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Review Article

Focus and methodological adaptations of qualitative research during the COVID-19 pandemic: a scoping review and textual narrative synthesis

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ABSTRACT

Research is a vital driver of the response to health emergencies. This scoping review aimed to characterize the application of qualitative research during the COVID-19 pandemic, with two primary objectives: identifying the qualitative research methods and adaptations applied, and summarizing the research questions which the studies sought to answer. CINAHL and PsycINFO were systematically searched for qualitative studies relating to COVID-19 and published between January 2020 and November 2021. Articles were screened and included in the review using pre-defined eligibility criteria. A total of 535 articles met the inclusion criteria, mostly from North America and Europe. An observed methodological adaptation was a surge in virtually conducted research – most studies collected data through interviews, 52% of which were conducted virtually using telephone or teleconferencing technology. Similarly, 27% of the focus group discussions and 20% of the ethnographies were conducted virtually. A textual narrative synthesis of all reviewed studies identified four major groups: health-related studies, education-related studies, studies about vaccine acceptance, and studies in specific population groups, such as the elderly, ethnic minorities, and working-class women in patriarchal contexts. There was a seeming neglect of the experience of youths, and insufficient attention has been paid to the dynamics of medical distrust with regard to vaccine hesitancy. Qualitative research has been applied to extensively explore people's perceptions and experiences of the pandemic. The progressive improvement of virtual research methods will be beneficial for future pandemic preparedness. More representation of research from under-resourced regions of the world is also needed.

Keywords: COVID-19, Qualitative research, Methods, Ethnography

INTRODUCTION

The World Health Organization (WHO) declared the coronavirus disease 2019 (COVID-19) as a pandemic on the 12 of March 2020.[1] Three years thereafter, the virus had spread to every country in the world, with over 6 million excess deaths caused by five "variants of concern" identified around the world.[2,3] While the initial global response to COVID-19 has been characterized as uncoordinated and suboptimal, the world has made remarkable strides towards complete recovery.[4] This progress is highlighted by the relatively rapid development of multiple effective vaccines and predictions of a downgrade of COVID-19 status from a pandemic to an endemic by the end of 2023.[5,6]

The successful response to COVID-19 was driven by research conducted while the pandemic unfolded. Research is integral to the effective management of health crises, as it informs the timely formulation of evidence-based policy and enhances future pandemic preparedness.[7] In particular, qualitative research is vital for the

assessment of the perceptions and experiences of various groups of people regarding the disruptive event. In the early stages of the pandemic, Tremblay et al highlighted the potential utility of qualitative research for attaining a deeper understanding of current lived realities of those affected by the pandemic, including frontline workers, vulnerable persons, and the general population.[8] Considering the restrictions to conducting qualitative research during the pandemic (including physical distancing and time constraints), they further proposed methodological adaptations for conducting qualitative research within this context. A previous review identified ways in which data collection and analysis methods have been adapted to deal with short study timeframes.[9] However, it remains unclear how qualitative research contributed to the demystification of the COVID-19 pandemic, and consequently shaped the global response. In particular, no review has assessed the substantive focus of qualitative research conducted during the pandemic, and identified the methodological adaptations that were applied for sampling, data collection and analysis, due to the restrictive context.

In order to fill this research gap, this review characterizes the application of qualitative research during the COVID-19 pandemic, with two primary objectives: identifying the qualitative research methods applied by such studies, and summarizing the research questions which they sought to answer. The first objective will enable the identification of methodological adaptations necessitated by the peculiar context of the pandemic. The second objective will enable the identification of areas that have received the greatest research attention and potentially identify research gaps. In general, this review will inform the conduct of qualitative research during future health emergencies by identifying effective methodological adaptations and highlighting research areas that received sparse attention during this pandemic.

METHODS

This is a scoping review of qualitative studies conducted on subjects relating to COVID-19 and published between January 2020 and November 2021. Scoping reviews have been described as a form of knowledge synthesis which maps the available literature on a subject and identifies key concepts, methods, and knowledge gaps, with the aim of guiding practice, policymaking, and further research.[10] With the vast breadth of available research on COVID-19, a scoping review was deemed most appropriate for summarizing this sizeable and diverse body of knowledge. This scoping review was guided by Arksey and O'Malley's methodological framework, a widely applied blueprint for conducting scoping reviews.[11] Based on this framework, the scoping review involved five steps: defining the research question; identifying relevant studies; selecting studies; charting the data; and collating, summarizing and reporting results. In addition, the preferred reporting items for systematic reviews and meta-analyses guidelines for scoping reviews (PRISMA-ScR) were followed.[12]

Search strategy

A systematic search was completed in November 2021 and included studies published from January 2020, since the COVID-19 pandemic officially began in March 2020. The cumulative index to nursing and allied health literature (CINAHL) and PsycINFO databases were used for this review, as they offer access to vast collections of peer-reviewed qualitative studies in health and psychology.[13] Furthermore, it has been demonstrated that CINAHL features a large number of qualitative content that are absent in PsycINFO, indicating their complementariness for systematic reviews.[14] Using appropriate MESH terms and Boolean operators, both databases were searched for all qualitative studies related to the COVID-19, published between January 2020 and November 2021.

Inclusion and exclusion criteria

For inclusion in this review, eligible studies were those which: employed qualitative methods of data collection and analysis (including mixed-methods studies with a qualitative component); were related to the COVID-19 pandemic; were conducted among humans between January 2020 and November 2021 (when the search was completed); and were reported in the English Language. Studies were excluded if they: applied quantitative methods only; were unrelated to COVID-19; were not reported in the English language; or were conducted before January 2020.

Study selection

The database search produced 698 articles, which were assessed for relevance to the review. Study selection began with the elimination of 53 duplicates, after which the remaining 645 articles were screened in two steps. First, a manual title-and-abstract screening was conducted based on the inclusion and exclusion criteria, which resulted in the exclusion of 97 irrelevant papers. This was followed by a full text screening which eliminated another 13 papers. The remaining 535 articles were included in the scoping review. The PRISMA flowchart in Figure 1 describes the screening process, including reasons for exclusions at each stage.[15]

Data extraction and meta-synthesis

An electronic data charting form was populated with relevant information from each study. This form collected the following information: title, author(s), publication date, journal, country, study setting, study aims, sample size, sampling strategy, data collection method, data analysis method, and study duration. Data extraction was followed by a characterization of the research methods applied across the studies, in order to identify adaptations necessitated by the restrictive pandemic context. Lastly, a

textual narrative synthesis of all included studies was conducted to summarize their research focus and identify research gaps. The narrative synthesis was performed independently by two authors (A.A.H and S.C.O), using a process described by Popay et al.[16] Specifically, the observed similarities between studies were used to identify overarching themes and group the studies into categories of similar research focus. This facilitated a critical narrative summary of the studies and the identification of research gaps. No risk of bias assessment was conducted for the included studies, since the PRISMA-ScR guidelines for scoping reviews considers risk of bias assessments as inapplicable to scoping reviews, due to the vast amounts of literature that they typically process.[12]

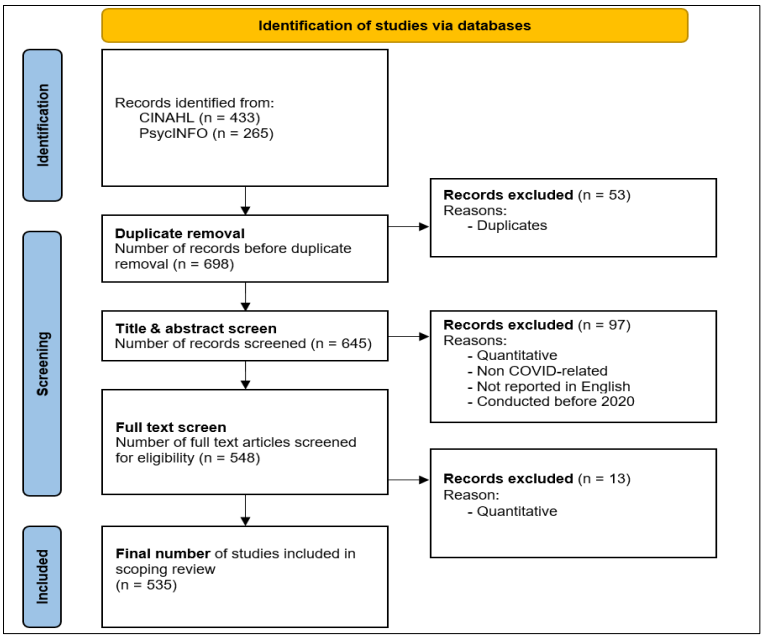

Figure 1: PRISMA flowchart of the study selection process.

Characteristics of included studies

As shown in Table 1, the studies were conducted in a wide range of settings, including educational institutions, healthcare settings, and community settings. With regard to location, most of the included studies were conducted in North America (with 84% of these from the United States of America), Europe (50% from the United Kingdom) and Asia (mostly from China and Iran). This may be because these countries recorded some of the greatest COVID-19 infection and mortality rates during the study period.[17] It may also be partly attributed to the previously reported publication bias towards Western populations.[18] Due to its size, the complete data extraction form is available as a Microsoft excel spreadsheet upon request from the authors.

Methods (and adaptations) employed in included studies

Table 2 shows the methods of sampling, data collection and data analysis applied by the reviewed studies. The most commonly used sampling method is purposive sampling (68%), followed by convenience (9%) and snowballing (6%) sampling methods. While no pre-pandemic review has explicitly examined the frequencies of these sampling methods in the qualitative literature, the predominance of purposive sampling has been previously reported.[19,20] This is because purposive sampling enables the researcher to select participants with the most relevant experiences, perspectives, or characteristics related to the research question, thereby fostering a rich understanding of the phenomenon being studied.[19]

In contrast, snowballing harnesses study participants' social networks to recruit more participants into a study. As such, snowballing facilitates the recruitment of participants from hard-to-reach or typically hesitant groups. For instance, Moyce et al used this sampling technique to recruit rural Latino participants into their study exploring the rural Latino community's perception of the pandemic.[21] This sampling method helped the researchers to surmount the well-documented difficulties in recruiting hard-to-reach minority populations for health research.[22] However, snowball sampling may result in a homogeneous pool of participants, as people are more likely to invite friends or colleagues that are similar to them. This may have negative implications for the representativeness and transferability of study results.

For data collection, over two-thirds of the studies used interviews, while the others used focus group discussions (FGDs), ethnography, and free-text questionnaires. Due to physical distancing requirements and safety concerns, over half (52%) of the interviews were conducted virtually using telephone or internet-based teleconferencing facilities. These include a study assessing physicians'

perspectives about the use of telehealth services during the pandemic in North America[23] and two other studies which used telephone interviews to explore older people's experience of household isolation and social distancing during COVID-19.[24,25] A smaller proportion (27%) of the FGD studies were conducted virtually. These include a virtual FGD study exploring the factors driving vaccine acceptance among members of high-risk multiethnic communities in California and another teleconferencing-based FGD exploring the perspectives of Australian students about the transition to full eLearning.[26,27]

Table 1: Summary of the characteristics of qualitative studies conducted during the COVID-19 pandemic.

Study characteristics and categories	Count (%)
Study setting	
Healthcare setting	197 (37)
Educational setting	131 (24)
Community setting	99 (18)
Virtual (e.g. social media)	26 (5)
Others	82 (15)
Continent	
North America	220 (41)
Europe	128 (24)
Asia	82 (15)
Australia	38 (7)
Africa	26 (5)
South America	23 (4)
Others (mixed)	18 (3)
Sample size	
n≤50	203 (38)
n>50	332 (62)
Publication year	
2020	166 (31)
2021	369 (69)

Among the five ethnographies included in this review, one study (20%) was conducted virtually.[28-32] This study involved the "digital ethnography" of social media forums in order to understand the experiences of frontline adult social care workers during the pandemic in the United Kingdom.[29] Digital ethnography uses technologies like video diaries and participatory social media forums to document people's experiences and behaviours in their natural habitat. It is a data collection method which holds significant potential, not only in a restrictive pandemic context, but also for modern qualitative research in general. However, digital ethnography has an inherent limitation of missing out the offline aspects of participants' lives, which may be more authentic than what they choose to project online. Also, like traditional ethnography, digital ethnography is susceptible to the Hawthorne effect – a person's behaviour may change as a direct consequence of being observed.[33]

For data analysis, most included studies applied thematic analysis – including inductive and deductive thematic analysis approaches. In a study exploring the experiences of resource-planning USA clinicians during the pandemic, the authors applied inductive thematic analysis by allowing themes to emerge from the 61 different accounts, while taking care not to approach the analysis with predetermined themes.[34] Conversely, deductive thematic analysis was applied by a Canadian study of the experiences and challenges of people living with chronic pain during the COVID-19 pandemic.[35]

Table 2: Methods of data sampling, collection and analysis applied by qualitative studies conducted during COVID-19.

Task and methods	Count (%)
Sampling	
Purposive sampling	381 (71)
Convenience sampling	57 (11)
Snowballing	38 (7)
Purposeful + snowballing	12 (2)
Purposeful + convenience	7 (1)
Purposeful + convenience + snowballing	3 (0.6)
Undefined	37 (7)
Data collection	
Semi-structured interview	235 (44)
Structured interview	66 (13)
In-depth interview	70 (13)
Focus group discussion	49 (9)
Questionnaire	12 (2)
Ethnography	5 (0.9)
Others	98 (18)
Data analysis	
Thematic analysis	353 (66)
Content analysis	42 (8)
Interpretive phenomenological analysis (IPA)	33 (6)
Narrative analysis	11 (2)
Grounded theory approach	9 (2)
Discourse analysis	4 (1)
Others	82 (15)

Textual narrative synthesis

Based on their research focus, the studies were classified into four broad groups as shown in Figure 2: education-related studies, healthcare-related studies, studies in specific population groups, and vaccine-related studies.

Education

About 20% of the reviewed studies explored the impact of the pandemic on various aspects of education globally, including students' experiences of the pandemic, its effect on their health and academic performance, and measures taken by teachers and school managements to adapt to the unanticipated exigencies. As a result of school closures affecting over 1.5 billion students worldwide, the reviewed studies unanimously reported inimical effects of the

pandemic on students' mental health, with high correlates of depression, stress and anxiety.[36-38] Most schools soon switched to distance learning using video call technology. However, the lack of physical contact and interaction with teachers and fellow students resulted in decreased motivation levels, increased stress, and worsened academic performance.[39] Due to the lockdowns, these negative effects of the pandemic were worse for displaced and stranded students, who also had to deal with food shortages, isolation from family and friends, and feelings of uncertainty.[36]

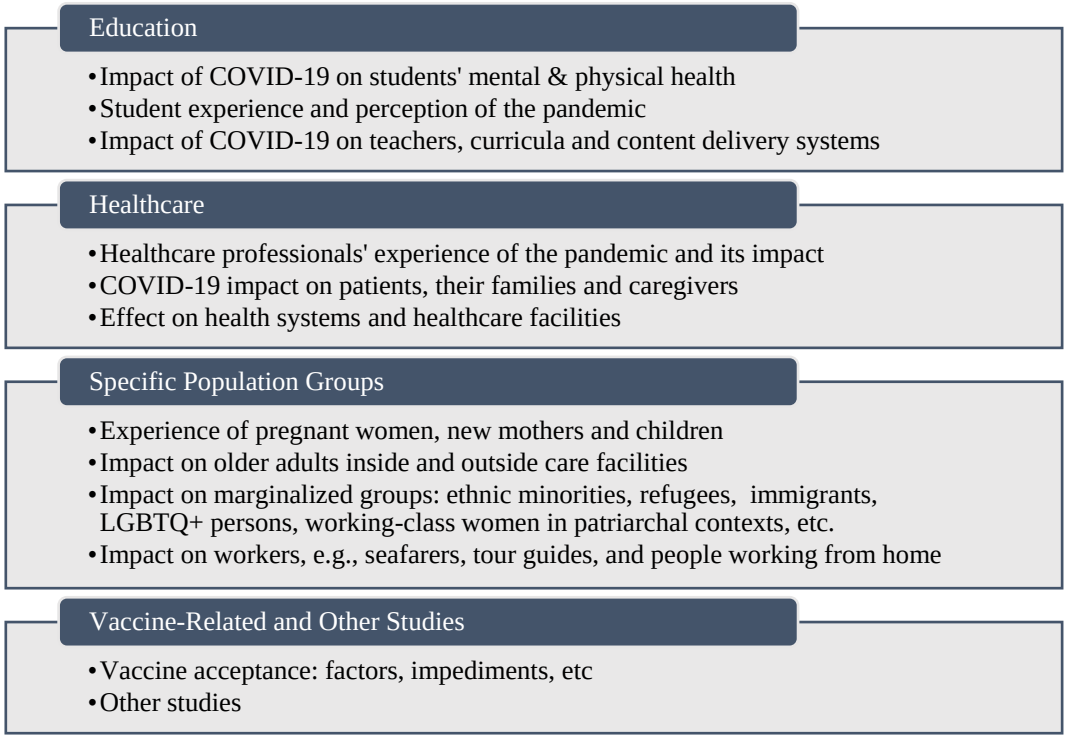

Figure 2: Chart of overarching themes of qualitative studies conducted during COVID-19.

Healthcare

Most (257) of the included studies focused on health-related aspects of the pandemic – its impact on patients, their families and caregivers; its impact on health systems and healthcare facilities across the world; and the experiences of frontline healthcare providers during the pandemic. Of the studies conducted among healthcare professionals, 70% were conducted among nurses, 15% among medical practitioners, and the rest among pharmacists, pharmacy technicians, social care workers, physical therapists, and hospital management. Across all professions, concerns raised ranged from mental health issues such as stress and anxiety, to physical concerns like the shortage of PPE and infection concerns.[40,41] Twenty-six pediatric nurses in Brazil further cited staff shortages and poor appreciation for the nursing profession as barriers to their effective service during the pandemic.[42] Another study in the USA showed that nurses were turning to the use of substances such as tobacco, alcohol and marijuana to cope with the immense stress of working during the pandemic.[43] On the part of patients, an Australian study reported that 20% of respondents were consistently dissatisfied with telehealth consultation, although this fraction consisted of mostly older and less literate adults.[44] Despite the abundance of studies on the health impacts of COVID-19 on the population, only one study explored the experiences of COVID-19 patients during hospitalization and quarantine, and this represents an important research gap.

Specific population groups

Some studies focused on the experiences and perceptions of COVID-19 by specific population groups, such as children; pregnant women; new mothers; older adults (within and outside care homes); and marginalized groups such as ethnic minorities, LGBTQ+ individuals, refugees, immigrants, and working class women in patriarchal societal contexts. Three studies attempted to capture the experiences of pregnant women and new mothers during the pandemic.[45-47] They reported similar themes of women feeling uncertainty and anxiety due to changing hospital policies; a sense of loss of the pregnancy and birthing experience due to the inability to have family around; and a sense of gratitude for compassionate and helpful doctors and midwives. One study further reported a general wariness among pregnant women in the UK about taking the COVID vaccine, with most women perceiving it as potentially more risky than the disease itself.[47] Three studies in South Africa, Sweden and Australia assessed children's perception of the pandemic and its

restrictions.[48-50] All three studies reported that children expressed concerns about their safety and those of their family and friends, the potential permanence of their loss of freedom, and their inability to attend school – "I can longer go to school when I'm so close to finishing….I may never get a chance to finish my education".[48]

Twenty studies were conducted on issues relating to older adults, with five studies conducted in the care home context and 15 studies in the general context. In a study conducted in the Netherlands, older adults described the pandemic situation as ungraspable and bemoaned the disruption of their daily and social lives – "Who sits with me at my table and has a cup of soup with me? No-one".[51] The experience was reportedly worse for elderly people living with disabilities, as the decline in care provided by their caregivers caused profound loneliness, hunger, and suicidal thoughts in some cases.[52] The pandemic also brought ageism-related discourse to the fore, with three studies exploring this subject through discourse analysis of posts on Twitter, and the Chinese "Weibo" social media platform.[53-55] While both Twitter studies showed an increase in ageist remarks within Western populations during the pandemic, the Weibo study found a favourable portrayal of older people in China as warm, competent and valuable. These differences echo longstanding (largely anecdotal) beliefs that Western societies are more ageist than Eastern cultures, who teach their young to show more deference to the elderly.[56]

Numerous studies focused on how the pandemic differentially affected certain marginalized groups, including ethnic minorities, refugees, immigrants, LGBTQ+ persons, and working-class women in patriarchal contexts. In a study among African Americans, identified barriers to coping with the pandemic included food insecurity, economic hardship, mistrust for government, lack of healthcare access, and lack of internet access to enable participation in virtual schooling and church services; and facilitators to coping included religious faith and physical activity.[57] In another study among Latinx persons in the US who survived hospitalization for COVID-19, respondents blamed their infection and subsequent hospitalization on a lack of trust in the government, misinformation, fear of deportation (for undocumented immigrants), high-density housing, high cost of healthcare, and fear of unemployment – "How will I support my family in Mexico if I can't send money?".[58]

Although LGBTQ persons were negatively reportedly affected by COVID to a greater extent due to pervasive rejection and discrimination, two studies demonstrated how this group has persevered through the pandemic using the values of community and culture in the USA, and through reflexively adapted mental health services for LGBT youth in Canada.[59,60] Two other studies explored how the pandemic affected married women who are also working, particularly concerning balancing work and domestic obligations in heavily patriarchal contexts. In the first study conducted in Turkey, the pandemic lockdown appeared to worsen gender inequalities and patriarchal norms, as female academics experienced increased pressure to carry out unpaid domestic work as expected by society, mostly without spousal assistance.[61] The second study found a similar situation in Pakistan, where educated Muslim women felt a heightened societal pressure to carry out the traditional roles of "good" wife and mother, due to the restrictive pandemic.[62] As such, COVID-19 is said to have dealt a blow to the progress made by the global feminist movement.

COVID-19 vaccine

Six studies focused on the vaccine and factors associated with its acceptance by different population groups. In general, healthcare workers were more willing to accept the vaccine than the general population, with Black Americans and pregnant women showing the greatest reported hesitancy.[47,63] In a discrete choice experiment aimed at eliciting attributes that would encourage Chinese adults to take a COVID vaccine, the following features were prominent in decreasing order of importance: vaccine efficacy and brand, exemption from quarantine for vaccinated travelers, vaccine safety, convenient venue for vaccination, vaccine acceptance by friends and family, and recommendations by general physicians or government.[64] A similar study in the USA found more complex concerns surrounding vaccine acceptance, including eligibility uncertainty, fears of politicization or pharmaceutical industry influence, medical mistrust, need for vaccine evidence by subpopulation, cost concerns, and desire for practitioner recommendation.[26] In general, there was a seeming neglect of the experience and perception of youths, and a limited representation of research from non-Western populations.

DISCUSSION

This scoping review has characterized the methods (and adaptations) applied in COVID-19-related qualitative research, and summarized the focus of these studies, with a view to identifying research gaps. Regarding the methods, the pandemic inspired a major switch to virtual data collection methods, including the use of telephone and teleconferencing interviews and focus group discussions, online surveys, and digital ethnographies. In one of the reviewed studies, the authors reported that they were forced to convert their in-person study into a virtual one after the pandemic interrupted their physical interviews.[65] Although the observed switch was largely imposed by the pandemic, virtual research conduct is likely to remain popular beyond the pandemic, due to benefits such as ease of participation, lower cost of conduct, geographically boundless recruitment, and relatively easy follow-up.

However, virtual data collection methods have their unique limitations. Carson et al noted that their use of a virtual focus group discussion may have led to a selection bias against those with limited telephone or internet

access.[26] To address this limitation, they offered tablets and Wi-Fi access to individuals contacted for participation in the study. Other limitations of virtual data collection methods that have been identified include issues with internet connectivity, greater potential for distractions at home, reduced privacy, and a limited capacity for participant observation.[65] Researchers may surmount these limitations by asking participants to find a private space for the interview, and providing telephone interview as a standby alternative in case of technical difficulties with internet interviews. In addition, the progressive refinement and standardization of virtual research methods will be beneficial for future pandemic preparedness and for qualitative research in general.

This study also aimed to characterize the focus of qualitative studies conducted during the pandemic, with the aim of identifying research gaps and making recommendations. An important identified research gap is the paucity of COVID-19 research from the global South. Another deficiency in the literature is the lack of studies assessing the perspectives and experiences of healthcare workers besides doctors and nurses. Among the studies exploring the experiences of healthcare professionals, 70% were conducted among nurses, 15% among physicians, and the rest among pharmacists, pharmacy technicians, social care workers, anesthesiologists, and hospital administrators. This highlights a paucity of studies exploring the experiences of other frontline healthcare professionals. How have hospital administrators coped with the stress occasioned by increased COVID-19 hospitalizations and the task of managing wearied hospital staff? How did community pharmacists cope with the increased workload during the pandemic? What were the experiences of non-professional support staff (such as janitors and cleaners) in healthcare facilities? These are some research questions that will be beneficial for future pandemic preparedness and health system resilience.

Another identified research gap is unearthing the causes and impacts of political and medical distrust – how it aided the spread of the virus, how it affected vaccine acceptance and hesitancy, and what factors made previously hesitant persons to eventually accept the vaccine, if they did. Only two of the 535 studies focused on political distrust – one from the UK which found 95% support for government decisions due to perceived transparency, and another from Nigeria which reported large-scale distrust for the government due to political corruption.[66,67] Also, too few studies explored youths and adolescents' perceptions and experiences of the pandemic, unlike other population groups (such as women, children and the elderly). This warrants greater research attention in the future.

Limitations

This review only considered studies reported in the English language. Since English is not the official language in many countries, relevant publications in other languages were likely left out. Also, the number of articles on COVID-19 is growing at a rapid pace, and several potentially relevant papers that were published after the defined period were not included. Lastly, only two carefully chosen databases were used, although more databases may have provided more potentially relevant studies. However, the two databases were chosen because of their vast coverage of qualitative research in health and psychology, and this coverage was reflected in the large number (535) of retrieved and reviewed studies.

CONCLUSION

This review has characterized the methods (and adaptations) applied in COVID-19 related qualitative research conducted during the pandemic. The review further synthesized evidence from the 535 included studies, while identifying research gaps and providing recommendations for future qualitative research on the pandemic. Given the proliferation of virtual data collection methods during the pandemic, it may be beneficial to progressively refine and standardize these methods, in preparation for future health emergencies. Efforts should also be made to encourage health research from under-resourced (and consequently under-represented) regions of the world through incentives such as journal article processing charge waivers and discounts.

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