Young children living in households with preparedness for Covid-19 in low- and middle-income countries

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HARNESSING GLOBAL DATA

TO ADVANCE YOUNG CHILDREN'S LEARNING & DEVELOPMENT

BRIGHAM HEALTH

BWH BRIGHAM AND WOMEN'S HOSPITAL

HARVARD MEDICAL SCHOOL

Outline

- Background
- Methods and Data
- Preliminary results

Background

- Importance of young children's development
- Target 4.2 in SDGs for young children under age five
- Covid-19's impact on young children

Direct
- lacking access to early care and education
- lacking regular health care
- increased living in poverty
- more suffering from malnutrition, etc.

Indirect
- increased parental stress
- increased harsh punishment
- poorer parent-child interactions

- Little is known about the capacity of the household environment for protecting young children from the Covid-19

Objectives

- Assessing % of young children (< 5 years) living in the households with preparedness for Covid-19 in low- and middle-income countries (LMICs) with available data

- Assessing associated socioeconomic inequalities

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Methods

Definition of household with preparedness for Covid-19

WHO/CDC guideline on household prevention or home care

- Prepare for possible illness
  - ✓ Room for quarantine
  - ✓ Adequate sanitation to avoid direct contact with stool, urine
  - ✓ Can separate waste from the patient
  - ✓ Masks for patients and caregivers
- Take preventive actions
  - ✓ Soap or detergent for hand washing and room cleaning
- Stay informed and in touch
  - ✓ Communication with health care providers and emergency contacts
  - ✓ Obtaining up-to-date info

Methods

Definition of household with preparedness for Covid-19

A household is prepared for covid-19 if

Conditions:

1. Space for quarantine +
2. Capacity for performing hand hygiene +
3. Adequate toilet +
4. Good communication +
5. Being informed

Variables

1. Household size and # of sleeping rooms
2. Handwashing facility with water & soap
3. Toilet condition
4. Ownership of phones, or radio, or TV
5. Listening to radio, or watching TV, or reading newspapers

Data - Search for Household Surveys

- International Household Survey Network
  - Informal network of household surveys conducted in low- and middle-income countries,
  - Improving the availability, accessibility, and quality of survey data and encouraging data use for evidence-based decision making,
  - Supported by its members such as the WHO, World Bank, or USAID (US), or DFID (UK), etc.

https://www.ihsn.org/about

Data - Search for Household Surveys

- Keywords search through the network (e.g. sleeping room, water, sanitation, hygiene, soap, toilet, radio, TV)
  - nationally-representative
  - publicly accessible
  - since 2016 (tradeoff: accuracy vs. availability)

Data - Search for Household Surveys

Countries included in the study (43)

Year	Country #
2016	10
2017	11
2018	16
2019	6
Total	43

Income group	Country #
Low-income	14
Lower-middle income	21
Upper middle income	8

Region	Country #
East Asia and Pacific	9
Europe and Central Asia	4
Latin America and the Caribbean	3
South Asia	5
Sub-Saharan Africa	19
Middle East and North Africa	3

Data - Search for Household Surveys

- Demographic and Health Surveys (DHS)
  - Nationally-representative household surveys
  - Every five years in over 90 LMICs since 1985
  - Variables on population, child and maternal health and nutrition
  - Funded by USAID and implemented by ICF

- Multiple Indicator Cluster Surveys (MICS)
  - Nationally-representative household surveys in more than 100 LMICs since 1995
  - Focusing on child and maternal health and well-being
  - Funded and implemented by UNICEF

Data - Search for Household Surveys

- DHS and MICS are widely used for tracking progress in MDGs and SDGs by international organizations and countries

- DHS and MICS are highly comparable (WHO)
  - Survey design: two-stage stratified cluster sampling design
  - Survey implementation
  - Measurement strategies

Measuring “preparedness for Covid-19”

(1) Quarantine condition

Step 1: Constructing a variable of # of persons per sleeping room (“personroom) using two variables below

(a) # of household members who usually sleep at home

(b) # of sleeping rooms of a household

Step 2: Constructing a dummy variable indicating good condition for quarantine

- pooling the data of “personroom” from all countries, then
- selecting mean of its distribution as the cutoff point for good condition

  “quarantine” = 1 if “personroom” < mean (3.38), 0 otherwise
- sensitivity tests: the 25th percentile (2), and the 75th percentile (4)

Measuring “preparedness for Covid-19”

(2) Availability of handwashing facility with water and soap

“hygiene” = 1 if a household has handwashing facility with water and soap,

= 0 otherwise

(3) Adequate sanitation

“toilet” = 1 if toilet not shared with other households AND excreta safely disposed or treated or transported,

= 0 otherwise

Measuring “preparedness for Covid-19”

(4) Household ownership of phones, radio, and TV

“hhict” = 1 if a household has radio, or TV, or phones (fixed line or mobile)

= 0 otherwise

(5) Mother’s exposure to mass media

“mediaexposure” = 1 if a mother reads newspapers, OR listens to radio, OR watches TV

at least once a week,

= 0 otherwise.

Measuring “preparedness for Covid-19”

Generate a summary measure for the five dummy variables

(1) Constructing a dummy variable

“prepared” = 1 if “quarantine” =1 AND “hygiene”=1 AND
“toilet” = 1 AND “hhict” =1 AND
“mediaexposure”=1

= 0 otherwise

(2) Construct a variable to assess a household score on preparedness

Summing up the value across all five dummy variables, with scores ranging 0—5

Analytical framework

	Prepared	Quarantine	Hygiene	Toilet	Phone/radio/TV	Media exposure
(1) Estimating %						
Country-level	X	X	X	X	X	X
Aggregate-level	X	X	X	X	X	X
Region						
Income group						
(2) Assessing inequalities						
Within-country						
Residential area	X	X	X	X	X	X
Poverty/wealth status	X	X	X	X	X	X
Subnational	X	X	X	X	X	X
Aggregate-level						
Region	X	X	X	X	X	X
Income group	X	X	X	X	X	X

Analyzing “preparedness for Covid-19”

- Estimating aggregate-level of % of young children living in households with preparedness
  - Average of country-level estimate of % with population weights
  - Random-effect meta analysis (e.g. McKinnon et al. 2014 Lancet GH)

Analyzing “preparedness for Covid-19”

- **Measuring inequalities**

Absolute difference in % of young children living in prepared households

  - Within country
    - by residential area (rural vs. urban)
    - by poverty/wealth status (e.g. poorest 20% vs. richest 20%)
    - subnational inequality
  - Cross-country
    - by region
    - by income group

Issues on using wealth quintile

- Person per sleeping room, radio, TV, phones, toilet are included in constructing wealth quintile variable
- Suggestions from previous studies
  - Wealth indices remain useful proxies for water or toilet
- Our approach: two options

  (1) Using existing wealth quintile

  (2) Reconstructing wealth quintile by excluding TV, radio, toilet, persons per sleeping room

Methods

- Limitations

(1) Data before 2019

(2) Self-reported information

(3) Wealth index measure including outcome variables

(4) Not representative at the aggregate level

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Figure 1: % of young children living in prepared households (2018 & 2019)

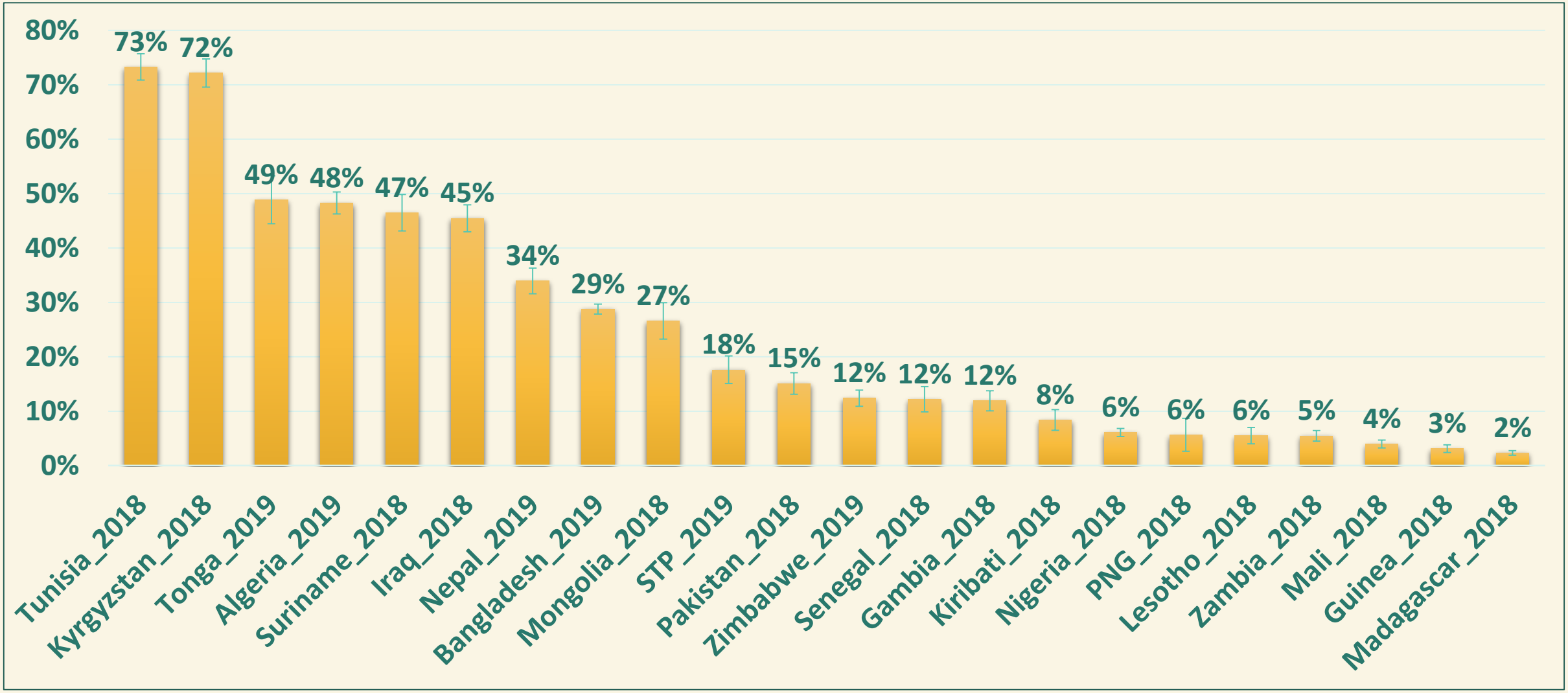


Figure 2 % of young children living in households with any ownership of radio, TV, landed/mobile phone (2018 & 2019)

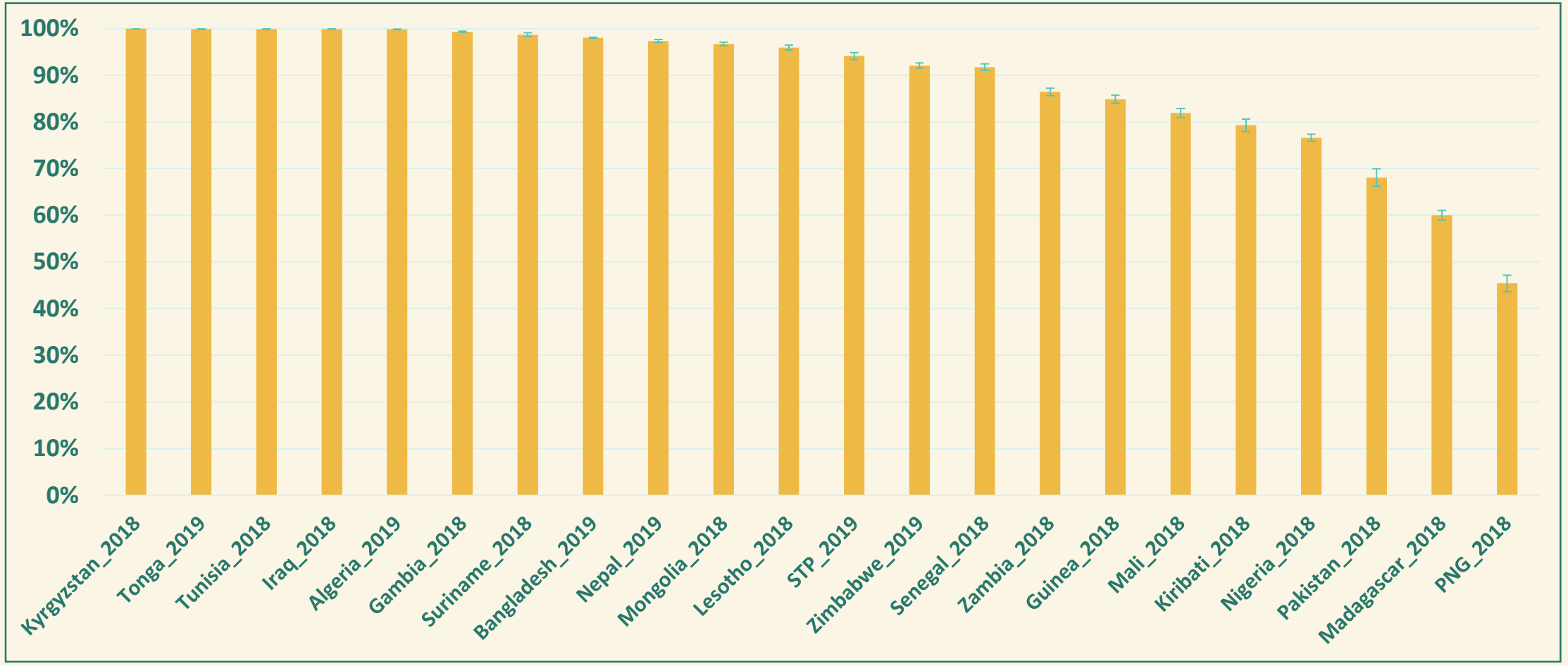


Figure 3 % of young children living in households with good quarantine condition (2018 & 2019)

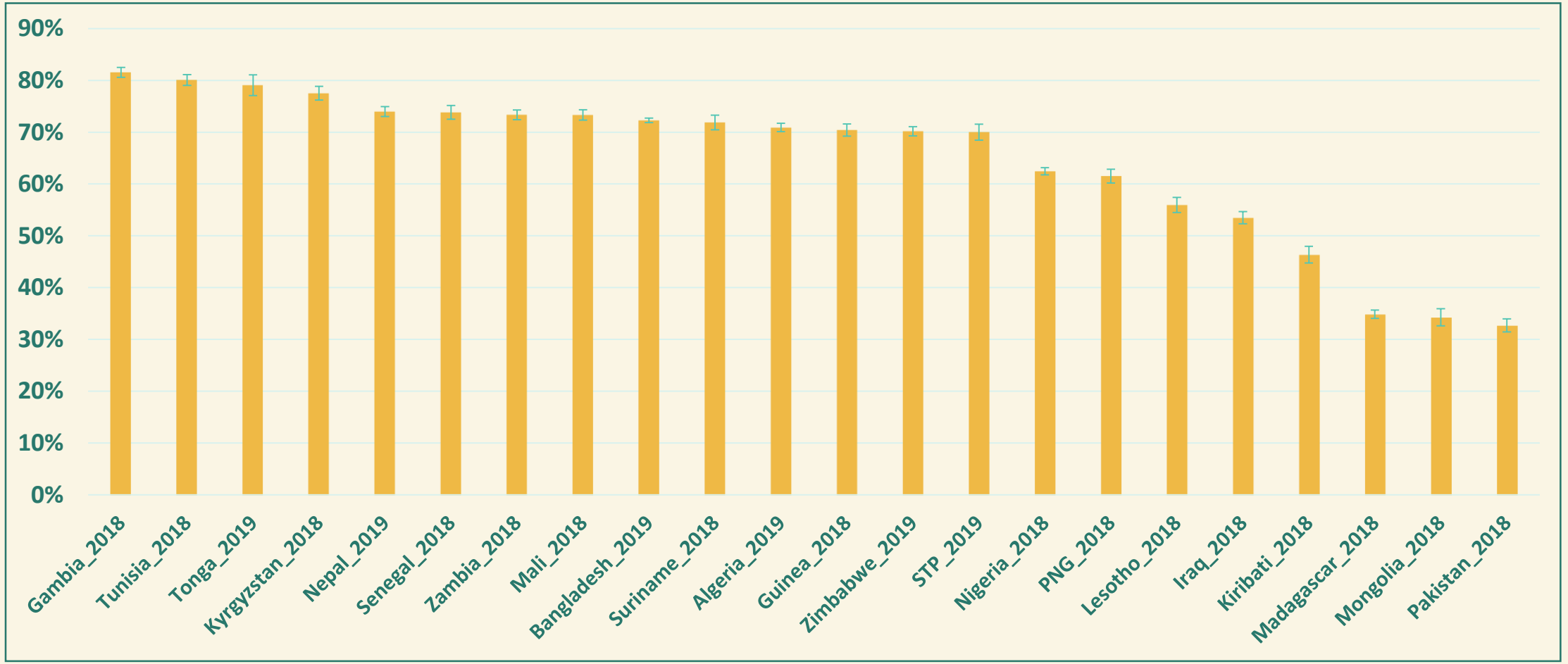


Figure 4 % of children living in households with mother exposed to mass media at least once a week (2018 & 2019)

Figure 5 % of young children living in households with handwashing facilities, water, soap (2018 & 2019)

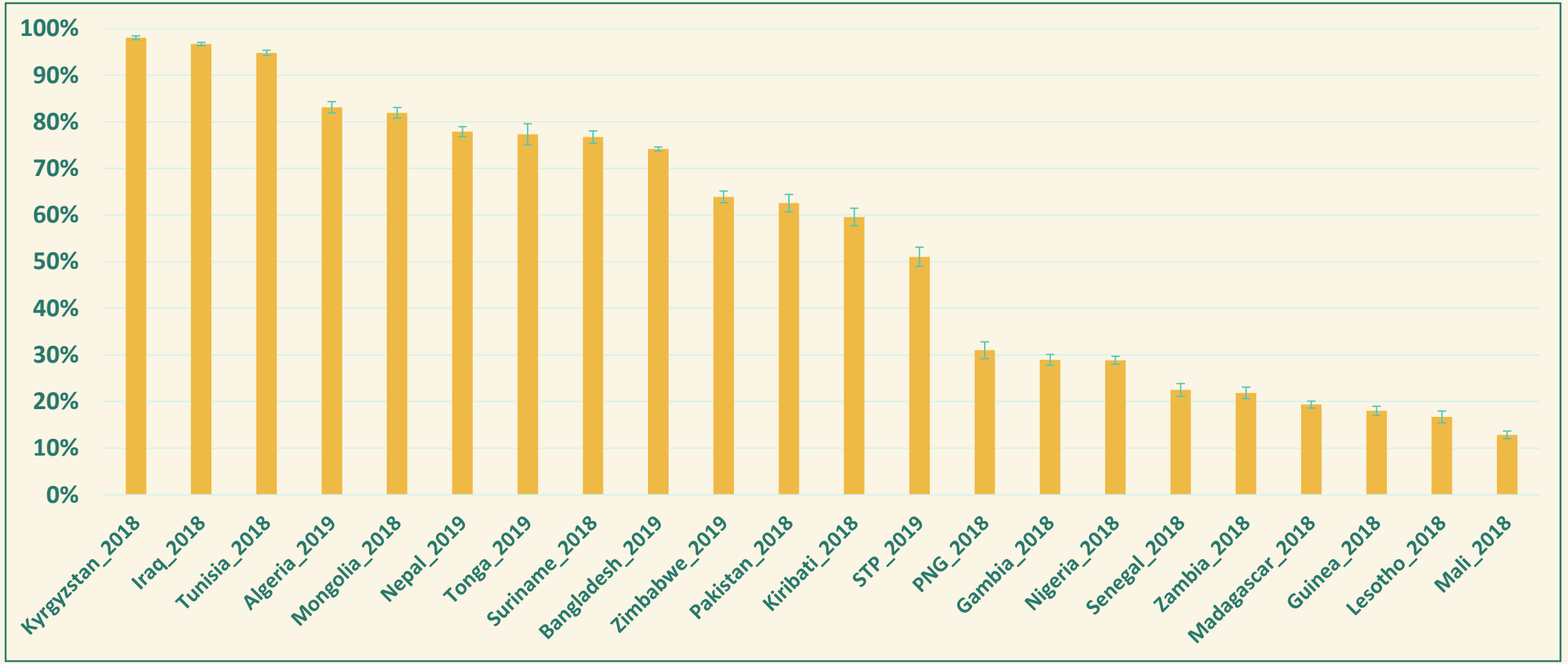


Figure 6 % of young children living in households with adequate toilet (2018 & 2019)

Figure 7 Disparities between young children living in rural and urban areas (2018 & 2019)

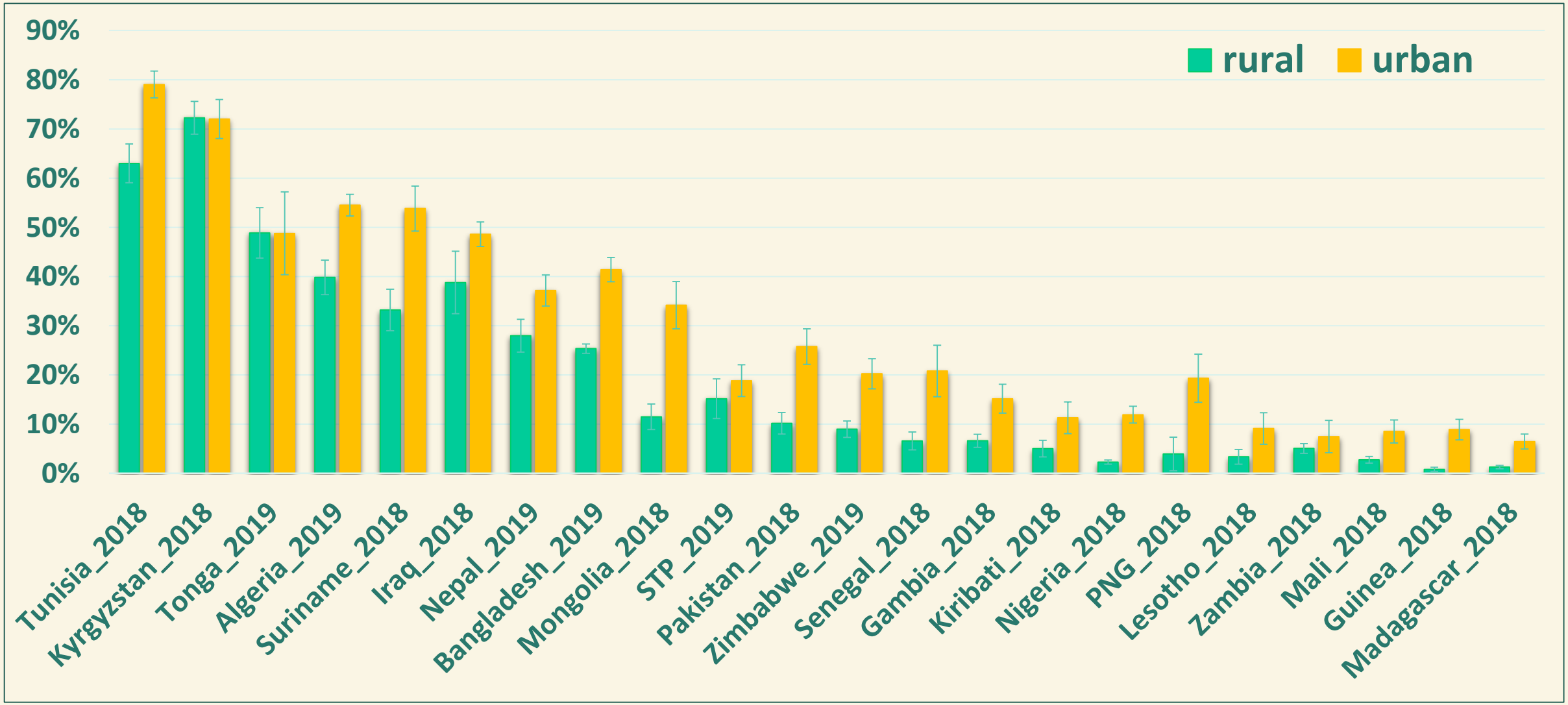
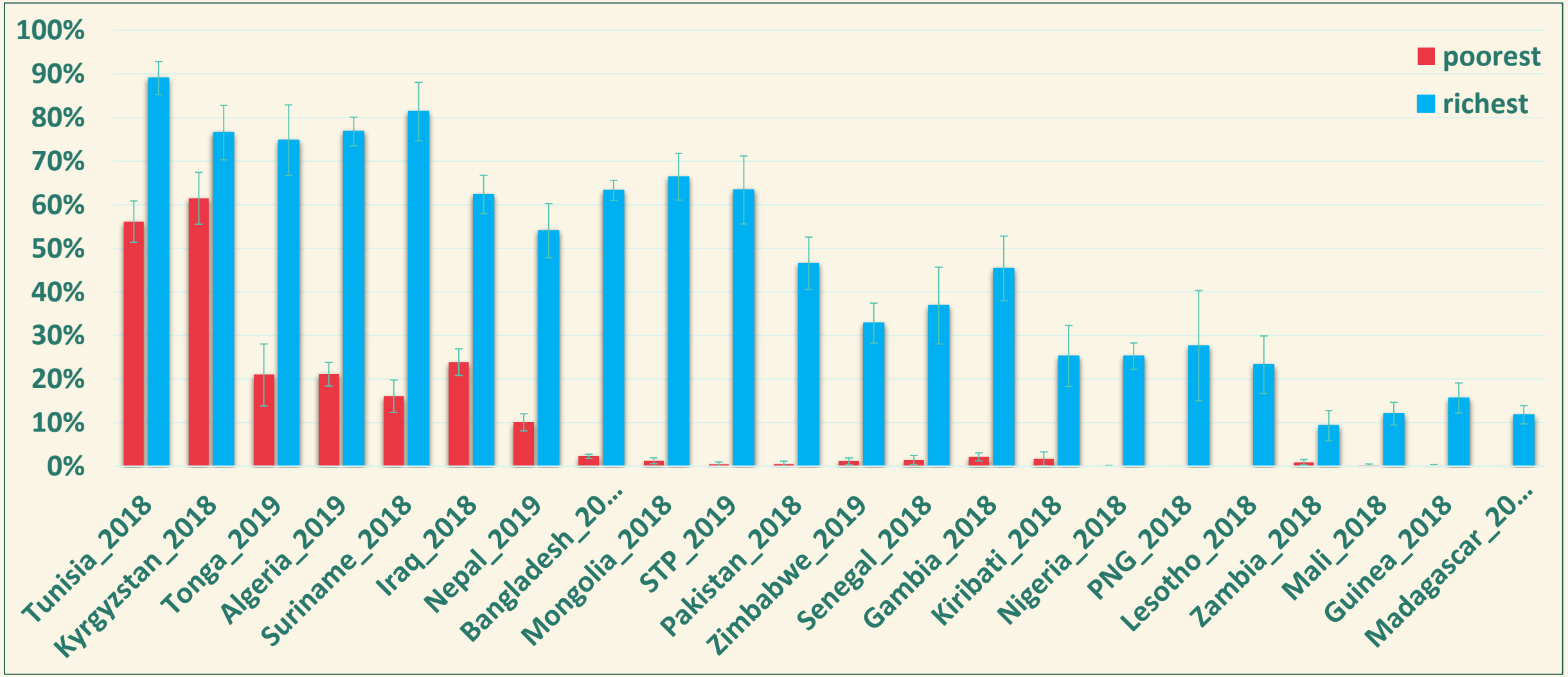


Figure 8 Disparities between young children living in the poorest and the richest wealth quintiles (2018 & 2019)



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Thank you very much!

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UKRI Economic and Social Research Council

GCRF Global Challenges Research Fund

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