Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

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Letter to the Editor

Regional differences in NPI efficacy and recommendations for Africa

Non-pharmaceutical interventions (NPIs) remain a key component of COVID response, particularly in low- and middle-income countries (LMICs) where vaccination is limited (Padma 2021). Much of what we know about NPI efficacy, however, comes from HIC contexts, and this knowledge is not necessarily transferrable to LMICs (Chowdhury et al. 2020). It is well-established that lockdowns have had detrimental effects in LMICs, including increased food insecurity and diminished healthcare access (Amare et al. 2021; Harling et al. 2021). Targeting NPI packages to regional contexts can potentially maximize efficacy while reducing secondary costs.

Based on empirical data from countries worldwide, Bo et al. (2021) present analyses of NPI impacts on Rt by NPI type (Bo et al., 2021). Examining countries in aggregate, they recommend social distancing as the most effective NPI for the control of COVID-19, consistent with other studies (Mendez-Brito et al. 2021). While they include valuable data on NPI efficacy by region (reproduced in Figure 1), Bo et al. make no comment on differences between or within regions. Herein I present a re-examination of their regionally differentiated data, leading to key insights including NPI recommendations for Africa that differ from their globally aggregated recommendation.

In comparing efficacy of different types of NPIs within a region based on data from Bo et al. 2021, social distancing remains the most effective NPI within Europe, the Americas, and Asia, consistent with global recommendations ((Bo et al., 2021); Mendez-Brito et al. 2021). In contrast, mobility-related NPIs are the most effective in Africa, where the change in Rt is -30.86%, with a 95% confidence interval of [-34.83%, -26.66%]. In Africa, masking is the next most efficacious NPI, but with a wide confidence interval (Rt change of -28.56%, [-48.80%, -0.31%]). Social distancing follows with a change in Rt of -16.05%, [-21.33%, -10.41%].

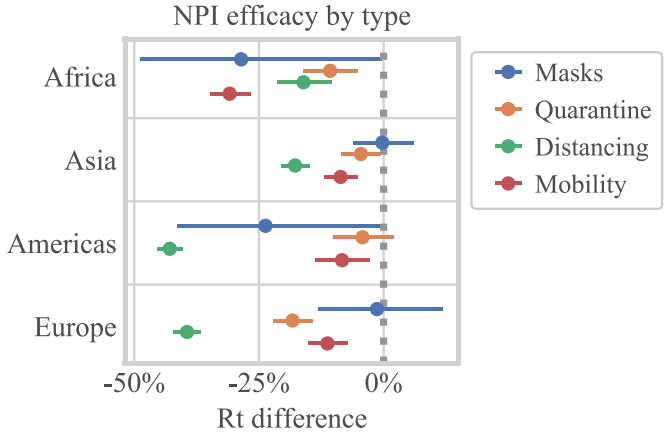

FIGURE 1. NPI types grouped by region on the y-axis. Percent difference in Rt with vs. without NPI policy on the x-axis. See Bo et al. 2021 for data and methodology (Bo et al., 2021).

Despite the high uncertainty in the efficacy of masking in Africa, two factors recommend its continuing use as an NPI policy. There is a wide evidence base supporting the efficacy of masking in reducing COVID transmission, particularly when compliance is high (Howard et al. 2021). Further, masking is cost-effective, both reducing cost in human life and offsetting economic costs associated with lockdowns (Abaluck et al. 2020; Hatzius et al. 2020).

Implementing targeted mobility NPIs, strengthening masking policies and practices in Africa, and easing social distancing may be a path to optimizing trade-offs between epidemiological efficacy and secondary costs of NPI policies. In addition, strategic public messaging may increase NPI compliance, serving as a key component of NPI policy implementation (Harling et al. 2021; Howard et al. 2021). The demonstration of regional differences in NPI efficacy highlights the importance of context-specific information for targeting NPI policy design and minimizing detrimental secondary effects.

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Ethical approval

Not required.

Declaration of Competing Interests

The author declares no conflicts of interest.

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