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Experiences of Black and Latinx health care workers in support roles during the COVID-19 pandemic: A qualitative study

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35 **Abstract**

36

37 Black and Latinx individuals, and in particular women, comprise an essential health care
38 workforce often serving in support roles such as nursing assistants and dietary service staff.
39 Compared to physicians and nurses, they are underpaid and potentially undervalued, yet play a
40 critical role in health systems. This study examined the impact of the coronavirus disease 2019
41 (COVID-19) pandemic from the perspective of Black and Latinx health care workers in support
42 roles (referred to here as HCWs). From December 2020 to February 2021, we conducted 2
43 group interviews (n=9, 1 group in English and 1 group in Spanish language) and 8 individual
44 interviews (1 in Spanish and 7 in English) with HCWs. Participants were members of a high-risk
45 workforce as well as of communities that suffered disproportionately during the pandemic.
46 Overall, they described disruptive changes in responsibilities and roles at work. These
47 disruptions were intensified by the constant fear of contracting COVID-19 themselves and
48 infecting their family members. HCWs with direct patient care responsibilities reported reduced
49 opportunities for personal connection with patients. Perspectives on vaccines reportedly
50 changed over time, and were influenced by peers' vaccination and information from trusted
51 sources. The pandemic has exposed the stress endured by an essential workforce that plays a
52 critical role in healthcare. As such, healthcare systems need to dedicate resources to improve
53 the work conditions for this marginalized workforce including offering resources that support
54 resilience. Overall working conditions and, wages must be largely improved to ensure their
55 wellbeing and retain them in their roles to manage the next public health emergency. The role of
56 HCWs serving as ambassadors to provide accurate information on COVID-19 and vaccination
57 among their coworkers and communities also warrants further study.

58

59 **Introduction**

60 As of June 2021, the United States continues to have the highest number of coronavirus
61 disease 2019 (COVID-19) cases and deaths in the world. Individuals working in healthcare
62 settings, the frontline of the pandemic, face higher risk of infection as well as higher risk of
63 psychological stress compared to the general population [1-4]. While nurses and physicians are
64 the most recognized frontline workers, there are a variety of other roles in healthcare including
65 certified nurse assistants, therapists, emergency medical service personnel, dietary and food
66 services staff, and administrative staff, among others, referred to here as health care workers
67 (HCW) [5]. HCWs work alongside physicians and nurses but are less recognized and lower
68 paid. This essential workforce comprises nearly 7 million people in low-paid jobs including
69 healthcare support workers (e.g., dietary aids), direct care workers (e.g., certified nursing
70 assistants), and healthcare service workers (e.g., hospital janitor staff) [6]. Furthermore, in the
71 U.S., the vast majority of support HCWs are women (>80%) and they are disproportionately
72 Black and Latinx [7, 8].

73 In many cases, these HCWs have different relationships with their communities than other
74 health care professionals. They often live in the same communities that they serve and have
75 established ties with community members. Many times, they share ethnicity, language,
76 socioeconomic status and life experiences with the community members they serve. These
77 HCWs have played an immense role in the COVID-19 response. For example, in collaboration
78 with community-based organizations, HCW have contacted socially isolated patients,
79 connecting them with sources of critical important care and support [9]. They also served in
80 hospital and nursing homes settings such as laboratory technicians, phlebotomists or therapists
81 in direct contact with COVID-19 patients. Their role is even more important in underserved and
82 minority populations where these workers break barriers of culture, language, and isolated

83 neighborhoods and community hospitals to deliver health care and social and public health
84 interventions.

85 Overall, individuals from racial and ethnic minority populations have been disproportionately
86 impacted by the pandemic. For example, the risk of hospitalizations and death from COVID-19
87 are 2-3 times higher among Black and Latinx compared to White individuals [10-12]. Structural
88 and institutional racism underlies their higher risk and impact their ability to avoid infection and
89 seek care [13]. Black and Latinx HCWs are not exempt from the profound effects of these
90 factors. Furthermore, the interaction between these factors and the inherent higher risk of
91 COVID-19 due to their profession, make Black and Latinx HCWs a population that is at
92 particularly acute risk. To date only a few studies have examined the perspectives of HCWs
93 during the COVID-19 pandemic, [2, 14, 15] and none have focused on their dual perspective as
94 high-risk workers and members of marginalized communities, which has the potential to yield
95 critical insights for equity promotion during this pandemic and future public health crises. This
96 study examined the experiences of Black and Latinx HCWs to understand how the pandemic
97 impacted their profession, job responsibilities, and relationship with their communities.

98

99 **Methods**

100 As part of NJ HEROES TOO (**N**ew **J**ersey **H**ealthcare **E**ssential Worker **O**ut**R**each and
101 **E**ducation **S**tudy- **T**esting **O**verlooked **O**ccupations), we conducted group- and one-on-one
102 interviews online [16]. This study was part of the NIH Rapid Acceleration of Diagnostics
103 Underserved Populations (RADx-UP) Initiative which aims to understand disparities in
104 underserved populations, with particular focus on COVID-19 testing [17]. We purposively
105 sampled Black and Latinx individuals who worked as staff for 4 health care employers in New
106 Jersey, including both in-patient (2 urban university hospitals) and outpatient (long-term care

107 and homecare) settings in 4 counties with high numbers of Black/Latinx populations and
108 COVID-19 burden. Employees over age 18 years who identified as Black or Latinx and
109 identified English or Spanish as their primary language were eligible.

110 *Data collection*

111 We recruited 23 HCW, 3 were not eligible and 3 did not attend. We conducted 2 group- and 8
112 individual interviews with Black and Latinx HCW (N=17) between December 2020 and February
113 2021 using a secure Zoom platform. Variation in HCW work schedules made group interviews
114 largely prohibitive. After completing 2 group interviews, we began recruiting participants for
115 individual interviews in order to accommodate their schedules and ensure our approach was
116 responsive to their needs. Group interviews were led by a primary and secondary facilitator and
117 included two study team members for notetaking and technical assistance. We used a semi-
118 structured interview guide for group- and individual interviews, which the team iteratively
119 developed through literature review, prior experience, and debrief meetings after initial
120 interviews. All interviews were recorded and transcribed verbatim. Group interviews lasted
121 approximately 90 minutes, and individual interviews 20-30 minutes. In conducting the interviews
122 over time and interview format, perspectives expressed by the respondents were remarkably
123 consistent, thus leading to our conclusion of reaching thematic saturation.

124

125 *Data analysis*

126 We analyzed the interview data using an “editing” approach as it was collected [18]. The study
127 team debriefed after each interview and met weekly to review the data and discuss emerging
128 themes. We initially read each transcript openly, and then in a second reading, we cut and
129 pasted meaningful segments of text into approximately 4-page summaries. These summaries
130 highlighted themes that emerged specifically from each interview, independent of the other
131 interviews. We then comparatively analyzed the summaries to identify cross-cutting themes.

132 This study was approved by the Rutgers Biomedical Health Sciences IRB and follows the
133 Standards for Reporting Qualitative Research [19]. All participants provided verbal consent prior
134 to participation.

135

136 **Results**

137 Table 1 summarizes demographics and job descriptions of our sample. The median age was 48
138 years (range 25-58); 47% were Black, 53% Latinx, and 100% female.

139 We identified three key themes that provide insight into the dual experiences of HCWs as high-
140 risk workers and members of marginalized communities during the COVID-19 pandemic: (1)
141 Profound impact of the pandemic on job responsibilities, work settings, and personal
142 connections, (2) Fear and uncertainties caused by the pandemic; and, (3) Shifts in testing
143 frequency and vaccine attitudes as the pandemic evolved.

144 **Profound impact of the pandemic in job responsibilities, work settings, and connections**

145 HCWs described the substantial impacts of the pandemic on their personal lives.

146 “Well, the impact has been tremendous for me.... I lost my husband during
147 COVID, and I think that - in May, that was kind of the height of the COVID, so I
148 couldn’t do a lot of things. And I still had to work and so forth and take care of the
149 family and try to make them safe.” [Group 1, community health worker in home
150 setting]

151 They described the distress caused by knowing they had contact with positive cases.

152 “By the middle of April, I’d lost four friends to it... we were altogether Friday, Saturday,
153 Sunday, and they all caught it, and I was spared. I mean, I was spared” (Participant 8,
154 outpatient care staff, hospital setting)

155

156 Experiences in the workplace intensified this impact. Participants shared stories about the
157 changes they endured at their place of employment. These changes varied based on work
158 setting and job roles and responsibilities. Participants in positions without direct patient contact
159 who were physically at their place of employment described abrupt structural changes in regular
160 job arrangements and duties to comply with the stricter COVID-19 preventive measures.

161 “[O]ur department was actually closed March 20th, and we were put into what they call...
162 a labor pool. So our jobs ranged from either mask distribution, cleaning COVID vents,
163 temperature taking... So a variety of different roles that we played outside of what our
164 normal job duties would be.” [Participant 9, therapy department staff, hospital setting]

165 HCWs reported that they needed to adapt quickly, not only to aggressive prevention measures,
166 but also to rapidly changing work-related tasks and expectations.

167 “As far as work goes, it’s been implementing new policies every day to the
168 workflow being changed drastically”. [Participant 4, administrative support staff,
169 hospital setting]

170 They commented on experiences from friends and community members about the long
171 hours and lack of personal protective equipment.

172 “I have a friend of mine that work at the hospital. She works 16 hours. Sixteen hours.
173 She said [name of participant], I barely have no time to eat because she’s standing on
174 her feet to try to help the best way she can. Sometimes they have no equipment in there.

175 They have no gloves, no masks. She said [name of participant], I have to look all over
176 the place to find equipment so I could help taking care of these patient.” [Group 1,
177 certified nurse assistant]

178 HCWs working in the community (e.g., home care settings), in particular, stopped visiting their
179 patients, which led to drastic changes in their responsibilities by switching to telework. This
180 change included teaching their patients to use technology and to share resources remotely.

181 “I’ve also seen that many people have felt like a little bit lost because with all of this
182 involving technology, trying to talk via the internet has been something difficult for the
183 elderly, and communicating with doctors.” [Group 2, community health worker]

184 In that context, those bilingual HCWs were also faced with assisting non-English speakers to
185 adapt to new technology tools. They provided help to non-English speakers, particularly
186 Spanish speakers, to sign in and register using various technology tools including apps and
187 online appointments for testing. They also pointed at the difficulties identifying issues that can
188 be done only by in-person visits such as domestic violence cases or lead exposure as described
189 by one HCW serving in a home care setting.

190 “In this city, for example, lead in the paint. We would ... go in physically, into the house
191 and we’d see if the paint might have lead...” [Participant 5, community health worker,
192 home care setting]

193 In addition to changes in work responsibilities, participants described the loss of personal
194 connections with patients and patient’s family members including the inability to provide physical
195 comfort. A participant in a direct care setting provided the following description:

196 “And then some residents, they want to get close to you, hold your hand. Their family is
197 not around. They want to talk to you. ... You can’t do it no more.” [Participant 7, clinic
198 coordinator, nursing home]

199 Participants also commented on the potential long-term changes in personal contact due to the
200 pandemic.

201 “Human beings cannot only be limited to visual or audio contact... Do you
202 understand me? Physical contact of, hello, a hug, a handshake. I think those
203 things will never be the same after COVID.” [Participant 5, community health
204 worker, home setting]

205

206 **Fears and uncertainty caused by the pandemic among HCWs**

207 Participants described the daily fear and uncertainty they faced at work related to the risk of
208 COVID-19 for them and their families. A participant reflected:

209 “It strikes me how sometimes I get up in the morning. I say I don’t know what I’m going
210 to face now... I have my children. We live together as a family. Sometimes when I come
211 back from work I tell them, you know what? Don’t come close to me. Let me get
212 undressed, take my shower. Then when I’m ready, I’ll come out and then we can say hi
213 to each other. ” [Participant 7, clinic coordinator, nursing home]

214 Participants also shared stories about the risks of working in direct care settings:

215 “You take care of this today. The next day, by the time you get to work, they told you
216 they have the COVID. They have to move them. Then you say oh, my God. ...You don’t
217 protect yourself, but I took care of this person yesterday and then it’s like we are too
218 close to each other.” [Participant 7, clinic coordinator, nursing home]

219 Concerns about the risk of losing their jobs or a portion of their income were also discussed.

220 “There was the fear of saying, yes, I’m positive, because obviously, they would
221 immediately get sent home from work. ...And obviously, the falling behind in bills
222 or the fact that you did not work one day, gets you behind with all your bills. For
223 example, rent payment, the electric bill.” [Participant 5, community health worker,
224 home care setting]

225 They discussed the impact of informing their employers about possible exposure.

226 “...they were exposed to someone – not at work, but on the ride to get to work.
227 So, the managers tell them, okay, you were exposed outside of work to someone
228 who was positive, so you have to stay home and we’re not going to pay you for
229 those two weeks... they said, no, well, next time, I’m not going to notify them. I’m
230 going to work because if they continue leaving me at home, in quarantine, with
231 no pay, what am I going to do?” (Group 1, community health worker)

232 Participants also brought up the issue of stigma among coworkers after testing positive.

233 “It’s a huge stigma; not from everyone, but some people will make you feel very
234 dirty, very uncomfortable, because someone has tested positive.” [Participant 6,
235 administrative assistant in a hospital setting]

236 They also shared their own fear of coworkers who have tested positive.

237 “Right now, two people just came back - three - to our area that were tested
238 positive and were out for a while, and it really gives me the creeps. I don’t know.
239 I’m thinking once it’s in you, it’s in you, and it’s going to get me. So I try to stay as
240 far as I can from them.” [Participant 10, dietary aid, nursing home setting]

241

242 **Shifts in testing and vaccines attitudes as the pandemic evolved**

243 The rapid nature of the pandemic displayed the progression of testing in relation to frequency of
244 testing, type of test, and testing procedures.

245 Some participants were provided with frequent testing, while others were tested less frequently
246 or were not required to take tests at all.

247 “So it’s basically your choice [testing]. It’s not mandatory. It’s not required.”

248 [Participant 4, administrative support staff, hospital setting]

249 Another participant mentioned how they assumed the burden of testing by themselves to keep
250 their families safe:

251 “...I’d also do it every two weeks on my own behalf because if something
252 happens to me, I didn’t want to affect [my children].” [Group 1, community health
253 worker]

254 Additionally, employment status, such as contractors, who typically are third party employees,
255 made some participants not eligible for testing. Such policies created logistical barriers and
256 challenges for HCWs, as a participant explained:

257 “[S]ometimes I do find it difficult trying to figure out, am I eligible for the free
258 testing that they have, and because I’m not a true employee, should I go
259 somewhere else.” [Participant 6, administrative assistant, hospital setting]

260 Participants, in both direct and indirect care settings, also discussed temporal changes in
261 frequency of testing and concerns about type of testing as the pandemic unfolded.

262 “Ours [test] is twice weekly for the lab, and then they had this thing where we were
263 getting rapid tests three times per week, but that has stopped. ...My main concern (...) I
264 don’t know if anybody else see it the way I do, but when it comes to rapid testing, that

265 person is just tested and let go back into their work area until 15 minutes later. I don't
266 think that is safe because more than once they find people that are positive, and they've
267 already gone back to the people that it's like - it's - that's why I'm so scared of it.
268 [Participant 10, dietary aid, nursing home setting]

269 They also discussed their reasons for testing and changes in type of testing.

270 "I have to keep my parents safe... I was going to say one way of doing that is with
271 testing. The hospital does not test us for COVID. Initially they did. They tested us for
272 COVID. Then they tested us for the antibodies. We had nasal swab, then saliva, and
273 then blood was drawn. And that was done all at once." [Participant 9, physical therapy
274 department staff, hospital setting]

275 Perspectives on vaccine skepticism and decisions around vaccination also evolved over time.
276 Initial concerns about vaccines ranged from questions on secondary effects, trials data, and
277 experiences of failed public health interventions in minority populations.

278 "Well, I just wanted to see the type of side effects, if there were any, other than
279 just the mild temperature." [Participant 8, outpatient care staff, hospital setting]

280 Participants discussed the evolution of their opinions about vaccines including how they initially
281 were opposed to vaccination, but later changed their minds.

282 "Initially, it was a hard no... In the very, very beginning, I decided to let my coworkers go
283 first and see what happened with them, and then I would do it. Wednesday evening, I
284 finally logged on to make an appointment.... [Participant 8, outpatient care staff, hospital
285 setting]

286 They discussed reasons for changing their opinion about vaccines including learning about
287 other coworkers taking the vaccine and acquiring vaccine data from reliable sources. They also
288 shared how they investigated vaccine data themselves.

289 "I had questions. And so, part of my questions had to do with testing, believe it or not...
290 Well, I'm not afraid to get it. It's not that. I have questions and I think it's fair that...I want
291 my questions answered. So I actually couldn't get answers from anyone else, so that's
292 when I wrote the NIH ... I felt amazed that they answered me, and so quickly, and very
293 specifically. And then I felt more comfortable about getting the vaccine. [Participant 9,
294 physical therapy department staff, hospital setting]

295 Some participants were vocal in their struggle about making decisions on the vaccine. They
296 recognized their struggle between failed past public health strategies in minority populations and
297 their current knowledge about science and prevention.

298 "Why are they offering it to Newark first? Is it because of the minorities? So they want
299 to experiment on us, right? But then the intelligent part of me says that we should be
300 blessed, and at the same time, if this is a chance to make it go away, then I have to do
301 what I have to do, not for myself, but for my family." [Participant 4, receptionist, hospital
302 setting]

303 Finally, participants voiced their concern about vaccine mandates and the implication for their
304 current employment.

305 "Either you are doing it or you are not getting your job. So I don't think they
306 should - they kind of put us in a place whereby you have to choose between your
307 job and the vaccine." [Group 2, certified nurse assistant]

308

309 **Discussion**

310 This study illustrated the multi-layered impact of the COVID-19 pandemic on Black and
311 Latinx HCWs in ancillary and support roles. These workers received far less attention and
312 recognition than doctors and nurses in the frontlines of the COVID-19 pandemic, yet they
313 worked in similar high-risk settings and lived in the communities that suffered disproportionately.
314 As such, their perspectives offer a unique lens on the pandemic including mitigation strategies
315 like testing and vaccines that can inform policy.

316 HCWs reported a variety of changes in job responsibilities and personal connections.
317 They also described the fear of contracting COVID-19 themselves and transmitting to their
318 family members. These alterations led to continuous distress across HCWs in different roles.
319 Worldwide, HCWs have described increased workloads, new tasks, and disruption on HCWs'
320 ability to deliver on their usual work responsibilities [15, 20]. A study of palliative care workers
321 including 41 countries, reported how the reorganization of work resulted in time-consuming
322 tasks and accessibility barriers for those workers conducting home visits [15]. Home HCWs in
323 New York City described their situation as a tough tradeoff between their own health and
324 finances [14]. Our study showed that these alterations occurred across multiple settings
325 including hospital, homes, nursing homes and community. Before the pandemic, all HCWs were
326 known to be at high risk for anxiety, depression, burnout, insomnia, moral distress, and post-
327 traumatic stress disorder [21, 22]. Our findings illustrate the critical need for health systems to
328 provide targeted programs that support this marginalized workforce to mitigate the devastating
329 impact of the pandemic on this group, promote healing, reduce burnout, and enhance retention.

330 In 2020, more people were employed in health care support roles than in all health care
331 practitioners and technician jobs (doctors, nurses, emergency medical technicians [EMT],
332 laboratory technicians) [7]. These HCWs provide frontline essential care, yet they are poorly

333 compensated. In 2018, HCW, who are mostly women (>80%) and disproportionately Black and
334 Latinx, made a median of \$13.38 per hour with home health and personal care workers making
335 only \$11.52 per hour [23]. Furthermore, nearly 20% live in poverty and more than 40% rely on
336 some public assistance [23]. This pandemic has exposed the stress endured by an essential
337 workforce that plays a critical role in healthcare. As such, healthcare systems need to dedicate
338 resources to improve the work conditions to this marginalized workforce. Working conditions
339 can include pay, space, physical conditions and mental demands, health, safety and wellbeing
340 among others [24]. Overall work conditions must be largely improved to be able to ensure their
341 wellbeing and role retention to manage the next public health emergency.

342 Vaccine hesitancy has been widely discussed since early in the pandemic [25, 26].
343 Various surveys have reported shifts in vaccine hesitancy and enthusiasm among the U.S.
344 population. For example, individuals taking the “wait and see approach” decreased by 8%
345 between December 2020 and January 2021 [27]. Among HCW, our data suggest that access to
346 information about the vaccine, candid answers to their questions, and seeing coworkers
347 vaccinated all influenced their decisions on moving towards vaccination. However, some
348 remained hesitant about vaccines citing distrust in the government and institutions based on
349 past failed interventions in Black and Latinx populations. As of October 2021, 4 in 10 of all
350 HCWs have not been vaccinated [28]. In New Jersey, the census estimates that 14% and 21%
351 of the general population in 2019 was Black and Latinx, respectively. However, as of November
352 1st 2021, in New Jersey, Black and Latinx individuals represent only 8% and 16% of those fully
353 vaccinated [29]. Our research suggests that transparent dialogue directly addressing questions
354 and concerns about the COVID-19 vaccine by trusted entities or individuals may help to
355 increase the number of vaccinated individuals within the HCW workforce. Participants also
356 shared how seeing peers vaccinated influenced their decision to seek vaccination. The role of
357 HCWs serving as ambassadors to provide accurate COVID-19 information and improve the

358 number of vaccinated individuals among their coworkers and communities warrants additional
359 study. This role may be particularly relevant in light of concerns voiced by HCWs in relation to
360 vaccine mandates. It is unclear the extent to which states and/or employers might implement
361 COVID-19 vaccine mandates, and whether or not mandates are the most effective means to
362 achieve higher vaccination rates is unknown.

363 Our work has limitations. First, we sampled Black and Latinx participants from largely
364 urbanized counties in one state; thus, our results may not transfer to other racial/ethnic groups
365 or rural settings. We were, however, able to capture a unique, diverse population and HCWs
366 from a variety of work settings including hospital, home, and community settings. Second, while
367 we were able to capture temporal changes in testing and vaccine hesitation from November to
368 February, given the rapid evolution of the pandemic it is likely that perspectives have continued
369 to change. Nevertheless, this study design did enable us to capture participants' experiences at
370 a critical juncture during the pandemic when the first rollout of vaccines was occurring.

371 **Conclusion**

372 Our study illustrates the profound impact of the COVID-19 pandemic in Black and Latinx
373 HCWs in ancillary and support roles. Disruption in their daily responsibilities and roles, abrupt
374 structural changes, and fear of contracting COVID-19 caused continuous distress. Efforts to
375 further examine the role of HCWs as ambassadors to improve the number of vaccinated
376 individuals among their coworkers warrants additional research. This marginalized workforce
377 has been an integral part of the fight against COVID-19; however, these workers remain
378 underpaid and under recognized. Health systems must work to improve work conditions for this
379 marginalized group to ensure their wellbeing and support their critical role in our communities
380 during this pandemic and future public health emergencies.

381

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405

406 **References**

- 407 1. Barrett ES, Horton DB, Roy J, Gennaro ML, Brooks A, Tischfield J, et al. Prevalence of
408 SARS-CoV-2 infection in previously undiagnosed health care workers at the onset of the U.S.
409 COVID-19 epidemic. medRxiv. 2020.
- 410 2. Nguyen LH, Drew DA, Graham MS, Joshi AD, Guo CG, Ma W, et al. Risk of COVID-19
411 among front-line health-care workers and the general community: a prospective cohort study.
412 Lancet Public Health. 2020;5(9):e475-e83.
- 413 3. Walton M, Murray E, Christian MD. Mental health care for medical staff and affiliated
414 healthcare workers during the COVID-19 pandemic. Eur Heart J Acute Cardiovasc Care.
415 2020;9(3):241-7.
- 416 4. Kambhampati A, O'Halloran A, Whitaker M, Magill S, Chea N, Chai S, et al. COVID-19–
417 Associated Hospitalizations Among Health Care Personnel — COVID-NET, 13 States, March
418 1–May 31, 2020. Morbidity and Mortality Weekly Report. 2020;69(43).
- 419 5. NIOSH. Healthcare Workers 2017 [Available from:
420 <https://www.cdc.gov/niosh/topics/healthcare/default.html>
- 421 6. Kinder M. Essential but undervalued: Millions of health care workers aren't getting the
422 pay or respect they deserve in the COVID-19 pandemic. Brookings Institution 2020.
- 423 7. US Bureau of Labor Statistics. Occupational Employment and Wage Statistics May 2020
424 National Industry-Specific Occupational Employment and Wage Estimates 2020 [Available from:
425 https://www.bls.gov/oes/current/naics3_622000.htm.
- 426 8. HRSA. Sex, Race, and Ethnic Diversity of U.S. Health Occupations (2011-2015). In:
427 U.S. Department of Health and Human Services, US Bureau of Labor Statistics, National Center
428 for Health Workforce Analysis editor. 2017.
- 429 9. Peretz PJ, Islam N, Matiz LA. Community Health Workers and Covid-19 - Addressing
430 Social Determinants of Health in Times of Crisis and Beyond. N Engl J Med.
431 2020;383(19):e108.
- 432 10. Louis-Jean J, Cenat K, Njoku CV, Angelo J, Sanon D. Coronavirus (COVID-19) and
433 Racial Disparities: a Perspective Analysis. J Racial Ethn Health Disparities. 2020;7(6):1039-45.
- 434 11. Kaufman HW, Niles JK, Nash DB. Disparities in SARS-CoV-2 Positivity Rates:
435 Associations with Race and Ethnicity. Popul Health Manag. 2021;24(1):20-6.
- 436 12. Gu T, Mack JA, Salvatore M, Prabhu Sankar S, Valley TS, Singh K, et al. Characteristics
437 Associated With Racial/Ethnic Disparities in COVID-19 Outcomes in an Academic Health Care
438 System. JAMA Netw Open. 2020;3(10):e2025197.
- 439 13. Bailey ZD, Krieger N, Agénor M, Graves J, Linos N, Bassett MT. Structural racism and
440 health inequities in the USA: evidence and interventions. Lancet. 2017;389(10077):1453-63.
- 441 14. Sterling MR, Tseng E, Poon A, Cho J, Avgar AC, Kern LM, et al. Experiences of Home
442 Health Care Workers in New York City During the Coronavirus Disease 2019 Pandemic: A
443 Qualitative Analysis. JAMA Intern Med. 2020;180(11):1453-9.
- 444 15. Pastrana T, De Lima L, Pettus K, Ramsey A, Napier G, Wenk R, et al. The impact of
445 COVID-19 on palliative care workers across the world: A qualitative analysis of responses to
446 open-ended questions. Palliat Support Care. 2021;19(2):187-92.
- 447 16. Jimenez M, Rivera-Núñez Z, Crabtree B, Pellerano M, Devance D, Macenat M, et al.
448 Understanding Black and Latinx Community Perspectives on COVID-19 Mitigation Behaviors,
449 Testing, and Vaccines: A Qualitative Study. In Press.
- 450 17. NIH. Rapid Acceleration of Diagnostics Unerserved Populations (RADx-UP) 2020
451 [Available from: <https://www.nih.gov/research-training/medical-research-initiatives/radx>.
- 452 18. Miller W, Crabtree B. Doing Qualitative Research in Primary Care: Multiple Strategies
453 Second ed. Miller W, Crabtree B, editors 1999.
- 454 19. O'Brien BC, Harris IB, Beckman TJ, Reed DA, Cook DA. Standards for reporting
455 qualitative research: a synthesis of recommendations. Acad Med. 2014;89(9):1245-51.

- 456 20. Nyashanu M, Pfende F, Ekpenyong M. Exploring the challenges faced by frontline
457 workers in health and social care amid the COVID-19 pandemic: experiences of frontline
458 workers in the English Midlands region, UK. *J Interprof Care*. 2020;34(5):655-61.
- 459 21. Moss M, Good VS, Gozal D, Kleinpell R, Sessler CN. A Critical Care Societies
460 Collaborative Statement: Burnout Syndrome in Critical Care Health-care Professionals. A Call
461 for Action. *Am J Respir Crit Care Med*. 2016;194(1):106-13.
- 462 22. Poncet MC, Toullic P, Papazian L, Kentish-Barnes N, Timsit JF, Pochard F, et al.
463 Burnout syndrome in critical care nursing staff. *Am J Respir Crit Care Med*. 2007;175(7):698-
464 704.
- 465 23. Campbell S, Del Rio Drake A, Espinoza R, Scales K. Caring for the Future: The Power
466 and Potential of America's Direct Care Workforce Paraprofessionals Healthcare Institute,
467 Inc.2021 [Available from: [https://phinational.org/resource/its-time-to-care-a-detailed-profile-of-
468 americas-direct-care-workforce/](https://phinational.org/resource/its-time-to-care-a-detailed-profile-of-americas-direct-care-workforce/)].
- 469 24. ILO. Working conditions: International Labour Organization; 2021 [Available from:
470 <https://www.ilo.org/global/topics/working-conditions/lang--en/index.htm>
- 471 25. Fisher KA, Bloomstone SJ, Walder J, Crawford S, Fouayzi H, Mazor KM. Attitudes
472 Toward a Potential SARS-CoV-2 Vaccine : A Survey of U.S. Adults. *Ann Intern Med*.
473 2020;173(12):964-73.
- 474 26. Khubchandani J, Sharma S, Price JH, Wiblishauser MJ, Sharma M, Webb FJ. COVID-
475 19 Vaccination Hesitancy in the United States: A Rapid National Assessment. *J Community*
476 *Health*. 2021;46(2):270-7.
- 477 27. Hamel L, Kirzinger A, Lopes L, Kearnnet A, Sparks G, Brodie M. Kaise Family Foundation
478 COVID-19 Vaccine Monitor: January 2021 2021 [Available from: [https://www.kff.org/report-
479 section/kff-covid-19-vaccine-monitor-january-2021-vaccine-hesitancy/](https://www.kff.org/report-section/kff-covid-19-vaccine-monitor-january-2021-vaccine-hesitancy/)].
- 480 28. COVID Data Tracker [Internet]. 2021. Available from: [https://covid.cdc.gov/covid-data-
481 tracker/#datatracker-home](https://covid.cdc.gov/covid-data-tracker/#datatracker-home).
- 482 29. NJDH. New Jersey COVID-19 Dashboard 2021 [New Jersey Department of Health].
483 Available from: https://www.nj.gov/health/cd/topics/covid2019_dashboard.shtml.

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Table 1: Demographic characteristics of study participants		
	Total (n=17)	
	n	Percent
Age		
Median	48	
Range	25-58	
Sex		
Female	17	100.0
Race/Ethnicity		
Black or African American	8	47.1
Hispanic/Latino-White	0	0
Hispanic/Latino-Other	9	52.9
Education		
Doctoral/Professional Degree	1	5.9
Master's Degree	2	11.8
4-Year Degree	6	35.3
Associate Degree	1	5.9
Some College, No Degree	3	17.6
High School Diploma/Equivalent	3	17.6
< High School	1	5.9
Household Income		
<\$120,000-100,000	2	11.8
\$75,000 to 99,999	1	5.9
\$50,000 to 74,999	6	35.3
\$25,000 to 49,999	5	29.4
< \$25,000	1	5.9
Refused/Missing	2	11.8
Total Household Members		
1	4	23.5
2	0	0.0
3	5	29.4
4	4	23.5
5	2	11.8
6+	2	11.8