

# Barriers to Swimming Lessons for Children

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Racial and economic segregation in the United States has limited people's opportunities to learn to swim<sup>1,2</sup> and likely contributes to fatal drowning disparities.<sup>3,4</sup> Racial and ethnic differences in learning to swim have been documented among adults.<sup>4,5</sup> In Chicago in 2020 to 2021, we found differences crossed generations. Over half of Black parents and Hispanic/Latine parents reported no children in their household had ever taken swimming lessons compared with less than one quarter of white parents.<sup>5</sup> In this study, we describe prior year swimming lesson participation for Chicago children in 2022, a year impacted by pool closures related to coronavirus disease 2019 (COVID-19) and lifeguard shortages. We also examine barriers to participation and child comfort with 5 swimming skills by child age, gender, and race and ethnicity.

## METHODS

Data were collected in October and November 2022 through the Voices of Child Health in Chicago Parent Panel Survey, administered tri-annually in English and Spanish via web and phone to parents from all 77 Chicago neighborhoods with children <18 in their household.<sup>6</sup> We asked parents if any of their 3- to 17-year-old children had taken swimming lessons in the past year. Parents who responded "no" could select all that apply from 10 reasons why they had not (drawing on unpublished data from a prior survey),<sup>5</sup> with a free choice option. Parents were asked about their youngest child's comfort with 5 survival swimming skills (Table 1),<sup>7</sup> with 4 response options: not able to do this, not comfortable, somewhat comfortable, and very comfortable.

We calculated descriptive and  $\chi^2$  statistics. All analyses were survey-weighted to be representative of Chicago's population. Recognizing Chicago's historically segregated community areas and the related distribution of public swimming pools, we compared responses by parent-reported race and ethnicity. Race and ethnicity were grouped as Black non-Hispanic/Latine, Hispanic/Latine, white non-Hispanic/Latine, and other or multiple races, given small samples of caregivers who identified as Asian, Native American/Alaska Native, Native Hawaiian/Other Pacific Islander, and those selecting multiple races. We also compared being "very comfortable" with each of the 5 swimming skills and a composite of all 5 swimming skills by child age group (3–7 years, 8–12 years, 13–17 years), gender, and race and ethnicity.

## RESULTS

Responses were received from 1140 parents; 1042 parents with children 3 years or older received swimming questions and were included in analysis. Parents were 58.8% female, 31.6% had a high school education or below, and 13.8% had household incomes <100% of the Federal Poverty Level. Child characteristics are presented in Table 1.

Nearly three quarters of children had no prior year swimming lessons (73.9%; 95% confidence interval [CI]: 70.5–77.3), with significant racial and ethnic differences: 85.0% (95%CI: 80.0–90.0) among Black parents, 82.5% (95% CI:

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Dr Macy conceptualized and designed the study, interpreted data, and drafted the initial manuscript; Drs Kendi, Beale-Tawfeeq, and Lennon contributed to the study design and interpretation of data; Ms Bendelow conducted statistical analyses and contributed to interpretation of data; Dr Heffernan contributed to study design, developed the survey instrument, was responsible for acquisition of data, contributed to interpretation of data; and all authors critically reviewed and revised the manuscript for important intellectual content, approved the final manuscript as submitted, and agree to be accountable for all aspects of the work.

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**TABLE 1** Parent Report of Child Being Very Comfortable With Each of 5 Swimming Skills to Survive a Drowning Situation

Swimming Skill	Child Characteristics		Very Comfortable With Skill		P
		n, Wt'd Column %	Wt'd %	95% CI	
Floating on their back for more than 30 s without help	Overall		29.8	26.0–33.6	
	Child age				<.001
	3 – 7 y old	n = 496–46.7	14.7	11.0–18.5	
	8 – 12 y old	n = 334–31.7	35.2	28.2–42.1	
	13 – 17 y old	n = 212–21.5	54.5	45.1–63.8	
	Child gender				.18
	Female	n = 540–49.2	32.2	25.7–37.9	
	Male	n = 492–50.8	27.1	22.1–32.1	
	Child race and ethnicity				.009
	Black	n = 226–22.0%	19.4	13.4–25.5	
	Hispanic/Latine	n = 370–38.3%	29.1	22.6–35.6	
	Other or multiple	n = 126–14.9%	37.9	26.7–49.1	
	White	n = 320–24.8%	35.1	28.1–42.2	
Treading water for more than 1 min	Overall		27.1	23.3–30.9	
	Child age				<.001
	3 – 7 y old		11.4	7.9–14.8	
	8 – 12 y old		34.3	27.1–41.5	
	13 – 17 y old		50.7	41.3–60.1	
	Child gender				.22
	Female		29.5	23.8–35.3	
	Male		24.9	18.8–29.8	
	Child race and ethnicity				.93
	Black		25.4	17.5–33.2	
	Hispanic/Latine		27.9	21.2–34.5	
	Other or multiple		25.6	16.0–35.2	
	White		28.4	21.6–36.2	
Swimming the length of a pool without help	Overall		26.5	22.7–30.3	
	Child age				<.001
	3 – 7 y old		11.0	7.3–14.8	
	8 – 12 y old		29.2	22.7–35.6	
	13 – 17 y old		56.1	46.8–65.4	
	Child gender				.35
	Female		28.3	22.8–33.7	
	Male		24.7	19.5–29.9	
	Child race and ethnicity				.02
	Black		17.0	11.0–22.9	
	Hispanic/Latine		32.0	25.0–39.0	
	Other or multiple		27.5	17.1–37.9	
	White		25.8	18.8–31.6	
Swimming with their face in the water	Overall		27.5	23.8–31.2	
	Child age				<.001
	3 – 7 y old		14.4	10.5–18.4	
	8 – 12 y old		33.5	26.7–40.2	
	13 – 17 y old		46.8	37.4–56.3	
	Child gender				.20
	Female		29.8	24.4–35.3	
	Male		25.0	20.0–30.0	
	Child race and ethnicity				.03
	Black		20.1	13.5–26.6	
	Hispanic/Latine		25.6	19.3–31.9	
	Other or multiple		37.9	26.4–49.2	
	White		30.7	24.4–37.0	

**TABLE 1** Continued

Swimming Skill	Child Characteristics		Very Comfortable With Skill		P
	n, Wt'd Column %	Wt'd %	95% CI		
Swimming in water where they cannot touch the bottom	Overall		21.4	17.9–24.8	
	Child age				<.001
	3 – 7 y old		10.0	6.4–13.6	
	8 – 12 y old		21.1	15.7–26.4	
	13 – 17 y old		46.2	36.7–55.7	
	Child gender				.07
	Female		24.5	19.1–29.9	
	Male		18.2	13.8–22.5	
	Child race and ethnicity				.05
	Black		14.0	8.9–19.2	
	Hispanic/Latine		23.0	16.6–29.4	
	Other or multiple		29.0	18.5–39.5	
	White		20.8	15.5–26.0	
Very comfortable with all 5 swimming skills	Overall		12.4	9.5–15.3	
	Child age				<.001
	3 – 7 y old		3.6	1.8–5.4	
	8 – 12 y old		12.9	8.4–17.4	
	13 – 17 y old		30.7	21.4–40.1	
	Child gender				.10
	Female		14.8	10.1–19.5	
	Male		10.1	6.8–13.4	
	Child race and ethnicity				.11
	Black		7.6	4.0–11.2	
	Hispanic/Latine		13.6	8.0–19.1	
	Other or multiple		18.2	9.2–27.1	
	White		11.4	7.2–15.6	

**TABLE 2** Reasons Why Chicago Children Had Not Taken Swimming Lessons in the Prior Year

	Overall	Black	Hispanic / Latine	Other or Multiple Races	White	P
	Wt'd% (95% CI)	Wt'd% (95% CI)	Wt'd% (95% CI)	Wt'd% (95% CI)	Wt'd% (95% CI)	
Child(ren) in family had no swimming lessons in the prior year	73.9 (70.5–77.3)	85.0 (80.0–90.0)	82.5 (77.8–87.1)	49.2 (35.4–62.9)	64.1 (57.9,70.3)	<.001
Reasons <sup>a</sup>						
1. Cost was too high	24.8 (20.5–29.1)	26.7 (17.5–36.0)	24.4 (17.6–31.1)	30.7 (12.6–48.8)	22.0 (15.2–28.8)	.76
2. My child already knew how to swim	24.1 (19.8–28.5)	14.3 (7.7–20.9)	17.8 (11.4–24.2)	27.2 (10.3–44.2)	42.3 (33.3–51.4)	<.001
3. I could not find a place to go	20.7 (16.3–25.2)	19.9 (11.5–28.3)	29.5 (21.1–38.0)	24.6 (7.8–41.5)	7.9 (4.0–11.8)	.0004
4. My child was interested in other activities	16.5 (12.6–20.3)	17.4 (9.0–25.8)	15.9 (9.7–22.2)	20.9 (6.8–34.9)	15.1 (8.8–21.4)	.89
5. There was not enough time	14.9 (11.4–18.4)	6.6 (2.9–10.4)	18.7 (12.2–25.3)	24.5 (8.3–40.7)	15.1 (8.9–21.2)	.012
6. Our Park District <sup>b</sup> pool was not open	12.1 (8.6–15.6)	20.2 (11.4–28.9)	8.9 (3.6–14.2)	5.6 (0–12.2)	10.3 (5.5–15.1)	.018
7. There were no open classes	11.9 (8.6–15.2)	15.9 (8.0–23.7)	13.2 (7.5–18.9)	7.0 (0–14.9)	7.3 (3.5–11.2)	.15
8. I'm not comfortable swimming myself	8.6 (5.5–11.8)	16.5 (8.5–24.6)	8.8 (3.4–14.3)	3.4 (0–8.1)	1.7 (0.6–3.3)	.0002
9. My child was too young	5.4 (3.1–7.7)	5.1 (1.4–8.8)	3.5 (0–7.3)	15.5 (0.1–30.8)	5.6 (2.3–8.9)	.11
10. My child was afraid of the water	4.2 (2.3–6.1)	7.0 (1.3–12.7)	3.5 (1.4–5.6)	3.0 (0–8.8)	2.5 (0.4–4.7)	.26
Other reason <sup>c</sup>	7.3 (4.3–10.3)	5.2 (1.7–8.7)	7.2 (1.4–12.9)	7.6 (0–18.8)	9.5 (3.6–15.4)	.75

<sup>a</sup> Percentages do not total to 100% as parents were allowed to select all that apply.  
<sup>b</sup> The Chicago Park District manages more than 75 public pools in 47 of the city's 77 neighborhoods. In July of 2022—the summer before the administration of this survey, pools were open in just 29 community areas because of lifeguard shortages.  
<sup>c</sup> A total of 44 free-text responses were provided and 26 were mapped by M.L.M. and M.E.H. to fixed choice responses. Other free-text response reasons that did not map to fixed choice responses: concern about COVID-19 exposure (n = 10), child has a health or behavioral condition (n = 6), and parent was pregnant (n = 2).

77.9–87.1) among Hispanic/Latine parents, and 64.1% (95% CI: 57.9–70.3) among white parents, and 49.2% (95% CI: 35.4–62.9) among other or multiple race parents ( $P < .001$ ). Reasons for not having swimming lessons, ranked from most to least common in Table 2, showed significant differences by racial and ethnic group for: child already knew how to swim, no place to go, not enough time, Park District pool closure, and parent not comfortable with swimming themselves. Child age group was associated with being very comfortable with each swimming skill and 3.6% (95% CI: 1.8–5.4) of 3 to 7 year olds, 12.9% (95% CI: 8.4–17.4) of 8 to 12 year olds, and 30.7% (95% CI: 21.4–40.1) of 13 to 17 year olds were very comfortable with all 5 skills ( $P < .001$ ) (Table 2). Child gender was not associated with any swimming skills. Racial and ethnic differences were present for floating, swimming the length of the pool, and swimming with their face in the water.

## CONCLUSIONS

As Chicago families emerged from the COVID-19 pandemic, racial and ethnic disparities in swimming lesson participation persisted. Differences relate to pool access and prior swimming experience for children and their parents. Cost was a common barrier across groups. In contrast to prior research,<sup>4,5,8</sup> some swimming skills did not differ by race and ethnicity. Interventions to promote aquatic literacy,<sup>9</sup> health equity,<sup>10</sup> and access to affordable, high quality swimming lessons deserve greater attention as children missed opportunities to learn to swim during the pandemic and as communities faced subsequent lifeguard shortages. Our findings may not be generalizable to communities with different waterscapes.

## ABBREVIATION

CI: confidence interval

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