



From Brain to Brawn: Effects of a 6 Week Training Program Designed by Student Trainers

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BACKGROUND

An estimated 3.4 to 95.6% of all US adults meet the recommendations for physical activity and exercise (Zenko, Willis & White, 2019). Over the next 8 years, the demand for fitness professionals is projected to grow 13% (bsl.gov, 2019). Being a competent fitness professional involves proficient assessment and tailored personal programming. At Concordia University - St. Paul (CSP), student exposure to assessment and program development occurs in an academic setting. Student trainers benefit from a hands-on learning approach, however, it is unknown if the clients of student trainers benefit physically within an academic setting.

PURPOSE

The purpose of the study was to determine if clients were able to experience anthropometric and muscular endurance changes over a 6 week training period.

FIGURE 1. Partial Curl Up Pre- and Post-Training



METHODS

- Compiled data over the course of three years from student trainers participating in the KHS 475 Applied Exercise Prescription class at CSP.
- Students personalize their training program for their client over a six week period.
- Client pre- and post-training assessment data for height, weight, body mass index (BMI), body fat percentage (BF%), pushup, and partial curl up were required for inclusion in the study.
- All data was collected through the use of scientifically valid methodologies: skin fold, BMI, circumference measurement, Bod Pod, pushup and partial curl up assessments.
- SPSS Statistics v23 was used for statistical analysis.
- Paired T tests were used to compare pre- and post-training data within each assessment.
- Statistical significance was set at $p \leq 0.01$ since a Bonferroni correction for multiple comparisons was needed.

FIGURE 2. Upper Body Muscular Endurance Assessment via Pushups



RESULTS

Fourteen subjects met the criteria for inclusion. Over the 6 week training period, anthropometric factors did not experience a statistically significant improvement:

- 170.8±31.6lbs vs. 170.9±32.0lbs, $P=0.879$
- 27.6±6.3BMI vs. 28.4±6.9BMI, $P=0.436$
- 22.96±7.59BF% vs. 22.76±7.74BF% $P=0.824$.

Upper body muscular endurance assessed via pushup experienced a statistically significant improvement (22±13 vs. 30±18, $P=0.003$) while the partial curl-up assessment did not display a statistically significant improvement over 6 weeks (37±9 vs. 40±16, $P=0.371$).

CONCLUSION

While a valuable academic and practical learning experience was achieved for student trainers, client assessment variables changed minimally in a 6 week exercise program. Future research could include body composition and cardiorespiratory fitness changes experienced in a similar academic setting.

REFERENCES

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