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## **RESEARCH** ARTICLE



## Worldwide Comparison of Symptoms and Symptomatic Treatment Recommendations in Mild COVID-19

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#### Abstract

**Background:** Coronavirus disease 2019 (COVID-19) has rapidly become a common illness, affecting over 1% of the global population in 2020. Although some patients are severely affected and may have life-threatening complications, most SARS-CoV-2 infections cause mild disease. Yet, symptoms can entail considerable suffering. This is the first worldwide systematic review comparing COVID-19 symptoms and symptomatic treatment recommendations from the literature and health authorities, with a focus on self-care medication in mild disease.

**Methods:** To systematically compare symptoms and symptomatic treatment recommendations in mild COVID-19 from the scientific literature and by health authorities worldwide, we have performed systematic literature searches for COVID-19 and symptoms, limited to mild disease or self-reported symptoms and patients staying home. Web sites of the major national health authorities from Africa, America, Asia, Europe, Middle East, and Oceania were searched for patient recommendations.

**Results:** Symptoms of COVID-19 are multifarious, touching practi-cally all organ systems. Except for the neurological symptoms (e.g. anosmia and ageusia), the most common complaints of mild disease (e.g. fever, cough, rhinitis, sore throat, headache, myalgia, and diarrhea) are amenable to self-care medication. From the health authorities of 30 countries across all global regions, 29 recommendations were reviewed. Practically all the authorities mention fever and cough, while other symptoms, in particular neurological and gastrointestinal manifesta-tions, are not listed consistently. Only four of the 29 institutions provide patients with specific recommendations for symptomatic treatment, whereas two advise explicitly against any symptomatic therapy. Keywords: COVID-19, symptoms, symptomatic treatment, self-care, systematic literature review, guidelines, health authorities, health care policy

**Conclusions:** More complete and up-to-date descriptions of anticipated COVID-19 symptoms could help direct more patients to testing, isolation, and appropriate care. For most COVID 19 patients, symptomatic treatments should be the therapeutic mainstay. However, advice from the health authorities on the self-care treatment of COVID-19 symptoms is scarce. This may deprive patients of necessary and effective treatments and turn them toward less reliable sources and potentially harmful remedies.

**Keywords:** COVID-19, symptoms, symptomatic treatment, self-care, systematic literature review, guidelines, health authorities, health care policy

### 1 | INTRODUCTION

OVID-19, caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), affected about 80 million people worldwide by the end of 2020 (1). In a large cohort of symptomatic patients, 81% had mild disease (i.e. without or with only mild pneumonia), 14% had severe disease, and 5% became critically ill with organ failure (2). Severe disease, which typically starts about 1 week after the onset of symptoms, with dyspnea (respiratory rate  $\geq$  30/min) and often hypoxemia (2), requires hospitalization (3).

Most subjects infected with SARS-CoV-2 will experience symptoms. While it was previously estimated that about 40-45% remain asymptomatic (4), a recent meta-analysis determined the rate of asymptomatic infection may be lower at only 17%, although advising that more and robust epidemiology evidence is needed (5). Among healthcare workers with confirmed infection, 9% reported no symptoms, 78% mild symptoms, and 13% severe symptoms (6).

Common acute symptoms of hospitalized patients with COVID-19 are fever (59%), cough (55%), dyspnea (31%), malaise (30%), fatigue (28%), sputum/secretion (25%), neurological symptoms (21%), dermatological manifestations (20%), anorexia (20%), myalgia (17%), sneezing (15%), sore throat (14%), rhinitis (14%), goosebumps (13%), headache (12%), chest pain (11%), and diarrhea (10%) (7).

In one systematic review not restricted to hospital patients, fever (69%/44%), cough (53%/33%), and dyspnea (20%/4%) were more common in adults than in children, whereas diarrhea was more frequent in children (12%/9%) (8).

Our study reviews the information on symptoms and symptomatic treatment of ambulatory COVID-19 patients with mild disease in the scientific literature and compares it to the guidance and patient recommendations provided by the Health Authorities.

## 2 | METHODS

The literature search was performed in PubMed on December 31, 2020. The following filters were ap-

plied: Text availability - Abstract; Article type all; Publication date - any; Language - any. Key words: COVID-19 AND (symptom OR symptomatic OR manifestation OR complaint) AND (mild[TI] OR mildly[TI] OR non-severe[TI] OR self[TI] OR home[TI]). Medical Subject Headings (MeSH) were not used, because they yielded much fewer results, possibly due to indexing lag (9). Abstracts and selected full texts were searched for symptomatic treatment recommendations for patients without underlying disease and not requiring hospitalization, as shown in Figure 1.

The websites of worldwide Health Authorities were accessed between December 28 and 31, 2020. For each global region, Health Authorities of 5 most populated and/or economically important countries were identified, as shown in Table 1. If several of a country's major governmental Health Authorities provided information on COVID-19, the institution providing most patient information was chosen. The information was accessed by clicking through visible headings, such as COVID-19 or news, rather than by using search terms. Professional information (e.g. manuals for health care providers) was accessed only if no patient information was available.

Information in languages other than English, French, German, Italian, Portuguese, and Spanish was translated in English using Google Translate or Yandex.Translate.

## 3 | RESULTS

#### **Review of the literature**

The literature search produced 432 results; 1 additional article (a systematic review and metaanalysis) (10) was identified in other searches. Of these 433 articles, 2 were published in 2019, 419 in

**Supplementary information** The online version of this article (https://doi.org/10.52845/CMRO/2021/4-8-1) contains supplementary material, which is available to authorized users.

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2020, and 12 were dated 2021. Of the 56 abstracts selected for the full text review (see Figure 1), 50 (89%) discuss only symptoms of COVID-19 and 6 (11%) discuss symptomatic treatments.

Of the 50 articles discussing only symptoms, 16 were excluded based on the full text, because the study concerned hospitalized patients (n=8), the diagnosis of COVID-19 was not confirmed (n=5), or no specific information on the symptoms was given (n=3). The 34 included articles report 22 prospective studies, 3 retrospective studies (11-13)3 case reports (14-16), and 6 reviews or metaanalyses (10, 17-21). Among the 22 prospective studies, 8 considered smell or taste disorders (22-(28), 2 fever (29, 30), 1 psychological distress (31), and 11 any symptoms (32-42). Of the 11 prospective studies considering any symptoms, all report - besides cough and fever - neurological symptoms (e.g. anosmia / ageusia), gastrointestinal symptoms (e.g. nausea, vomiting, and diarrhea), nasal symptoms (e.g. rhinorrhea and nasal congestion), headache, sore throat, and body aches (e.g. myalgia), with the exception of one study that does not specify headache (37). These 11 studies were conducted in Canada (32), Germany (38), India (36), Italy (39-41), the Netherlands (33, 34), South Korea (35, 42), and the United States (37). Of the 3 retrospective studies, 2 report, besides fever and cough, neurological, gastrointestinal, and nasal symptoms, as well as headache (only (11), sore throat, and body aches (11,13), while 1 lists headache, sore throat, and body aches, but neither neurological nor gastrointestinal symptoms (12). The 3 case reports describe anosmia and tachycardia (14), exanthema and paresthesias (15), and mild respiratory symptoms with or without fever (16). Of the 6 systematic reviews and meta-analyses, 4 focus on specific symptoms, i.e. gastrointestinal symptoms (17) or dysosmia and dysgeusia (10, 20, 21), while 2 report on general symptoms, i.e. fever, cough, diarrhea, myalgia, fatigue, expectoration, dyspnea, shortness of breath, headache, sore throat, nausea, vomiting, nasal congestion, rhinorrhea, chest pain, and chest tightness (19), or fever, cough, myalgia, fatigue, and expectoration (18).

In summary, of the 34 publications discussing only symptoms, 16 articles, 11 prospective studies, 3

retrospective studies, and 2 meta-analyses (not including the 3 case reports), considered a priori any COVID-19 symptoms. All (100%) of these 16 articles list fever and cough. Moreover, regarding the other most frequently reported COVID-19 symptoms, 15 (94%) mention body aches, 14 (88%) gastrointestinal symptoms, 14 (88%) nasal symptoms, 14 (88%) sore throat, 13 (81%) neurological symptoms, and 12 (75%) headache. Other symptoms, which were less regularly reported in the articles selected in the literature review, include (ordered by body systems): dyspnea; tachypnea; expectoration; hemoptysis; sneezing; postnasal drip; dysphagia, lump in the throat; abdominal pain; chills; sweating; feeling warm and then cold again; hypothermia; fatigue; dizziness; malaise; lethargy, altered consciousness; drowsiness; confusion; disorientation; delirium; restlessness; fearfulness; anxiety; stress; depression; insomnia; anorexia; migraine; sinonasal pain; face pain or heaviness; generalized body pain; paresthesia, e.g. numbness or tingling; arthralgia; back pain; chest pain or tightness; angina; tachycardia; palpitations; ocular symptoms, e.g. red, sore, or itchy eyes and conjunctivitis; and cutaneous symptoms, e.g. rash.

Of the 6 articles discussing symptomatic treatments, 4 were excluded from this review, as they give no specific information on the symptoms (n=3)(43-45)or concern a hospitalized patient (n=1) (46). One of the 2 included articles reports a double-blind, randomized trial of 392 patients (nitazoxanide 500 mg orally 3x/day, 194; placebo, 198) (47). The antiparasitic and broad-spectrum antiviral drug nitazoxanide significantly reduced viral load versus placebo after 5 days, but had no effect on the primary symptomatic outcome (the resolution of dry cough, fever, or fatigue). The other article describes the results of an open-label, non-randomized trial of hydroxychloroquine plus lopinavir / ritonavir (Group 1; 14 patients, retrospectively) versus hydroxychloroquine plus acetic acid 0.34% inhaled 2x/day (Group 2; 15 patients, prospectively), to evaluate the effects of the principal disinfectant component of vinegar (48). After 15 days, Group 2 reported 2x more improvements in cough, fever, dyspnea, vomiting / diarrhea, fatigue, headache, nasal congestion, anosmia, or dysgeusia than Group 2, but the numbers were too small

for statistical analysis.

#### **Recommendations of the health authorities**

The following health authorities were identified from 30 countries (5 of each region; see Table 1 Africa: Algeria-Ministry of Health (MSPRH), Ethiopia-Ministry of Health (MOHE), Kenya-Ministry of Health (KMOH), Nigeria-Federal Ministry of Health (FMOH), South Africa-Ministry of Health (DOHZA); Americas: Argentina-Ministry of Health (ANMAT), Brazil-Health Regulatory Agency (ANVISA), Canada-Health Canada (HC), Mexico-Ministry of Health (COFEPRIS), United States-Centers for Disease Control and Prevention (CDC); Asia: Bangladesh-Ministry of Health and Family Welfare (MOH&FW); China-National Health Commission (NHC), India-Ministry of Health and Family Welfare (MoHFW), Japan-Ministry of Health, Labour and Welfare (MHLW), Pakistan-Ministry of National Health Services (NHSRC); Europe: France-Ministry of Social Affairs and Health (solidarites-sante), Germany-Federal Ministry of Health (BMG), Italy-National Health Institute (ISS), Russia-Ministry of Health (Minzdrav), United Kingdom-National Health Service (NHS); Middle East: Egypt-Ministry of Health and Population (MOHP), Iran-Ministry of Health and Medical Education (MOHME), Israel-Ministry of Health (Misrad-HaBri'ut), Saudi Arabia-Ministry of Health (MOHS), Turkey-Ministry of Health (Saglik-Bakanligi); Oceania: Australia-Department of Health (health.gov.au), Indonesia-Ministry of Health (kemkes.go.id), Malaysia-Ministry of Health (moh.gov.my), New Zealand-Ministry of Health (health.govt.nz), Philippines-Department of Health (doh.gov.ph).

From the official web sites of the 30 health authorities, all but 1 (Egypt's MOHP) (49) could be accessed. At all 29 accessed sites (100%), relevant information on COVID-19 could be retrieved through a few clicks. Most of the relevant information was provided as text, except for Nigeria's FMOH (50), where it was given in a video. Six sites provided only professional information, which was not considered as patient advice regarding treatment, as it included prescription drugs. At 7 of the 29 sites (24%), the information was updated in the first half and by 13 sites (45%) in the second half of 2020, whereas 9 sites (31%) did not date their information.

Of the 29 official web sites, all except two (50, 51) listed COVID-19 symptoms including fever and cough. Neurological (e.g. anosmia / ageusia) or gastrointestinal symptoms (e.g. nausea, vomiting, and diarrhea), however, were each communicated by only 11 sites (38%) Table 1. While 5 sites (17%) listed both neurological and gastrointestinal symptoms, 12 (41%) mentioned neither of these. Nasal symptoms (e.g. rhinorrhea and nasal congestion), headache, sore throat, and body aches (e.g. myalgia) were covered by 14 (48%), 10 (34%), 17 (59%), and 15 (52%), respectively, of the sites. Only one site (52) listed all these symptoms. Other COVID-19 symptoms, which were infrequently mentioned by the health authorities, included dyspnea, fatigue, feeling unwell, malaise, abdominal pain, chills, chest pain, anorexia, arthralgia, rashes, conjunctivitis, and skin changes.

Only 4 (14%) of the 29 official web sites of the health authorities, i.e. those from France (53) the United Kingdom (54), Japan (55), and the United States (52) provided patient informa-tion for the treatment of COVID-19 symptoms. Of these, just one (3%), from the United King-dom

(54), recommended treatments according to specific symptoms (cough and fever). The medications recommended to patients include paracetamol (52, 53) antipyretics (55), honey for cough (54), and paracetamol or ibuprofen for fever (54).

## 4 | DISCUSSION

To our knowledge, this work is the first systematic review comparing the symptomatic treatment recommendations for COVID-19 patients. Several previous reviews have focused on the nature of symptoms reported by COVID-19 patients with mild disease, non-severe disease, or not requiring hospitalization (10, 17–21). Most of these regarded specific symptoms, such as smell or taste alterations (10, 20, 21) or gastrointestinal symptoms (17). The two reviews considering all symptoms / any of the symptoms were limited to clinical studies published in

English and Chinese language, before 16 March (18) and 1 April 2020 (19), respectively. By contrast, our review was not restricted by article type or language, and considered both symptoms and symptomatic treatments for mild COVID-19 patients not requiring hospitalization. Moreover, we compared the patient recommendations for symptomatic treatments by the major health authorities globally and in any language.

Major limitations of the present literature search include the restriction to publications listed in PubMed and a limited string of key words. COVID-19 studies are often published first or exclusively in databases not covered by PubMed (56). Additional information might have been retrieved by considering all publications of COVID-19 and symptoms without *a priori* restriction to the title terms mild, mildy, non-severe, self, or home (which yields 21,418 results). Hence the literature search presented here may not give an exhaustive list of all symptoms and treatments in mild COVID-19. Rather, it reflects the information that is currently (as of 31 December 2020) available to health care professionals searching in a major, public, and trusted search engine (57).

## **Review of symptoms**

The literature review of mild COVID-19 symptoms revealed surprising homogeneity, particularly among the 11 prospective studies not focusing on particular symptoms, although these studies were conducted in various countries across Asia (India, South Korea), Europe (Germany, Italy and the Netherlands), and North America (Canada and the United States). Thus, all studies report fever, cough, neurological symptoms (e.g. anosmia, ageusia), gastrointestinal symptoms (e.g. nausea, vomiting, and diarrhea), nasal symptoms (e.g. rhinorrhea and nasal congestion), headache, sore throat, and body aches (e.g. myalgia), with the exception of one study not specifying headache.

In contrast to the information available from the published studies, the review of the symptoms detailed on the web site of the major health authorities exposed major omissions and discrepancies. Thus, of 29 sites (4-5 for each global region) that were accessed, only 5 (17%) listed neurological and abdominal symptoms in addition to fever and cough. In a reverse situation to the published studies, only one of the health authorities provided the most frequent symptoms of mild COVID-19, which also include nasal symptoms, headache, sore throat, and body aches. This is particularly concerning regarding the neurological symptoms, such as anosmia and ageusia, and the gastrointestinal symptoms, such as nausea, vomiting, and diarrhea. Anosmia / dysosmia and ageusia / dysgeusia are frequent in mild to moderate COVID-19 (22), independently predictive of COVID-19 infection (27), and often the only signs of the disease (28), Similarly, COVID-19 patients may present with gastrointestinal complaints as the only symptoms (58). Anosmia, nausea, and vomiting have been identified as the strongest predictors for COVID-19 infection alongside fever, chills, and dyspnea (38).

We are at loss of any plausible explanation why most health authorities worldwide have chosen to omit characteristic COVID-19 symptoms, in particular the loss of smell or taste alteration, from their patient information. Olfactory disorders associated with SARS-CoV-2 infection have been widely published since the first half of 2020 (59–61), while a substantial proportion of the institutions have apparently updated their information in the second half of 2020. While such omissions may adversely affect the containment of COVID-19, as more cases remain undetected and are not isolated, they could also worsen its prognosis, by impeding the timely diagnosis and treatment of pneumonia (62).

## **Review of treatments**

Most of the symptoms of mild COVID-19, such as fever, cough, rhinitis, sore throat, headache, myalgia, and diarrhea) can be treated with over-the-counter medications, such as paracetamol (acetaminophen), antitussives, antihistamines, non-steroidal antiinflammatory drugs (NSAIDs), or antidiarrheals. The benefit/risk profile of these symptomatic treatments (63–66), as well as of herbal medicines (67), is well established in other viral diseases, including the common cold, influenza, and acute gastroenteritis. However, the information retrieved in the present literature review is scarce regarding symptomatic treatments in COVID-19 patients. Little more information is currently obtained when the search is

not limited to mild disease, self-care treatment, and patients staying home. While early warnings against the use of NSAIDs or corticosteroids in COVID-19 patients have been subsequently refuted or 'toned down' (68, 69), the actual clinical evidence for the efficacy and safety of symptomatic COVID-19 treatments is still sketchy and limited to hospitalized patients (70, 71). A conclusion from this is that more research into symptom relief in acute COVID-19 in ambulatory patients is urgently needed.

In our study patient advice from the health authorities for symptomatic treatments was rare, as general or symptom-related advice was given by only three and one web sites, respectively, of 29 institutions. There may be several reasons for health authorities not providing patient advice for the symptomatic treatment of COVID-19. First, as documented in the literature review, data on the clinical efficacy and safety of self-care treatment in COVID-19 is still scarce. Thus the Indian health authority stated that recommendations for self-care medication are pending on the results of ongoing clinical trials (72). Second, health authorities might try turning patients away from self-care in order to direct them to professional care for a potentially deadly disease (although in other countries, patients with mild disease are discouraged from health care attendance to avoid infection transmission). Third, withholding symptomatic treatments could potentially avert patients from pursuing their usual activities, such as school or work, and thus spreading the disease.

In the absence of official recommendations for symptomatic treatments, however, the COVID-19 epidemic has fueled the spread of misinformation and use of potentially harmful remedies, such as alcohol (i.e., the ingestion of ethanol or methanol), antibiotics, and antimalarials (73). A recent international survey has shown the widespread use of broad-spectrum antibiotics in patients with COVID-19 (74). More efficient patient information and the implementation of antimicrobial stewardship are warranted to mitigate the negative consequences of such practices.

#### 5 | CONCLUSIONS

This review has searched which symptoms of COVID-19 are amenable to self-care and which symptomatic treatments are recommended by the major national health authorities worldwide.

The results reveal that the patient information provided by the health authorities worldwide is incomplete regarding the symptoms of COVID-19 and scarce regarding symptomatic treatments. Fewer than one out of seven institutions make specific recommendations for self-care treatment.

As most health authorities worldwide do not present the full information on the characteristic symptoms of COVID-19 that is available from clinical studies, the recognition of COVID-19 by patients, and therefore their testing, isolation, and access to appropriate care, are compromised.

While the clinical data on the symptomatic treatment of COVID-19 are still scarce, especially for ambulatory patients, the lack of recommendations for self-care treatment by many health authorities may contribute to suffering and lead patients to use less reliable sources of information and potentially harmful remedies.

A comprehensive and consistent description of COVID-19 symptoms by the health authorities, particularly regarding the neurological and gastrointestinal manifestations, and providing practical information on symptomatic treatments, may help to curb the epidemic and improve patients' lives.

## **TABLE 1:** Health authority recommendations for COVID-19 symptoms by region and country

Region / Country	Reference	Symptoms	Symptomatic treatments
Africa			
Algeria	MSPRH (75)	Fever, fatigue, cough, chest pain, nasal congestion, rhinorrhea, sore throat, diarrhea	- no recommendations -
Ethiopia	MOHE (76) (professional information)	Fever, cough, sore throat, nasal congestion, malaise, headache, myalgia	Paracetamol 1000 mg 3-4x/day Tramadol 50-100 mg 4-6x/day avoid ibuprofen and aspirin
Kenya	КМОН (77)	Fever, cough, dyspnea, rhinor- rhea	- no recommendations -
Nigeria	FMOH (50)	- none specified -	Do not self-medicate
South Africa	DOHZA p (78)	Fever, fatigue, cough, aches, nasal congestion, rhinorrhea, sore throat, diarrhea	- no recommendations -
Americas			
Argentina	ANMAT (79)	Fever, cough, sore throat, dys- pnea, myalgia, headache, diar- rhea, vomiting, anosmia, ageusia	- no recommendations -
Brazil	ANVISA ( <mark>80</mark> )	Fever, cough, sore throat, rhinitis	- no recommendations -
Canada	HC (81)	Cough, dyspnea, fever, chills, fa- tigue, myalgia, body aches, anos- mia, ageusia, abdominal pain, di- arrhea, vomiting, feeling very un- well; children: abdominal symp- toms, skin changes, rashes	- no recommendations -
Mexico	COFEPRIS (82)	Cough, fever, headache, sore throat, conjunctivitis, myalgia, arthralgia, feeling unwell	- no recommendations -

Continued on next page

**RECOMMENDATIONS IN MILD COVID-19** 

WORLDWIDE COMPARISON OF SYMPTOMS AND SYMPTOMATIC TREATMENT

Table 1 continued			
United States	CDC (52, 83)	Fever, chills, cough, dyspnea, fatigue, myalgia, body aches, headache, anosmia, ageusia, sore throat, nasal congestion, rhinorrhea, nausea, vomiting, diarrhea	Over-the-counter medicines, such as acetaminophen (paracetamol)
Asia			
Bangladesh	MOH&FW (84) (professional information)	Fever, fatigue, cough, sore throat, nasal congestion, anorexia, malaise, headache, diarrhea, nausea, vomiting	Paracetamol 500 mg 3x/day Fexofenadine 1x/day Steam inhalation / gurgle with lukewarm water
China	NHC (85) (professional information)	Fever, cough, fatigue, anosmia, ageusia, nasal congestion, rhin- orrhea, sore throat, conjunctivi- tis, myalgia, diarrhea	Different herbal prescriptions specified according to disease severity and symptom complex
India	MoHFW (72)	Fever, tiredness, cough, aches and pains, nasal congestion, rhi- norrhea, sore throat, diarrhea	Self-care medication not recommended (pending clinical trials of Western and traditional medicines)
Japan	MHLW (55)	Fever, cough	Antipyretics (e.g. pain killers) for mild cases
Pakistan	NHSRC (84, 86) (professional information)	Cough, dyspnea, fever, myalgia, headache, sore throat, anosmia, ageusia, severe fatigue	Non-severe cases: paracetamol or NSAIDs for fever, oral hydra- tion in case of diarrhea, antihis- tamines for rhinorrhea
Europe			
France	Solidarite-sante (53) (87)	Fever, cough, anosmia, ageusia, dyspnea	Paracetamol $\leq$ 1000 mg, interval $\geq$ 4 h, $\leq$ 3000 mg /day
Germany	BMG (88, 89)	Fever, cough, rhinitis, headache, myalgia, fatigue, sore throat, anosmia, ageusia, dyspnea	- no recommendations -
Italy	ISS (51)	- none specified -	- no recommendations -
			Continued on next page

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CM	Table 1 continued
RO 04 (08),	Russia
1009-1025 (20)	United Kingdom
210	Middle East
IU	Egypt
RR	Iran
ENT M	Israel
ED	Saudi Arabia
IC.	Turkey
AL	Oceania
RES	Australia
EΑ	Indonesia
ARCH AND C	Malaysia
PINIO	New Zealand
4	Dhilinging

Table 1 continued			
Russia	Minzdrav (83)	Fever, dyspnea, sneezing, cough, nasal congestion, myalgia, chest pain, headache, weakness, nau- sea, vomiting, diarrhea	- no recommendations -
United Kingdom	NHS (54, 90)	Fever, cough, anosmia, ageusia, dysosmia, dysgeusia	Fever: drink plenty of fluids; if uncomfortable, paracetamol (500-1000 mg $\leq$ 4x/day) or ibuprofen (200-400 mg 3x/day) Cough: a teaspoon of honey
Middle East			
Egypt	MOHP (49)	<ul> <li>site not accessible -</li> </ul>	- site not accessible -
Iran	MOHME (91)	Fever, cough, myalgia, fatigue	- no recommendations -
Israel	Misrad-HaBri'ut (92)	Fever, fatigue, dyspnea, cough, rhinitis, myalgia, headache, sore throat, anosmia, ageusia	- no recommendations -
Saudi Arabia	MOHS (93)	Fever, cough, dyspnea	- no recommendations -
Turkey	Saglik-Bakanligi (94)	Fever, cough, dyspnea	- no recommendations -
Oceania			
Australia	health.gov.au (95, 96)	Fever, cough, sore throat, dysp- nea	- no recommendations -
Indonesia Malaysia	kemkes.go.id (97) moh.gov.my (97) (professional information)	Fever, cough, dyspnea Cough, dyspnea, anosmia, ageusia, fever, chills, myalgia, headache, sore throat, nausea, vomiting, diarrhea, fatigue, nasal congestion, rhinitis	<ul> <li>no recommendations -</li> <li>no recommendations -</li> </ul>
New Zealand	health.govt.nz (98)	Cough, fever, dyspnea, sore throat, sneezing, rhinorrhea, anosmia	- no recommendations -
Philippines	doh.gov.ph (99)	Fever, fatigue, cough, aches, pains, nasal congestion, rhinorrhea, sore throat, diarrhea	- no recommendations -
Anosmia: loss of smell; dysosmia: alteration of smell; ageusia: loss of taste; dysgeusia: alteration of taste.			

## 6 | DECLARATIONS

#### Ethics approval and consent to participate

This review was based solely on the scientific literature and public health authority guidelines; therefore, ethics approval or consent to participate are not applicable.

#### **Consent for publication**

This manuscript does not contain any individual person's data.

#### Availability of data and materials

All sources analyzed in this review are cited and publicly available.

#### **Competing interests**

G. Coutinho and A. Kulasekaran are employees of Reckitt Benckiser Health Care UK Ltd. (RB). M. Duerden is member of the Global Respiratory Infection Partnership (GRIP), which receives an educational grant from RB.

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FIGURE 1: PRISMA flow diagramof study selection

#### DUERDEN, COUTINHO AND KULASEKARAN CURRENT MEDICAL RESEARCH AND OPINION

#### TABLE 2: LIST OF ABBREVIATIONS

ANMAT	Argentina-Ministry of Health
ANVISA	Brazil-Health Regulatory Agency
BMG	Germany-Federal Ministry of Health
CDC	United States-Centers for Disease Control and Pre-
	vention
COFEPRIS	Mexico-Ministry of Health
COVID-19	Coronavirus disease 2019
DOHZA	South Africa-Ministry of Health
FMOH	Nigeria-Federal Ministry of Health
GRIP	Global Respiratory Infection Partnership
HC	Canada-Health Canada
ISS	Italy-National Health Institute
КМОН	Kenya-Ministry of Health
MHLW	Japan-Ministry of Health, Labour and Welfare
MOH&FW	Bangladesh-Ministry of Health and Family Welfare
MOHE	Ethiopia-Ministry of Health
MoHFW	India-Ministry of Health and Family Welfare
MOHME	Iran-Ministry of Health and Medical Education
MOHP	Egypt-Ministry of Health and Population
MOHS	Saudi Arabia-Ministry of Health
MSPRH	Algeria-Ministry of Health
NHC	China-National Health Commission
NHS	United Kingdom-National Health Service
NHSRC	Pakistan-Ministry of National Health Services
NSAID	Non-steroidal anti-inflammatory drug
RB	Reckitt Benckiser Healthcare Ltd.
SARS-CoV-2	Severe acute respiratory syndrome coronavirus 2
WHO	World Health Organization