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Examining Minority Youth Swimmers' versus Non-Swimmers' Perceptions of Swimming Involvement

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Cover Page Footnote

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Abstract

Drowning is one of the leading causes of death in youth, especially among minority populations (Gilcrest & Parker, 2014). According to the World Health Organization (2014), every hour of every day approximately 42 people lose their lives to drowning. Additionally, African-Americans are 14 times more likely to drown in a pool than other racial or ethnic group members (Waller & Norwood, 2011). The purpose of this study was to examine survey results between swimming and non-swimming minority youth participants. Forty African-American students between the ages of 5-17 from an after-school program completed the Swimming Involvement Survey. Results indicated that swimmers, independent of group or gender, would like to swim more than they currently do. These results can help structure more effective swimming programs targeting minority youth.

Keywords: swimming lessons, youth, minority, ethnicity, drowning prevention

In the United States over 4,000 people die each year from drowning incidents (Gilchrist & Parker, 2014). The World Health Organization (WHO, 2014) reported world-wide approximately 42 people died each hour every day from drowning. Drowning is a preventable death that can deter many people from swimming participation. Drowning was the second leading cause of death in the United States for children between the ages of 1 and 19 (Gilchrist & Parker, 2014). Furthermore, the drowning rates among minorities such as African-Americans and Hispanics were 56% higher than the drowning rates for individuals of European descent (Ito, 2014). More specifically, the drowning rates were the highest for African-American males ages 5-19 years (Ito, 2014). Not only were African-Americans 10 times more likely to drown in a swimming pool (Gilchrist & Parker, 2014), but they were also 60% less likely to participate in swimming activities (Hastings et al., 2006).

According to data from USA Swimming (2018), only 1.4% of their year-round swim members identified as African-American while 3.5% self-reported as Hispanic or Latino. Coakley (2004) also determined that African-Americans and other minority groups were vastly underrepresented in collegiate and professional aquatic sports such as swimming, diving, and water polo. Additionally, individuals of Hispanic and African-American descent were significantly less comfortable and skilled in water activities as compared to Whites or Asians (Ito, 2014). The Arkansas Department of Health (ADH, 2011) and Ito (2014) suggested that the lack of access to swimming pools and the reluctance to choose water-related activities may have contributed to the difference in drowning rates based on ethnicity.

Possible factors that have prevented minorities from swimming might have included a lack of resources, misconceptions of swimming, or cultural boundaries (Waller & Norwood, 2011). Historically, African-Americans were not offered the

same opportunities related to pool access (Wiltse, 2007). Similarly, the pools in which African-Americans had access were frequently too small and shallow to gain a high degree of water competence (Wiltse, 2007). Another influential cultural barrier that has deterred minorities from swimming participation was what Irwin and colleagues (Irwin et al., 2011) referred to as a “legacy of fear.” This fear of water has gotten passed down from generation to generation and even strengthened through the generations (Ito, 2014). Another barrier, specifically for African-American females, was not wanting to get their hair wet (Irwin et al., 2009). For this population, hair has been a cultural norm and part of their identity. It was not uncommon for African-American to regularly have gone to the salon to get their hair done.

Swimming participation cannot only tear down cultural barriers, but it might also provide children and adults with the tools to live healthy and active lifestyles. In order to decrease minority drowning rates, a need exists to encourage and support minorities in water activities to create a downward trend for drowning. WHO (2014) identified that there was a vast need to increase national and international attention given to drowning. Additionally, WHO (2014) identified drowning as a neglected public health issue reporting that approximately 372,000 people drowned in the year 2012. WHO (2014) has supported various community-based actions to aid in preventing drowning. These actions have included safe practices, teaching swim lessons, training bystanders, and strengthening public awareness. Additional prevention strategies reported by Gilchrist and Parker (2014) suggested using fencing, life jackets, proper supervision, swimming lessons, and education of bystanders about cardiopulmonary resuscitation. Lack of water safety knowledge may lead to misconceptions and negative perceptions that may prevent many minorities from participating in water activities.

The purpose of this study was to compare differences in perceptions of swimming involvement between youth minorities involved in guided swimming lessons as well as water safety lessons and youth minorities who only received water safety lessons. We hypothesized that children who had engaged in the swimming lessons would have developed a more complete understanding of the activity and would demonstrate more desire for future involvement in aquatics.

Method

Participants

Thirty-eight participants (47.4% female, 47.4% male, 5.2% unreported) were recruited from an afterschool program in the Southeast United States to participate in this study. The ages of the participants ranged from 6 to 12 years ($M = 8.97 \pm 1.8$ years). Most of the participants were African-American (73.7%) while some were biracial (18.4%) and Caucasian (7.9%). Also, half of the participants were engaged

in a once-a-week swim program while the other half were not. Before data collection, IRB approval was granted for this study.

Instrumentation

All participants completed the Swimming Involvement Survey (SIS; Irwin et al., 2008). This instrument consisted of 27 questions relating to perceptions of the individual's swimming ability, perceived social support in relation to swimming, and access to aquatic facilities. For example, participants responded to questions such as, "my parents/caregivers encourage me to swim" on a 2-point Likert scale, *yes* or *no*. The SIS has previously demonstrated appropriate content validity for children ages 4-17 (Irwin et al., 2008). In addition, the Cronbach alpha was determined to be .78, a suitable level of internal reliability (Bland & Altman, 1997). The score for each question was evaluated as well as a sum across all of the questions.

Procedure

Over the course of two semesters, the individuals in the swimming group participated in an hour-long guided swimming lessons once a week. At each session there were on average 12-15 swimming participants who were divided up into four or five different groups based on ability level. The volunteer instructors running the guided swimming lessons were certified Water Safety Instructors (WSI) or individuals with multiple years of swim team experience. All participants in the swimming group received at least one hour up to a maximum of nine hours of voluntary, guided swimming lessons. Additionally, all participants, independent of group or gender, obtained bi-weekly aquatic safety lessons for a period of three months. These lessons included information regarding the rules at the swimming pool and practice with safety and flotation devices. After a total of six safety lessons and/or nine swimming lessons, the Swimming Involvement Survey (Irwin et al., 2008) was distributed and completed by all participants.

Statistical Analysis

Data were analyzed using the Statistical Package for Social Sciences (SPSS). First, the data were checked for missing data then descriptive statistics including means, standard deviations, and Cronbach's alpha were analyzed. Then, t-tests were run to compare differences between scores on the SIS between the swimming and non-swimming groups as well as differences between genders on the instrument.

Results

First, descriptive statistics and frequencies were calculated. Using the means and standard errors, independent t-tests were run to examine differences on the SIS between the swimming and non-swimming groups. The noteworthy findings of this analysis are displayed in Table 1. The overall mean for the non-swimming group

($M=17.71$, $SD= 4.48$) was statistically equal to the mean of the swimming group ($M=16.33$, $SD= 7.77$) since no significant differences existed between groups ($t=.43$, $p=.20$). The non-swimming group demonstrated significantly higher scores for not wanting to swim because of submerging ears ($M=.53$, $SD= .51$) and eyes ($M=.50$, $SD=.51$) than individuals in the swimming group ($M=.20$, $SD=.41$; $M=.29$, $SD=.47$, respectively). Also, the swimming group reported significantly higher scores than the non-swimming group on the question, “I swim with other members of my family” ($t=-1.17$, $p=.02$).

Table 1

Differences between swimming and non-swimming group

	Swimming Group		Non-Swimming Group		t-test
	M	SD	M	SD	
Total	16.33	7.77	17.71	4.48	.43
Swimming is an activity that I enjoy	1.00	.00	1.00	.00	.00
There is a pool close to where I live	.53	.44	.75	.52	1.33*
I swim with members of my family	.88	.34	.71	.46	-1.17*
My best friends like to swim	.75	.45	.90	.30	1.26*
I do not like to swim because water gets in my ears	.20	.41	.53	.51	2.00*
I do not like to swim because water gets in my eyes	.29	.47	.50	.51	1.24*

Note: * $p<.05$

Next, gender differences on the SIS were examined through independent t-tests and the significant results are shown in Table 2. When comparing total scores on the SIS, females reported statistically equivalent overall sums ($M=18.71$, $SD= 4.72$) as compared to males ($M=15.56$, $SD= 4.13$) ($t=-1.43$, $p=.34$). Additionally, females displayed significantly higher means for having access to a pool ($M=.75$, $SD= .48$), having family members who can swim ($M=1.00$, $SD=.00$), and wanting to improve their swimming skills ($M=.88$, $SD= .33$) as compared to males. Females also had a significantly higher mean for not liking swimming because their hair gets wet ($M=.50$, $SD=.52$) compared to males ($M=.25$, $SD=.45$); $t=-1.46$; $p=.03$.

Table 2
Differences between genders

	Male		Female		t-test
	M	SD	M	SD	
Total	15.56	4.13	18.71	4.72	-1.43
Swimming is an activity that I enjoy	1.00	.00	1.00	.00	.00
There is a pool close to where I live	.53	.51	.75	.48	-1.31*
I would like to swim more than I do now	.82	.39	.94	.25	-.987*
I know how to be safe around water	.72	.46	.88	.33	-1.17*
Most of my family members know how to swim	.67	.49	1.00	.00	-2.92**
It is easy for me to get to a pool	.63	.50	.82	.39	-1.27*
I swim with members of my family	.72	.46	.88	.33	-1.17*
My best friends are good swimmers	.72	.46	.94	.24	-1.74*
I would like to improve my swimming skills	.47	.51	.88	.33	-2.77**
I do not like to swim because my hair gets wet	.25	.45	.50	.52	-1.46*

Note: * $p < .05$; ** $p < .01$

Discussion

First, it is important to note that every single participant independent of group or gender reported that they enjoyed swimming, similar to the findings of Irwin and colleagues (2009). This was a surprising finding since half of the individuals did not participate in the guided swimming lessons. This could possibly mean that water safety lessons helped to increase youth minority's familiarity and level of enjoyment; however, this cannot be proven without a control group to compare to. Furthermore, some of the members in the swimming group still were not completely comfortable being in the water even after participating in multiple hours of swimming lessons. Although actual swimming ability was not assessed in this

study, it was clear that some of the participants who received the guided swimming lessons still were cautious and fearful in the water.

Next, our hypothesis suggesting that participating in swimming and water safety lessons would increase swimming competency and involvement was not supported. These findings may be due to an ambiguous definition of what is considered “swimming.” This is consistent with the findings of Dixon and Bixler (2007) in which young adults could not reliably define what it meant to be a competent swimmer. Ito (2014) also reported that many participants declared they were swimming when in actuality they were standing in water. Even dating back to the early 1900s, African-Americans often did not have access to pools conducive to swimming which could have led to some ambiguity (Wiltse, 2007). Furthermore, Langendorfer and Bruya (1995) as well as Moran and colleagues (2012) have recommended the use of “water competence” instead of swimming competency to define the breadth of knowledge and skills required to prevent drowning which may be more appropriate for this sample. Additionally, the instrument used does not only assess competence.

Although gender differences in terms of swimming involvement were not originally hypothesized, some intriguing findings were discovered between males and females. For example, females demonstrated higher scores related to perceived swimming competency; this contradicted previous research by McCool and colleagues (2008). These authors discovered that males tended to overestimate their swimming ability as compared to their female counterparts, while we found the exact opposite to be true. Also, the WHO (2014) reported that males were twice as likely to drown as females. To this point, the males expressed significantly lower scores for “knowing how to be safe around water” and for “I would like to improve my swimming skills.” These findings suggested that youth minority males were satisfied with their current level of swimming. Females, in this sample, reported that most of the members of their families and friends were competent swimmers. These results were contrary to the findings from Irwin et al. (2017); these authors discovered that females rated their peers and family members as low in ability. Additionally, females in this study stated that they did not like to swim because they did not want to get their hair wet. This finding added to the cultural barrier regarding African-American females and avoiding water for hair-related reasons (Irwin et al., 2009).

Limitations

One limitation of this study was the small, convenient sample. Also, we were unable to collect data on a control group by which to compare the swimming and water safety groups. Additionally, there were inconsistencies in the attendance of the swimming lessons; some participants received nine hours of guided swimming

lessons while others only received one hour. This large discrepancy in the amount of time spent in swimming lessons certainly could have impacted the results. Actual swimming performance was not assessed, and, if assessed in the future, could provide valuable information regarding actual water competence among minority youth. As previously mentioned, the results of this study could have been impacted by a vague understanding of what is considered “swimming.” In the future, coming to an agreement on an operational definition of swimming which is validly and reliably measurable would be beneficial and could help pinpoint idiosyncrasies related to water competence in minority populations. Also, qualitative research examining reasons for swimming participation from both minority youth and their parents could provide more detail on swimming involvement. Finally, creating a more structured, regimented, and more extensive swimming program could result in firmer conclusions about youth minority’s swimming involvement. Another limitation of the study is the inflation of Type I error due to multiple t-tests run.

Practical Implications

Based on the results of this study and previous studies, minority youth are at an increased risk for drowning. Providing opportunities for this population to become more comfortable both in their water competence and water safety could result in fewer drownings and increased enjoyment. For example, the WHO (2014) provided information about community-based actions such as resuscitation training for bystanders and teaching school-age water safety and safe rescue skills. The WHO (2014) also suggested that water safety policies (e.g., developing a national water safety plan and building resilience for flood risks) be adopted and implemented to prevent drowning. Additionally, USA Swimming offers a National Diversity Select Camp for minority youth swimmers, a camp in which 48 athletes get to train at the USA Olympic Training Center.

Directions for Future Research

In the future, assessing actual swimming performance could provide more objective results about water competence. Additionally, qualitative studies examining the reasons for participating in the guided swimming lessons and barriers for not drowning may help better explain youth minorities' swimming involvement. Finally, assessing the guardians of the youth about their swimming involvement could help researchers understand what role the legacy of fear plays and help guide future programming.

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