

# Fitness as mediator between weight status and dimensions of health-related quality of life

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**Background:** There is evidence that overweight and obesity in children is associated with poor Physical Fitness and consequently lower Health-related Quality of Life (HRQoL). However, this linear-causal relationship between Weight Status ? Physical Fitness ? HRQoL is not enough to fully understand this phenomenon. Therefore, need to know, through mediation analysis, how operate the Physical Fitness between weight status and HRQoL dimensions. **Purpose:** The aim of this study was to determine which HRQoL dimensions are mediated through Physical Fitness in obese (including overweight) and normal weight children. The study also examined the association between Physical Fitness, Body Mass Index (BMI) and HRQoL. **Methods:** A total of 233 overweight/obese children and 105 normal-weight children participated in the study. Children were recruited from public educational centers and a public weight loss program. BMI, Physical Fitness (upper limb, central body and lower limb strength; agility and range of motion) and HRQoL (PedsQL and VAS) were measured. Simple mediation analyses by gender, through PROCESS macro developed by Preacher and Hayes, were performed in order to analyze whether Physical Fitness computed as z-score, is a mediator in the relation between weight status (normal weight or overweight/obesity) and HRQoL dimensions. Additionally, unequal-variances t statistics were executed to know differences in BMI, Physical Fitness components and HRQoL dimensions between groups, and correlations to know the associations between weight status, Physical Fitness z-score and HRQoL. **Results:** Our results, indicated association between the Physical Fitness z-score and HRQoL dimensions in overweight/obese children. Regarding to mediation analysis, the results

showed that the negative association between overweight/obesity and HRQoL is softened by the level of Physical Fitness. Therefore Physical Fitness is a mediator in the relationship between overweight/obesity children and the most of dimensions of HRQoL, except the School functioning in boys and the School and Emotional functioning in girls. Conclusions: The negative effect of overweight or obesity on HRQoL in children, is mitigated by Physical Fitness. Consequently, the Physical Fitness is a mediator on HRQoL in most dimensions, especially daily living, in schoolchildren. © 2018 The Author(s).

Mediation analysis

Obesity

Overweight

Physical fitness

Quality of life

academic achievement

agility

Article

body mass

body weight

child

controlled study

cross-sectional study

emotionality

female

fitness

functional status

grip strength

human

jumping

major clinical study

male

obesity

quality of life

range of motion

social interaction

social psychology

weight loss program

adolescent

attitude to health

body weight

comparative study

fitness

health status

obesity

psychology

quality of life

socioeconomics

student

Adolescent

Attitude to Health

Body Mass Index

Body Weight

Child

Cross-Sectional Studies

Female

Health Status

Humans

Male

Obesity

Overweight

Physical Fitness

Quality of Life

Socioeconomic Factors

Students