

metabolism up and sustain energy. However, currently concept of snack is associated with frequency and amount but not with food nutritional value. Unhealthy and low nutritional or high nutrient content and fibers quality foods are both considered snacks. This fact associated with the epidemics of obesity and type 2 diabetes, imposes a question “snack or not to snack: are we doing the right choice?”.

**Objectives:** Portuguese reality was studied in order to draw attention to the benefits/risk of snacking behavior.

**Methods:** An evaluation survey has been carried out based on snacking knowledge and behavior. It has been target at Portuguese people over 18 years. Data were statistically analyzed and association between variables was measured.

**Results:** Survey was answered by 704 persons being 681 data validated; 79.1% female and 20.9% male. Sex differences were found for snack definition, while women associated it with timing and amount, men associated it with satiety. Regarding snacking behavior the majority of women opted for snacking whereas men preferred not to do it. An optimistic result was that snacking people are in those who identified better and healthy snack options revealing a high nutritional literacy.

**Conclusions:** In order to reach a systematic information dissemination as a form of publicizing snacking good practices, it is mandatory to clarify snack definition. It was also possible to infer the need to include vegetables as a healthy option for a break between meals. Therefore, we believe that the findings of this survey have great public health importance not only for Portugal, but also for benefit those who have a busier lifestyle.

**Keywords:** Snacking. Snack literacy. Snack options. Satiety. Meals replace.

**Results:** The GEXERCISE-SCHOOL obtained results statistically significant ( $p \leq 0.05$ ) and more favorable, in the Systolic and Diastolic Blood Pressure and all spirometric values assessed, compared to GSEDENTARY. In relation to smoking habits was found that non-smokers achieved a statistically different results and more favorable in the evaluated variables. We also found a negative correlation between the consumption of tobacco and spirometric values, ie, it appears that a higher tobacco consumption, as lower spirometric values.

**Conclusions:** The supervised exercise practice appears to contribute to the improvement of some physiological parameters, providing increased functionality and decreasing the appetite for cardiovascular and respiratory diseases. In turn tobacco use appears to result in injury, negatively influencing health status.

**Keywords:** Physical activity. Physiological parameters. Smoking. Sedentary lifestyle.

### CLASSROOM TEACHERS' PERCEPTION ABOUT PHYSICAL EDUCATION AND PHYSICAL ACTIVITY: A TYPOLOGY

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**Introduction:** According to the socioecological model teachers may act as facilitators or barriers in a school physical activity (PA) program.

**Objectives:** The purpose of this study was to characterize classroom teachers' perceptions about Physical Education (PE).

**Methods:** 297 teachers answered a questionnaire about PE past experience, status, aims, and academic benefits of PA. The Multiple Correspondence Analysis was used aiming to identify teachers' profiles.

**Results:** Dimension 1 combines the view that the PA affects academic achievement (AA) with the idea that PE must be optional or compulsory, but non-examinable. In dimension 2 the biggest difference is between a standard that refers to a relatively neutral position in relation to PA (PE as important for promotion of healthy lifestyles associated with the idea that PA does not affect AA, and PE should be compulsory but non-examinable), as opposed to positions, either in favour (PA benefits AA and PE should be compulsory and examinable) or against PA (PE should be optional). The joint analysis of the two dimensions allowed to identify three distinct patterns of teacher's perceptions which made possible to build a typology, regardless the cluster they belong to. Considering their personal experience teachers make a misjudgment of PE in schools they attended specially in cluster 3. As for the relation between PA and AA, most teachers say that the PA benefits AA (65% in cluster 1; 96% in cluster 2). In cluster 3, 70% of the teachers say that PA impairs AA.

**Conclusions:** These results support the importance of the earliest good experiences in PE, in generating positive attitudes towards PE. PE teachers should explain to other teachers that PA does not affect academic performance, and that PA prevents deviant behaviours.

**Keywords:** Cluster analysis. Perception. Physical activity. Classroom teachers.

## 13. HEALTH AND PHYSICAL ACTIVITY

### SMOKING AND PHYSICAL ACTIVITY: INFLUENCE ON PHYSIOLOGICAL PARAMETERS WITH IMPACT ON HEALTH STATE OF HIGH SCHOOL STUDENTS

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**Introduction:** Cigarette smoking and physical activity (PA) are two determinants variables to health.

**Objectives:** This study has as main objective to verify the influence of PA and tobacco consumption at the level of physiological parameters with an impact on health status of sedentary individuals and with differentiated exercise practice, in students of higher education. We also intend to correlate these measured indicators.

**Methods:** Sample with 132 students divided into 3 groups: GEXERCISE-SCHOOL-58 students practitioners of supervised exercise (academic and extracurricular); GSCHOOL-44 students practitioners of supervised exercise (school); GSEDENTARY-30 sedentary students. To characterize the sample, we applied an adaptation of the questionnaire Telama et al. (1997). It was Evaluated the spirometry values (PEF; FEV1; FVC) and blood pressure. We have used the Mann-Whitney test, ANOVA (LSD); Pearson and Spearman correlation test.

## PREVALENCE AND CORRELATES OF ACTIVE COMMUTING AMONG PORTUGUESE ADOLESCENTS CONSIDERING THE HOME-TO-SCHOOL DISTANCE

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**Introduction:** Active commuting to and from school (ACS), defined as the use of active means such as walking and cycling, is an important contributor of youth health. However, the prevalence of youth ACS is low.

**Objectives:** To analyse the prevalence and potential correlates of ACS among adolescents that lived near (< 2 miles) and far (≥ 2 miles) from school.

**Methods:** Participants were 391 adolescents (189 boys; 14-18 years). A questionnaire assessed active (walk and cycling) and passive (car, bus, motorcycle) commuting behaviours, potential correlates and perceived barriers of ACS. Between-group comparisons were performed by ANCOVA (using school as covariate) and chi-square tests.

**Results:** About 2/3 of adolescents lived near school. For the 'near group', walking to and from school (47.8% and 55.5%) was more common than cycling (< 1%). Public transports was most used to commute to and from school (42.0% and 53.8%) by the 'far group', followed by car (36.1% and 18.5%). Having a family with a low SES ( $p = 0.05$ ) and 9 years of education ( $p = 0.001$ ) was associated with living near the school. Comparing to the 'far group', those who lived near were younger ( $p < 0.001$ ), had a low SES [ $p = 0.05$ ], reported more time in ACS ( $p < 0.001$ ). Those who lived far had significantly higher ratings on 10 of 17 specific barriers of ACS, such as 'stuff to carry', 'dangerous crossings', 'no bike lanes' and 'don't enjoy walking/biking'.

**Conclusions:** There is much room for ACS improvement among Portuguese adolescents that lived near and far from the school. Interventions promoting bicycle use and addressing multiple perceived barriers, such as those related to traffic safety, have the potential to increase ACS.

**Keywords:** Active transportation. Psychosocial. Barriers.

## PERCEIVED ENVIRONMENTAL BARRIERS TO PHYSICAL ACTIVITY AMONG PHYSICALLY ACTIVE AND INACTIVE ADOLESCENTS

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**Introduction:** Most adolescents are not engaging in recommended levels of physical activity (PA) to benefit their health and a steep

decrease in PA occurs during adolescence. A better understanding of the environmental influences on youth PA is needed.

**Objectives:** To examine the perceptions of physically active and inactive adolescents about environmental barriers at the neighborhood level.

**Methods:** 460 adolescents from the 9<sup>th</sup> grade (236 boys; 14.7 ± 1.0 years) and 319 adolescents from the 12<sup>th</sup> (168 boys; 17.7 ± 0.9 years) answered to a questionnaire about PA (formal, informal, school sport) and neighborhood barriers to PA. Qui-square tests were used to analyze if the classification of PA (active: practice daily PA vs inactive: do not practice daily PA) was independent of the neighborhood barriers to PA, by taking into account school grade.

**Results:** The majority of adolescents from the 9<sup>th</sup> (69.3%) and 12<sup>th</sup> grade (74.9%) had a physically inactive lifestyle. More 9<sup>th</sup> grade inactive adolescents rated significantly ( $p < 0.005$ ) the barriers "no choice of activities" (24.7% vs 16.3%), "no other children there" (28.8% vs 18.1%) and "it is not safe because of crime" (29.3% vs 19.3) when compared to their active peers. For the 12<sup>th</sup> grade active adolescents, a higher proportion ( $p < 0.005$ ) mentioned to have been "a victim of crime in their neighborhood" (18.8%). Regardless of age and lifestyle, more than 1/3 of adolescents agreed that there were "no equipment" in their neighborhood.

**Conclusions:** Inactive and younger adolescents perceived more neighborhood barriers to PA. Providing a higher choice of PA activities and equipment, having other adolescents and friends around, and assure safety might help to prevent the decline and improve adolescents PA levels.

**Keywords:** Neighborhood. Physical activity. Correlates. Youth.

## LEISURE-TIME ACTIVITIES REPRESENTATIONS CLUSTERS AND PHYSICAL ACTIVITY LEVELS OF ADOLESCENTS

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**Introduction:** To improve adolescent lifestyles and health, an understanding of leisure-time representations and activity patterns is needed to provide information for targeting interventions.

**Objectives:** To identify leisure-time activities (LTA) representations clusters and analyse their physical activity (PA) levels.

**Methods:** A total of 387 adolescents (217 girls; 17,1 ± 1 years) answered to a questionnaire about informal and formal PA and the importance attributed to LTA. Using factor analysis and cluster analysis, five different groups of valuing LTA were formulated. Kruskal-Wallis was used to compare PA among groups.

**Results:** Cluster 1 (no sociable; 8.4% of all students) was characterized by valuing school and home activities but not social relationships. Cluster 2 (eclectics; 36.6%) attributed a high importance to all components of LTA. Cluster 3 (artists; 23.0%) valued music and recreation activities, but attributed low importance to other LTA. Cluster 4 (sporty; 16.4%) considered that sport and social relationships were important but not music. Cluster 5 (non sporty; 15.6%) valued music, sedentary screen and school activities, and attributed low importance to sport. All groups present low levels of PA. No differences were found between clusters regarding informal PA. Comparing to other groups, the "non sporty" presented significant lower levels of formal PA ( $M = 0.4$  Sessions/Week). The "sporty" adolescents had higher levels of formal PA ( $M = 2.4$  S/W) differing

significantly from other clusters, but not from the “no sociable” ( $M = 1.5$  S/W).

**Conclusions:** Complex clusters were identified based on adolescents representations of LTA. The understanding of what adolescents value and do can be crucial to promote PA during leisure-time, but other PA correlates need to be considered.

**Keywords:** Cluster analysis. Leisure activities. Physical activity. Youth.

### CHILDREN AND PARENTS - RELATIONSHIP BETWEEN CHILDREN ACTIVITY AND THE PERCEPTION OF THEIR PARENTS' ACTIVITY

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**Introduction:** Identifying psychological influences related with children's physical activity (PA) is important to understand individual differences in PA participation. PA is influenced by many factors and at a social level the perception of the parent's PA levels is fundamental during childhood.

**Objectives:** This study sought to examine the relationship of children's PA participation and the perception they have of their parents' participation in PA.

**Methods:** Participants were 415 (251 boys, 164 girls) aged 10-12 years ( $10.6 \pm 0.7$ ) from 5 Lisbon's schools randomly selected. Data was collected using a questionnaire used on international research project on children's lifestyles. A two-way ANOVA was used to determine main effects and interactions effects of children's perceptions of their parents' PA participation on children PA participation.

**Results:** On average boys spent  $4.2 \pm 2.8$  hours/week in PA and girls  $3.1 \pm 2.3$  hours/week. Boys and girls with both active parents were more involved with PA ( $4.21 \pm 3.1$ ) than those whose parents were inactive ( $3.4 \pm 2.1$ ). No significant interaction for children's perception of their father and mother PA participation (boys,  $p = 0.92$ ; girls,  $p = 0.95$ ). For girls, non significant differences were observed neither for the perception regarding fathers' ( $p = 0.18$ ) and mothers' ( $p = 0.24$ ) PA participation. However, a significant difference was found between boys who perceived that fathers were active and those who said their father were inactive ( $F(1,239) = 4.96$ ,  $p = 0.03$ ).

**Conclusions:** Children's participation in PA is not significantly related to their perception of parental involvement, with the exception of boys who perceived their fathers as actives. However, despite not having found significant differences, we could observe a tendency that points to a relation between the perceptions that parents are active with the amount of PA practiced by children.

**Keywords:** Sport. Physical activity. Family.

### WELL-BEING AND PHYSICAL ACTIVITY IN HEALTHY YOUNG ADULTS

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**Introduction:** Recent studies show a positive relationship between physical activity and well-being, although mediated by other variables. The most negative self-reported well-being is in the age group of 18-25 years.

**Objectives:** To characterize, contrast and compare physical activity levels and well-being of Portuguese young adults from the Centre region, exploring the relevance of other variables.

**Methods:** Participants were 125 young adults of both genders, between 18-25 years. To measure well-being, we used SWLS (life satisfaction) and PANAS (negative and positive affect). The IPAQ assessed physical activity and a characterization questionnaire evaluated satisfaction with the image and lifestyle.

**Results:** Physical activity correlated more strongly with SWLS ( $r = 0.234$ ,  $p < 0.05$ ), lifestyle ( $r = 0.185$ ,  $p < 0.05$ ) and gender ( $r = 0.129$ ,  $p < 0.05$ ). SWLS was positively associated with satisfaction with the image ( $r = 0.524$ ,  $p < 0.01$ ), lifestyle ( $r = 0.214$ ,  $p < 0.05$ ) and positive affect ( $r = 0.544$ ,  $p < 0.05$ ) and negatively with age ( $r = -0.290$ ,  $p < 0.01$ ). Analysis by gender showed positive associations in women between physical activity and lifestyle ( $r = 0.429$ ,  $p < 0.01$ ) and SWLS with satisfaction with the image ( $r = 0.636$ ,  $p < 0.01$ ), lifestyle ( $r = 0.422$ ,  $r < 0.05$ ) and positive affect ( $r = 0.685$ ,  $p < 0.05$ ). In men, only physical activity was associated with positive affect.

**Conclusions:** The results support other studies regarding the relationship between physical activity and well-being as well as the mediating role of variables, such as lifestyle, although more evident in women. The strategies to implement in order to change young adult's behavior, cannot fail to take into account the differential effect of these factors. The multidisciplinary must be the key for any community intervention.

**Keywords:** Physical activity. well-being. young adults.

### OPTIMIZING THE PERFORMANCE OF ELITE ATHLETES: EFFECTIVENESS OF A MINDFULNESS PROGRAMS IN SPORTS

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**Introduction:** The difference between success and failure has become increasingly smaller in sport. A “third wave” approach in sport psychology has been recently used for the first time to increase the performance level of elite athletes with very well defined programs. Mindfulness based interventions (MBI) have demonstrated effectiveness in reducing negative psychological consequences, improving psychological coping, and reducing re-injury anxiety.

**Objectives:** The purpose of this systematic review was to summarize the empirical findings of effectiveness of the implementation of mindfulness based programs to enhance performance on elite-athletes.

**Methods:** Literature review was conducted based on scientific publications and was retrieved from the PUBMED, MEDLINE, PsycINFO, Cochrane, ISI-Web of Science databases searched from 1985 to 2015. The main references cited in reviews were also included to ensure that no relevant studies were excluded. The main search terms were mindfulness, sport performance, stress reduction, flow state, self-compassion, and Acceptance Commitment Therapy (ACT), in different combinations as needed. All articles were coded for their design, type of control, study population, and outcome measures.

**Results:** The literature review allowed documenting advantages in participating in the Mindfulness based programs with increase of attributes related to mindfulness, higher levels of self-compassion, acceptance flow state, sport performance, a lower overall index of psychopathological symptoms and physiological response to stress, less suppression of thoughts.