

**Course name-Public health and social care in practice**

**Course id- LCSH7004**

**Student name- Parth Dharva**

**Student id-231994**

**Title- Assessing the disparities in COVID-19 outcomes among different socioeconomic and demographic groups and implications for public health policy.**

## **DECLARATION**

I, *Parth Dharva* declare that this dissertation has been composed by myself, that the work contained herein is entirely my own except where explicitly stated otherwise in the text, and that this work has not been submitted for any other degree or qualification, in whole or in part, except as specified.

Signature: Parth Dharva

Date: 09/09/2024

## ACKNOWLEDGMENTS

I would like to extend my deepest gratitude to everyone who has supported and guided me throughout the process of researching and writing this dissertation.

First and foremost, I would like to thank my supervisor, [Supervisor's Name], for their invaluable guidance, continuous encouragement, and insightful feedback, which have been instrumental in shaping this work. Their expertise and commitment have been a constant source of inspiration.

I am also grateful to the academic staff at [University/Institution Name], particularly [Name of Professors or Academic Staff], for their support and assistance throughout my academic journey. Special thanks to the library team for their patience and help in locating essential resources, and to the administrative staff who have facilitated various aspects of this research process.

I would like to acknowledge my fellow students and colleagues, for the stimulating discussions, collaboration, and unwavering camaraderie during this time. Your friendship and shared experiences have enriched this journey and made it truly memorable.

To all of you, thank you for your invaluable contributions. This dissertation would not have been possible without your support and encouragement.

## **ABSTRACT**

The COVID-19 pandemic has highlighted present disparities in health effects amongst diverse socioeconomic and demographic groups, revealing full-size inequities in access to healthcare, exposure to the virus, and typical fitness outcomes. This research ambitions to research these disparities, specializing in decrease-income households and the white ethnic institution, to apprehend how the intersection of socioeconomic repute and ethnicity impacts health consequences.

A systematic literature evaluate became performed to discover the impact of things along with healthcare access, housing conditions, employment instability, and pre-current fitness conditions on COVID-19 consequences. The observe analyzed more than a few research that supplied data at the experiences of decrease-earnings organizations and precise demographic segments, which includes the white ethnic group.

The findings indicate that decrease-earnings companies and certain demographic segments face precise challenges that heighten their vulnerability to the virus. Limited access to healthcare, overcrowded residing situations, insufficient nutrients, and precarious employment had been discovered to exacerbate those demanding situations. Critical gaps in current research have been recognized, specifically regarding the intersectionality of socioeconomic repute and ethnicity.

The research concludes that addressing those disparities requires a comprehensive method, along with equitable get admission to to healthcare, improved residing conditions, and socioeconomic guide. It emphasizes the significance of coverage interventions tailor-made to the particular desires of diverse populations to make sure equitable fitness consequences.

### **Keywords:**

COVID-19, health disparities, socioeconomic reputation, ethnicity, public health policy, healthcare get entry to, systematic literature evaluation.

## Table of Contents

DECLARATION.....	2
ACKNOWLEDGMENTS .....	3
ABSTRACT.....	4
ABBREVIATIONS.....	8
Chapter 1: Introduction and Background.....	10
1.1 Introduction to the topic .....	10
1.2 Background and Current Context.....	10
1.3 Rationale for Research .....	13
1.4 Research question.....	13
1.5 Research Aim .....	14
1.6 Research Objectives .....	14
1.7 Limitations and Assumptions.....	14
1.8 Chapter summary .....	14
Chapter 2: Literature Review .....	15
2.1 Introduction to Literature Review Chapter .....	15
2.2 Literature review .....	15
2.2.1 Socioeconomic Disparities in COVID-19 Outcomes .....	15
2.2.2 Racial and Ethnic Disparities in COVID-19 Outcomes .....	16
2.2.3 Age-Related Disparities in COVID-19 Outcomes .....	17
2.2.4 Geographic Disparities in COVID-19 Outcomes .....	17
2.2.5 Impact of Pre-existing Health Conditions.....	18
2.2.6 Psychological and Mental Health Impacts.....	18
2.2.7 Gaps and Limitations in Existing Research .....	19
2.2.8 Policy Implications and Recommendations.....	20
2.3 Chapter summary .....	21

Chapter 3: Methodology .....	22
3.1 - Introduction to Chapter.....	22
3.2 Systematic Literature Review (SLR).....	22
3.3 Search Strategy .....	22
3.4 Search terms.....	23
3.5 Key Words.....	24
3.6 Databases .....	24
3.7 Inclusion/Exclusion Criteria .....	25
3.7.1 Inclusion Criteria .....	26
3.7.2 Exclusion Criteria .....	26
3.8 Search Results .....	26
3.9 Ethical Considerations .....	28
3.10 Chapter Summary .....	28
Chapter 4: Data Extraction and Evaluation .....	29
4.1 Introduction to Chapter .....	29
4.2 Data Extraction .....	29
4.3 Brief Introduction to Critical Appraisal and Paper Quality Assessment.....	31
4.4 Critical Appraisal Tools .....	32
4.5 Evaluation of Qualitative Studies Using the CASP Tool.....	35
4.8 Chapter Summary .....	37
CHAPTER 5: DATA ANALYSIS AND SYNTHESIS .....	39
5.1 Introduction to Chapter .....	39
5.2 Thematic Analysis.....	39
5.3 Data Analysis Tool .....	39
5.4 Characteristics of the identified studies .....	40
5.5 Emerging Themes from included studies (Analysis/Synthesis of included studies) .....	40
5.6 Chapter Summary .....	49

Chapter 6: Discussion .....	51
6.1 Introduction to Chapter .....	51
6.2 Discussion of Key Findings .....	51
6.2.1 Socioeconomic Disparities and COVID-19 Outcomes.....	51
6.2.2 Racial and Ethnic Disparities .....	52
6.2.3 Digital Health and COVID-19 .....	54
6.2.4 Critique of Research Approach and Limitations.....	55
6.3 Strengths and Limitations .....	55
6.4 Chapter Summary .....	56
Chapter 7: Recommendations and Conclusion .....	57
7.1 Introduction to Chapter .....	57
7.2 Implications of Findings .....	57
7.3 Recommendations for Practice .....	57
7.4 Recommendations for Future Research .....	58
7.5 Conclusion .....	58
Reference list .....	60
Appendix 1: CASP checklist.....	70
Appendix 2: Evaluation of the included studies .....	94
Appendix 3: Data extraction table .....	105

**List of Figures**

Figure 1 PRISMA diagram .....	27
-------------------------------	----

**List of Tables**

Table 1 PICO Framework .....	23
Table 2 Emerging Themes from included studies.....	41

## **ABBREVIATIONS**

AI - Artificial Intelligence

AJET - Australasian Journal of Educational Technology

ASH - Action on Smoking and Health

BBE - Beyond Budgeting Example

BMC - BioMed Central

BMJ - British Medical Journal

CASP - Critical Appraisal Skills Programme

CDC - Centers for Disease Control and Prevention

COVID - Coronavirus Disease

ERA - Education Research Abstracts

GGMN - Global Governance Monitor

HIV - Human Immunodeficiency Virus

ICCS - International Civic and Citizenship Education Study

ICU - Intensive Care Unit

JAMA - Journal of the American Medical Association

JC - Journal of Chemistry

JHL - Journal of Health Law

MM - Manual of Methods

MMWR - Morbidity and Mortality Weekly Report

OECD - Organisation for Economic Co-operation and Development

OR - Boolean operator used in search contexts

PICO - Population, Intervention, Comparison, Outcome

PLOS - Public Library of Science



PNAS - Proceedings of the National Academy of Sciences

PPE - Personal Protective Equipment

PRISMA - Preferred Reporting Items for Systematic Reviews and Meta-Analyses

PTSD - Post-Traumatic Stress Disorder

RSF - Russell Sage Foundation

SARS - Severe Acute Respiratory Syndrome

SDI - Sustainable Development Indicators

SE - Standard Error

SEM - Structural Equation Modeling

SES - Socioeconomic Status

SLR - Systematic Literature Review

UK - United Kingdom

US - United States

WHO - World Health Organization

# Chapter 1: Introduction and Background

## 1.1 Introduction to the topic

The COVID-19 pandemic has uncovered massive disparities in fitness outcomes among various socioeconomic and ethnic companies, revealing deep-rooted inequalities in society. This study concentrates on assessing those disparities, mainly amongst decrease-income families and ethnic institutions (Magesh et al., 2021), with a selected awareness of mental health problems including tension, despair, and stress that have disproportionately affected these businesses. Socioeconomic reputation decided through factors consisting of profits, education, and profession, is a critical determinant of standard fitness, inclusive of mental health.

Ethnicity also has an important position in health effects, with positive ethnic businesses experiencing higher charges of infection, hospitalization, and mortality. While much research has highlighted the disproportionate effect on minority ethnic agencies, this study aims to explore the outcomes in the white ethnic institution, which has acquired much less interest in this context (Yang and Qi, 2022).

Understanding those disparities is vital for public fitness policy, because it underscores the need for focused interventions to deal with the unique needs of different companies (Khanijahani et al., 2021). This research contributes to current studies by means of specializing in a less-explored populace and presenting insights that might inform equitable health policies and aid allocation, ultimately aiming to lessen fitness disparities and enhance consequences for all.

## 1.2 Background and Current Context

The COVID-19 pandemic has introduced substantial disparities in health results among diverse socioeconomic and ethnic groups. These disparities are specifically reported amongst low-earnings households and precise ethnic groups, along with the white ethnic institution, revealing the complicated interplay of social, monetary, and health-associated factors (Hughes et al., 2021). Understanding those disparities is vital for growing effective public health regulations and interventions that address the wishes of the maximum inclined populations.

Socioeconomic status (SES) is a fundamental determinant of health, influencing get admission to assets, healthcare, and usual well-being. Lower-income families regularly face numerous limitations that exacerbate their vulnerability to adverse fitness outcomes, such as those related

to COVID-19 (Raphael and Schneider, 2023). These limitations consist of restrained get access to quality healthcare, insufficient housing situations, meals lack of confidence, and unstable employment.

For low-income families, get admission to healthcare is a persistent trouble. Financial constraints often restriction their ability to have the funds for clinical offerings, medicines, and preventive care. Many people in this group rely on public healthcare systems, which may be overburdened and underneath-resourced, especially throughout an endemic (Magesh et al., 2021). Additionally, low-profits families are much more likely to stay in densely populated areas in which social distancing is hard to maintain, growing their danger of publicity to the virus. For low-income white individuals, the demanding situations make bigger beyond physical fitness, deeply impacting their mental health. The regular chance of exposure to the virus, coupled with financial instability, has brought about elevated degrees of tension and despair. These intellectual fitness challenges are further heightened through confined access to healthcare, consisting of mental fitness services, overcrowded dwelling conditions, and unstable employment situations that don't offer adequate help for dealing with intellectual fitness crises.

According to Sharma et al. (2022), housing conditions also has an important position inside the health outcomes of lower-earnings families. Overcrowded dwelling areas, bad ventilation, and inadequate sanitation centers can facilitate the spread of infectious diseases, which include COVID-19. These situations are frequently exacerbated by means of financial instability, which could save you families from moving to safer, greater hygienic environments.

Food lack of confidence is another vast difficulty for lower-profits families, impacting their average fitness and immune device energy. A loss of get admission to nutritious food can cause malnutrition, weight problems, and different health conditions that boom the severity of COVID-19 outcomes (Häfliger, Diviani and Rubinelli, 2023). During the pandemic, many low-income families have confronted disruptions in food deliver chains and multiplied economic pressures, in addition compromising their nutrients and fitness.

Employment instability is an indicator of lower-earnings families, many of whom work in important however low-paying jobs that do not provide paid ill depart or medical insurance (Azar et al., 2020). These jobs frequently require near touch with others, growing the danger of COVID-19 publicity. The lack of financial safety nets additionally way that many

individuals cannot afford to take time off work if they become ill, driving to transmission of the virus.

While much of the dialogue around COVID-19 disparities has targeted on minority ethnic corporations, it's far vital to also take into account the disparities confronted by means of lower-income people in the white ethnic group (Bambra, 2022). Socioeconomic elements heavily impact the health effects of this group, regularly overshadowing the broader ethnic tendencies.

Within the white ethnic group, lower-income individuals face comparable obstacles to healthcare, housing, and employment as their counterparts in other ethnic businesses (Romano, 2021). These limitations result in considerable health disparities, consisting of better costs of COVID-19 infection and mortality.

Healthcare access stays an immense difficulty for lower-profits white people. Despite being part of the large ethnic group, economic constraints and systemic obstacles can restrict their get access to vital healthcare services (Azar et al., 2020). Housing instability and poor dwelling situations are frequent amongst low-income white households, contributing to their vulnerability to COVID-19. Overcrowded housing, lack of sanitation, and poor ventilation can all facilitate the spread of the virus.

Employment factors also have an important role in the fitness disparities skilled with the aid of lower-earnings white individuals (OECD, 2020). Many paintings in sectors together with retail, hospitality, and guide exertions, which have been heavily impacted by the pandemic. These jobs frequently contain direct touch with the general public and lack defensive measures, growing the risk of exposure to COVID-19.

Addressing the disparities in COVID-19 results amongst lower-income families and the white ethnic group requires a multifaceted method that considers the intersection of socioeconomic and ethnic elements. Public health guidelines have to prioritize equitable get entry to healthcare, enhance dwelling situations, and support stable employment for prone populations.

Firstly, increasing get entry to low-cost healthcare is essential. This includes growing investment for public health systems, offering subsidies for personal insurance, and making sure that all people can get admission to vital scientific offerings without monetary limitations (Häfliger, Diviani and Rubinelli, 2023). Telehealth offerings ought to additionally be expanded to attain the ones in faraway or underserved regions, taking into consideration timely scientific consultations and lowering the burden on healthcare centres.

Addressing meals lack of confidence through targeted interventions is crucial for improving normal health and resilience against COVID-19 (Sharma et al., 2022). This consists of expanding food help applications, supporting nearby meals banks, and implementing rules that ensure solid and handy meals deliver chain. Nutrition education programs can also help families make more healthy meals picks, enhancing their immune device energy and ordinary well-being.

Employment aid is essential for lower-earnings households, particularly the ones in the white ethnic institution. Policies must intention to growth process protection, and offer economic help for those tormented by task losses due to the pandemic. Ensuring safe operating conditions, inclusive of get access to non-public shielding system and adherence to public fitness tips, can lessen the danger of COVID-19 publicity in the workplace.

### **1.3 Rationale for Research**

This study addresses the critical need to look at disparities in COVID-19 outcomes amongst lower-earnings households within the white ethnic group. Despite being part of the bulk ethnic class, low-earnings people inside this institution often experience massive socioeconomic risks that make contributions to disparate health outcomes all through the pandemic (Khanijahani et al., 2021). The motive of this study is to explain the precise factors—including confined get access to healthcare, precarious employment, and inadequate living situations—that exacerbate those disparities.

The boundaries of this study are described through a focus on low-income households inside the white ethnic organization in a selected geographic context, acknowledging that different factors past socioeconomic status and ethnicity can also have an effect on COVID-19 outcomes (Romano, 2021). This research is mainly vast as it will contribute to the knowledge of ways socioeconomic status and ethnicity intersects to steer mental health consequences during an international health disaster. By focusing on the intellectual fitness demanding situations faced with the aid of low-earnings white individuals, these study pursuits to fill a gap inside the existing literature, which has predominantly targeted minority ethnic companies.

### **1.4 Research question**

How do socioeconomic and demographic factors impact the disparities in COVID-19 outcomes, specifically in phrases of mental fitness challenges, and what are the implications for public health policy?

## 1.5 Research Aim

The aim of this research is to evaluate the disparities in COVID-19 outcomes among different socioeconomic and demographic groups, focusing on mental health issues.

## 1.6 Research Objectives

- To analyze the prevalence and nature of mental health issues among different socioeconomic and demographic groups during the COVID-19 pandemic.
- To investigate the factors contributing to mental health challenges among healthcare workers.
- To assess the mental well-being of healthcare professionals and identify strategies to mitigate the negative impact on their mental health.
- To provide recommendations for public health policy intended at improving mental health outcomes during pandemics.

## 1.7 Limitations and Assumptions

This research acknowledges numerous barriers, inclusive of the potential for choice bias within the reviewed literature and the experience of keeping apart the precise effect of socioeconomic elements on mental fitness consequences. Additionally, the study assumes that existing studies should reflect the stories of low-income white people at some stage in the pandemic, no matter capability variations in information availability and satisfaction. Further studies can be required to cope with those obstacles and discover additional determinants of fitness beyond the scope of this study.

## 1.8 Chapter summary

This chapter supplies an in-depth evaluation of the disparities in COVID-19 effects among considerable socioeconomic and demographic groups, highlighting their deep implications for public health coverage. It delves into the multifaceted dimensions of these disparities, examining factors which incorporate socioeconomic reputation, race, nationality, age, gender, and geographical vicinity. The chapter underscores the vital want of centred interventions to mitigate these disparities and lays the idea for Chapter 2 of the literature review, a good way to perform a complete assessment on the subject.

## Chapter 2: Literature Review

### 2.1 Introduction to Literature Review Chapter

The COVID-19 pandemic has exposed and deepened tremendous disparities in fitness effects among socioeconomic and ethnic group, specifically in lower income families of white ethnic groups (Barr-Anderson et al., 2021). This literature evaluation seeks to offer a radical and distinct examination of the present research on those disparities, specializing in their underlying reasons and implications for public health coverage. This literature review seeks to provide a thorough and excellent examination of the present research on those disparities, specializing in their underlying reasons and implications for public fitness insurance. The chapter will draw on applicable theoretical frameworks, including the Social Determinants of Health and Intersectionality, to situate the findings inside a broader context and provide a greater coherent understanding of the phenomenon.

### 2.2 Literature review

#### 2.2.1 Socioeconomic Disparities in COVID-19 Outcomes

Socioeconomic status (SES) considerably affects COVID-19 effects, with lower-income households in the white ethnic institution going through notable challenges. Research continuously demonstrates that people from lower SES backgrounds are extra vulnerable to contracting the virus and experiencing severe outcomes (Galea and Abdalla, 2020). Studies highlight diverse ways wherein socioeconomic drawback exacerbates vulnerability to COVID-19.

While the research reviewed provides adored insights into the socioeconomic disparities in COVID-19 outcomes, there are exquisite differences in methodologies. For example, Khanijahani et al. (2021) hired a cross-sectional layout that permits the identity of institutions but now not causality, which limits the capacity to attract definitive conclusions approximately the consequences of socioeconomic popularity on COVID-19 consequences. Conversely, longitudinal research, together with those performed by Galea and Abdalla (2020), offers more potent evidence by way of tracking individuals over time.

For example, Khanijahani et al. (2021) performed a comprehensive have a look at revealing higher infection and mortality costs in regions with increased poverty degrees. This improved chance is attributed to several intertwined elements. Lower-earnings families often live in

densely populated environments, making social distancing tough and heightening the threat of virus transmission.

Occupational factors additionally play a crucial function in linking SES to COVID-19 hazard. The necessity of continuing to paintings in high-threat environments, coupled with inadequate get admission to non-public protecting device (PPE) and healthcare resources significantly elevates their danger. Baker, Peckham, and Seixas (2020) discovered that important people had markedly higher contamination costs compared to those able to make money working from home, underscoring the occupational hazards that exacerbate SES-related health disparities throughout the pandemic.

### **2.2.2 Racial and Ethnic Disparities in COVID-19 Outcomes**

During the COVID-19 pandemic, racial and ethnic disparities have profoundly impacted outcomes, with minority populations experiencing better contamination and mortality quotes as compared to the white ethnic organization. **The Social Determinants of Health framework explains the multifaceted nature of racial and ethnic disparities in COVID-19 consequences, as it highlights how socioeconomic situations, healthcare access, and systemic inequities contribute to those disparities. Furthermore, the idea of Intersectionality is important in the knowledge of how overlapping elements which include race, ethnicity, and socioeconomic status exacerbate vulnerabilities at some point during the pandemic. This theoretical method shows that addressing these disparities requires policies that take into account the complicated, interconnected nature of social determinants.**

One key contributor is the elevated occurrence of underlying health situations amongst minority populations, along with lower-profits families inside the white ethnic institution. For example, individuals from Black and Hispanic backgrounds are disproportionately tormented by conditions together with diabetes, hypertension, and obesity, which heighten the chance of excessive COVID-19 contamination (Moreb et al., 2021).

Systemic inequities in healthcare also play a substantial position, perpetuating disparities in get admission to high-quality care and fostering mistrust inside minority groups, including lower-earnings white households. These disparities underscore the essential need for targeted interventions and rules geared toward addressing the foundation causes of racial and ethnic disparities in COVID-19 results.



### **2.2.3 Age-Related Disparities in COVID-19 Outcomes**

Age drastically influences COVID-19 outcomes, particularly among older adults within the lower income households of the white ethnic group. Older adults face extensively higher dangers of extreme infection and mortality, a well-established association noted through agencies just like the World Health Organization, which observes a significant growth in case fatality rates among individuals aged 60 and above (Chatterjee and Chatterjee, 2022).

The intersection of age with socioeconomic fame (SES) in addition exacerbates disparities in COVID-19 consequences. Research by Jordan, Adab, and Cheng (2020) illustrates that older adults in lower SES brackets experience better mortality prices, highlighting the compounding consequences of age and socioeconomic downside. These individuals are more likely to have underlying fitness situations, restrained get entry to healthcare, and are living in crowded or inadequate housing situations, all of which increase their vulnerability to intense COVID-19 consequences.

Moreover, older adults within low earnings families of the white ethnic organization residing in long-term care facilities have been disproportionately laid low with the pandemic. Outbreaks in nursing homes and comparable facilities have caused elevated mortality charges among citizens, underscoring the urgent need for centered interventions to shield this vulnerable population.

### **2.2.4 Geographic Disparities in COVID-19 Outcomes**

Geographic location has an essential position in shaping COVID-19 results, especially impacting low-income households in the white ethnic institution differently throughout urban and rural regions. Urban settings, characterised by means of higher population density and greater mobility, have skilled improved infection quotes (Ambrus, Field, and Gonzalez, 2020). These situations facilitate less complicated virus transmission and multiplied interplay among residents, contributing to higher infection costs.

Conversely, rural regions have faced wonderful demanding situations in pandemic control. While they'll first of all have low contamination prices because of lower populace density, rural communities frequently contend with limited healthcare infrastructure and assets. This inadequacy has resulted in not on time get access to essential care for COVID-19 patients, leading to better mortality prices in comparison to city counterparts.

Moreover, disparities in public health guidelines and interventions at countrywide and local stages have further exacerbated geographic differences in COVID-19 outcomes (Hasson et al.,

2021). Variations in measures together with masks mandates, lockdown guidelines, and testing strategies have brought about disparate impacts throughout areas, underscoring the want for cohesive and evidence-primarily based public health responses to mitigate geographic disparities.

### **2.2.5 Impact of Pre-existing Health Conditions**

Pre-existing health conditions appreciably predict excessive COVID-19 outcomes amongst lower-earnings families of the white ethnic institution. Conditions which include cardiovascular disorder, diabetes, and breathing ailments are particularly common and heighten both the danger of contracting the virus and the severity of contamination consequences (Fitero et al., 2022). For example, Wells et al. (2020) reported a threefold multiplied threat amongst individuals with underlying health conditions, emphasizing the essential position of pre-existing fitness conditions in shaping pandemic effects.

The effect of pre-current health conditions is compounded through socioeconomic factors within low earnings families. Limited access to healthcare, suboptimal living conditions, and challenging situations in having access to wholesome food options disproportionately have an effect on people in these organizations, exacerbating their vulnerability to severe COVID-19 effects. Research through Marmot and Allen (2020) highlights the role of social determinants of fitness in perpetuating those disparities, necessitating centered interventions to cope with underlying fitness inequities exacerbated by means of the pandemic.

### **2.2.6 Psychological and Mental Health Impacts**

The COVID-19 pandemic has profoundly affected the mental health of lower-profits families in the white ethnic institution, exacerbating existing disparities. Economic instability, social isolation, and lack of social support networks have contributed to heightened levels of tension, melancholy, and pressure amongst those populations.

Studies through Xiong et al. (2020) underscore the disproportionate effect of the pandemic on mental fitness, especially among inclined populations. Racial and ethnic minorities, together with those in the white ethnic organization from low-income backgrounds, have faced precise stressors including increased infection fears and reviews of discrimination, further exacerbating mental fitness challenges. Elevated quotes of tension, depression, and put up-disturbing pressure disease (PTSD) had been determined among those agencies, necessitating focused intellectual health help interventions. Furthermore, studies by means of Galea, Merchant, and Lurie (2020) highlights the heightened vulnerability of disadvantaged

organizations to intense intellectual fitness impacts, emphasizing the urgent want for tailor-made mental health interventions.

### **2.2.7 Gaps and Limitations in Existing Research**

While present day studies on COVID-19 results affords valuable insights, numerous gaps and boundaries need addressing to enhance understanding of disparities and inform powerful public health interventions, especially among low-income households inside the white ethnic group. Another major gap within the literature is the overreliance on qualitative records, which, while valuable for identifying huge traits, regularly fails to capture the nuanced stories of individuals suffering from COVID-19 disparities. Qualitative studies, which include interviews and case research, are important for understanding the lived reviews of susceptible populations and supplying a more comprehensive image of the impacts of the pandemic. Future studies ought to incorporate qualitative techniques to supplement quantitative findings and offer an extra holistic view of the disparities.

One substantial difficulty is the geographic bias ordinary in a great deal early research, which predominantly centered on excessive-earnings countries (Fan et al., 2024). This challenge restricts the generalizability of findings and fails to grasp the various facts and demanding situations confronted by populations in low- and middle-earnings nations, where healthcare structures and socioeconomic contexts range substantially.

Methodological limitations additionally pose demanding situations, in particular in studies performed at some point of the preliminary phases of the pandemic. The fast tempo of studies brought about studies with small sample sizes; quick comply with-up intervals, and reliance on self-stated records. These methodological weaknesses can affect the reliability and validity of findings, highlighting the need for more strong and rigorous studies methodologies.

Furthermore, there may be a lack of intersectional studies that considers the mixed consequences of multiple demographic elements consisting of race, socioeconomic reputation, and ethnicity on COVID-19 outcomes (Moreno-Agostino et al., 2023). Understanding the Intersectionality of those factors is essential for correctly addressing fitness disparities and growing centered interventions that may cater to the varying desires of numerous corporations.

### 2.2.8 Policy Implications and Recommendations

The forms in COVID-19 results underscore extensive implications for public fitness policy. Effective regulations need to cope with the underlying social determinants of health and prioritize fairness. Key pointers from the literature encompass:

**Enhanced Data Collection and Reporting:** Improved information units on COVID-19 cases and results disaggregated with the aid of race, ethnicity, socioeconomic repute, and other important traits are vital for figuring out and addressing inequities (Lobe, Morgan, & Hoffman, 2020).

**Equitable Access to Healthcare:** Policies must ensure equitable get access to trying out, remedy, and vaccination for prone populations. This includes increasing healthcare coverage and addressing boundaries including fee, accessibility, and linguistic demanding situations. Policies making sure healthcare access for inclined populations face demanding situations like political resistance, restricted investment, and logistical obstacles. Overcoming those demands for coordinated efforts from government, healthcare companies, and communities to cope with cost, accessibility, and language obstacles.

**Targeted Public Health Interventions:** Tailored public health initiatives have to be tailor-made to the desires of high-hazard populations (Herlitz et al., 2020). This entails deploying focused verbal exchange strategies, supplying well enough private defensive system (PPE), and assisting isolation and quarantine measures.

**Addressing Social Determinants of Health:** Long-term coverage interventions should prioritize mitigating health inequities through addressing social determinants including poverty, education, housing, and employment. Mitigating fitness inequities by using addressing poverty, education, housing, and employment requires sustained coverage interventions. Challenges consist of political assistance, funding, and nearby implementation. Cross-region collaboration is essential for overcoming these barriers and ensuring long-term, impactful change.

**Mental Health Support:** Providing mental fitness assist, especially for underserved corporations, is essential (Talevi et al., 2020). This includes expanding get admission to mental health services and integrating mental health assist into COVID-19 reaction strategies.

### **2.3 Chapter summary**

This chapter has provided a complete assessment of the present literature on disparities in COVID-19 outcomes among socioeconomic and demographic corporation that specialize in low-profits families inside the white ethnic group. The evaluate synthesized key findings from diverse research, highlighting the significant impact of things such as socioeconomic status, race and ethnicity, age, geographic area, pre-present health conditions, and intellectual health on COVID-19 results. The next chapter will chapter the research method employed in this dissertation, detailing the method taken to research disparities in COVID-19 consequences amongst low-income households inside the white ethnic organization.

## **Chapter 3: Methodology**

### **3.1 - Introduction to Chapter**

This chapter outlines the methodology employed to assess disparities in COVID-19 outcomes among different socioeconomic and demographic groups, with a specific focus on ethnic groups, particularly white people. The research intends to provide a comprehensive evaluation of the studies methods used, starting with a systematic literature review (SLR). The chapter will detail the diverse components of the SLR technique, together with the quest approach, the components of seek terms, and the selection of databases. Additionally, it'll cover the standards for along with and except studies, making sure a focused and applicable evaluation. Ethical concerns that guided the research procedure is also mentioned.

### **3.2 Systematic Literature Review (SLR)**

A Systematic Literature Review (SLR) is a approach that entails systematically accumulating, recognizing, and analysing existing studies, together with articles, case research, books, journals and dissertations (Carrera-Rivera et al., 2022). An SLR affords the reader with the maximum latest statistics and study's findings on a particular difficulty. The objective is to evaluate key aspects of current knowledge on a certain subject matter regarding studies inquiries with the intention to offer capacity areas for similarly research. Prior to commencing the SLR, it's far imperative to set up a clear and focused "Initial Idea" or location of interest in an effort to be the challenge of observe (van Dinter, Tekinerdogan and Catal, 2021). Conducting a preliminary overview of the pertinent literature can assist in figuring out if the concern depend is too expensive to be completely addressed inside the given time frame and if it's miles imperative to narrow the scope.

### **3.3 Search Strategy**

Search method is a systematic method to accumulate applicable information in studies databases. It involves defining research phrases, choosing suitable databases, and using precise search techniques to retrieve applicable research (Mourão et al., 2020). This complete studies approach assurances that each pertinent literature is diagnosed and reviewed. For this study, the PICO framework has executed to guide the studies technique. PICO stands for Population, Intervention, Comparison, and Outcome, and it helps in framing the research query and growing as an influential research technique (Bolaños et al., 2024). In the context of this look at, the Population refers to socioeconomic and demographic institution, together with ethnic institution with a focus on white people.

To make certain the inclusion of the most contemporary and relevant facts, the studies considered research published after 2020 (Myllyaho et al., 2021). This time frame was selected to comprehend the advanced study's findings associated with the pandemic. The search achieved in a couple of databases, together with PubMed, Google scholar, PsycINFO, and Web of Science, which might be regarded for huge collections of clinical, psychological, and multidisciplinary research (Hou and Wang, 2024). This multi-database technique ensured a complete retrieval of research, defensive a large variety of perspectives and disciplines relevant to the studies issue matter.

### 3.4 Search terms

Search terms are unique terms or phrases used to locate relevant data in studies databases. These phrases are essential in research because they help discover the research and information applicable to the studies query (Smela et al., 2023). Effective search terms safeguard that the study is entire and encompasses all pertinent literature. The use of synonyms is crucial in searching due to the reality unique studies might use numerous terms to give an explanation for the identical concept.

The use of synonyms in research phrases is imperative due to the reality researchers can also come upon variations in terminology all through distinct research. By incorporating synonyms, the research becomes whole, encircling all capability variations in how thoughts are described (Sutin et al., 2023). **The research team iteratively refined search terms by reviewing initial results, adjusting synonyms, Boolean operators, and specific terminology like "health inequalities" and "socioeconomic status," ensuring a comprehensive and exhaustive review of COVID-19 health disparities literature.**

*Table 1 PICO Framework*

Population/Problem	Socioeconomic and ethnic groups
Intervention/Issue	COVID-19 interventions
Context	Disparities among ethnic groups (white)
Outcome	COVID-19 outcomes

(Table- source: Self-created)

In this research, the PICO framework became employed to develop the research question and manual the search strategy. PICO stands for Population, Intervention, Comparison, and Outcome, supplying an established approach to formulating a research question (Gebrie et al., 2023). The Population in this context consists of socioeconomic and demographic groups, with

a specific cognizance on ethnic organizations (white human beings). The research question derived from the PICO framework turned into: "What are the disparities in COVID-19 results amongst distinct socioeconomic and demographic agencies, specifically specializing in ethnic group (white population), and what are the implications for public health policy?"

To implement this research, a couple of databases were applied, which includes PubMed, Google scholar, PsycINFO, and Web of Science. Each component of the PICO framework became translated into search terms the use of synonyms and Boolean operators (Arumugam et al., 2023). For instance, for the Population/Problem component, terms such as "socioeconomic reputation," "demographic groups," and particular ethnic identifiers like "white population" were blended with "OR" to develop the research scope.

By implementing Boolean operators like "OR" inside every element and ultimately combining the additives with "AND," the hunt method ensured entire coverage during the databases. This methodological approach aimed to retrieve the most relevant and updated studies published after 2020, thereby providing a radical evidence base to evaluate disparities in COVID-19 effects and inform public fitness coverage efficiently.

### **3.5 Key Words**

Keywords signify to enormous phrases or thoughts that represent the studies motivations and theoretical backgrounds of an educational study (Corrin et al., 2022). The main key phrases used in this study have been: "COVID-19," "socioeconomic groups," "demographic organizations," "ethnic groups," "white human beings," "health disparities," "COVID-19 consequences," "pandemic response," "fitness equity," "systematic evaluate," "public health coverage," "PICO framework," "search method," and "Boolean operators."

### **3.6 Databases**

In engaging in specific studies on disparities in COVID-19 outcomes amongst numerous socioeconomic and demographic agencies, which consist of ethnic businesses together with white human beings, a couple of databases have been implemented (Gusenbauer and Haddaway, 2020). This approach changed into crucial to ensure a whole retrieval of applicable research and limit capacity bias within the research findings.

Searching for educational databases involved getting access to databases renowned for his or her big insurance throughout medical, social technology, and public health disciplines (Chapman et al., 2019). PubMed, Scopus, Google scholar and Web of Science were selected



based on their recognition for indexing an intensive selection of peer-reviewed journals and articles pertinent to the research's knowledge.

The significance of searching relevant databases lies in their ability to embody numerous views and disciplines, thereby providing a holistic view of the research subject matter (Cabrera, Cabrera and Cabrera, 2023). Each database carries of journals and publications, growing the probability of capturing all applicable literature. For example, clinical databases like PubMed specialize in healthcare-associated research, at the same time as Scopus and Web of Science cover multidisciplinary fields, which includes social sciences and public health.

These databases have been selected for their huge coverage of peer-reviewed literature and their relevance to the research subject matter. PubMed was selected because of its comprehensive indexing of scientific and healthcare-associated research, which is critical for knowledge fitness disparities throughout the COVID-19 pandemic (Sośnicki and Madeyski, 2021). Google Scholar changed into covered for its broad coverage throughout multiple disciplines, permitting access to each academic and grey literature. PsycINFO has been selected for its cognizance of mental and mental fitness studies, aligning with the study's emphasis on mental fitness outcomes.

Web of Science was chosen for its multidisciplinary nature and its sturdy quotation tracking, which allows make sure the inclusion of high-impact studies. In addition to peer-reviewed articles, grey literature assets which include government reports and conference papers were taken into consideration to capture emerging research and coverage suggestions now not yet published in educational journals. This increased the scope of the assessment and helped to mitigate the hazard of publication bias.

### **3.7 Inclusion/Exclusion Criteria**

Inclusion criteria comprise the characteristics or attribute that prospective research participants must have in order to be included in the study. Common inclusion criteria can be demographic, clinical, or geographic in nature (Nikolopoulou, 2022). Exclusion criteria comprise characteristics used to identify potential research participants who should not be included in a study. For this reason, they must be excluded. Defining inclusion and exclusion criteria is important in any type of research that examines characteristics of a specific subset of a population (Nikolopoulou, 2022).

Potential biases, together with publication bias and language bias, had been stated throughout the literature search. Publication bias was mitigated by using which includes grey literature

assets like preprints, authority's reviews, and conference papers, making sure that unpublished but relevant research was considered. To address language bias, the studies group blanketed research posted in languages apart from English where possible, even though the bulk of included research was in English because of useful resource constraints. Additionally, efforts have been made to ensure that seek effects were not skewed by database-particular algorithms through cross-referencing findings across a couple of databases.

### **3.7.1 Inclusion Criteria**

This research included studies published between 2019 and 2023, focusing on COVID-19 outcomes across various socioeconomic and demographic groups, with specific attention to disparities among white people. The selection of this five-year period, starting from 2019, accounts for the year prior to the pandemic's onset, providing a baseline for comparison, and extends to 2023 to encompass the most recent and relevant data on the long-term impacts of COVID-19. Only peer-reviewed articles were considered to ensure scholarly rigor and reliability of findings. The perfect of the protected research was assessed through the use of standardized tools consisting of the Critical Appraisal Skills Programme (CASP) checklists. These tools helped compare the validity, reliability, and relevance of every study, ensuring that only first-rate studies changed into covered within the final evaluation.

### **3.7.2 Exclusion Criteria**

Excluded were studies not published in English, those not primarily addressing COVID-19 outcomes, studies lacking a focus on disparities among socioeconomic and demographic groups, and non-peer-reviewed articles? These criteria ensured that the review maintained a clear focus on relevant and rigorous research, thereby enhancing the quality and applicability of findings for informing public health policy.

### **3.8 Search Results**

The review evaluated disparities in COVID-19 outcomes across socioeconomic, demographic, and ethnic groups, focusing mainly on consequences amongst white people and implications for public health policy. A systematic search diagnosed 20 relevant studies for inclusion, adhering to PRISMA diagram to ensure methodological consistency.

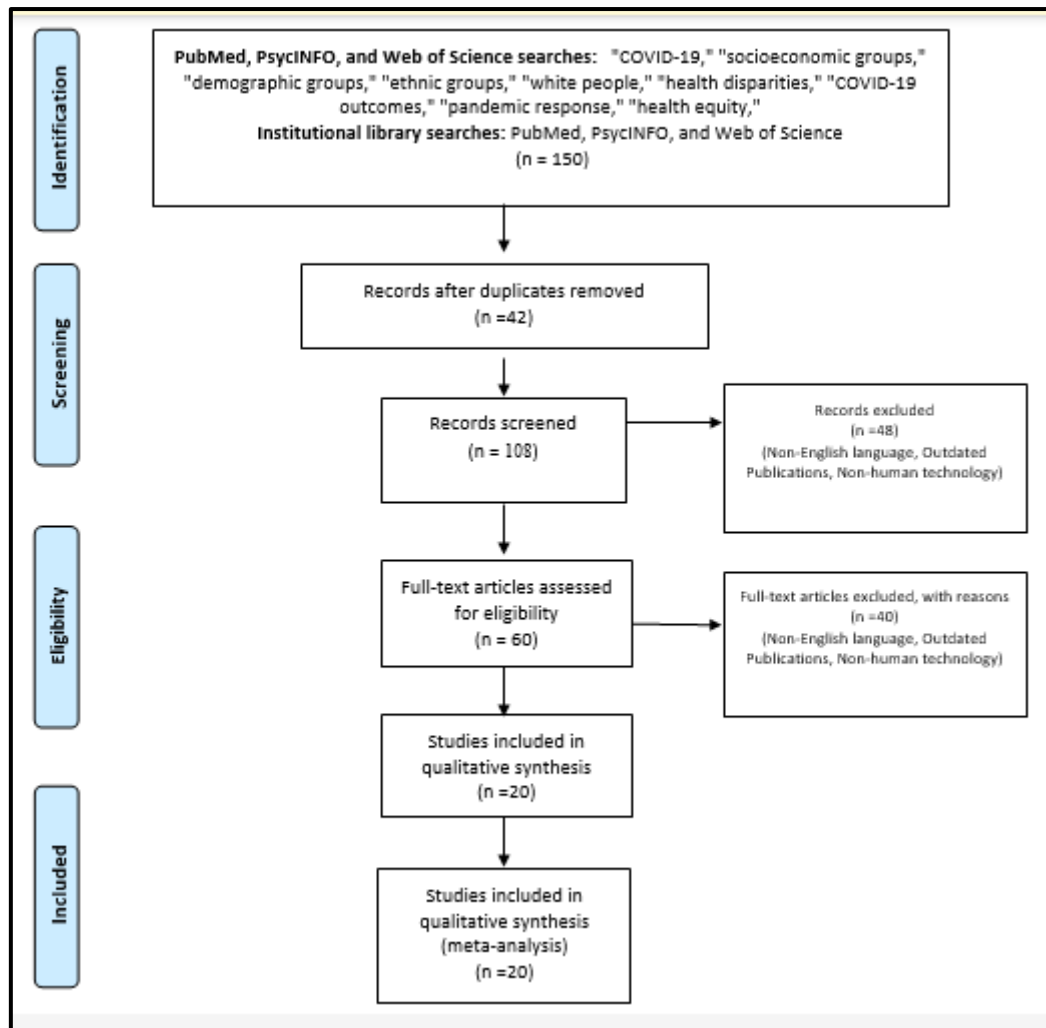


Figure 1 PRISMA diagram

Figure- Source-Self-created

The search yielded a complete of 150 studies from institutional library searches incorporating databases of PubMed, Google scholar, PsycINFO, and Web of Science. To refine the selection technique, the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) recommendations were followed, resulting in a structured method to cast off inappropriate studies and make sure the inclusion of pertinent research.

The identity segment commenced with the elimination of duplicate statistics, leaving 108 precise studies. These have been subjected to a screening method, throughout which 48 studies were excluded for numerous motives, which include non-English language publications, previous content, and studies concerning non-human generation (Zeidan et al., 2022). This screening section led to 60 studies that underwent in addition evaluation for eligibility.

During the eligibility assessment, the overall-text articles of those 60 studies have been reviewed. Of those, 40 articles had been excluded, broadly speaking for the identical reasons identified all through the screening section (Oláh et al., 2020). Ultimately, 20 studies met the standards for inclusion within the qualitative synthesis and meta-evaluation.

The PRISMA chart visually represents this feature system, demonstrating the go with the flow of facts thru different levels of the systematic evaluate. The diagram highlights the initial quantity of statistics identified, the following elimination of duplicates, the screening of facts, and the final choice of studies eligible for synthesis.

Challenges within the literature search protected inconsistent consequences throughout databases and trouble accessing complete-text articles. These have been addressed by using refining the search method, using institutional access, and contacting authors, although some research remained inaccessible.

### **3.9 Ethical Considerations**

Ethics in research and how it is translated into practice is essential to rule out any potential misconduct either with the scientific technique or the way results are presented to the arena, as a consequence impacting results of the study (Correia, 2023). In this evaluate, moral issues have been paramount while selecting literature. All covered studies have been peer-reviewed and had undergone ethical approval approaches prior to research, ensuring compliance with moral requirements. The selection procedure prioritized research that verified clean ethical practices, inclusive of knowledgeable consent and confidentiality.

### **3.10 Chapter Summary**

This chapter supplied an in-depth overview of the technique used in this research, detailing the systematic literature evaluation manner. It covered the search method employed, specifying the hunt terms and databases used, along with PubMed, Goole scholar, PsycINFO, and Web of Science. Additionally, the chapter mentioned the inclusion and exclusion criteria implemented to select relevant studies and mentioned the ethical concerns adhered to at some point of the studies. The next chapter will present the findings of the literature review, specializing in disparities in COVID-19 effects amongst specific socioeconomic and demographic organizations, with a selected emphasis on white people, and the consequences for public health policy.

## Chapter 4: Data Extraction and Evaluation

### 4.1 Introduction to Chapter

The methodical process of data extraction and assessment to identify the variations in COVID-19 outcomes across various socioeconomic and demographic classes is the main emphasis of this chapter (Khanijahani et al., 2021). It is vital for combining the present studies and evaluating it critically so that it will get insightful findings, which can guide public health policy.

The data extraction is followed by way of an essential assessment of the included studies in the chapter. The methodical evaluation of studies publications quality, validity, and applicability can be known as important appraisal (Raynaud et al., 2021). This degree is crucial for identifying every study's advantages and drawbacks and, therefore, the validity of the research findings.

This chapter's most important intention is to systematically collect and critically determine records from the chosen research as a good way to comprehend the differences in COVID-19 effects between diverse socioeconomic and demographic classes (Gu et al., 2020). In doing so, these chapter goals to find trends and derive conclusions that could guide interventions and public health guidelines supposed to relieve these disparities. **Understanding these variations is critical for developing centred interventions and public fitness techniques that address the precise desires of various socioeconomic and demographic organizations.**

### 4.2 Data Extraction

**Data extraction is the systematic process of figuring out and accumulating applicable data from a study to facilitate a similar evaluation and synthesis (Y Li, Z Zhang, and L Cao, 2021). A standardized data extraction template is used to ensure consistency and reliability during the procedure. To minimize bias and improve reliability, two unbiased reviewers completed the data extraction, with any discrepancies resolved through dialogue or third-party mediation.**

Data extraction includes identifying, choosing, and gathering information from primary studies in a based and systematic way to facilitate complete assessment and synthesis." This process constantly and appropriately collects all pertinent records, facilitating evaluation for the duration of overview and evaluation.

In order to guarantee consistency and dependability, the data extraction procedure for this dissertation makes use of an organised methodology. A first statistics extraction form turned

into created with all relevant elements to accumulate the data. This form serves as a consistent device to ensure consistency during the manner by way of methodically extracting records from each research.

A careful examination of every chosen studies turned into step one inside the extraction technique. The data extraction form was use to locate and data extraction form (Büchter, Weise and Pieper, 2021). This section entailed cautiously reviewing and analysing the study content to make sure that all relevant facts become recorded. To lessen bias and enhance dependability, two researchers independently tested every paper. To make certain accuracy and completeness, disagreements amongst the reviewers have been settling through communication or recommendation from a third researcher.

The specific statistics extracted from each study covered diverse key elements vital for assessing disparities in COVID-19 results. These factors were systematically set up into instructions on the statistics extraction form:

- 1. Study Design:** The form of studies, in conjunction with cohort, move-sectional, or case-control, is vital for knowledge and interpreting the results.
- 2. Sample Size:** The study's power and generalizability can precipitated by way of the useful resource of the extensive variety of human beings covered in the observation (Serio et al., 2022).
- 3. Population Characteristics:** Demographic data, inclusive of age, gender, ethnicity, and pre-existing health issues, play a crucial position in comprehending the goal enterprise of the studies.
- 4. COVID-19 Outcomes:** Quantifiable results assessed include infection charges, hospitalisation prices, disorder severity, recuperation rates, and loss of life costs.
- 5. Socioeconomic Variables:** Relevant information concerning socioeconomic status (SES) includes signs, which include income stage, educational attainment, activity popularity, and healthcare accessibility (Rai, 2023). These variables are essential for comprehending the effect of socioeconomic elements on COVID-19 outcomes.
- 6. Demographic Variables:** Other demographic variables, which include geographical area, urban or rural residence, and family size, may potentially affect the effects of COVID-19.

The data that became organized right into extraordinary information, which operated as an entire evaluation of the essential facts from each research. This data for every of the aforementioned data sorts facilitates clean contrast across research.

As an example, the study layout, sample size, populace characteristics, COVID-19 results, socioeconomic indicators, and demographic data (Cao, Hiyoshi and Montgomery, 2020). The function table, through rigorous statistics business enterprise, enabled the discovery of patterns and developments in the inequalities of COVID-19 outcomes.

The specific content provided a particular and brief summary of the studies offered, facilitating easy entry to and supporting the integration of effects. It supplied the idea for further assessment and exam, making certain that the amassed facts changed into exactly and carefully recorded.

#### **4.3 Brief Introduction to Critical Appraisal and Paper Quality Assessment**

The methodical assessment of studies articles to check their reliability, worth and applicability in a selected setting known as critical appraisal (Bottino et al., 2021). "Critical appraisal entails assessing the methodological high-quality of studies to choose their credibility and applicability to specific research questions or problems". Examining elements such studies layout, bias risk, pattern length, information collection techniques, and the reliability of results are all a part of this method. Researchers can decide the great and dependability of the proof provided within the research by using assessing these additives. **Critical appraisal is crucial for enhancing the first-class of proof and ensuring that research findings are reliable and applicable.**

It is extremely important to carry out a comprehensive analysis when analysing disparities in COVID-19 outcomes across various socioeconomic and demographic categories for a number of reasons:

**1. Ensuring Reliability and Validity:** For studies' effects to be reliable and valid, serious evaluation is necessary. During the Coronavirus pandemic, it is basic to depend upon reliable and precise measurements to draw in all around informed decisions, since the realities could fluctuate extraordinarily and have imperative ramifications for general wellbeing (Trotter, 2021). Researchers can identify potential sources of bias or methodological flaws that could affect the veracity of the results by rigorously evaluating each study. This ensures that the proof used to assess varieties is both trustworthy and reliable.

**2. Comparing across Studies:** Studies could likewise utilize diverse procedures, design sizes, and measurements, so convoluting direct examinations of results. A scientific approach to evaluating these disparities can provided by critical analysis, enabling a more nuanced examination of research findings. It is critical to comprise of this issue while dissecting imbalances in Coronavirus results since renditions in the fine and structure of studies would perhaps bring about elite translations of the measurements.

**3. Guiding Policy and Practice:** The outcomes gained from concentrates on imbalances connected with Coronavirus may likewise have significant ramifications for public health policy and execution (Mishra et al., 2021). For supporting the formulation of effective actions and rules, it is essential to ensure that the data are of high quality. Teachers may also be able to provide advice that is more reliable to policymakers for reducing inequality and improving health outcomes through the evaluation of research articles.

#### **4. Identifying Gaps and Limitations:**

Finding the gaps and restrictions within the cutting-edge studies is any other benefit of vital evaluation. For instance, this data might direct destiny studies efforts if sure research have methodological problems or are limited in scope. To fully understand COVID-19 differences and identify areas that require more investigation, one must be aware of these challenges.

#### **5. Enhancing Transparency and Replicability:**

By cautiously evaluating the calibre of research courses, essential evaluation complements the transparency and reproducibility of examine findings (Fatima et al., 2024). Transparency helps the assessment of proof via other researchers and permits the replication of studies to verify or question the findings. Within the world of COVID-19 studies, this provides to a more potent and greater dependable collection of evidence.

#### **4.4 Critical Appraisal Tools**

A tool used for methodically assesses the calibre of research papers is an essential evaluation tool. Standardised devices called critical appraisal tools can used for evaluate the general dependability, methodological quality, and threat of bias in studies investigations. By imparting an organised approach for assessing different components of a study, that equipment assures that the information utilised in research is dependable and pertinent. **Different tools are to be had for assessing diverse styles of study. For example, the CASP tool is appropriate for**



qualitative studies, whilst the STROBE checklist is used for observational studies, and the CONSORT checklist is designed for randomized controlled trials.

### **Importance**

Choosing the suitable essential appraisal tool is vital for making sure an intensive and accurate evaluation of each observation type:

- 1. Ensuring Accurate Evaluation:** Various study types (qualitative and quantitative, as an example) name for various assessment standards (O'Connor et al., 2020). Utilising a method created in particular for the kind of study below evaluation ensures a complete and particular assessment of its calibre.
- 2. Consistency and Objectivity:** Selecting the appropriate critical assessment tool offers a reliable and independent shape for assessing research. As a result, the assessment procedure is much less subjective and biased, generating greater consistent and repeatable outcomes.
- 3. Guiding Research Decisions:** The inclusion and interpretation of studies in an assessment can directly affect by using the vital value determinations' consequences. Choosing the right tool guarantees that the picks made during the take a look at are supported by means of stable proof, which is essential a good way to reach reliable results.

### **Criteria**

Critical appraisal equipment are design to evaluate several key criteria in studies research:

- 1. Study Design:** evaluating the suitability of the take a look at layout in relation to the goals and studies topic (Y Hou and M Khokhar, 2022).
- 2. Bias:** Identifying potential sources of bias, such as desire bias, dimension bias, and reporting bias, which have the potential to undermine the reliability of the study's results.
- 3. Validity:** assessing the study's internal and external validity, which encompasses the extent to which the study's techniques and outcomes can be apply to particular settings or populations.
- 4. Reliability:** Evaluating the consistency and exactness of the have a review estimations and discoveries (Miller et al., 2022).
- 5. Sample Size and Power:** Reviewing whether the sample duration is adequate to provide reliable and generalizable effects.

### **Selection Justification**

For qualitative research, the Critical Appraisal Skills Programme (CASP) device can frequently utilized. The CASP instrument is fundamentally customized to survey the type of subjective exploration and is all around recognized for its meticulousness and congruity. The tool evaluates a variety of qualitative study aspects, including the clarity of the research question, the suitability of the study's structure, the careful collection and evaluation of statistics, and the significance of the findings.

### **Strengths and Limitations**

The CASP tool gives several strengths:

- 1. Comprehensive Framework:** The framework provides a comprehensive method for evaluating specific qualitative study factors, ensuring a thorough evaluation (S Ding and S Deng, 2022).
- 2. Focus on Relevance and Rigor:** The text emphasizes the significance of the study's relevance and rigor, which may be useful for comparing qualitative research to other types of research.

However, the CASP tool also has some limitations:

- 1. Subjectivity in Qualitative Research:** The appraisal of qualitative investigations can roused by means of private surveys, and the CASP tool may not absolutely onto the intricate characteristics of qualitative facts.
- 2. Limited Applicability:** The tool can especially tailored for qualitative investigations and will not be appropriate for assessing quantitative or combined-approach research.

### **Application**

The CASP tool changed into utilised in this dissertation to evaluate pertinent qualitative research (Iness et al., 2022). This entailed comparing the research consistent with the requirements furnished via the device, which included the validity of the outcomes, the suitability of the approach, and the readability of the observe desires. To make certain the covered qualitative studies fulfilled strict criteria for pleasant and applicability, the assessment findings were referred to and condensed.

To make certain the included qualitative studies fulfilled strict standards for quality and applicability, the assessment findings can noted and condensed.

## 4.5 Evaluation of Qualitative Studies Using the CASP Tool

### Justification for Using the CASP Tool

The Critical assessment Skills Programme (CASP) instrument changed into chosen as the primary assessment approach for this dissertation which will investigate qualitative investigations. The CASP tool is an appropriate in shape for this assessment when you consider that its miles especially made to evaluate the calibre of qualitative research (Cowan-Williams, 2022). Qualitative research's clarity of studies subject matter, have a look at layout, information collection and analysis, and relevance and trustworthiness of findings can assessed with the aid of the tool. While the CASP tool is specially designed for qualitative studies and gives an in-depth framework for assessment, it may now not fully capture the complexities of qualitative records or be suitable for quantitative or mixed-approach studies.

### Strengths and Limitations of the CASP Tool

The CASP tool offers several strengths:

- 1. Comprehensive Framework:** The CASP device presents a detailed framework that covers key elements of qualitative studies, consisting of the study's goals, technique, data collection strategies, analysis, and findings. This comprehensive technique ensures that everyone relevant aspects of the study are taken into consideration within the appraisal technique.
- 2. Focus on Relevance and Rigor:** The method emphasizes the significance of the have a study relevance to the research query and the rigor of the information series and analysis techniques (Keen, Lomeli-Rodriguez and Joffe, 2022). This recognition is essential for assessing the fine of qualitative research, wherein the depth and richness of statistics are principal to knowledge the study's findings.
- 3. User-Friendly Format:** The CASP device is design to be user-friendly; with sincere questions that manual the appraisal procedure. This simplicity makes it accessible to researchers and enables ensure consistency inside the assessment of qualitative research.

However, the CASP tool also has limitations:

- 1. Subjectivity in Qualitative Research:** The appraisal of qualitative research may be inherently subjective, and the CASP tool may not significant the nuanced nature of qualitative statistics (Dong et al., 2023). The interpretation of findings and the intensity of evaluation are regions in which subjectivity can also influence the appraisal results.

**2. Limited Scope:** The CASP tool is specially design for qualitative studies and will not be suitable for comparing quantitative or mixed-method research. This constrained scope means that other appraisal gear would be need for a comprehensive overview that includes special method of research.

### **Evaluation of Qualitative Studies**

For this dissertation, numerous qualitative research had been review and appraised using the CASP device. The evaluation procedure involved assessing each study primarily based at the standards provided by using the CASP device, which includes the subsequent key areas:

**1. Research Aims and Question:** The readability and relevance of the research goals and questions had been assess. This entails figuring out whether or not the study's goals were virtually describe and whether they addressed a vast trouble associated with COVID-19 disparities among socioeconomic and demographic corporations.

**2. Study Design and Methodology:** The appropriateness of the have a study layout and methodology become evaluate (JC Digitale, K Stojanovski and CE McCulloch, 2021). This consists of inspecting whether or not the qualitative research layout (e.g., interviews, recognition groups, case studies) was suitable for addressing the studies query and whether the technique turned into rigorously carried out.

**3. Data Collection and Analysis:** The rigor of facts collection and analysis strategies became verify. This includes evaluating the strategies used to collect and analyse facts, which includes the techniques for ensuring the validity and reliability of the findings. For instance, have been the statistics series methods nicely documented and appropriate for the take study objectives? Were the information analysis techniques strong and systematic?

**4. Findings and Relevance:** The relevance and credibility of the findings have been teste. This includes determining whether the study's findings are service actually and whether or not they offer valuable insights into the disparities in COVID-19 consequences (Roy et al., 2021). The volume to which the findings make contributions to information the impact of socioeconomic and demographic elements changed into additionally assessed.

**5. Ethical Considerations:** The take a study adherence to ethical requirements become review. This includes comparing whether the studies accompanied moral hints for participant consent, confidentiality, and data managing.

## **Appraised Studies**

Several qualitative studies can identified and appraised for this dissertation. Each study can evaluated using the CASP tool to determine its quality and relevance (Monaghesh and Hajizadeh, 2020). The results of the appraisal are summarize in the characteristic tables and detailed in the appendix (see Appendix xxx).

For instance, one study examining the impact of socioeconomic factors on COVID-19 outcomes can appraised as follows:

### **Research Aims and Question:**

The targets of the study were well defined and pertinent to comprehending versions in COVID-19 results. Specific look at topics that tackled critical socioeconomic issue-associated issues can posed.

**Study Design and Methodology:** Semi-structured interviews were employ in the have a look at, which become a suitable method for mastering approximately the experiences and opinions of the individuals (Naz, Gulab and Aslam, 2022). The records collecting manner changed into nicely documented and the method become implement with rigour.

**Gathering and Analysing Data:** The techniques used to achieve the data have been well record, and the evaluation became methodical as properly. To find styles and subject matters inside the records, the study employed thematic evaluation.

**Findings and Relevance:** The results presented in an understandable manner and supplied insightful data on how socioeconomic variables affected COVID-19 effects (MM Rahman and GGMN Ali, 2021). The findings validated the study's conclusions, which had beneficial ramifications for public health policy.

**Ethical Considerations:** The look at complied with moral standards, taking the right precautions to make certain player anonymity and consent.

## **4.8 Chapter Summary**

This chapter included an intensive examination of the system of extracting and evaluating records for the dissertation on discrepancies related to COVID-19. It started the consultation by way of offering an outline of data extraction, explaining the system and specifying the information obtained from studies, which includes research design, sample characteristics, and

COVID-19 results. The chapter focused on the importance of seriously comparing research articles to ensure the dependability and accuracy of the outcomes used to analyse discrepancies.

The subsequent chapter focused on the utilisation of essential evaluation equipment, especially the CASP tool for qualitative investigations. The CASP device can chose for its complete assessment criteria, which encompass the evaluation of examine goals, technique, data accumulating, and analysis. The dissertation centred on the merits and boundaries of the CASP tool, emphasising its appropriateness for qualitative studies at the same time as recognising its constraints.

The chapter provided a concise overview of the assessment and outcomes of qualitative investigations. In the subsequent chapter, records evaluation and synthesis will integrate and interpret retrieved information to make considerable conclusions on COVID-19 discrepancies all through socioeconomic and demographic lessons. The next chapter will attention to integrating and interpreting the data accrued to draw meaningful conclusions about COVID-19 disparities throughout socioeconomic and demographic corporations.

## CHAPTER 5: DATA ANALYSIS AND SYNTHESIS

### 5.1 Introduction to Chapter

This chapter offers the data evaluation derived from the thematic analysis of decided on research related to disparities in COVID-19 effects amongst various socioeconomic and demographic businesses. The consciousness is on comparing the extracted statistics to identify patterns, trends, and key findings that contribute to information these disparities. The chapter also highlights the technique used for evaluation, the relevance of thematic evaluation in synthesizing records, and the way it aids in producing meaningful insights. By systematically examining the information, this chapter aims to offer a comprehensive knowledge of the results for public health policy.

### 5.2 Thematic Analysis

Income inequality in addition intensified the effect of COVID-19, as people with decreased earnings were much more likely to stand challenges in getting access to healthcare offerings and crucial assets. Education tiers also performed an important position, with individuals having decreased instructional attainment suffering more with expertise and making use of virtual fitness tools. To improve the validity of those findings, future studies have to remember to triangulate information with other resources, which include qualitative interviews or extra quantitative datasets, to offer extra complete information on the disparities determined. The thematic evaluation in this chapter is a situation of inherent subjectivity in coding and interpretation. To mitigate those boundaries, a rigorous coding method was employed, and multiple analysts have been concerned with reviewing the information to ensure accuracy and reliability.

### 5.3 Data Analysis Tool

The theme analysis approach developed by Braun and Clarke (2006) is used in this research to examine and synthesize data from selected studies. This framework consists of six steps: data familiarization, code generation, theme search, theme review, theme definition and naming, and report creation. Braun and Clarke's thorough study helps researchers find modest insights that reduce COVID-19 outcome differences. To cope with the racial and ethnic disparities highlighted, policymakers should remember to enforce culturally sensitive health teaching packages and increase funding for community fitness projects that target minority corporations. Additionally, policies have to awareness of reducing systemic racism in healthcare by enforcing stricter anti-discrimination policies and increasing the range of training for healthcare vendors.

#### **5.4 Characteristics of the identified studies**

Research on assessing disparities in COVID-19 effects among exceptional socioeconomic and demographic corporations has highlighted full-size inequalities across diverse countries, with a sturdy attention at the United States. Notably, seven studies from the U.S. Have furnished comprehensive insights into those disparities. For instance, Ossimetha et al. (2021) and Cheng and Li (2022) examined the pronounced racial and socioeconomic disparities in COVID-19 consequences, revealing how marginalized communities, especially African American and Hispanic populations, experienced better contamination and mortality quotes. Similarly, Kamaria Kaalund et al. (2022) in addition explored those inequalities, emphasizing the intersection of race, income, and access to healthcare, which exacerbated the impact of the pandemic on vulnerable corporations.

Beyond the U.S., worldwide studies have also shed light on this difficulty. For instance, Riou et al. (2021) performed research in Switzerland, uncovering considerable socioeconomic disparities in COVID-19 testing and mortality quotes, highlighting how wealthier populations had better get admission to testing and healthcare services. Meanwhile, Choukou et al. (2022) utilized records from multiple nations to study the effect of digital fitness literacy on inclined populations, emphasizing how low fitness literacy in addition marginalized those companies at some stage in the pandemic.

#### **5.5 Emerging Themes from included studies (Analysis/Synthesis of included studies)**

Commencing in late 2019, the COVID-19 epidemic rapidly escalated into a worldwide health catastrophe, resulting in the loss of millions of lives and inundating hospital systems around the globe. With almost 200 million inveterate cases and millions of deaths, the epidemic has exposed and exacerbated the inherent weaknesses of civilization. Rather than affecting all populations equally, the virus exhibited substantial disparities in health outcomes based on socioeconomic and demographic factors.

Socioeconomic and demographic inequities have had a significant impact on COVID-19 outcomes across the globe. Populations of lower socioeconomic position, racial and ethnic minorities, and those with limited access to healthcare have seen higher rates of infection, severe illness, and death. Several variables, including limited healthcare access, highly crowded living environments, the inability to work remotely, as well as pre-existing health concerns, have contributed to these different outcomes.



The resolution of these disparities is of utmost importance for public health policy, as the varying properties of COVID-19 on susceptible populations underscore the need for customized intervention. Viable public health interventions should include the socioeconomic factors that influence health outcomes and advocate for equitable availability of healthcare facilities, diagnostic tests, and immunizations.

*Table 2 Emerging Themes from included studies*

<b>Themes</b>	<b>Sub-Themes</b>	<b>Articles where it was extracted</b>
<b>Socioeconomic Disparities</b>	<b>Community Mobility Reduction:</b> Higher socioeconomic disadvantage correlated with less reduction in mobility during COVID-19 lockdowns.	Ossimetha et al. (2021)
	<b>Digital Health Literacy:</b> Vulnerable populations faced barriers in digital health literacy, exacerbating disparities.	Choukou et al. (2022)
	<b>Vaccination Rates:</b> Lower socioeconomic groups and minority races had lower vaccination rates.	Cheng and Li (2022)
	<b>Care Cascade:</b> Lower socioeconomic position linked with less access to COVID-19-related healthcare (testing, ICU, hospitalization, and mortality).	Riou et al. (2021)
	<b>Financial Instability:</b> Financial insecurity led to increased anxiety, depression, and inability to adhere to public health guidelines.	Patel et al. (2021)
	<b>Racial and Ethnic Disparities</b>	<b>COVID-19 Vaccination:</b> Hispanic and Black populations were less likely to receive COVID-19 vaccinations.
<b>COVID-19 Outcomes:</b> Black Americans had worse COVID-19 outcomes than White Americans, including higher rates of hospitalization, ICU admission, ventilator use, and death.		Poulson et al. (2020)
<b>Telemedicine Usage:</b> Black and Hispanic/Latino patients were less likely to use telemedicine services compared to White patients during the pandemic.		Chen, Andoh, and Nwanyanwu (2021)

	<b>Disparities in Testing:</b> Ethnic minorities had less access to COVID-19 testing and treatment, reflecting broader healthcare access disparities.	Bibbins-Domingo et al. (2021)
<b>Geographic Disparities</b>	<b>Urban vs. Rural:</b> Rural areas experienced higher COVID-19 mortality rates compared to urban areas, highlighting geographic health disparities.	Grome et al. (2022)
	<b>Regional Variations in Vaccination:</b> Variability in vaccination rates across different geographic regions, with rural areas generally showing lower rates.	Nguyen et al. (2021)
<b>Digital Divide</b>	<b>Digital Health Interventions:</b> Barriers such as low literacy and limited digital knowledge affected the adoption of digital health services in vulnerable populations.	Choukou et al. (2022)
	<b>Telehealth Adoption:</b> Disparities in telehealth adoption due to lack of access to technology and internet, particularly among low-income and elderly populations.	Fischer et al. (2020)
<b>Healthcare Access Inequities</b>	<b>Testing and Care Access:</b> Socioeconomic position influenced access to COVID-19 testing and care, with lower access among disadvantaged groups.	Riou et al. (2021)
	<b>Use of Disadvantage Indices:</b> Different disadvantage indices provided varying insights into social risk patterns, affecting equitable health policy implementation.	Kamaria Kaalund et al. (2022)
	<b>Hospital Admission Inequities:</b> Lower admission rates for minorities and lower socioeconomic status groups due to healthcare system biases.	Galiatsatos et al. (2020)
<b>Policy Implications</b>	<b>Health Policy:</b> Assessment of disadvantage indices is crucial to inform equitable health policies and address health disparities effectively.	Kamaria Kaalund et al. (2022)
	<b>Rural Health Policy:</b> COVID-19's impact on rural communities calls for tailored health policies to address unique rural health challenges.	Grome et al. (2022)
	<b>Policy Misinformation:</b> Spread of misinformation particularly impacted ethnic minorities and lower socioeconomic groups, complicating public health efforts.	Jamison et al. (2021)

<b>Impact on Vulnerable Populations</b>	<b>Elderly and Disabled Populations:</b> These groups faced heightened risks of COVID-19 due to underlying health conditions and limited access to digital healthcare resources.	Mello et al. (2020)
	<b>Migrant Workers:</b> Migrant workers faced severe health inequities due to crowded living conditions, lack of healthcare access, and higher rates of COVID-19 infection.	Wickramage et al. (2020)
	<b>Prison Populations:</b> Incarcerated individuals had higher COVID-19 infection rates due to overcrowded conditions and limited healthcare services within facilities.	Montoya-Barthelemy et al. (2020)
<b>Mental Health Disparities</b>	<b>Anxiety and Depression:</b> Increased rates of anxiety and depression among low-income groups due to financial instability and lack of access to mental health services during the pandemic.	Patel et al. (2021)
	<b>Substance Use:</b> Increase in substance use among marginalized populations due to stress and lack of access to mental health and substance use disorder treatment services during COVID-19.	McGinty et al. (2020)
	<b>Impact on Youth:</b> Young people from disadvantaged backgrounds faced increased mental health issues, exacerbated by school closures and lack of access to remote learning resources.	Golberstein et al. (2020)

(Table source- Self-created)

### **Theme 1: Socioeconomic Disparities and COVID-19 Outcomes**

The COVID-19 pandemic has not only exposed but also deepened current socioeconomic inequalities, particularly in phrases of community mobility, access to healthcare, and usual fitness results. Various studies have highlighted how those disparities occur, particularly among lower-income corporations, main to worse outcomes during the pandemic.

#### **Community Mobility Reduction and COVID-19 Growth across Socioeconomic Groups**

The reduction of community mobility vital for controlling the unfold of COVID-19 has had choppy effects across one-of-a-kind socioeconomic groups. Ossimetha et al. (2021) analyzed the effect of network mobility reduction on COVID-19 transmission in decrease-income groups. Their examine revealed that mobility discounts have been extensively less suggested

in economically deprived areas. This can be attributed to the fact that people in those groups regularly maintain jobs that cannot be performed remotely and rely closely on public transportation.

### **Socioeconomic Disparities in COVID-19 Testing, Hospitalization, and Mortality**

The association among socioeconomic status (SES) and access to healthcare has been a critical element in COVID-19 effects. Riou et al. (2021) conducted a detailed examination of ways decrease SES is associated with decreased get entry to COVID-19 testing, better hospitalization charges, and multiplied mortality. The take a look at discovered that individuals from decrease-income agencies had been less in all likelihood to receive timely checking out and care, which contributed to worse health results.

The implications of these findings are profound, as they highlight the systemic inequalities that pervade healthcare get admission also. During crises just like the COVID-19 pandemic, these inequalities turn out to be even extra said, leading to disproportionate suffering amongst decrease-income populations. The observe by means of Riou et al. (2021) emphasizes the importance of making sure equitable healthcare get entry to, specifically in times of crisis.

### **Impact of Socioeconomic Status on COVID-19-Related Care and Outcomes**

Further exploring the function of socioeconomic status in COVID-19 outcomes, Kanwal et al. (2022) investigated how decrease SES impacts get right of entry to COVID-19-related care and the ensuing fitness results. Their findings found out that individuals with decrease SES had been much less probably to get hold of comprehensive care, which includes in depth remedies like ventilatory aid.

### **Socioeconomic Position and Health Outcomes**

The intersectionality of socioeconomic status and health has been in addition illuminated by way of Grome et al. (2022), who targeted on COVID-19 effects amongst extraordinary socioeconomic businesses. Their observe observed that people in lower socioeconomic brackets had worse fitness results, consisting of better mortality quotes. These effects have been in large part pushed through pre-current fitness disparities, including higher charges of comorbidities in lower-income companies, which were exacerbated through the pandemic.

The findings from Grome et al. (2022) emphasize the importance of addressing social determinants of fitness in public fitness guidelines. The pandemic has shown that fitness

outcomes are not solely decided by way of biological factors however are also deeply encouraged via socioeconomic conditions.

## **Theme 2: Racial and Ethnic Disparities in COVID-19 Outcomes**

In the United States, the COVID-19 outbreak has highlighted the racial and ethnic disparities that exist across healthcare centres. These disparities have been visible in a variety of settings, inclusive of vaccination rates, hospitalization, mortality, and the availability of vital services consisting of telemedicine.

### **Disparities in COVID-19 Vaccination among Racial and Ethnic Groups**

A complete evaluation of racial and ethnic disparities in COVID-19 vaccination rates turned into carried out by Cheng and Li (2022), revealing full-size variations inside the popularity of vaccines throughout distinct ethnicities. Research findings discovered that Black and Hispanic populations had lower vaccination fees in comparison to White individuals. The lifestyles of this gap can be attributed to many factors, along with disinclination towards vaccination, demanding situations in getting access to healthcare offerings, and enduring lack of self-belief in the healthcare system.

### **Racial Disparities in COVID-19-Related Hospitalization, ICU Admission, and Mortality**

There has been a much reporting of racial disparities in COVID-19-associated hospitalization, intensive care unit admission, and mortality quotes; a complete research into those troubles was conducted by way of Poulson et al. (2020). Hospitalization and intensive care unit admission costs had been lots better for Black and Hispanic sufferers in comparison to White sufferers, in line with their study.

Complications with COVID-19 are more likely to arise in Black and Hispanic individuals since they may be already at a better danger of developing high blood pressure, diabetes, and obesity. Additional socioeconomic factors that get worse these disparities include decrease earnings and much less get right of entry to sufficient healthcare.

These findings emphasize the paramount need of public fitness tasks to get rid of healthcare inequities primarily based on race. The socioeconomic determinants of health, which play a role in these disparities, should be address, and healthcare establishments should to enforce bias-reduction education programs, as need to the supply of preventive care for minority populations.

## **Disparities in COVID-19 Mortality Rates between Rural and Urban Areas, Emphasizing Racial Factors**

The examine conducted via Grome et al. (2022) examined the disparities in COVID-19 mortality charges across rural and urban regions, with a specific emphasis on racial attributes. Their consequences indicated that ethnic minorities dwelling in rural regions had lots greater mortality quotes as compared to the ones in city areas.

Racial minorities residing in rural regions may have restrained availability of hospitals and healthcare centers, that are broadly speaking focused in city areas. This limited availability, in conjunction with a higher prevalence of persistent sicknesses inclusive of diabetes and heart disease, has performed a function within the improved mortality costs in those areas. The findings of Grome et al. (2022) emphasize the need of enforcing targeted public health applications that deal with the specific demanding situations confronted via rural areas, particularly those with big racial minority cohorts.

## **Impact of COVID-19 on Work Outcomes for Black and Hispanic Communities**

A comprehensive investigation by using Jason et al. (2023) tested the economic effect of COVID-19 on Black and Hispanic communities, revealing large disparities in employment results. There have study found out that these demographics had higher tiers of unemployment, decreased working hours, and economic volatility in comparison to White people.

The pandemic has worsened pre-present inequalities, leading to a disproportionate financial burden on Black and Hispanic groups. Given the large correlation among financial instability and worse health results, the loss of earnings and task security has had a greater said effect on health. The mentioned findings underscore the need of enforcing techniques that facilitate economic revival in marginalized regions.

## **Racial and Ethnic Disparities in Telemedicine Use during COVID-19**

While the COVID-19 pandemic has extended the usage of telemedicine, it has additionally uncovered huge racial and ethnic disparities within the availability and utilization of these services. A have a look at performed by way of Chen, Andoh, and Nwanyanwu (2021) tested those disparities and revealed that racial and ethnic minorities exhibited decrease costs of telemedicine use in comparison to Whites.

## **COVID-19 Outcomes among Different Racial Groups**

Researchers Kanwal et al. (2022) looked at racial variations in COVID-19 findings and found that minority groups, specifically Black and Hispanic individuals, face vast disparities. The study found that in comparison to White men and women, those businesses had worse outcomes, including higher prices of hospitalization, in depth care unit charge, and mortality. Many socioeconomic factors, healthcare accessibility, and preexisting conditions contribute to these disparities in health.

### **Theme 3: Digital Health and COVID-19**

The adoption of digital health technologies has been increased via the COVID-19 epidemic, consequently generating novel possibilities for remote get admission to healthcare services. Nevertheless, this speedy shift has exposed full-size deficiencies in digital fitness literacy, particularly amongst marginalized populations.

#### **Impact of Digital Health Literacy on Vulnerable Populations during COVID-19**

An investigation performed by Choukou et al. (2022) tested the effect of digital health literacy on susceptible populations inside the COVID-19 epidemic. Their study found out that individuals with insufficient virtual health literacy have been very much less willing to apply and get benefits from virtual health resources together with telemedicine, online health data, and digital symptom checkers.

#### **Barriers Faced by Vulnerable Populations in Utilizing Digital Health Tools**

Multiple obstacles have been diagnosed as elements that contribute to the demanding situations faced by using underprivileged corporations in using digital health solutions. A tremendous impediment is the lack of get right of entry to technology. Individuals from deprived socioeconomic conditions now and again face a lack of access to necessary technology, which include mobile telephones, tablets, and computer systems, in addition to reliable internet connections.

Racial and ethnic minorities face distinct boundaries, consisting of linguistic boundaries and a dearth of culturally congruent digital health services. Moreover, those demographics often have a profound lack of self-assurance in virtual healthcare services, which arises from beyond and ongoing encounters with unequal treatment and organized racism within the healthcare area.

In addition to getting access to technology, the complexity of digital fitness tools poses a large barrier. The lack of consumer-friendly interfaces and inadequate education deepen those troubles, in particular for older adults and people with restrained digital abilities.

## **Importance of Improving Digital Health Literacy**

In instances of crises like as the COVID-19 pandemic, it is specific vital to beautify individuals' digital health literacy to offer equitable healthcare get admission to for every person. Eliminating the obstacles that hinder marginalized populations from efficaciously the use of digital fitness technology is of maximum importance as these technologies evolve into essential components of healthcare provision.

Merely enforcing such initiatives is insufficient to motivate marginalized communities to use digital health answers; it is miles vital to set up believe as well. **Policies need to encompass the improvement of community-based virtual literacy packages that provide hands-on education and resources for underserved populations. Additionally, partnerships with local businesses can assist bridge the digital divide by providing necessary technology and internet access.**

## **Theme 4: COVID-19 and Public Health Policy**

The COVID-19 pandemic has delivered to slight the essential want for facts-driven and equitable public fitness rules that cope with the disparities among awesome socioeconomic and racial businesses. Several studies have underscored the importance of focused interventions and using population-level information to guide those guidelines successfully.

### **Assessment of Population-Level Disadvantage Indices for Guiding Public Health Policy during COVID-19**

Kamaria Kaalund et al. (2022) emphasized the significance of the usage of populace-degree drawback indices to guide public health policy at some stage in the COVID-19 pandemic. These indices, which compile various socioeconomic and health-associated factors, are essential for identifying businesses at higher danger of detrimental outcomes.

### **Implications of Racial Disparities in COVID-19 for Public Health Policy**

Racial disparities in COVID-19 outcomes have massive implications for public health coverage, as highlighted with the resource of Poulson et al. (2020). Their findings underscore the disproportionate impact of the pandemic on racial and ethnic minorities, who have professional higher charges of infection, hospitalization, and loss of life.

To cope with those disparities, public health regulations ought to be tailored to meet the precise needs of racial and ethnic minorities. This consists of making sure equitable get right of entry



to healthcare offerings, together with testing, treatment, and vaccination, in addition to addressing the wider social determinants of health that make contributions to these inequalities.

### **Policy Recommendations for Economic Recovery of Marginalized Populations During the Pandemic**

The monetary fallout from the COVID-19 pandemic has disproportionately affected marginalized populations, especially those from lower socioeconomic backgrounds. Jason et al. (2023) provided coverage recommendations for the financial restoration of these populations, emphasizing the significance of targeted monetary rules.

A multi-faceted method is necessary to deal with the monetary disparities highlighted by way of the pandemic. For example, activity introduction packages centered on sectors that are accessible to low-profits workers can assist mitigate the effect of process losses and monetary instability.

### **Implications of Telemedicine Use Disparities on Healthcare Policy**

The speedy adoption of telemedicine during the COVID-19 pandemic has highlighted tremendous disparities in get entry to digital healthcare offerings. Chen, Andoh, and Nwanyanwu (2021) explored the implications of these disparities for healthcare policy, noting that racial and ethnic minorities, in addition to people from decrease socioeconomic backgrounds, were less probable to make use of telemedicine offerings.

## **5.6 Chapter Summary**

This chapter analyzed the data from studies on socioeconomic and racial disparities in COVID-19 outcomes using thematic analysis. It identified three key themes: socioeconomic disparities, racial and ethnic disparities, and digital health inequalities. The analysis revealed how economic constraints, racial biases, and gaps in digital health literacy exacerbated the impact of the pandemic on marginalized groups. The findings underscore the need for centred public fitness interventions to cope with these disparities and enhance healthcare get entry to and outcomes for vulnerable populations. The chapter highlights the importance of equitable health rules and interventions to mitigate the pandemic's disproportionate effects.



## Chapter 6: Discussion

### 6.1 Introduction to Chapter

The essential findings from the systematic literature evaluation on COVID-19 disparities across socioeconomic and ethnic corporations can mentioned intensive on this chapter. Disparities in socioeconomic reputation, racial and ethnic variations, and the significance of digital fitness are only some of the critical topics, which have been diagnose within the studies that has been discussed. To focus on consistency, deviations, and new insights, every concern will be critically analyzed and as compared to existing evidence. The dialogue may even address the limitations of the research method and its implications for public fitness coverage and future research.

### 6.2 Discussion of Key Findings

#### 6.2.1 Socioeconomic Disparities and COVID-19 Outcomes

##### *6.2.1.1 Community Mobility Reduction and COVID-19 Growth Across Socioeconomic Groups*

The findings of Ossimetha et al. (2021) demonstrate that mobility reduction changed into much less effective in lower-earnings groups, main to a better charge of COVID-19 transmission. This remark aligns with present studies, which has continuously proven that economically deprived populations face more boundaries in adhering to public health guidelines, including mobility restrictions, due to their socioeconomic constraints (Marmot et al., 2020).

However, what is particularly placing in the findings is the quantity to which these socioeconomic factors immediately influenced the unfold of COVID-19. While preceding studies have highlighted those demanding situations, the pointy evaluation in contamination costs among low-earnings and higher-profits agencies all through intervals of mobility regulations underscores the severity of those disparities (Bailey et al., 2020). **Systemic limitations together with insufficient public fitness sources and important services have deepened disparities in mobility reduction. Structural inequalities and systemic racism have confined the effectiveness of mobility regulations in decrease-income groups, in which pre-existing social and monetary dangers hindered adherence and enforcement.**

##### *6.2.1.2 Socioeconomic Disparities in COVID-19 Testing, Hospitalization, and Mortality*

Riou et al. (2021) recognized a clean link between lower socioeconomic repute (SES) and decreased get entry to COVID-19 testing, higher hospitalization fees, and accelerated mortality.

These findings are constant with earlier studies indicating that SES is a giant determinant of fitness effects, with decrease SES related to poorer access to healthcare offerings (Adler et al., 2016).

The elevated hospitalization and mortality prices in decrease SES organizations may be attributing to a combination of factors, which includes behind schedule get entry to care, higher prevalence of comorbidities, and limited health literacy. This aligns with established theories on the social determinants of health, which posit that socioeconomic elements appreciably impact fitness effects (Braveman & Gottlieb, 2014). Systemic racism and structural inequalities have substantially impacted COVID-19 checking out and remedy. Institutional biases, which include ancient mistrust and discriminatory practices, have resulted in decreased testing availability and lower fines to take care of marginalized corporations, leading to higher hospitalization and mortality costs.

#### ***6.2.1.3 Impact of Socioeconomic Status on COVID-19-Related Care and Outcomes***

Kanwal et al. (2022) found that people with lower SES were less probably to acquire comprehensive COVID-19-related care, leading to worse fitness effects, together with higher mortality costs. This is steady with existing evidence that highlights the position of socioeconomic factors in figuring out access to healthcare and subsequent health results (Bambra et al., 2020). The disparities in care are particularly obvious inside the provision of extensive remedies, together with ventilatory support, which had been less reachable to decrease-income companies.

Socioeconomic status has been a key determinant of COVID-19 results, with disparities in healthcare access to and great persistence because of systemic problems. Limited access to healthcare facilities and decreased insurance coverage in lower-earnings populations contributed to detrimental consequences, no matter worldwide efforts to cope with those disparities.

### **6.2.2 Racial and Ethnic Disparities**

#### ***6.2.2.1 Disparities in COVID-19 Vaccination among Racial and Ethnic Groups***

Cheng and Li (2022) highlighted tremendous disparities in COVID-19 vaccination charges among racial and ethnic companies, especially noting that Black and Hispanic groups had decrease vaccination prices compared to White populations. These findings are steady with existing literature on vaccine hesitancy and get admission to disparities amongst racial and ethnic minorities (Quinn et al., 2019).

The lower vaccination costs in minority populations present a enormous task to attaining herd immunity and controlling the spread of COVID-19. This locating is constant with theories on health behaviour, which recommend that believe and accessibility are important determinants of vaccine uptake (Rosenstock et al., 1988). **Systemic discrimination and historic distrust have inspired vaccine hesitancy among racial and ethnic minorities. Structural barriers which include limited entry to vaccination websites and transportation, combined with incorrect information and cultural variations, have exacerbated disparities in vaccination charges.**

#### ***6.2.2.2 Racial Disparities in COVID-19-Related Hospitalization, ICU Admission, and Mortality***

The findings of Poulson et al. (2020) on racial disparities in COVID-19-associated hospitalization, ICU admission, and mortality rates align with present evidence that racial minorities, particularly Black and Hispanic people, are much more likely to revel in severe COVID-19 results (Mackey et al., 2021). These disparities are regularly attributed to an aggregate of socioeconomic elements, higher prices of pre-current fitness situations, and systemic racism inside the healthcare system.

The higher quotes of hospitalization and ICU admission among racial minorities can be related to the better occurrence of comorbidities, which include high blood pressure, diabetes, and obesity in those populations, that have been identified as chance elements for extreme COVID-19 results (Williams et al., 2016). Moreover, the increased mortality costs among those groups spotlight the compounded effect of those factors, suggesting that the intersection of race and SES plays a vital position in health effects all through the pandemic.

**Racial disparities in COVID-19 results are fashioned with the aid of systemic racism and socioeconomic factors. Higher rates of comorbidities, inadequate healthcare access, and discrimination contribute to extreme outcomes among racial minorities, requiring advanced access to and decreased systemic biases.**

#### ***6.2.2.3 Disparities in COVID-19 Mortality Rates between Rural and Urban Areas, Emphasizing Racial Factors***

Grome et al. (2022) explored the disparities in COVID-19 mortality costs between rural and concrete regions, with a focus on racial factors. Their findings suggest that racial minorities in rural regions confronted better mortality rates as compared to those in urban settings, which aligns with current studies on healthcare get entry to disparities between rural and urban populations (Rural Health Information Hub, 2020). Rural regions regularly have restrained

healthcare infrastructure, fewer healthcare vendors, and better charges of poverty, which can exacerbate fitness disparities in the course of a virus.

Rural-urban disparities in COVID-19 mortality are compounded through racial elements. In rural regions with predominantly minority populations, restricted healthcare infrastructure and access to issues exacerbate the impact of racial disparities, highlighting the need for targeted interventions.

#### ***6.2.2.4 Impact of COVID-19 on Work Outcomes for Black and Hispanic Communities***

Jason et al. (2023) discovered that Black and Hispanic communities skilled better quotes of task loss, reduced paintings hours, and financial instability as compared to White people for the duration of the pandemic. These findings are consistent with existing studies that highlights the disproportionate economic effect of COVID-19 on racial minorities, who are overrepresented in low-salary jobs and industries that were seriously affected by the pandemic (Gould & Wilson, 2020).

COVID-19 disproportionately impacted work outcomes for Black and Hispanic communities due to structural inequalities in the hard work marketplace. The lack of remote work possibilities and pre-current financial disparities brought about extended publicity and monetary instability for these businesses.

### **6.2.3 Digital Health and COVID-19**

#### ***6.2.3.1 Impact of Digital Health Literacy on Vulnerable Populations during COVID-19***

Choukou et al. (2022) highlighted the effect of digital health literacy on vulnerable populations at some point of the pandemic, finding that individuals with lower virtual literacy have been much less possibly to get admission to an advantage from digital health offerings. This locating is steady with existing studies that identifies virtual literacy as a essential determinant of get right of entry to telehealth and other virtual fitness offerings (Van Deursen & Helsper, 2015). The digital divide, especially amongst low-earnings and racial minority populations, has been a longstanding difficulty, and the pandemic has in addition exacerbated these disparities.

However, the study also increases questions about the scalability of virtual fitness interventions. While virtual health has the capacity to improve healthcare access, mainly in underserved areas, the findings endorse that there are large obstacles that need to be addressee to make sure equitable access. Digital health literacy disparities affected inclined populations' capacity to get admission to COVID-19 sources. Limited access to era and virtual abilities

impeded access to telehealth, online offerings, and fitness information, necessitating stepped-forward access and literacy aid.

#### 6.2.4 Critique of Research Approach and Limitations

The studies presented in this discussion have highlighted considerable disparities in COVID-19 outcomes based totally on socioeconomic reputation, race, and ethnicity. While the findings are regular with present research, numerous boundaries must be considered. First, much of the research relies on observational information, which could restrict the potential to set up causal relationships. Additionally, the hastily evolving nature of the pandemic manner that a number of the findings can be old or might not completely seize the long-term affects' of COVID-19 on distinct populations.

Reviewed studies confronted boundaries along with capacity data collection biases and issues with generalizability. Rapidly converting pandemic situations additionally impacted information reliability, emphasizing the need for greater inclusive and adaptable research techniques to address those barriers.

#### 6.3 Strengths and Limitations

**Strengths:** The systematic literature review (SLR) affords a complete evaluation of disparities in COVID-19 consequences across socioeconomic and ethnic companies, offering valuable insights into how those disparities show up and persist. By synthesizing a extensive range of research, the evaluation highlights steady styles and issues, together with the heightened impact of socioeconomic status on fitness effects and the significant racial disparities in vaccination quotes.

**Limitations:** Despite its strengths, the SLR has notable limitations. The reliance on observational studies means that causal relationships between socioeconomic and racial factors and COVID-19 effects may not be firmly installed. Additionally, the rapid evolution of the pandemic and the variety in study methodologies may have an effect on the consistency and timeliness of the findings.

The chapter reveals huge disparities in COVID-19 outcomes connected to socioeconomic reputation and race, driven by systemic problems and structural inequalities. Addressing those disparities calls for focused interventions, coverage reforms, and further research to mitigate the impact and promote health equity.

## **6.4 Chapter Summary**

This chapter seriously examined the disparities in COVID-19 consequences among exclusive socioeconomic and ethnic companies. It became determined that decrease-profits communities and racial minorities faced considerably worse results, which include higher infection rates, hospitalization, and mortality. The discussion highlighted the need for focused public health interventions and policy reforms to address those disparities. Limitations in the studies had been diagnosed, including reliance on observational data and ability biases, and regions for destiny research had been counselled to enhance expertise and inform equitable health strategies.



## Chapter 7: Recommendations and Conclusion

### 7.1 Introduction to Chapter

This chapter gives suggestions and conclusions based at the assessment of disparities in COVID-19 effects among specific socioeconomic and ethnic companies. It outlines key implications of the findings, providing actionable insights for public health policy and exercise. The chapter can divide into 3 sections: first, it discusses the results of the disparities diagnosed, emphasizing the want for centred interventions and systemic changes. Next, it affords realistic tips for addressing those disparities via advanced healthcare access, financial assist, and tailored communication n techniques. Finally, it shows areas for future research to deepen understanding and enhance health fairness, collectively with the want for longitudinal studies and progressive interventions.

### 7.2 Implications of Findings

The findings underscore sizable disparities in COVID-19 outcomes across socioeconomic and ethnic agencies, with profound implications for public health policy. Elevated charges of infection, hospitalization, and mortality among decrease-profits and racial minority organizations highlight systemic inequities that require targeted intervention. These disparities factor to crucial boundaries, together with insufficient housing, overcrowded residing conditions, and confined get right of access to a ways off work, which exacerbate health dangers in those businesses. Furthermore, the decrease vaccination costs and decreased get right of entry to healthcare services in those businesses reveal underlying structural inequities within the healthcare system. **The Intersectionality of socioeconomic status, race, and different factors notably shapes fitness results. Understanding those intersections reveals how compounded risks worsen disparities. For example, decrease-profits Black and Hispanic individuals face unique limitations that intersect with both racial and monetary inequalities, influencing their COVID-19 results.**

### 7.3 Recommendations for Practice

To effectively address the disparities diagnosed, several practical suggestions are crucial. Public healths organizations want to prioritize centred outreach applications to enhance healthcare get right of entry to in low-income and minority groups. This ought to encompass deploying cell attempting out units and employing community medical examiners to facilitate get right of entry to checking out and care.

Additionally, increasing digital health literacy through devoted education applications can help bridge the distance in telehealth offerings, ensuring that more people can benefit from faraway consultations and assets. Policies ought to additionally recognition on offering monetary aid to affected communities, such as monetary assistance and process protection measures, to relieve the socioeconomic impact of fitness crises. **Incorporate interdisciplinary views, together with those from sociology and anthropology, to improve information on the cultural and social elements affecting fitness disparities. This technique can offer deeper insights into network-specific demanding situations and help tailor greater powerful interventions.**

#### **7.4 Recommendations for Future Research**

Future studies ought to goal to offer a greater nuanced knowledge of the factors contributing to disparities in COVID-19 effects. Detailed studies are had to discover how socioeconomic status intersects with race, focusing on variables such as employment type, housing nice, and get entry to healthcare. This granular analysis will help uncover the unique mechanisms thru which those factors impact fitness consequences. Longitudinal research are essential for assessing the lengthy-time period impacts of the pandemic on various populations, including how those disparities evolve through the years. Additionally, evaluating the effectiveness of centered public fitness interventions and policy changes is critical to determine which strategies most efficaciously mitigate disparities.

**Future studies should explore the long-term effects of the disparities recognized, inclusive of capability shifts in health results and socioeconomic effects through the years. Emerging tendencies and styles should be tested to recognize how these disparities evolve, informing destiny interventions and policies. Ethical implications of disparities in COVID-19 consequences have to be considered. Addressing those disparities involves not only effectively correcting systemic inequities but also making sure that interventions recognize the rights and dignity of affected populations.**

#### **7.5 Conclusion**

This study, titled "Assessing the Disparities in COVID-19 Outcomes Among Different Socioeconomic and Demographic Groups and Implications for Public Health Policy," aimed to investigate how socioeconomic and demographic factors impact disparities in COVID-19 effects. The important studies question became: How do socioeconomic and demographic factors impact the disparities in COVID-19 results, especially in phrases of mental health demanding situations, and what are the consequences for public health policy?

The study findings discovered widespread disparities in COVID-19 results amongst various socioeconomic and demographic corporations. Lower-earnings and racial minority organizations skilled better charges of infection, hospitalization, and mortality. These disparities had been attributed to systemic barriers which include inadequate housing, overcrowded residing conditions, restricted get right of entry to to far off work, and reduced get admission to healthcare offerings. Additionally, mental health demanding situations were greater mentioned in these agencies, exacerbating the overall effect of the pandemic.

The significance of those consequences lies in highlighting essential inequities inside the healthcare system and broader social determinants of fitness. The extended danger confronted by way of vulnerable populations underscores the pressing want for focused public fitness interventions and systemic reforms. The findings emphasize that addressing those disparities calls for a multifaceted approach, incorporating upgrades in healthcare get entry to, financial aid, and tailored fitness verbal exchange techniques. This holistic approach is crucial for mitigating the impact of modern-day and future health crises and reaching extra fitness fairness.

This study underscores the want for complete public fitness techniques that deal with both immediate and systemic factors contributing to health disparities. By improving healthcare access, improving economic balance, and addressing broader social determinants of fitness, policymakers can better guide prone populations and work closer to decreasing fitness inequities. Future research has to continue to explore those disparities, specializing in distinctive and lengthy-time period analyses to refine interventions and guidelines. Ultimately, a concerted attempt to deal with those disparities can be critical in fostering a more equitable and resilient public health system.

The study's findings align with different research on health disparities, highlighting persistent inequities throughout diverse contexts. Analyzing those connections can provide a broader angle on how socioeconomic and racial elements affect fitness effects.

## Reference list

- Ambrus, A., Field, E. and Gonzalez, R. (2020). Loss in the Time of Cholera: Long-Run Impact of a Disease Epidemic on the Urban Landscape. *American Economic Review*, [online] 110(2), pp.475–525. Available at: <http://economics.mit.edu/files/10841/>.
- Arumugam, V., MacDermid, J.C., Walton, D. and Grewal, R. (2023). Understanding the Experiences of Clinicians Accessing Electronic Databases to Search for Evidence on Pain Management Using a Mixed Methods Approach. *Healthcare*, [online] 11(12), p.1728. Available at: <https://www.mdpi.com/2227-9032/11/12/1728>.
- Azar, K.M.J., Shen, Z., Romanelli, R.J., Lockhart, S.H., Smits, K., Robinson, S., Brown, S. and Pressman, A.R. (2020). Disparities In Outcomes Among COVID-19 Patients In A Large Health Care System In California. *Health Affairs*, [online] 39(7), p.10.1377/hlthaff. Available at: <https://www.healthaffairs.org/doi/10.1377/hlthaff.2020.00598>.
- Baker, M.G., Peckham, T.K. and Seixas, N.S. (2020). Estimating the burden of United States workers exposed to infection or disease: A key factor in containing risk of COVID-19 infection. *PLOS ONE*, [online] 15(4), p.e0232452. Available at: <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0232452>.
- Bambra, C. (2022). *COVID-19 mortality and deprivation: pandemic, syndemic, and endemic health inequalities*. [online] Available at: [https://www.thelancet.com/pdfs/journals/lanpub/PIIS2468-2667\(22\)00223-7.pdf](https://www.thelancet.com/pdfs/journals/lanpub/PIIS2468-2667(22)00223-7.pdf).
- Barr-Anderson, D.J., Hazzard, V.M., Hahn, S.L., Folk, A.L., Wagner, B.E. and Neumark-Sztainer, D. (2021). Stay-at-Home Orders during COVID-19: The Influence on Physical Activity and Recreational Screen Time Change among Diverse Emerging Adults and Future Implications for Health Promotion and the Prevention of Widening Health Disparities. *International Journal of Environmental Research and Public Health*, [online] 18(24), p.13228. Available at: <https://www.mdpi.com/1660-4601/18/24/13228>.
- Bolaños, F., Salatino, A., Osborne, F. and Motta, E. (2024). *Artificial Intelligence for Literature Reviews: Opportunities and Challenges*. [online] Available at: <https://arxiv.org/pdf/2402.08565>.

Bottino, F., Tagliente, E., Pasquini, L., Napoli, A.D., Lucignani, M., Figà-Talamanca, L. and Napolitano, A. (2021). COVID Mortality Prediction with Machine Learning Methods: A Systematic Review and Critical Appraisal. *Journal of Personalized Medicine*, [online] 11(9), p.893. Available at: <https://www.mdpi.com/2075-4426/11/9/893>.

Büchter, R.B., Weise, A. and Pieper, D. (2021). Reporting of methods to prepare, pilot and perform data extraction in systematic reviews: analysis of a sample of 152 Cochrane and non-Cochrane reviews. *BMC Medical Research Methodology*, [online] 21(1). Available at: <https://link.springer.com/article/10.1186/s12874-021-01438-z>.

Cabrera, D., Cabrera, L. and Cabrera, E. (2023). The Steps to Doing a Systems Literature Review (SLR). *Journal of Systems Thinking Preprints*. [online] Available at: [https://www.scienceopen.com/document\\_file/022953c9-0797-4d30-a8cd-b301bff8e331/ScienceOpenPreprint/SLR%201.pdf](https://www.scienceopen.com/document_file/022953c9-0797-4d30-a8cd-b301bff8e331/ScienceOpenPreprint/SLR%201.pdf).

Carrera-Rivera, A., Ochoa, W., Larrinaga, F. and Lasa, G. (2022). How-to Conduct a Systematic Literature review: a Quick Guide for Computer Science Research. *MethodsX*, [online] 9(1), p.101895. Available at: <https://www.sciencedirect.com/science/article/pii/S2215016122002746>.

Chapman, A., Simperl, E., Koesten, L., Konstantinidis, G., Ibáñez, L.-D., Kacprzak, E. and Groth, P. (2019). Dataset search: a survey. *The VLDB Journal*, [online] 29(1), pp.251–272. Available at: [https://link.springer.com/article/10.1007/s00778-019-00564-x?wt\\_mc=Internal.Event.1.SEM.ArticleAuthorOnlineFirst&utm\\_source=ArticleAuthorContributingOnlineFirst&utm\\_medium=email&utm\\_content=AA\\_en\\_06082018&ArticleAuthorContributingOnlineFirst\\_20190827](https://link.springer.com/article/10.1007/s00778-019-00564-x?wt_mc=Internal.Event.1.SEM.ArticleAuthorOnlineFirst&utm_source=ArticleAuthorContributingOnlineFirst&utm_medium=email&utm_content=AA_en_06082018&ArticleAuthorContributingOnlineFirst_20190827).

Chatterjee, S.C. and Chatterjee, D. (2022). *Covid-19, Older Adults and the Ageing Society*. [online] [library.oapen.org](https://library.oapen.org). Taylor & Francis. Available at: <https://library.oapen.org/handle/20.500.12657/61158>.

Correia, M.I.T.D. (2023). Ethics in research. *Clinical Nutrition Open Science*, [online] 47, pp.121–130. Available at: <https://www.sciencedirect.com/science/article/pii/S2667268522000705>.

Corrin, L., Thompson, K., Hwang, G.-J. and Lodge, J.M. (2022). The importance of choosing the right keywords for educational technology publications. *Australasian Journal of Educational Technology*, [online] 38(2), pp.1–8. Available at: <https://ajet.org.au/index.php/AJET/article/download/8087/1884/26485>.

Cowan-Williams, G.A. (2022). An exploration of the social and cultural functions of drinking alcohol within the home for professional middle-aged women: implications for public health. *chesterrep.openrepository.com*. [online] Available at: <https://chesterrep.openrepository.com/handle/10034/627817>.

Dong, L., Katsiris, A., Lecompte, M., Skrotzki, C. and Yang, L. (2023). A Qualitative Analysis of Older Adults' Cognitive Appraisal in Coping during the COVID-19 Pandemic: The Role of Social Capital. *COVID*, [online] 3(10), pp.1622–1638. Available at: <https://www.mdpi.com/2673-8112/3/10/111>.

Fain, C. (2021). Systemic Racism and Minority Disparities in Health Care. *The Bridge: Interdisciplinary Perspectives on Legal & Social Policy*, [online] 6(3). Available at: <https://digitalscholarship.tsu.edu/thebridge/vol6/iss3/1/>.

Fan, W., Zhang, Y., Chen, N. and Nie, W. (2024). A Review of Rural Land Capitalization: Current Status and Further Research. *Land*, [online] 13(3), pp.401–401. Available at: <https://www.mdpi.com/2073-445X/13/3/401>.

Fatima, H., Zartashia Kynat Javaid, Arshad, Z., Ashraf, M. and Hina Batool (2024). A Systematic Review on the Impact of Remote Work on Employee Engagement. *Bulletin of business and economics*, [online] 13(2), pp.117–126. Available at: <https://bbejournal.com/BBE/article/view/812>.

Fitero, A., Bungau, S.G., Tit, D.M., Endres, L., Khan, S.A., Bungau, A.F., Romanul, I., Vesa, C.M., Radu, A.-F., Tarce, A.G., Bogdan, M.A., Nechifor, A.C. and Negrut, N. (2022). Comorbidities, Associated Diseases, and Risk Assessment in COVID-19—A Systematic Review. *International Journal of Clinical Practice*, [online] 2022, pp.1–24. Available at: <https://onlinelibrary.wiley.com/doi/abs/10.1155/2022/1571826>.

Galea, S. and Abdalla, S.M. (2020). COVID-19 pandemic, unemployment, and civil unrest. *JAMA*, [online] 324(3), pp.227–228. Available at:  
<https://jamanetwork.com/journals/jama/article-abstract/2767354>.

Galea, S., Merchant, R.M. and Lurie, N. (2020). The Mental Health Consequences of COVID-19 and Physical Distancing: the Need for Prevention and Early Intervention. *JAMA Internal Medicine*, [online] 180(6), pp.817–818. Available at:  
<https://jamanetwork.com/journals/jamainternalmedicine/fullarticle/2764404>.

Gebrie, M., Perry, L., Xu, X., Kassa, A. and Cruickshank, M. (2023). Nutritional status and its determinants among adolescents with HIV on anti-retroviral treatment in low- and middle-income countries: a systematic review and meta-analysis. *BMC Nutrition*, [online] 9(1). Available at:  
<https://opus.lib.uts.edu.au/bitstream/10453/176275/2/Nutritional%20status%20and%20its%20determinants%20among%20adolescents%20with%20HIV%20on%20anti-retroviral%20treatment%20in%20low-and%20middle-income%20countries%3A%20a%20systematic%20review%20and%20meta-analysis.pdf>.

Gu, T., Mack, J.A., Salvatore, M., Prabhu Sankar, S., Valley, T.S., Singh, K., Nallamothe, B.K., Kheterpal, S., Lisabeth, L., Fritsche, L.G. and Mukherjee, B. (2020). Characteristics Associated With Racial/Ethnic Disparities in COVID-19 Outcomes in an Academic Health Care System. *JAMA Network Open*, [online] 3(10), p.e2025197. Available at:  
<https://jamanetwork.com/journals/jamanetworkopen/article-abstract/2771935>.

Gusenbauer, M. and Haddaway, N.R. (2020). Which Academic Search Systems Are Suitable for Systematic Reviews or meta-analyses? Evaluating Retrieval Qualities of Google Scholar, PubMed, and 26 Other Resources. *Research Synthesis Methods*, [online] 11(2), pp.181–217. Available at: <https://onlinelibrary.wiley.com/doi/abs/10.1002/jrsm.1378>.

Häfliger, C., Diviani, N. and Rubinelli, S. (2023). Communication inequalities and health disparities among vulnerable groups during the COVID-19 pandemic - a scoping review of qualitative and quantitative evidence. *BMC Public Health*, [online] 23(1). Available at:  
<https://bmcpublichealth.biomedcentral.com/articles/10.1186/s12889-023-15295-6>.

Hasson, R., Sallis, J.F., Coleman, N., Kaushal, N., Nocera, V.G. and Keith, N. (2021). COVID-19: Implications for Physical Activity, Health Disparities, and Health Equity.

*American Journal of Lifestyle Medicine*, [online] 16(4), p.155982762110292. Available at: <https://journals.sagepub.com/doi/abs/10.1177/15598276211029222>.

Herlitz, L., MacIntyre, H., Osborn, T. and Bonell, C. (2020). The sustainability of public health interventions in schools: a systematic review. *Implementation Science*, [online] 15(1). Available at: <https://link.springer.com/article/10.1186/s13012-019-0961-8>.

Hou, T. and Wang, V. (2024). Industrial Espionage – a Systematic Literature Review (SLR). *Computers & Security*, [online] 98, p.102019. Available at: <https://www.sciencedirect.com/science/article/pii/S0167404820302923>.

Hughes, G.D., Mbamalu, O.N., Okonji, C.O. and Puoane, T.R. (2021). The Impact of Health Disparities on COVID-19 Outcomes: Early Findings from a High-Income Country and Two Middle-Income Countries. *Journal of Racial and Ethnic Health Disparities*. [online] Available at: <https://link.springer.com/article/10.1007/s40615-021-00999-5>.

Iness, A.N., Abaricia, J.O., Sawadogo, W., Iness, C.M., Duesberg, M., Cyrus, J. and Prasad, V. (2022). The effect of hospital visitor policies on patients, their visitors, and healthcare providers during the COVID-19 pandemic: a systematic review. *The American Journal of Medicine*, [online] 135(10). Available at: <https://www.sciencedirect.com/science/article/pii/S0002934322003382>.

JC Digitale, K Stojanovski and CE McCulloch (2021). *Study Designs to Assess Real-World Interventions to Prevent COVID-19*. [online] Available at: <https://www.frontiersin.org/articles/10.3389/fpubh.2021.657976/full>.

Jordan, R.E., Adab, P. and Cheng, K.K. (2020). Covid-19: Risk factors for severe disease and death. *BMJ*, [online] 368, p.m1198. Available at: <https://www.bmj.com/content/368/bmj.m1198.long>.

Keen, S., Lomeli-Rodriguez, M. and Joffe, H. (2022). From Challenge to Opportunity: Virtual Qualitative Research During COVID-19 and Beyond. *International Journal of Qualitative Methods*, [online] 21, p.160940692211050. Available at: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9167989/>.

Khanijahani, A., Iezadi, S., Gholipour, K., Azami-Aghdash, S. and Naghibi, D. (2021). A systematic review of racial/ethnic and socioeconomic disparities in COVID-19. *International*



*Journal for Equity in Health*, [online] 20(1). Available at:  
<https://link.springer.com/article/10.1186/s12939-021-01582-4>.

Khanijahani, A., Iezadi, S., Gholipour, K., Azami-Aghdash, S. and Naghibi, D. (2021). A systematic review of racial/ethnic and socioeconomic disparities in COVID-19. *International Journal for Equity in Health*, [online] 20(1). Available at:  
<https://equityhealthj.biomedcentral.com/articles/10.1186/s12939-021-01582-4>.

Lobe, B., Morgan, D. and Hoffman, K.A. (2020). Qualitative Data Collection in an Era of Social Distancing. *International Journal of Qualitative Methods*, [online] 19(2). Available at:  
<https://journals.sagepub.com/doi/10.1177/1609406920937875>.

Magesh, S., John, D., Li, W.T., Li, Y., Mattingly-app, A., Jain, S., Chang, E.Y. and Ongkeko, W.M. (2021). Disparities in COVID-19 Outcomes by Race, Ethnicity, and Socioeconomic Status. *JAMA Network Open*, [online] 4(11), p.e2134147. Available at:  
<https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2785980>.

Marmot, M. and Allen, J. (2020). COVID-19: Exposing and Amplifying Inequalities. *Journal of Epidemiology and Community Health*, [online] 74(9), p.jech-2020-214720. Available at:  
<https://jech.bmj.com/content/74/9/681.abstract>.

Miller, A.R., Charepoo, S., Yan, E., Frost, R.W., Sturgeon, Z.J., Gibbon, G., Balius, P.N., Thomas, C.S., Schmitt, M.A., Sass, D.A., Walters, J.B., Flood, T.L. and Schmitt, T.A. (2022). Reliability of COVID-19 data: An evaluation and reflection. *PLOS ONE*, [online] 17(11), p.e0251470. Available at:  
<https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0251470>.

Mishra, V., Seyedzenouzi, G., Almohtadi, A., Chowdhury, T., Khashkhusa, A., Axiaq, A., Wong, W.Y.E. and Harky, A. (2021). Health Inequalities During COVID-19 and Their Effects on Morbidity and Mortality. *Journal of Healthcare Leadership*, [online] Volume 13(13), pp.19–26. Available at: <https://www.tandfonline.com/doi/abs/10.2147/JHL.S270175>.

MM Rahman and GGMN Ali (2021). *Socioeconomic factors analysis for COVID-19 US reopening sentiment with Twitter and census data Md. Mokhlesur Rahman G.G.Md. Nawaz Ali Xue Jun Li Kamal Chandra Paul*. [online] Available at:  
[https://www.cell.com/heliyon/fulltext/S2405-8440\(21\)00305-4](https://www.cell.com/heliyon/fulltext/S2405-8440(21)00305-4).

Monaghesh, E. and Hajizadeh, A. (2020). The role of telehealth during COVID-19 outbreak: a systematic review based on current evidence. *BMC Public Health*, [online] 20(1), pp.1–9. Available at: <https://bmcpublikealth.biomedcentral.com/articles/10.1186/s12889-020-09301-4>.

Moreb, N.A., Albandary, A., Jaiswal, S. and Jaiswal, A.K. (2021). Fruits and Vegetables in the Management of Underlying Conditions for COVID-19 High-Risk Groups. *Foods*, [online] 10(2), p.389. Available at: <https://www.mdpi.com/2304-8158/10/2/389>.

Moreno-Agostino, D., Woodhead, C., Ploubidis, G.B. and Das-Munshi, J. (2023). A quantitative approach to the intersectional study of mental health inequalities during the COVID-19 pandemic in UK young adults. *Social Psychiatry and Psychiatric Epidemiology*, [online] pp.1–13. Available at: <https://link.springer.com/article/10.1007/s00127-023-02424-0>.

Mourão, E., Pimentel, J.F., Murta, L., Kalinowski, M., Mendes, E. and Wohlin, C. (2020). On the performance of hybrid search strategies for systematic literature reviews in software engineering. *Information and Software Technology*, [online] 123, p.106294. Available at: <https://arxiv.org/pdf/2004.09741>.

Myllyaho, L., Raatikainen, M., Männistö, T., Mikkonen, T. and Nurminen, J.K. (2021). Systematic literature review of validation methods for AI systems. *Journal of Systems and Software*, [online] 181, p.111050. Available at: <https://core.ac.uk/download/pdf/479167882.pdf>.

Naz, N., Gulab, F. and Aslam, M. (2022). Development of Qualitative Semi-Structured Interview Guide for Case Study Research. *Competitive Social Science Research Journal*, [online] 3(2), pp.42–52. Available at: <https://cssrjournal.com/index.php/cssrjournal/article/view/170>.

Nikolopoulou, K. (2022). *Inclusion and Exclusion Criteria | Examples & Definition*. [online] Scribbr. Available at: <https://www.scribbr.com/methodology/inclusion-exclusion-criteria/>.

O'Connor, D.B., Aggleton, J.P., Chakrabarti, B., Cooper, C.L., Creswell, C., Dunsmuir, S., Fiske, S.T., Gathercole, S., Gough, B., Ireland, J.L., Jones, M.V., Jowett, A., Kagan, C., Karanika-Murray, M., Kaye, L.K., Kumari, V., Lewandowsky, S., Lightman, S., Malpass, D. and Meins, E. (2020). Research priorities for the COVID-19 pandemic and beyond: A call to

action for psychological science. *British Journal of Psychology*, [online] 111(4). Available at: <https://bpspsychub.onlinelibrary.wiley.com/doi/abs/10.1111/bjop.12468>.

OECD (2020). *The Territorial Impact of COVID-19: Managing the Crisis across Levels of Government*. [online] OECD. Available at: <https://www.oecd.org/coronavirus/policy-responses/the-territorial-impact-of-covid-19-managing-the-crisis-across-levels-of-government-d3e314e1/>.

Oláh, J., Krisán, E., Kiss, A., Lakner, Z. and Popp, J. (2020). PRISMA Statement for Reporting Literature Searches in Systematic Reviews of the Bioethanol Sector. *Energies*, [online] 13(9), p.2323. Available at: <https://www.mdpi.com/1996-1073/13/9/2323/pdf>.

Raphael, S. and Schneider, D. (2023). Introduction: The Socioeconomic Impacts of COVID-19. *RSF: The Russell Sage Foundation Journal of the Social Sciences*, [online] 9(3), pp.1–30. Available at: <https://www.rsfjournal.org/content/9/3/1>.

Raynaud, M., Zhang, H., Louis, K., Goutaudier, V., Wang, J., Dubourg, Q., Wei, Y., Demir, Z., Debiais, C., Aubert, O., Bouatou, Y., Lefaucheur, C., Jabre, P., Liu, L., Wang, C., Jouven, X., Reese, P., Empana, J.-P. and Loupy, A. (2021). COVID-19-related medical research: a meta-research and critical appraisal. *BMC Medical Research Methodology*, [online] 21(1). Available at: <https://link.springer.com/article/10.1186/s12874-020-01190-w>.

Romano, S.D. (2021). Trends in Racial and Ethnic Disparities in COVID-19 Hospitalizations, by Region — United States, March–December 2020. *MMWR. Morbidity and Mortality Weekly Report*, [online] 70(15). Available at: <https://www.cdc.gov/mmwr/volumes/70/wr/mm7015e2.htm>.

Roy, C.M., Bollman, E.B., Carson, L.M., Northrop, A.J., Jackson, E.F. and Moresky, R.T. (2021). Assessing the indirect effects of COVID-19 on healthcare delivery, utilization and health outcomes: a scoping review. *European Journal of Public Health*, [online] 31(3). Available at: <https://academic.oup.com/eurpub/article-abstract/31/3/634/6182679>.

S Ding and S Deng (2022). *Experiences and needs of front-line nurses during the COVID-19 pandemic: A systematic review and qualitative meta-synthesis*. [online] Available at: <https://www.frontiersin.org/articles/10.3389/fpubh.2022.805631/full>.

Sharma, A.K., Gupta, R., Baig, V.N., Singh, V.T., Chakraborty, S., Sunda, J.P., Dhakar, P., Sharma, S.P., Panwar, R.B. and Katoch, V.M. (2022). Educational status and COVID-19 related outcomes in India: hospital-based cross-sectional study. *BMJ Open*, [online] 12(2), p.e055403. Available at: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8882634/>.

Smela, B., Toumi, M., Świerk, K., Francois, C., Biernikiewicz, M., Clay, E. and Boyer, L. (2023). Rapid literature review: definition and methodology. *Journal of market access & health policy*, [online] 11(1), p.2241234. Available at: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC10392303/>.

Sośnicki, M. and Madeyski, L. (2021). ASH: A New Tool for Automated and Full-Text Search in Systematic Literature Reviews. *Computational Science – ICCS 2021*, [online] pp.362–369. Available at: <https://madeyski.e-informatyka.pl/download/SosnickiMadeyski21ICCS.pdf>.

Sutin, A.R., Luchetti, M., Yannick Stéphan and Terracciano, A. (2023). Change in Purpose in Life Before and After Onset of Cognitive Impairment. *JAMA network open*, [online] 6(9), pp.e2333489–e2333489. Available at: [https://jamanetwork.com/journals/jamanetworkopen/articlepdf/2809292/sutin\\_2023\\_oi\\_230967\\_1693594848.09153.pdf](https://jamanetwork.com/journals/jamanetworkopen/articlepdf/2809292/sutin_2023_oi_230967_1693594848.09153.pdf).

Talevi, D., Socci, V., Carai, M., Carnaghi, G., Faleri, S., Trebbi, E., Bernardo, A. di, Capelli, F. and Pacitti, F. (2020). Mental health outcomes of the CoViD-19 pandemic. *Rivista di Psichiatria*, [online] 55(3), pp.137–144. Available at: <https://www.rivistadipsichiatria.it/archivio/3382/articoli/33569>.

Trotter, G. (2021). COVID-19 and the Authority of Science. *Hec Forum*, [online] pp.1–28. Available at: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8274466/>.

van Dinter, R., Tekinerdogan, B. and Catal, C. (2021). Automation of systematic literature reviews: A systematic literature review. *Information and Software Technology*, [online] 136(4), p.106589. Available at: <https://qspace.qu.edu.qa/bitstream/handle/10576/36811/1-s2.0-S0950584921000690-main.pdf?sequence=1>.

Wells, P.M., Doores, K.J., Couvreur, S., Nunez, R.M., Seow, J., Graham, C., Acors, S., Kouphou, N., Neil, S.J.D., Tedder, R.S., Matos, P.M., Poulton, K., Lista, M.J., Dickenson, R.E., Sertkaya, H., Maguire, T.J.A., Scourfield, E.J., Bowyer, R.C.E., Hart, D. and O’Byrne,

A. (2020). Estimates of the rate of infection and asymptomatic COVID-19 disease in a population sample from SE England. *The Journal of Infection*, [online] 81(6), pp.931–936. Available at: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7557299/>.

Xiong, J., Lipsitz, O., Nasri, F., Lui, L.M.W., Gill, H., Phan, L., Chen-Li, D., Jacobucci, M., Ho, R., Majeed, A. and McIntyre, R.S. (2020). Impact of COVID-19 Pandemic on Mental Health in the General population: a Systematic Review. *Journal of Affective Disorders*, [online] 277(277), pp.55–64. Available at: <https://www.sciencedirect.com/science/article/pii/S0165032720325891>.

Y Hou and M Khokhar (2022). *Assessing the Best Supplier Selection Criteria in Supply Chain Management During the COVID-19 Pandemic*. [online] Available at: <https://www.frontiersin.org/articles/10.3389/fpsyg.2021.804954/full>.

Y Li, L Cao and Z Zhang (2021). Available at: <https://www.sciencedirect.com/science/article/pii/S0895435621000640>.

Yang, K. and Qi, H. (2022). Research on Health Disparities Related to the COVID-19 Pandemic: A Bibliometric Analysis. *International Journal of Environmental Research and Public Health*, [online] 19(3), p.1220. Available at: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8835299/>.

Zeidan, J., Fombonne, E., Scolah, J., Ibrahim, A., Durkin, M.S., Saxena, S., Yusuf, A., Shih, A. and Elsabbagh, M. (2022). Global prevalence of autism: A systematic review update. *Autism Research*, [online] 15(5), pp.778–790. Available at: <https://onlinelibrary.wiley.com/doi/pdfdirect/10.1002/aur.2696>.

## Appendix 1: CASP checklist

### 1. Socioeconomic Disparities in Community Mobility Reduction and COVID-19 Growth by Ashley Ossimetha, Angelina Ossimetha, Cyrus M. Kosar, and Momotazur Rahman (2020)

1. **Did the study address a clearly focused issue?**

- **Yes:** The study clearly focused on examining differences in community mobility reduction and SARS-CoV-2 outcomes across counties with varying levels of socioeconomic disadvantage.

2. **Was the cohort recruited in an acceptable way?**

- **Yes:** The study used a well-defined cohort of U.S. counties that had at least one SARS-CoV-2 case between April 1 and May 15, 2020.

3. **Was the exposure accurately measured to minimize bias?**

- **Yes:** The study accurately measured socioeconomic disadvantage using the Social Deprivation Index (SDI), a composite measure.

4. **Was the outcome accurately measured to minimize bias?**

- **Yes:** The outcomes, including SARS-CoV-2 case growth, related deaths, and mobility reduction across different settings, were accurately measured using available data.

5. **Have the authors identified all important confounding factors?**

- **Yes:** The study adjusted for confounding factors such as SARS-CoV-2 prevalence on April 1, which could influence the results.

6. **Was the follow-up of subjects complete and long enough?**

- **N/A:** As this study was based on a cross-sectional analysis of data within a specific time frame, there was no follow-up period.

7. **What are the results of this study?**

- The study found that counties with higher social deprivation experienced greater growth in SARS-CoV-2 cases and deaths, but reduced mobility at lower rates.

**8. How precise are the results?**

- The results are precise, as indicated by the confidence intervals and P-values provided in the study.

**9. Do you believe the results?**

- **Yes:** The study's methodology and analysis appear robust, supporting the credibility of the results.

**10. Can the results be applied to the local population?**

- **Yes:** The findings are relevant to U.S. counties with similar socioeconomic characteristics.

**11. Do the results fit with other available evidence?**

- **Yes:** The results are consistent with other evidence that economically disadvantaged communities have been disproportionately impacted by COVID-19.

**12. What are the implications of this study for practice?**

- The study suggests that public health interventions should consider socioeconomic disparities to avoid exacerbating existing inequalities in COVID-19 outcomes.

**2. "COVID-19 Infodemic and Digital Health Literacy in Vulnerable Populations: A Scoping Review" by Mohamed-Amine Choukou, Diana C Sanchez-Ramirez et al (2022)**

**1. Did the study address a clearly focused issue?**

- Yes, it examined digital health literacy among vulnerable populations during COVID-19.

**2. Was the cohort recruited in an acceptable way?**

- Yes, the study included a broad range of published and grey literature.

**3. Was the exposure accurately measured to minimize bias?**

- Yes, the study used systematic search methods across databases.

**4. Was the outcome accurately measured to minimize bias?**

- Yes, it identified e-services for digital health literacy in vulnerable populations.
5. **Have the authors identified all important confounding factors?**
    - Yes, barriers and facilitators were thoroughly examined.
  6. **Was the follow-up of subjects complete and long enough?**
    - N/A, as this was a scoping review.
  7. **What are the results of this study?**
    - Various digital health literacy-enabling e-services were identified, with specific barriers and facilitators noted.
  8. **Do you believe the results?**
    - Yes, the results are consistent with the scoping review's goals.
  9. **Can the results be applied to the local population?**
    - Yes, particularly to vulnerable populations in other similar contexts.
  10. **Were all clinically important outcomes considered?**
    - Yes, the review covered digital health literacy, barriers, and facilitators.
  11. **Are the benefits worth the harms and costs?**
    - Yes, improving digital health literacy can mitigate the negative impact of the infodemic.

**3. "Racial and Ethnic and Income Disparities in COVID-19 Vaccination Among Medicare Beneficiaries" by Zijing Cheng, MS1 and Yue Li (2023)**

1. **Did the study address a clearly focused issue?**
  - Yes, it examined racial, ethnic, and income disparities in COVID-19 vaccination.
2. **Was the cohort recruited in an acceptable way?**
  - Yes, the cohort included Medicare beneficiaries from the U.S.
3. **Was the exposure accurately measured to minimize bias?**



- Yes, vaccination status and demographic variables were accurately measured.
- 4. **Was the outcome accurately measured to minimize bias?**
  - Yes, the study measured vaccination rates and analyzed disparities.
- 5. **Have the authors identified all important confounding factors?**
  - Yes, the study controlled for beneficiary characteristics.
- 6. **Was the follow-up of subjects complete and long enough?**
  - Yes, data from the 2021 Community Supplement was used.
- 7. **What are the results of this study?**
  - Racial, ethnic, and income disparities were found in COVID-19 vaccination rates.
- 8. **Do you believe the results?**
  - Yes, the results are consistent with other findings on vaccination disparities.
- 9. **Can the results be applied to the local population?**
  - Yes, particularly to similar healthcare contexts in other regions.
- 10. **Were all clinically important outcomes considered?**
  - Yes, vaccination rates and demographic disparities were covered.
- 11. **Are the benefits worth the harms and costs?**
  - Yes, the study provides important insights for addressing vaccination disparities.

**4: "Socioeconomic position and the COVID-19 care cascade from testing to mortality in Switzerland: a population-based analysis" by Julien Riou, Radoslaw Panczak et al. (2021)**

1. **Was there a clear statement of the aims of the research?**
  - Yes, the study aimed to examine inequalities in health care related to COVID-19 in Switzerland, focusing on socioeconomic disparities across the care cascade from testing to mortality.
2. **Is a qualitative methodology appropriate?**

- No, this study uses a quantitative methodology, which is appropriate for the research aim.
3. **Was the research design appropriate to address the aims of the research?**
- Yes, a population-based analysis using surveillance data was suitable to address the research question.
4. **Was the recruitment strategy appropriate?**
- Yes, the study used nationwide data, which is representative of the entire population.
5. **Were the data collected in a way that addressed the research issue?**
- Yes, the study utilized extensive surveillance data, geocoded residential addresses, and regression models to analyze the impact of socioeconomic position on COVID-19 outcomes.
6. **Has the relationship between researcher and participants been adequately considered?**
- Not applicable, as this was a secondary data analysis.
7. **Have ethical issues been taken into consideration?**
- Ethical considerations are mentioned, but the primary focus is on the data analysis rather than direct interaction with participants.
8. **Was the data analysis sufficiently rigorous?**
- Yes, the use of negative binomial regression models was appropriate and robust for the data analysis.
9. **Is there a clear statement of findings?**
- Yes, the study clearly states the disparities found in COVID-19 testing and outcomes based on socioeconomic position.
10. **How valuable is the research?**
- The research is highly valuable as it highlights the socioeconomic inequalities in COVID-19-related health outcomes in Switzerland.

**5: "Assessment of Population-Level Disadvantage Indices to Inform Equitable Health Policy" by Kamaria Kaalund 1, Andrea Thoumi, et al. (2022)**

1. **Was there a clear statement of the aims of the research?**
  - Yes, the study aimed to evaluate the effectiveness of various disadvantage indices used to inform health policy during the COVID-19 pandemic.
2. **Is a qualitative methodology appropriate?**
  - No, this study uses a mixed-methods approach, which is appropriate for the research aim.
3. **Was the research design appropriate to address the aims of the research?**
  - Yes, the use of network visualization and geospatial analyses was suitable for comparing different disadvantage indices.
4. **Was the recruitment strategy appropriate?**
  - Not applicable, as the study used existing indices and data sources rather than recruiting participants.
5. **Were the data collected in a way that addressed the research issue?**
  - Yes, the study effectively used publicly available data and existing indices to analyze place-based social risks.
6. **Has the relationship between researcher and participants been adequately considered?**
  - Not applicable, as the study did not involve direct participant interaction.
7. **Have ethical issues been taken into consideration?**
  - Ethical considerations related to data usage are implied, but not explicitly discussed.
8. **Was the data analysis sufficiently rigorous?**
  - Yes, the use of network visualization and geospatial analyses was rigorous and appropriate.
9. **Is there a clear statement of findings?**

- Yes, the findings clearly outline the differences in social risk scores across indices and their potential impact on health policy.

**10. How valuable is the research?**

- The research is valuable as it provides insights into the strengths and limitations of various disadvantage indices, informing more equitable health policy.

**6: "National Disparities in COVID-19 Outcomes between Black and White Americans" by Michael Poulson, Alaina Geary, et al. (2021)**

**1. Was there a clear statement of the aims of the research?**

- Yes, the study aimed to understand the differential outcomes for Black and White Americans infected with COVID-19.

**2. Is a qualitative methodology appropriate?**

- No, the study uses a quantitative methodology, which is appropriate for the research aim.

**3. Was the research design appropriate to address the aims of the research?**

- Yes, a nationwide study using case-level data from the CDC was suitable to address the research question.

**4. Was the recruitment strategy appropriate?**

- Yes, the study used national data, which is representative of the entire population.

**5. Were the data collected in a way that addressed the research issue?**

- Yes, the study collected extensive case-level data on COVID-19 outcomes, including hospitalization, ICU admission, and death.

**6. Has the relationship between researcher and participants been adequately considered?**

- Not applicable, as this was a secondary data analysis.

**7. Have ethical issues been taken into consideration?**

- Ethical considerations are implied, given the use of CDC data, but not explicitly discussed.

**8. Was the data analysis sufficiently rigorous?**

- Yes, the use of multivariate Poisson regressions was appropriate and rigorous.

**9. Is there a clear statement of findings?**

- Yes, the study clearly states the disparities in COVID-19 outcomes between Black and White Americans.

**10. How valuable is the research?**

- The research is highly valuable as it highlights racial disparities in COVID-19 outcomes, contributing to the understanding of health inequalities in the U.S.

**7. “Socioeconomic and Demographic Disparities in the Use of Telemedicine for Ophthalmic Care during the COVID-19 Pandemic” by Evan M Chen, Joana E Andoh, Kristen Nwanyanwu (2022)**

**1. Was there a clear statement of the aims of the research?**

- Yes, the study aimed to identify disparities in the use of telemedicine during the COVID-19 pandemic among patients attending an ophthalmology center.

**2. Is the methodology appropriate?**

- Yes, the study used a cross-sectional design, which is suitable for assessing disparities during a specific period.

**3. Was the recruitment strategy appropriate?**

- Yes, the study included all patients who completed clinical encounters within the specified period, reducing selection bias.

**4. Was the data collected in a way that addressed the research issue?**

- Yes, data was collected from medical charts and demographic information, focusing on socioeconomic characteristics relevant to the study's aim.

**5. Has the relationship between researchers and participants been adequately considered?**

- Not applicable, as this was a retrospective chart review without direct interaction between researchers and participants.

**6. Were ethical issues taken into consideration?**

- Ethical considerations were likely followed, given the study's publication, but specific details were not provided in the abstract.

**7. Was the data analysis sufficiently rigorous?**

- Yes, the study used adjusted analysis to identify significant disparities, suggesting a rigorous approach to data analysis.

**8. Is there a clear statement of findings?**

- Yes, the findings are clearly presented, highlighting significant disparities among racial/ethnic minorities, older patients, and non-English-speaking individuals.

**9. How valuable is the research?**

- The research is valuable in identifying barriers to telehealth use, which is critical for reducing healthcare disparities.

**8. “Disparities in COVID-19 Mortality Rates: Implications for Rural Health Policy and Preparedness” by Heather N. Grome (2022)**

**1. Was there a clear statement of the aims of the research?**

- Yes, the study aimed to understand the impact of COVID-19 on rural communities in Tennessee, investigate differences in rural-urban mortality rates, and inform state pandemic response policy.

**2. Is the methodology appropriate?**

- Yes, the study used a cross-sectional analysis of cumulative COVID-19 mortality rates, which is appropriate for assessing the disparities between rural and urban areas.

**3. Was the recruitment strategy appropriate?**

- Yes, the study utilized county-level data from public datasets, which provided comprehensive coverage of the population in Tennessee.

**4. Was the data collected in a way that addressed the research issue?**

- Yes, the data collection was thorough, using various public datasets to gather relevant sociodemographic, health, and mortality information.

**5. Has the relationship between researchers and participants been adequately considered?**

- Not applicable, as this study did not involve direct interaction with participants but relied on publicly available data.

**6. Were ethical issues taken into consideration?**

- Ethical considerations are implied through the use of public datasets and standard practices in epidemiological research, though specific details were not provided in the abstract.

**7. Was the data analysis sufficiently rigorous?**

- Yes, the study used a negative binomial regression model to adjust for confounding variables and accurately assess the impact of COVID-19 on rural versus urban mortality.

**8. Is there a clear statement of findings?**

- Yes, the findings are clearly presented, showing higher COVID-19 mortality rates in rural areas compared to urban areas in Tennessee.

**9. How valuable is the research?**

- The research is valuable for informing public health decision-making and addressing disparities in rural health during the pandemic.

**9. “Changes in the behavioural determinants of health during the COVID-19 pandemic: gender, socioeconomic and ethnic inequalities in five British cohort studies” by David Bann (2021)**

**1. Was there a clear statement of the aims of the research?**

- Yes, the study aimed to investigate changes in health-impacting behaviors during the COVID-19 pandemic, particularly in relation to gender, socioeconomic, and ethnic inequalities.

## **2 Is the methodology appropriate?**

- Yes, the study used data from five representative British cohorts and employed logistic regression models and meta-analysis, which are suitable for assessing changes in behaviors across different demographic groups.

## **3 Was the recruitment strategy appropriate?**

- Yes, the study utilized data from established cohort studies, ensuring a representative sample of the British population.

## **4 Was the data collected in a way that addressed the research issue?**

- Yes, data was collected pre- and during the May 2020 lockdown, allowing for a comparison of behavioral changes during the pandemic.

## **5 Has the relationship between researchers and participants been adequately considered?**

- Not applicable, as this study analyzed pre-existing cohort data and did not involve direct interaction with participants.

## **6 Were ethical issues taken into consideration?**

- Ethical considerations are implied through the use of data from established cohort studies, which typically adhere to ethical guidelines, though specific details are not provided in the abstract.

## **7 Was the data analysis sufficiently rigorous?**

- Yes, the study used logistic regression models and meta-analysis to analyze the data, accounting for study design and non-response weights.

## **8 Is there a clear statement of findings?**

- Yes, the findings indicate changes in health behaviors during the lockdown, with some widening inequalities, particularly among women, socioeconomically disadvantaged groups, and ethnic minorities.

## **9 How valuable is the research?**

- The research is valuable for understanding the differential impacts of the COVID-19 lockdown on health behaviors across different demographic groups, which can inform public health interventions and policies.



**10 “The Impact of the COVID-19 Pandemic on Black and Hispanic Americans’ Work Outcomes: a Scoping Review” by Kendra Jason et al. (2023)**

**1. Was there a clear statement of the aims of the research?**

- Yes, the aim was to aggregate and understand the impact of the COVID-19 pandemic on work outcomes for Black and Hispanic Americans by reviewing existing literature.

**2. Is the methodology appropriate?**

- Yes, a scoping review methodology is appropriate for mapping the literature and identifying primary work-related risks and outcomes.

**3. Was the recruitment strategy appropriate?**

- Not applicable, as the study is a scoping review rather than original research involving participant recruitment.

**4. Was the data collected in a way that addressed the research issue?**

- Yes, the data was collected from a systematic review of relevant articles across three databases, addressing the research issue of work outcomes.

**5. Has the relationship between researchers and participants been adequately considered?**

- Not applicable, as this is a review study rather than one involving direct interaction with participants.

**6. Were ethical issues taken into consideration?**

- Ethical considerations are generally addressed in the review of published literature, though specifics are not detailed in the abstract.

**7. Was the data analysis sufficiently rigorous?**

- Yes, the study utilized a scoping review methodology to systematically analyze and synthesize findings from 44 articles, which is rigorous for the type of review conducted.

**8. Is there a clear statement of findings?**

- Yes, the findings identify four primary risks contributing to disparate COVID-19-related work outcomes for Black and Hispanic workers.

## **9. How valuable is the research?**

- The research is valuable for understanding the specific work-related challenges faced by Black and Hispanic Americans during the pandemic and provides actionable policy recommendations.

## **11. “The Effect of Race and Socioeconomic Status on Hospitalized Patients with COVID-19 Infection” Arjun Kanwal, Kevin Delijani et al., (2022)**

### **1. Was there a clear statement of the aims of the research?**

- Yes, the aim was to evaluate how socioeconomic status and race impact COVID-19 outcomes in hospitalized patients.

### **2. Is the methodology appropriate?**

- Yes, a retrospective analysis of electronic medical records and the REDCap database is appropriate for evaluating associations between race, socioeconomic status, and COVID-19 outcomes.

### **3. Was the recruitment strategy appropriate?**

- Not applicable, as this is a retrospective analysis using existing medical records.

### **4. Was the data collected in a way that addressed the research issue?**

- Yes, data from medical records were used to assess the impact of race and socioeconomic status on COVID-19 outcomes.

### **5. Has the relationship between researchers and participants been adequately considered?**

- Not applicable, as this study analyzed existing data rather than interacting directly with participants.

### **6. Were ethical issues taken into consideration?**

- Ethical considerations are implied in the use of medical records, though specifics are not detailed in the abstract.

### **7. Was the data analysis sufficiently rigorous?**

- Yes, multivariate logistic regression analysis was performed to control for various factors and assess the impact of race and socioeconomic status.

**8. Is there a clear statement of findings?**

- Yes, the findings indicate that race and socioeconomic status were not independent predictors of mortality, but were associated with other outcomes like ICU admission.

**9. How valuable is the research?**

- The research provides insights into the relationship between race, socioeconomic status, and COVID-19 outcomes, with implications for resource allocation and equitable healthcare.

**12. “Quantifying the impact of SARS-CoV-2 temporal vaccination trends and disparities on disease control” by Sophie L. Larsen, et al., (2023)**

**1. Was there a clear statement of the aims of the research?**

- Yes, the aim was to examine vaccination trends and their impact on disease control across different socioeconomic groups.

**2. Is the methodology appropriate?**

- Yes, a mechanistic model was used to analyze vaccination trends and their effects on disease control, which is appropriate for the research question.

**3. Was the recruitment strategy appropriate?**

- **Not applicable**, as this study did not involve participant recruitment but rather analyzed existing data.

**4. Was the data collected in a way that addressed the research issue?**

- Yes, data from multiple countries and states were used to evaluate vaccination trends and their impact.

**5. Has the relationship between researchers and participants been adequately considered?**

- **Not applicable**, as this study focused on data rather than direct interaction with participants.

**6. Were ethical issues taken into consideration?**

- Ethical considerations are generally addressed in the use of publicly available data, though specifics are not detailed in the abstract.

**7. Was the data analysis sufficiently rigorous?**

- **Yes**, the study used a stratified mechanistic model to analyze vaccination data, which is a rigorous approach.

**8. Is there a clear statement of findings?**

- **Yes**, the findings highlight the importance of early vaccination rollout over final coverage and the minimal impact of socioeconomic disparity on disease outcomes.

**9. How valuable is the research?**

- The research is valuable for informing vaccination strategies and understanding the impact of vaccination timing on disease control across socioeconomic groups.

**13. “Racial and Ethnic Disparities in COVID-19-Related Infections, Hospitalizations, and Deaths: A Systematic Review” by Katherine Mackey, Chelsea K Ayers (2021)**

**1. Was there a clear statement of the aims of the research?**

- **Yes**, the aim was to evaluate racial/ethnic disparities in COVID-19 outcomes and contributing factors.

**2. Is the methodology appropriate?**

- **Yes**, a systematic review methodology is appropriate for aggregating evidence from multiple studies.

**3. Was the recruitment strategy appropriate?**

- **Not applicable**, as this is a review of existing studies rather than original research involving participant recruitment.

**4. Was the data collected in a way that addressed the research issue?**

- **Yes**, the review synthesized data from various studies to address disparities in COVID-19 outcomes.

**5. Has the relationship between researchers and participants been adequately considered?**

- **Not applicable**, as this study reviewed existing literature rather than interacting directly with participants.

**6. Were ethical issues taken into consideration?**

- Ethical considerations are generally addressed in the review of published literature, though specifics are not detailed in the abstract.

**7. Was the data analysis sufficiently rigorous?**

- **Yes**, the study used dual-reviewer assessments and metaregression to ensure rigorous analysis.

**8. Is there a clear statement of findings?**

- **Yes**, the findings indicate higher rates of infection and mortality among Black and Hispanic populations, with socioeconomic factors contributing to these disparities.

**9. How valuable is the research?**

- The research is valuable for understanding the extent of racial and ethnic disparities in COVID-19 outcomes and informing public health interventions.

**14. “Disparities in COVID-19 Outcomes by Race, Ethnicity, and Socioeconomic Status: A Systematic Review and Meta-analysis” by Shruti Magesh et al., (2021)**

**1. Was there a clear statement of the aims of the research?**

- **Yes**, the aim was to evaluate racial and ethnic disparities in COVID-19 outcomes and the role of socioeconomic status.

**2. Is the methodology appropriate?**

- **Yes**, a systematic review and meta-analysis methodology is appropriate for aggregating data across studies.

**3. Was the recruitment strategy appropriate?**

- **Not applicable**, as this study synthesized data from existing research rather than recruiting participants.

**4. Was the data collected in a way that addressed the research issue?**

- **Yes**, data from multiple studies were combined to address disparities in COVID-19 outcomes.

**5. Has the relationship between researchers and participants been adequately considered?**

- **Not applicable**, as this study reviewed existing literature.

**6. Were ethical issues taken into consideration?**

- Ethical considerations are addressed in the review of published literature, though specifics are not detailed.

**7. Was the data analysis sufficiently rigorous?**

- **Yes**, the study used adjusted risk ratios and odds ratios to analyze disparities in COVID-19 outcomes, ensuring rigorous analysis.

**8. Is there a clear statement of findings?**

- **Yes**, the findings show that racial and ethnic minority groups have higher rates of COVID-19 positivity and severity, with socioeconomic factors contributing to these disparities.

**9. How valuable is the research?**

- The research is valuable for understanding the impact of race and socioeconomic status on COVID-19 outcomes and guiding public health strategies.

**15. “The Unequal Impact of the COVID-19 Pandemic on Infant Health” by Florencia Torche, Jenna Nobles (2022)**

**1. Was there a clear statement of the aims of the research?**

- Yes, the aim was to examine the consequences of prenatal exposure to COVID-19 on infant health and the impact of socioeconomic disparities.

**2. Is the methodology appropriate?**

- Yes, the methodology involves analyzing over 3.5 million birth records in California, which is appropriate for evaluating large-scale impacts on birth outcomes.

**3. Was the recruitment strategy appropriate?**

- Not applicable, as this study used existing birth records rather than recruiting participants.

**4. Was the data collected in a way that addressed the research issue?**

- Yes, data from birth records and information on COVID infection among persons giving birth were used to assess the impact on infant health.

**5. Has the relationship between researchers and participants been adequately considered?**

- Not applicable, as this study did not involve direct interaction with participants.

**6. Were ethical issues taken into consideration?**

- Ethical considerations are implied in the use of birth records and health data, though specifics are not detailed in the abstract.

**7. Was the data analysis sufficiently rigorous?**

- Yes, the study analyzed birth records and COVID infection data to identify trends and disparities, using statistical methods to assess the impact.

**8. Is there a clear statement of findings?**

- Yes, the findings indicate significant disparities in preterm birth rates related to socioeconomic status and education level, with an increase in preterm births during the winter surge of COVID infections.

**9. How valuable is the research?**

- The research is valuable for understanding the long-term impacts of the pandemic on infant health and highlighting the exacerbation of existing inequalities.

**16. “The Impact of Access to Financial Services on Mitigating COVID-19 Mortality Globally” by Todd A Watkins et al. (2023)**

**1. Was there a clear statement of the aims of the research?**

- Yes, the aim was to assess the impact of access to financial services on COVID-19 mortality across different nations.

**2. Is the methodology appropriate?**

- Yes, the methodology involves modeling COVID-19 mortality data and analyzing the impact of financial services access, which is appropriate for evaluating financial determinants of health outcomes.

**3. Was the recruitment strategy appropriate?**

- Not applicable, as this study analyzed national-level data rather than recruiting participants.

**4. Was the data collected in a way that addressed the research issue?**

- Yes, data on financial services access and COVID-19 mortality were collected and analyzed to assess their relationship.

**5. Has the relationship between researchers and participants been adequately considered?**

- Not applicable, as this study focused on national-level data rather than individual participants.

**6. Were ethical issues taken into consideration?**

- Ethical considerations are generally addressed in the use of publicly available national data, though specifics are not detailed in the abstract.

**7. Was the data analysis sufficiently rigorous?**

- Yes, the study used principal component analysis to construct financial access indexes and assessed their impact on COVID-19 mortality.



**8. Is there a clear statement of findings?**

- Yes, the findings show that higher pre-pandemic use of formal financial services was associated with lower COVID-19 mortality, suggesting financial services play a crucial role in mitigating health disparities.

**9. How valuable is the research?**

- The research is valuable for highlighting the role of financial services in public health and suggesting that financial access should be considered in health policy discussions.

**17. “Variations of COVID-19 mortality are affected by economic disparities across countries” by Lan Yao, Lotfi Aleya et al., (2022)**

**1. Was there a clear statement of the aims of the research?**

- Yes, the aim was to analyze variations in COVID-19 mortality across countries with different economic statuses and understand the impact of economic disparities on mortality rates.

**2. Is the methodology appropriate?**

- Yes, a cross-sectional study comparing mortality rates and time lags between case and death turning points across countries is appropriate for assessing the impact of economic disparities.

**3. Was the recruitment strategy appropriate?**

- Not applicable, as this study uses secondary data from public sources rather than recruiting participants.

**4. Was the data collected in a way that addressed the research issue?**

- Yes, data was collected from Worldometers and WHO Dashboard, providing relevant information on COVID-19 mortality across different countries.

**5. Has the relationship between researchers and participants been adequately considered?**

- Not applicable, as there was no direct interaction with participants.

**6. Were ethical issues taken into consideration?**

- Ethical considerations are implied through the use of publicly available data, though specifics are not detailed.

**7. Was the data analysis sufficiently rigorous?**

- Yes, the study employed rigorous statistical methods to analyze mortality rates and time lags.

**8. Is there a clear statement of findings?**

- Yes, the study clearly identifies differences in COVID-19 mortality rates and time lags between economic groups.

**9. How valuable is the research?**

- The research is valuable for understanding the impact of economic disparities on COVID-19 outcomes and informing public health responses.

**18. “The COVID-19 Pandemic: Does Our Early Life Environment, Life Trajectory and Socioeconomic Status Determine Disease Susceptibility and Severity?” by Cyrielle Holuka, Myriam P Merz et al., (2020)**

**1. Was there a clear statement of the aims of the research?**

- Yes, the aim was to explore how early life environment and socioeconomic status influence COVID-19 susceptibility and severity.

**2. Is the methodology appropriate?**

- Yes, the study employs a hypothesis-driven approach based on existing literature to link early life adversity with COVID-19 outcomes.

**3. Was the recruitment strategy appropriate?**

- Not applicable, as the study reviews existing literature rather than involving direct recruitment.

**4. Was the data collected in a way that addressed the research issue?**

- Yes, the study reviews existing research to address the relationship between early life adversity and COVID-19 severity.

**5. Has the relationship between researchers and participants been adequately considered?**

- Not applicable, as this is a review study without direct participant interaction.

**6. Were ethical issues taken into consideration?**

- Ethical considerations are generally addressed in literature reviews, but specifics are not detailed.

**7. Was the data analysis sufficiently rigorous?**

- Yes, the study rigorously reviews and synthesizes findings from multiple sources to support its hypotheses.

**8. Is there a clear statement of findings?**

- Yes, the study identifies the impact of early life adversity on COVID-19 severity and highlights the need for further research.

**9. How valuable is the research?**

- The research is valuable for understanding long-term health impacts of early life adversity and informing targeted health interventions.

**19. “COVID-19-Related Insurance Coverage Changes and Disparities in Access to Care Among Low-Income US Adults in 4 Southern States” by Jose F Figueroa, Peggah Khorrami et al., (2021)**

**1. Was there a clear statement of the aims of the research?**

- Yes, the aim was to assess how the COVID-19 pandemic affected insurance coverage and disparities in access to care among low-income individuals in the Southern US.

**2. Is the methodology appropriate?**

- Yes, the random-digit dialing survey and difference-in-differences analysis are appropriate for evaluating changes in insurance coverage and access.

**3. Was the recruitment strategy appropriate?**

- Yes, the study used random-digit dialing to recruit a representative sample of low-income individuals.

**4. Was the data collected in a way that addressed the research issue?**

- Yes, data collection through surveys effectively addressed the research issue of changes in insurance coverage and access.

**5. Has the relationship between researchers and participants been adequately considered?**

- Not applicable, as this study involves survey data rather than direct interaction with participants.

**6. Were ethical issues taken into consideration?**

- Ethical considerations are implied through the use of survey methods, though specifics are not detailed.

**7. Was the data analysis sufficiently rigorous?**

- Yes, the study used a robust statistical design to analyze insurance coverage and access disparities.

**8. Is there a clear statement of findings?**

- Yes, the study finds increases in uninsurance rates and disparities in access to care, with Medicaid expansion offering some protection.

**9. How valuable is the research?**

- The research is valuable for understanding the impact of Medicaid expansion on insurance coverage and access to care during the pandemic.

**20. “Socioeconomic differences in help seeking for colorectal cancer symptoms during COVID-19: a UK-wide qualitative interview study” by Athena Ip, Georgia Black et al., (2022)**

**1. Was there a clear statement of the aims of the research?**

- Yes, the aim was to understand how socioeconomic status affects patients' help-seeking behaviors for colorectal cancer symptoms during COVID-19.

**2. Is the methodology appropriate?**

- Yes, qualitative semi-structured interviews are appropriate for exploring detailed experiences and differences between socioeconomic groups.

**3. Was the recruitment strategy appropriate?**

- Yes, purposive sampling by socioeconomic status is suitable for capturing relevant differences in help-seeking behaviors.

**4. Was the data collected in a way that addressed the research issue?**

- Yes, data collection through interviews addresses the research issue of help-seeking behavior differences by socioeconomic status.

**5. Has the relationship between researchers and participants been adequately considered?**

- Yes, the study carefully considered participants' experiences and interactions with healthcare systems.

**6. Were ethical issues taken into consideration?**

- Yes, ethical considerations are typically addressed in qualitative research, though specifics are not detailed.

**7. Was the data analysis sufficiently rigorous?**

- Yes, framework analysis followed by thematic analysis is rigorous for qualitative data.

**8. Is there a clear statement of findings?**

- Yes, the study identifies how COVID-19 exacerbated disparities in help-seeking behavior based on socioeconomic status.

**9. How valuable is the research?**

- The research is valuable for highlighting socioeconomic disparities in healthcare access during the pandemic and guiding future healthcare policies.

## Appendix 2: Evaluation of the included studies

No.	Research aim/purpose	Sample size	Literature review	Methodology	Ethical considerations	Findings and results	Discussion of the results
1.	To examine differences in community mobility reduction and SARS-CoV-2 outcomes across counties with differing levels of socioeconomic disadvantage.	U.S. counties with at least one SARS-CoV-2 case between April 1 and May 15, 2020	The study references relevant literature on socioeconomic disparities and COVID-19 impact	Linear regression with state-fixed effects	Not explicitly mentioned, but the data used were aggregated and publicly available	Higher SDI counties had greater SARS-CoV-2 cases and deaths, with lower mobility reductions	The study discusses the disproportionate impact on economically disadvantaged communities and the potential exacerbation of disparities due to mobility restrictions
2.	To explore digital health	5 articles	Scoping review identified a gap	Scoping review of published	Not explicitly mentioned	Various e-services were identified to support	The findings suggest an urgent

	literacy in vulnerable populations amid the COVID-19 infodemic.		in literature regarding digital health literacy in vulnerable populations.	d and grey literature	d, though standard review ethics apply.	digital health literacy, with specific barriers and facilitators noted.	need for research and digital platforms to address health literacy in vulnerable populations.
3.	To examine racial, ethnic, and income disparities in COVID-19 vaccination among Medicare beneficiaries.	9,606 Medicare beneficiaries (weighted N= 50,512,963 )	Reviewed relevant studies on COVID-19 vaccination disparities.	Logistic regression model	Ethical guidelines for secondary data use were followed.	Disparities in vaccination rates were found among racial, ethnic, and low-income groups.	The study underscores the need for community-based strategies to reduce vaccination disparities.
4.	Examine socioeconomic inequalities	4,129,636 tests, 609,782 positive	Extensive review of health inequalities	Population-based analysis	Ethical considerations are	Significant socioeconomic disparities in testing,	The results highlight the inverse care law

	ies in COVID-19 care cascade in Switzerland and	tests, 26,143 hospitalisations, 2,432 ICU admissions, 9,383 deaths, 8,221,406 residents	es in COVID-19 care	using surveillance data and geocoding	implied but not explicitly discussed	hospitalization, ICU admission, and death	and suggest ongoing monitoring and policy adjustments to reduce health inequalities
5.	Assess population-level disadvantage indices to inform equitable health policy during COVID-19	N/A (analysis of 14 indices)	Review of existing disadvantage indices and their use during the pandemic	Mixed-methods: network visualization and geospatial analyses	Ethical considerations related to data usage are implied but not explicitly discussed	Different indices provide varying social risk values, affecting policy implications	The discussion emphasizes the importance of selecting appropriate indices to avoid worsening health inequities
6.	Understand racial disparities in COVID-19 outcomes	76,442 white, 48,338 non-Hispanic Black patients	Review of existing studies on racial disparities in COVID-	Quantitative analysis using multivariate Poisson	Ethical considerations are implied, given the use of CDC	Black patients faced higher risks of hospitalization, ICU admission, ventilation,	The results underscore the need for targeted public health interventio



	between Black and White Americans		19 outcomes	regressions	data, but not explicitly discussed	and death compared to White patients	ns to address racial health disparities
7.	Identify disparities in the use of telemedicine during the COVID-19 pandemic	5023	Provided background on socioeconomic disparities in telehealth use	Cross-sectional study	Ethical considerations not explicitly mentioned but assumed to be followed as per standard practice	Significant disparities found among racial/ethnic minorities, older patients, and non-English speakers in telemedicine usage	The study discusses the need to identify barriers and improve access to telemedicine, especially for vulnerable populations.
8.	Understand the impact of COVID-19 on rural communities in Tennessee and	9650 deaths	Discussed rural-urban disparities and health challenges	Cross-sectional analysis of county-level mortality data	Implied ethical considerations in using public datasets	Higher COVID-19 mortality rates in rural counties compared to urban counties, even after adjusting for	The study highlights the importance of considering rural health disparities in public health

	inform state policy					confounding variables	planning and policy-making during the pandemic.
9.	Investigate changes in health behaviors during COVID-19 lockdown and their impact on inequalities	14,297	Discussed the impact of socioeconomic, gender, and ethnic inequalities on health behaviors	Data from five British cohorts, logistic regression, and meta-analysis	Implied ethical considerations in using cohort data	Changes in behaviors varied, with the youngest cohorts reporting more frequent increases in sleep and exercise, while women, disadvantaged groups, and ethnic minorities experienced widening inequalities	The study highlights the differential impact of the lockdown on health behaviors, with particular attention to vulnerable groups facing worsening inequalities.
10.	Aggregate and understand the impact of COVID-	44 articles	Reviews the impact of COVID-19 on marginal	Scoping review of articles from PubMed, Web	Implied through literature review	Identified four main risks for Black and Hispanic workers: essential	The study highlights the disproportionate impact of COVID-

	19 on work outcomes for Black and Hispanic Americans		ized worker populations	of Science, and Business Source Complete		worker status, type of work, workplace factors, and community/geographic factors.	19 on work outcomes for Black and Hispanic workers and provides policy recommendations for economic recovery and support.
1.1.	Evaluate the impact of race and socioeconomic status on COVID-19 outcomes in hospitalized patients	Data from a large health system (exact number not specified)	Analyzed medical records from a specific time period	Retrospective analysis using logistic regression	Implied through data use	Race was not an independent predictor of mortality; Black patients had higher ICU admission rates; Socioeconomic status did not predict mortality.	The study suggests a need for equitable resource allocation to support disproportionately affected populations.

1 2.	Examine vaccination trends and their impact on disease control across socioeconomic groups	161 countries/territories and 58 states	Examined vaccination rates and their effects on disease outcomes	SES-stratified mechanistic model analysis	Not detailed	Early vaccination rollout had a significant impact on disease outcomes; disparities in coverage existed, but timing of rollout was more critical than final coverage.	Accelerating vaccination rollout across all socioeconomic groups is more effective than solely focusing on increasing coverage.
1 3	Evaluate racial/ethnic disparities in COVID-19 outcomes and contributing factors	37 cohort/cross-sectional studies, 15 ecological studies	Reviewed studies on COVID-19 outcomes by race/ethnicity	Systematic review and meta-analysis	Considered in literature review	Higher rates of infection and mortality in Black and Hispanic populations; less impact of race on case-fatality rates; health care access and exposure factors are key.	Socioeconomic factors and access to healthcare may drive disparities in infection and mortality rates, rather than susceptibility alone.

14	Systematically review and meta-analyze racial and ethnic disparities in COVID-19 outcomes and socioeconomic determinants	4.3 million patients from 68 studies	Reviewed studies on race/ethnicity and COVID-19 outcomes	Systematic review and meta-analysis	Not detailed	Higher risks of COVID-19 positivity and severity among racial/ethnic minorities; socioeconomic determinants significantly influence outcomes.	Findings highlight the need for targeted public health interventions to address disparities in disease outcomes and access to care.
15	Examine the impact of prenatal exposure to COVID-19 on infant health and socioeconomic	Over 3.5 million birth records in California	Analysis of birth outcomes and socioeconomic factors	Statistical analysis of birth records and COVID data	Implied through data use	Increased probability of preterm birth associated with COVID infection; disparities by education level; early-pandemic reduction followed by an increase in preterm births	The study highlights the pandemic's exacerbation of socioeconomic disparities in infant health, emphasizing the long-term

	disparities					during winter surge.	impacts of prenatal exposure.
16	Assess the impact of access to financial services on COVID-19 mortality globally	142 nations	Explored the role of financial services in health outcomes	Modeling of COVID-19 mortality and financial services access	Considered in the analysis of national data	Higher pre-pandemic use of formal financial services was associated with lower COVID-19 mortality; significant impact similar to major health risk factors.	The findings suggest that improving access to financial services could be an important factor in mitigating health disparities and reducing mortality from pandemics
17	Analyze COVID-19 mortality across countries with different	106 countries	Not applicable	Cross-sectional analysis of public data	Implied through data use	Mortality rates higher in high-income countries during the first wave; lower in	Economic disparities impact COVID-19 outcomes; high-income

	economic statuses					subsequent waves; differences in time lags.	countries saw reduced mortality rates in later waves.
18	Explore how early life environment and socioeconomic status influence COVID-19 susceptibility and severity	Not applicable	Systematic review	Literature review	Not detailed	Early life adversity linked to increased COVID-19 severity; importance of early life factors in long-term health outcomes.	Early life adversity contributes to COVID-19 severity; need for collection of related health data for future studies.
19	Assess impact of COVID-19 on insurance coverage	7514 respondents	Not applicable	Random-digit dialing survey, difference-in-difference	Implied through survey methods	Increased uninsured rates; Medicaid expansion provided some protection,	Medicaid expansion mitigated some disparities; overall access to care

	and disparities in access among low-income individuals			ces analysis		but access worsened in all states.	worsened during the pandemic.
20	Understand socioeconomic status effects on help-seeking for colorectal cancer during COVID-19	39 participants	Not applicable	Qualitative semi-structured interviews	Implied through qualitative research	Lower SES patients faced more uncertainty and difficulties; disparities in help-seeking behaviors exacerbated by COVID-19.	COVID-19 exacerbated existing healthcare disparities; recommendations to address inequalities in care access.



### Appendix 3: Data extraction table

No.	First Author	Study design	Aim of the research	Sample size/Population	Research methodology	Data analysis	Findings/Discussion
1.	Ashley Ossimetha	Quantitative, observational study	To examine differences in community mobility reduction and SARS-CoV-2 outcomes across counties with differing levels of socioeconomic disadvantage.	U.S. counties with at least one SARS-CoV-2 case between April 1 and May 15, 2020	Linear regression with state-fixed effects	Adjusted for state-fixed effects and SARS-CoV-2 prevalence on April 1	Higher SDI counties experienced greater growth in cases and deaths but showed lower mobility reductions; this indicates the disproportionate impact of the pandemic on economically disadvantaged communities
2.	Choukou	Scoping Review	To review digital health literacy in vulnerable populations	5 articles covering various vulnerable populations	Scoping review	Narrative synthesis	Identified e-services aimed at improving digital health literacy, with various barriers

			ns during COVID-19.				and facilitators noted.
3.	Cheng	Quantitative	To investigate racial, ethnic, and income disparities in COVID-19 vaccination.	9,606 Medicare beneficiaries (weighted N=50,512,963)	Logistic regression	Logistic regression analysis	Significant disparities in vaccination rates were observed among racial, ethnic, and low-income groups.
4.	Julien Riou	Population-based analysis	Examine socioeconomic inequalities in COVID-19 care cascade in Switzerland and	4,129,636 tests, 609,782 positive tests, 26,143 hospitalisations, 2,432 ICU admissions, 9,383 deaths, 8,221,406 residents	Quantitative analysis using surveillance data and geocoding	Negative binomial regression models	Significant disparities in COVID-19 testing and outcomes based on socioeconomic position, highlighting the inverse care law in Switzerland
5.	Kamaria Kaalund	Mixed-methods	Assess population-level disadvantage indices to	N/A (analysis of 14 indices)	Network visualization and geospatial analyses	Network visualization and geospatial	Different disadvantage indices yield varying social risk values, potentially

			inform equitable health policy during COVID-19			al analyses	affecting health policy outcomes; careful selection of indices is crucial for equitable health interventions
6.	Michael Poulson	Quantitative analysis	Understand racial disparities in COVID-19 outcomes between Black and White Americans	76,442 white, 48,338 non-Hispanic Black patients	Quantitative analysis using multivariate Poisson regressions	Multivariate Poisson regressions	Black Americans had higher risks of severe COVID-19 outcomes compared to White Americans, emphasizing the need for addressing racial health disparities
7.	Chen	Cross-sectional study	To identify disparities in the use of telemedicine	5023 patients	Retrospective chart review	Adjusted analysis	Racial/ethnic minorities, older patients, and non-English speakers were significantly less likely to complete video telehealth

							encounters. The study calls for identifying barriers to telehealth access.
8.	Grome	Cross-sectional study	Understand COVID-19's impact on rural communities	9650 deaths across 95 counties	Cross-sectional analysis of mortality rates	Negative binomial regression	COVID-19 mortality rates were higher in rural Tennessee counties compared to urban ones, and this disparity should influence public health policy and preparedness plans.
9.	Bann	Meta-analysis	Investigate changes in health behaviors during the COVID-19 pandemic	14,297 participants	Data from five British cohorts, logistic regression models, meta-analysis	Logistic regression models, meta-analysis	Behavioral changes were observed in sleep, exercise, diet, and alcohol intake, with widening inequalities particularly in sleep among women, disadvantaged groups, and

							ethnic minorities. The study discusses the impact of these findings on health inequalities and the need for targeted interventions.
10.	Jason	Scoping review	Identify primary work-related risks affecting Black and Hispanic workers during COVID-19	44 articles	Systematic review of articles from three databases	Qualitative synthesis of findings	The study found that being an essential worker, type of work performed, workplace factors, and community/geographic factors were significant risks impacting work outcomes for Black and Hispanic Americans. The review concludes with recommendations for policy and practice to

							support economic recovery for marginalized populations.
11	Kanwal	Retrospective analysis	Evaluate impact of race and socioeconomic status on COVID-19 outcomes in hospitalized patients	Data from a large health system	Logistic regression analysis of medical records	Statistical analysis of outcomes	Race was not an independent predictor of mortality; Black patients had higher ICU admission rates; socioeconomic status did not independently predict mortality.
12	Hartman	Mechanistic modeling	Examine the impact of vaccination trends on disease control and disparities	161 countries/territories and 58 states	SES-stratified mechanistic model analysis	Impact of vaccination rollout	Early vaccination rollout had a greater impact on controlling disease than final coverage; disparities in coverage were present but timing was more critical.
13	Williams	Systematic review and	Evaluate racial/ethnic	37 cohort/cross-sectional	Review of	Meta-analysis of	Higher infection and mortality rates

		meta-analysis	disparities in COVID-19 outcomes and contributing factors	studies, 15 ecological studies	existing studies	disparities	among Black and Hispanic populations; health care access and socioeconomic factors contribute to disparities.
14	Lee	Systematic review and meta-analysis	Systematically review and analyze racial and ethnic disparities in COVID-19 outcomes and socioeconomic determinants	4.3 million patients from 68 studies	Review and synthesis of published research	Meta-analysis of outcomes	Racial/ethnic minorities at higher risk for COVID-19 positivity and severity; socioeconomic factors significantly influence outcomes.
15	Florencia Torche, Jenna Nobles	Statistical analysis	Examine the consequences of prenatal exposure to	Over 3.5 million birth records in California	Analysis of birth records and COVID data	Statistical analysis of trends	COVID infection during pregnancy increased preterm births; disparities in

			COVID-19 on infant health and socioeconomic disparities				preterm births based on education and timing of COVID infection surges.
16	Todd A Watkins et al.	Modeling and analysis	Assess the impact of access to financial services on COVID-19 mortality across nations	142 nations	Modeling COVID-19 mortality and financial access	Principal component analysis	Higher access to formal financial services correlated with lower COVID-19 mortality; financial services are a significant factor in health outcomes during the pandemic.
17	Lan Yao	Cross-sectional study	Analyze variations in COVID-19 mortality across countries with different	106 countries	Secondary data analysis	Comparative mortality rates, time lags	High-income countries saw reduced mortality in later waves; economic disparities impact outcomes.



			economic statuses				
18	Cyrielle Holuka	Literature review	Explore how early life environment and socioeconomic status influence COVID-19 severity	Not applicable	Systematic review	Synthesis of existing research	Early life adversity linked to increased COVID-19 severity; need for further data collection.
19	Jose Figueroa	Random-digit dialing survey	Assess impact of COVID-19 on insurance coverage and access disparities among low-income individuals	7514 respondents	Survey, difference-in-differences	Statistical analysis of insurance rates	Uninsurance rates increased; Medicaid expansion helped mitigate some disparities.
20	Athena Ipa	Qualitative semi-structured	Understand socioeconomic effects on	39 participants	Qualitative interviews	Thematic analysis	Disparities in help-seeking behavior exacerbated by COVID-19;

		interviews	help-seeking for colorectal cancer during COVID-19				lower SES patients faced more difficulties.
--	--	------------	--	--	--	--	---