

Constraints Impacting Minority Swimming Participation

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BACKGROUND

Mr. Jim Wood, president of USA Swimming, has stated that under-represented groups face an assortment of challenges in their pursuit of constructive out-of-school activities¹. Challenges reported in the literature over the years have ranged from the cost of activities and transportation problems² to family and peer pressure.³ According to the annual DDB Needham Lifestyles Survey almost three-fourths of African Americans indicated that they never participated in swimming while sixty percent (60%) of white respondents indicated participating in swimming at least once per year (see Appendix A).⁴ Hastings, et al. contend that "being Black reduces the odds of participation in swimming by approximately 60%, even while adjusting for age, sex, and household income" (p. 908).⁵

Perhaps as a result, drowning rates among minority, particularly African American, youth have occurred at disproportionate rates (see Appendix A). According to the Center for Disease Control (CDC), fatal unintentional drowning rates for 5-14 year old African Americans has been found to be more than three times (3x) higher than that for white children of similar age.⁶

Unfortunately, as noted by Woods, nationwide empirical data has not been generated to identify predominant barriers inhibiting swimming participation among minority youth in the United States. It is with this analytical void in mind that this research agenda was designed.

PURPOSE OF CURRENT INVESTIGATION

The fundamental purpose for this exploratory investigation was to determine variables influencing swim participation among underrepresented youth within metropolitan settings in the United States.

¹ Wood, J. (2006, November). A voice for diversity. *Swimming World*, p.6.

² Washburne, R.E. (1978). Black under participation in wildland recreation: alternative explanations. *Leisure Sciences*, 1, 175-189.

³ Hastings, D. W., Zahran, S., & Cable, S. (2006, July). Drowning in inequalities: Swimming and social justice. *Journal of Black Studies*, 36(6), 894-917.

⁴ Saluja, G., Brenner, R.A., Trumble, A.C., Smith, G.S., Schroeder, T., Cox, C. (2006). Swimming pool drowning among US residents aged 5-24 years: understanding racial/ethnic disparities. *American Journal of Public Health*, 4, 728-733.

⁵ Hastings, D. W., Zahran, S., & Cable, S. (2006, July). Drowning in inequalities: Swimming and social justice. *Journal of Black Studies*, 36(6), 894-917.

⁶ Center for Disease Control and Prevention (2007). *Water-related injuries: Fact sheet*. Retrieved from <http://www.cdc.gov/ncipc/factsheets/drown.htm>.

METHODS

The methodological protocol implemented by the research team included construction and validation of the study's survey instrument; designing and executing data collection processes; and, data analysis and reporting procedures.

Instrument development. A survey instrument, drawn from previous physical activity constraint studies, was designed in collaboration with representatives from U.S. Swimming. For content/face validity analysis, an expert panel comprised of specialists in the area of adolescent studies as well as aquatics reviewed the proposed survey instrument. Similarly, a pilot sample of 100 respondents was used to determine the reliability of specific instrument items. The instrument's Cronbach alpha, a measure used to ascertain a survey instrument's reliability, was found to be .80. Given that previous studies have found acceptable alpha levels between .50 and .70 for adolescent respondents, the .80 found for the current instrument indicates a very high level of reliability, confirming use of the instrument for the intended purposes.

Data collection. In an effort to fulfill the fundamental research objective described above a purposeful sample comprised of underrepresented youth subjects, between the ages of 6 and 16, from six (6) metropolitan markets (Chicago, Houston, Memphis, Miami, Oakland, and Philadelphia) was used. Hence, the research team focused on generating a statistically valid, not necessarily representative, data set comprised of metropolitan minority youth. Within each survey market the research team worked with representatives from the Young Men's Christian Association (YMCA) to identify appropriate data collection sites. The YMCA was chosen as the primary data collection source due to the organization's access to diverse youth populations (swimmers and non-swimmers) and keen interest in the topic under investigation. Site visits were scheduled for data collection and staff training between January 6 and February 12, 2008. An incentive of \$500 was offered to each participating metropolitan YMCA. More than two thousand (2,000) surveys were distributed. Adolescent respondents, 12 – 16 years of age, completed the survey instrument (see Appendix A) under the supervision of at least one trained research team member. The average age of respondents' who completed the adolescent survey was 13.5 years with a Standard Deviation of 2.5 years, meaning that a majority of the respondents were between the ages of 11 and 16. Participation constraints for minority youth 6 – 11 years of age were ascertained via surveys (see Appendix B) administered among parents and/or guardians. The average age of respondents whose data was provided by a parent or guardian was 8.5 with a Standard Deviation of 1.8, indicating a majority of respondents were between the ages of 5.7 and 9.3 years of age.

Statistical Analysis. All data were entered systematically into the Statistical Package for Social Sciences (SPSS). The data set was cleaned to ensure accurate results prior to analysis resulting in a usable sample of 1,772 surveys. Descriptive statistics, including statistics of central tendency and frequencies, were used to report the findings as well as inferential, multivariate statistics where appropriate and applicable.

KEY FINDINGS

Not surprisingly, the robust sample rendered an abundance of statistically significant findings. For the purposes of USA Swimming, the research team chose to focus on reporting those of meaningful, practical, and actionable nature.

Emerging Themes/New Discoveries

The exploratory nature of this study exposed a number of new findings associated with variables influencing swimming ability and activity among minority youth.

- Variables (specifically and categorically) most commonly or significantly found to influence minority youth swimming include:
 - The child's as well as parent's fear of child drowning/being injured while swimming
 - Family environment, a category of responses which includes:
 - Parent swim ability
 - Parent encouragement
 - Family swim participation
 - Family exercising regularly
 - Household income/free or reduced lunch program receptivity
 - Parent/guardian education
 - Easy access to/feeling safe at nearest pool
 - Awareness and admiration of a highly competitive swimmer
- African American and Hispanic/Latino respondents were significantly less skilled or comfortable in the pool and less likely to come from a home that regularly exercises, can swim, or encourages swimming than White/Asian respondents.
- As income increased so did respondent swimming ability/comfort, agreement with "swimming is for me", "I have a parent/guardian that encourages me to swim", "a majority of my family members can swim", and fear of drowning decreased.
- Respondents from homes with highly educated parents/guardians (advanced degrees) were significantly more skilled/comfortable swimming and inclined to receive parental/guardian support for swimming, and less inclined to express fear of drowning than children from households with less educated parent/caregivers.
- African American boys reported significantly higher swim ability/comfort in pool and less fear of drowning than did African American girls. In fact, African American female respondents were significantly less skilled or comfortable in the pool than all other races of female respondents.

- Respondents indicating that it is not easy to get to the nearest pool as well as those citing a “fear of people around pool” and reported significantly lower swimming ability/comfort and higher fear of drowning.
- Free/reduced lunch recipients reported significantly lower swimming ability, significantly less agreement with “swimming is for me”, parental/caregiver support, and greater fear of drowning.
- Variables found to significantly *increase* the chances for children 6 – 11 years of age being a low ability “at risk” swimmer include living in a home with a level of income that qualifies for free/reduced lunch program and where a parent fears that the child may drown or be injured while swimming. In fact, with all other factors being equal a child’s on free/reduced lunch is twice as likely to be an “at risk” swimmer. The child’s chances of becoming an “at risk” swimmer are increased 1.5 times when residing in a home with a parent/guardian that fears the child drowning.
- Variables found to *decrease* the chances that a child between the ages of 6 and 11 would be an “at risk” swimmer include living in a home with White or Asian parent/caregivers, parent/caregiver increased swimming ability, agreement that most people in their family know or will learn how to swim, and, the child’s familiarity with a highly competitive swimmer.
- 46% of parents of at-risk swimmers agreed or strongly agreed that they are afraid that their child will drown or become injured while swimming (compared to only 21% of non-at-risk swimmers).
- 65% of parents of at-risk swimmers are, themselves, an at-risk swimmer. On the other hand, only 19% of parents of non-at-risk swimmers are, themselves, an at-risk swimmer.

RESPONDENT PROFILE

As intended, the respondent group primarily consisted of non-white children ages 6 – 16 of varying swimming ability, from low income (reduced/free lunch recipients) households with moderately educated parents/caregivers. A complete profile of the respondents can be found below.

Respondent sex	<u>6-11 yr olds⁷</u>	<u>12-16 yr. olds</u>	<u>Total</u>
Male	52.0%	49.7%	50.5%
Female	48.0%	50.3%	49.5%
Respondent race			
White	27.8%	8.2%	14.3%
African American/Black	39.7%	55.5%	50.4%
Asian/Asian American	3.9%	2.9%	3.1%
Hispanic/Latino	20.4%	22.2%	22.2%
American Indian & Alaska Native	0.6%	1.0%	0.9%
Native Hawaiian & Other Pacific Islander	0.4%	0.6%	0.5%
Multi-racial	6.5%	7.6%	7.0%
Other	0.8%	2.0%	1.6%
Respondent school lunch program			
I am on a free lunch program	29.0%	50.6%	41.1%
I am on a reduced cost lunch program	13.4%	12.7%	12.1%
I do not receive free or reduced lunches	50.4%	23.3%	30.0%
I do not know if I am on any free/reduced lunch program	7.2%	13.4%	16.8%

⁷ Parents/caregivers responded on behalf of children less than 12 years of age.

Respondent annual household income (parent responses only)

Less than \$25,000	20.5%	-	20.5%
\$25,000 - \$49,999	23.3%	-	23.3%
\$50,000 - \$74,999	18.0%	-	18.0%
\$75,000 - \$99,999	9.6%	-	9.6%
\$100,000 or more	11.3%	-	11.3%
Would rather not say	17.2%	-	17.2%

Parent/caregiver highest level of education

Some high school	5.6%	25.0%	17.0%
High School Diploma or GED	23.2%	15.6%	16.6%
College or technical school degree	47.1%	16.0%	25.1%
Advanced college degree (Masters/Doctorate, etc.)	20.8%	14.0%	14.9%
Unknown	3.2%	29.4%	26.4%

Number of hours a week respondent works at a job (12 -16 year old only)

I do not work at a job	-	72.8%	72.8%
10 or fewer hours a week	-	12.6%	12.6%
11-20 hours a week	-	6.1%	6.1%
21-30 hours a week	-	3.9%	3.9%
31 or more hours a week	-	4.5%	4.5%

SWIMMING ABILITY AND PARTICIPATION

As noted below, a large proportion of respondents, including parents of children 6 – 11 years of age⁸, do not spend time swimming and, thus, do not feel comfortable in the water. In fact, nearly one-fourth (23%) of all respondents “never/rarely” spend time at a pool throughout anytime of the year.

Child’s swimming ability	<u>6-11 yr olds⁹</u>	<u>12-16 yr. olds</u>	<u>Total</u>
Unable to swim	34.6%	14.6%	20.9%
Can swim a little, but not comfortable in deep water	30.7%	29.0%	30.3%
Comfortable in deep water, but cannot swim very long	18.5%	20.6%	19.6%
Able to swim for an extended period of time	11.8%	23.1%	19.3%
Swim competitively (or could) and for an extended period of time	4.4%	12.7%	9.9%

Parent’s swimming ability			
Unable to swim	25.1%	-	25.1%
Can swim a little, but not comfortable in deep water	23.7%	-	23.7%
Comfortable in deep water, but cannot swim very long	18.5%	-	18.5%
Able to swim for an extended period of time	25.5%	-	25.5%
Swim competitively (or could) and for an extended period of time	7.2%	-	7.2%

⁸ According to Gilchrist et al. 37% of the U.S. adult population has limited swimming ability [Gilchrist, J., Sacks, J.J., Branche, C.M. (2000). Self-reported swimming ability in US adults, 1994. *Public Health Reports*, March/April & May/June, 110] indicating that the current sample of adult respondents is quite similar to the U.S. adult population.

⁹ Parents/caregivers responded on behalf of children less than 12 years of age.

Summer pool frequency

Never/very rarely	21.1%	23.8%	22.7%
Rarely; about 1-2 times a month	22.1%	20.3%	20.9%
Sometimes; more than 1-2 times a month	31.0%	25.7%	28.1%
Frequently; about 1-2 times a week	25.8%	20.4%	28.4%

Non-summer pool frequency

Never/very rarely	59.2%	62.8%	61.5%
Rarely; about 1-2 times a month	21.5%	16.4%	18.3%
Sometimes; more than 1-2 times a month	15.3%	10.6%	12.1%
Frequently; about 1-2 times a week	4.0%	10.3%	8.1%

Most likely means of getting to a swimming pool

Walk/Bike/Skateboard	8.1%	30.2%	23.2%
Drive self	-	10.2%	10.2%
Ride with friend	4.4%	13.2%	10.5%
Ride with parent/other family/caregiver	81.6%	40.1%	53.9%
Public transportation/bus	5.9%	6.2%	6.1%

SWIMMING CONSTRAINT SCALE & POOL AVAILABILITY, ACCESS & SAFETY ISSUES

A thirty-three (33) item scale, drawn from the physical activity constraint literature as well as input from physical activity/youth swimming experts and USA Swimming representatives, was used to fulfill the research project's primary objective, to ascertain predominant barriers inhibiting swimming participation among respondents. Items were posed as affirmation statement that required respondents to provide a response ranging from "Strongly Disagree [1] - Strongly Agree [4]". See Table I for results.

A set of six (6) categorical response statements (Yes/No/I don't know) regarding pool availability, access, and safety drawn from similar sources were posed to the respondents. See Table I for results.

Statements eliciting a level of *agreement/disagreement* from the total sample (both age groups) include:

- General *agreement* (mean score >3.0 or 50%+ "Yes")
 - Everyone should learn how to swim
 - I would like to improve my swimming skills
 - I have at least one friend who enjoys swimming
 - The nearest pool is in good condition
 - I feel safe in that pool (nearest)
 - It is easy for me to get to that pool

- General *disagreement* (mean score <2.0 or 50%+ "Yes")
 - I do not swim because I do not enjoy it
 - I do not have enough money to go swimming
 - Swimmers are primarily White/Caucasian
 - I do not like to go to pools because I would be different from others
 - Because of an injury or my health, I am unable to swim
 - Because of the shape I am in, I am unable to swim
 - I do not swim because I do not like to get my hair wet
 - I do not swim because it affects my personal appearance
 - I do not like to swim because of how I look in a swimsuit
 - I do not like to swim because I am shy
 - I do not swim because I do not have the right equipment/swimwear
 - I have no time for swimming because I care for children after school

Statements eliciting a level of *agreement/disagreement* among respondents between the ages of 6 - 11 (responses provided by parents/caregivers) include¹⁰:

- General *agreement* with the following statements (mean score >3.0 or 50%+ “Yes”)
 - **Swimming is an activity for someone like me**
 - Everyone should learn how to swim
 - I would like to improve my swimming skills
 - **I have a parent/grandparent/guardian who encourages me to swim**
 - **I have (my child has) at least one friend who enjoys swimming**
 - **I (my child) would swim if he/she had someone one to go with**
 - The nearest pool is in good condition
 - I feel safe in that pool (nearest)
 - It is easy for me to get to that pool

- General *disagreement* with the following statements (mean score <2.0 or 50%+ “Yes”)
 - I do not swim because I do not enjoy it
 - I do not have enough money to go swimming
 - Swimmers are primarily White/Caucasian
 - I do not like to go to pools because I would be different from others
 - Because of an injury or my health, I am unable to swim
 - Because of the shape I am in, I am unable to swim
 - I do not swim because it affects my personal appearance
 - I do not like to swim because of how I look in a swimsuit
 - I do not like to swim because I am shy
 - I do not swim because I do not have the right equipment/swimwear
 - **I have no time for swimming because I participate in other sports/activities**

¹⁰ Items in bold were not found to be of agreement/disagreement within the overall sample; unique to this age group.

Statements eliciting a level of *agreement/disagreement* among respondents between the ages of 12 - 16 include:

- General *agreement* with the following statements (mean score >3.0 or 50%+ "Yes")
 - The nearest pool is in good condition
 - I feel safe in that pool (nearest)
 - It is easy for me to get to that pool

- General *disagreement* with the following statements (mean score <2.0 or 50%+ "Yes")
 - I do not swim because I do not enjoy it
 - I do not have enough money to go swimming
 - Swimmers are primarily White/Caucasian
 - I do not like to go to pools because I would be different from others
 - Because of an injury or my health, I am unable to swim
 - Because of the shape I am in, I am unable to swim
 - I do not swim because it affects my personal appearance
 - I do not like to swim because of how I look in a swimsuit
 - I do not like to swim because I am shy
 - I do not swim because I do not have the right equipment/swimwear

SUMMARY: DESCRIPTIVE FINDINGS & INTRPRETATION

A quick review of the descriptive results would appear to indicate that items related to pool availability, access, and safety, as well as swimming enjoyment, money, personal appearance, and equipment are not cited as barriers by the separate age-based subgroups (6 -11; 12 – 16) or entire population of respondents. However, the research team felt it necessary to subject the data to further inferential statistical analysis to uncover predictive variables among subgroups based on respondent demographic characteristics as well as swimming ability and participation.

The data were subject to a number of multivariate analyses. Analysis of Variance (ANOVA) was used to explore differences between respondent subgroups (see Table II) whereas a variety of regression models (Binary Logistic Regression and Multiple Regression) were used to explore the strength of relationships between survey items. Only items achieving a .05 level of significance have been reported.

SWIMMING CONSTRAINT VARIABLES TESTED BY RESPONDENT DEMOGRAPHIC VARIABLES

Analyses by Race

- African American and Hispanic/Latino respondents were significantly less skilled or comfortable in the pool and less likely to come from a home that regularly exercises, can swim, or encourages swimming as compared to White/Asian respondents. White respondents were significantly more inclined to agree with the statement that “swimming is for me” and significantly less inclined to agree that they feared drowning or injury as a result of swimming than Asian, Hispanic/Latino, or African American respondents.
- White respondents were significantly more inclined to agree with the statement that “a majority of their family can swim” and “I have a parent/guardian that encourages me to swim” than Hispanic/Latino and African American respondents.
- African American boys did report significantly higher swim ability/comfort in pool and less fear of drowning than did African American girls. In fact, African American female respondents were significantly less skilled or comfortable in the pool than all other races of female respondents.
- White respondents are significantly more likely to think that everyone should learn how to swim than African American, Asian, and Hispanic/Latino respondents.
- More White respondents have friends that enjoy swimming than African American and Hispanic/Latino respondents.
 - Further, White responses were significantly higher (more agreement) with regards to the statement: “I would swim if I had someone to go with.”
- African American and Hispanic/Latino responses were significantly more inclined than White responses to agree with the statement: “I do not swim because I do not enjoy it.”
- White responses were significantly more inclined than African American, Asian, and Hispanic/Latino responses to agree with the statement: “Swimming is an activity for someone like me.”
- White responses were significantly more inclined than African American and Hispanic/Latino responses to agree with the statement: “I have a parent/grandparent/guardian who encourages me to swim.”
- White responses were significantly more inclined than African American and Hispanic/Latino responses to agree with the statement: “Most people in my family know or will learn how to swim.”

- The swimming ability of the parent/grandparent/guardian was significantly higher for White respondents than African American and Hispanic/Latino respondents.
- Parents of African American and Hispanic/Latino children are significantly more afraid that their child will drown or be injured while swimming than parents of White children.
- African American and Hispanic/Latino responses were significantly higher (more agreement) than White responses with regards to the statement: "I do not swim because I do not have the right equipment/swimwear."
- African American and Hispanic/Latino responses were significantly higher (more agreement) than White responses with regards to the statement: "My child does not swim because (s)he is not a very good swimmer."
- African American and Hispanic/Latino respondents were significantly more afraid of drowning or being injured while swimming than White respondents.
- White responses were significantly higher (more agreement) than African American and Hispanic/Latino responses with regards to the statement: "I know who to contact if I wanted to take swimming lessons."
- The following items relate to the issue of access to a swimming facility:
 - African American and Hispanic/Latino responses were significantly higher (more agreement) than White responses with regards to the statement: "I do not swim because there aren't any pools close to me." Similarly, African American and Hispanic/Latino responses were significantly higher with regards to the statement: "I do not know where the nearest swimming pool is."
 - Hispanic/Latino respondents feel significantly less safe walking or riding their bike to the nearest pool than White respondents.
 - African American and Hispanic/Latino respondents feel significantly less safe in the nearest pool or swimming facility than White respondents.
 - African American and Hispanic/Latino respondents feel significantly less safe when certain people are around the nearest pool than White respondents.
- There were ***no*** significant differences between any race on the following items:
 - I do not have enough money to go swimming
 - Swimmers are primarily White/Caucasian
 - The nearest pool (or swimming facility) is available all year
 - The nearest pool is in good condition
 - I would like to improve my swimming skills
 - I am not the swimming type
 - I would swim if there were pools I could afford to go to
 - I do not like to go to pools because I would be different from others
 - I would go to a pool by myself

Analyses by Income/Free lunch program

- As income increased so did respondent swimming ability/comfort, agreement with “swimming is for me”, “I have a parent/guardian that encourages me to swim”, “a majority of my family members can swim”, while the fear of drowning decreased.
 - Free/reduced lunch recipients reported significantly lower swimming ability, significantly less agreement with “swimming is for me”, parental/caregiver support, and greater fear of drowning.
 - African American and Latino recipients of free/reduced lunch were significantly more inclined to express a fear of drowning and less inclined to agree with “I have a parent/guardian that encourages me to swim”.

Analyses by Parental Education

- Respondents from homes with highly educated parents/guardians (advanced degrees) were significantly more skilled/comfortable swimming and inclined to receive parental/guardian support for swimming, and less inclined to express fear of drowning than children from households with less educated parent/caregivers.

SWIMMING CONSTRAINT VARIABLES TESTED BY POOL AVAILABILITY, ACCESS & SAFETY ISSUES

- Respondents citing a “fear of people around pool” report significantly lower swimming ability/comfort, less agreement with “swimming is for me”, higher fear of drowning, and are less inclined to have family members that swim.
- Those indicating that it is not easy to get to the nearest pool reported significantly lower levels of swimming ability/comfort and higher fear of drowning.

SWIMMING CONSTRAINT VARIABLES TESTED BY SELF-REPORTED SWIMMING ABILITY

- At-risk swimmers felt significantly less safe in a pool than swimmers of higher ability; however, 72% of those swimmers still indicated that they do feel safe.
- The responses for non-at-risk swimmers (comfortable in deep water) were significantly higher with regards to the statement: "Swimming is an activity for someone like me."
- 45% of at-risk swimmers indicated that they are afraid of drowning or being injured while swimming (compared to 16% of non-at-risk swimmers).
- 46% of parents of at-risk swimmers agreed or strongly agreed that they are afraid that their child will drown or become injured while swimming (compared to only 21% of non-at-risk swimmers).
- 65% of parents of at-risk swimmers are, themselves, an at-risk swimmer. On the other hand, only 19% of parents of non-at-risk swimmers are, themselves, an at-risk swimmer.
- At-risk swimmers are significantly more likely to be on a free lunch program than non-at-risk swimmers.
- 67% of parents of at-risk swimmers reported an annual household income of less than \$49,999. Only 29% of non-at-risk swimmers reported an income of less than \$49,999.
- Non-at-risk swimmers swim significantly more often than at-risk swimmers. However, among at-risk swimmers, 48% still swim regularly.
- 31% of White respondents were considered at-risk swimmers, 58% of African American respondents were considered at-risk swimmers, and 56% of Hispanic/Latino respondents were considered at-risk swimmers.
- Separate analysis of self-reported "competent" swimmers (comfortable in deep water) that never or rarely visit a pool anytime during the year were ...
 - More likely to:
 - Fear drowning or being injured while swimming
 - Reside with parents/caregivers who similarly were more fearful of the child drowning or being injured while swimming
 - And, less likely to:
 - cite parental/caregiver encouragement for swimming,
 - to cite easy access to the nearest pool,
 - agree that they do not swim because there are no pools close by,
 - and cite social, self-esteem variables such as "I would swim if somebody would swim with me" and "I don't swim because I'm shy." NOTE: a similar analysis of "at risk" swimmers found shyness not be a factor for never/rarely visiting a swimming facility.

SWIMMING CONSTRAINT VARIABLE RELATIONSHIPS

As previously noted, a variety of multivariate analyses were used to explore the strength of relationships between survey items. Initially, tests were performed to identify predictors of low swimming ability (“Unable to swim” + “Can swim a little, but not comfortable in deep water”), a group referred to by the research team as “at risk” swimmers. It was assumed that this group may be “at risk” for incidents of drowning.

Responses provided by parents/caregivers for children 6 – 11 years of age indicate that the following variables *increase* a child’s chances for being “at risk”:

- Living in a home with a level of income that qualifies for free lunch program.
- A parent’s fear that the child may drown or be injured while swimming.

Likewise, the following variables *decrease* a child’s chances for being “at risk”:

- White or Asian parent/caregivers.
- Parent/caregiver increased swimming ability.
- Agreement that most people in their family know or will learn how to swim.
- Child’s increased age (between 6 and 11).
- The parent’s belief of the child’s familiarity with a highly competitive swimmer.

Responses from African American males indicate that agreement with the variables “I’m not the swimming type” and “I don’t swim because it gets my hair wet” *increase* the chances for being “at risk”. Likewise, indicating awareness and admiration of a highly competitive swimmer and citing easy access to the nearest swimming facility were found to *decrease* an African American male’s chances for being an “at risk” swimmer.

African American females expressing a fear of drowning or being injured while swimming were more likely to be of low or “at risk” swimming ability. African American females indicating awareness and admiration of a highly competitive swimmer and citing that members of their family exercise on a regular basis were more likely to not be an “at risk” swimmer.

TABLE 1 SWIMMING CONSTRAINT SCALE MEANS SCORES & POOL AVAILABILITY, ACCESS & SAFETY ISSUE FREQUENCY TABLE

Respondents were asked to indicate their level of agreement with the following statements (data reported as mean scores):

1 - Strongly Disagree 2 - Disagree 3 – Agree 4 - Strongly Agree

	<u>6-11 yr olds</u> ¹¹	<u>12-16 yr. olds</u>	<u>Total</u>
I am not the swimming type	-	2.06	2.06
I would swim if I had someone one to go with	3.08	2.71	2.83
Because of an injury or my health, I am unable to swim	1.52	1.61	1.58
I would swim if there were pools I could afford to go to	2.39	2.39	2.40
I like to swim because I am a very good swimmer	-	2.58	2.58
My child does not swim because (s)he is not a very good swimmer	2.14	-	2.14
I have no time for swimming because I have to work	2.30	1.90	1.90
Because of the shape I am in, I am unable to swim	1.48	1.60	1.56
I do not swim because I do not like to get my hair wet	-	1.64	1.64
I do not swim because it affects my personal appearance (<i>make up, grooming, contacts</i>)	1.51	1.60	1.58
I have no time for swimming because I participate in other sports/activities	1.72	2.10	1.98
I do not like to swim because of how I look in a swimsuit	1.52	1.78	1.70
I do not like to swim because I am shy	1.60	1.67	1.65
I am afraid of drowning/being injured while swimming	-	2.02	2.02
I (the parent) am afraid of my child drowning/being injured while swimming	2.20	-	2.20
I do not swim because I do not have the right equipment/swimwear	1.72	1.67	1.67
I have no time for swimming because I care for children after school	-	1.59	1.59

¹¹ Parents/caregivers responded on behalf of children less than 12 years of age.

I do not swim because I do not enjoy it	1.63	1.67	1.65
I do not swim because there aren't any pools close to me	1.90	1.95	1.92
I do not like to go to pools because I would be different from others	1.60	1.67	1.62
I do not have enough money to go swimming	1.52	1.73	1.73
I know who to contact if I wanted to take swimming lessons	2.87	2.44	2.57
Most people in my family know or will learn how to swim	2.95	2.82	2.85
I (the child) am aware of, and admire, a highly competitive swimmer	-	2.32	2.32
I (the parent) am aware of, and admire, a highly competitive swimmer	2.69	-	2.69
Most members of my family exercise on a regular basis	-	2.53	2.53
I (the parent) exercise on a regular basis	2.73	-	2.73
I would go to a pool by myself	-	2.37	2.37
I would like to improve my swimming skills	3.46	2.92	3.07
I have at least one friend who enjoys swimming	3.10	2.91	2.97
I (the child) do not know where the closest swimming pool is	-	1.93	1.93
I (the parent) do not know where the closest swimming pool is	1.85	-	1.85
I would swim more if I could be part of a competitive team	2.20	2.20	2.21
Swimming is an activity for someone like me	3.30	2.65	2.86
I see financial opportunities for me in swimming (jobs, scholarships, etc)	2.24	2.20	2.21
Everyone should learn how to swim	3.53	2.95	3.10
Swimmers are primarily White/Caucasian	2.00	2.00	2.00
I have a parent/grandparent/guardian who encourages me to swim	3.28	2.44	2.72

Respondents were asked to consider the nearest pool or swimming facility (i.e., lake, beach, etc.) in which they could or would go swimming:

<u>6 – 11 year old respondents</u>	<u>Yes</u>	<u>No</u>	<u>Unsure</u>
The nearest pool (or swimming facility) is available all year	56.8%	24.9%	18.1%
The nearest pool is in good condition	75.9%	7.3%	16.8%
I feel safe with my child in that pool	70.6%	12.0%	17.3%
It is easy for my child to get to that pool	67.3%	20.7%	12.0%
I do not feel that my child is safe when certain people are around that pool	25.2%	52.8%	22.0%
I do not feel that my child is safe walking/riding a bike to this pool	48.0%	41.4%	10.7%
<u>12 – 16 year old respondents</u>	<u>Yes</u>	<u>No</u>	<u>Unsure</u>
The nearest pool (or swimming facility) is available all year	30.1%	30.8%	39.1%
The nearest pool is in good condition	54.3%	13.5%	32.2%
I feel safe in that pool	56.9%	17.6%	25.5%
It is easy for me to get to that pool	64.7%	19.0%	16.4%
I do not feel safe when certain people are around that pool	30.6%	48.2%	21.2%
I feel safe walking/riding a bike to this pool	45.3%	31.9%	22.8%

TABLE II ANALYSIS OF VARIANCE (ANOVA) USING SELECTED SWIMMING CONSTRAINTS VARIABLES¹²

	Swimming Ability	Fear Drowning	Swimming is for me	Family Exercises Regularly	Majority of Family Swim	Parents Encourage Swimming
Sex ¹³	Yes	No	No	Yes	No	No
Race	W, A x B, L	W x B, L	W x A, B, L	W x B	W x B, L	W x B, L
Household income	1, 2 x 3, 4, 5	1 x 4, 5 2, 3x 5	No	1 x 5	1 x 3,4, 5 2 x 5	No
Free lunch	N x F	N x F	N x F, R	N x F, R	N x F, R	N x F, R
Parent Education	Non	S, H, C x A	H,S x C, A	S,H,C x A	S x C, A H,C x A	S x H, C, A
All year pool availability	No	No	No	Yes	No	No
Respondent Age	Yes	No	Yes	Yes	No	Yes
Easy access to pool	Yes	Yes	Yes	Yes	Yes	Yes
Fear of people around pool	Yes	Yes	Yes	No	Yes	No
Safe transport to pool	Yes	Yes	No	No	No	No
Sex, Free lunch recipients only	Yes	Yes	No	No	No	No
Sex, Black respondents only	Yes	Yes	No	Yes	No	Yes

¹² Key: W –White, B – Black, L – Latino, A – Asian; Income: 1 is lowest income, 5 is highest income; Free Lunch: F – Free lunch, R – Reduced lunch, N – No free or reduced lunch; Parent Education: S –Some HS, H – HS diploma/GED, C – College degree, A – Advanced degree. x indicates statistically significant differences between groups, such that W x B is a statistically significant difference between Whites and Blacks.

¹³Howland et al. report that male adults tend to overestimate swimming ability which may be a cause for higher drowning rates. See Howland, J., Hingson, R., Mangione, T.W., Bell, N., Bak, S. (1996). Why are most drowning victims men? Sex differences in aquatic skills and behaviors. *American Journal of Public Health*, 86, 93-96.

Appendix A

Adolescent Drowning Rates According to the Center for Disease Control

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Adolescent Swimming Participation Rates

Adolescent Drowning Rates According to the Center for Disease Control:

- In 2004, there were 3,308 unintentional fatal drowning in the United States (9 per day).
- Drowning is the second-leading cause of unintentional injury-related death for children aged 1-14.
 - For every child that dies, 5 more receive emergency medical care for nonfatal submersion injuries.
- Fatal unintentional drowning rates for 5-14 year old African Americans were 3.2 times higher than that for whites.

Age Group	Race	Number of Accidental Drowning Fatalities	Rate per 100,000
5-9 years	Black or African American	368	1.59
5-9 years	Other Race	79	0.98
5-9 years	White	651	0.6
5-9 years	Total	1,098	0.78
10-14 years	Black or African American	478	1.98
10-14 years	Other Race	71	0.86
10-14 years	White	541	0.48
10-14 years	Total	1,090	0.75
15-19 years	Black or African American	545	2.43
15-19 years	Other Race	186	2.24
15-19 years	White	1,535	1.36
15-19 years	Total	2,266	1.58
Total		4,454	1.04

Adolescent Participation Rates According to the annual DDB Needham Lifestyles Survey:

- Between 1975 and 1998, 72.2% of African Americans indicated that they never participated in swimming. Forty percent (40%) of white respondents indicated participating in swimming at least once per year (39.3% at least 5 times/year).
- Additionally, 27% of white respondents swam at least 9 times per year compared to only 7.3% of African Americans.

