Racial/Ethnic Disparities in Exposure, Disease Susceptibility, and Clinical Outcomes during COVID-19 Pandemic in National Cohort of Adults, United States

Appendix

Appendix Table 1. Demographic and Socioeconomic Characteristics of the Chasing COVID Cohort (C3) Participants who were Seronegative and Retested - United States, Enrolled from March 28 - April 20, 2020 (N = 3,422)*

Total					Asian\Pacific			
Mean (SD)	Characteristic	Total	Hispanic	Black NH	Islander NH	White NH	Other NH	p value†
Mean (SD) Median (IQR) 44 (15.16) 39.51 (13.13) 40.5 (12.90) 33 (13.18) 46.62 (15.43) 44.33 (13.57) 48 (23.56) 37 (30, 48) 37 (30, 51) 33 (26, 41) 45 (34, 60) 43 (35, 53) 40.001 Age Category, n (%) 84 (38.36) 32(14.79) 14 (12.50) 30.001 48 (38.36) 342 (14.79) 14 (12.50) 30.001 30–39 934 (27.29) 166 (33.20) 100 (35.84) 76 (34.70) 566 (24.48) 26 (23.21) 40.49 654 (19.11) 104 (20.80) 50 (17.92) 30 (13.70) 430 (18.60) 40 (35.71) 50-59 514 (15.02) 62 (12.40) 40 (14.34) 11 (5.02) 388 (16.78) 13 (11.61) 60+ 703 (20.54) 48 (9.60) 32 (11.47) 18 (8.22) 586 (25.35) 19 (16.96) 80.001 82 (11.47) 18 (8.22) 586 (25.35) 19 (16.96) 80.001 82 (14.44) 14 (28.20) 82 (25.35) 19 (16.96) 80.001 80.001 80.001 80.001 80.001 80.001 80.001 80.001 80.001 80.001 80.001 80.001 <td>Total, n (%)</td> <td>3,422 (100.00)</td> <td>500 (14.61)</td> <td>279 (8.15)</td> <td>219 (6.4)</td> <td>2,312 (67.56)</td> <td>112 (3.28)</td> <td></td>	Total, n (%)	3,422 (100.00)	500 (14.61)	279 (8.15)	219 (6.4)	2,312 (67.56)	112 (3.28)	
Median (IQR) 42 (32, 56) 37 (30, 48) 37 (30, 51) 33 (26, 41) 45 (34, 60) 43 (35, 53) Age Category, n (%) 18–29 617 (18,03) 120 (24,00) 57 (20,43) 84 (38,36) 342 (14.79) 14 (12,50) 30–39 934 (27.29) 166 (33.20) 100 (35.84) 76 (34.70) 566 (24.48) 26 (23.21) 40–49 654 (19,11) 104 (20.80) 50 (17.92) 30 (13.70) 430 (18.60) 40 (35.71) 50–59 514 (15.02) 62 (12.40) 40 (14.34) 11 (5.02) 388 (16.78) 13 (11.61) 60+ 703 (20.54) 48 (9.60) 32 (11.47) 18 (8.22) 586 (25.35) 19 (16.96) 582, n (%) 582, n (%) 52 (46.43) 52 (46.43) 71 (14.20) 32 (11.47) 18 (8.22) 586 (25.35) 19 (16.96) 50.001 40 (14.34) 11 (15.02) 388 (16.78) 13 (11.61) 50.001 582, n (%) 582, n (%) 582, n (%) 582, n (%) 582 (26.84) 14 (2.80) 8 (2.87) 3 (13.7) 58 (2.51) 13 (11.61) 50.001 50.001 582, n (26.84) 122 (26.84) </td <td>Age</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>< 0.001</td>	Age							< 0.001
Age Category, n (%) 18–29	Mean (SD)	44 (15.16)	39.51 (13.13)	40.5 (12.90)	33 (13.18)	46.62 (15.43)	44.33 (13.57)	
18-29 617 (18.03) 120 (24.00) 57 (20.43) 84 (38.36) 342 (14.79) 14 (12.50) 30-39 934 (27.29) 166 (33.20) 100 (35.84) 76 (34.70) 566 (24.48) 26 (23.21) 40-49 654 (19.11) 104 (20.80) 50 (17.92) 30 (13.70) 430 (18.60) 40 (35.71) 50-59 514 (15.02) 62 (12.40) 40 (14.34) 11 (5.02) 388 (16.78) 13 (11.61) 60+ 703 (20.54) 48 (9.60) 32 (11.47) 18 (8.22) 586 (25.35) 19 (16.96) Sex, n (%) M	Median (IQR)	42 (32, 56)	37 (30, 48)	37 (30, 51)	33 (26, 41)	45 (34, 60)	43 (35, 53)	
18-29 617 (18.03) 120 (24.00) 57 (20.43) 84 (38.36) 342 (14.79) 14 (12.50) 30-39 934 (27.29) 166 (33.20) 100 (35.84) 76 (34.70) 566 (24.48) 26 (23.21) 40-49 654 (19.11) 104 (20.80) 50 (17.92) 30 (13.70) 430 (18.60) 40 (35.71) 50-59 514 (15.02) 62 (12.40) 40 (14.34) 11 (5.02) 388 (16.78) 13 (11.61) 60+ 703 (20.54) 48 (9.60) 32 (11.47) 18 (8.22) 586 (25.35) 19 (16.96) 50 (7.00) 50 (7.	Age Category, n (%)	, ,	, ,	• •	. ,	, ,	, ,	<0.001
40-49 654 (19.11) 104 (20.80) 50 (17.92) 30 (13.70) 430 (18.60) 40 (35.71) 50-59 514 (15.02) 62 (12.40) 40 (14.34) 11 (5.02) 388 (16.78) 13 (11.61) 60+ 703 (20.54) 48 (9.60) 32 (11.47) 18 (8.22) 586 (25.35) 19 (16.96) Sex, n (%)		617 (18.03)	120 (24.00)	57 (20.43)	84 (38.36)	342 (14.79)	14 (12.50)	
50–59	30–39	934 (27.29)	166 (33.20)	100 (35.84)	76 (34.70)	566 (24.48)	26 (23.21)	
60+ 703 (20.54) 48 (9.60) 32 (11.47) 18 (8.22) 586 (25.35) 19 (16.96)	40–49	654 (19.11)	104 (20.80)	50 (17.92)	30 (13.70)	430 (18.60)	40 (35.71)	
Sex, n (%) M	50–59	514 (15.02)	62 (12.40)	40 (14.34)	11 (5.02)	388 (16.78)	13 (11.61)	
Sex, n (%) M 1,516 (44.30) 219 (43.80) 124 (44.44) 88 (40.18) 1,033 (44.68) 52 (46.43) F 1,810 (52.89) 267 (53.40) 147 (52.69) 128 (58.45) 1,221 (52.81) 47 (41.96) Non-Binary 96 (2.81) 14 (2.80) 8 (2.87) 3 (1.37) 58 (2.51) 13 (11.61) Education, n (%) Less than 12th grade 37 (1.08) 10 (2.00) 2 (0.72) 2 (0.91) 22 (0.95) 1 (0.89) 12th grade/GED 278 (8.12) 71 (14.20) 33 (11.83) 6 (2.74) 155 (6.70) 13 (11.61) Some college (1-3 y) 815 (23.82) 151 (30.20) 112 (40.14) 38 (17.35) 488 (21.11) 26 (23.21) College (≥4 years) 2,292 (66.98) 268 (53.60) 132 (47.31) 173 (79.00) 1,647 (71.24) 72 (64.29) Employment Status, n (%) Employed 2,102 (61.43) 284 (56.80) 181 (64.87) 131 (59.82) 1,436 (62.11) 70 (62.50) Other 918 (26.83) 128 (25.60) 56 (20.07) 62 (28.31) 647 (27.98) <td< td=""><td>60+</td><td>703 (20.54)</td><td>48 (9.60)</td><td>32 (11.47)</td><td>18 (8.22)</td><td>586 (25.35)</td><td>19 (16.96)</td><td></td></td<>	60+	703 (20.54)	48 (9.60)	32 (11.47)	18 (8.22)	586 (25.35)	19 (16.96)	
F	Sex, n (%)	, ,	, ,	, ,	, ,	, ,	, ,	< 0.001
Non-Binary 96 (2.81) 14 (2.80) 8 (2.87) 3 (1.37) 58 (2.51) 13 (11.61) Education, n (%) Less than 12th grade 37 (1.08) 10 (2.00) 2 (0.72) 2 (0.91) 22 (0.95) 1 (0.89) 12th grade/GED 278 (8.12) 71 (14.20) 33 (11.83) 6 (2.74) 155 (6.70) 13 (11.61) Some college (1-3 y) 815 (23.82) 151 (30.20) 112 (40.14) 38 (17.35) 488 (21.11) 26 (23.21) College (24 years) 2,292 (66.98) 268 (53.60) 132 (47.31) 173 (79.00) 1,647 (71.24) 72 (64.29) Employment Status, n (%) Employed 2,102 (61.43) 284 (56.80) 181 (64.87) 131 (59.82) 1,436 (62.11) 70 (62.50) Out of Work 402 (11.75) 88 (17.60) 42 (15.05) 26 (11.87) 229 (9.90) 17 (15.18) Other 918 (26.83) 128 (25.60) 56 (20.07) 62 (28.31) 647 (27.98) 25 (22.32) Income, n (%) Less than \$35,000 870 (25.42) 174 (34.80) 113 (40.50) 47 (21.46) 494 (21.37) 42 (37.50) \$35,000 - \$49,999 383 (11.19) 77 (15.40) 43 (15.41) 16 (7.31) 231 (9.99) 16 (14.29) \$50,000 - \$69,999 505 (14.76) 75 (15.00) 56 (20.07) 30 (13.70) 333 (14.40) 11 (9.82) \$70,000 - \$99,999 592 (17.30) 73 (14.60) 30 (10.75) 43 (19.63) 436 (18.86) 10 (8.93) \$100,000+ 993 (29.02) 90 (18.00) 33 (11.83) 72 (32.88) 768 (33.22) 30 (26.79) Don't know 79 (2.31) 11 (2.20) 4 (1.43) 11 (5.02) 50 (2.16) 3 (2.68) Any Children <18, n (%) No 2,596 (75.86) 326 (65.20) 183 (65.59) 154 (70.32) 1,853 (80.15) 80 (71.43)	M	1,516 (44.30)	219 (43.80)	124 (44.44)	88 (40.18)	1,033 (44.68)	52 (46.43)	
Education, n (%) Less than 12th grade 37 (1.08) 10 (2.00) 2 (0.72) 2 (0.91) 22 (0.95) 1 (0.89) 12th grade/GED 278 (8.12) 71 (14.20) 33 (11.83) 6 (2.74) 155 (6.70) 13 (11.61) Some college (1−3 y) 815 (23.82) 151 (30.20) 112 (40.14) 38 (17.35) 488 (21.11) 26 (23.21) College (≥4 years) 2,292 (66.98) 268 (53.60) 132 (47.31) 173 (79.00) 1,647 (71.24) 72 (64.29) Employment Status, n (%) Employed 2,102 (61.43) 284 (56.80) 181 (64.87) 131 (59.82) 1,436 (62.11) 70 (62.50) Out of Work 402 (11.75) 88 (17.60) 42 (15.05) 26 (11.87) 229 (9.90) 17 (15.18) Other 918 (26.83) 128 (25.60) 56 (20.07) 62 (28.31) 647 (27.98) 25 (22.32) Income, n (%) Less than \$35,000 870 (25.42) 174 (34.80) 113 (40.50) 47 (21.46) 494 (21.37) 42 (37.50) \$35,000 - \$49,999 383 (11.19) 77 (15.40) 43 (15.41) 16 (7.31) 231 (9.99) 16 (14.29) \$50,000 - \$69,999 505 (14.76) 75 (15.00) 56 (20.07) 30 (13.70) 333 (14.40) 11 (9.82) \$70,000 - \$99,999 592 (17.30) 73 (14.60) 30 (10.75) 43 (19.63) 436 (18.86) 10 (8.93) \$100,000+ 993 (29.02) 90 (18.00) 33 (11.83) 72 (32.88) 768 (33.22) 30 (26.79) Don't know 79 (2.31) 11 (2.20) 4 (1.43) 11 (5.02) 50 (2.16) 3 (2.68) Any Children <18, n (%) No 2,596 (75.86) 326 (65.20) 183 (65.59) 154 (70.32) 1,853 (80.15) 80 (71.43)	F	1,810 (52.89)	267 (53.40)	147 (52.69)	128 (58.45)	1,221 (52.81)	47 (41.96)	
Less than 12th grade 37 (1.08) 10 (2.00) 2 (0.72) 2 (0.91) 22 (0.95) 1 (0.89) 12th grade/GED 278 (8.12) 71 (14.20) 33 (11.83) 6 (2.74) 155 (6.70) 13 (11.61) Some college (1–3 y) 815 (23.82) 151 (30.20) 112 (40.14) 38 (17.35) 488 (21.11) 26 (23.21) College (≥4 years) 2,292 (66.98) 268 (53.60) 132 (47.31) 173 (79.00) 1,647 (71.24) 72 (64.29) Employment Status, n (%) Employed 2,102 (61.43) 284 (56.80) 181 (64.87) 131 (59.82) 1,436 (62.11) 70 (62.50) (0.001) (0.	Non-Binary	96 (2.81)	14 (2.80)	8 (2.87) [°]	3 (1.37) ´	58 (2.51)	13 (11.61)	
12th grade/GED 278 (8.12) 71 (14.20) 33 (11.83) 6 (2.74) 155 (6.70) 13 (11.61) Some college (1-3 y) 815 (23.82) 151 (30.20) 112 (40.14) 38 (17.35) 488 (21.11) 26 (23.21) College (≥4 years) 2,292 (66.98) 268 (53.60) 132 (47.31) 173 (79.00) 1,647 (71.24) 72 (64.29) Employment Status, n (%)	Education, n (%)	, ,	, ,	, ,	, ,	, ,	, ,	< 0.001
Some college (1-3 y) 815 (23.82) 151 (30.20) 112 (40.14) 38 (17.35) 488 (21.11) 26 (23.21) College (≥4 years) 2,292 (66.98) 268 (53.60) 132 (47.31) 173 (79.00) 1,647 (71.24) 72 (64.29) Employment Status, n (%) 50 (20.07) 131 (59.82) 1,436 (62.11) 70 (62.50) 70 (62.50) Out of Work 402 (11.75) 88 (17.60) 42 (15.05) 26 (11.87) 229 (9.90) 17 (15.18) Other 918 (26.83) 128 (25.60) 56 (20.07) 62 (28.31) 647 (27.98) 25 (22.32) Income, n (%) 870 (25.42) 174 (34.80) 113 (40.50) 47 (21.46) 494 (21.37) 42 (37.50) \$35,000 - \$49,999 383 (11.19) 77 (15.40) 43 (15.41) 16 (7.31) 231 (9.99) 16 (14.29) \$50,000 - \$69,999 505 (14.76) 75 (15.00) 56 (20.07) 30 (13.70) 333 (14.40) 11 (9.82) \$70,000 - \$99,999 592 (17.30) 73 (14.60) 30 (10.75) 43 (19.63) 436 (18.86) 10 (8.93) \$100,000+ 993 (29.0	Less than 12th grade	37 (1.08)	10 (2.00)	2 (0.72)	2 (0.91)	22 (0.95)	1 (0.89)	
College (≥4 years) 2,292 (66.98) 268 (53.60) 132 (47.31) 173 (79.00) 1,647 (71.24) 72 (64.29) Employment Status, n (%)	12th grade/GED	278 (8.12)	71 (14.20)	33 (11.83)	6 (2.74)	155 (6.70)	13 (11.61)	
Employment Status, n (%) Employed 2,102 (61.43) 284 (56.80) 181 (64.87) 131 (59.82) 1,436 (62.11) 70 (62.50) Out of Work 402 (11.75) 88 (17.60) 42 (15.05) 26 (11.87) 229 (9.90) 17 (15.18) Other 918 (26.83) 128 (25.60) 56 (20.07) 62 (28.31) 647 (27.98) 25 (22.32) Income, n (%) Less than \$35,000 870 (25.42) 174 (34.80) 113 (40.50) 47 (21.46) 494 (21.37) 42 (37.50) \$35,000 - \$49,999 383 (11.19) 77 (15.40) 43 (15.41) 16 (7.31) 231 (9.99) 16 (14.29) \$50,000 - \$69,999 505 (14.76) 75 (15.00) 56 (20.07) 30 (13.70) 333 (14.40) 11 (9.82) \$70,000 - \$99,999 592 (17.30) 73 (14.60) 30 (10.75) 43 (19.63) 436 (18.86) 10 (8.93) \$100,000+ 993 (29.02) 90 (18.00) 33 (11.83) 72 (32.88) 768 (33.22) 30 (26.79) Don't know 79 (2.31) 11 (2.20) 4 (1.43) 11 (5.02) 50 (2.16) 3 (2.68) Any Children <18, n (%) No 2,596 (75.86) 326 (65.20) 183 (65.59) 154 (70.32) 1,853 (80.15) 80 (71.43)	Some college (1-3 y)	815 (23.82)	151 (30.20)	112 (40.14)	38 (17.35)	488 (21.11)	26 (23.21)	
Employed 2,102 (61.43) 284 (56.80) 181 (64.87) 131 (59.82) 1,436 (62.11) 70 (62.50) Out of Work 402 (11.75) 88 (17.60) 42 (15.05) 26 (11.87) 229 (9.90) 17 (15.18) Other 918 (26.83) 128 (25.60) 56 (20.07) 62 (28.31) 647 (27.98) 25 (22.32) Income, n (%) Less than \$35,000 870 (25.42) 174 (34.80) 113 (40.50) 47 (21.46) 494 (21.37) 42 (37.50) \$35,000 - \$49,999 383 (11.19) 77 (15.40) 43 (15.41) 16 (7.31) 231 (9.99) 16 (14.29) \$50,000 - \$69,999 505 (14.76) 75 (15.00) 56 (20.07) 30 (13.70) 333 (14.40) 11 (9.82) \$70,000 - \$99,999 592 (17.30) 73 (14.60) 30 (10.75) 43 (19.63) 436 (18.86) 10 (8.93) \$100,000+ 993 (29.02) 90 (18.00) 33 (11.83) 72 (32.88) 768 (33.22) 30 (26.79) Don't know 79 (2.31) 11 (2.20) 4 (1.43) 11 (5.02) 50 (2.16) 3 (2.68) \$0.001 No 2,596 (75.86) 326 (65.20) 183 (65.59) 154 (70.32) 1,853 (80.15) 80 (71.43)	College (<u>></u> 4 years)	2,292 (66.98)	268 (53.60)	132 (47.31)	173 (79.00)	1,647 (71.24)	72 (64.29)	
Out of Work 402 (11.75) 88 (17.60) 42 (15.05) 26 (11.87) 229 (9.90) 17 (15.18) Other 918 (26.83) 128 (25.60) 56 (20.07) 62 (28.31) 647 (27.98) 25 (22.32)	Employment Status, n (%)	, ,	, ,	, ,	, ,	, ,	, ,	< 0.001
Other 918 (26.83) 128 (25.60) 56 (20.07) 62 (28.31) 647 (27.98) 25 (22.32) (20.001) (25.42) 174 (34.80) 113 (40.50) 47 (21.46) 494 (21.37) 42 (37.50) (335,000 - \$49,999 383 (11.19) 77 (15.40) 43 (15.41) 16 (7.31) 231 (9.99) 16 (14.29) (40.000 - \$69,999 505 (14.76) 75 (15.00) 56 (20.07) 30 (13.70) 333 (14.40) 11 (9.82) (40.000 - \$99,999 592 (17.30) 73 (14.60) 30 (10.75) 43 (19.63) 436 (18.86) 10 (8.93) (40.000 - \$99,999 592 (17.30) 73 (14.60) 33 (11.83) 72 (32.88) 768 (33.22) 30 (26.79) (20.001	Employed	2,102 (61.43)	284 (56.80)	181 (64.87)	131 (59.82)	1,436 (62.11)	70 (62.50)	
Income, n (%) Less than \$35,000	Out of Work	402 (11.75)	88 (17.60)	42 (15.05)	26 (11.87)	229 (9.90)	17 (15.18)	
Less than \$35,000	Other	918 (26.83)	128 (25.60)	56 (20.07)	62 (28.31)	647 (27.98)	25 (22.32)	
\$35,000 - \$49,999	Income, n (%)	, ,	, ,	, ,	, ,	, ,	, ,	< 0.001
\$50,000 - \$69,999	Less than \$35,000	870 (25.42)	174 (34.80)	113 (40.50)	47 (21.46)	494 (21.37)	42 (37.50)	
\$70,000 - \$99,999	\$35,000 - \$49,999	383 (11.19)	77 (15.40)	43 (15.41)	16 (7.31)	231 (9.99)	16 (14.29)	
\$100,000+ 993 (29.02) 90 (18.00) 33 (11.83) 72 (32.88) 768 (33.22) 30 (26.79) Don't know 79 (2.31) 11 (2.20) 4 (1.43) 11 (5.02) 50 (2.16) 3 (2.68) Any Children <18, n (%) <	\$50,000 - \$69,999	505 (14.76)	75 (15.00)	56 (20.07)	30 (13.70)	333 (14.40)	11 (9.82)	
Don't know 79 (2.31) 11 (2.20) 4 (1.43) 11 (5.02) 50 (2.16) 3 (2.68) Any Children <18, n (%)	\$70,000 - \$99,999	592 (17.30)	73 (14.60)	30 (10.75)	43 (19.63)	436 (18.86)	10 (8.93)	
Any Children <18, n (%) <	\$100,000+	993 (29.02)	90 (18.00)	33 (11.83)	72 (32.88)	768 (33.22)	30 (26.79)	
No 2,596 (75.86) 326 (65.20) 183 (65.59) 154 (70.32) 1,853 (80.15) 80 (71.43)	Don't know	79 (2.31) [′]	11 (2.20)	4 (1.43)	11 (5.02)	50 (2.16)	3 (2.68)	
		` '	, ,	` '	, ,	` '	, ,	< 0.001
	No ` ´	2,596 (75.86)	326 (65.20)	183 (65.59)	154 (70.32)	1,853 (80.15)	80 (71.43)	
	Yes	826 (24.14)	174 (34.80)	96 (34.41) [°]	65 (29.68)	459 (19.85)	32 (28.57)	

^{*}IQR: Interquartile Range, NH: non-Hispanic, n: number, SD: standard deviation, U.S.: United States, and %: percentage. †p value based on the Kruskal-Wallis test for means and Chi square for frequencies.

Appendix Table 2. Measures of Exposure, Susceptibility and Access to Care – Among Participants who were Seronegative and Retested (N = 3,422)*

Asian\Pacific

				Asian\Pacific				
	Overall	Hispanic	Black NH	Islander	White NH	Other		
Category	(N = 6,740)	(N = 1,308)	(N = 899)	(N = 465)	(N = 3,846)	(N = 222)	p value†	
Measures of potential exposure: inability to impose social distance Built environment								
measures								
Living in an urban area	1,430 (41.79)	219 (43.80)	140 (50.18)	116 (52.97)	906 (39.19)	49 (43.75)	< 0.001	
Living in an	1,348 (39.39)	206 (41.20)	144 (51.61)	93 (42.47)	859 (37.15)	46 (41.07)	< 0.001	
multidwelling building	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	()	(• ,	***(****)	(******)	(,		
Ability to avoid public	218 (6.37)	38 (7.60)	37 (13.26)	7 (3.20)	128 (5.54)	8 (7.14)	< 0.001	
transportation	(,	(*****)	()	()	(,	- ()		
Sum built-environment								
Median (IQR)	1 (0,2)	1 (0,2)	1 (0,2)	1 (0,2)	1 (0,1)	1 (0,2)	< 0.001	
Work-related measures	. (-,-)	. (-,-/	. (-,-/	. (-,-/	. (-, -,	. (-,-/		
Not able to work from	849 (24.81)	134 (26.80)	87 (31.18)	42 (19.18)	554 (23.96)	32 (28.57)	0.01	
home	(=)	(=====)	()	()	(=====)	()		
Will not get paid if at	632 (18.47)	104 (20.80)	70 (25.09)	38 (17.35)	398 (17.21)	22 (19.64)	0.01	
home	()	(=====)	(====)	()	,	(,		
Does not have sick	746 (21.80)	116 (23.20)	82 (29.39)	46 (21.00)	474 (20.50)	28 (25.00)	0.01	
leave	7 10 (21.00)	110 (20.20)	02 (20.00)	10 (21.00)	11 (20.00)	20 (20.00)	0.01	
Could lose job or	597 (17.45)	113 (22.60)	69 (24.73)	38 (17.35)	353 (15.27)	24 (21.43)	< 0.001	
business if unable to go to	007 (17.10)	110 (22.00)	00 (2 1.70)	00 (17.00)	000 (10.21)	21 (21.10)	0.001	
work								
Job can only be done in	911 (26.62)	157 (31.40)	98 (35.13)	50 (22.83)	577 (24.96)	29 (25.89)	<0.01	
workplace	011 (20.02)	107 (01.10)	00 (00.10)	00 (22.00)	011 (21.00)	20 (20.00)	0.01	
Essential worker	282 (8.24)	34 (6.80)	32 (11.47)	15 (6.85)	189 (8.17)	12 (10.71)	0.15	
Sum work-related	202 (0.24)	04 (0.00)	02 (11.47)	10 (0.00)	100 (0.17)	12 (10.71)	<0.001	
measures							10.001	
Median (IQR)	1 (0,2)	1 (0,3)	2 (0,3)	1 (0,2)	0 (0,2)	1 (0,3)		
Sum built-environment and	1 (0,2)	1 (0,0)	2 (0,0)	1 (0,2)	0 (0,2)	1 (0,0)		
work-related measures								
Median (IQR)	2 (1,3)	2 (1,4)	3 (1,4)	2 (1,3)	2 (1,3)	2 (1,4)	<0.001	
More potential exposure	1,115 (32.58)	189 (37.80)	130 (46.59)	69 (31.51)	687 (29.71)	40 (35.71)	<0.001	
risk: index >2	1,110 (02.00)	103 (37.00)	100 (40.00)	03 (31.31)	007 (23.71)	40 (00.71)	10.001	
Measures of Susceptibility								
Age 60+	703 (20.54)	48 (9.60)	32 (11.47)	18 (8.22)	586 (25.35)	19 (16.96)	<0.001	
Chronic Lung Disease	103 (3.01)	17 (3.40)	9 (3.23)	5 (2.28)	64 (2.77)	8 (7.14)	0.10	
Asthma (current)	389 (11.37)	62 (12.40)	35 (12.54)	10 (4.57)	261 (11.29)	21 (18.75)	<0.01	
T2 Diabetes	231 (6.75)	44 (8.80)	29 (10.39)	5 (2.28)	140 (6.06)	13 (11.61)	<0.01	
Serious heart condition	865 (25.28)	115 (23.00)	89 (31.90)	20 (9.13)	613 (26.51)	28 (25.00)	<0.01	
Kidney disease	50 (1.46)	7 (1.40)	2 (0.72)	1 (0.46)	39 (1.69)	1 (0.89)	0.45	
Immunocompromised	108 (3.16)	13 (2.60)	7 (2.51)	3 (1.37)	80 (3.46)	5 (4.46)	0.43	
HIV	161 (4.70)	25 (5.00)	30 (10.75)	3 (1.37)	97 (4.20)	6 (5.36)	<0.001	
Daily smoker	343 (10.02)	58 (11.60)	49 (17.56)	8 (3.65)	202 (8.74)	26 (23.21)	<0.001	
Sum susceptibility measures	343 (10.02)	36 (11.00)	49 (17.30)	0 (3.03)	202 (0.74)	20 (23.21)	\0.001	
Median (IQR)	1 (0, 1)	0 (0,1)	1 (0,1)	0 (0,1)	1 (0,1)	1 (0,2)	<0.001	
More susceptible: index	795 (23.23)	98 (19.60)	78 (27.96)	15 (6.85)	570 (24.65)	34 (30.36)	<0.001	
>1	190 (20.20)	30 (13.00)	10 (21.90)	13 (0.03)	370 (24.03)	34 (30.30)	\0.001	
Measures of healthcare acces	c							
Does not have one person	808 (23.61)	145 (29.00)	74 (26.52)	69 (31.51)	483 (20.89)	37 (33.04)	<0.001	
as doctor	000 (23.01)	143 (23.00)	74 (20.32)	09 (31.31)	403 (20.03)	37 (33.04)	\0.001	
Did not see doctor due to	510 (14 00)	04 (19 90)	59 (20 70)	/1 /10 7 2)	205 (12 76)	22 (10 64)	<0.001	
	510 (14.90)	94 (18.80)	58 (20.79)	41 (18.72)	295 (12.76)	22 (19.64)	<0.001	
Cost	27 (0.79)	12 (2 60)	1 (1 12)	5 (2 20)	2 (0.00)	3 (2 60)	<0.001	
Did not see doctor due to	21 (0.19)	13 (2.60)	4 (1.43)	5 (2.28)	2 (0.09)	3 (2.68)	~ 0.001	
immigration No insurance	384 (11.22)	88 (17 60)	56 (20 07)	27 (12 22)	105 (9.43)	18 (16 07)	<0.001	
	304 (11.22)	88 (17.60)	56 (20.07)	27 (12.33)	195 (8.43)	18 (16.07)	<0.001	
Sum healthcare access								
measures Modian (IOP)	0 (0 1)	1 (0.2)	1 (0.2)	0 (0 1)	0 (0 1)	1 (0 1)	<0.001	
Median (IQR)	0 (0.1) 1,213 (35.45)	1 (0,2) 217 (43.40)	1 (0,2)	0 (0,1) 97 (44.29)	0 (0,1) 726 (31.40)	1 (0,1) 52 (46.43)	<0.001 <0.001	
More difficulty with	1,213 (33.43)	217 (43.40)	121 (43.37)	31 (44.23)	120 (31.40)	52 (46.43)	~U.UU1	
access: index >0								

^{*}IQR: interquartile range, SD: standard deviation.
†p value statistic is based on the chi-square test for categorical data or the Kruskal-Wallis for the summative indices.

Appendix Table 3. Proportion Hospitalized (Yes) or Seroconverted (Yes) By Exposure Level Within Race/Ethnicity Strata*

							Chi-Square p value for
	Overall	White NH	Hispanic	Black NH	API NH	Other NH	Differences by
Category	(N = 3,422)	(N = 2,312)	(N = 500)	(N = 279)	(N = 219)	(N = 112)	Race/Ethnicity
Seroconversion - N(%)	161 (4.70)	93 (4.02)	37 (7.40)	17 (6.09)	7 (3.20)	7 (6.25)	<0.01
Potential exposure	101 (4.70)	33 (4.02)	37 (7.40)	17 (0.00)	7 (0.20)	7 (0.23)	< 0.001
Less exposure risk	86 (3.73)	53 (3.26)	20 (6.43)	6 (4.03)	5 (3.33)	2 (2.78)	10.001
More exposure risk	75 (6.73)	40 (5.82)	17 (8.99)	11 (8.46)	2 (2.90)	5 (12.50)	
Susceptibility	75 (0.75)	40 (3.02)	17 (0.55)	11 (0.40)	2 (2.50)	3 (12.50)	0.03
Less susceptible	130 (4.95)	76 (4.36)	30 (7.46)	13 (6.47)	7 (3.43)	4 (5.13)	0.00
More susceptible	31 (3.90)	17 (2.98)	7 (7.14)	4 (5.13)	0	3 (8.82)	
Healthcare Access	01 (0.00)	17 (2.00)	7 (7.14)	4 (0.10)	J	0 (0.02)	0.02
Less barriers to access	93 (4.21)	58 (3.66)	21 (7.42)	8 (5.06)	3 (2.46)	3 (5.00)	0.02
More barriers to access	68 (5.61)	35 (4.82)	16 (7.37)	9 (7.44)	4 (4.12)	4 (7.69)	
	Overall	White NH	Hispanic	Black NH	API NH	Other NH	Chi-Square P-
	(N = 6,740)	(N = 1,403)	(N = 1,308)	(N = 899)	(N = 465)	(N = 222)	Value for
	(0,)	(,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	(,000)	(()	(===)	Differences by
							Race/Ethnicity
Hospitalization	401 (5.95)	185 (4.81)	108 (8.26)	78 (8.68)	13 (2.80)	17 (7.66)	<0.001
Potential exposure	(0.00)	()	()	(5155)	(=:==)	(1100)	<0.001
Less exposure risk	178 (4.30)	99 (3.85)	35 (4.95)	28 (6.41)	9 (3.01)	7 (5.51)	
More exposure risk	223 (8.59)	86 (6.76)	73 (12.15)	50 (10.82)	4 (2.41)	10 (10.53)	
Susceptibility	(/	()	- (/	,	,	. (,	< 0.001
Less susceptible	258 (4.88)	119 (4.07)	65 (6.07)	53 (7.60)	11 (2.53)	10 (6.13)	
More susceptible	143 (9.84)	66 (7.14)	43 (18.07)	25 (12.38)	2 (6.67)	7 (11.86)	
Healthcare access	,	,	, ,	,	,	, ,	< 0.001
Less barriers to access	130 (3.52)	78 (3.23)	26 (4.65)	18 (4.63)	4 (1.71)	4 (4.35)	
More barriers to access	271 (8.89)	107 (7.48)	82 (10.95́)	60 (11.76)	9 (3.90)	13 (10.00)	

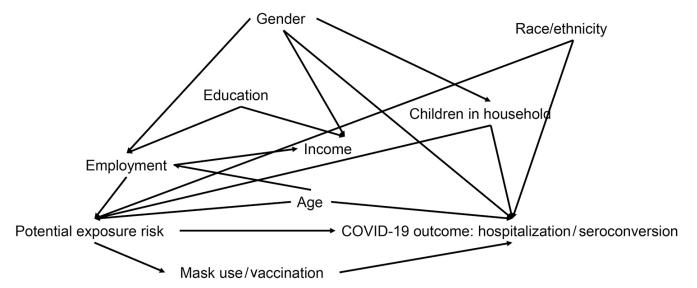
^{*}Chi-square assessed differences in proportion by White NH and Non-White.

Appendix Table 4. Modification of the association between race/ethnicity and seroconversion by potential SARS-CoV-2 exposure risk, susceptibility, and healthcare access – N = 3,086*

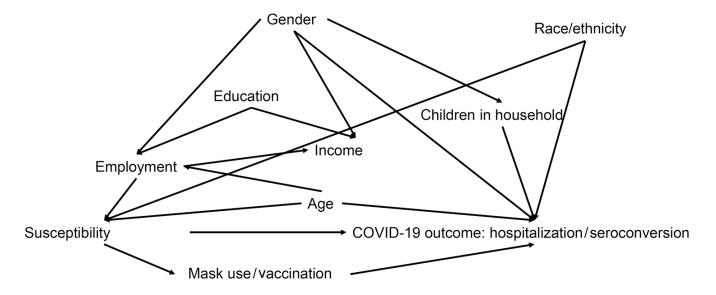
White NIH Hispanic/Latino/a or Black NH AOR (95% CI) for

<u>.</u>	White	e NH	Hispanic/Latino	AOR (95% CI) for	
				race/ethnicity effect	
					within exposure
					strata; Hispanic/Latino/a or
Measure of	N Hospitalized		N Hospitalized		Black NH Versus
Exposure	/Denominator (%)	AOR (95% CI)	/Denominator (%)	AOR (95% CI)	White
Less exposure risk	53/1625 (3.26)	1.00	26/460 (5.65)	1.67 (1.02, 2.75)	1.67 (1.02, 2.75)
More exposure risk	40/687 (5.82)	1.64 (1.06, 2.54)	28/319 (8.78)	2.46 (1.47, 4.12)	1.50 (0.90, 2.52)
AORs (95% CI) for	40/007 (3.02)	1.64 (1.06, 2.54)	20/313 (0.70)	1.47 (0.84, 2.60)	1.50 (0.50, 2.52)
less versus more		p = 0.02		p = 0.18	
within strata of		P 0.02		P 0.10	
race/ethnicity					
RERI (95% CI): meas	sure of interaction on t	he additive scale		0.15 (-1.16, 1.46)	
(/				p = 0.82	
Susceptibility				·	
Less susceptible	76/1,742 (4.36)	1.00	43/603 (7.13)	1.59 (1.07, 2.37)	1.59 (1.07, 2.37)
More susceptible	17/570 (2.98)	0.72 (0.42, 1.25)	11/176 (6.25)	1.43 (0.74, 2.78)	1.98 (0.90, 4.33)
AORs (95% CI) for		0.72 (0.42, 1.25)		0.90 (0.45, 1.78)	
more versus less		p = 0.24		p = 0.76	
within strata of					
race/ethnicity	ura of interaction on t	ha additiva agala		0.11 / 0.07 1.100	
RERI (95% CI): meas	sure of interaction on the	ne additive scale		0.11 (-0.97, 1.190) p = 0.84	
Healthcare				ρ – 0.04	
Troditioaro					
Less barriers to	58/1,586 (3.66)	1.00	29/441 (6.58)	1.67 (1.04, 2.68)	1.67 (1.04, 2.68)
access	, ,		, ,	, ,	,
More barriers to	35/726 (4.82)	1.20 (0.77, 1.87)	25/338 (7.40)	1.80 (1.07, 3.03)	1.50 (0.88, 2.57)
access					
AORs (95% CI) for		1.20 (0.77, 1.87)		1.08 (0.61, 1.89)	
less versus more		p = 0.43		p = 0.55	
within strata of					
race/ethnicity				,	
RERI (95% CI): meas	sure of interaction on t	he additive scale		-0.07 (-1.15, 1.02)	

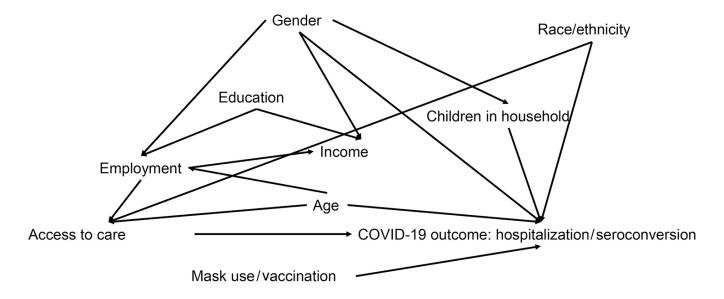
p = 0.89
*aOR, adjusted odds ratio. Shown are Model adjusted for age, presence of children in the household, employment, income, race/ethnicity; Model adjusted for employment, income, race/ethnicity; and Model adjusted for age, employment, sex, income, race/ethnicity.



Appendix Figure 1. Directed acyclic graph depicting the relationship between potential SARS-CoV-2 exposure and COVID outcomes.



Appendix Figure 2. Directed acyclic graph depicting the relationship between susceptibility and COVID outcomes.



Appendix Figure 3. Directed acyclic graph depicting the relationship between access to care and COVID outcomes.