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Aquatic Instructors' Attitudes Toward Teaching Students with Disabilities

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The purpose was to examine attitudes of aquatic instructors (female, $n = 59$; male, $n = 23$) toward teaching swimming to students with mild to severe disabilities in an inclusive setting. Aquatic instructors from 28 states representing 75 cities across the U.S. participated in this study. Data were collected by mail with a modified version of Rizzo's (1984) "Attitudes of Physical Educators Toward Teaching Handicapped Pupils" (renamed "Physical Educators' Attitudes Toward Teaching Individuals with Disabilities – Swim"). A correlated t test showed that aquatic instructors were significantly more favorable toward teaching aquatics to students with mild disabilities than students with severe disabilities. Stepwise multiple regression analysis indicated that conducting an inclusive aquatic program was the best predictor of favorable attitudes toward including students with mild disabilities, while having more certifications in aquatics was the best predictor of favorable attitudes toward including students with severe disabilities in regular aquatic programs.

Traditionally, swim programs for students with disabilities have been provided in segregated programs (i.e., special swim programs just for students with disabilities). In fact, many aquatic programs around the world continue to offer separate swimming programs for students with and without disabilities. However, there is a trend to include students with disabilities in regular, community swim programs. Many students with disabilities and their parents are opting for participation in regular swim programs (American Red Cross, 1992b).

One of the keys to making any inclusive physical education/recreation program (including swimming) successful is the training and attitude of the instructor

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(Block, 1994; Kelly, 1994; Lepore, Gayle, & Stevens, 1998; Rizzo & Vispoel, 1991; Rizzo & Wright, 1988). In fact, research has shown that attitudes and training are intricately tied together. Physical education teachers with more academic preparation in adapted physical education and special education and more experience with students with disabilities are more likely to have favorable attitudes toward working with students with disabilities (Block & Rizzo, 1995; Rizzo & Vispoel, 1991; Rizzo & Wright, 1988; Weiss & Karper, 1980).

Unfortunately, many aquatic instructors have limited training in adapted pedagogy and meeting individual needs (Horvat & Forbus, 1989; Horvat, Forbus, & Van Kirk, 1987; Reid, 1979). However, instructors still are expected to provide swimming instruction to students with disabilities (American Red Cross, 1992b, 1977; Canadian Red Cross Society, 1980). Insufficient training of staff and instructors who lack experience and specific instruction in conducting integrated aquatic programs are major reasons why these types of programs fail (Exceptional Parent Staff, 1993; Lepore et al., 1998; Priest, 1979; Skinner & Thompson, 1983). Additionally, lack of training and experience may lead to unfavorable attitudes toward working with students with disabilities in regular swim programs. Two questions need answering: How do aquatic instructors feel about instructing students with disabilities in regular swim programs? Do aquatic instructors feel they are adequately trained to provide instruction to students with disabilities in regular swim programs? To date, there has been no systematic attempt to determine the training and attitudes of aquatic instructors toward teaching students with disabilities in regular swimming programs. Therefore, the purpose of this study was to assess aquatic instructors' attitudes toward teaching students with mild to severe disabilities in regular swim programs and to determine demographic variables (i.e., years experience, coursework in adapted physical education, coursework in special education, gender, certifications in aquatics, inclusive or separate programs, geographic regions) that relate to favorable attitudes.

Attitude Theory

To achieve this purpose, it was necessary to develop a valid and reliable instrument to measure aquatic instructors' attitudes. Rather then develop a new instrument, it was decided to modify Rizzo's (1984) "Attitudes of Physical Educators Toward Teaching Handicapped Pupils," which is based on reasoned action theory (Ajzen & Fishbein, 1980). The theory of reasoned action stipulates that behaviors begin in peoples' belief systems, with most behaviors accomplished for a reason. People make conscious decisions about whether they want to achieve some desired outcome or not. Thus, people can be taught to reason about desirable behaviors and to act in desired ways. The purpose of reasoned action theory is to understand and predict behaviors. The theory consists of several components including beliefs, attitudes, intentions, and behaviors. The theory assumes that intention is a predictor of behavior, and attitudes correspond to intentions. Attitudes are measured by collecting information about people's personal and normative beliefs in relation to what they would like to do or see happen, based on their past experience, knowledge, and/or new information. These variables can have a direct, as well as an indirect, relationship with people's beliefs, attitudes, intentions, and behaviors. Discussion of this theory in more detail can be found in Ajzen and Fishbein, (1980), Fishbein and Ajzen, (1975), Sherrill (1998), and Tripp and Sherrill (1991).

Method

Participants

Participants included 59 female and 23 male aquatic instructors. The sampling design used was cluster (i.e., all addresses were obtained from the National Swim School Association Membership Directory; NSSA). The NSSA membership is comprised of aquatic instructors from privately run businesses, schools, and clubs across the United States. The investigators believed this sample was representative of typical aquatic instructors in the United States and was appropriate for research purposes. The directory has a total list of 170 aquatic instructors from 35 different states, each of whom was mailed the survey with a stamped, return-addressed envelope.

After one month, 82 surveys were returned from 28 states and 75 different cities, representing an overall return rate of 48%. Each survey represented a different swimming program/pool. Of the 82 respondents, 59 were female and 23 were male. Aquatic instructors' average experience teaching swimming was 22 years, with a range of 2 to 45 years of experience ($SD = 10.2$). Most (95%) of the aquatic instructors had experience teaching swimming to students with disabilities. In addition, aquatic instructors reported working with an average of three different types of disability groups. Aquatic instructors held one to seven different types of aquatic certifications, with an overall average of three. Aquatic instructors obtained aquatic certifications from a variety of national organizations (e.g., American Red Cross, Young Men's Christian Association, Aquatic Council of American Association of Active Lifestyles and Fitness, etc.). Also, 48% of the instructors had one or more college courses in adapted physical education, and 40% had one or more special education courses.

Measures

The instrument used to measure attitudes was the Physical Educators' Attitudes Toward Teaching Individuals with Disabilities - Swim (PEATID-SWIM), a modified version of Rizzo's (1984) Physical Educators' Attitudes Toward Teaching the Handicapped (PEATH). Permission to adapt this survey was given by Dr. Terry L. Rizzo at California State University in San Bernardino. PEATID-SWIM consisted of two parts. The first part consisted of 20 belief statements that were designed to measure aquatic instructors' attitudes regarding such issues as acceptance of students with disabilities by their nondisabled peers, self-concept, rate of learning, best practices, motivation, training of instructors, benefits, safety, and behavior disruptions. Each statement required aquatic instructors to convey their attitude toward students with mild and severe disabilities. Students with mild disabilities were defined as students with learning disabilities, mild/moderate mental retardation, mild behavior problems, partial vision, hearing loss, mild autistic tendencies, or deafness. Students with severe disabilities were defined as students with severe/profound mental retardation, severe behavior problems, blindness, physical disabilities, multiple disabilities, or severe autism. For example, one statement read: "I believe students with mild and/or severe disabilities will learn more rapidly if they are taught with students without disabilities."

Respondents were directed to rate each statement separately for students with mild disabilities and students with severe disabilities on a 5-point Likert scale

(i.e., 5 = *strongly agree*, 4 = *agree*, 3 = *undecided*, 2 = *disagree*, 1 = *strongly agree*). Scores for belief statements that were negatively phrased were reversed to obtain proper scale means. For example, strongly disagreeing with the statement ("I believe having to teach students with mild and/or severe disabilities in swimming classes with students without disabilities places an unfair burden on teachers") would indicate a favorable attitude toward teaching students with disabilities (receive a score of 5). Following Rizzo's methods of data analysis (e.g., Block & Rizzo, 1995; Rizzo & Kirkendall, 1995; Rizzo & Vispoel, 1991), the 20 belief statement scores were then summed for each disability category (i.e., mild and severe) and then divided by the total number of statements to obtain a final score that could be interpreted with reference to the original 5-point Likert scale.

The second portion of PEATID-SWIM contained aquatic instructors' responses to nine demographic questions such as, "How many years have you been teaching swimming?" "Do you/your agency offer swim programs for students with disabilities?" and one open-ended question, "Assuming you might have some students with disabilities entering your swimming class, what type(s) of support service(s) may be of most benefit to help you teach your classes?" Aquatic instructors were asked to fill in the blank accordingly, check the appropriate response, or elaborate on the open-ended question.

Reliability

Reliability for the PEATID-SWIM was established in two ways. First, internal consistency was measured using Cronbach's (1951) alpha test for the two subscales (mild disability and severe disability) as well as the overall PEATID-SWIM. Results showed alpha scores of 0.88 for mild, 0.89 for severe, and 0.91 for total score. Second, stability across time was measured by test-retest reliability for PEATID-SWIM. A second survey was mailed to 30 randomly selected aquatic instructors from the 82 original respondents. The intraclass correlation formula (2,1) of Shrout and Fleiss (1979) yielded a test-retest reliability of $ICC = 0.98$ and a standard error of measurement of $SEM = 0.14$.

Validity

The content validity of PEATID-SWIM was established by experts in adapted physical education (APE) and aquatics. Five adapted physical educators made minor suggestions about content and wording of items. After making revisions recommended by APE experts, the survey was then sent to five nationally known experts in aquatics. All aquatic experts agreed that (a) the format and statements did measure attitudes of aquatic instructors toward teaching students with disabilities swimming, and (b) no changes were needed. In addition, a pilot study was conducted in which 17 aquatic instructors participating in an international aquatic conference were asked to complete and comment on the attitude surveys. These aquatic instructors commented that the statements were clear, appropriate, and reflected their attitudes on working with students who have disabilities.

The procedures for instrument development and content validation are consistent with those used by Ajzen and Fishbein (1980), Dillman (1978), and Krathwohl (1998), respectively. In addition, construct validity was established for the items on the PEATID-SWIM by using principal axis factor analyses (SPSS version 9.0), which is the appropriate model for instrument validation (McArdle,

Table 1 Factor Loadings for the 20 Items Comprising PEATID-SWIM

Item 1-10		Item 11-20	
1	.937	11	.758
2	.590	12	.806
3	.900	13	.737
4	.921	14	.741
5	.645	15	.791
6	.938	16	.636
7	.674	17	.847
8	.752	18	.952
9	.947	19	.927
10	.671	20	.927

1990). The results revealed one factor that explained 66% of the total variance and a eigenvalue of 13.2. Table 1 provides factor loadings on each of the 20 items on the PEATID-SWIM. Factor loadings ranged from .59 to .95, with the best two items being #18, "I believe students with disabilities and students without disabilities benefit from participating together in swimming classes" and #9, "I believe students with disabilities will not be accepted by students without disabilities in regular swimming classes."

Results and Discussion

Aquatic instructors were asked if their work place currently offered swimming programs for students with disabilities, and 91% responded *yes*. Of these, 63% offered both separate and inclusive swim classes, 17% offered only separate programs, and 19% offered only inclusive programs. While some aquatic programs continue to offer only separate programs, 80% offer some type of inclusive swimming opportunities. Apparently the impact of federal laws such as the ADA, as well as heightened awareness by parents and advocacy groups, has lead to more inclusive swimming opportunities (Christie, 1985; Grosse, 1985, 1996; Langendorfer, 1990; Martin, 1983).

When making decisions about where students are placed in programs, 50% said instructors made the decision, 13% said parents made the decision, and 37% said the decision was made collaboratively. While some aquatic instructors involve parents in program placement, half do not use parents. Parental involvement is a crucial factor for a child's success at all levels of intervention including placement (Bryant & Graham, 1993; Newman, 1997). Unfortunately, many aquatic instructors in this sample do not appear to take advantage of parental input when making placement decisions.

Aquatic Instructors' Attitudes

A correlated t test showed significant difference between attitudes toward including students with mild vs. severe disabilities, $t\ (81) = 10.86$, $p < .01$, $ES = 1.16$.

Aquatic instructors had more favorable attitudes toward including students into swim programs with mild disabilities ($M = 3.33$, $SD = 0.70$) compared to including students with severe disabilities with a mean of ($M = 2.50$, $SD = 0.74$). The means of 3.33 and 2.50 indicated that instructors were undecided for students with mild disabilities and disagreed with inclusion for students with severe disabilities. The effect size calculated by the Delta formula, was 1.16, which is considered a large effect (Cohen, 1969, 1977, 1988).

Demographic Data

Previous research has found that demographic data such as training (Heikinaro-Johansson & Sherrill, 1994; Rizzo & Vispoel, 1991) and experience with students with disabilities (Block & Rizzo, 1995; Rizzo & Kowalski, 1996) can significantly contribute to more positive attitudes toward teaching physical education to students with disabilities. Unfortunately, there has been no research to date on the relationship between various demographic data and attitudes of aquatic instructors toward working with students with disabilities. Therefore, intercorrelation and a stepwise multiple-regression analysis run by SPSS version 9.0 were conducted for seven variables: geographic location, gender, number of adapted physical education courses, special education courses, aquatic certifications, separate or inclusive swimming classes, and years of experience teaching swimming. Because aquatic instructors' attitudes toward teaching swimming to students with mild compared to severe disabilities were significantly different, each condition was analyzed separately.

Five of the seven demographic variables significantly correlated with more favorable attitudes of aquatic instructors toward teaching inclusive swimming programs to students with disabilities: (a) inclusive vs. separate swim classes ($r = -.29$, $r^2 = .08$, $p < .01$); (b) one or more courses in adapted physical education ($r = .27$, $r^2 = .07$, $p < .01$); (c) one or more courses in special education ($r = .23$, $r^2 = .06$, $p < .02$); (d) gender ($r = .24$, $r^2 = .06$, $p < .01$); and (e) certifications in aquatics ($r = .27$, $r^2 = .07$, $p < .01$). The variance explained by these individual variables ranged from 6% to 8%, indicating a medium effect size (Cohen, 1977, 1988).

Aquatic instructors who had one or more courses in adapted physical education, special education, and/or held more aquatic certifications had more favorable attitudes. This was further substantiated in responses to the open-ended question as many respondents noted that they did not have adequate training to serve the diverse needs of students with disabilities along with the needs of typically developing children. As noted earlier, insufficient training and/or experience working with students who have disabilities can lead to inclusive programs failing and thus eventually being eliminated (Priest, 1979). Unsuccessful or failing swimming programs can lead to negative attitudes toward inclusion.

Results from a forward stepwise multiple-regression procedure (Norusis, 1999) revealed three significant demographic variables were the best predictors for favorable attitudes toward teaching swimming to students with mild disabilities (refer to Table 2). The first order predictor was inclusion, $R = .29$, $R^2 = .08$, $F(1, 78) = 7.51$, $p = .01$; the second order predictor was one or more courses in adapted physical education, $R = .36$, $R^2 = .13$, $F(2, 77) = 4.22$, $p = .04$; and the third order predictor was gender (females held more favorable attitudes than males), $R = .42$, $R^2 = .17$, $F(3, 76) = 3.96$, $p = .05$. The cumulative variance explained was

Table 2 Stepwise Regression Analysis Findings on Predicting Attitudes Toward Teaching Students with Mild and Severe Disabilities

Variables	R	R^2	R^2 change	Beta	F	p
			Students with mild disabilities			
1. Inclusion	.29	.08	.08	–.20	7.51	.01
2. Coursework in adapted PE	.36	.13	.04	.23	4.22	.04
3. Gender	.42	.17	.04	.21	3.96	.05
			Students with severe disabilities			
1. Certifications in aquatics	.27	.07	.07	.27	6.18	.01

17%, which is a large effect (Cohen, 1988). However, further research is needed to discover other variables that will explain the remaining unexplained variance.

Results show aquatic instructors who conduct inclusive programs have more positive attitudes toward including students with disabilities compared to aquatic instructors who conduct separate programs. In other words, it is possible that aquatic instructors who conduct inclusive programs did so because they had favorable attitudes toward inclusion from the beginning. On the other hand, it is possible that favorable attitudes toward inclusion were shaped by conducting a successful inclusive aquatic program. The two possible explanations for these results deserve future research. However, it is interesting to observe that one or more courses in APE, certifications in aquatics, and gender all had a significant relationship with conducting an inclusive swim program. This suggests that aquatic instructors with these demographics were more likely to conduct inclusive swim programs.

Aquatic instructors with coursework in adapted physical education had significantly more positive attitudes toward including students with disabilities in regular aquatic programs than those without coursework. Training has been shown in previous research to have a positive effective on attitudes of physical educators toward teaching students with disabilities (e.g., Block & Rizzo, 1995). Unfortunately, only about half of the aquatic instructors had taken courses in adapted physical education. These results certainly favor such coursework. In addition, female aquatic instructors had more favorable attitudes ($M = 3.42$, $SD = 0.66$) than male aquatic instructors ($M = 3.08$, $SD = 0.72$) when teaching inclusive swimming programs. The effect size for this difference is 0.05, which is interpreted as medium (Cohen, 1969). It appears that the best overall predictors for an inclusive aquatic program for students with mild disabilities are if instructors are female, have taken at least one class in adapted physical education, and are teaching inclusive swim programs.

One of the seven demographic variables was significantly related to students with severe disabilities. Instructors' attitudes toward teaching swimming to students with severe disabilities increased significantly as certifications in aquatics (e.g., Water Safety Instructor, Water Fitness Instructor, Aquatic Therapy & Rehabilitation Institute Certification) increased ($r = .27$, $r^2 = .07$, $p = .01$). The

variance explained by this relationship was 7%, which is considered a medium effect (Cohen, 1988). No other variables were significantly related to attitudes.

Results from a forward stepwise multiple-regression procedure (refer to Table 2) further confirmed that, as certifications in aquatics increased, so did favorable attitudes of aquatic instructors toward inclusion, ($R = 0.27$, $R^2 = 0.07$, $F(1, 78) = 6.18$, $p = .02$). Although certifications explained 7% of the variance in attitudes, which is a medium effect (Cohen, 1969, 1977, 1988), 93% still remains unexplained. From these results, it appears that attitudes toward including students with severe disabilities in swimming programs is complex. Therefore, further research to identify what other contributing variables is needed.

Perceived Needs

Aquatic instructors were asked to respond to the following open-ended question: "Assuming you might have some students with disabilities entering your swimming class, what type(s) of support service(s) may be of most benefit to help you teach your classes?" Seventy-seven aquatic instructors responded to the open-ended question, resulting in a response rate of 94%. To analyze responses to this open-ended question, an emergent design approach was employed, following Lincoln & Guba's (1985) model. Analysis revealed three main categories: training, equipment, and class management. If one of these words were present in the instructors' response to this question, then one point was given to the appropriate category. Instructors' response frequency rates were as follows: 69% said training, 37% said equipment, and 75% said class management techniques. One aquatic instructor wrote:

> Training, equipment, training to use equipment, and class management techniques, which should include how to use aides . . . without aides doing a private class *which* defeats the purpose. Safety issues need to be addressed, diapers etc., drooling, feces' contamination. I had one student with a disability in a class with two nondisabled students, once I was working with one nondisabled student when the child with a disability got stuck under a piece of equipment and had to be rescued. Pretty Scary!!!

Responses to the open-ended question further highlight instructors' perceived needs for more training, even though many of the instructors surveyed had training and several certifications. It may be the case that the training these instructors had received related more to organizing and teaching regular aquatic programs than to inclusion strategies. One would think that such a course, if taught with an emphasis on ways to include students with disabilities into regular aquatic programs, might have a positive effect on attitudes.

While more students with disabilities are being included in regular aquatic programs, it is interesting to note that the American Red Cross eliminated its Adapted Aquatic Certification Course in 1992 in favor of including a chapter on disabilities in its regular Water Safety Instructor's Program (American Red Cross, 1992a). Unfortunately, this chapter provides very little specific information on how to include students with disabilities into regular aquatic programs. Although some states voluntarily offer the adapted aquatic certification, the text and teaching materials used must be from 1977. Also, the text and the course provide little, if anything at all, about inclusion.

Other formal training/certification programs for adapted aquatic instructors in the United States are available through the AAALF, YMCA, or the Special Olympics adapted aquatic course. However, these certifications provide very little specific information on inclusion. In addition, if the person conducting the formal certification class does not have ample experience and/or training in inclusion, not much information about including students with disabilities in regular aquatic programs will be provided. Finally, there is no information on students with disabilities in any official Life Guard Training Certification, Emergency Water Safety Courses, or Pool Director Certification. While training seems to have a positive effect on attitudes toward including students with disabilities in regular aquatic programs, the specific type of training will be very important.

It is interesting to note that aquatic instructors in this sample also highlighted adapted equipment and class management techniques as specific needs. Again, general training in teaching adapted aquatics may not be sufficient to prepare aquatic instructors for inclusion of students with disabilities. Aquatic instructors in this survey noted that they need specific information and support in adapting and modifying equipment for students with disabilities and class management techniques for conducting successful instruction to a class with a wide range of abilities. Such information may be limited in formal adapted aquatic certification courses.

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Author Note

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