A Comparison Between the Psychological Profiles of Wheelchair Athletes, Wheelchair Nonathletes, and Able-Bodied Athletes

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Wheelchair athletics, designed for individuals who have a severe, permanent disability of the lower extremities, is a relatively new phenomenon that has grown rapidly during the past three decades. Despite a modest beginning in England in 1944, thousands of wheelchair athletes currently participate internationally in competitive sports.

Wheelchair athletics is physiologically, emotionally, and psychologically beneficial to the athletes. Participation in sports promotes the acceptance of the disabled individual as an athlete, allowing performance to be objectively judged by standards which are applied to nondisabled athletes. Increased sports opportunities for disabled athletes, such as the Paralympics, have illustrated to society that disabled athletes can be as competitive as their able-bodied peers. Competition can be therapeutic and assist in the normalization and adjustment processes.

There is a growing trend toward acceptance of wheelchair athletes simply as athletes who happen to utilize a wheelchair as part of their sports equipment (Labanowicz 1978). This attitude, coupled with the competitiveness exhibited in wheelchair sports events, suggests that disabled athletes would have psychological profiles similar to those of nondisabled athletes. At present, there are only a handful of studies available and they substantiate this supposition (Henschen et al. 1984; Horvat et al. 1986; Ogilvie 1985).

Method

The experimental group consisted of volunteers from the disabled athletes participating in the 1987 Bluegrass Invitational Wheelchair Basketball Tournament, in Lexington, Kentucky. All participants completed surveys in a classroom adjacent to the tournament arena prior to athletic competition. The control group consisted of randomly selected wheelchair athletes and nonathletes who were not currently participating in sports. Subjects were secured through various rehabilitative agencies in the Southeastern United States.

The Profile of Mood States (POMS; McNair et al. 1981) was used to determine the psychological profile of each subject. The POMS consists of 65 items that measure the six psychological states of tension, depression, anger, vigor, fatigue, and confusion. It is a 5-point Likert-type adjective-rating scale with test-retest reliability over a 20-day period ranging from 0.65 to 0.74 on the...
six subscale and internal consistency ranging from 0.87 to 0.95 (McNair et al. 1981).

Using multiple $t$ tests, a statistical comparison of mean scores obtained on the six components of the POMS was conducted for wheelchair athletes and non-athletes. Because the large number of repeated $t$ tests increased the experimentwise error rate, significance was set at the 0.01 level. Additionally, a visual comparison was made between these norms and previously established norms (the iceberg profile) for able-bodied athletes (Morgan 1980).

A demographic survey questionnaire was completed by each subject to identify groups by age, gender, and athletic experience prior to and since injury. Responses were used to further distinguish between subjects, placing them in small, homogeneous groups. Visual comparisons were made in an attempt to identify possible differences between and among groups on the six psychological states of the POMS. A comparison was made between those wheelchair athletes and nonathletes who actively participated in athletics prior to their injury and those who did not participate prior to injury. The purpose of these post hoc comparisons was to attempt to identify differences between the three large groups as well as identify the impact that factors such as age, gender, and athletic participation have on each of the six psychological states.

**Results**

A visual comparison of demographic information between wheelchair athletes and wheelchair nonathletes is illustrated in Fig 1 and 2. The wheelchair athletes averaged 30.6 years of age, had been disabled for more than 15 years, and 71% were active in sports prior to injury. The nonathletes averaged 27.5 years of age and had been disabled an average of 10.5 years. Forty-one percent of all nonathletes surveyed were active in sports prior to injury, and 22% had participated as disabled athletes in the past.

All wheelchair athletes and nonathletes were classified into three categories: spinal cord injuries, amputee, or medical condition (i.e., spina bifida, polio, stroke). All groups, with the exception of medical condition nonathletes displayed psychological profiles similar to able-bodied athletes, with wheelchair athletes scoring higher on the vigor scale and nonathletes scoring higher on the depression scale than the able-bodied athletes.

The POMS was used to establish a psychological profile for both wheelchair athletes and nonathletes. A visual comparison of mean scores revealed similar profiles among wheelchair athletes, wheelchair nonathletes, and the previously established iceberg profiles of able-bodied athletes as illustrated in Fig. 3.

Results of multiple $t$ tests between wheelchair athletes and nonathletes indicated a significant difference existed between groups on the depression, $t(149) = 3.15$, $p < 0.01$, and vigor, $t(149) = 2.61$, $p < 0.01$, subscales of the POMS. Means and standard deviations for both groups are presented in Table 1.

Wheelchair athletes scored significantly higher on the vigor subscale than their nonathletic peers. Nonathletes scored significantly higher on the POMS depression subscale. In an attempt to account for these differences, variables