




Global Food Insecurity and African, Caribbean, and Black (ACB) Populations During the COVID-19 Pandemic: a Rapid Review

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Abstract

Background The global food insecurity reinforces the ongoing impact of COVID-19 on human health and mortality. Although literature remained sparse, reports indicated that food insecurity is disproportionately high among African, Caribbean, and Black (ACB) population since the outset of COVID-19. Hence, we assessed the food insecurity conditions of ACB populations globally during the COVID-19 pandemic.

Methods Comprehensive searches in CINAHL, Medline (Ovid), PubMed (Medline), Food Science and Technology Abstracts, SCOPUS, EMBASE, AMED, CAB Abstracts, Cochrane Library (OVID), and PsycINFO were carried out. Title/abstract and full-text screening, quality appraisal (modified JBI QARI), and data extraction were carried out by double reviewers.

Results The initial search yielded 354 articles. After removal of duplicates and irrelevant articles, a full-text review and critical appraisal, 9 papers were included in the study. After data extraction and synthesis, six major themes emerged from the analysis: increased food insecurity, adverse health outcomes of food insecurity, exacerbation of existing disparities, systemic inequities and adverse policies, racism, and sociocultural response and solutions.

Conclusion/implications The study showed that COVID-19 had exacerbated food insecurity and other health disparities within racialized populations including ACB people, due to systemic anti-Black racism; inadequate representation in decision-making; and issues of cultural appropriateness and competency of health services. While sociocultural response by ACB people through the expansion of their social capital is imperative, specific policies easing access to food, medicine, and shelter for racialized communities will ensure equity while reducing global food insecurity and health crises during the COVID-19 pandemic.

Keywords Food insecurity · COVID-19 · African, Caribbean, and Black (ACB) population · Global · Health

Introduction

The world is no stranger to challenges and tragedies. Despite the varying magnitude in devastation triggered by local and global problems, the SARS-CoV-2 disease (SARS-CoV-2/

COVID-19) has caused tremendous tribulations across the globe. Since it was first reported in December 2019 in Wuhan City, China, COVID-19 has spread to virtually all corners of the world causing untold adverse outcomes such as increased mortality and exacerbation of food insecurity within already marginalized populations [1, 2].

Food insecurity—which refers to the unsustainable access to adequate supplies of good quality foods to meet the biological, developmental, and functional needs of humans for a healthy and normal life—has presented new challenges in a rapidly evolving world population [3, 4]. Globally, there are more than 820 million hungry people while about 2 billion people experience moderate to severe food insecurity [4]. In developed countries, the issue hits severely marginalized subgroups of the population including racial minorities. For instance, in the USA, food insecurity affects Black people (21.2%) more than any other racial groups, at a rate higher than the national average of 11.1% [5, 6]. In Canada, the

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prevalence of food insecurity is approximately 3.5 times more in Black households compared to White households at a national level [7].

With the negative impact of the ongoing COVID-19 pandemic, it is estimated that the number of people at risk of starvation globally will double—from 135 million to 265 million—by the end of 2020 [1, 3]. In the USA, counties which have a large population of Native Americans and African-Americans—such as Navajo County in Arizona and Orleans Parish in Louisiana—are projected to have some of the highest food insecurity rates as the ongoing pandemic rages on [8]. Likewise in Canada, it is also expected that the food insecurity situation will double from the existing 4.4 million, further impacting racialized populations as a result of factors such as unemployment, reduced income, and food-price spikes [9]. Many countries—such as those in the Horn of Africa, Central America and Caribbean, Western Africa, and parts of Asia—that rely on essential agricultural seasons may be impacted by reduced agricultural workforce, or reduced access to agricultural inputs, due to a combination of the lockdown measures and supply chain disruptions. Consequently, this could lead to spikes in food-price in these low-income countries, and other long-term repercussions [1].

More specifically among marginalized populations including African, Caribbean, and Black (ACB) populations, food insecurity has become disproportionately high since the COVID-19 pandemic started, as there have been reports of lack of access to healthy food, food unaffordability, and food unavailability [8, 10–12]. The recent COVID-19 Impact Survey which collected data on American adults in May 2020 indicated that more than half of Black respondents with children reported that they were food insecure, and over 40% of Hispanic respondents with children reported food insecurity [13]. All the more, the pandemic has had indirect impacts on the food insecurity experience of Black people. For instance, about 39% of jobs held by Black American workers have become vulnerable due to reduced pay at work, short-term furloughs, or outright layoffs [12]. Such economic circumstances have, in turn, led to the difficulty in purchasing nutritious food [14]. Similarly, since ACB people rely on essential public services such as public transportation to be able to access food at grocery stores, ongoing containment measures such as lockdown and restrictions on movement have worsened the already precarious food insecurity situation [12, 15]. Even though some of the factors that exacerbated the food insecurity among ACB population are apparent, it is worthy to note that this current food insecurity experience could be traced to years of structural disparities, longstanding health and economic inequities that systematically place ACB and other marginalized populations at socioeconomic disadvantages [5, 10].

A few studies have successfully shown that food insecurity is disproportionately high among marginalized populations

such as ACB people [5–7]. However, there remains a paucity of reviews documenting the global food insecurity experience of the ACB population during the ongoing COVID-19 pandemic. Hence, the aim of this review was to assess the current state of the literature regarding food insecurity, food accessibility, and food availability during the SARS-CoV-2 outbreak among ACB populations around the world. This knowledge would enable policy makers, global leaders, and other stakeholders to develop and implement specific policies and programs that will reduce the burden of food insecurity among marginalized communities worldwide, including ACB populations.

Methods

Literature Search

The search strategy was done in efforts to answer the research question: “What is the experience of food insecurity among ACB people during the COVID-19 pandemic?” More particularly, we sought to find out “How the COVID-19 pandemic has affected the food insecurity condition among ACB populations.”

Ten electronic databases were consulted to find scholarly publications and gray literature pertinent to the research question. CINAHL, Medline (Ovid), PubMed (Medline), Food Science and Technology Abstracts, SCOPUS, EMBASE, AMED: Allied and Complementary Medicine Database, CAB Abstracts, Cochrane Library (OVID), and PsycINFO were perused for articles published between December 2019 and June 2020, available in either English or French. Keywords, and their truncated forms, used for the search were those referring to COVID-19, ACB, race and marginalization, as well as food insecurity (ex: [COVID or COVID-19 or Coronavirus or "Corona virus"] AND [Black* or African* or Afro* or Carib* or Race* or racial* or racis* or minorit* or marginali*] AND [food* or deficienc* or nutri* or hunger or hungry]). The inclusion and exclusion criteria are listed in [Appendix I](#).

Qualitative, quantitative, and methodological articles were retained for the review, as well as media reports and press releases, given the novelty of the topic and the need to reach audiences of various levels of education and literacy. Searching and the use of gray literature for rapid reviews has become increasingly important during the COVID-19 pandemic [16]. Also, the National Collaborating Center for Methods and Tools [17] suggests conducting “an exhaustive search for all available evidence – both quantitative and qualitative, published and grey literature – that address the issue.” The references and publications were managed using the EndNote X8 software package, following which they were

added to the online Covidence software to facilitate the collaborative review process.

Eligibility Criteria

Population The population of interest was the African, Caribbean, and Black (ACB) population across the globe with diverse sociodemographic characteristics such as sex, age (children, adolescents, adults, elderly), geographic regions (rural, urban), employment, income, education, and socioeconomic status.

Exposure Exposure to the Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) virus that is responsible for the COVID-19 pandemic was selected in lieu of an intervention.

Comparison The comparison to the chosen ACB population was in reference to various population groups that did not identify as ACB people such as White (Caucasians), Latino/Hispanic, Indigenous people, and Asians.

Outcomes Outcomes that were assessed were the impacts and effects of the COVID-19 pandemic on food insecurity and other socioeconomic realities ACB people faced, including—but not limited to—access to food, availability of food, and use of food, as well as health status, behaviors, and perceptions regarding the stability of availability, access, and use of food.

Time Period Articles published between December 2019 and June 2020 were retained for this review.

Quality Appraisal

Ensuring the quality of papers and data to be collected was a critical component of the rapid review. Hence, the quality of included studies was assessed by two independent reviewers using a modified Joanna Briggs Institute Qualitative Assessment and Review Instrument (modified JBI QARI) Critical Appraisal Instrument ([Appendix II](#)). This modified instrument consists of a total of thirteen questions and was adapted by combining three questions from the Critical Appraisal Skills Programme (CASP) Qualitative Appraisal Checklist [18] with ten questions from the JBI QARI [19]. The thirteen questions on the modified JBI QARI tool were uploaded to Covidence, and a risk of bias (ROB) assessment was carried out for each paper by the two independent reviewers. For each question on the tool, the reviewers were to choose between High, Unclear, or Low ROB. A High ROB was assigned 0 point, Unclear ROB was issued 0.5 point, and Low ROB obtained 1 point. A maximum score of 13 was assigned to the modified JBI QARI tool and a grading system

was then created to assess the quality of each paper: High = 10–13; Moderate = 6–9; Low = 0–5. Hence, a total score was then computed for each paper. Any disagreements that arose between the two reviewers were resolved by a third reviewer.

Data Extraction

Qualitative data were extracted by two independent reviewers from the included papers using the standardized data extraction tool from JBI-QARI [20]. The data extracted included specific details about the populations, setting, culture, geographical location, study methods, and the phenomena of interest relevant to the review question and specific objectives. Additionally, findings—and their illustrations—were also extracted and assigned a level of credibility.

Data Synthesis

Following the extraction and tabulation of data, the table derived was used to inform a narrative synthesis. Initially, all authors read the table of findings repeatedly and independently so as to identify prevalent concepts in the outcome categories when observed through a health-equity lens. These prevalent concepts and themes were provided to the research team. Subsequently, all the identified concepts were then grouped and clustered by two of the authors to synthesize major themes and sub-themes. Thereafter, all authors reviewed and discussed the themes and sub-themes, which would be used as a basis for evidence-based practice and informed this written rapid review. Meta-analysis (or meta-aggregation) was not performed as this was a rapid review and the design, methods, and settings of included studies were heterogeneous.

Results

Study Selection

The initial search yielded 354 articles. Removal of duplicates allowed for 69 articles to be deleted. With 285 articles remaining, 222 articles were deemed irrelevant following the title and abstract screening. This allowed for 63 articles to undergo a full-text review. Twenty-six articles were then excluded, as they were not sufficiently relevant—notably, 9 articles failed to mention ACB people, another 9 articles did not mention food security, and 8 articles were excluded for other reasons (such as lack of availability). After this process, 37 articles were included for a full appraisal. At this time, the literature search was updated, ensuring that the most current data was reflected in this publication. Still, by June 2020, 37 articles were reviewed at the quality appraisal phase ([Fig. 1](#)).

The 37 papers were critically appraised for the quality of their study methods. The summary of the score and quality of

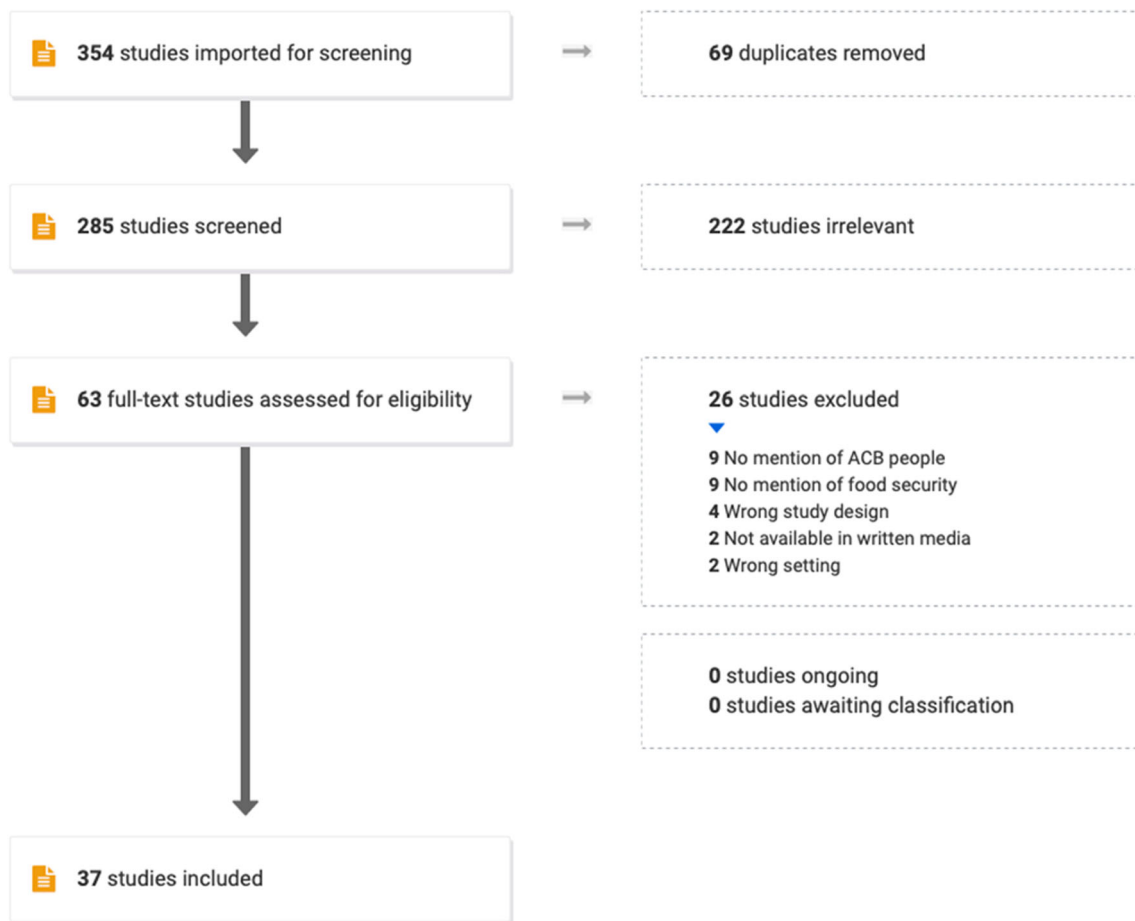


Fig. 1 Study flow diagram

the 37 papers is listed in [Appendix III](#). The decision as to whether or not to include a study was made based on meeting the pre-determined score for either moderate or high quality. Only nine papers were of moderate or high quality ([Appendix IV](#)) and, thus, were included for the data extraction process.

Characteristics of Included Studies

The nine (9) studies included in this rapid review are classified in two categories: four (4) were online news reports [21–24] while five (5) were peer reviewed articles [25–29]. The studies and reports presented here were all published in 2020 including four (4) related to the USA [21, 22, 26, 28], three (3) related to Africa [23, 24, 27], one (1) related to developing countries in general [29], and a last one related to a global perspective [25]. From all these studies, only one has collected original data involving 1478 adults [26]. The rest of the studies were comments [27], theoretical perspectives [25, 28, 29], or just a press release report [21, 23, 24]. While some of the studies focused specifically on ACB population [23, 24, 27], the majority focused on minorities and marginalized communities [21, 22, 25, 26, 28, 29].

Synthesis of Findings (Outcomes of Included Studies)

Relevant data from each included study are listed in [Table 1](#). However, overall, the analysis of the data highlighted six major themes: increased food insecurity, adverse health outcomes of food insecurity, exacerbation of existing disparities, systemic inequities and adverse policies, racism, and sociocultural response and solutions ([Table 2](#)). As food insecurity may be experienced differently due to the difference in geographical location, we presented the themes according to developed countries (USA) and developing countries (Kenya, South Africa, etc.).

Themes that Emerged from a Developed Country (USA)

Increased Food Insecurity

Food insecurity increased during the COVID-19 pandemic through three aspects. Firstly, the *food demand is greater than what is available*. At the time of the COVID-19 pandemic, many people relied on community organizations that provided food relief services. As a consequence, food demand has

Table 1 Relevant data extracted from each of the included study

S/N	Study title (first author and year)	Study population	Study design (type, theory/framework, sampling)	Setting (country and region)	Key findings (author's conclusion)
1	A framework for identifying and mitigating the equity harms of COVID-19 policy interventions (Glover et al., 2020)	COVID-19 policy examples from each WHO region, including high, medium, and low-income countries.	Review of COVID-19 literature; Purposive sampling of COVID-19 policy examples; Expert consultation. Conceptual framework (based on Lorenz and Oliver's framework, and Cochrane PROGRESS-Plus equity algorithm). Public-opinion Online Poll/Survey.	Worldwide USA (Minnesota: Twin Cities vs. Greater Minnesota)	Our conceptual framework highlights the fact that COVID-19 policy interventions can generate or exacerbate interactive and multiplicative equity harms. COVID-19 has disrupted daily life for virtually every Minnesotan, disproportionately impacting the food security and mental health of marginalized communities.
2	COVID-19 disproportionately impacts Minnesotans' food security and mental health (Blue Cross and Blue Shield of Minnesota, 2020)	638 Minnesota residents (aged 18 years and above).			
3	Socio-demographic and epidemiological consideration of Africa's COVID-19 response: what is the possible pandemic course? (Gaye et al., 2020)	Members of African communities and others (Whites, Asian).	Compilation of information from WHO to provide an overview of expected numbers of deaths from COVID-19 different African countries and comparison with other countries out of Africa.	Some 24 African countries (North and sub-Saharan) and France, Italy, Germany, USA, Singapore, South Korea	There is reason for hope in Africa's response to COVID-19. The pessimistic outlook and prediction of the pandemic in Africa can — and should — be prevented. To this end, African countries should keep implementing rapid action and remain vigilant in the upcoming weeks. African countries can lower the spread of the pandemic by: treating and monitoring; tailor approaches according to local context (social, economic, behavioral); intensive and well-designed campaigns; major role of traditional and religious chiefs in conjunction with local healthcare organizations and/or authorities to fight misinformation and erroneous faulty beliefs.
4	Food insecurity and COVID-19: Disparities in early effects for US adults (Wolfson et al., 2020)	1478 low-income adults with household income < 250% of the Federal Poverty Line.	Quantitative cross-sectional Survey/Peer-reviewed Article. National web-based survey (using TurkPrime crowd-surfing platform). Use of quotas to recruit a sample that matches researcher-specific needs (census-matched panel of US adults based on age, gender, and race/ethnicity). Sample limited to low-income adults with household incomes below 250% of the federal poverty line.	USA	The social and economic upheaval caused by the COVID-19 pandemic is magnifying existing disparities and disproportionately affecting low-income, food-insecure households that already struggle to meet basic needs. The early effects documented in the present study are likely to continue to worsen as the pandemic continues unless extensive policy and economic supports are swiftly implemented.
5	Official Statement from Washington State's Leading Hunger Relief Agency Northwest Harvest (Businesswire, 2020)	Individuals and communities that struggle with hunger and poverty, low-income families and immigrants.	Online press statement/Report	USA (Seattle, WA State)	The COVID-19 virus is a test of who we are as a society. We must work together to ensure all have access to the essential needs that sustain good health in order to contain the spread of the virus, and that is only made possible by strong public and private partnerships. We

Table 1 (continued)

S/ N	Study title (first author and year)	Study population	Study design (type, theory/framework, sampling)	Setting (country and region)	Key findings (author's conclusion)
6	As Africa locks down, some deliveries of aid are threatened (Anna, 2020)	African populations	Online news article; Media Report.	Africa	<p>must hold our government leaders accountable for the care of all who reside here and demand they delay implementation of harmful cuts to our safety net. We can volunteer to raise resources and must work together to call out discrimination and xenophobic stigma in our communities.</p> <p>Lockdown restrictions' are delaying deliveries of critical aid including food supply with potential impact on malnutrition.</p> <p>We are already seeing, however, challenges in terms of the logistics involving the movement of food (not being able to move food from point A to point B) ... As a result of the above as of April and May we expect to see disruptions in the food supply chains.</p>
7	South Africa announces \$26 billion to help struggling nation (Anna et al., 2020)	African populations	Online news article; Report	South Africa; other African countries such as Nigeria and Egypt	<p>New funding from the government will help to address food insecurity occurring during the coronavirus pandemic.</p>
8	Racial Capitalism: A Fundamental Cause of Novel Coronavirus (COVID-19) Pandemic Inequities in the United States (Laster Pirtle, 2020)	Members of poor and marginalized communities including Black Americans; people of color; racially segregated people; economically deprived groups	Perspective/Opinion piece in a journal; Theory – Racism and Capitalism. Compilation of quantitative data and qualitative comments.	USA (mainly Detroit, MI)	<p>Racial capitalism is a fundamental cause of the racial and socioeconomic inequities within the novel coronavirus pandemic (COVID-19) in the United States. Racialized capitalist pursuits have left behind the poor, people of color in Detroit, devaluing life so much that it is being easily snatched up by the novel coronavirus pandemic.</p> <p>Interventions should address social inequality (including food insecurity) to achieve health equity across pandemics.</p>
9	Slum Health: Arresting COVID-19 and Improving Well-Being in Urban Informal Settlements (Corburn et al., 2020)	Residents of urban and peri-urban informal settlements (close to one billion people)	Peer-reviewed article; Literature synthesis. Recommendations based on literature synthesis.	Global (USA, Kenya, Brazil, Bangladesh, Global South)	<p>Governments should particularly focus their actions against covid-19 toward slums' resident because they are neglected.</p> <p>The informal settlements of the Global South are the least prepared for the pandemic of COVID-19. The toll it will take on lives and livelihoods will have immediate and long-lasting effects. The response will need to involve multiple actors that include national and local governments, bilateral and multi-lateral international agencies, CBOs, NGOs, and foundation.</p>

Table 2 Synthesized themes and sub-themes

S/ N	Major themes	Sub-themes	Key results/findings
1	Increased food insecurity	Lack of access to food	Nearly one-third of Minnesotans expressed concern about their own personal access to affordable, healthy foods - COVID-19 disproportionately impacts Minnesotans' food security and mental health (Blue Cross and Blue Shield of Minnesota, 2020)
		Unhealthy eating behaviors	40% of those individuals said their food and eating habits are less healthy than before - COVID-19 disproportionately impacts Minnesotans' food security and mental health (Blue Cross and Blue Shield of Minnesota, 2020)
		Food demand is greater than what is available (food unavailability)	President Ramaphosa acknowledged that government food distribution has been unable to meet the "huge need." - South Africa announces \$26 billion to help struggling nation (Anna et al., 2020)
2	Food insecurity and adverse health outcomes	Increased risk of contracting COVID-19	The pandemic exacerbates existing inequities, which can in turn exacerbate the pandemic, e.g., low SES individuals needing to work rather than remain in lockdown - A framework for identifying and mitigating the equity harms of COVID-19 policy interventions (Glover et al., 2020)
		Impact on Mental Health	In our study, adults currently experiencing food insecurity were not able to buy food in bulk quantities and therefore are at greater risk of exposure to the virus (due to the need for more frequent food shopping trips) as well as being at greater risk of an acute hunger crisis (due to lack of financial resources to purchase sufficient food) - Food insecurity and COVID-19: Disparities in early effects for US adults (Wolfson et al., 2020)
		Disproportionate impact of COVID-19	42% of respondents who identify as food insecure said the pandemic has had a strong or significant impact on their mental health, ranking it as the area most impacted by COVID-19—above even financial concerns or their physical health - COVID-19 disproportionately impacts Minnesotans' food security and mental health (Blue Cross and Blue Shield of Minnesota, 2020)
3	Exacerbation of existing disparities	Increased poverty and food insecurity	The COVID-19 virus does not discriminate. It is a human disease and not the fault of any one race. Yet the disease does have disproportionately negative impacts on individuals and communities that struggle with hunger and poverty - Official Statement from Washington State's Leading Hunger Relief Agency Northwest Harvest (Businesswire, 2020)
		Unemployment/Job Losses and food insecurity	Poverty and food insecurity have deepened dramatically since the lockdown began on March 27. - South Africa announces \$26 billion to help struggling nation (Anna et al., 2020)
4	Systemic inequities and adverse policies	Policies during the pandemic have exacerbated food insecurity	In addition, as individuals already at risk for food insecurity are more vulnerable to losing their jobs, rates of food insecurity will climb higher as the pandemic progresses (Page 9 of 13) - Food insecurity and COVID-19: Disparities in early effects for US adults (Wolfson et al., 2020)
		Inequities in socioeconomic status and food insecurity	The same harms (food insecurity; violence; loneliness; depression; anxiety; stigma) are repeated across many groups, and are exacerbated by many COVID-19 policy interventions. This is crucial; it shows that inequitable policy options may generate interactive and multiplicative harms - A framework for identifying and mitigating the equity harms of COVID-19 policy interventions (Glover et al., 2020)
			Governments have already begun to impose draconian quarantine and physical distancing measures for the urban poor without also ensuring that those residing in urban slums can meet their everyday needs, such as food and clean water - Slum Health: Arresting COVID-19 and Improving Well-Being in Urban Informal Settlements (Corburn et al., 2020)
			In Kenya, travel restrictions have delayed the delivery of pesticides needed to fight the most devastating locust outbreak some East African countries have seen in 70 years, an official with the U.N. Food and Agriculture Organization told The Associated Press - Aid deliveries face threat as Africa locks down (Anna, 2020)

Table 2 (continued)

S/ N	Major themes	Sub-themes	Key results/findings
5	Racism	<p>Poor living conditions/environment as a mediator for food insecurity</p> <p>Relationship between race, poverty and health</p>	<p>We find that, as of mid-March 2020, 44% of adults with an income < 250% of the FPL were food insecure in the past 30 days, and these individuals were more likely to be non-Hispanic Black or Hispanic. This disparity in food security status based on race/ethnicity is an additional way in which COVID-19 is disproportionately impacting communities of color in the US</p> <ul style="list-style-type: none"> - Food insecurity and COVID-19: Disparities in early effects for US adults (Wolfson et al., 2020) <p>These communities face roadblocks to opportunities put in place by an inequitable system that does discriminate. As a result, they lack resources to afford basic needs—a struggle that has exacerbated further in times of crisis</p> <ul style="list-style-type: none"> - Official Statement from Washington State’s Leading Hunger Relief Agency Northwest Harvest (Businesswire, 2020) <p>Those living in slum areas are vulnerable to food insecurity during pandemics such as COVID-19, but they are neglected</p> <ul style="list-style-type: none"> - Slum Health: Arresting COVID-19 and Improving Well-Being in Urban Informal Settlements (Corburn et al., 2020) <p>Racism and capitalism mutually construct harmful social conditions that fundamentally shape COVID-19 disease inequities because they (a) shape multiple diseases that interact with COVID-19 to influence poor health outcomes; (b) affect disease outcomes through increasing multiple risk factors for poor, people of color, including racial residential segregation, homelessness, and medical bias; (c) shape access to flexible resources, such as medical knowledge and freedom, which can be used to minimize both risks and the consequences of disease; and (d) replicate historical patterns of inequities within pandemics, despite newer intervening mechanisms thought to ameliorate health consequences.</p> <ul style="list-style-type: none"> - Racial Capitalism: A Fundamental Cause of Novel Coronavirus (COVID-19) Pandemic Inequities in the United States (Laster Pirtle, 2020)
6	Sociocultural response and solutions	<p>Sociocultural response</p> <p>Contextual consideration (as a solution)</p> <p>Need for support programs from government (as a solution)</p> <p>Improved food assistance (as a solution)</p> <p>Need for funding (as a solution)</p> <p>Addressing social inequality (as a solution)</p>	<p>Those living in urban informal settlements often rely on robust social connections to survive, such as to identify day labor, to get food using credit from a street vendor, or to find trustworthy child care providers, just to name a few</p> <ul style="list-style-type: none"> - Slum Health: Arresting COVID-19 and Improving Well-Being in Urban Informal Settlements (Corburn, et al., 2020) <p>It is paramount that governments tailor their approaches to their own countries. A successful prevention method that will help to control the outbreak in Africa will need to be achieved by taking into consideration the social, economic, and behavioral context of the African Population (Page 3, column 3 - Page 4, Column 1).</p> <ul style="list-style-type: none"> - Socio-demographic and epidemiological consideration of Africa’s COVID-19 response: what is the possible pandemic course? (Gaye et al., 2020) <p>Other African countries are implementing relief and social welfare programs for their citizens, although none on the scale of South Africa.</p> <ul style="list-style-type: none"> - Slum Health: Arresting COVID-19 and Improving Well-Being in Urban Informal Settlements (Corburn, et al., 2020) <p>Immediate measures to protect residents of urban informal settlements, the home-less, those living in precarious settlements, and the entire population from COVID-19 include the following: ... (6) provide immediate food assistance...</p> <ul style="list-style-type: none"> - Slum Health: Arresting COVID-19 and Improving Well-Being in Urban Informal Settlements (Corburn, et al., 2020) <p>One-tenth of the new special budget will go toward the country’s most vulnerable people over the next six months in one of the world’s most unequal nations. The pandemic has exacerbated inequalities.</p> <ul style="list-style-type: none"> - South Africa announces \$26 billion to help struggling nation (Anna et al., 2020) <p>Racism and capitalism mutually construct harmful social conditions that fundamentally shape COVID-19 disease inequities... Interventions should address social inequality to achieve health equity across pandemics.</p> <ul style="list-style-type: none"> - Racial Capitalism: A Fundamental Cause of Novel Coronavirus (COVID-19) Pandemic Inequities in the United States (Laster Pirtle, 2020)

increased making the demand greater than what is available. Secondly, this unavailability induced a *lack of access to food*. This was mentioned by an official of the Blue Cross and Blue Shield of Minnesota [21] who revealed that:

We all feel the toll of COVID-19, but it is particularly alarming to see how the pandemic is exacerbating existing health inequities and impacting so many Minnesotans' access to healthy and affordable foods.

Thirdly, the lack of food availability and accessibility led people to adopt *unhealthy eating behaviors*. According to the Blue Cross and Blue Shield, 40% of Minnesotans said their food and eating habits are less healthy than before [21].

Food Insecurity and Adverse Health Outcomes

The reviews of the studies included here reveal that during the pandemic, ACB communities experienced some adverse health outcomes as a result of food insecurity. Firstly, a *disproportionate impact of COVID-19* was seen among ACBs compared to other racial groups in spite of the fact that the disease does not discriminate among humans:

The COVID-19 virus does not discriminate. It is a human disease and not the fault of any one race. Yet, the disease does have disproportionately negative impacts on individuals and communities that struggle with hunger and poverty. [22]

It was also noted that the issue of food insecurity has *increased the risk of contracting COVID-19*. Indeed, in their study, Wolfson and Leung (2020) [26] reported that:

Adults currently experiencing food insecurity were not able to buy food in bulk quantities and therefore are at greater risk of exposure to the virus (due to the need for more frequent food shopping trips) as well as being at greater risk of an acute hunger crisis (due to lack of financial resources to purchase sufficient food).

Finally, one study showing that food insecurity affected more ACB people also highlighted that food insecurity had an *impact on their Mental Health* [21]:

Forty-two percent of respondents who identify as food insecure said the pandemic has had a strong or significant impact on their mental health, ranking it as the area most impacted by COVID-19 – above even financial concerns or their physical health.

Racism

Relationship Between Race, Poverty, and Health One study [28] also shows that the food insecurity situation experienced by the ACB population is deeply linked to racism. Racism contributes to poverty and affects minorities through its duality with capitalism, as they mutually construct harmful social conditions that fundamentally shape COVID-19 disease inequities. The authors further stated that:

Indeed, historical research on smallpox reveals that if access to flexible basic resources, like food, medicine, shelter, and treatment, excluded any subset of the population, the disease will continue to spread and continue to kill. [28]

Themes that Emerged from Developing Countries (Africa, Kenya, South Africa, etc.)

Exacerbation of Existing Disparities

Increased Poverty and Food Insecurity Poverty and food insecurity have deepened dramatically since the lockdown began. Indeed, they became top priorities for many African countries, including South Africa according to the President of South Africa, Cyril Ramaphosa [23]:

The top priorities are combating the virus and relieving “hunger and social distress” as millions of South Africans struggle to survive under lockdown.

Unemployment/Job Losses and Food Insecurity In addition, as individuals already at risk for food insecurity are more vulnerable to losing their jobs, rates of food insecurity will climb higher as the pandemic progresses. This is mentioned in this excerpt below:

It's extremely important that food systems continue to function ... but also be able to move across borders. Lockdowns and other restrictions for the coronavirus may affect us very, very much on a continent where millions of people who must go out daily to make a living are made to stay at home. [24]

Sociocultural Response and Solutions

The majority of studies included in this review highlighted the sociocultural response and solutions to consider when dealing with the situation within ACB and other marginalized

communities. These are the following (and corresponding quotes supporting the key strategies): *social context, contextual consideration, support programs from government, improved food assistance, need for funding, and addressing social inequality*.

Social context and response:

Those living in urban informal settlements often rely on robust social connections to survive, such as to identify day labor, to get food using credit from a street vendor, or to find trustworthy child care providers, just to name a few. [29]

Contextual consideration:

It is paramount that governments tailor their approaches to their own countries. A successful prevention method that will help to control the outbreak in Africa will need to be achieved by taking into consideration the social, economic, and behavioural context of the African Population. [27]

Need for support programs from government:

Nigeria's government has announced it will expand its social welfare register from 2.6 million households to 3.6 million, in addition to food distribution...Cape Verde has offered cash transfers and food assistance...Egypt has reduced taxes for industries and postponed taxes on agricultural land. [23]

Other African countries are implementing relief and social welfare programs for their citizens. [29]

Improved food assistance:

Governments should support existing community-based organizations (CBOs), faith-based groups, and others that may already be providing food support to the poor and ensure they can deliver cooked meals to all those in the informal settlements and living on the streets. Efforts should be made to ensure adequate nutritional content, including protein, of all delivered food. [29]

Need for funding:

One-tenth of the new special budget will go toward the country's most vulnerable people over the next six months in one of the world's most unequal nations. The pandemic has exacerbated inequalities. [23]

Addressing social inequality:

Indeed, historical research on smallpox reveals that if access to flexible basic resources, like food, medicine, shelter, and treatment, excluded any subset of the population, the disease will continue to spread and continue to kill. [28]

Themes that Emerged from Both Developed and Developing Countries

Systemic Inequities and Adverse Policies

Policies During the Pandemic Have Exacerbated Food Insecurity

The results of this review demonstrate that inequitable policies implemented systematically may generate interactive and multiplicative harms. As reported by Corburn et al. [29], governments have already begun to impose draconian quarantine and physical distancing measures for the urban poor without also ensuring that those residing in urban slums can meet their everyday needs, such as obtaining food and accessing clean water. These lockdown policies have also exacerbated food insecurity as reported by Gaye et al. (2020) [27] and Corburn et al. (2020) [29] respectively:

Given the low socioeconomic status in most of African cities, mass quarantines may mean people will starve, as many of them already struggle to find food on a daily basis, much as has been reported in deprived neighborhood in the USA. [27]

Schools often provide essential nutrition and meals for children living in slums, and closing those institutions may deny children access to their only consistent meals. [29]

Certain harms such as food insecurity, violence, loneliness, and stigma are disproportionately repeated across marginalized groups, and are exacerbated by many COVID-19 policy interventions [25]. For example in Kenya, an official with the U.N. Food and Agriculture Organization told The Associated Press that "travel restrictions have delayed the delivery of pesticides needed to fight the most devastating locust outbreak some East African countries have seen in 70 years." [24]. This situation can contribute to the alteration of the food system that is already weak in many African countries. As underlined in the report released by ABC News:

With the rainy season starting now, farmers start planting and ranch-land begins regenerating. But if these

voracious insects are landing on these young crops, then these farmers will be facing a 100% loss. [24]

Inequities in Socioeconomic Status and Food Insecurity

Existing socioeconomic inequities within communities, specifically against minorities including ACBs, have an impact on food insecurity. In their study, Wolfson and Leung [24] found that:

...as of mid-March 2020, 44% of adults with an income <250% of the Federal Poverty Line (FPL) were food insecure in the past 30 days, and these individuals were more likely to be non-Hispanic Black or Hispanic. [26]

Also, according to the authors:

This disparity in food security status based on race/ethnicity is an additional way in which COVID-19 is disproportionately impacting communities of color in the US. [26]

Above these, the socioeconomic status of marginalized communities is linked to the food insecurity situation:

Individuals with low or very low food security were more likely to be non-Hispanic Black or Hispanic, to have children in the home, and have less than a college education. Individuals with very low food insecurity were also more likely to rent their homes, not have health insurance or have Medicaid, and were more likely to be receiving Supplemental Nutrition Assistance Program (SNAP) benefits. [26]

In fact, more results further highlighted the socioeconomic constraints and the link to food insecurity, as stated below [22]:

These communities face roadblocks to opportunities put in place by an inequitable system that does discriminate. As a result, they lack resources to afford basic needs – a struggle that’s exacerbated further in times of crisis. [22]

...the lack of affordable childcare or reduction of hours worked means missed or reduced paychecks. Stockpiling emergency supplies of food is a daunting expense – especially when you can barely afford to eat on a day-by-day basis. [22]

Poor Living Conditions/Environment as a Mediator for Food Insecurity The study also reveals that people living in slums were vulnerable to food insecurity during the COVID-19 pandemic [29]. The excerpts below illustrate the situation:

Malnutrition and food insecurity is endemic in many urban slums throughout the world. Urban slum dwellers rely on day wages to purchase food, and street food vending is often a significant source of calories and nutrition. [29]

Residents in deprived neighbourhoods have less access to green spaces and healthy, affordable foods. [28]

Discussion

Food Insecurity and Its Adverse Effects

Food insecurity is a complex condition that encompasses four fundamental dimensions namely food availability, food accessibility, food utilization, and food stability [30]. During the current study, we found that food insecurity increased through its availability, accessibility, and utilization dimensions within ACB communities due to the COVID-19 pandemic. Hence, the rising food demand has affected food availability. According to Nicola et al. (2020) [31], this increase is a consequence of the panic-buying and stockpiling of food products in the early days of the pandemic, when people feared that existing food will run out.

In addition to existing challenges, food availability has been impacted by the disruption of the food supply chains, which is a consequence of the closure of borders on a global scale [32]. As a result, the supply of food to markets has become more difficult [33] with a direct impact on availability of food at the household level. Additionally, accessibility of food became difficult during the pandemic, both physically and economically. Economically, increased demand is causing increased food prices especially for healthier options such as vegetables [34].

The precarious conditions in which many disadvantaged communities are living have also made physical accessibility more difficult. Unable to buy large amount of food for storage, the poorest have to continue working despite the public health lockdown measures, in order to be able to feed themselves and fulfill basic needs [11, 12]. The consequence is that in addition to not being able to eat a healthy diet, they must go out to purchase food despite the risk of being infected by the virus

due to increased exposure to others. Thus, food insecurity itself appears as a risk factor for contracting the disease for the poorest. On the other hand, it has been reported that a poor diet poses a risk of weakening the immune system, thereby compromising the body's ability to fight diseases [35, 36].

As Black communities in many developed countries struggle with so many chronic diseases, there was a concern that they would have to pay a heavy price in face of COVID-19. In this regard, the early released statistics from the USA clearly showed how a huge number of ACB people died from COVID-19 or complications of the disease [37]. The pandemic has contributed to exacerbating the already precarious health conditions of Black populations [38]. Furthermore, the issue of mental health is the one that we noted as a stark consequence of food insecurity. This is understandable since the fear and stress induced by unhealthy eating behaviors and food scarcity are well documented [39]. This can even be more serious when children are present in the household, as many of them lost access to school meals due to the COVID-19 pandemic [40, 41].

Exacerbation of Disparities—Increased Poverty, Unemployment, and Food Insecurity

The social and economic impacts of the COVID-19 pandemic have exposed the precarious position of the underserved populations of which the ACB community makes up a significant part. It is projected that COVID-19 will push 71 million people into extreme poverty in 2020: with Africa and India being the most affected regions [42]. Poverty and minority status—especially being Black—have since been linked to food insecurity; thus, the COVID-19 pandemic has further worsened an already dire situation [43, 44].

Minority populations make up a significant proportion of workers considered essential such as retail grocery workers, public transit employees, health-care workers, and custodial staff, many of whom are low-income earners [45]. As such, many survive paycheck to paycheck and do not have the financial ability to stockpile food items. Several complicated food management and purchase strategies which low-income households adapted to maintain food security have been described, and these involved long-term budgeting, buying products on sale, buying unbranded products, and buying the cheapest items from multiple stores. In addition, the increased job insecurity and lack of cheaper food items on the grocery shelves make such survival strategies difficult at best and impossible at worst, further worsening the inability to purchase food and increasing food insecurity [10, 46].

Moreover, in a bid to slow down the spread of the virus, several governmental policies were put in place worldwide, including temporary closure of many businesses so as to adhere to social distancing measures. Using Canada as a case study, from February to April 2020, about 5.5 million

Canadian workers were affected by the COVID-19 economic shutdown. This included a drop in employment of 3.0 million jobs and an increase in COVID-19-related absences from work of 2.5 million [47]. As an attempt to reduce the impact of the economic fallout, various governments from predominantly high-income countries implemented relief measures which were expected to reduce food insecurity. These involved stimulus checks to employees who experienced income-loss due to the pandemic, as well as various protections to businesses, enabling them to retain some of their staff [48]. With the exclusion of most European countries, most stimulus checks are however significantly lower than the usual salary of the individuals, and many households have seen a reduction in their income for a significant time period [49].

With a proportionate increase in use of food banks globally, Canada is not spared. For instance, the CEO of Canada Food Banks compared the current increase of food bank use (20%) to the Great Depression, when the use of food banks increased 28% across the country [50]. As such, the policy measures implemented during the COVID-19 crisis have been insufficient to prevent increases in poverty and food insecurity.

Systemic Inequities and Adverse Policies

In Western countries—and particularly in Canada with a universal healthcare system—one might wonder why the experiences of the ACB population during the pandemic would be different from that of any other Canadian. This is exactly the type of uninformed belief which this study sought to address by sharing the specific experience of hardships lived by ACB populations. Social determinants are known to account for the disproportionate health risks and differential health outcomes experienced in the ACB communities during the COVID-19 pandemic. These include systemic anti-Black racism; poor representation in healthcare leadership, research and decision-making; lack of culturally appropriate services; and lack of culturally competent health [51]. Systemic racism is often very subtle. It affects people not only at an interpersonal level but also through the broader structures of society, most notably in the systems of justice, media, public policing, immigration, and employment, as well as through hate activity and government policies [52]. As a result of these inequities, people of African descent and those in the western nations including Canada are often more prone to pre-existing health conditions including diabetes and high blood pressure. Also, they represent some of the most vulnerable populations in terms of their susceptibility to health risks and particularly to COVID-19 [53].

The unprecedented pandemic has highlighted how pre-existing socioeconomic inequities have negatively impacted the ACB community's ability to fight back against the SARS-CoV-2. Since the World Health Organization (WHO)

declared COVID-19 as a pandemic on March 11, 2020, countries worldwide reacted through various measures intended to contain the spread of the virus. Governments have put in place policy interventions such as lockdown measures of various stringencies, public spaces or workplace closures and restrictions on internal and external movements focusing on social distancing [25].

The policy interventions were aimed at shielding populations against the virus to prevent overwhelming countries' healthcare systems and to quickly get control of the pandemic. However, many of these measures produced adverse effects and created unique hardships for struggling families and vulnerable populations [25, 27]. For example, lockdown measures requiring citizens to stay at home may be seen as simple and logical measures to achieve social distancing and prevent the spread of the disease. However, the direct implications of these seemingly simple and benign measures show that families with low income may lack basic needs such as food [22].

Stay at home measures for the ACB communities and other marginalized groups happened to be an impossible task particularly in low- and middle-income countries where people need to go out on a daily basis to secure food for their families. For those populations, one day inside the house is equal one day of starvation and COVID-19 is the least of the existential problems they are facing. Many African countries have closed their borders to mitigate the impact of the COVID-19 pandemic. Even though these policy measures seem well-intended, the immediate results of their implementation are that many countries experienced shortages of food, health items, and other vital necessities and supplies [24].

This study shows that the ACB community has been severely impacted by the COVID-19 pandemic due to pre-existing inequalities that were exacerbated by the disease. Moreover, COVID-19 policy interventions were mostly top-down decisions that did not always take into account the perspectives of vulnerable populations [29]. In Canada, for example, concerns have been voiced about the absence of appropriate race-based data collection [54]. Without such data, policy makers may not fully understand how the pandemic is affecting different communities in order to design appropriate policy interventions. The different lived experiences of ACB people included in this study revealed that food insecurity is not an isolated issue, but just one of the multiple intersecting barriers and hardships that the community is facing in these unprecedented times.

Racism

The relationship between race, poverty, and health is one that cannot be ignored. Longstanding societal inequities have predisposed ACB populations to numerous disadvantages. Groups that were already marginalized and facing disproportional struggles saw these challenges heightened in the wake

and aftermath of the COVID-19 pandemic [55, 56]. The Government of Canada [57] acknowledges race and racism as determinants of health, recognizing that they are factors that have historically affected the lives of Canadians of African Descent (CAD), and that can continue to yield health inequalities. The concerning situation regarding food security is not novel, as especially vulnerable groups such as immigrants and refugees, and individuals living in rural and remote regions struggle to obtain access to resources that are readily available to other communities. When adding challenges such as socio-economic disparity, whereby wealthier individuals tend to have better health outcomes than those with lower incomes or those living in poverty, many ACB people are faced with challenges in which their race causes them to face greater disadvantages than their White counterparts [58, 59].

The intersection of multiple detrimental factors—from oppressively racist policies to societal xenophobia and discrimination—contributes to the marginalization of ACB people, affecting the previously healthy and those with existing health challenges, alike [22, 28, 29]. Heightened risk factors include the over-representation of racialized essential workers, decreased access to resources for pre-existing health issues, and concomitant reduction in access to vital resources, from health services to healthy and affordable food [10, 28]. Policies meant to protect the public are found to cause greater harms when they do not consider the social contexts of racialized people, from those living in racially segregated and disadvantaged neighborhoods, to advisories enforcing distancing and isolation, not considering the contexts and lived experiences of those residing in slums, multi-family households, those detained or in correctional settings, or those experiencing homelessness [28, 29]. As racialized individuals tend to be over-represented in these precarious situations, in order to mitigate existing and potential disparities, considerations of particular needs of these groups must be at the forefront of health planning, not in hindsight or as an afterthought.

The power inequities that are heightened when considering racism and vulnerabilities of ACB people cannot be ignored, as they have historically affected Blacks and will continue to cause stigmatization, marginalization, and poor health outcomes within this population group. “The racial time bomb” continues to tick and jeopardize the lives of ACB people [28, 60]. Until race and racism are considered in identifying the needs and mitigating the harms of the most racially disadvantaged communities, the fight against COVID-19 will remain a long shot.

Sociocultural Response and Solutions

This rapid review identified some ways in which marginalized communities have responded to the food insecurity exacerbated by the pandemic, such as relying on strong social connections to survive, identifying day labor to engage in so as to

make more money to be able to afford food, and getting food using credit from street vendors [29]. Similarly, household response to food insecurity has been documented in literature, as households have been found to utilize various mechanisms such as crop diversification, contract farming, household savings, and agricultural intensification to cope and adapt [61].

However, it is important to note that any strategy that will successfully control the COVID-19 outbreak and its effect among ACB population will need to consider the social, economic, and behavioral contexts of people of African descent [27]. Hence, this review found some strategies that are being used by some countries to mitigate the burden of food insecurity among ACB people during the COVID-19 pandemic. This includes immediate food assistance to their citizens, provision of special budgets for the most vulnerable people, expansion of food distribution process, and cash transfers [23, 29]. Such strategies have also been utilized in the past during disease outbreaks to alleviate the impact on food insecurity. For instance, during the 1918 influenza pandemic, organizations such as the American Red Cross and Tuberculosis Society assisted affected families with salaries, food for convalescents, and up to 100 quarts of milk per day, and volunteers also prepared meals for patients at community kitchens opened by the U.S. Food Administration [62]. Conclusively, other possible ways in which countries can build the competence of their food systems during pandemics have been suggested, including elimination of food wastage, utilizing by-products of food processing in the context of emergencies, and identifying the most critical threats to the food system so as to tackle them proactively [63].

Ultimately, addressing social inequality by providing access to basic resources such as food, medicine, and shelter for racialized communities has been identified as a possible solution to help achieve health equity during pandemics such as the COVID-19 crisis [28].

Strengths and Limitations

To the best of our knowledge, this rapid review is the first in its kind, exploring the issue of global food insecurity within the ACB population amidst the COVID-19 pandemic.

However, there are several limitations to the review methods employed here. Firstly, there were few peer-reviewed papers related to this study. Similarly, most of the papers retrieved from the search strategy were moderate- to low-quality gray literature, and the design, methods, and settings of the included studies were heterogenous, making meta-aggression difficult to execute. Finally, our study included only studies published in French and English. Thus, we may have missed studies published in other languages. However, the included studies were selected to thoughtfully tailor the

rapid review according to current evidence, the urgent nature of the task, and the need to provide timely results.

Implications and Conclusions

During these challenging times, the measures discussed above are welcome, and useful in the short-term to mitigate the effects of food insecurity in light of the COVID-19 pandemic. However, food insecurity is still an ongoing challenge globally which many ACB people have experienced long before the pandemic came into play. With COVID-19 disproportionately affecting the ACB population, there is a double burden of both disease and food insecurity. As such, policies, programs, and long-term solutions, which are specifically tailored to the unique needs of this demographic, are necessary to proactively tackle food insecurity within the ACB community. Since the future is unknown and pandemics are unpredictable, results of this rapid review will empower individuals, communities, and nations to be better prepared peradventure another outbreak hits our shores.

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Code availability Not applicable

Author contribution All the authors contributed to the conceptualization of the study, literature search, quality appraisal, data extraction, data analysis, and manuscript development. All authors read and approved the final manuscript.

Declarations

Conflict of interest The authors declare no competing interests.

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