COVID

MDPI

Article

Mitigation of Socio-Economical Inequalities on the Profile of Healthcare Workers Infected with SARS-CoV-2 upon Vaccination: The Experience of a Brazilian Public Healthcare Institution during the Omicron Wave

Maria Celia Chaves Zuma [1,2,3,†], Roberta Soares Faccion [1,2,3,†], Ana Carolina Carioca da Costa [3], Leonardo Henrique Ferreira Gomes [1,3], Daniella Campelo Batalha Cox Moore [4,5], Saint Clair Gomes Junior [3], Adriana Cesar Bonomo [6,7,8], Wilson Savino [6,7,8,*], Sotiris Missailidis [9] and Zilton Farias Meira Vasconcelos [1,3,*]

[1] Laboratório de Alta Complexidade (LACIFF), Instituto Nacional de Saúde da Mulher, da Criança e do Adolescente Fernandes Figueira (IFF), Fundação Oswaldo Cruz (FIOCRUZ), Rio de Janeiro 22250-020, Brazil

[2] Programa de Pós-Graduação em Pesquisa Aplicada à Saúde da Criança e da Mulher, IFF, FIOCRUZ, Rio de Janeiro 22250-020, Brazil

[3] Unidade de Pesquisa Clínica, IFF, FIOCRUZ, Rio de Janeiro 22250-020, Brazil

[4] Departamento de Pediatria, Unidade de Terapia Intensiva, IFF, FIOCRUZ, Rio de Janeiro 22250-020, Brazil

[5] Departamento de Medicina Clínica, Universidade Federal Fluminense (UFF), Niterói 24030-210, RJ, Brazil

[6] Laboratório de Pesquisas sobre o Timo, Instituto Oswaldo Cruz (IOC), FIOCRUZ, Rio de Janeiro 21045-900, Brazil

[7] Instituto National de Ciencia e Tecnologia em Neuroimunomodulação (INCT/NIM), IOC, FIOCRUZ, Rio de Janeiro 21045-900, Brazil

[8] Rede FAPERJ de Pesquisa em Neuroinflamação, IOC, FIOCRUZ, Rio de Janeiro 21045-900, Brazil

[9] Laboratório de Tecnologia Imunológica, Instituto de Tecnologia em Imunobiológicos, Bio-Manguinhos,, Fiocruz, Rio de Janeiro 21040-900, Brazil

* Correspondence: wilson.savino@fiocruz.br or savino.w@gmail.com (W.S.);
zilton.vasconcelos@fiocruz.br or zvasconcelos@gmail.com (Z.F.M.V.)

† These authors contributed equally to this work.

Supplementary Material

Table S1: Types and number of means of transportation to work used by IFF/Fiocruz workers according to SARS-CoV-2 test result.

Table S2: Logistic regression model of IFF/Fiocruz workforce according to gender and types of work activities.

Table S3: Socio-demographic and types of work activities data on IFF/Fiocruz healthcare workers tested for SARS-CoV-2 during the Omicron wave and the Original outbreak.

Figure S1: Frequency of occurrence of SARS-CoV-2 relevant variants in the state of Rio de Janeiro.

Table S1. Types and number of means of transportation to work used by IFF/Fiocruz workers according to SARS-CoV-2 test results.

Variables	SARS-CoV-2 test result				p-value *
Means of Transportation	Negative		Positive		
	n	%	n	%	
Bus					
No	33	38.4	53	61.6	1.000
Yes	36	38.7	57	61.3	
Train/Subway					
No	55	37.4	92	62.6	0.641
Yes	14	43.7	18	56.3	
Taxi/Private Car Service					
No	64	37.6	106	62.3	0.469
Yes	5	55.6	4	44.4	
Own Car/Motorcycle/Walking					
No	39	40.2	58	59.8	0.733
Yes	30	36.6	52	63.4	

* Pearson's chi-square test; significant result: p-value < 0.05.

Table S2. Logistic regression model of IFF/Fiocruz workforce according to gender and types of work activities.

Variables	Crude Odds Ratio (95% CI) [a]	Adjusted Odds Ratio (95% CI) [a]	p-value *
Gender			
Male	1.0	1.0	
Female	1.77 (1.06 – 2.98)	1.40 (0.69 – 2.85)	0.355
Workplace exposure to SARS-CoV-2			
Low exposure	1.0	1.0	
Medium exposure	0.97 (0.28 – 3.33)	1.01 (0.29 – 3.48)	0.991
High exposure	2.30 (1.22 – 4.32)	2.20 (1.16 – 4.17)	0.016 *
Occupation			
Healthcare professionals	1.0	1.0	0.872
Support workers	0.78 (0.50 - 1.20)	1.06 (0.53 - 2.13)	

* Significant result: p-value < 0.05. [a] Odds Ratios were adjusted by gender, workplace level of exposure, and Occupation. CI: Confidence Interval.

Table S3. Socio-demographic and types of work activities data on IFF/Fiocruz healthcare workers tested for SARS-CoV-2 during the Omicron wave and the Original outbreak.

	Omicron outbreak		Original outbreak	
Variable	**n**	**% ***	**n**	**% ***
Total	351	100%	1141	100%
Race				
White	165	47%	568	50.3%
Non-white	186	53%	561	49.7%
Gender				
Female	272	77.5%	848	74.6%
Male	79	22.5%	289	25.4%
Age				
18-30	38	8.0%	257	22.9%
31-45	149	42.8%	462	41.1%
46-60	135	38.8%	347	30.9%
Over 60	26	7.4%	57	5.1%
Income				
≤ 3 MW	110	33%	396	36.0%
4-5 MW	46	14%	157	14.3%
More than 5 and ≤ 10 MW	92	27%	264	24.0%
More than 10 MW	85	26%	282	25.7%
Schooling				
Complete secondary school or less	72	27%	353	31.2%
Complete undergraduate university	76	28%	310	27.4%
More than complete undergraduate university	120	45%	468	41.4%
Private health care plan				
No	66	20%	231	20.2%
Yes	269	80%	879	79.2%
Number of residents in household				
Living alone	26	10%	116	11.8%
2 to 4 residents	206	77%	743	75.4%
5 to 8 residents	36	13%	126	12.8%
Occupation				
Healthcare professionals	198	56.7	748	69.8%
Support workers	151	43.3	324	30.2%
Level of workplace exposure to SARS-CoV-2				
Low exposure	65	31.4	223	21.2%
Medium exposure	12	5.8	116	11.0%
High exposure	130	62.8	713	67.8%

* Percentages calculated excluding cases with missing information. One monthly minimum wage (MW) = BRL 1,045.00 or US$ 195.00.

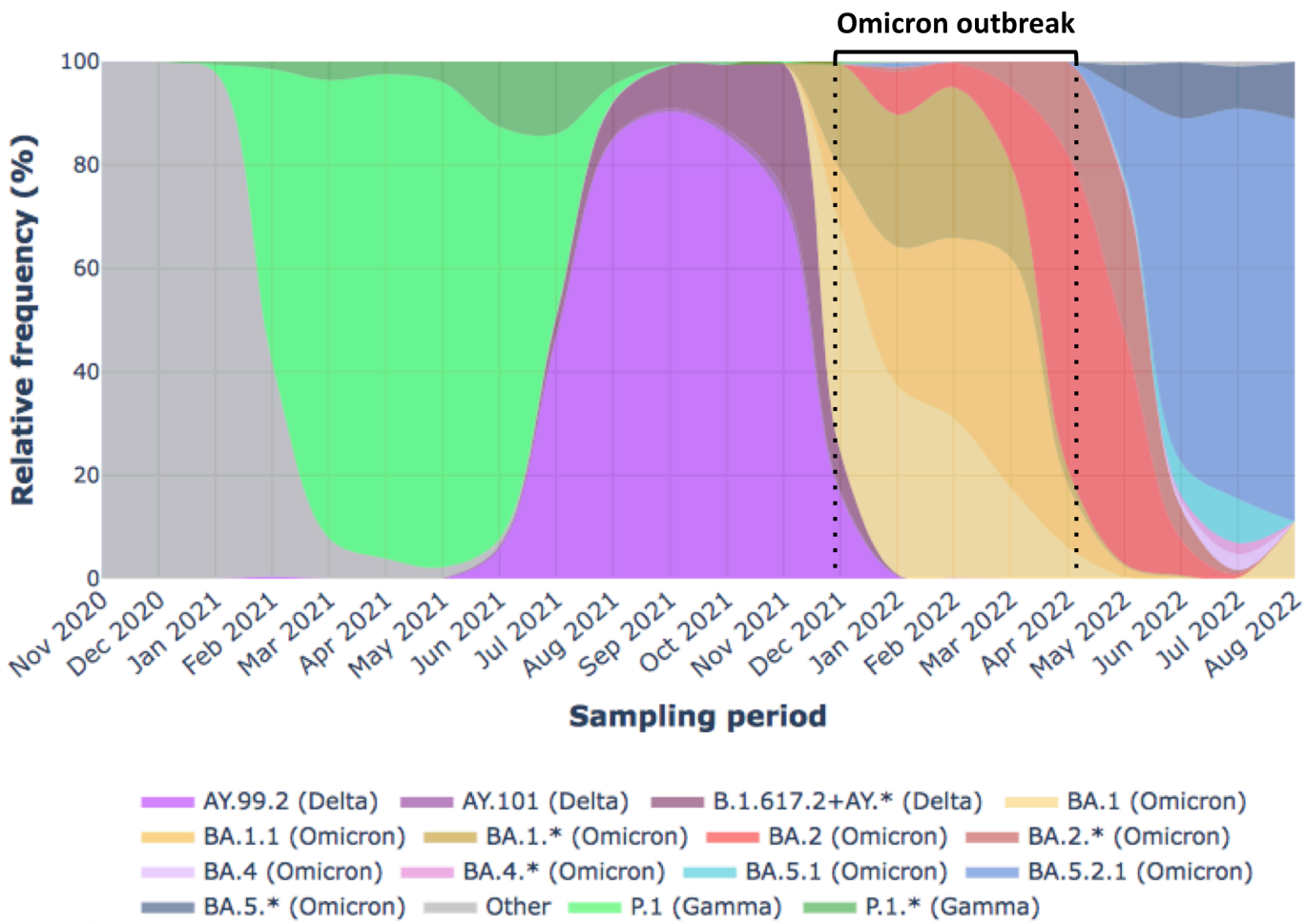

Figure S1. Frequency of occurrence of SARS-CoV-2 relevant variants in the state of Rio de Janeiro. The Omicron outbreak (between December 2021 and March 2022) is depicted. Adapted from the website for the "SARS-CoV-2 Genomic Surveillance in Brazil" network accessed in 30/09/2022 (20).