

The social determinants of health and health outcomes among adults during the COVID-19 pandemic: A systematic review

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Abstract

Objective: To synthesize the best available evidence on the relationship between the social determinants of health and health outcomes among adults during the COVID-19 pandemic.

Introduction: COVID-19 has created widespread global transmission. Rapid increase in individuals infected with COVID-19 prompted significant public health responses from governments globally. However, the social and economic impact on communities may leave some individuals more susceptible to the detrimental effects.

Methods: A three-step search strategy was used to find published and unpublished papers. Databases searched included: MEDLINE, CINAHL, EMBASE, and Google Scholar. All identified citations were uploaded into Endnote X9, with duplicates removed. Methodological quality of eligible papers was assessed by two reviewers, with meta-synthesis conducted in accordance with JBI methodology.

Results: Fifteen papers were included. Three synthesized-conclusions were established (a) Vulnerable populations groups, particularly those from a racial minority and those with low incomes, are more susceptible and have been disproportionately affected by COVID-19 including mortality; (b) Gender inequalities and family violence have been exacerbated by COVID-19, leading to diminished wellbeing among women; and (c) COVID-19 is exacerbating existing social determinants of health through loss of employment/income, disparities in social class leading to lack of access to health care, housing instability, homelessness, and difficulties in physical distancing.

Conclusion: Reflection on social and health policies implemented are necessary to ensure that the COVID-19 pandemic does not exacerbate health inequalities into the future.

KEYWORDS

COVID-19, health inequalities, pandemic, social determinants, systematic review

ConQual Summary of Findings

The social determinants of health and health outcomes among adults during the COVID-19 pandemic: A systematic review Population: Adults

Phenomena of interest: Wellbeing and social determinants of health

Context: Community

Synthesized Conclusions	Type of research	Dependability	Credibility	ConQual score	Comments
Vulnerable populations groups, particularly those from a racial minority and those with low incomes, are more susceptible and have been disproportionately affected by COVID-19 in a range of ways including mortality.	Text and opinion papers	Moderate (downgraded one level)	Moderate (downgraded one level)	Moderate	Dependability downgraded—of 11 papers, nine papers addressed six dependability questions; and two papers addressed four dependability questions. Credibility downgraded due to mix of U and C findings (9 U + 11 C).
Gender inequalities and family violence have been exacerbated by COVID-19, leading to diminished wellbeing among women.	Text and opinion papers	Moderate (downgraded one level)	Low (downgraded two levels)	Low to Moderate	Dependability downgraded—of 4 papers, two papers addressed all six dependability questions; and two papers addressed four dependability questions. Credibility downgraded due to C findings only (7 C).
COVID-19 is exacerbating existing social determinants of health through loss of employment/income, disparities in social class leading to lack of access to health care, housing instability, homelessness and difficulties in social distancing.	Text and opinion papers	Moderate (downgraded one level)	Moderate (downgraded one level)	Moderate	Dependability downgraded—of 10 papers, eight papers addressed six dependability questions; and two papers addressed four dependability questions. Credibility downgraded due to mix of U and C findings (11 U + 9 C).

U = Unequivocal; C = Credible.

1 | BACKGROUND

The emergence of COVID-19, caused by a virus, severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), has created widespread global transmission. Declared a Public Health Emergency of International Concern (PHEIC) by WHO on 30 January 2020 (Mullen et al., 2020), there have been over 192 million cases of COVID-19 globally as at July 23, 2021, with more than 4 million deaths (World Health Organization, 2021b). Rapid increase in individuals infected with COVID-19, along with mortality in the early phase of the pandemic, prompted significant public health responses from governments globally. The public health measures implemented during the first wave of the pandemic in countries like China, Thailand, Italy, the United Kingdom,

and the United States to prevent further transmission were centered on physical distancing, lockdown measures, and closure of productive activities (Anderson et al., 2020; Broughel & Kotrous, 2021; Gibertoni et al., 2021; Triukose et al., 2021).

While COVID-19 was initially deemed by some governments as “the great equalizer” (Crawley, 2021; Coleman & Mullin-McCandish 2021), public health measures implemented to reduce the transmission of COVID-19, while effective, have had unequal implications for people within communities and globally (Marmot & Allen, 2020). Limitations to people’s social freedoms, social isolation, and the impact on countries’ economies as a result of efforts to curb the spread of COVID-19 have been widespread (Broughel & Kotrous, 2021). Additionally, since the scientific communities succeeded in producing several COVID-19



vaccines, there has been inequitable vaccine distribution within and among countries, leading to what has been termed as vaccine poverty (Hyder et al., 2021).

The social, psychological, health, and economic impacts of COVID-19 on communities may leave some individuals more susceptible to the detrimental effects on their health and wellbeing. Factors affecting susceptibility to COVID-19, as well as the impact of health and wellbeing outcomes, include insecure housing, limited access to health care, poverty, gender inequalities, racial segregation, food insecurity and loss of income, and employment (Maness et al., 2021). These factors are collectively described as the social determinants of health. Social determinants of health can create health inequalities within society, and “*are the conditions in which people are born, grow, live, work and age. These circumstances are shaped by the distribution of money, power and resources at global, national and local levels*” (World Health Organization, 2021a). Social determinants of health can affect the prevalence, mortality, wellbeing, and health outcomes and consequences of COVID-19 within communities globally (Upshaw et al., 2021). The impact of COVID-19 is not homogenous; therefore, there is merit in considering how the differential impacts are felt within countries, even in countries that are wealthy.

Global and national crises, including pandemics such as COVID-19, have the ability to emphasize social and health inequalities, particularly those that may be unseen or hidden prior to the pandemic (Clouston, Natale & Link 2021). For example, during the MERS epidemic those who were employed reported feeling that they had an increased risk of infection (Kim & Kim, 2018), whereas generally, employment is thought to be a protective factor when examining social determinants of health. Indeed, experience from recent epidemics such as SARS, MERS, and Ebola have shown that inequalities are amplified as a consequence of these infectious disease epidemics (Furceri et al., 2021). A number of public health experts have published in the literature on the consequences of COVID-19 for minority population groups, including the worsening of social determinants of health (Ali et al., 2020; Douglas et al., 2020; Haynes et al., 2020). Certain ethnic groups, while continuing to be employed during the COVID-19 pandemic, are employed in occupations that are considered to be essential services, such as transportation and retail, leaving them without the ability to work from home (Clouston, Natale & Link 2021; Xafis, 2020). Furthermore, minority populations are disproportionately affected by COVID-19, including increased morbidity, hospitalizations, and mortality (Douglas et al., 2020). In addition to these immediate impacts, COVID-19 is thought to have lasting impacts on health and social inequalities, with workers displaced due to the pandemic not likely to regain employment, even after economic recovery (Furceri et al., 2021). It is therefore vital that an understanding of the relationship between the social determinants of health and health and wellbeing outcomes is generated to inform social and health policies that can address health inequalities, not just for the current pandemic, but to achieve health for all into the future.

A preliminary search of PROSPERO, MEDLINE, the Cochrane Database of Systematic Reviews and the JBI Database of Systematic Reviews and Implementation Reports was conducted and did not

reveal any literature reviews, integrative reviews or systematic reviews on the topic. Therefore, the objective of this review is to synthesize the evidence exploring the relationship between the social determinants of health and health outcomes of adults during the first 6 months of the COVID-19 pandemic.

2 | METHODS

2.1 | Search strategy and study selection

A three-step search strategy was employed to find both published and unpublished papers. Initially, a preliminary search of MEDLINE via OVID was undertaken to identify papers on the topic, followed by analysis of the text words contained in the titles and abstracts of the relevant papers. Secondly, specific search strategies for each of the selected databases were developed and a full search was undertaken. Databases included in the search were MEDLINE via OVID, CINAHL via EbscoHost, EMBASE via OVID, Cochrane Library (CENTRAL), PsycINFO, and Google Scholar using the following search terms (“Social determinants of health OR structural determinants of health OR socioeconomic factors OR social determinants OR social class OR social support OR education OR education status OR income OR poverty OR access to health care OR food supply OR employment OR employment status OR housing stability OR Gender OR ethnicity OR race) AND (COVID-19 OR coronavirus infection* OR Coronavirus) AND (health outcome* OR impact OR health OR wellbeing)”. Finally, the reference list of all papers potentially suitable for inclusion were screened to identify any additional papers. All references were organized into EndNote V9, with all duplicate papers removed prior to screening the titles and abstracts. Two reviewers (H.G., R.F.) screened all the titles and abstracts to exclude those papers that did not meet the inclusion criteria. Full text papers that matched the inclusion criteria were obtained and were assessed by two independent reviewers for inclusion (H.G., R.F.). A protocol for this review was registered on PROSPERO International prospective register of systematic reviews under the registration number CRD42020214271.

2.2 | Inclusion and exclusion criteria

The review considered papers (opinion, discussion, and narrative) that included participants aged 18 years and over from countries in any geographical region globally. Papers published from January 2020 to July 2020 were considered for inclusion. This date range starts from when the COVID-19 pandemic was recognized by WHO as a PHEIC and ends at the first 6 months of the pandemic. Any paper that did not report on social determinants of health or health outcomes and wellbeing were excluded. Only papers published in the English language are included, as the authors are not fluent in any other language. No primary data collection papers were included in this review.

2.3 | Methodological quality assessment

Two independent reviewers (H.G., R.F.) critically appraised the methodological quality of each paper eligible for inclusion using the critical appraisal instruments from Joanna Briggs Institute (JBI) for text and opinion papers (McArthur et al., 2020). This instrument consists of six questions assessing the source, source field of expertise, reference to extant literature, and congruence with literature. Using the critical appraisal instrument, each question was allocated a score (Yes = 2, No = 0, Unclear = 1), with the maximum achievable score of 12 or 100% when converted to a percentage. A score of between 0% and 50% was considered low quality, 50% and 70% was medium quality and any textual paper that scored 70% and over was considered high quality. However, all papers, irrespective of methodological quality, were included in the review. Any disagreements between the reviewers concerning the inclusion of a paper in the review was resolved through the use of the third reviewer (C.M.).

2.4 | Data extraction and thematic synthesis

Data were extracted from the papers included in the review using the Joanna Briggs Institute System for the Unified Management, Assessment and Review of Information (JBI SUMARI) data extraction tool (McArthur et al., 2015) by one reviewer and checked by a second reviewer. The specific data extraction included details regarding the populations' represented, social determinants of health addressed, and author's conclusions significant to the review question. Authors of the included papers were not contacted regarding request for clarification or additional data.

An extract from the text was identified to support each conclusion and used as an illustration. The extracted author's conclusions from the included papers were assigned a credibility rating in order to assess the validity (unequivocal, credible, and unsupported). A rating of unequivocal (U) refers to the author's conclusions being beyond reasonable doubt, directly reported and not open to challenge; a rating of credible (C) refers to the author's conclusions being plausible, that is they could be open to interpretation; whereas a rating of unsupported (Un) refers to the author's conclusion not being supported by the text (Munn et al., 2014).

Each authors' conclusions were grouped to generate a set of statements (categories) based on similarity of meaning. These categories were then subjected to meta-synthesis to develop comprehensive synthesized conclusions (Munn et al., 2014) and can be used as a foundation for evidence based practice. To establish the dependability and credibility of the synthesized conclusions, each were rated using a modified ConQual approach. The JBI ConQual approach was developed for qualitative systematic reviews (Munn et al., 2014) and we have modified this approach to be used for systematic reviews of text and opinion. The modified ConQual approach enables the synthesized conclusions to be downgraded based on their credibility or dependability. The papers have a starting rank of high and can be downgraded for

both dependability and credibility. Using all six questions from the critical appraisal tool, dependability is scored as: 5–6 "yes" responses—the conclusion remains high; 2–4 "yes" responses - the conclusion is downgraded one level; 0–1 "yes" responses—the conclusion is downgraded two levels. Credibility is ranked according to the assigned levels of credibility: unequivocal; equivocal and unsupported, with a synthesized conclusion consisting of all unequivocal findings remaining high, while a mixture of unequivocal and equivocal findings is downgraded one level. Credibility is downgraded two levels if the synthesized conclusion contains all equivocal findings, while a synthesized conclusion consisting of a mixture of unequivocal, equivocal, and unsupported findings is downgraded three levels. If the synthesized conclusion only contains unsupported findings then the credibility is downgraded four levels. The dependability and credibility rankings are then compiled into a modified ConQual score, which provides a level of confidence in the synthesized conclusions (Author's own).

3 | RESULTS

3.1 | Search results

A search of the literature produced 1504 potential records, after removal of duplicate papers, 1101 papers were ascertained as potential titles for inclusion (Figure 1). Following the review of the titles and abstracts of 1101 papers, 1082 papers were excluded as they did not meet the inclusion criteria. The remaining 19 papers were retrieved in full text to read completely. A total of four papers did not meet the inclusion criteria and were therefore excluded from the review (reasons for exclusion in Supplementary material).

3.2 | Methodological quality

Fifteen papers were critically appraised. The methodological quality of the papers was high with all scoring 70% or more. No papers were excluded based on methodological quality. Seven papers (Ali et al., 2020; Baptiste et al., 2020; Douglas et al., 2020; Kinsey et al., 2020; Schulz et al., 2020; Takian et al., 2020) met all the appraisal criteria, while eight papers (Betron et al., 2020; Bucciardini et al., 2020; Farley et al., 2020; Gray et al., 2020; Haynes et al., 2020; Kantamneni, 2020; Van Dorn et al., 2020; Xafis, 2020) did not meet all the appraisal criteria, including the lowest scoring papers (Betron et al., 2020; Kantamneni, 2020) with 83.3%. The methodological quality for each included paper is described in Table 1.

3.3 | Characteristics of included papers

A total of 11 papers (Baptiste et al., 2020; Betron et al., 2020; Farley et al., 2020; Gray et al., 2020; Haynes et al., 2020; Kantamneni, 2020; Kinsey et al., 2020; Schulz et al., 2020; Shah et al., 2020; Van

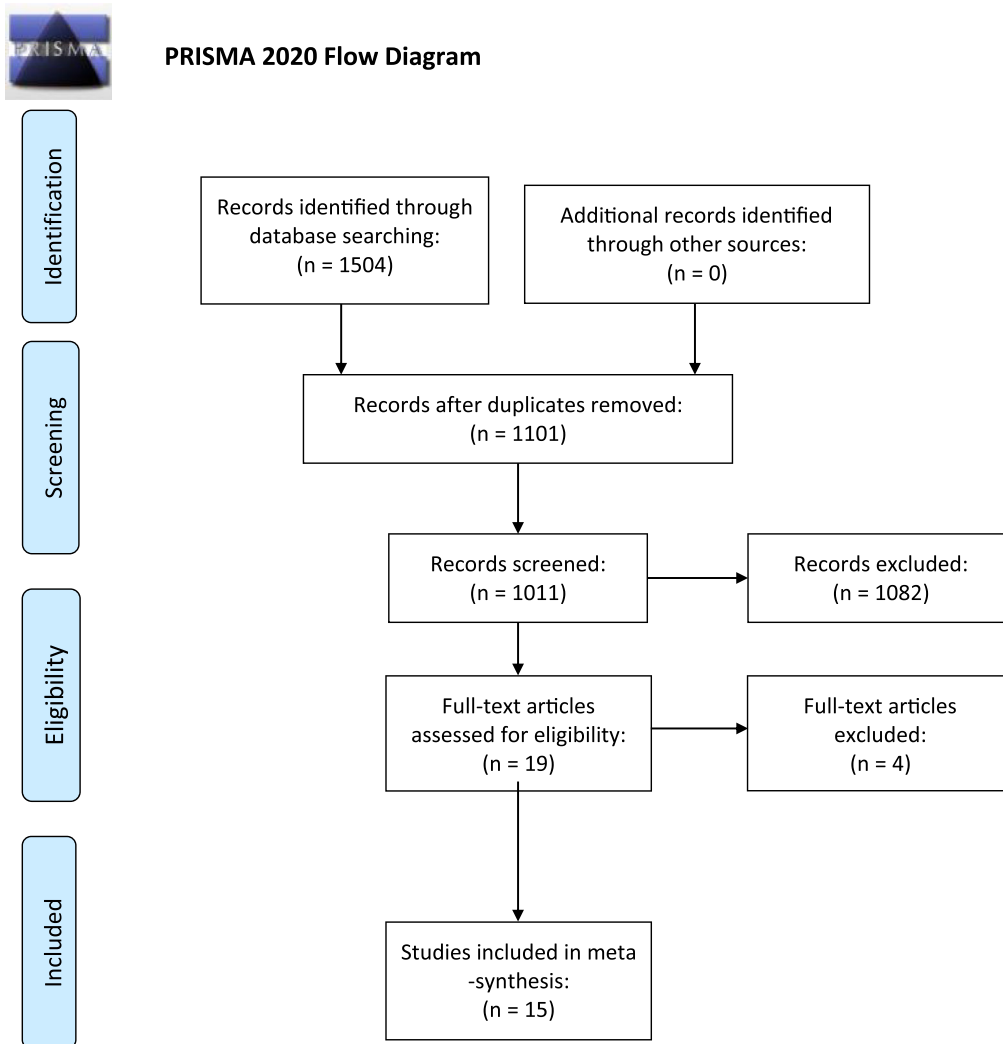


FIGURE 1 PRISMA flow diagram. Source: Page et al. (2021) [Color figure can be viewed at wileyonlinelibrary.com]

Dorn et al., 2020; Xafis, 2020) originated from the United States, two papers highlighted the United Kingdom experience (Ali et al., 2020; Douglas et al., 2020) and one paper each originated from Iran (Takian et al., 2020), and Italy (Bucciardini et al., 2020). Nine papers explored ethnicity and racism (Ali et al., 2020; Baptiste et al., 2020; Bucciardini et al., 2020; Gray et al., 2020; Haynes et al., 2020; Kantamneni, 2020; Schulz et al., 2020; Shah et al., 2020; Van Dorn et al., 2020; Xafis, 2020), socioeconomic status was referred to in seven papers (Ali et al., 2020; Baptiste et al., 2020; Bucciardini et al., 2020; Farley et al., 2020; Haynes et al., 2020; Kinsey et al., 2020; Takian et al., 2020). Six papers examined employment and income (Douglas et al., 2020; Farley et al., 2020; Kinsey et al., 2020; Schulz et al., 2020; Takian et al., 2020; Xafis, 2020), while access to health care was discussed in four papers (Farley et al., 2020; Gray et al., 2020; Haynes et al., 2020; Van Dorn et al., 2020). Other social determinants of health discussed in the papers were housing (Farley et al., 2020; Gray et al., 2020; Haynes et al., 2020; Schulz et al., 2020), food supply/security (Kinsey et al., 2020; Schulz et al., 2020; Xafis, 2020) gender (Betron et al., 2020; Dou-

glas et al., 2020; Kantamneni, 2020), domestic violence (Douglas et al., 2020; Xafis, 2020). The types of papers included were: Commentary (Betron et al., 2020; Bucciardini et al., 2020; Gray et al., 2020; Shah et al., 2020; Van Dorn et al., 2020), Editorial essay (Kantamneni, 2020), letter to the editor (Ali et al., 2020), Editorial (Baptiste et al., 2020; Kinsey et al., 2020; Takian et al., 2020), Opinion –Analysis and perspective paper (Douglas et al., 2020; Haynes et al., 2020; Schulz et al., 2020; Xafis, 2020), and Clinical practice statement (Farley et al., 2020). The characteristics of the included studies are further specified in Table 2.

3.4 | Review findings

Meta-synthesis of textual data based on narrative and opinion generated three synthesized conclusions. These were derived from 47 authors' conclusions that were subsequently aggregated into six categories.

TABLE 1 Critical appraisal results

Citation	Q1	Q2	Q3	Q4	Q5	Q6	Results (%)
Shah et al. (2020)	Y	Y	Y	Y	Y	Y	12/12 (100)
Kantamneni (2020)	Y	U	Y	Y	Y	U	10/12 (83.3)
Kinsey et al. (2020)	Y	Y	Y	Y	Y	Y	12/12 (100)
Douglas et al. (2020)	Y	Y	Y	Y	Y	Y	12/12 (100)
Xafis (2020)	Y	U	Y	Y	Y	Y	11/12 (91.7)
Takian et al. (2020)	Y	Y	Y	Y	Y	Y	12/12 (100)
Gray et al. (2020)	Y	U	Y	Y	Y	Y	11/12 (91.7)
Haynes et al. (2020)	Y	U	Y	Y	Y	Y	11/12 (91.7)
Ali et al. (2020)	Y	Y	Y	Y	Y	Y	12/12 (100)
Schulz et al. (2020)	Y	Y	Y	Y	Y	Y	12/12 (100)
Baptiste et al. (2020)	Y	Y	Y	Y	Y	Y	12/12 (100)
Betron et al. (2020)	Y	U	Y	Y	Y	U	10/12 (83.3)
Bucciardini et al. (2020)	Y	U	Y	Y	Y	Y	11/12 (91.7)
Van Dorn et al. (2020)	Y	U	Y	Y	Y	Y	11/12 (91.7)
Farley et al. (2020)	Y	U	Y	Y	Y	Y	11/12 (91.7)
Results	100%	55.6%	100%	100%	100%	93.3%	

Yes (Y) = 2, No (N) = 0, Unclear (U) = 1.

Q1 Is the source of the opinion clearly identified? Q2 Does the source of opinion have standing in the field of expertise? Q3 Are the interests of the relevant population the central focus of the opinion? Q4 Is the stated position the result of an analytical process, and is there logic in the opinion expressed? Q5 Is there reference to the extant literature? Q6 Is any incongruence with the literature/sources logically defended?

3.4.1 | Synthesized conclusion 1 - Vulnerable populations groups, particularly those from a racial minority and those with low incomes, are more susceptible and have been disproportionately affected by COVID-19 in a range of ways including mortality

This synthesized conclusion incorporates two categories comprising of 20 authors' conclusions. (see Supplementary material)

Disparities in burden of disease among those from racial minorities, low-income populations and other disadvantaged groups.

Current tracking of the COVID-19 cases in countries such as the United States, indicate the communities of color or racial minority groups have been disproportionately affected (Haynes et al., 2020; Kantamneni, 2020; Schulz et al., 2020; Shah et al., 2020; Van Dorn et al., 2020), with early data highlighting the disparities in hospitalizations of African Americans and Hispanic American population groups, who are overrepresented. Preliminary data from both the United Kingdom and the United States suggest that there are COVID-19 hotspots where black communities' mortality risk from COVID-19 is at least twice that of white community groups (Ali et al., 2020; Baptiste et al., 2020). A baseline of disadvantage in the most impoverished communities means they are already affected by the social determinants of health (Gray et al., 2020; Schulz et al., 2020), and the high burden of chronic disease that plagues such population groups predisposes them to even poorer health outcomes if they are infected with COVID-19 (Gray et al., 2020; Xafis, 2020). Not only are racial minority and low-income populations affected with high numbers of COVID-19 cases, they also have

substantially higher mortality due to COVID-19 than any other group (Baptiste et al., 2020; Schulz et al., 2020).

The inability to work from home, stockpile food supplies or obtain secure housing (homelessness) increases susceptibility and exposure to COVID-19.

Compounding disadvantaged communities' susceptibility to COVID-19 are structural drivers of health inequalities, such as racism, poverty, economic vulnerability, and lack of social services (Douglas et al., 2020; Farley et al., 2020; Gray et al., 2020; Schulz et al., 2020; Xafis, 2020). The pandemic has forced many essential and low-income workers (cleaners, delivery drivers, supermarket jobs) to continue to work in frontline roles exposing them to increased risk of becoming infected with COVID-19 (Farley et al., 2020; Xafis, 2020). Physical distancing and an ability to work from home and quarantine have become for the privileged, with those on the lowest incomes still having to move around during the pandemic, increasing their risk for exposure to COVID-19 (Douglas et al., 2020; Farley et al., 2020). Indeed, families and communities that are financially insecure have fewer resources to stockpile food supplies (Schulz et al., 2020), this results in more frequent outings to the supermarkets increasing their susceptibility to COVID-19 infection (Kinsey et al., 2020; Schulz et al., 2020). The inability to stockpile food could also led to food insecurity with families and communities not being able to afford or source food products, often due to food being bought out by others for stockpiling (Xafis, 2020). The COVID-19 pandemic has also created issues for disadvantaged community members to secure housing, with many shelters at full capacity and those that are available overcrowded, with increased transmission risks of COVID-19 (Farley et al., 2020; Schulz

**TABLE 2** Characteristics of included studies

Author	Country	Main outcome/s
Xafis (2020)	US	<ul style="list-style-type: none"> Ethnicity and racism: Structural racial injustice with Hispanics and African Americans disproportionately affected by COVID-19 Employment and income: Increased unemployment and those in low paying jobs forced to continue working exposing them to risk of COVID-19 Domestic violence: Increase domestic violence due to inability to escape the abuser Food supply: food insecurity among disadvantaged population groups Access to health services: Lack of access to health care
Douglas et al. (2020)	UK	<ul style="list-style-type: none"> Employment and income: 3.5 million people are expected to need unemployment payments through loss of income and employment Gender: Women and children to lose income and fare worse Domestic violence: Increased risk of domestic violence
Takian et al. (2020)	Iran	<ul style="list-style-type: none"> Socioeconomic status: Political instability and COVID has widened the gap between socioeconomic groups Employment and income: Low-income workers are not able to abide by the quarantine measures (while those in higher incomes are able to work and stay at home)
Gray et al. (2020)	US	<ul style="list-style-type: none"> Ethnicity and racism: Hispanics and native and African Americans are disproportionately experience the burden of disease Access to health care: Disadvantaged groups have less access to primary care services Housing: overrepresented among essential workers and those living in overcrowded conditions
Haynes et al. (2020)	US and UK	<ul style="list-style-type: none"> Ethnicity and racism: Disparities in burden of disease with communities of color disproportionately affected by COVID –19 Socioeconomic status and Access to health care: Lack of health resources perpetuating poverty and segregation Housing: Households are overcrowded making communities of color more susceptible to COVID-19
Ali et al. (2020)	UK	<ul style="list-style-type: none"> Ethnicity and racism: Mortality risk in ethnic minority groups six times higher than white populations lowest income households were six times less likely to work from home during COVID, three times less likely to self-isolate Socioeconomic status: Higher percentage of people tested positive in low socioeconomic areas compared to high socioeconomic areas
Schulz et al. (2020)	US	<ul style="list-style-type: none"> Ethnicity and racism: African Americans account for 11% of Michigan's population but account for 32% of COVID cases and 41% of deaths Employment and income: Social distancing is hard due to most African Americans working in essential services such as transport Food supply: Those in low socioeconomic areas have fewer resources to stockpile supplies, meaning more frequently visit to supermarkets and at risk of food insecurity Housing: Households have lost their homes and homelessness shelters are struggling to accommodate people
Betron et al. (2020)	US	<ul style="list-style-type: none"> Gender: Altering gender roles; Opportunity to upend men as head of the household and share caregiving roles
Bucciardini et al. (2020)	Italy	<ul style="list-style-type: none"> Socioeconomic status: People in a lower socioeconomic areas are suffering the ill effects of COVID-19 Employment and income: Loss of work and income is a major consequence of COVID-19
Van Dorn et al. (2020)	US	<ul style="list-style-type: none"> Ethnicity and racism: African Americans are disproportionately affected by COVID-19; Minority populations in the US are essential workers which don't have the privilege of staying at home Access to health care: Millions without health care access and many local and regional hospitals closed
Farley et al. (2020)	US	<ul style="list-style-type: none"> Income: Only 9.2% of workers with the lowest income can work from home compared to 61.5% of those with a higher income Housing and poverty: Poverty, lack of savings and unstable housing increase susceptibility to COVID-19 Ethnicity and racism: Minority populations in the US disproportionately affected by COVID
Kantamneni (2020)	US	<ul style="list-style-type: none"> Ethnicity and racism: Black Americans and LatinX populations are being displaced from employment during COVID-19 pandemic; Income: People of color and low-income earners are disproportionately affected by COVID-19 Gender: Gender inequalities, with women expected to balance multiple roles during the pandemic

(Continues)

TABLE 2 (Continued)

Author	Country	Main outcome/s
Kinsey et al. (2020)	US	<ul style="list-style-type: none"> Socioeconomic status: Stockpiling foods in response to the pandemic leaves disadvantaged (lower socioeconomic) families with facing food insecurity Employment and income: Low-income households are required to travel around to multiple store to find cheapest food items which puts them at increased exposure to COVID-19 Food supply: Low-income households can't afford to stockpile food
Shah et al. (2020)	US	<ul style="list-style-type: none"> Ethnicity and racism: Impact of COVID-19 disproportionate among populations due to structural racial injustice; Higher rates of COVID-19 among black communities; Higher mortality from COVID-19 in black communities
Baptiste et al. (2020)	US	<ul style="list-style-type: none"> Ethnicity and racism: Racial minority groups are being infected with COVID-19 at higher rates than white population and are more likely to die from COVID-19 Socioeconomic status: Those from a low social class are vulnerable to COVID-19 due to housing instability, food insecurity and limited access to health care.

et al., 2020). Overcrowding within low-income and ethnic minority households, due to the inability to secure housing, creates conditions that make physical distancing impossible resulting in a higher risk of exposure to COVID-19 (Farley et al., 2020; Gray et al., 2020).

3.4.2 | Synthesized conclusion 2: Gender inequalities and family violence have been exacerbated by COVID-19, leading to diminished wellbeing among women

This synthesized conclusion incorporates two categories comprising of seven authors' conclusions. (see Supplementary material)

Gender inequalities and imbalances in loss of income and within the household.

Public health measures such as closure of schools and childcare in response to the COVID-19 pandemic have meant that dual income households have had to juggle home schooling and employment (Douglas et al., 2020; Kantamneni, 2020). For those families with the ability to work from home, school and childcare closures have added pressure and stress within the household, due to balancing paid work and schooling children (Douglas et al., 2020). This pressure is disproportionately felt by women who shoulder more responsibility for childcare in the household, leading to role conflict and affecting women's wellbeing (Betron et al., 2020; Kantamneni, 2020). Furthermore, it has been indicated that loss of income during the pandemic will be unequal, with women most burdened with loss of income and therefore likely to fare worse than men (Douglas et al., 2020).

Increased incidence of family violence.

Family relationships during the COVID-19 pandemic have exacerbated existing tensions and created new strains, with increased concerns regarding domestic and family violence (Douglas et al., 2020; Xafis, 2020). Public health measures, including physical distancing and quarantine, implemented to slow the transmission of COVID-19, have placed, particularly women, at increased risk of domestic abuse (Douglas et al., 2020). This is predominantly occurring because victims can-

not escape the home environment or the attention of the abuser and may have fewer resources and money due to income loss (Xafis, 2020).

3.4.3 | Synthesized conclusion 3: COVID-19 is exacerbating existing social determinants of health through loss of employment/income, disparities in social class leading to lack of access to health care, housing instability, homelessness, and difficulties in physical distancing

This synthesized conclusion incorporates two categories comprising of 20 authors' conclusions. (see Supplementary material)

COVID-19 is exacerbating health disparities with social position directly and indirectly affecting health outcomes and difficulty in physical distancing.

COVID-19 is having significant impacts on vulnerable populations such as those in a lower social class (Ali et al., 2020; Baptiste et al., 2020; Bucciardini et al., 2020; Farley et al., 2020; Haynes et al., 2020; Van Dorn et al., 2020). While the benefits of public health measures to curb the spread of COVID-19 are evident, those most impacted by the pandemic are disadvantaged population groups, including those in a lower socioeconomic class who may not be able to comply with simple measures such as physical distancing (Farley et al., 2020; Haynes et al., 2020; Van Dorn et al., 2020). Disruption to essential services, residing in multigenerational households, and inability to work from home during the pandemic impose additional burdens on those in a lower social class who already face barriers with existing poor health, predisposing them to worse health outcomes as a result of COVID-19 (Baptiste et al., 2020; Douglas et al., 2020; Farley et al., 2020; Haynes et al., 2020). Those in a higher social class have the ability to mitigate the risks of the pandemic, through working from home and the ability to physically distance, this once again highlights that social position can influence health outcomes (Farley et al., 2020; Takian et al., 2020).

Limited access to health care, particularly in regional areas, among uninsured populations, and where health systems are overwhelmed.



Geographical locations and resource allocations have left some population groups with limited access to health care, not only for COVID-19 testing and hospitalization, but also for the management of existing health conditions (Farley et al., 2020; Gray et al., 2020; Haynes et al., 2020). In the United States, the high cost of health care and refusal of some states to accept the Affordable Care Act has led to the closure of many regional hospitals, which has presented barriers to appropriate diagnosis and treatment of COVID-19 for some communities (Gray et al., 2020; Van Dorn et al., 2020). The limited access to health care is predominantly seen in under-resourced communities that serve those most affected by COVID-19, which also happen to be lower socioeconomic areas (Douglas et al., 2020; Farley et al., 2020; Gray et al., 2020). Furthermore, the disparity in access to health care during the pandemic perpetuates poverty and creates further segregation (Douglas et al., 2020; Haynes et al., 2020), leaving those most vulnerable (sick and disadvantaged) without health care (Van Dorn et al., 2020). Disruption to essential health care during the COVID-19 pandemic may leave many with worsening existing health conditions and poorer health outcomes (Douglas et al., 2020).

4 | DISCUSSION

Termed by some governments as the great equalizer (Coleman & Mullin-McCandish 2021; Furceri et al., 2021), COVID-19 is far from such, with the impact felt disproportionately among ethnic groups, the socio-economically disadvantaged and women. This review synthesizes the available evidence on the relationship between the social determinants of health and health outcomes among adults during the first 6 months of the COVID-19 pandemic. The findings of this review highlight that there is a direct relationship between the social determinants of health and health and wellbeing outcomes among adults during the COVID-19 pandemic.

COVID-19 has brought the social determinants of health and resultant health inequalities to the forefront and demonstrated that action needs to be taken to address underlying social and health inequalities, “the causes of the causes” (Marmot & Allen, 2020). Disparities among vulnerable populations including ethnic groups, low-income earners, those living in poverty and women have been demonstrated in this review. Addressing such disparities requires a collaborative approach, one that initiates widespread changes in social and health policy (Aidukaite et al., 2021). COVID-19 is not the great equalizer; however, COVID-19 has renewed the need to tackle the inequalities created by the social determinants of health. Large-scale global initiatives such as the United Nations (UN) Sustainable Development Goals (SDGs) are just one approach to take action on health inequalities, particularly SDG 1 no poverty, SDG 3 good health and wellbeing, SDG 5 Gender equality, SDG 10 reduce inequalities and SDG 11 sustainable cities and communities (Hák et al., 2016).

While the direct burden of COVID-19 has impacted populations, it is the health and wellbeing outcomes beyond those attributable to the virus itself that are most alarming. Public health actions, in col-

laboration with governments and public health professionals must be made to support those considered to be among vulnerable population groups (Webber-Ritche et al., 2021). As nations, we cannot afford to have inaction on the social determinants of health and the resultant health inequalities. The results of this review have demonstrated that COVID-19 has negative consequences, especially for vulnerable population groups who are already affected by social and health inequalities. COVID-19 has exacerbated existing health inequalities and provided a wakeup call to advance efforts to address health inequalities and the social determinants of health (Perry et al., 2021).

Pandemic response and planning should take into account the social determinants of health to reduce the unequal consequences of COVID-19. Health responses including COVID-19 vaccine rollout need to take account of increased risk associated with the social determinants of health as well as inequities in access to care. Policy decisions made as a result of COVID-19 must be reflected upon to ensure that they do not damage health and create health inequalities in the future (MacIntyre, 2019). Public health professionals need to be part of the solution for addressing health inequalities and social determinants of health; this can be achieved at the individual, practice and community levels (Andermann, 2016). On an individual level, this may include discussing potential social challenges with patients; within an organization or at a practice level, identifying methods to reduce barriers to accessing health care; and at a community level, partnering with community groups (Andermann, 2016).

5 | STRENGTHS AND LIMITATIONS

This review used standardized critical appraisal instruments for the text and opinion papers. In addition, this review used a modified ConQual approach (modified from the JBI ConQual approach for qualitative reviews) to rate the dependability and credibility of the synthesized conclusions, allowing for confidence in the findings. To our knowledge, this is the first review to use the modified ConQual approach for test and opinion systematic reviews. While the review employed robust methods, some limitations that need to be acknowledged. Firstly, although a systematic search was conducted to identify relevant papers for inclusion, some papers might have been missed during the search process. Additionally, the search was restricted to papers only published in the English language, which may have omitted papers published in any other language. This review included studies from January 2020 to July 2020 when there were no vaccines for COVID-19 available hence papers on health inequalities surrounding vaccination roll outs was not available. Further research needs to be conducted on the health inequities associated with vaccination roll outs. Finally, because the COVID-19 pandemic is a rapidly evolving situation, the evidence in the literature from the first 6 months of the epidemic was limited to predominately the US experience. However, recent evidence since the search was conducted in July 2020, demonstrates that low- and middle-income countries are reporting similar experiences as reported in this review.

6 | CONCLUSION

Vulnerable population groups have been disproportionately impacted by COVID-19, including on health outcomes such as hospitalizations and mortality. The COVID-19 pandemic has highlighted the need for action on health inequalities and the social determinants of health if we are to ever achieve the SDGs and health for all. Public health professionals should be part of this response by developing a better understanding of the underlying causes of poor health, assisting people to access support services, improving access to care for people in hard-to-reach communities and partnering with community groups. Reflection on social and health policies implemented are necessary to ensure that the COVID-19 pandemic does not exacerbate health inequalities into the future.

DATA AVAILABILITY STATEMENT

The data that supports the findings of this study are available in the supplementary material of this article.

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SUPPORTING INFORMATION

Additional supporting information may be found online in the Supporting Information section at the end of the article.

How to cite this article: Green, H., Fernandez, R., & MacPhail, C. (2021). The social determinants of health and health outcomes among adults during the COVID-19 pandemic: A systematic review. *Public Health Nursing*, 38, 942–952. <https://doi.org/10.1111/phn.12959>