

# Discordance in self-reported SARS-CoV-2 infection and seroprevalence among a triad of learners, their parents, and teachers in KwaZulu-Natal, South Africa



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*South African Medical Research Council*

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*Disclosures: None*

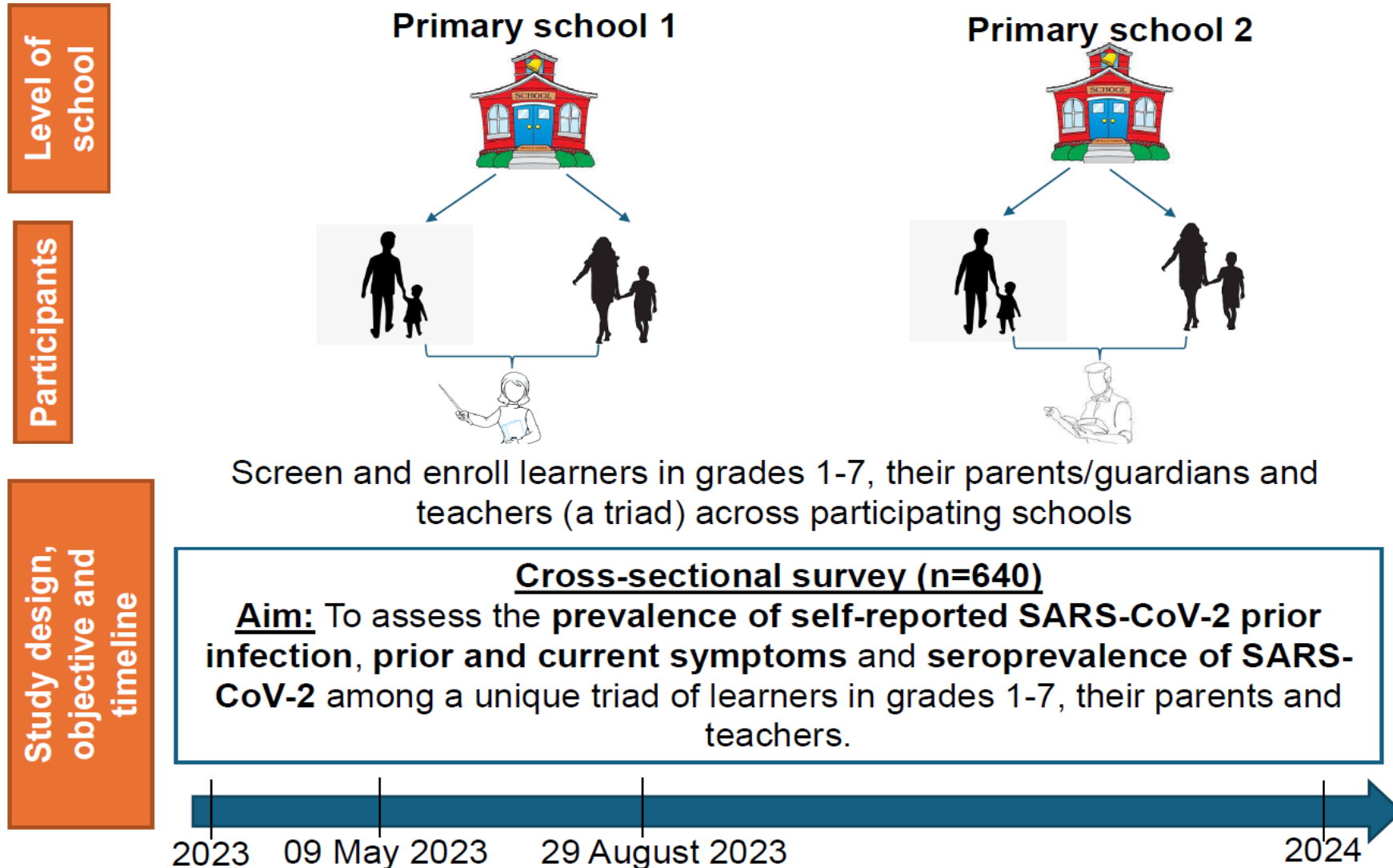
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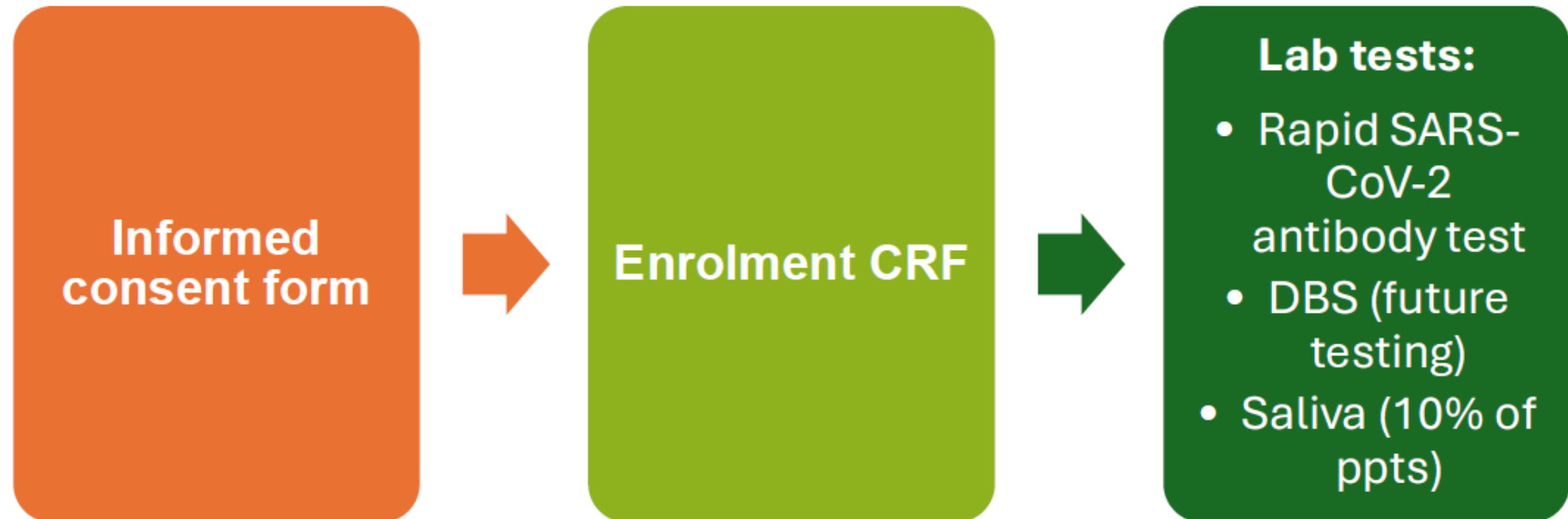
# Study overview

Figure 1. Study overview: design, objective and timeline

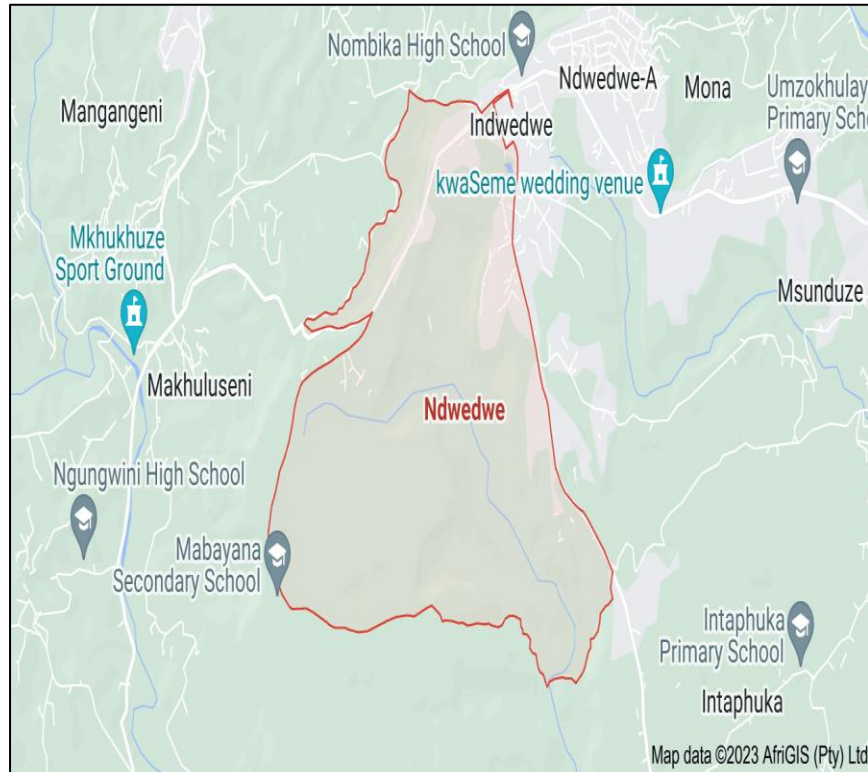


# Data collection

Figure 2. Data collection



# Study setting



**Figure 3.** Map of the Ndwedwe area, iLembe District



**Figure 4.** Pictures of the school setting and the study team

# Cohort size

Table 1. Sample size for cross-sectional survey

<b>Participants</b>	<b>Learners</b>	<b>Parents</b>	<b>Teachers</b>
<b>Cross-sectional survey</b>			
Target sample size	451	147	42
Enrolled as of 29 August 2023	457	147	42
<b>TOTAL # of participants enrolled</b>	<b>646</b>		
	<b>(100%)</b>		

# Results

**Table 2.** Characteristics of the school

	School 1		School 2			School 1		School 2	
	n	%	n	%		n	%	n	%
<b>Number of pupils per school</b>	1252	100	351	100	<b>Number of teachers per grade</b>				
<b>Number of teachers per school</b>	56	100	24	100	Grade 0				
<b>Number of pupils per grade</b>					Grade 1	4	14.29	1	10.00
Grade 0	137	10.94	39	10.51	Grade 2	4	14.29	1	10.00
Grade 1	162	12.94	34	9.16	Grade 3	4	14.29	2	20.00
Grade 2	152	12.14	38	10.24	Grade 4	4	14.29	2	20.00
Grade 3	171	13.66	56	15.09	Grade 5	3	10.71	1	10.00
Grade 4	122	9.74	66	17.79	Grade 6	3	10.71	1	10.00
Grade 5	161	12.86	31	8.73	Grade 7	3	10.71	1	10.00
Grade 6	193	15.42	51	13.75		3	10.71	1	10.00
Grade 7	154	12.30	36	9.70	<b>Number enrolled</b>	502	77.83	143	22.17

**Table 3. Baseline characteristics, by group**

Individual level characteristics	Learners in grades 1-7			Parents			Teachers		
	n	%	95% CI	n	%	95% CI	n	%	95% CI
	456	100		147	100		42	100	
<b>Grade</b>									
Junior Primary (grades 1-3)	183	40.1	35.7, 44.7						
Senior Primary (grades 4-7)	273	50.9	55.3, 64.3						
<b>Gender (sex)</b>									
Male	214	46.9	42.4,51.5	76	51.7	43.6, 9.8	7	16.67	7.9, 31.8
Female	242	53.1	47.3,56,9	71	48.3	40.2, 6.4	35	83.33	68.2,92.1
Other									
<b>Age</b>									
< 7	46	10.1	7.5,13.1						
7-10	172	38.0	33.6,42.5						
11-15	235	51.4	46.7,56.0						
16-18	3	0.7	0.2,2.0						
18-29				29	19.73	14.0,27.0	8	19.05	9.5,34.4
30-39				58	39.46	31.8,47.7	15	35.71	22.3,51.8
40-59				51	34.69	27.4,42.8	18	42.86	28.4,58.7
≥60				9	6.12	3.2,11.4	1	2.38	0.3,16.2

**Table 3.**

Baseline characteristics, by group continued

Parents			
Individual level characteristics	n	%	95% CI
	147	100	
<b><u>Level of education</u></b>			
No formal education	4	2.72	
Junior Primary School (grades 1-4)	13	8.84	
Senior Primary School (grades 5-7)	9	6.12	
Some secondary school (grades 8-12)	55	37.14	
Completed secondary school (grades 8-12)	59	40.17	
Some university/technical education	4	2.72	
Completed university/technical education	2	1.36	
National certificate/trade	1	0.68	

Parents			
Individual level characteristics	n	%	95% CI
	147	100	
<b>Employment status</b>			
Employed, part-time	18	12.24	7.8,18.7
Employed, full-time	13	8.84	5.2,14.7
Unemployed	115	78.23	70.7,84.2
Other	1	0.68	0.1,4.8



**Table 3.**  
Baseline  
characteristics  
by group  
continued

	Learners in grades 1-7		Parents		Teachers	
	n	%	n	%	n	%
<b>Individual level characteristics</b>	147	100		42	100	
<b>Comorbidities</b>						
HIV	7	1.5	36	24.5	5	11.0
TB(current)	1	0.2	1	0.7	0	0.0
TB(Prior)	2	0.4	7	4.8	0	0.0
Diabetes Mellitus	0	0.0	7	4.8	3	7.14
*Other comorbidities	2	0.41	17	11.6	5	11.0
<b>Concomitant medications</b>						
ARVs/ART	5	1.1	49	33.3	3	7.1
Bactrim	0	0.0	1	0.68	1	2.4
TB meds	1	0.2	0	0.0	0	0.0
#Other con meds	1	0.2	18	12.2	8	19.0
<b>Previous self reported COVID-19 infection</b>						
Yes	2	0.44	6	4.20	4	9.52
No	454	99.56	137	95.80	38	90.48
<b>Vaccination status</b>						
Vaccinated	2	0.4	60	41.0	33	79.0
Unvaccinated	454	99.6	86	59.0	9	21.0

## SARS-CoV-2 seroprevalence by group

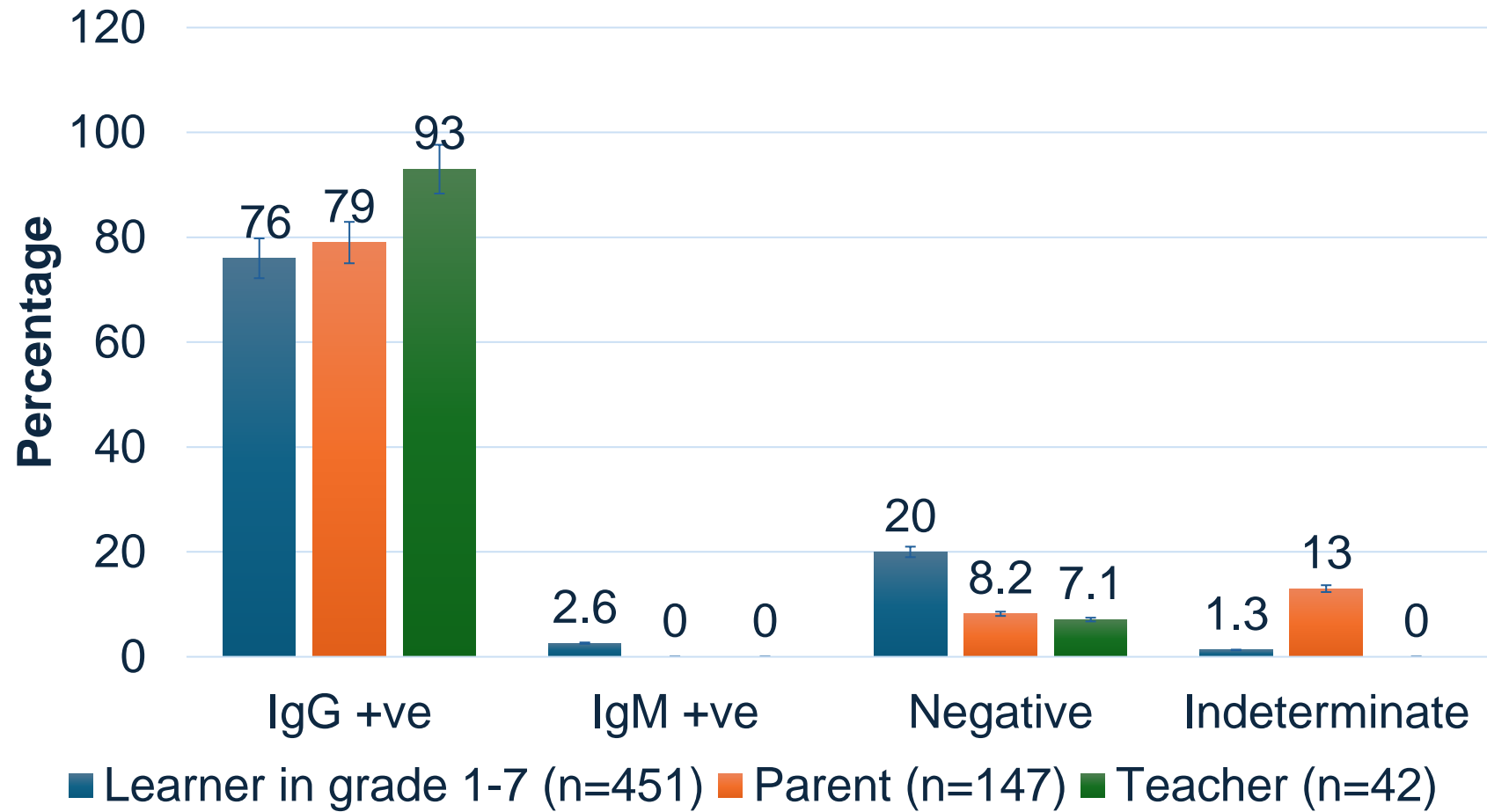


Figure 4. SARS-CoV-2 seroprevalence by group



# Key Findings

- Almost 100% learners, 96% parents and 91% teachers did not report having a previous SARS-CoV-2 infection. However, 78% of participants tested SARS-CoV-2 IgG seropositive.
- The discordance in self-reporting SARS-CoV-2 infection and seroprevalence may be attributed to:
  - **Recall bias** or
  - **Poor access to SARS-CoV-2 testing** or
  - **A high proportion of asymptomatic infections**
- **The high SARS-CoV-2 antibody seropositivity may protect from future severe COVID-19.**
- Interestingly, 20% of participants predominantly learners tested negative for SARS-CoV-2 antibodies. This could be due to a **waning of SARS-CoV-2 antibodies.**
- Only 0.4% learners, 41% parents and 79% teachers had received a SARS-CoV-2 vaccination.
- Note, that children aged 5-12 were only eligible to receive a SARS-CoV-2 specific vaccine if they were at risk of severe COVID-19.



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transformation

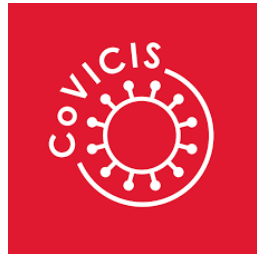
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- Partners and Collaborators



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- Co-PI and Key Investigators

- Ameena Goga (Co-PI)
- Terusha Chetty
- Brodie Daniels
- Trisha Ramraj

- Participating schools, principals, learners in grades 1-7, their parents and teachers.