

Preface

Texas Statewide Assessment of Youth Fitness (ii–iv)

Kenneth H. Cooper, Diana Everett, Marilu D. Meredith, Jeff Kloster, Marissa Rathbone, and Kathy Read

Articles

Overview of the Texas Youth Fitness Study (S1–S5)

James R. Morrow, Jr., Scott B. Martin, Gregory J. Welk, Weimo Zhu, and Marilu D. Meredith

This paper summarizes the historical and legislative backgrounds leading to statewide testing of health-related physical fitness in Texas children grades 3–12 as mandated by Texas Senate Bill 530. The rationale and goals for an associated research project (the Texas Youth Fitness Study, funded by the Robert Wood Johnson Foundation) to evaluate data collected from the statewide initiative are provided. The study investigated the relations between health-related physical fitness and educational variables, including academic achievement, absenteeism, and negative school incidents. It also provides unique insights into the quality (both reliability and validity) of collected data and implications of large-scale school-based physical fitness testing. Teacher commentary and experiences add to the description of the data collection processes. Last, the relations between psychosocial variables and health-related fitness in middle school students are described.

Distribution of Health-Related Physical Fitness in Texas Youth: A Demographic and Geographic Analysis (S6–S15)

Gregory J. Welk, Marilu D. Meredith, Michelle Ihmels, and Chris Seeger

This study examined demographic and geographic variability in aggregated school-level data on the percentage of students achieving the FITNESSGRAM® Healthy Fitness Zones™ (HFZ). Three-way analyses of variance were used to examine differences in fitness achievement rates among schools that had distinct diversity and socioeconomic status profiles. The results revealed age-related declines in the percentage of youth who achieved the HFZ standard for cardiovascular fitness (elementary school: 70%; middle school: 46%; high school: 34%). Interestingly, there was little evidence of age-related declines in other fitness dimensions. School-level attainment of fitness was consistently higher in schools categorized as low diversity and high socioeconomic status. Clear spatial patterns in fitness achievement were also evident when data were analyzed at the region and county level using geodemographic information system software.

The Association of Health-Related Fitness With Indicators of Academic Performance in Texas Schools (S16–S23)

Gregory J. Welk, Allen W. Jackson, James R. Morrow, Jr., William H. Haskell, Marilu D. Meredith, and Kenneth H. Cooper

This study examined the associations between indicators of health-related physical fitness (cardiovascular fitness and body mass index) and academic performance (Texas Assessment of Knowledge and Skills). Partial correlations were generally stronger for cardiovascular fitness than body mass index and consistently stronger in the middle school grades. Mixed-model regression analyses revealed modest associations between fitness and academic achievement after controlling for potentially confounding variables. The effects of fitness on academic achievement were positive but small. A separate logistic regression analysis indicated that higher

fitness rates increased the odds of schools achieving exemplary/recognized school status within the state. School fitness attainment is an indicator of higher performing schools. Direction of causality cannot be inferred due to the cross-sectional nature of the data.

Reliability and Validity of the FITNESSGRAM®: Quality of Teacher-Collected Health-Related Fitness Surveillance Data (S24–S30)

James R. Morrow, Jr., Scott B. Martin, and Allen W. Jackson

The purpose of this study was to investigate the quality (reliability and validity) of large-scale fitness testing in Texas and determine if reliabilities and validities were related to potential confounding variables. Four test administration scenarios were conducted to investigate the quality of data collected statewide as part of the Texas Youth Evaluation Project. Teachers and/or expert test administrators tested individual students (N = 1,010) on two occasions. Criterion-referenced reliabilities were very good to generally acceptable for all FITNESSGRAM® test items, with musculoskeletal items having the lowest reliabilities. The validity of teacher-administered tests was good. Reliability and validity of teacher-obtained health-related fitness measures were generally unrelated to potentially confounding student or school characteristics. Administrators, teachers, parents, and students can feel comfortable with the reliability and validity of the statewide health-related fitness testing in Texas.

Statewide Physical Fitness Testing: Perspectives From the Gym (S31–S41)

Scott B. Martin, Alison Ede, James R. Morrow, Jr., and Allen W. Jackson

This paper provides observations of physical fitness testing in Texas schools and physical education teachers' insights about large-scale testing using the FITNESSGRAM® assessment (Cooper Institute, 2007) as mandated by Texas Senate Bill 530. In the first study, undergraduate and graduate students who were trained to observe and assess student fitness testing in grades 3 through 12 provided observations. In the second study, physical education teachers responded to selected interview questions during a focus group discussion. From the observations and responses, specific themes emerged related to teachers' knowledge and training about conducting fitness testing and managing data, students' knowledge and motivation, support and resources for conducting fitness assessments, and complexity of the fitness situation.

A Survey of Physical Education Programs and Policies in Texas Schools (S42–S52)

Weimo Zhu, Gregory J. Welk, Marilu D. Meredith, and Elena A. Boiarskaia

To better understand key physical education program factors and policies that may affect Texas students' physical fitness, a 39-question survey, administered as part of the Texas Youth Fitness Study (TYFS), was sent to 5,651 Texas schools via e-mail. The survey consisted of five sections: (a) demographics, (b) physical education/recess frequency and duration, (c) resources/environment, (d) school physical education policies, and (e) experience/perception of fitness testing. A total of 2,576 responses were received, of which 1,505 responses (elementary = 58.1%, middle school = 21.2%, high school = 19.4%, and "mixed" school = 1.3%) were used for the report. Most of the findings are consistent with those reported in recent national studies. In addition, there were four distinct aspects: (a) broad support among teachers for the Senate Bill 530 mandate, (b) strong evidence of adherence to the mandated testing protocols, (c) teachers' negative experiences related to the testing, and (d) lack of recess in some Texas elementary schools. The survey provided rich updated information on physical education programs and policies in Texas schools.

Physical Education and School Contextual Factors Relating to Students' Achievement and Cross-Grade Differences in Aerobic Fitness and Obesity (S53–S64)

Weimo Zhu, Elena A. Boiarskaia, Gregory J. Welk, and Marilu D. Meredith

Using two major data sets from the Texas Youth Fitness Study, ordinary least squares regression, and hierarchical linear modeling, we examined the impact of key correlates in school physical education programs and policies on students' fitness status and cross-grade differences. While a number of factors, such as teachers' training/updates, recess time, available physical activity space, a school wellness policy, and fitness testing before administration, were confirmed, these correlates can explain only limited variance. Other aspects, such as socioeconomic status and community confounding factors, were recognized and illustrated. Future studies should include more factors such as these in data collection and analysis.

Psychosocial Variables Associated With Body Composition and Cardiorespiratory Fitness in Middle School Students (S65–S74)

Christy A. Greenleaf, Trent A. Petrie, and Scott B. Martin

This study examined the associations among self-esteem, depression, physical self-concept, and body satisfaction among 1,022 middle school students who were in the FITNESSGRAM® Healthy Fitness Zone™ (HFZ) compared to those in the Needs Improvement Zone (NIZ) for body composition and cardiorespiratory fitness. After controlling for socioeconomic status (SES), participants in the body composition HFZ reported higher levels of self-esteem and body satisfaction and rated themselves as being more flexible and having greater endurance than those in the NIZ. After controlling for SES, girls in the cardiorespiratory HFZ had higher levels of self-esteem and body satisfaction and rated themselves as stronger, having greater endurance, and having lower levels of depression than those in the NIZ. Similarly, boys in the cardiorespiratory HFZ reported having greater endurance and being stronger and more satisfied with their bodies than boys in the NIZ. The findings have implications for promoting healthy school environments.

Texas Youth Fitness Study: A Commentary (S75–S78)

Charles B. Corbin

Reflections on the Texas Youth Evaluation Project and Implications for the Future (S79–S83)

Kenneth H. Cooper

The passage of Senate Bill 530 in June 2007 increased visibility about the importance of health-related fitness in Texas. As a result of the mandate, more than 2.6 million 3rd- through 12th-grade students from all Texas counties were evaluated between January 1, 2008, and June 1, 2008, using a standardized test of health-related physical fitness (FITNESSGRAM®). This number represented 84.8% of all public school districts in Texas. In the subsequent 2 years, 2.8 and 2.9 million children were tested, which represents more than 90% of all public school districts in Texas. This summary provides reflections on the test results and implications for future school-based fitness initiatives, both in Texas and in other states.