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Short Communication

Perceived challenges of COVID-19 infection prevention and control preparedness: A multinational survey

Ermira Tartari a,b,c,1, Joost Hopman d,1, Benedetta Allegranzi b,e, Bin Gao f,g, Andreas Widmer b, Vincent Chi-Chung Cheng d,1, Shuk Ching Wong j, Kalisvar Marimuthu k,l,m, Folashade Ogunsola h,o, Andreas Voss d,p,q,i,2, on behalf of the International Society of Antimicrobial Chemotherapy Infection and Prevention Control ISAC-IPC Working Group 2

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1. Introduction

Implementation of effective infection prevention and control (IPC) measures is needed to support global capacity building to limit the transmission of coronavirus disease 2019 (COVID-19) and mitigate its impact on health systems. The COVID-19 pandemic has shown a high incidence of transmissibility of health care-associated infections and outbreaks affecting healthcare workers (HCWs) who are at the forefront of these crises, illustrating the importance of being prepared [1].

2. Methods

We assessed the perceptions of infection preventionists on the current global IPC preparedness measures for COVID-19. Between 26 February 2020, and 20 March 2020, we conducted a cross-sectional self-administered web-based survey study to gain a rapid insight into the preparedness of healthcare facilities and investigate current global practices and perceptions among IPC professionals concerning the prevention and control of COVID-19. All IPC professionals working in healthcare facilities preparing for the detection, investigation and management of confirmed and
suspected COVID-19 patients were invited to participate. Descriptive statistics were used to analyse the survey data. Differences between regions and income groups were tested using Pearson’s χ² test for categorical variables.

3. Results and discussion

A total of 349 responses were received; 10 were excluded as no demographic information was provided. The 339 eligible responses were from 63 countries across six regions: Africa, 113 (33.3%); Europe, 92 (27.1%); Southeast Asia, 72 (21.2%); the Americas, 33 (9.7%); Eastern Mediterranean, 15 (4.4%); Western Pacific, 14 (4.1%). Based on the 2020 World Bank list of gross national income per capita, they represented 113 (33.3%) responses from high-income countries (HICs), 99 from upper-middle-income countries (UMICs) (29.2%), 71 from lower-middle-income countries (LMICs) (20.9%) and 56 from low-income countries (LICs) (16.5%) (https://datahelpdesk.worldbank.org/knowledgebase/articles/906519-world-bank-country-and-lending-groups). Response rate by profession included 190 IPC physicians (56.0%);
113 IPC nurses (33.3%) and 36 other professionals, including pharmacists and public health specialists. Healthcare facilities represented in the survey were mostly tertiary care centres (46%). Of all participants, 66.6% were aware of the existence of national guidelines to prevent COVID-19 (Table 1). A shortage of personal protective equipment (PPE) supplies was reported by 48% (ranging from 64.2% in LICs to 27.4% in HICs). When asked about the availability of PPE supplies, 163 of 339 [48%; 95% confidence interval (CI), 42.7–53.4] respondents reported a shortage of supplies [64.2% (36/56); 95% CI, 51.7–76.8] in LICs compared with 27.4% (31/113; 95% CI, 19.2–35.6) in HICs. A total of 41.5% of respondents considered that the media had an impact on guideline development and 63.6% believed that guidelines were based on maximum security rather than on evidence-based recommendations; thus, uncertainties regarding the transmission modes of COVID-19 continue to generate controversy [2,3].

The belief that opinions expressed by the media influenced the choices made for national/local guidelines or the preparedness plans for COVID-19 was confirmed by 41.5% (105/252; 95% CI, 35.4–47.5) of respondents. More than half of them (161/253; 63.6%; 95% CI, 57.7–69.5) also believed that national/local guidelines were based predominantly on maximum security, rather than on evidence-based recommendations. HICs were more likely than LICs to report sufficient preparedness (51/71; 71.8%; 95% CI, 61.3–82.2 vs. 14/45; 31%; 95% CI, 17.5–44.6; P < 0.01).

Participants reported that national or local COVID-19 guidelines recommended mainly the use of N95/FFP2 masks (120/267; 44.9%), followed by surgical masks (77/267; 28.8%) or a combination of the two in specific situations, respectively (39/267; 14.6%), and powered air-purifying respirators (PAPR) (21/267; 7.9%) (Table 2). A total of 74.3% (188/253; 95% CI, 68.9–79.6) believed that the use and heightened focus on wearing facemasks creates a misplaced feeling of safety, possibly reducing attention on other IPC measures, such as hand hygiene.

At the height of the outbreak, uncertainties about transmission led many institutions to impose airborne precautions while considerable variation was observed amongst international guidelines. The main transmission modes of COVID-19 virus occur via respiratory droplets and contact [4,5]. More uniformity is needed at the international level on PPE recommended for care of suspected or confirmed COVID-19 patients, based on available evidence and the most effective IPC strategies. The PPE doffing process is critical to keep HCWs safe, and further research on the science of human factors and HCW behaviour with respiratory protection safety is needed.

4. Conclusions

The COVID-19 global pandemic has shown the importance of building more resilient healthcare systems with effective IPC as key to avoid or mitigate outbreak impact. Health organizations should jointly evaluate the available evidence and develop a uniform policy on the appropriate PPE to be used. Strengthening of coordinated international efforts is urgent to address the challenges related to the major PPE shortage in healthcare facilities, particularly the lack of resources in low-income settings, and to improve reliable communication through the media. National health authorities should ramp up the implementation of IPC measures and focus on long-term preparedness and readiness for future pandemics, which likely requires government funds rather than reliance on healthcare institutions.

Competing interests

None to declare.

Ethical approval

This study was exempted by the Radboud University Medical Center (The Netherlands) as it did not fall within the remit of the Medical Research Involving Human Subjects Act (NL2020–6262).

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