

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22

Identifying facilitators and barriers to culturally responsive communication for racial, ethnic, sexual, and gender minoritized patients when screened for COVID-19 vaccinations: A Scoping Review Protocol

Nikhil Kalita<sup>1\*</sup>, Patrick Corr<sup>2\*</sup>, Maranda C. Ward<sup>2\*</sup>, Julia Xavier<sup>2\*</sup>, Paige McDonald<sup>2\*</sup>

<sup>1</sup>The George Washington University Milken School of Public Health, Department of Epidemiology, Washington, D.C., USA

<sup>2</sup>The George Washington University School of Medicine and Health Sciences, Department of Clinical Research and Leadership, Washington, D.C., USA

<sup>\*</sup>These authors contributed equally to this work and have approved the following manuscript for submission to PLOS ONE.

\*Corresponding Author, email: [nkalita19@gwmail.gwu.edu](mailto:nkalita19@gwmail.gwu.edu) (NK); 2600 Virginia Avenue NW, Suite 300, Washington DC, 20037

## 23 **Abstract**

24 **Introduction:** Racial, ethnic, sexual, and gender minoritized groups are considered historically  
25 excluded groups and have been disproportionately affected by the coronavirus disease 2019  
26 (COVID-19) pandemic. The influence of social determinants of health (SDOH), including access  
27 to screening and treatment, and other systemic and structural factors are largely responsible for  
28 these disparities. Primary care practitioner (PCP) competence in culturally responsive screening  
29 practices will be critical to reducing the impact of systemic and structural factors serving as  
30 barriers to screening and treatment. Correspondingly, improving the capacity of PCPs to  
31 communicate with patients in a culturally responsive manner may influence improved screening  
32 and treatment outcomes for minoritized groups related to COVID-19. This scoping literature  
33 review aims to determine the current breadth of literature on culturally responsive  
34 communication (CRC) in regard to COVID-19 vaccination screening for historically excluded,  
35 or minoritized groups. Results from this review will inform the development of a training series  
36 and social marketing campaign to improve PCPs capacity in CRC.

37 **Objectives:** This scoping literature review aims to analyze existing literature on culturally  
38 responsive COVID-19 vaccinations between PCPs and patients in the U.S., specifically for  
39 racial, ethnic, sexual, and gender minoritized groups. Results of this scoping review will inform  
40 the development of a training series and social marketing campaign to improve capacity of PCPs  
41 in this area. Additionally, the review will inform recommendations for future research.

42 **Materials and Methods:** This scoping review will be performed following the framework of  
43 Arksey and O'Malley and the Preferred Reporting Items for Systematic Reviews and Meta-  
44 Analyses extension for scoping reviews (PRISMA-ScR). Relevant studies between the years  
45 2019-2022 were identified using a rigorous search strategy across four databases: MEDLINE

46 (via PubMed), Scopus, Cochrane (CENTRAL; via Wiley), and CINAHL (via EBSCO), using  
47 Boolean and Medical Subject Headings (MeSH) search terms. Studies will be uploaded to the  
48 data extraction tool, Covidence, to remove duplicates and perform a title/abstract screening,  
49 followed by a full-text screening.

50 **Results:** The data extraction and analysis phases of the scoping review are in progress. Data will  
51 be analyzed for themes related to culturally responsive COVID-19 screening practices in clinical  
52 encounters with the identified study populations. Results will be reported by theme and align to  
53 PRISMA-ScR guidelines.

54 **Discussion:** To our knowledge, this is the first study to use scoping methods to investigate the  
55 barriers and facilitators to CRC of COVID-19 vaccine screening for historically excluded  
56 communities in the U.S. The work and results from this research will be directly utilized for the  
57 development of nationally-accessible, continuing medical education materials to teach PCPs  
58 about CRC, as well as other materials to influence relevant policy changes within the healthcare  
59 landscape.

60 **Key Words:** Culturally Responsive Communication, Cultural Competence, COVID-19, Primary  
61 Care Practitioners, Vaccination Screening, BIPOC, LGBTQIA+

62

63

64

65

66

67

68

## 69 **Introduction**

70           The impact of racism, heterosexism, and transphobia in healthcare settings has been  
71 elucidated by the coronavirus disease 2019 (COVID-19) pandemic. People from historically  
72 excluded communities, such as those who are racial, ethnic, sexual, and gender minoritized,  
73 endure disproportionate systemic barriers and structural inequities related to social determinants  
74 that influence increased susceptibility to disease and associated health outcomes.<sup>1-3</sup> For example,  
75 both COVID-19 and human immunodeficiency virus (HIV) are both preventable, communicable  
76 viruses that are highly stigmatized and disproportionately affect health outcomes for these  
77 minoritized groups.<sup>4-5</sup> Culturally responsive communication in the primary care setting for  
78 COVID-19 and HIV among these groups may mitigate the negative effects of structural and  
79 systemic barriers to care. To promote simultaneous culturally responsive screening for COVID-  
80 19 and HIV, our study team aims to design training modules to build PCP capacity in culturally  
81 responsive communication (CRC). We are conducting two separate scoping reviews to inform  
82 and validate the design of this training, corresponding social marketing campaigns, and policy  
83 recommendations. The protocol for one scoping review related to culturally responsive  
84 communication for HIV and PrEP has been published<sup>6</sup> with its analysis underway.

85           This protocol informs a scoping review focused on understanding how, and whether  
86 CRC is occurring between PCPs and minoritized groups related to COVID-19 vaccination  
87 screening. As noted in the aforementioned published protocol, the data from the two reviews will  
88 be combined to inform 1) a training series for PCPs pertaining to CRC screening for COVID-19,  
89 HIV testing and PrEP screening, 2) a social marketing campaign by PCPs to encourage other  
90 PCPs to routinize culturally responsive conversations about testing, screening, and prevention;  
91 and 3) a white paper with policy recommendations for improved screening guidelines for HIV

92 and to inform better implementation of current guidelines for HIV, PrEP/PEP and COVID-19.<sup>6</sup>  
93 The remainder of this article describes the protocol guiding the scoping review on CRC related  
94 to COVID-19 screening by PCPs with the noted minoritized groups.

95 As there are many intersecting themes between the disproportionate burden of COVID-  
96 19 endured by racial, ethnic, sexual, and gender minoritized patients, PCPs should learn to  
97 acknowledge the potential differences in culture and perspective when communicating with their  
98 patients during the screening of COVID-19 vaccines. This requires PCPs to gain an appreciation  
99 for CRC and learn how to facilitate it. However, PCPs may not have the appropriate skills and  
100 training to engage in non-judgmental conversations with historically excluded communities  
101 about various aspects of care.<sup>7-11</sup>

102 In existing published literature, CRC has been related to culturally competent care and  
103 has been defined as “communicating with awareness and knowledge of cultural differences and  
104 attempting to accommodate those differences,”<sup>12(p2)</sup> and it necessarily involves “respect and an  
105 understanding that sociocultural issues such as race, gender, sexual orientation, disability, social  
106 class and status can affect health beliefs and behaviours”.<sup>12(p2)</sup> Xavier & colleagues<sup>6</sup> expand upon  
107 this definition, while emphasizing that within primary care, PCPs must “engage with patients” in  
108 a responsive way that appreciates the role of culture, including their views as healthcare  
109 professionals. According to these authors:

110 “Cultural responsiveness centers unique patient experiences and understandings of health  
111 and illness, recognizes the individual biases that clinicians may hold, and seeks to work  
112 productively with patients who are not typically represented or valued in the Western  
113 understandings of care. At an organizational level, cultural responsiveness includes  
114 valuing diversity within the community; institutionalizing cultural awareness; and

115 adapting to best serve the community by creating policies, systems, administrations, and  
116 protocols that allow for effective cross-cultural interactions. This type of approach allows  
117 healthcare practitioners to work consciously and effectively toward cultivating health  
118 equity for historically marginalized groups.<sup>6(p2)</sup>

119 Correspondingly, CRC could be instrumental in addressing the burden of COVID-19 in  
120 historically excluded groups, if we had greater understanding of if and how CRC occurs in  
121 patient-practitioner interactions, particularly with minoritized populations. Additionally, current  
122 outcome assessments only relate to the influence of cultural competence training on the PCP<sup>13</sup>  
123 and on few patient outcomes, such as satisfaction and compliance.<sup>14</sup> Additional knowledge is  
124 required to understand the process, PCP training outcomes, and patient outcomes regarding  
125 CRC.

126 The study team aims to build the capacity of PCPs to routinize CRC in COVID-19  
127 vaccination screening visits. As such, this scoping review focuses on investigating what has been  
128 published on CRC between PCPs and historically excluded populations related to COVID-19  
129 vaccination screening.

## 130 **Background**

### 131 **Disproportionate COVID-19 Outcomes**

132 Racial and ethnic minoritized communities are at an increased risk of exposure and  
133 burden from COVID-19 due to many systemic disadvantages. COVID-19 disproportionately  
134 affects historically excluded communities due to a lack of access to healthcare, racism, gender  
135 oppression, structural discrimination, medical mistrust, and more.<sup>15-16</sup> Racial and ethnic  
136 minoritized patients have about one and a half times greater risk of COVID-19 infection and are

137 twice as likely to die from COVID-19 as their white counterparts when accounting for age  
138 differences across racial and ethnic groups.<sup>17</sup> In fact, in the summer of 2020, Hispanic people  
139 were five times more likely to die from COVID-19, and Black people were three times as likely  
140 to die from COVID-19 compared to their white counterparts.<sup>17</sup> Endemic inequities are also  
141 persistent when it involves income, education, nutrition, transportation, housing, jobs,  
142 environment, psychosocial stress, and health care.<sup>18</sup> Each of these inequities can be directly tied  
143 to the disproportionate incidence, burden, and mortality of COVID-19 for racial and ethnic  
144 minoritized people.<sup>18</sup> For example, Black Americans are exposed to air that is 38% more polluted  
145 compared to white Americans, increasing their propensity for developing asthma as well as their  
146 subsequent risk of COVID-19.<sup>19</sup>

147         Similar to racial and ethnic minoritized groups, sexual and gender minoritized groups  
148 face systemic disparities in relation to COVID-19. There is little known on the overall health  
149 effects of COVID-19 for sexual and gender minoritized groups due to the limited data collection  
150 and reporting executed by the U.S. public health system.<sup>20</sup> Despite this, U.S. sexual and gender  
151 minoritized people reported having significant and disproportionate poor mental health outcomes  
152 due to the COVID-19 pandemic.<sup>21-25</sup> Additionally, sexual and gender minoritized patients reported  
153 greater rates of job loss, housing, and food insecurity along with minority stress and  
154 stigmatization, all linked to higher levels of mental illness during the COVID-19 pandemic.<sup>21-27</sup>

### 155         **COVID-19 Vaccination Acceptance**

156         Disparities in vaccine access and acceptance are also associated with disproportionate  
157 COVID-19 hospitalization and mortality among racial, ethnic, sexual, and gender minoritized  
158 patients. By the end of April, 2021, 47% of Hispanic Americans and 46% of Black Americans  
159 had received at least one vaccine, compared to 59% of white Americans.<sup>28</sup> As of July 6, 2021,

160 only 44% and 41% of Black and Hispanic Americans received a COVID-19 booster dose, while  
161 56% of White Americans received a COVID-19 booster dose.<sup>29</sup> Many recent equity-based efforts  
162 may have caused vaccine uptake to increase among all racial and ethnic minoritized groups.<sup>29</sup>  
163 Though vaccine uptake by all groups has recently equalized, it is important to understand the  
164 influences on initial disproportionate uptake by racial and ethnic minoritized populations.  
165 Additionally, sexual and gender minoritized patients faced initial barriers to receiving and  
166 accepting COVID-19 vaccinations with many intersecting themes when compared to racial and  
167 ethnic minoritized patients.<sup>27</sup> A persistent barrier for COVID vaccinations among sexual and  
168 gender minoritized groups include historical and ongoing medical trauma. These barriers, faced  
169 by all historically excluded groups, should be addressed in primary care settings.

170 COVID-19 vaccination acceptance is directly related to psychological behavior, societal  
171 and political issues, and vaccine-derived factors that strongly influence decision-making.<sup>30</sup>  
172 Vaccine-related behavioral patterns are complex and influenced by various extrinsic factors.<sup>30</sup>  
173 Negative extrinsic factors can accumulate and prevent people from receiving vaccines.<sup>31</sup> A major  
174 negative extrinsic factor is the behavior of medical mistrust significantly derived from the  
175 malicious history of the mistreatment of historically excluded populations in healthcare and  
176 medical research.<sup>32</sup> In the 1800s, James Marion Sims performed nonconsensual, experimental  
177 surgeries on several enslaved Black women without anesthesia.<sup>33</sup> From 1932 to 1972, 600 Black  
178 men with syphilis were examined without proper consent nor access to penicillin treatments that  
179 were readily available.<sup>15</sup> In the late 1900s, Black women in Mississippi, who had gone to receive  
180 surgeries for their benign tumors, instead had their uterus removed without their consent.<sup>15</sup>  
181 Doctors in the 1980s falsely referred to AIDS as “Gay-Related Immune Deficiency,” kick-  
182 starting the stigmatization of HIV and AIDS against sexual and gender minoritized patients.<sup>34</sup>



183 These profound historical mistreatments have partly caused the justified mistrust in healthcare  
184 among minoritized populations. Medical mistrust could also arise from present-day extrinsic  
185 factors that include communication content, communication presentation, policy, and vaccine  
186 delivery in clinical settings.<sup>35</sup>

## 187 **COVID-19 Vaccination Communication and Culturally Responsive** 188 **Communication**

189 COVID-19 demonstrated the importance of CRC in primary care settings during an  
190 emergent health crisis. Throughout COVID-19, the general public relied on varying sources of  
191 information to determine COVID-19 vaccine safety and efficacy, some of which are not reliable  
192 or evidence-informed.<sup>36</sup> This reliance, highlights the central role of PCPs as reputable sources of  
193 evidence-informed guidance for their patient populations. PCPs are often responsible for  
194 improving health literacy by communicating evidence-based, understandable, and accessible  
195 health information to patients.<sup>37</sup> Unfortunately, disparate treatment and communication between  
196 PCPs and their minoritized patients exists.<sup>38</sup> Racial, ethnic, sexual, and gender minoritized  
197 patients are significantly more likely to report discrimination, a notable predictor of medical  
198 mistrust.<sup>15,39</sup> Communication disparities, specifically, are linked to PCP bias and stigma, leading  
199 to increased mistrust of healthcare practitioners along with other barriers significantly affecting  
200 patient adherence and healthcare-seeking behavior.<sup>38</sup> PCPs can better address these current  
201 disparities in the clinical setting through our expanded definition of CRC.<sup>12</sup> However, we first  
202 need to learn more about if and how CRC is currently occurring in PCP encounters with  
203 minoritized patients.

## 204 **Objectives**

205 A scoping review rapidly maps the body of literature on a specific research area and the  
206 main sources and types of evidence available.<sup>40</sup> Scoping reviews can develop a basis or  
207 preliminary understanding of published literature on a topic before conducting systematic  
208 reviews.<sup>41</sup> This scoping review aims to summarize and disseminate information on CRC between  
209 PCPs and racially, ethnically, sexually, and gender minoritized patients related to COVID-19  
210 vaccination. The results of this scoping review will be used to inform future research and policy  
211 recommendations to understand and improve PCPs' capacity to routinize COVID-19 screening  
212 and prevention with all patients and rely on CRC for patients from historically excluded  
213 communities.

## 214 **Materials and Methods**

215 This scoping review will be conducted in accordance with the Arksey and O'Malley  
216 methodological framework.<sup>40</sup> The framework provides a flexible design for when researchers  
217 redefine search terms as familiarity with the literature increases.<sup>40</sup> The process is considered to be  
218 iterative for researchers to engage with each stage, so that the review is fully comprehensive.<sup>40</sup>  
219 The framework suggests a scoping review undergo five stages: (1) identify the research question;  
220 (2) identify relevant studies; (3) select studies and extract data; (4) chart the data; and (5) collate,  
221 summarize, and report results.<sup>40</sup> This scoping review will also be guided by the specific steps of  
222 the PRISMA extension for scoping reviews (PRISMA-ScR).<sup>42</sup>

## 223 **Institutional review board statement**

224 This project did not utilize human subjects, nor did it involve a process of informed  
225 consent as the need for consent was waived by an ethics committee. This manuscript exclusively  
226 provides an overview of a scoping review protocol. The data from this scoping review will be

227 used to inform a continuing medical education intervention that is IRB-approved and supported  
228 by grant funding.

### 229 **Stage 1: Identifying the Research Question**

230 Before proceeding with the scoping review, the research team first identified pertinent  
231 issues while crafting an initial research question to bring forward to multiple clinicians for  
232 review and feedback. Most PCPs consulted expressed that there should be a focus on  
233 understanding and teaching CRC regarding COVID-19 vaccinations rather than on general  
234 COVID-19 prevention and screening. As of now, COVID-19 vaccinations are still not widely  
235 accepted in the U.S. despite the compounding positive effects of herd immunity.<sup>43</sup> Additionally,  
236 minoritized populations are disproportionately affected by COVID-19 due to various systemic  
237 and interpersonal barriers described previously. Therefore, the concern for appropriate culturally  
238 tailored interventions with COVID-19 vaccination is particularly valid. Correspondingly, the  
239 research question (PRISMA-ScR Item 4: Objectives) guiding this review is: “*How is culturally*  
240 *responsive communication occurring between patient and practitioner related to COVID-19*  
241 *vaccination and booster screening for racially, ethnic, sexually, and gender minoritized*  
242 *patients?*”

### 243 **Stage 2: Identifying Relevant Studies**

244 The search was conducted across the four databases (PRISMA-ScR Item 7: Information  
245 Sources) of MEDLINE (Pubmed), Scopus, CENTRAL (Cochrane Central Registry of Controlled  
246 Trials), and CINAHL (Complete). Studies with various title-abstract and Boolean and Medical  
247 Subject Headings (MeSH) terms pertaining to the research question and definitions of key  
248 concepts were included in the search strategy. With input from the research team, collaborators,  
249 and an experienced research librarian, an initial search strategy was devised (see Table 1). The

250 search strategy required four categories of terms: terms including the population of interest,  
251 terms similar to “culturally competent”, terms synonymous to “COVID-19”, and terms related to  
252 vaccination in the context of the study.

253 Several groups within historically excluded populations are named in different contexts,  
254 languages, and forms. So, it was crucial to include all possible terms that each marginalized  
255 group is referred to in scientific literature. For example, each term and all synonyms within the  
256 acronyms of LGBTQIA+ and BIPOC were searched. Terms that potentially cause  
257 marginalization for groups such as “discrimination”, “prejudice”, “stereotyping”, were also  
258 included. All terms related to cultural responsiveness and the practitioner-patient relationship,  
259 such as “cultural competence”, “cultural sensitivity”, and “patient-centered” were included.

260 As COVID-19 has surged into the global environment, various nomenclature of COVID-  
261 19 have also emerged. Studies may have different terminology of COVID-19 due to their  
262 scientific nature and specificity of results. Therefore, a thorough identification process of all  
263 possible COVID-19 terms was implemented in the search strategy. The differing names include,  
264 but were not limited to, “COVID”, “n-CoV2”, “SARS Coronavirus 2”. Search terms specifically  
265 regarding vaccination were the last set of terms that had to be included in the search. These terms  
266 refer to primary prevention and include “vaccination”, “booster”, “immunization”.

267 The finalized search strategies brought about the following results by database:  
268 MEDLINE yielded 284 results; SCOPUS yielded 545 results; CENTRAL yielded 61 reviews  
269 and 114 prospective clinical trials; and CINAHL database yielded 127 results. All databases  
270 posed problems with formatting and character technicalities. Correspondingly, a few adjustments  
271 were made to conduct the search appropriately and reflect searches in other databases. Table 1

272 provides an overview of the MEDLINE search strategy (PRISMA-ScR Item 8: Search),  
 273 translated and utilized in the other databases.

274 **Table 1: MEDLINE Search Strategy**

Categories	Search Terms
Population of Interest	<p>(Marginaliz* [tiab] OR disadvantag* [tiab] OR underserv* [tiab] OR vulnerable populations [mesh] OR medically underserved area [mesh] OR LGBT* [tiab] OR BIPOC [tiab] OR POC [tiab] OR minorit* [tiab] OR ethnic and racial minorities [mesh] OR minority groups [mesh] OR minority health [mesh] OR ethnic minorit* [tiab] OR racial minorit* [tiab]</p> <p>OR gay [tiab] OR lesbian* [tiab] OR homosexual* [tiab] OR health services for transgender persons [mesh] OR sexual and gender minorities [mesh] OR sexual minorit* [tiab] OR gender minorit* [tiab] OR homosexuality [mesh] OR homosex* [tiab] OR transgender* [tiab] OR transgender persons [mesh] OR transsexualism [mesh] OR transex* [tiab] OR MSM [tiab] OR WSW [tiab] OR YMSM [tiab] OR men who have sex with men [tiab] OR bisexual* [tiab] OR queer* [tiab] OR nonbinary [tiab] OR intersex [tiab]</p> <p>OR indigenous* [tiab] OR American Native Continental Ancestry Group [mesh] OR health services, indigenous [mesh] OR indigenous peoples [mesh] OR alaskan native* [tiab] OR indigenous canadians [mesh] OR native american* [tiab] OR native-american* [tiab] OR native* [tiab] OR nation people* [tiab] OR inuit* [tiab] OR inuits [mesh] OR indian* [tiab]</p> <p>OR African American* [tiab] OR POC [tiab] OR people of color [tiab] OR African-american* [tiab] OR black* [tiab] OR blacks [mesh] OR African Americans [mesh] OR health disparity, minority and vulnerable populations [mesh]</p> <p>OR hispanic [tiab] or latino [mesh] OR hispanic* [tiab] OR latino* [tiab] OR latinX* [tiab] OR latina* [tiab]</p> <p>OR asian americans [mesh] OR asian* [tiab]</p> <p>OR pacific islander americans [mesh] OR native hawaiian [mesh]</p> <p>OR prejudice [mesh] OR bias [tiab] OR prejudice [tiab] OR racis* [tiab] OR racia* [tiab] OR sexis* [tiab] OR discriminat* [tiab] OR homophob* [tiab] OR inequit* [tiab] OR inequalit* [tiab] OR health inequities [mesh] OR healthcare disparities [mesh] OR disparit* [tiab] OR social inequalit* [tiab] OR racial inequalit* [tiab] OR segregat* [tiab] OR social stigma [mesh] OR stereotyping</p>

	<p>[mesh] OR social discrimination [mesh] OR social marginalization [mesh] OR social isolation [mesh] OR stigma* [tiab] )</p> <p><b>AND</b></p>
<p>Culturally Competent</p>	<p>( cultural* responsi* [tiab] OR culturally-responsive [tiab] OR culturally competent care [mesh] OR cultural* competen* [tiab] OR culturally-competent [tiab] OR cultural* aware* [tiab] OR culturally-aware [tiab] OR cultural* sensitiv* [tiab] OR culturally-sensitive [tiab] OR cultural* congruen* [tiab] OR culturally-congruent [tiab] OR cross-cultur* [tiab] OR cross cultur* [tiab] OR cultural* grounded* [tiab] OR culturally-grounded [tiab] OR inclusi* [tiab] OR competen* [tiab] OR cultural* adapt* [tiab] OR culturally-adapted [tiab] OR cultural* tailor* [tiab] OR culturally-tailored [tiab] OR culturally influenced [tiab] OR culturally-influenced [tiab] OR affirm* [tiab] OR transcultural [tiab] OR multicultural [tiab] OR intercultural [tiab] OR cultural* litera* [tiab] OR cultural* respect* [tiab] OR cultural* appropriate* [tiab] OR culturally accept* [tiab] OR cultural* safe* [tiab] OR cultural* intelligen* [tiab] OR</p> <p>patient communic* [tiab] OR patient interact* [tiab] OR patient satisfact* [tiab] OR patient relation* [tiab] OR patient trust* [tiab] OR patient concordanc* [tiab] OR patient trust* [tiab] OR patient collaborat* [tiab] OR patient partner* [tiab] OR patient-centered* [tiab] OR patient centered* [tiab] OR patient orientat* [tiab] OR patient-orientat* [tiab] OR Patient-Practitioner Orientation Scale [tiab] OR PPOS [tiab] OR provider communic* [tiab] OR provider interact* [tiab] OR provider satisfact* [tiab] OR provider relation* [tiab] OR provider trust* [tiab] OR provider concordanc* [tiab] OR provider trust* [tiab] OR provider collaborat* [tiab] OR provider partner* [tiab] OR patient-centered* [tiab] OR patient centered* [tiab] OR Patient-Practitioner Orientation Scale [tiab] OR PPOS [tiab] OR Health Communication [mesh] OR Patient Satisfaction [mesh] OR Health Education [mesh] OR patient-practitioner* [tiab] OR patient-provider* [tiab] OR patient-physician* [tiab] OR patient-doctor* [tiab] OR practitioner-patient* [tiab] OR provider-patient* [tiab] OR physician-patient* [tiab] OR doctor-patient* [tiab] )</p> <p><b>AND</b></p>
<p>COVID-19</p>	<p>(COVID-19 [mesh] OR COVID* [tiab] OR coronavirus* [tiab] OR corona virus* [tiab] OR SARS-CoV-2 [mesh] OR SARS-CoV-2* [tiab] OR COVID-19* [tiab] OR nCoV* [tiab] OR SARS Coronavirus 2* [tiab] OR SARS Corona virus 2* [tiab] OR Severe Acute Respiratory Syndrome Coronavirus 2* [tiab] OR Severe Acute Respiratory Syndrome Coronavirus 2* [tiab] OR Severe Acute Respiratory Syndrome Coronavirus-2* [tiab])</p> <p><b>AND</b></p>

Vaccination	(vaccin* [tiab] OR Vaccines [mesh] OR booster* [tiab] OR immuniz* [tiab])
-------------	---

275

276

### Stage 3: Study Selection

277

278

279

280

281

The scoping review will incorporate two levels of screening using Covidence literature review software. First, titles and abstracts will be reviewed for all manuscripts, and consensus will be required from at least two reviewers for inclusion. All studies deemed relevant in the title and abstract review shall move forward for review in the full-text level of screening (PRISMA-ScR Item 9: Selection of Sources of Evidence).

282

283

In the title and abstract review, four investigators (NK, JX, SP, DB) will independently screen each study based on the following inclusion criteria:

284

285

286

287

288

289

290

291

- Study must be based in the U.S. or analyze a U.S. population (unless it is a scoping or systematic review)
- Study must conduct research for or with an LGBTQIA+ and/or BIPOC group
- Study must include any results and/or discussion related to COVID-19 vaccines
- Study must include attitudes, behaviors, etc. of patients and/or PCPs in healthcare settings
- Study must have been published after November 2019 (start of COVID-19)
- Study must not be a protocol or any type of research not already published

292

293

294

295

The search will also be limited (PRISMA-ScR Item 6: Eligibility Criteria) to studies that concern COVID-19 vaccination screening for minoritized populations. Studies will be included if both investigators found that they fulfilled all the requirements of the inclusion criteria. If two investigators have differing opinions on a study, a third investigator will make a final decision on

296 the study's inclusion. The title and abstract review will be conducted by primary reviewers (NK,  
297 JX) and secondary reviewers (SP, DB).

298 Full-text screening of the studies included from the title and abstract review will then be  
299 conducted. This stage will require two reviewers to read articles in their entirety and decide  
300 whether they should be included in the review. Similar to the title and abstract screening, if two  
301 investigators have differing opinions on a study, a third investigator decides if it should be  
302 included in the review to be forwarded for data extraction. The relevance and inclusion criteria of  
303 the full-text screening will be the same as that of the title and abstract screening. The full-text  
304 screening will be conducted by primary reviewers (NK, JX) and a new team of secondary  
305 reviewers (SP, PC). The resulting studies will qualify for inclusion in the next step of the review,  
306 the extraction phase, where data on these studies will be charted.

#### 307 **Stage 4: Charting the Data**

308 This stage is meant to collate and synthesize the data in a comprehensive and organized  
309 manner to appropriately extract information relevant to our research question (PRISMA-ScR  
310 Item 10: Data Charting Process). The extraction phase will be moved from Covidence to Google  
311 Sheets to allow for better collaboration and cohesiveness. This study team deemed that  
312 Covidence has several limitations when collaborating with group members, copying and pasting  
313 from full-text presentations of studies, and selection capabilities. Google Sheets will also allow  
314 more flexibility for complicated questions and connectivity between team members. Information  
315 from the included studies will be reviewed by 9 reviewers (NK, PM, PC, AK, MW, HC, PS, OC,  
316 MCW) and extracted through an evidence-based format of prompts and questions requiring a  
317 specific input, or checkbox selection, through Google Sheets (PRISMA-ScR Item 11: Data  
318 Items).



319 **Table 2: Format of prompts and questions for extraction phase**

Prompt/Question (s)	Input; Checkbox Selection
Reviewers	Reviewers' initials.
Covidence ID	ID provided by Covidence.
Author(s)	Name of first author.
Publication Title	Title of study.
Publication Year	Year when study was published.
Study Selection	Location where study was conducted.
Study Design	Checkbox Selection: <ul style="list-style-type: none"> <li>• Randomized controlled trial</li> <li>• Non-randomized experiment</li> <li>• Cohort study</li> <li>• Cross-sectional study</li> <li>• Quantitative research</li> <li>• Participatory Action Research</li> <li>• Systematic review</li> <li>• Case series</li> <li>• Case report</li> <li>• Diagnostic test accuracy study</li> <li>• Opinion Piece/editorial</li> <li>• Other (<i>space to input design provided</i>)</li> </ul>
Intervention (if applicable)	Checkbox Selection: <ul style="list-style-type: none"> <li>• Quality improvement (i.e. protocol, screening QI)</li> <li>• Community health/Public health initiatives</li> <li>• Patient education: unspecified</li> <li>• Patient education: knowledge/attitudes</li> <li>• Patient education: skill-building</li> <li>• Patient education: behavior change</li> <li>• Clinical education: unspecified</li> <li>• Clinician education: knowledge/attitudes</li> <li>• Clinician education: skill-building (i.e. measurable clinical tests/skills)</li> <li>• Clinician education: CME courses</li> <li>• N/A</li> <li>• Other (<i>space to input intervention type provided</i>)</li> </ul>
Timeframe of Study	Timeframe of data collection of study.
Study Aims	Verbatim copy and paste of aims indicated by study.

Study Population	Specific population(s)/group(s) studied, including any demographic details
Methodology Overview	<p>Checkbox Selection:</p> <ul style="list-style-type: none"> <li>• Observation/Participant observation</li> <li>• Literature review (i.e. systematic review, scoping reviews, etc.)</li> <li>• Art-based forms (i.e. photo, voice data poems)</li> <li>• Surveys/Questionnaire</li> <li>• Individual Interviews</li> <li>• Paired Interviews</li> <li>• Focus groups</li> <li>• Administering intervention and tracking outcomes</li> <li>• Biometric data (i.e. fitbits and cardiac health)</li> <li>• Secondary data analysis/archival study (i.e. hospital-based, EMR, etc.)</li> <li>• Other (<i>space to input methodology overview provided</i>)</li> </ul>
Results	All results copied and pasted.
Level of Communication Addressed	<p>Checkbox Selection:</p> <ul style="list-style-type: none"> <li>• Patient-practitioner interaction</li> <li>• EHR/patient portal communication</li> <li>• Public health communication - local level (i.e. local non-profits, community messages)</li> <li>• Public health communication - national level (i.e. government orgs, large orgs)</li> <li>• Social media</li> <li>• N/A</li> <li>• Other (<i>space to input level of communication addressed</i>)</li> </ul>
How does it address racial and ethnic minoritized patients?	<p>Checkbox Selection:</p> <ul style="list-style-type: none"> <li>• Engaged racial and ethnic minoritized groups as study participants</li> <li>• Offered recommendations specific to needs of racial and ethnic minoritized patients</li> <li>• Collaborated with racial and ethnic minoritized groups or related organizations</li> <li>• Racial and ethnic minoritized people participated in study analysis</li> <li>• Racial and ethnic minoritized people leading/designing study</li> <li>• N/A</li> </ul>

	<ul style="list-style-type: none"> <li>• Other (<i>space to input the addressing of racial and ethnic minoritized patients</i>)</li> </ul>
How does it address sexual and gender minoritized patients?	<p>Checkbox Selection:</p> <ul style="list-style-type: none"> <li>• Engaged sexual and gender minoritized groups as study participants</li> <li>• Offered recommendations specific to needs of sexual and gender minoritized patients</li> <li>• Collaborated with sexual and gender minoritized groups or related organizations</li> <li>• Sexual and gender minoritized people participated in study analysis</li> <li>• Sexual and gender minoritized people leading/designing study</li> <li>• N/A</li> <li>• Other (<i>space to input the addressing of sexual and gender minoritized patients</i>)</li> </ul>
How does it address COVID-19 Vaccine Communication? [EXPLANATION]	Reviewers explain why they indicated the specific component as a facilitator or barrier to COVID-19 vaccine communication addressed by the study.
How does it address COVID-19 Vaccine Communication? [QUOTES]	Reviewers input excerpts of the study supporting their choice of indicating the specific component as a facilitator or barrier to COVID-19 vaccine communication addressed by the study.
Implications	Verbatim or summarized input of implications, recommendations, etc. explained by authors of the study.
Limitations	Verbatim copied and pasted of limitations or biases indicated by authors of the study.

320

321 To increase the rigor of the scoping literature review, 3 primary reviewers (NK, PM, PC)

322 will undergo another review of all 81 studies to determine if there was substantial mention of

323 CRC, specifically in regard to direct PCP communication with patients. The 3 reviewers (NK,

324 PM, PC) will first extract data on CRC between PCPs and patients from all 81 studies through a

325 similar process as the initial data extraction utilizing Google Sheets. If this information was

326 present in a substantial amount, or in at least one sentence throughout the individual studies, they

327 will be included for data analysis. All results from these reviews will be conducted individually

328 by the 3 reviewers (NK, PM, PC) and then be reviewed amongst each reviewer to finalize  
329 decisions on what data should be analyzed and what should not.

### 330 **Stage 5: Collating, Summarizing, and Reporting the Results**

331 Data determined to be useful in answering the study question, “How is CRC occurring  
332 between patient and practitioner related to COVID-19 vaccination and booster screening for  
333 racially, ethnically, sexually, and gender minoritized patients?” will be collated again via Google  
334 Sheets. The data will then be organized by theme and relevance to determine the scope of  
335 literature regarding our topic of interest, along with potential gaps in existing literature. The  
336 themes and relevance will be identified inductively through emergent coding and then  
337 deductively through the lenses of Critical Race Theory,<sup>44</sup> Queer Theory,<sup>45</sup> and the Socio-  
338 Ecological Framework.<sup>46</sup> These perspectives stress the importance of centering the voices of  
339 minoritized patients in order to understand, disrupt, and reshape systems of power, as these  
340 groups are best able to speak to their humanity and experiences. The scoping literature review  
341 will also focus on identifying the breadth of the available literature rather than its quality, which  
342 is typically evaluated through a systematic literature review.<sup>41</sup> After analysis, results will be  
343 synthesized and reported according to PRISMA-ScR guidelines (Item 13: Synthesis of Results;  
344 Items 15-19). The process used to select studies will be detailed in a PRISMA flowchart  
345 (PRISMA-ScR Item 14: Selection of Sources of Evidence). The study team will disseminate our  
346 findings of the scope of available literature, as well as opportunities for future research and  
347 clinical interventions in regard to CRC for COVID-19 vaccination screening in primary care  
348 settings.

### 349 **Discussion**

350 As minoritized patients often face many barriers to health care, PCPs must aim to be  
351 trusted sources of information through utilizing CRC to facilitate important discussions with  
352 minoritized patients about COVID-19 vaccinations. Discussions incorporating CRC are vital in  
353 influencing a patient’s decision-making process when considering to take a COVID-19  
354 vaccination or booster. This scoping review will indicate if and how CRC is currently  
355 implemented in PCP encounters with minoritized patients. To our knowledge, this is the first  
356 study to use scoping methods to investigate the barriers and facilitators to CRC between PCPs  
357 and minoritized patients regarding COVID-19 vaccine screening. This scoping review protocol  
358 will allow us to adequately map the landscape, gaps, and prominent themes of current research.  
359 Our findings will then be disseminated in publication and via nationally-accessible, continuing  
360 medical education materials, as well as other materials to influence relevant policy changes  
361 within the healthcare landscape. One limitation involved the translation of search terms of  
362 interest across databases in the health and medical sciences. Each database has unique language  
363 parameters and search requirements, resulting in minor differences across databases.

364

365

366

367

368

369

370

371

372

373 **Supporting Information**

374 PRISMA-P 2015 checklist.docx

375

376 **Conflict of Interest**

377 The authors declare no conflict of interest.

378

379 **Acknowledgments**

380 The authors would like to acknowledge Thomas Harrod, Associate Director of Reference,  
381 Instruction, and Access at the George Washington University's Himmelfarb Health Sciences  
382 Library for his guidance and support in developing the search strategies for this scoping review.

383 The authors would like to acknowledge Saylor Pershing, Darrell Bailey, Hasina Chimeka-  
384 Tisdale, Olivia Cristillo, Paloma Delgado, Madeleine Will, and Abigail Konopasky for their  
385 assistance in the text screening and extraction process.

386

387 **Funding Statement**

388 This scoping review is part of a grant from Gilead Sciences, Inc. (<https://www.gilead.com/>). NK,  
389 PC, MCW, JX, and PM are all funded under this grant. The funders did not have a role in the  
390 study design, data collection and analysis, decision to publish, or preparation of the manuscript.

391

392 **Data Availability**

393 All relevant data from this study will be made accessible upon completion of the scoping review.

394 No datasets were produced or analyzed in the current study.

395

396  
397  
398  
399  
400  
401  
402  
403  
404  
405  
406  
407  
408  
409  
410  
411  
412  
413  
414  
415  
416  
417

## References

1. Abedi V, Olulana O, Avula V, et al. Racial, Economic, and Health Inequality and COVID-19 Infection in the United States. *J Racial Ethn Health Disparities*. 2021;8(3):732-742. doi:10.1007/s40615-020-00833-4
2. Sears B, Conron KJ, Flores AR. *The Impact of the Fall 2020 COVID-19 Surge on LGBT Adults in the US*. University of California, Los Angeles. February 2021. Accessed May 24, 2023. <https://williamsinstitute.law.ucla.edu/publications/covid-surge-lgbt/>.
3. Yancy CW. COVID-19 and African Americans. *JAMA*. 2020;323(19):1891–1892. doi:10.1001/jama.2020.6548
4. Rewerska-Juško M, Rejdak K. Social Stigma of Patients Suffering from COVID-19: Challenges for Health Care System. *Healthcare (Basel)*. 2022;10(2):292. doi:10.3390/healthcare10020292
5. Rueda S, Mitra S, Chen S, et al. Examining the associations between HIV-related stigma and health outcomes in people living with HIV/AIDS: a series of meta-analyses. *BMJ Open*. 2016;6(7):e011453. doi:10.1136/bmjopen-2016-011453
6. Xavier J, Ward MC, Corr PG, Kalita N, McDonald P. Identifying the barriers and facilitators to culturally responsive HIV and PrEP screening for racial, ethnic, sexual, and gender minoritized patients: A scoping review protocol. *PLOS One*. doi:10.1371/journal.pone.0281173.
7. Ashana DC, D'Arcangelo N, Gazarian PK, et al. "Don't Talk to Them About Goals of Care": Understanding Disparities in Advance Care Planning. *J Gerontol A Biol Sci Med Sci*. 2022;77(2):339-346. doi:10.1093/gerona/glab091

- 418 8. Casanova-Perez R, Apodaca C, Bascom E, et al. Broken down by bias: Healthcare biases  
419 experienced by BIPOC and LGBTQ+ patients. *AMIA Annu Symp Proc.* 2022;2021:275-  
420 284.
- 421 9. Kabir, R., & Zaidi, S. T. (2022). Implicit bias against BIPOC patients in clinical settings:  
422 A qualitative review. *Spectra Undergraduate Research Journal.* 2022;2(1); 28-46.  
423 doi:10.9741/2766-7227.1014
- 424 10. Malik S, Master Z, Parker W, DeCoster B, Campo-Engelstein L. In our own words: a  
425 qualitative exploration of complex patient-provider interactions in an LGBTQ population.  
426 *Canadian Journal of Bioethics.* 2019;2(2):83-93. doi:10.7202/1062305ar
- 427 11. Moore C, Dukes C. The Value of Identity: Providing Culturally-Responsive Care for  
428 LGBTQ+ Patients Through Inclusive Language and Practices. *Dela J Public Health.*  
429 2019;5(3):6-8. doi:10.3281/djph.2019.06.003
- 430 12. Minnican C, O'Toole G. Exploring the incidence of culturally responsive communication  
431 in Australian healthcare: the first rapid review on this concept. *BMC Health Serv Res.*  
432 2020;20(1):20. doi:10.1186/s12913-019-4859-6
- 433 13. Govere L, Govere EM. How Effective is Cultural Competence Training of Healthcare  
434 Providers on Improving Patient Satisfaction of Minority Groups? A Systematic Review  
435 of Literature. *Worldviews Evid Based Nurs.* 2016;13(6):402-410. doi:10.1111/wvn.12176
- 436 14. Alizadeh S, Chavan M. Cultural competence dimensions and outcomes: a systematic  
437 review of the literature. *Health Soc. Care Community.* 2015;24(6):e117-e130.  
438 doi:10.1111/hsc.12293
- 439 15. Morgan KM, Maglalang DD, Monnig MA, Ahluwalia JS, Avila JC, Sokolovsky AW.  
440 Medical Mistrust, Perceived Discrimination, and Race: a Longitudinal Analysis of



- 441 Predictors of COVID-19 Vaccine Hesitancy in US Adults. *J Racial Ethn Health*  
442 *Disparities*. 2023;10(4):1846-1855. doi:10.1007/s40615-022-01368-6
- 443 16. Pharr JR, Terry E, Wade A, Haboush-Deloye A, Marquez E, Nevada Minority Health  
444 And Equity Coalition. Impact of COVID-19 on Sexual and Gender Minority  
445 Communities: Focus Group Discussions. *Int J Environ Res Public Health*. 2022;20(1):50.  
446 doi:10.3390/ijerph20010050
- 447 17. Ndugga N, Hill L, Artiga S. Covid-19 cases and deaths, vaccinations, and treatments by  
448 race/ethnicity as of fall 2022. KFF website. November 17, 2022. Accessed May 24, 2023.  
449 [https://www.kff.org/racial-equity-and-health-policy/issue-brief/covid-19-cases-and-](https://www.kff.org/racial-equity-and-health-policy/issue-brief/covid-19-cases-and-deaths-vaccinations-and-treatments-by-race-ethnicity-as-of-fall-2022/)  
450 [deaths-vaccinations-and-treatments-by-race-ethnicity-as-of-fall-2022/](https://www.kff.org/racial-equity-and-health-policy/issue-brief/covid-19-cases-and-deaths-vaccinations-and-treatments-by-race-ethnicity-as-of-fall-2022/)
- 451 18. Singu S, Acharya A, Challagundla K, Byrareddy SN. Impact of Social Determinants of  
452 Health on the Emerging COVID-19 Pandemic in the United States. *Front. Public Health*.  
453 2020;8:406. doi:10.3389/fpubh.2020.00406
- 454 19. Dey T, Dominici F. COVID-19, Air Pollution, and Racial Inequity: Connecting the Dots.  
455 *Chem Res Toxicol*. 2021;34(3):669-671. doi:10.1021/acs.chemrestox.0c00432
- 456 20. Cahill S, Grasso C, Keuroghlian A, Sciortino C, Mayer K. Sexual and Gender Minority  
457 Health in the COVID-19 Pandemic: Why Data Collection and Combatting  
458 Discrimination Matter Now More Than Ever. *Am J Public Health*. 2020;110(9):1360-  
459 1361. doi:10.2105/AJPH.2020.305829
- 460 21. Pharr JR, Batra K. Physical and Mental Disabilities among the Gender-Diverse  
461 Population Using the Behavioral Risk Factor Surveillance System, BRFSS (2017-2019):  
462 A Propensity-Matched Analysis. *Healthcare (Basel)*. 2021;9(10):1285.  
463 doi:10.3390/healthcare9101285

- 464 22. Ferlatte O, Salway T, Rice SM, Oliffe JL, Knight R, Ogrodniczuk JS. Inequities in  
465 depression within a population of sexual and gender minorities. *J Ment Health*.  
466 2020;29(5):573-580. doi:10.1080/09638237.2019.1581345
- 467 23. Chan ASW, Wu D, Lo IPY, Ho JMC, Yan E. Diversity and Inclusion: Impacts on  
468 Psychological Wellbeing Among Lesbian, Gay, Bisexual, Transgender, and Queer  
469 Communities. *Front Psychol*. 2022;13:726343. doi:10.3389/fpsyg.2022.726343
- 470 24. Pharr JR, Kachen A, Cross C. Health Disparities Among Sexual Gender Minority  
471 Women in the United States: A Population-Based Study. *J Community Health*.  
472 2019;44(4):721-728. doi:10.1007/s10900-019-00631-y
- 473 25. Swann G, Stephens J, Newcomb ME, Whitton SW. Effects of sexual/gender minority-  
474 and race-based enacted stigma on mental health and substance use in female assigned at  
475 birth sexual minority youth. *Cultur Divers Ethnic Minor Psychol*. 2020;26(2):239-249.  
476 doi:10.1037/cdp0000292
- 477 26. Dawson L, McGough M, Kirzinger A, Sparks G, Rae M, Young G, Kates J. The Impact  
478 of the COVID-19 Pandemic on LGBT+ People's Mental Health. KFF website. August  
479 27, 2021. Accessed May 24, 2023. [https://www.kff.org/coronavirus-covid-19/poll-  
480 finding/the-impact-of-the-covid-19-pandemic-on-lgbt-people/](https://www.kff.org/coronavirus-covid-19/poll-finding/the-impact-of-the-covid-19-pandemic-on-lgbt-people/)
- 481 27. Pharr JR, Terry E, Wade A, Haboush-Deloye A, Marquez E, Nevada Minority Health  
482 And Equity Coalition. Impact of COVID-19 on Sexual and Gender Minority  
483 Communities: Focus Group Discussions. *Int J Environ Res Public Health*. 2022;20(1):50.  
484 doi:10.3390/ijerph20010050
- 485 28. Kriss JL, Hung MC, Srivastav A, et al. COVID-19 Vaccination Coverage, by Race and  
486 Ethnicity - National Immunization Survey Adult COVID Module, United States,

- 487 December 2020–November 2021. *MMWR Morb Mortal Wkly Rep.* 2022;71(23):757-763.  
488 doi:10.15585/mmwr.mm7123a2
- 489 29. Ndugga N, Hill L, Artiga S, Haldar S. Covid-19 cases and deaths, vaccinations, and  
490 treatments by race/ethnicity as of fall 2022. KFF website. July 14, 2022. Accessed May  
491 24, 2023. [https://www.kff.org/coronavirus-covid-19/issue-brief/latest-data-on-covid-19-](https://www.kff.org/coronavirus-covid-19/issue-brief/latest-data-on-covid-19-vaccinations-by-race-ethnicity/)  
492 [vaccinations-by-race-ethnicity/](https://www.kff.org/coronavirus-covid-19/issue-brief/latest-data-on-covid-19-vaccinations-by-race-ethnicity/)
- 493 30. Roy DN, Biswas M, Islam E, Azam MS. Potential factors influencing COVID-19 vaccine  
494 acceptance and hesitancy: A systematic review. *PLoS One.* 2022;17(3):e0265496.  
495 doi:10.1371/journal.pone.0265496
- 496 31. Moore R, Purvis RS, Hallgren E, et al. Motivations to Vaccinate Among Hesitant  
497 Adopters of the COVID-19 Vaccine. *J Community Health.* 2022;47(2):237-245.  
498 doi:10.1007/s10900-021-01037-5
- 499 32. Jaiswal J, Halkitis PN. Towards a More Inclusive and Dynamic Understanding of  
500 Medical Mistrust Informed by Science. *Behav Med.* 2019;45(2):79-85.  
501 doi:10.1080/08964289.2019.1619511
- 502 33. Prather C, Fuller TR, Jeffries WL 4th, et al. Racism, African American Women, and  
503 Their Sexual and Reproductive Health: A Review of Historical and Contemporary  
504 Evidence and Implications for Health Equity. *Health Equity.* 2018;2(1):249-259.  
505 doi:10.1089/heq.2017.0045
- 506 34. Logie CH. Lessons learned from HIV can inform our approach to COVID-19 stigma. *J*  
507 *Int AIDS Soc.* 2020;23(5):e25504. doi:10.1002/jia2.25504

- 508 35. Batteux E, Mills F, Jones LF, Symons C, Weston D. The Effectiveness of Interventions  
509 for Increasing COVID-19 Vaccine Uptake: A Systematic Review. *Vaccines (Basel)*.  
510 2022;10(3):386. doi:10.3390/vaccines10030386
- 511 36. Cascini F, Pantovic A, Al-Ajlouni YA, et al. Social media and attitudes towards a  
512 COVID-19 vaccination: A systematic review of the literature. *EClinicalMedicine*.  
513 2022;48:101454. doi:10.1016/j.eclinm.2022.101454
- 514 37. Gibson C, Smith D, Morrison AK. Improving Health Literacy Knowledge, Behaviors,  
515 and Confidence with Interactive Training. *Health Lit Res Pract*. 2022;6(2):e113-e120.  
516 doi:10.3928/24748307-20220420-01
- 517 38. Schut RA. Racial disparities in provider-patient communication of incidental medical  
518 findings. *Soc Sci Med*. 2021;277:113901. doi:10.1016/j.socscimed.2021.113901
- 519 39. Savoia E, Piltch-Loeb R, Goldberg B, et al. Predictors of COVID-19 Vaccine Hesitancy:  
520 Socio-Demographics, Co-Morbidity, and Past Experience of Racial Discrimination.  
521 *Vaccines (Basel)*. 2021;9(7):767. doi:10.3390/vaccines9070767
- 522 40. Arksey H O'Malley L. Scoping studies: Towards a methodological framework. *Int J Soc*  
523 *Res Methodol*. 2005;8(1):19–32. doi:10.1080/1364557032000119616
- 524 41. Munn Z, Peters MDJ, Stern C, Tufanaru C, McArthur A, Aromataris E. Systematic  
525 review or scoping review? Guidance for authors when choosing between a systematic or  
526 scoping review approach. *BMC Med Res Methodol*. 2018;18(1):143. doi:10.1186/s12874-  
527 018-0611-x
- 528 42. Tricco AC, Lillie E, Zarin W, et al. PRISMA Extension for Scoping Reviews (PRISMA-  
529 ScR): Checklist and Explanation. *Ann Intern Med*. 2018;169(7):467-473.  
530 doi:10.7326/M18-0850

- 531 43. Chaudhary JK, Yadav R, Chaudhary PK, et al. Insights into COVID-19 Vaccine  
532 Development Based on Immunogenic Structural Proteins of SARS-CoV-2, Host Immune  
533 Responses, and Herd Immunity. *Cells*. 2021;10(11):2949. doi:10.3390/cells10112949
- 534 44. Bell DAA. “Who’s Afraid of Critical Race Theory?” *University of Illinois Law Review*.  
535 1995;4:893-910.
- 536 45. Alexander BK. Queer/Quare Theory. In: Denzin NK, Lincoln YS, eds. *The Sage*  
537 *Handbook of Qualitative Research*. 5<sup>th</sup> Edition. SAGE Publishing; 2017:275-307.
- 538 46. McLeroy KR, Bibeau D, Steckler A, Glanz K. An ecological perspective on health  
539 promotion programs. *Health Educ Q*. 1988;15(4):351-377.  
540 doi:10.1177/109019818801500401

541

542

543

544

545

546