Impacts And Strategies for Handling Covid-19 In Indigenous People: A Scoping Review

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ABSTRACT

The COVID-19 pandemic is a major health emergency that causes significant suffering and many deaths among indigenous people worldwide. During the pandemic, indigenous communities have higher rates of health problems than the general population. This review explores the impact and strategies for handling COVID-19. This scoping review aims to draw key concepts from the available literature that underpins a research area. The literature search was conducted on eight databases, namely *PubM*ed, *DOAJ*, *Science Direct*, *Cochrane*, *Wiley*, *ProQuest*, and *G*aruda, in July-November 2022. The online search engine was Google, and the keywords for the search were "impact of COVID-19 in indigenous people". The results of this review are expected to provide a reference of strategic considerations to deal with the pandemic in indigenous people. These strategies should focus on improving digital skills, health literacy to combat misinformation, awareness of COVID-19 handling, the benefits of COVID-19 prevention, and compliance with health guidelines as well as on actively involving patients in health decisions.

Keyword: Impact; strategy; COVID-19; indigenous people

INTRODUCTION

The COVID-19 pandemic is a major health emergency that causes significant suffering and many deaths among indigenous people worldwide (Curtice & Choo, 2020). During the pandemic, indigenous people suffered from higher rates of infection, more severe symptoms, and more deaths than the general population. This condition is the result of social and cultural determinants of health. Moreover, this condition is reminiscent of the past event, namely the Spanish influenza pandemic in 1918. During that pandemic, the death rate of indigenous Māori is seven times as many as that of the European population, but it is estimated that the actual casualties are more because many casualties of indigenous Māori are not fully documented (Summers et al., 2018).

The COVID-19 pandemic has significantly affected the health and livelihood of indigenous people (Raj, 2016). These communities are more susceptible to infection and less receive handling for the impact of COVID-19. Therefore, indigenous people need primary attention and should be more aware of the COVID-19 pandemic. These two aspects are crucially required by indigenous people because they have higher rates of health problems, such as high blood pressure, respiratory and circulatory diseases, obesity, and diabetes (Stevens et al., 2018), experience higher levels of psychological distress than general population (McNamara et al., 2018), and encounter significant barriers to access health services (Peiris et al., 2008). Hospital admissions and death at the hospital can be prevented three times higher in indigenous people (Health, 2013). In addition, the prevalence of anemia and malnutrition triggers women and children to reduce their body's resistance to COVID-19 (Jaiswal, 2015).

The increased burden of COVID-19 among indigenous people will invariably impact the elderly, who are the reservoirs of language and history. Thus, their deaths would result in an immeasurable cultural loss (Curtice & Choo, 2020). The elderly population of indigenous people have traditional knowledge and prefer traditional treatment practices, herbal medicine, spiritual naturopathy, and spiritual healing. Lack of emotional content and trust in the public healthcare systems continues to disassociate them from modern medicine systems (Jaiswal, 2015).

The unique contribution of indigenous people insists that their well-being enables them to survive during the pandemic and develop after the pandemic (Curtice & Choo, 2020). This condition underlies the importance of comprehensively identifying the impact of the COVID-19 pandemic and strategies for dealing with health problems. Therefore, solutions to the COVID-19 problems among rural communities can be formulated structurally.

Based on the aforementioned explanation, this scoping review aims to explore the impact, strategies, and ways of health and welfare to deal with COVID-19 in indigenous people. Moreover, this review identifies barriers and forces to improve their health, especially to deal with a pandemic disease.

MATERIALS AND METHODS

Study designs

This scoping review aims to draw key concepts from the available literature that underpins a research area. This design provides a broad scope of a specific field (Munn et

al., 2018; Sucharew & Macaluso, 2019). This review employed the PRISMA-ScR checklist, as a guideline to conduct the scoping review (Tricco et al., 2018; Peters et al., 2015).

Eligibility criteria

Although this scoping review was conducted extensively, the inclusion criteria were still defined and research questions were included. Following JBI's recommendations (Peters et al., 2015), this review defined population (P) as indigenous people, tribes, first nations, or natives, the context (C) as COVID-19, and the concepts (C) as impacts and strategies. Publications, such as reports, pre-printed peer-reviewed papers, and articles, eligibly met the inclusion criteria if they had focused on indigenous people, reported original research results, released in media, editorials, opinion pieces, comments, protocol papers, or summaries of general texts (without detailed findings), and written in English.
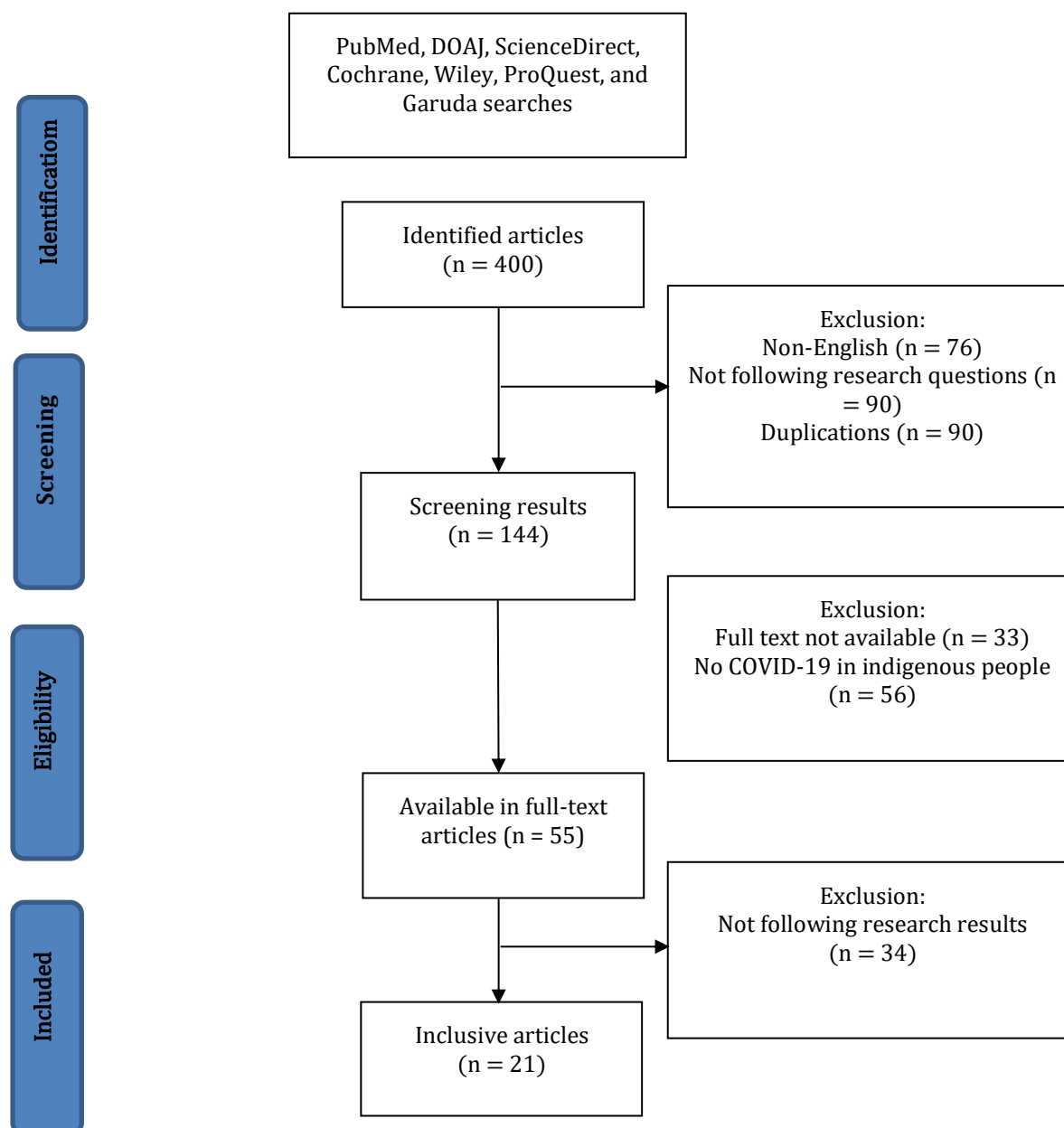
Literature search

The literature search was conducted on eight databases, namely *PubMed*, *DOAJ*, *Science Direct*, *Cochrane*, *Wiley*, *ProQuest*, and *G*aruda, in July-November 2022. The online search engine was Google, and the keywords for the search were "impact of COVID-19 in indigenous people". These keywords are found in related articles. Meanwhile, the keywords "strategies for handling COVID-19 in indigenous people" did not find any published articles. Reports, online papers, and preprints that cover impacts and strategies for indigenous people, interview questions, and sufficient information on study methods were identified and recorded. In addition, we checked reference lists of identified publications to identify relevant preprints or newly accepted publications.

Data extraction

The obtained data were extracted from full-text journal articles to meet the inclusion criteria. Overall, 21 articles eligibly met the inclusion criteria of this scoping review. Three reviewers independently assessed the full text of the 21 articles as well as extracted and recorded relevant data, including the origin country of the study, types of indigenous people, research objectives, research designs, sample characteristics, interventions, results, and key findings. All differences in data extraction were resolved through discussion. This review employed the data extraction forms developed by the Joanna Briggs Institute (Joanna Briggs Institute, 2015).

RESULTS

Schematic 1. Flowchart for inclusion and exclusion studies

Identification

PubMed, DOAJ, ScienceDirect, Cochrane, Wiley, ProQuest, and Garuda searches

Identified articles
(n = 400)

Exclusion:
Non-English (n = 76)
Not following research questions (n = 90)
Duplications (n = 90)

Screening

Screening results
(n = 144)

Exclusion:
Full text not available (n = 33)
No COVID-19 in indigenous people
(n = 56)

Eligibility

Available in full-text
articles (n = 55)

Exclusion:
Not following research results
(n = 34)

Included

Inclusive articles
(n = 21)

Geographical scopes of the study and types of indigenous people

Most of the studies (five studies) were conducted in Canada and investigated the indigenous people of Alberta, Ontario, and Toronto. The second most studies (four studies) were conducted in Brazil and investigated the indigenous people of Alto Rio Solimões. Furthermore, two studies, each, investigated New Mexican natives in America, the Dayak tribe in Indonesia, as well as Maori, Samoa, and Aotearoa natives in New Zealand. In addition, each of one study investigated the indigenous people of Marma,

Chakma, and Tripura in Bangladesh, the indigenous people of Mexico in Mexico, the indigenous people of Australia in Australia, the indigenous people of Shicua in China, and indigenous people in Canada, Great Britain, Columbia, Africa America, and Oceania.

Table 1. Methodological characteristics of the included articles (n = 21)

Characteristics	Categories	n	%
Study designs	Qualitative	3	14.28
	Cross-sectional	6	28.57
	Mix method	3	14.28
	Unavailable information	9	42.85
Setting	Communities	18	90.47
	Primary care center	1	4.76
	Hospitals	1	4.76
	Campus	1	4.76
Sampling techniques	Purposive sampling	3	14.28
	Unavailable information	18	85.71
Data collection instruments	Bangla depression anxiety stress scale (BDASS-21)	1	4.76
	Perceived stress scale (PSS)	1	4.76
	Generalized anxiety disorder (GAD)	1	4.76
	Patient health questionnaire (PHQ)	1	4.76
Target of study	Natives of Albertan	3	14.28
	Natives of Ontario	1	4.76
	Natives of Toronto	1	4.76
	Natives of of Alto Rio Solimoes	1	4.76
	Natives of Brazil	3	14.28
	Natives of New Mexico	2	9.52
	Natives of Dayak	2	9.52
	Natives of Aotearoa	1	4.76
	Natives of Maoro	1	4.76
	Natives of Samoa	1	4.76
	Natives of Marma	1	4.76
	Natives of Chakma	1	4.76
	Natives of Tripura	1	4.76
	Natives of Mexico	1	4.76
	Natives of Australia	1	4.76
	Natives of Shichua	1	4.76

% - relative frequency: n - number of articles (s)

Impacts of COVID-19 on indigenous people

Biological impacts

Indigenous people severely suffer from various biological impacts due to COVID-19, and one of the impacts is a severe disability (Horse et al., 2020). The COVID-19 emergency has greatly influenced the rehabilitation of persons with disabilities. Such a condition can impact their future because their functional outcomes decrease while the consequence increases the burden of care. When the emergency ends, the demand for rehabilitation will grow again because untreated patients surge the treatment and patients demand treatment after COVID-19 (Negrini et al., 2020). Lockdown for indigenous people with

disabilities during the COVID-19 pandemic has reduced their physical activities; this condition results in declining health functions, social isolation, and loneliness (Jesus et al., 2021). Moreover, indigenous people with disabilities are highly susceptible and more vulnerable to COVID-19 than the general population (Senjam, 2020).

Psychological impacts

The COVID-19 pandemic has also affected the psychology of indigenous people. For example, indigenous children who are school-age students experience trauma because their schools closed during the pandemic (Bewer, 2022). The same condition is also found in indigenous children with disabilities who experience trauma due to the disproportionate closure of schools (Jesus et al., 2021). In addition, a poor coping mechanism is a psychological impact that occurs in indigenous people. In this case, indigenous people are associated with sadness, acute stress disorders, and post-traumatic stress disorders (Muslimah et al., 2021). Long quarantines and the uncertain end of the pandemic have resulted in disorders that cause depression in indigenous people (Shah et al., 2021). The last psychological impact is the fear of vaccination because indigenous people think that vaccination can take their lives (Humble et al., 2021).

Economy

Before the pandemic, indigenous people more struggled economically than people in urban areas. For example, poverty is more commonly found in rural workers than in urban workers (Thiede et al., 2018). Some industries highly depend on sectors that possibly close due to the pandemic, such as tourism and factory industries (Mueller et al., 2021). In addition, indigenous people encounter difficulties to sell forest products because the demand from consumers and marketing decreases as transportation is restricted during the pandemic (Suwito et al., 2021). The condition is worsened because indigenous people are not registered as health insurance beneficiaries and government assistance never reaches them; thus, they should spend a lot of costs to access health services (Niko, 2020). Another study also asserts that this condition occurs because indigenous people are not registered in the population administration (Niko, 2020).

Mental health

In general, studies focus on psychological distress, depression, stress, and anxiety (Burnett et al., 2022). These psychological problems are experienced by rural people as a result of the government policy of social distancing applied in their regions during the pandemic. This policy has closed schools and businesses. Moreover, access to hospitals or

specialized health care, such as psychiatrists, is limited. Recently, many governments have implemented some actions, such as CARES Law to address the rural-urban disparity using telehealth; unfortunately, the provision of telehealth for indigenous communities is limited (Summers-Gabr, 2020).

Regression on mental health risk controls an individual's socio-demographic characteristics, such as the community's production capacity, basic medical services, community cohesion, housing conditions, external communication and transport supply, and eco-environment; these characteristics significantly reduce levels of mental health risk (Shevlin et al., 2022). The factor of community support has brought relatively different effects on different dimensions of psychological distress. External communications and transport maintenance in public infrastructure and services are associated with lower levels of frustration, boredom, and panic. Meanwhile, maintenance of basic medical services is associated with lower feelings of panic and anxiety. People's higher productive capacity and better housing conditions are associated with lower levels of the four psychological symptoms (Jia et al., 2021). Complex problems experienced by indigenous people have triggered them to take illegal drugs and drink alcohol during the pandemic (Flores et al., 2022).

Barriers to handling COVID-19

Health access

Access to health care is a fundamental part of maintaining and achieving good health during COVID-19. Some communities work in partnership with local public health units to access COVID-19 testing kits. However, a community-based approach for COVID-19 testing in which people can assess the test in the indigenous people's areas or near their residences is a major concern among the participants.

According to remote or isolated communities, the availability of wards and doctors is greatly reduced at the peak of the pandemic; for example, nurse fly-in programs for remote communities are discontinued during the COVID-19 pandemic and replaced with personal support workers and virtual care provided by nurses (Nielsen et al., 2017). There is also a rapid transition to virtual care, not in-person healthcare delivery, to limit the possible spread of COVID-19 in all communities. Remote and isolated participants explain that in some capacities, this transition may result in more flexible availability of doctors and nurses but raise other issues, such as access to stable broadband internet services and virtual devices (Mohammed et al., 2021). Several participants and the

community reflect that the key to handling COVID-19 is the ability of a public health team to combine cultural and traditional knowledge with a biomedical approach. One First Nation advocated for the construction of an important hospital in a larger community during the second wave of COVID-19. The decreased inspection funds for medical equipment, such as blood pressure machines, have also been reported (Mashford-Pringle et al., 2021).

Relationship with the government

The sub-core of all post-pandemic prevention and recovery policies is the government's involvement in communities, specifically indigenous people. Unfortunately, this ideal relationship is only a mere wishful for indigenous people. This unideal condition is seen from the absence of isolation, monitoring and testing facilities, and social protection from the government for indigenous people (OECD, 2020; Santos et al., 2021). In addition, vaccination programs do not reach indigenous people because access to their places is very difficult (Vitorino et al., 2022). On the other hand, when access has already reached their places, they do not trust the effectiveness of vaccines and health systems, are worried about the side effects of vaccines, and prefer natural immunity to vaccines; as a result, vaccination in indigenous people delays (Danabal et al., 2021).

Low trust in health programs

One of the crucial problems that hinder the handling of COVID-19 in the indigenous people is the low trust in health programs, such as the COVID-19 vaccination. In this section, this review has found various perceptions of indigenous people about vaccine programs. For example, (Gehlbach et al., 2022) explain that indigenous people do not trust government institutions that carry out vaccine programs. This statement is emphasized by an indigenous lady who rejects that her child is vaccinated because she believes that vaccines are not needed in their lives (Humble et al., 2021). Furthermore, the indigenous people say that they are worried about the side effects of vaccination (Burghouts et al., 2017).

Traditional medicine, alcohol, and religious beliefs have also caused vaccine hesitancy. Such a condition is probably triggered by people's disbelief in western medicine and their experience with the side effects of western medicine, fear of injections, and low need for immunization (Silubonde et al., 2022). Limited understanding of how vaccines work as well as overlapping local terms for vaccines and other medical concepts

have created confusion, inaccurate views, and pessimistic expectations. Another study reports that indigenous people refuse injections to avoid pain and infection risk (Pugliese-Garcia et al., 2018).

Strategies for handling COVID- 19 in indigenous people

Digital innovation

Although technology has several disadvantages, its support and implementation provide opportunities to overcome COVID-19 in indigenous people (Mohsan et al., 2022). Therefore, health service providers offer digital innovations that support local traditional culture; thus, traditional rituals that have become routine agendas can be carried out by indigenous people (Enari & Rangiwai, 2021). Besides, some parties apply technological innovations, such as telehealth. Telehealth is an option that provides health consultations and more accessible health services for indigenous people so that health maintenance costs are more efficient (Myers, 2019). Moreover, technological innovation can escalate indigenous people's participation to create preventive health behavior.

Availability of health facilities

Healthcare facilities, such as rapid testing in remote communities, aim to rapidly increase capacity for SARS-COV2 testing in indigenous people. This test employs a point-of-care platform (nucleic acid amplification testing) that provides the results of a nasopharyngeal swab within 45 minutes. Overall the test platform employs a hub and spoke model and will be deployed in remote and regional settings (Hodges et al., 2021). Trained health workers will conduct training for indigenous people using online platforms. This strategy enables indigenous people to receive COVID-19 test results quickly, from 3-10 days to only a few hours. Moreover, this strategy will allow contacts to be tested earlier and ensure that local action plans and strategies could minimize transmission among indigenous people (Gibson, 2020).

The COVID-19 handling program led by indigenous people

The pandemic is a serious public health risk for indigenous people worldwide. Measures to reduce the risk of COVID-19 have been quickly made as people learned the lessons from the 2009 H1N1 outbreak (Law et al., 2022). Community engagement is fundamental and essential to creating changes and actions. Moreover, encouraging indigenous people to define problems, set priorities, suggest solutions, and create culturally-informed strategies that address their needs can reduce health inequalities and potentially change current systems (Oakley, 1991).

Prioritizing the voices of indigenous people within culturally appropriate government structures can develop and implement planning, responses, and management protocols; therefore, a real difference can be realized. This model is potentially replicated because public health agencies, indigenous practitioners, and national researchers have developed a shared understanding (Gibson, 2020). The increasing burden of COVID-19 on indigenous people will invariably influence the elderly, who are the reservoirs of language and history (Torri & Herrmann, 2011). Their deaths would represent an immeasurable cultural loss. Indigenous people have many values to teach to young generations; for example how to live sustainably and communally when individualistic pursuits seem to dominate concern for the most vulnerable parties. Investing in indigenous people's health means investing in our future (Turner et al., 2022). The unique contributions of such indigenous people should be respected to provide them with well-being as well as enable them to survive during the pandemic and develop after the pandemic (Curtice & Choo, 2020).

DISCUSSION

The biological impacts of the synergism between severe diseases and COVID-19 infection are urgently investigated. The biological impacts of COVID-19 are more severely experienced by indigenous people with disabilities (Taggart et al., 2022). The current COVID-19 pandemic, followed by a national lockdown to mitigate COVID-19 transmission, has generated many challenges for aspects of human life, such as access to health services and the lives of persons with disabilities. A sudden interruption of support and assistance systems for this individual group will seriously impact their health, well-being, daily living, socio-economic activities, and livelihoods, impair their quality of life, and endanger their lives (Grolli et al., 2021). Moreover, indigenous children with disabilities experience more psychological pressure than other populations do (Aarah-Bapuah et al., 2022).

This phenomenon is caused by a long quarantine, which closes their school (Bewer, 2022; Jesus et al., 2021). Due to the unprecedented situation of the COVID-19 pandemic and the policy to control COVID-19 transmission, public health sanitation, and social measures have been implemented in many countries; these measures included lockdowns and school closures. Moreover, COVID-19 is a threatening disease with mild to severe development that can cause death (Dong et al., 2020). All of these adverse conditions can be described as traumatic events and may predispose and develop in many children, adolescents, and caregivers. (Bridgland et al., 2021)

Another impact of the COVID-19 pandemic on indigenous people is the economic destruction that causes a very extraordinary humanitarian crisis (Wangu & Githuku, 2022). The government's policies of social distancing and isolation have been proven to bring negative impacts on the economy, labor market, mental health, well-being, access to healthcare, and relations with the government. The economic condition is exacerbated by the job loss of indigenous people during the pandemic. Most studies document the effects of working hours and job loss (Forsythe et al., 2020). The significantly increased unemployment among indigenous people is partly caused by isolation and social distancing policies (Horse et al., 2020). In addition, indigenous people face difficulties marketing their forest products (Golar et al., 2020). This condition brings economic consequences and contributes to mental health problems related to COVID-19.

Mental health problems, such as depression, anxiety, somatic symptoms, panic attacks, psychosis, and suicidal tendencies, are commonly experienced by indigenous people during the COVID-19 pandemic (Trettel et al., 2022). Moreover, taking drugs, drinking liquor, and smoking done by housewives have been increasingly found in indigenous communities because they are depressed by the pandemic (Flores et al., 2022). The cycle has taken place and caused more deaths in indigenous people than in the general population (Ibarra-Nava et al., 2021).

indigenous people have tried to access health care but they frequently receive poor health care and find difficulties bearing the cost of the treatment because they do not get health insurance from the government (Ibarra-Nava et al., 2021). Several strategies have been revealed to solve this complex and heartbreaking condition, such as digital innovation to provide cost-effective services (Kichloo et al., 2020), sustainable health services (Wijesooriya et al., 2020), and culturally friendly health services (Haleem et al., 2021). Furthermore, the availability of health facilities and rapid test kits to identify COVID-19 in outbacks (Naren et al., 2021) should be led by indigenous people to create cultural-based health actions (Burnett et al., 2022). However, there is an aspect that should be rectified, namely the indigenous people's distrust of the vaccine program, which results in vaccine delays (Vitorino et al., 2022; Humble et al., 2021). Therefore, the government should carefully think about the collaborative, adaptive, facilitative, and reliable concepts of COVID-19 handling for indigenous communities. Moreover, the concepts should be friendly to indigenous people with disabilities.

CONCLUSIONS

This review has revealed several factors that facilitate and hinder COVID-19 responses for indigenous people. The scarce number of literature prevents this review from drawing strong conclusions. However, this review has presented the absence of comprehensive strategies for COVID-19 responses in indigenous people. This review has identified the need for filling knowledge gaps and developing COVID-19 coping strategies for indigenous people as well as described strategies to increase indigenous people's trust. These strategies should focus on improving digital skills, health literacy to combat misinformation, awareness of COVID-19 handling, the benefits of COVID-19 prevention, and compliance with health guidelines as well as on actively involving patients in health decisions.

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