

**Tanzania**

Background: COVID-19 outbreak started at Wuhan city in China, December 2019. On January, 2020 WHO declared it as, public health emergency and upon projection Sub-Saharan Africa was expected to see high number of deaths by 2020, because of poor and limited healthcare systems. In Tanzania by June 2020 there were 509 reported cases and 21 deaths from COVID-19 infection, among all reported cases were in cities. Since COVID-19 pandemic psychological impact was still unclear therefore understanding the psychological burden of the COVID-19 pandemic among caregivers is crucial in guiding policies and interventions to maintain their psychological well-being. Study Objective is to assess the psychological impact of COVID-19 on care givers of Dodoma Municipality in Tanzania. Methods: A cross-sectional study design were used, random sampling and purposeful sampling for select participants employed. The study established a brief, confidential, self-administered questionnaire containing DASS-21 (Depression, Anxiety, and Stress Scales) designed enquiry, in software data collector (KoBo toolbox), data analyzed by IBM SPSS software version 23.

Results: The current study employed a sample of 246 Dodoma residents' adults caregivers of COVID-19 patients, which found that psychological impact experienced by caregivers were commonly, anxiety, stress and depression was 83.7%, 76.4% 67.5 respectively, and peaking among nurses and family care givers, serving the frontline at hospital and quarantine center of COVID-19 patients. Mitigation of psychological burden, were achieved through taking precautionary measure of COVID-19, clear disease information, psychological support from family member, fellow staff and hospital managements, vaccination and least religious conviction. Conclusions: Generally, psychological burden has increased in COVID-19 caregivers, particularly among frontline health care workers, this may increase the risk of mood, sleep and functional disorders, therefore early psychotherapeutic interventions targeting this vulnerable group may be beneficial.

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### **Caring for Long COVID patients in primary health care: a cross-sectional study among general practitioners in Belgium and Malta**

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Background and Objective: At least 10% of COVID-19 recovered individuals experience persistent symptoms (Long COVID), with primary health care and general practitioners (GPs) at forefront in their care. In this study, GPs' knowledge, perception and experience on Long COVID, and the definition used across two countries are investigated to provide insight in their care at cross-country level.

Methods: A cross-sectional study targeting GPs was conducted in Belgium and Malta during mid-2022. An online survey on Long COVID was disseminated. Country-specific practice and demographic characteristics were collected. Descriptive and logistic regression analyses were performed.

Results: A total of 150 GPs (Belgium=105; Malta=45) responded. Female GPs represented 58.0%, median age was 49 years (IQR: 37-61). In both countries, two in three GPs felt that Long COVID patients were not well followed up by primary care. Most GPs reported insufficient scientific knowledge and information on Long COVID diagnosis and treatment. Accessibility to educational material was limited and an awareness-rising campaign is merited, especially in Malta (OR=6.81, 95%CI [1.49;31.12]). For diagnosing Long COVID, 54.7% reported the requirement of a positive COVID-19 test, especially among Belgian than Maltese GPs (64.3% vs 45.2%, p=0.036). To assess Long COVID, GPs mainly implemented diagnostic criteria by themselves (47.3%) together with persistence of symptoms (4 weeks to 5 months). 76.0% GPs reported caring for Long COVID patients, irrespective of practice type and GPs' country, sex or age (p=0.353; p=0.241; p=0.194; p=0.058). 48.3% of GPs reported to follow-up these patients by themselves or GP colleagues and 29.8% by multidisciplinary cooperation.

Conclusions: At cross-country level, most GPs provide similar (multidisciplinary) care to Long COVID patients. Although GPs perceive lack of scientific knowledge and training on Long COVID, similar diagnostic criteria were noted. Uniform guidelines, scientific support and training for GPs across Europe is a priority to augment their Long COVID approach.

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### **COVID-19 pandemic on public health systems and practice in 3 districts from the perspective of public health leaders: a qualitative study in Uganda**

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The COVID-19 pandemic has impacted health systems worldwide. Studies to date have largely focused on the health care system with less attention to the impact on public health systems and practice.

Objective: To describe the early impacts of COVID-19 on public health systems and practice in 3 Ugandan districts from the perspective of public health system leaders and synthesize lessons learned.

Design: A qualitative study using semi structured virtual interviews with public health leaders between October 2020 and April 2021. The World Health Organizations essential public health operations framework guided data collection and analysis.

Setting: This study involved the Ugandan government. These districts were chosen for their large populations, relatively high COVID-19 burden, and variation in public health systems.

Participants: Public health leaders from Kampala (n = 21), Wakiso (n = 18), and Mubende (n = 19) in organizations with a primary mandate of stewardship and/or administration of essential public health operations (total n = 58).

Results: We found that the COVID-19 pandemic led to intensified collaboration in public health systems and a change in workforce capacity to respond to the pandemic. This came with opportunities but also challenges of burnout and disruption of non-COVID-19 services. Information systems and digital technologies were increasingly used and there was greater proximity between public health leaders and other health system leaders. A renewed recognition for public health work was also highlighted.

Conclusions: The COVID-19 pandemic impacted several aspects of public health systems in the provinces studied. Our findings can help public health leaders and policy makers identify areas for further investment (eg, intersectoral collaboration, information systems) and develop plans to address challenges (eg, disrupted services, workforce burnout) that have surfaced.

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### **Impact of COVID-19 vaccination on mortality from COVID-19 severe acute respiratory syndrome (SRAG-COVID) in Brazilian municipalities in 2021**

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Background and Objective: During the COVID-19 pandemic, Brazil had difficulties in carrying out a timely vaccination campaign throughout its territory, already marked by strong social and health inequalities. The combination of vaccination of delay and structural inequality produced a heterogeneous vaccine coverage across the country. This work Aims to evaluate the differences in the impact of COVID-19 vaccination by on mortality due to COVID-19 severe acute respiratory syndrome (SRAG-COVID) in the country municipalities. In 2022, the initial difficulties on providing adequate vaccination coverage were overpassed.

Methods: Ecological study from January to December 2021, with monthly data from 200 Brazilian municipalities in five Brazilian regions with at least 25 deaths from COVID-19 in January 2021. A linear regression model was performed for the country and regions, with log-log transformation and fixed effects in the municipality, using SARS-COVID mortality rate standardized by age and sex as the dependent variable, first dose coverage as the independent variable and a significance level of 5%.

Results: The monthly average standardized mortality rate in January 2021 was 33.1 deaths/100,000 inhabitants, being higher in municipalities in the North and Midwest regions. Vaccination started in January 2021 and reached an average first dose coverage of 74.5% in December 2021, when the average mortality rate was 2.2 deaths/100,000 inhabitants, fifteen times lower than January 2021. A 10% increase in vaccination coverage caused an average decrease of 5.6% in the municipalities monthly mortality rate, with a significant effect in all regions, greater in the North (8.7%) and Northeast (6.3%).

Conclusions: Also in Brazil, vaccination was crucial for reducing deaths from COVID-19 and had a greater effect in the poorest regions of Brazil. A homogeneous increase in vaccination coverage, with a timely and well-articulated campaign by the central government, could be an important tool for reducing the country's territorial inequalities.

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### **Knowledge, attitudes, practices and perceptions around SARS**