The Relationship Between Weight and Performance Among Elementary Age Male Wrestlers

MARYWOOD UNIVERSITY – SUMMER 2017- HEATHER REYMUNDE
Introduction

• Wrestling is a weight-classified combat sport.

• Opponents of the same weight class wrestle one another

• Often attempt to compete in a lower weight class than their natural weight.

• Weight and hydration requirements for competitors in other age groups

• **NO** guidelines are in place for competitors at the elementary level

• Wrestlers may put themselves at risk for significant health issues related to cutting weight (rapid weight loss) or weight gain (bulking).
Background

- Implications of rapid weight loss:
  - aerobic and anaerobic performance,
  - hormonal changes,
  - growth impairment,
  - decreased bone formation,
  - decreased metabolic rate,
  - compromised record in wins/losses

- Implications for bulking:
  - aerobic and anaerobic performance,
  - compromised record in wins/losses,
  - Increase in fat gains and not muscular
Significance

Research on high school and collegiate wrestlers

- Weight Management
- RWL
- Weight control in regards to physiology and performance.

Studies have **NOT** been conducted in the elementary age group
Main Research Question

To determine if a relationship exists between growth status (as measured by CDC weight-for-age growth charts) and performance (as measured via individual record of wins and losses) within a 3-month wrestling season among male wrestlers 5-12 years of age.
Hypothesis

Elementary wrestlers with a lower weight-for-age will have more losses than wins on their record in a 3-month season.

**Sub-question 1:** What is the relationship between wins/losses in wrestlers with low weight-for-age percentile?

**Sub-question 2:** What is the relationship between wins/losses in wrestlers above weight-for-age category percentile?

**Null:** There will be no association between weight-for-age percentile and performance.
Participants

Inclusion Criteria:
• Male wrestlers
• Ages of 5-12 years old
• Participated in at least 5 varsity matches for their team
• Pennsylvania Elementary League wrestling season 2016-2017
• Wrestlers were from the Hazleton Area Little Cougars Wrestling Team

Exclusion Criteria:
• Female wrestlers
• Outside mandatory age requirements
• Participated in less than 5 varsity matches for their team
• Not affiliated with the Pennsylvania Elementary League Teams
Study Design

- Retrospective cohort study
- Pennsylvania Elementary League
- 3 months of data collected in November 2016- January 2017 season
- Compare weight-for-age percentiles of wrestlers against wins and losses
- Determine if a relationship exists between weight and performance
- Sample size was not calculated
- Sample size was dictated by inclusion and exclusion criteria of the existing data.
Method

- Data Collected from the Pennsylvania Elementary League website
- Manually Entered into Excel
- Cross Check Data
- Weight-for-age percentile plot will be done per CDC guidelines
- Z-Scores calculated utilizing CDC Macro Program
- Wins and losses for matches by date will be assessed as well
- Statistical Analysis
Data Analysis

• Utilizing descriptive statistics population will be described in terms of age, grade and weight.

• Correlations measured using Spearman’s Correlation
  • Z-scores
  • Wins & Losses
  • Chi Square will also be used to compare the differences in these variables
    • Low weight-for-age percentiles
    • High weight-for-age percentiles
Limitations

- Sampling was from only one team
- Height measurements were not collected
- Weight measurements were not completed by the same person or on same equipment
- Wrestlers had variable training hours
- No Data available on race/ethnicity, SES, hydration status, nutrition, sleep, natural ability, cognition, scoring
Conclusion

Identify if a relationship does exist

Hypothesis: supported or not?
• Does a relationship exist between wins/losses in wrestlers with low weight-for-age percentile?
• Does a relationship exist between wins/losses in wrestlers above weight-for-age category percentile?

Areas for future research:
• BMI for each
• Hydration status
• Nutrition education and performance
References

http://lrpmg.com/resources/Safe+Weight+Loss++and+Gain+for+the+Athlete.pdf


