main themes: education, work, health, and standard of living.

5.1 EDUCATION

ADULTS WHO HAVE EVER ATTENDED SCHOOL

This indicator reports the share of adults who have ever been to school.

The highest level of educational attainment achieved is reflected in the following three indicators:

ADULTS WHO HAVE LESS THAN PRIMARY SCHOOL COMPLETION

This is the share of adults who have not completed primary school. Some may have attended preschool. Some may have attended primary school but did not complete it. Adults who never attended school also belong in this category.

ADULTS WHO HAVE COMPLETED PRIMARY SCHOOL

This is the share of adults who have completed primary school. Adults who completed primary school, attended secondary school but did not complete secondary school belong in this category.

ADULTS WHO HAVE COMPLETED SECONDARY SCHOOL OR HIGHER

This is the share of adults who have completed secondary school. Adults who completed

secondary school belong in this category, whether or not they also attended tertiary school.

ADULTS WHO CAN READ AND WRITE IN ANY LANGUAGE

This indicator is the literacy rate defined as the share of individuals who can read and write in any language.

HOUSEHOLD HEADS WHO HAVE EVER ATTENDED SCHOOL

This is an indicator at the household level. It reports the share of households with heads who have ever been to school.

CHILDREN AGES 6 TO 14 WHO ARE NOT ENROLLED IN SCHOOL

This is an indicator at the household level. This is the share of children age 6 to 14 in households who are not in school.

HOUSEHOLD EDUCATION EXPENDITURES OUT OF TOTAL CONSUMPTION EXPENDITURES

This is the share of household expenditures dedicated to education (e.g. tuition, books).

5.2 WORK

EMPLOYMENT POPULATION RATIO (OR EMPLOYMENT RATE)

The employment population ratio, also called the employment rate, measures the share of the adult population who work for pay or profit (self-employed).

YOUTH IDLE RATE

The youth idle rate captures the share of youths aged 15-24 who are not enrolled in school or not employed. As information on training was not consistently available, it does not reflect whether youths might be in training.

WORKING INDIVIDUALS IN MANUFACTURING

Working individuals in manufacturing is the share of workers in the manufacturing sector.

WOMEN IN MANAGERIAL POSITIONS

Women in managerial positions is the share of working women who hold managerial positions.

ADULTS IN INFORMAL WORK

Adults in informal work measures the share of the adult population who do informal work, i.e. who are self-employed, those who work for a microenterprise of five or fewer employees or in a firm that is unregistered, and those who have no written contract with their employers. Family workers without pay are included as informal workers.

5.3 HEALTH

ADULTS IN HOUSEHOLDS USING SAFELY MANAGED DRINKING WATER

This indicator is based on the UN Statistics' (2017a) definition of and background to SDG indicator 6.1.1. It refers to the proportion of the population using safely managed drinking water services. Water sources considered as safely managed include: piped water into dwelling, yard or plot; public taps or standpipes; boreholes or tubewells; protected dug wells; protected springs; packaged water; delivered water and rainwater. Water sources that are not considered as safely managed include: unprotected well, unprotected spring, tanker truck, surface water (river/lake, etc), cart with small tank" UN Statistics (2017a).

ADULTS IN HOUSEHOLDS USING SAFELY MANAGED SANITATION SERVICES

This indicator is based on the UN Statistics' (2017b) definition of and background to SDG indicator 6.2.1. Members of the household are considered to have safely managed sanitation service if the household's sanitation facility is improved and is not shared with other households. 'Improved' sanitation facilities include: flush or pour flush toilets to sewer systems, septic tanks or pit latrines, ventilated improved pit latrines, pit latrines with a slab, and composting toilets" UN Statistics (2017b).

WOMEN WITH FAMILY PLANNING NEEDS MET

This is the share of women who self-report that they have their family planning needs met, i.e. who want and have access to modern contraceptive methods.

WOMEN SUBJECTED TO VIOLENCE IN THE PREVIOUS 12 MONTHS

This is the share of women who report being subject to domestic violence by their intimate partner in the past 12 months. Domestic violence may be physical, psychological or sexual.

5.4 STANDARD OF LIVING

ADULTS IN HOUSEHOLDS WITH ELECTRICITY

This indicator is based on the UN Statistics' (2017c) definition of and background to SDG indicator 7.1.1. Specifically, Indicator 7.1.1 refers to the proportion of population with access to electricity. Access is "only considered if the primary source of lighting is the local electricity provider, solar systems, mini-grids and stand-alone systems. Sources such as generators, candles, batteries, etc., are not considered due to their limited working capacities and since they are usually kept as backup sources for lighting (UN Statistics, 2017c)."

ADULTS IN HOUSEHOLDS WITH CLEAN COOKING FUEL

This indicator is based on the UN Statistics' (2017d) definition of and background to SDG indicator 7.1.2. It refers to the share of the population with primary reliance on clean fuels and technology for cooking. Clean fuel includes electricity, gaseous fuels (e.g. natural gas, biogas). Unclean fuels include kerosene and solid fuels (biomass (wood, crop waste, dung), charcoal, coal).

ADULTS IN HOUSEHOLDS WITH ADEQUATE HOUSING

Adequate housing refers to a household living in a place with quality floor, roof and wall materials. Quality floor conditions include laminates, cement, tiles, bricks, parquet. Poor floor conditions include earth, dung, stone, wood planks. Quality roof conditions include burnt bricks concrete, cement. Poor roof conditions refer to no roof or roofs made of natural or rudimentary materials (e.g. asbestos, thatch, palm leaf, mud, earth, sod, grass, plastic, polythene sheeting, rustic mat, cardboard, canvas, tent, wood planks, reused wood, unburnt bricks). Quality wall conditions include burnt bricks, concrete, cement. Poor wall conditions refer to no walls or walls made of natural or rudimentary materials (e.g. cane, palms, trunk, mud, dirt, grass, reeds, thatch, stone with mud, plywood, cardboard, carton/plastic, canvas, tent, unburnt bricks, reused wood).

ADULTS IN HOUSEHOLDS OWNING ASSETS

Adult who own assets is the share of adults who live in households owning at least a radio, TV, telephone, bike, motorbike, refrigerator, car (or truck) and computer.

ADULTS IN HOUSEHOLDS WITH A MOBILE PHONE

Adult who own assets is the share of adults who live in households with a mobile phone.

ADULTS IN FOOD INSECURE HOUSEHOLDS

In several countries under study, and especially those with LSMS data, food insecurity reflects whether recently (in the past week, month or 12 months) the household respondent worried about the household not having enough food or was faced with a situation when they did not have enough food to feed the household. For other datasets, questions related to food insecurity might vary and capture whether the household ran out of money to buy food and/or if any adult or child in the household went hungry.

ADULTS IN HOUSEHOLDS THAT EXPERIENCED A SHOCK RECENTLY

This indicator reflects to what extent adults live in households that recently was exposed to at least one negative shock. The time frame is

usually the past 12 months. The list of shocks varies from country to country, but typically includes shocks related to the weather (drought, flood, heavy rains), negative events affecting household members (death of a household member, illness of a household member), economic hardships (loss of a job, crop damage) and disasters (e.g. fire, landslide).

HOUSEHOLD HEALTH EXPENDITURES OUT OF TOTAL CONSUMPTION EXPENDITURES

For datasets with information on household expenditures overall and on health, this indicator is the share of the household total consumption expenditures that are dedicated to health (inpatient care and outpatient care out of pocket expenditures, medicines).

ADULTS LIVING IN HOUSEHOLDS RECEIVING SOCIAL PROTECTION

The share of adults living in households receiving social protection is the share of adults in households who have received social protection benefits in the past year or currently receive them (e.g. cash benefits, in kind transfers).

REFERENCES

- UN Statistics (2017a). Metadata 06-01-01. Accessed April 10th 2021 at: <https://unstats.un.org/sdgs/metadata/files/Metadata-06-01-01.pdf>
- UN Statistics (2017b). Metadata 06-02-01. Accessed April 10th 2021 at: <https://unstats.un.org/sdgs/metadata/files/Metadata-06-02-01.pdf>
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- UN Statistics (2017d). Metadata 07-01-02. Accessed April 10th 2021 at: <https://unstats.un.org/sdgs/metadata/files/Metadata-07-01-02.pdf>

METHOD BRIEF 6: MULTIDIMENSIONAL POVERTY

In addition to an indicator-by-indicator dashboard analysis, this study also estimates a multidimensional measure of poverty to investigate the experience of simultaneous deprivations following Alkire and Foster (2011). In brief, this method counts deprivations for a set of dimensions and indicators.

An individual is considered to experience multidimensional poverty if the number of deprivations of the individual exceeds a set threshold. Details on the calculation of this measure are included below. H is the multidimensional poverty headcount and gives the percentage of the population who experiences multidimensional poverty or multiple deprivations. Dimensions are weighted and w_j is the weight of dimension j . There are different possible methods for setting up weights, for instance, asking people's opinions or using the observed distribution of successes or deprivations (Decancq and Lugo 2013).

In this report, as is often done in multidimensional poverty research, all dimensions were considered equally important and were given equal weights (each has a weight of 1) and when more than one indicator was used within a dimension, indicators were equally weighted within the dimension. For instance, for the health dimension with two indicators, each indicator weighs $\frac{1}{2}$.

According to the method laid out in Alkire and Foster (2011), each individual i has a weighted count of dimensions where that person achieves

deprivations (c_i) across all measured dimensions: $0 \leq c_i \leq d$ where d is the number of dimensions; with c_{ij} equal to one if individual i has a deprivation in dimension j , and zero otherwise. Let q_i be a binary variable equal to one if the person is identified as deprived, and to zero otherwise. A person is identified as experiencing multidimensional poverty if the person's count of deprivations is greater than some specified cutoff (k):

$$\text{if } c_i > k, \text{ then } q_i = 1; \text{ if } c_i \leq k, \text{ then } q_i = 0$$

In this study, $k=1$.

The *share of adults experiencing multidimensional poverty* H is then the number of persons in multidimensional poverty ($q = \sum q_i$) divided by the total population (n): $H=q/n$

Dimensions and indicators are laid out in Table 1.

Based on the information available in the datasets under study, four dimensions and eight indicators were selected for the calculation of the multidimensional poverty measure. The four dimensions are: education, work, health, and standard of living¹. Each has a weight of 1 and when more than one indicator was used within a dimension, indicators were equally weighted within the dimension.

Education is measured through an indicator of educational attainment for adults. Work is

¹ The multidimensional poverty headcount was estimated for datasets where indicators were available for at least three of the four dimensions.

measured through work status. Health is measured with two indicators and each has a weight of $\frac{1}{2}$: access to safely managed drinking and sanitation services. Standard of living is measured through four indicators with each a weight of $\frac{1}{4}$: clean fuel, electricity, adequate housing and asset ownership.

The cutoffs for the dimensions are as follows: if a person (1) has less than primary education; (2) is not working; (3) lives in a household without

safely managed drinking water; (4) lives in a household without safely managed sanitation services; (5) lives in a household without clean cooking fuel; (6) lives in a household without adequate housing, i.e. without adequate walls, floor and roof; (7) lives in a household without assets.

More details on how each indicator is defined is in [Method Brief 5](#).

TABLE 1: DIMENSIONS, INDICATORS, AND WEIGHTS IN THE MULTIDIMENSIONAL POVERTY MEASURE

Dimension	Indicator(s)	Threshold: Deprived if...	Dimension Weight	Indicator Weight
Education				
	Education	Individual has less than primary schooling	1	1
Personal activities				
	Work status	Individual is not working	1	1
Health			1	
	Water	Household without safely managed drinking water		1/2
	Sanitation	Household without safely managed sanitation services		1/2
Standard of living			1	
	Electricity	Household without electricity		1/4
	Cooking fuel	Household without clean fuel		1/4
	Housing	Households without quality floor, roof and wall materials		1/4
	Assets	Household does not own more than one asset (among radio, TV, telephone, bike, or motorbike or fridge); and the household does not own a car (or truck).		1/4

REFERENCES

Alkire, S. and Foster, J. (2011). Counting and multidimensional poverty measurement. *Journal of Public Economics* 95(7–8):476–87.

Decancq, K. and Lugo, M. A. (2013). Weights in multidimensional indices of wellbeing: an overview. *Econometric Reviews*, 32, 7-34.



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