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**SEX AND AGE DIFFERENCES ON THE RAVEN’S MATRICES**

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Summary.—This study examined the effects of sex and age on scores on a matrices test among university and college students aged 17 to 51 yr. Sex differences in mean scores were nonsignificant. The general decline with age was linear and negative, significantly so for women (n = 132), not for men (n = 74). Significant decrements occurred from the age of 26 yr. upwards for women only. The findings suggest that loss of intellectual capacity on the Raven’s Matrices can be attributed to age.

Seventy-four men (mean age, 23 yr.; range of ages, 17 to 38 yr.) and 132 women (mean age, 26 yr.; range of ages, 17 to 51 yr.) in nine different undergraduate courses worked for 15 min. on an abridged version (Börjeson, et al., 1970) of the Standard Progressive Matrices (Raven, 1960), which has 4 sample items and 24 test items (10, 8, and 6 from Sets C, D, and E, respectively).

The descriptive statistics of the test scores for the sexes were as follows: M = 14.30, SD = 3.44 for men; M = 13.33, SD = 4.01 for women. The difference was not statistically significant (t = 1.75, p > .05), but the scores women obtained were more variable.

A chi-squared test of the hypothesis of distribution was that the normal was nonsignificant for men ($\chi^2 = 1.57$, $p > .05$) and women ($\chi^2 = 9.33$, $p > .05$). The minimum, maximum, and range of scores for the sexes were approximately the same.

The Pearson correlations between age and test score were negative and nonsignificant for men ($r = -.19$, $p > .05$) but significant for women ($r = -.45$, $p < .01$). Fisher’s z coefficients were nonsignificant ($z = 1.69$, $p > .05$).

Table 1 presents the descriptive and other relevant statistics at specified age intervals for both sexes. The decrease in mean scores across the age ranges were more marked for women than for men, and the reverse was true of the standard deviations, except for men aged 20 to 25 yr. These differences were brought about by varying levels of obtained minimum and maximum scores in the different age ranges which, in general, were again more pronounced for women than men.

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1A detailed account is on file in Document NAPS-04305. Remit $9.55 for photocopy or $4.00 for microfiche to Microfiche Publications, POB 3313, Grand Central Station, New York, NY 10017.

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TABLE 1
NUMBER OF STUDENTS, MEANS, STANDARD DEVIATIONS, MINIMUM, MAXIMUM, AND RANGES OF RAW SCORES ON RAVEN'S MATRICES AT DIFFERENT AGES FOR MEN (n = 74) AND WOMEN (n = 132)

<table>
<thead>
<tr>
<th>Statistics</th>
<th>Men</th>
<th>Women</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age in yr</td>
<td></td>
<td></td>
</tr>
<tr>
<td>17-20</td>
<td>30</td>
<td>43</td>
</tr>
<tr>
<td>21-25</td>
<td>30</td>
<td>37</td>
</tr>
<tr>
<td>26-38</td>
<td>14</td>
<td>36</td>
</tr>
<tr>
<td></td>
<td></td>
<td>16</td>
</tr>
<tr>
<td>M</td>
<td>15.00</td>
<td>15.30*</td>
</tr>
<tr>
<td>SD</td>
<td>3.11</td>
<td>3.81</td>
</tr>
<tr>
<td>Minimum</td>
<td>8</td>
<td>2</td>
</tr>
<tr>
<td>Maximum</td>
<td>21</td>
<td>21</td>
</tr>
<tr>
<td>Range</td>
<td>13</td>
<td>12</td>
</tr>
</tbody>
</table>

Note.—Values required for significance by Tukey at p = .05 and .01 are 2.47 and 2.99, respectively.

The result of the one-way analysis of variance was not significant for men (F_{2,71} = 1.28, p > .01) but was for women (F_{2,128} = 11.97, p < .01).

The results of the Tyuey's post hoc test, presented in Table 1, showed that all women, ranging in age from 26 to 51 yr., performed significantly lower than those between 17 to 25 yr. of age, but no such difference appeared between women aged 26 to 38 yr. and 39 to 51 yr.

The F test for the regression of test score on age were 18 and 47 for men and women, respectively. The F test of linearity was not significant for men (F_{1,71} = 10.29, p > .05) or for women (F_{1,128} = 2.01, p > .05). The regression of test score on age showed a consistent decline from the youngest to the oldest students of both sexes which was negative for men, positive for women, but in both cases linear, not curvilinear.

These findings do not suggest any significant sex difference in mean scores on the Raven's Matrices, but they point to a decrease in performance, which was significant for men but was for women, increasingly so for the youngest and the oldest students. Ongoing research will provide additional data to support or negate the findings reported in this study for a small sample.

REFERENCES


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TRAINING FACTORS AND PHYSICAL FITNESS AMONG AEROBIC DANCE INSTRUCTORS

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Summary.—The purpose of this study was to determine the relationship among selected training factors for 35 aerobic dance instructors who had taught for at least one year. Descriptive data were collected via questionnaire and laboratory testing. Maximum aerobic power (VO_{2 max}) was determined from a treadmill test. The instructors taught an average of 5.6 classes per week, 4.2 days per week, and 3.9 hr. Mean total class duration was about 1 hr. with a mean of 24.5 min. of actual aerobic activity. Mean level of intensity during the training phase of the workouts was 76% of age-predicted maximum heart rate. Among the aerobic dance instructors, there were significant linear associations between intensity of training and Max VO_{2} [ml/(kg·min.)], accounting for 27.7% shared variance. Duration of the aerobic phase of workouts showed a significant quadratic relationship with Max VO_{2} accounting for 20.2% shared variance. Frequency of training was linearly related to Max VO_{2}, accounting for 21.7% shared variance. Results indicate that the significant predictor variables accounted for almost 55% of the variance of the criterion, Max VO_{2}, in combination.

In recent years, recreational and leisure-time activities such as walking, jogging, swimming, and cycling have been regarded as favorable activities for improving an individual's cardiorespiratory endurance when performed at sufficient intensity, duration, and frequency (Astrand & Rodahl, 1986; Fox & Mathews, 1981). More recently, several investigators have reported positive physiological alterations in cardiorespiratory endurance following specified periods of aerobic dance training (Cantley, Moist, & Knutzen, 1994; Douhey, Cureton, Darvill, & Ouns, 1983; Millburn & Butts, 1983). Despite these studies, there is no information available regarding aerobic dance instructors who spend vast amounts of time in teaching, instructing, and choreographing routines for students and classes. However, data are available on other groups such as swimmers (Burke, 1977), joggers (Drinkwater, 1978), and marathoners (Upson, Hogan, & Lease, 1984), and these suggest that cardiorespiratory fitness levels would be similar in aerobic dance instructors if similar patterns of training were observed. Therefore, the purpose of this study was to assess aerobic dance instructors via questionnaire and laboratory testing to determine the factors contributing to fitness levels in this population.

METHOD

Forty-four female instructors of aerobic dance were recruited from local

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