

anthropology and health

Coimbra University, Portugal



18th – 19th November, 2010

trends for the next decade

PROGRAMME – ABSTRACTS BOOK

Research Centre for Anthropology and Health

Department of Life Sciences, University of Coimbra

Coimbra, Portugal, November 18-19, 2010

www.uc.pt/en/cia

CIAS
RESEARCH CENTRE
FOR ANTHROPOLOGY AND HEALTH

FCT
Fundação para a Ciência e a Tecnologia
MINISTÉRIO DA CIÊNCIA, TECNOLOGIA E ENSINO SUPERIOR

CIAS

PROGRAM - ABSTRACT BOOK

ANTHROPOLOGY AND HEALTH: TRENDS FOR THE NEXT DECADE



RESEARCH CENTRE FOR ANTHROPOLOGY AND HEALTH

Department of Life Sciences

Faculty of Sciences and Technology

University of Coimbra

Coimbra, Portugal

November 18-19, 2010

www.uc.pt/en/cia

Edited by:

Ana Luísa Santos

Augusta Gama

Cristina Padez

Licínio Manco

Maria Miguel Ferrão

Vítor Rosado Marques

Vítor Matos

ISBN: 978-989-96298-1-3

Copyright by:

© Centro de Investigação em Antropologia e Saúde, 2010

Front page:

Composed by Vítor Matos

Image: "*Death and life*", Gustav Klimt, 1916 (®public domain)

TABLE OF CONTENTS

Meeting committees	v
Sponsors, supporters and acknowledgments	vii
Programme	1
Abstracts	9
List of participants	47
Author index	53
Key word index	57

COMMITTEES

HONORARY

Minister of Science, Technology and Higher Education

Prof. Doutor José Mariano Rebelo Pires Gago

Governador Civil of Coimbra

Dr. Henrique José Lopes Fernandes

Rector of the University of Coimbra

Prof. Doutor Fernando Jorge Rama Seabra Santos

Director of the Faculty of Sciences and Technology of the University of Coimbra (FCTUC)

Prof. Doutor João Gabriel Monteiro de Carvalho e Silva

Mayor of Coimbra

Dr. Carlos Encarnação

Director of the Department of Life Sciences of the Faculty of Sciences and Technology of the University of Coimbra (FCTUC)

Prof. Doutor António Veríssimo

Coordinator of the Research Centre for Anthropology and Health (CIAS)

Prof. Doutora Cristina Padez

SCIENTIFIC

Ana Luísa Santos, CIAS, Department of Life Sciences, University of Coimbra, Portugal

Augusta Gama, CIAS and Faculty of Sciences, University of Lisbon, Portugal

Carlijn Kamphuis, Department of Public Health, Erasmus University Medical Centre, The Netherlands

Cristina Padez, CIAS, Department of Life Sciences, University of Coimbra, Portugal

Cynthia L. Ogden, Center for Disease Control (CDC)/NCHS, USA

Helena Nogueira, Department of Geography, University of Coimbra, Portugal

João Arriscado Nunes, Centre for Social Studies (CES), University of Coimbra, Portugal
Licínio Manco, CIAS and Department of Life Sciences, University of Coimbra, Portugal
Luís Quintais, Department of Life Sciences, University of Coimbra, Portugal
Manuela Alvarez, CIAS, Department of Life Sciences, University of Coimbra, Portugal
Marta Maia, Centro em Rede de Investigação em Antropologia (CRIA), ISCTE-IUL, Portugal
Vítor Rosado Marques, CIAS and Tropical Research Institute (IICT), Lisbon, Portugal
Vítor Matos, CIAS, Department of Life Sciences, University of Coimbra, Portugal

ORGANIZING

Ana Luísa Santos, CIAS, Department of Life Sciences, University of Coimbra, Portugal
Augusta Gama, CIAS and Faculty of Sciences, University of Lisbon, Portugal
Cristina Padez, CIAS, Department of Life Sciences, University of Coimbra, Portugal
Licínio Manco, CIAS, Department of Life Sciences, University of Coimbra, Portugal
Maria Miguel Ferrão, CIAS, Department of Life Sciences, University of Coimbra, Portugal
Vítor Rosado Marques, CIAS and Tropical Research Institute (IICT), Lisbon, Portugal
Vítor Matos, CIAS, Department of Life Sciences, University of Coimbra, Portugal

VOLUNTEERS

Carina Marques, CIAS, Department of Life Sciences, University of Coimbra, Portugal
Célia Lopes, CIAS, Department of Life Sciences, University of Coimbra, Portugal
Magdalena Muc, Department of Life Sciences, University of Coimbra, Portugal
Ricardo Encarnação, Department of Life Sciences, University of Coimbra, Portugal
Sandra Assis, CIAS, Department of Life Sciences, University of Coimbra, Portugal

SPONSORS

FCT

Fundação para a Ciência e a Tecnologia
MINISTÉRIO DA CIÊNCIA, TECNOLOGIA E ENSINO SUPERIOR

CIAS

RESEARCH CENTRE
FOR ANTHROPOLOGY AND HEALTH

SUPPORTERS

α
alfagene



FCTUC DEPARTAMENTO DE CIÊNCIAS DA VIDA
FACULDADE DE CIÊNCIAS E TECNOLOGIA
UNIVERSIDADE DE COIMBRA
Apartado 3046, 3001-401 Coimbra, Portugal



Departamento de Engenharia Civil
FCTUC FACULDADE DE CIÊNCIAS E TECNOLOGIA
UNIVERSIDADE DE COIMBRA



MUSEU DA CIÊNCIA
UNIVERSIDADE DE COIMBRA



Museu Nacional Machado de Castro

MUSICONCERTOS 

Restaurante Nacional, Coimbra



UNIVERSIDADE DE COIMBRA

ACKNOWLEDGEMENTS

Farewell wine tasting guided by the enologist Goretí Botelho, *PhD* (Escola Superior Agrária de Coimbra)

PROGRAMME

8.30 *Registration and poster set-up*

9:00 *Opening/Welcome ceremony*

9:30 **SESSION 1 – SOCIAL DETERMINANTS OF HEALTH (I)**

Chair: Cristina Padez

Lecture key topic – **The social determinants of health: evidence from the English Review of Health Inequalities**

Ilaria Geddes, Global Health Equity Group, University College of London, UK

10:10 Podium presentations (20 minutes each, including discussion)

Conceptions of quality of life, body and gender among Turkish breast cancer patients

Aysecan Terzioglu

An ethnography about women with breast cancer: a case study at Portuguese Institute of Oncology (IPO) of Coimbra

Diana Silva Martins

10:50 *Coffee-break* (20 minutes)

11:10 Podium presentations (20 minutes each, including discussion)

Chair: Vítor Rosado Marques

Paint, butterflies and metastasis: art as experience, knowledge and action on breast cancer

Susana de Noronha

Dynamics of risky sexual behaviours between gays in Portugal

Marta Maia

Cosmovision, leprosy and therapeutic itineraries within the Felupe community from Guinea-Bissau

Luís Costa

12:30 *Lunch*

14:00 **POSTER SESSION 1**

Chair: Licínio Manco

Social determinants of child dental caries in a schoolchildren sample aged between 6 to 11 years old from Coimbra, Portugal

Liliana Pereira, Sofia Neto Wasterlain

Effect of an exercise program on the perceived quality of life of warehouse workers

Cristina Mesquita, José Carlos Ribeiro, Pedro Moreira

Influence of environmental conditions on mental health of academic youth

Sylvia Baran, Iwona Teul

Analysis of *SLC40A1* gene diversity in African and Portuguese population samples

David Albuquerque, Luís Relvas, Maria de Jesus Trovoada, Manuela Alvarez, Ana Paula Arez, Letícia Ribeiro, Licínio Manco

Genetic variability associated with lactase persistence in Portugal and in several African populations

Sara Pires, Licínio Manco, Augusto Abade

Y-chromosome lineages in Coimbra district (Portugal): searching for genetic traces of historical events

Rui Martiniano, Augusto Abade, Licínio Manco

15:00 **SESSION 2 – HUMAN GENOME DIVERSITY AND DISEASES**

Chair: Licínio Manco

Lecture key topic – **The evolution of lactase persistence**

Jorge Macedo Rocha, Institute of Molecular Pathology and Immunology, University of Porto (IPATIMUP), Portugal

15:40 Podium presentations (20 minutes each, including discussion)

Population genetics of red cell enzyme deficiencies in Portugal: mutation profile on PK, G6PD, P5'N and TPI deficiencies

Licínio Manco, Letícia Ribeiro

Malaria: a selection pressure in the *PKLR* human gene?

Patrícia Machado, Rui Pereira, Ana Mafalda Rocha, Licínio Manco, Natércia Fernandes, Juliana Miranda, Leticia Ribeiro, Virgílio E. do Rosário, António Amorim, Leonor Gusmão, Ana Paula Arez

16.20 *Coffee-break* (15 minutes)

16:35 **SESSION 3 – HISTORY AND EVOLUTION OF DISEASES**

Chair: Ana Luísa Santos

16.35 Podium presentations (20 minutes each, including discussion)

Portuguese anthropological database (inAnthropos): analysing past population health status through anthropological excavation records

Cristina Barroso Cruz, Eugénia Cunha, Francisco Curate, Fernando Cabral

Clinical and palaeopathological complementarities in the retrospective diagnosis of leprosy

Vítor Matos, Ana Luísa Santos

Day 2 – Friday, 19th November 2010

9:00 **SESSION 4 – BIOMEDICINE AND BIOTECHNOLOGIES**

Chair: Luís Quintais

Lecture key topic – **On emerging biomedical citizenships: experiments in the collaborative production of public knowledge on health**

João Arriscado Nunes, Centre for Social Studies, School of Economics, University of Coimbra, Portugal

9:40 Podium presentation (20 minutes, including discussion)

“Advocating rarity”: rare diseases organizations in Portugal

João Arriscado Nunes, Ângela Marques Filipe, Marta Roriz, Daniel Neves, Marisa Matias

10.00 **SESSION 5 – CHILDHOOD OBESITY, PHYSICAL ACTIVITY AND PUBLIC HEALTH**

Chair: Carlijn Kamphuis

Lecture key topic – **Physical activity, sedentariness and obesity**

Jorge Mota, Faculty of Sport, University of Porto, Portugal

10.40 *Coffee-break* (20 minutes)

11:00 Podium presentations (20 minutes each, including discussion)

Trends in childhood overweight and obesity in Portugal from 2002 to 2009: the role of socioeconomic factors

Cristina Padez, Augusta Gama, Isabel Mourão, Vítor Rosado Marques

Perceptions of local neighbourhood environments and their relationship to childhood obesity

Helena Nogueira, Cristina Padez, Maria Miguel Ferrão, Augusta Gama, Isabel Mourão, Vítor Rosado Marques

Nutritional status of children and adolescents Quilombola of Jeremoabo, Brazil

Augusta Gama, Josilda Lima

12:30 *Lunch*

14:00 **POSTER SESSION 2**

Chair: Cristina Padez

Changes in female stature from 1966 to 1982: preliminary results using Portuguese data

Eunice Nobre Conceição, Susana Garcia, Cristina Padez, Hugo F. V. Cardoso

Indirect evidences of violence in African slaves buried at Lagos (Portugal) in the 15th/16th centuries: the contribution of Archeotatology

Maria João Neves, Maria Teresa Ferreira, Miguel Almeida

Overweight in adolescents from secondary schools of Montijo (Portugal)

Augusta Gama, Daniel Sampaio

Body mass and peak of pubertal spurt of body growth

Sylwia Baran, Iwona Teul

Application of radiological methods in the osseous changes due to mastoiditis in human prehistoric and historical skeletal material from Poland

Iwona Teul, Wiesław Lorkiewicz

Assessment of the intake of tryptophan-enriched cereal in the elderly and its influence on the circadian rhythm

Rafael Bravo, Sergio Matito, Javier Cubero, Cristina Lucía Sánchez, Sergio Damián Paredes, Lourdes Franco, Ana Beatriz Rodríguez, Montserrat Rivero, Carmen Barriga

Chronobiology in the components of the breast milk

Cristina L. Sánchez, Javier Cubero, Javier Sánchez, Rafael Bravo, Ana Beatriz Rodríguez, Montserrat Rivero, Carmen Barriga

15:00 **SESSION 6 - SOCIAL DETERMINANTS OF HEALTH (II)**

Chair: Marta Maia

15:00 Podium presentations (20 minutes each, including discussion)

Health, health knowledge and health information in Portugal: a preliminary outline

João Arriscado Nunes, Rita Serra, Tiago Santos Pereira, Carlos Barradas, José P. Arruda, Maria Cristina Canavarro, Elisabete Ramos, Fátima Pina, Joaquim Valentim, Júlio Santos, Manuel Quartilho, Maria Rui Correia

Multicultural experiences in nursing: from the theoretical paradigm to the subjective experiences in clinical settings

Ana Paula Monteiro

“Humanizing childbirth”: the *motto* for childbirth movements and organizations in Portugal

João Arriscado Nunes, Daniel Neves, Marta Roriz, Ângela Marques Filipe

16.00 *Coffee-break* (15 minutes)

16.15 Podium presentations (20 minutes each, including discussion)

Chair: Helena Nogueira

Stunting and underweight prevalence in children from the Cufada Lagoon Natural Park, Guinea-Bissau

Vítor Rosado Marques

Socioeconomic status and objectively measured physical activity in preschool children

Susana Vale, Nuno Ricardo, Rute Santos, Luísa Soares-Miranda, Jorge Mota

Lecture key topic – **Understanding socioeconomic inequalities in obesity and physical activity: the role of physical and social neighbourhood factors**

Carlijn Kamphuis, Department of Public Health, Erasmus University Medical Centre, The Netherlands

17:40 *Closing session*

Farewell wine tasting

ABSTRACTS

Analysis of *SLC40A1* gene diversity in African and Portuguese population samples

David Albuquerque¹, Luís Relvas², Maria de Jesus Trovoada³, Manuela Alvarez¹, Ana Paula Arez⁴, Letícia Ribeiro², Licínio Manco^{1*}

¹Research Centre for Anthropology and Health (CIAS), Department of Life Sciences, University of Coimbra, Portugal

²Department of Haematology, Centro Hospitalar de Coimbra, Portugal

³Instituto Gulbenkian de Ciência (IGC), Oeiras, Portugal

⁴Center for Malaria and Tropical Diseases, Malaria Unit, IHMT, Universidade Nova de Lisboa, Portugal

*lmanco@antrop.uc.pt

Ferroportin, encoded by *SLC40A1* gene, is a transmembrane protein responsible for iron export from enterocytes and macrophages. The *SLC40A1* mutation c.744G→T (Q248H), has been found as a polymorphism in populations of African origin. To enlarge information about the Q248H mutation frequency in native sub-Saharan populations, we present a study of this mutation on population samples from Angola, S. Tomé and Príncipe and Guinea-Conakry. Additionally, we investigated the haplotype background of this mutation using two additional *SLC40A1* polymorphic markers. Samples from unrelated individuals from S. Tomé and Príncipe (n=115), Angola (n=156) and Guinea-Conakry (n=170), and a population sample from central Portugal (n=142), were analyzed for the ferroportin Q248H mutation and for the *SLC40A1* polymorphisms IVS1(-24)G→C, in intron 1, and microsatellite (CGG)_n, in the promoter region, using genomic DNA standard methodology such as PCR, SSCP, RFLP and automatic fragment analysis. The estimated frequencies for Q248H mutation were 2.2% for the S. Tomé and Príncipe, 3.5% for the Angola and 4.1% for the Guinea populations. Individuals from central Portugal did not present this mutation. The analysis of polymorphisms IVS1(-24)G→C and (CGG)_n showed mutation allele 744T strongly associated with the haplotype IVS1(-24)G/(CGG)₇. We confirmed the presence of *SLC40A1* Q248H mutation at polymorphic frequencies in native sub-Saharan populations from S. Tomé and Príncipe, Angola and Republic of Guinea. The analysis of two additional markers in the same gene support for a single origin of the mutant allele 744T in the haplotype IVS1(-24)G/(CGG)₇.

Key words: ferroportin, *SLC40A1* gene 744G→T (Q248H) mutation, iron overload

Topic: Human genome diversity and diseases

Body mass and peak of pubertal spurt of body growth

Sylwia Baran^{1*}, Iwona Teul²

¹Faculty of Education, Sociology and Health Sciences, University of Zielona Gora, Poland

²Department of Anatomy, Pomeranian Medical University, Szczecin, Poland

*sbaran@ipp.uz.zgora.pl

Multiple reports states that certain maturity level of peripheral tissues triggers out the puberty. Relation between body mass, especially fatty tissue mass, and puberty is an aim of multiple studies. The assessment of the relation between the time of peak of pubertal spurt (PPS) of body growth and body mass index (BMI) was the aim of the study. The sample comprised 100 girls and 100 boys aged 15-16 years. Individual developmental courses of body height received on the basis of two structural models: BTT (Bock, Thissen, du Toit) and JPA2 (Jolicoeur, Pontier, Abidi) were used to estimate the phase of pubertal spurt. Body mass reflecting the moment of PPS was calculated using polynomials of various degrees from individual curves of body mass growth, and then both raw and standardised BMI was estimated. Variance analysis was performed on BMI values, where maturity was the category causing their variability ($p > 0,05$). Comparing chronological age with developmental age of body mass it was observed that boys and especially girls who reach their PPS earlier are developmentally older i.e. heavier then their peers while late puberty individuals are slighter. Variance analysis disclosed that PPS time diversifies the BMI values while raw values diversity is statistically more significant than that of standardised values. Early puberty children show higher values of BMI so they seem to be more massive, while late puberty children are more slender than their peers. Nutrition, growth rate and puberty time should form important elements of auxological assessment of children and adolescents.

Key words: fatty tissue mass, body mass index, pubertal spurt

Topic: Childhood obesity, physical activity and public health

Influence of environmental conditions on mental health of academic youth

Sylwia Baran^{1*}, Iwona Teul²

¹Faculty of Education, Sociology and Health Sciences, University of Zielona Gora, Poland

²Department of Anatomy, Pomeranian Medical University, Szczecin, Poland

* sbaran@ipp.uz.zgora.pl

Sources of stress and its results have long been a scope of multiple studies. Academic youth seems to form a particularly vulnerable group concerning stress. Assessment of psychological distress of academic youth together with its socioeconomic factors and lifestyle was the aim of this study. The sample studied comprised 300 students (150 medical and 150 non-medical). Psychological disturbance morbidity was assessed using short version of General Health Questionnaire (GHQ-12). Unifactorial variance analysis or, when the assumption of normality or uniformity of variance was not fulfilled, Kruskal-Wallis non-parametric test were used to estimate the influence of examined factors on distress scale values received. For dichotomised elevated psychological distress level index received by Goldberg scoring, multifactorial logistic regression analysis was used. Employing the recommended method of scoring (ranking from 0-12) the mean GHQ score was 3.6 (SD=3.4). Elevated distress level was found in 49% of students. Statistically significant differences were observed between sexes. Elevated levels of distress were observed among 57% of female students (mean 3.96) and 40% of male students (mean 2.98). Medical students are more likely to suffer from depression than non-medical students. The highest level of distress was characteristic for female medical students (mean 4.23), the lowest was observed among male non-medical students (mean 2.02). Relations between distress level and lifestyle were found. Stress was statistically significantly associated with sleep time, regularity of meals and physical activity. Stress assessment as well as stress management should be and important part of mental health preventive measures among academic youth.

Key words: psychological distress, academic youth, socioeconomic factors, lifestyle

Topic: Social determinants of health

Assessment of the intake of tryptophan-enriched cereal in the elderly and its influence on the circadian rhythm

Rafael Bravo^{1*}, Sergio Matito¹, Javier Cubero², Cristina Lucía Sánchez¹, Sergio Damián Paredes¹, Lourdes Franco¹, Ana Beatriz Rodríguez¹, Montserrat Rivero³, Carmen Barriga¹

¹Chrononutrition Laboratory, Department of Physiology, Faculty of Science, University of Extremadura, Spain

²Didactics Area in Experimental Sciences, Faculty of Education, University of Extremadura, Spain

³General Scientific Manager, Grupo Ordesa S.L., Barcelona, Spain

*rbravo@alumnos.unex.es

The hormone melatonin is involved in the circadian rhythm sleep/wake regulation in keeping with of changing environment light-dark. Our research group has observed that intake at dinner time tryptophan cereals (tryptophan is an amino acid precursor of neurotransmitter serotonin and hormone melatonin) induces a qualitative and quantitative improve in night sleep in the elderly. The aim of the present study was to evaluate the effect of the intake of enriched cereals, produces by Laboratorios Ordesa S.L. (Barcelona, Spain), at breakfast and dinner times and its impact on the sleep/wake cycle. Twelve individuals over 55 years old with sleep problems participated in the study. They consumed tryptophan enriched cereals at breakfast and dinner time for one week (60 mg tryptophan per dose) after a control week. Sleep was recorded by wrist actimeters (Actiwatch©) that patients wore continuously during the tests which were analyzed by the Sleep Analysis© software. Results obtained indicate that the intake at breakfast and dinner times tryptophan-enriched cereals in elderly people with sleep problems caused an increase ($p<0.05$) in the quality and duration of their sleep, shortening their sleep latency and increasing the sleep consistency. We can conclude that the intake of tryptophan enriched-cereals may help improving the quality of life for the elderly and their immediate environment. Also it may be used as a possible drug replacement for sleep induction.

Key words: tryptophan, elderly, circadian rhythm, actimetry, chronobiology

Topic: Biomedicine and biotechnologies

Changes in female stature from 1966 to 1982: preliminary results using Portuguese data

Eunice Nobre Conceição^{1,2*}, Susana Garcia³, Cristina Padez⁴, Hugo F. V. Cardoso^{1,5}

¹National Museum of Natural History, Centre for Environmental Biology, University of Lisbon, Portugal

²Faculty of Sciences, University of Lisbon, Portugal

³School of Social and Political Sciences, Centre for Public Administration and Policies, Technical University of Lisbon, Portugal

⁴Research Centre for Anthropology and Health (CIAS), Department of Life Sciences, University of Coimbra, Portugal

⁵Faculty of Medicine, University of Porto, Portugal

* eunice.conceicao@gmail.com

Studies on secular trends in stature are almost exclusively based on male data, while data on women is less common. This study wishes to document the evolution of mean female stature in a sample of Portuguese women who delivered their children at the Alfredo da Costa Maternity, born between 1966 and 1982 (n = 39540). Reported data on educational level allow the assessment of the evolution of female stature in relation to their social status. Results show that female stature in the sample increases during the time period considered (mean stature: 160.7 cm in 1966 and 161.61 cm in 1982), but not consistently. In addition, women of higher educational level (>9 years of schooling) are systematically taller than those of lower educational level (<9 years of schooling) (mean stature difference = 2.17 cm). Compared to male stature (Padez, 2003; *Ann Hum Biol*, 30: 262), female stature increased only one third of the male increase. Relative to males, female stature also increases at a relatively slower velocity (about a third as well). Although the time period considered is short, this is the first Portuguese study documenting the secular trend in female stature.

Key words: female stature, secular trend, Portugal, socioeconomic factors, 20th Century

Topic: Social determinants of health

Cosmovision, leprosy and therapeutic itineraries within the Felupe community from Guinea-Bissau

Luís Costa

Department of Life Sciences, University of Coimbra, Portugal

luismncosta@gmail.com

This communication aims to approach the leprosy phenomenon within the Felupe community in Guinea-Bissau. Starting from the general knowledge and basic principles on the disease and its cure, it is hoped to reach an universal grasp of the representation of evil as a disease and the analysis of the therapeutic itineraries undertaken, from seeking traditional cures to the search for cures within the biomedical environment. The investigation undertaken consisted in ethnographical research done at Suzana, a village in the north of Guinea-Bissau and the leper colony of Cumura in Bissau, the latter being complemented with bibliographical research. A particular emphasis is given to the human dimension of leprosy within the Felupe community and their search for a cure, from the central points of their society and culture all the way to the limits of their rationality, namely conventional biomedicine. Throughout the therapeutical paths undertaken, there is a constant need to dampen pain and suffering that gravitates around a social problem and a symptomatic one, in other words, there is an oscillation between *healing* and *curing*, aiming to profit between the best of both worlds. The leper colony stands as a legacy of the bio-policy instated by a colonial strategy to control the disease, and afterwards used by the missionary medical community as a base for charity and religious education.

Key words: Felupes, leprosy, leprosoaria, *healing*, cure, Guinea-Bissau

Topic: Social determinants of health

Portuguese anthropological database (inAnthropos): analysing past population health status through anthropological excavation records

Cristina Barroso Cruz^{1*}, Eugénia Cunha¹, Francisco Curate¹, Fernando Cabral²

¹Research Centre for Anthropology and Health, Department of Life Sciences, University of Coimbra, Portugal

²Sistemas do Futuro: Multimédia, Gestão e Arte, Portugal

*cbscruz@gmail.com

In the last years, physical anthropology has known important breakthroughs, mainly in the development of new methodologies. In Portugal, the lack of a standardized field work record system for excavations of human skeletal remains is an obstacle to the accurate application of the new analytic methods. In an effort to overcome such obstacles, an informatic anthropological database named “inAnthropos”, is being developed with the purpose of normalizing and systemizing anthropological field data. The analytical potential of “inAnthropos” will be presented, in particular its application to the context of paleopathology. This data base is being developed, using reported osteological data from anthropological excavations that took place in the last 15 years in Portugal. The results show that frequently, important evidence is not recorded or reported (36 out of 56 reports were not included due to shortage of information) stressing the need for an anthropological excavation protocol and a more effective registering system. To date, we have recorded over 300 individuals, from pre-history to the 19th century. Despite our previous selection of informative reports, paleopathological results seem to be biased by missing data, since, overall, this sample presents very low pathological frequencies. Combining the versatility of the inAnthropos with historical sources and other anthropological elements, we can achieve a better understanding of the Portuguese epidemiological scenario and consequently comprehend its relationship with the European and Iberian contexts. The “inAnthropos” database provides researchers, not only a large-scale analysis of past populations health status, but also confers an easier way to access human remains elements, that otherwise would not be fully explored.

Key words: anthropological data base, past populations, paleopathology, epidemiology

Topic: History and evolution of diseases

Nutritional status of children and adolescents Quilombola of Jeremoabo, Brazil

Augusta Gama^{1,2*} , Josilda Lima²

¹Research Centre for Anthropology and Health (CIAS), Department of Life Sciences, University of Coimbra, Portugal

²Faculty of Sciences, University of Lisboa, Portugal

* augusta.gama@fc.ul.pt

The rapid emergence of obesity was denoted in countries that are going in a rapid socioeconomic transition and also was observed the coexistence of overweight and undernutrition. The main objective of this study was to evaluate the nutritional status of Quilombola children and adolescents, taking into consideration international references and results from Brazil. Anthropometric and household data were collected in ten Quilombola communities of the municipality of Jeremoabo, Bahia. Were visited 181 families and data on height, weight, skinfolds and circumferences were collected. Data on household composition and economic activities were collected through interviews with the female heads of household. A sample of 332 subadults, with ages between 2 and 18 years was studied. The prevalence of mild and moderate malnutrition was high. The frequencies below the Z-score ≤ -1 were in males 36.4% for height and 40.0% for BMI and in females 23.1% for height and 30.1% for BMI. For Z-score ≥ 1 , in males 5.7% for height and 3.4% for BMI and in females 10.3% for height and 4.4% for BMI. The assessment of the prevalence of underweight and overweight becomes increasingly important in population with a traditional way of life to know the impact of changes in livelihood strategies in the nutritional status of children and adolescents.

Key words: Quilombola, nutritional status, growth

Topic: Childhood obesity, physical activity and public health

Overweight in adolescents from secondary schools of Montijo (Portugal)

Augusta Gama^{1,2*}, Daniel Sampaio²

¹Research Centre for Anthropology and Health (CIAS), Department of Life Sciences, University of Coimbra, Portugal

²Faculty of Sciences, University of Lisboa, Portugal

*augusta.gama@fc.ul.pt

The increasing prevalence of overweight in childhood and adolescence are a growing concern. The excess of fatness in young ages compromises the health and well-being in the adult. A cross-sectional study of adolescents 14-18 years was performed in secondary schools between May and June 2010. The sample was of 185 girls and 104 boys. Weight, height and waist circumference were measured. Adolescents and parents filled out a questionnaire about family and life style characteristics. The average of decimal age was 16.34 ± 1.5 years for females and 16.29 ± 1.14 years for males. The averages of Z-scores of weight, height, waist circumference and BMI are not different between sexes and age groups. The following percentages were observed: males, Z-score-height $< 1 = 20.2\%$ and Z-score-height $\geq 1 = 8.7\%$ and Z-score-BMI $< 1 = 9.6\%$ and Z-score-BMI $\geq 1 = 24.0\%$; females, Z-score-height $< 1 = 20.7\%$ and Z-score - height $\geq 1 = 5.9\%$, Z-score-BMI $< 1 = 10.86\%$ and Z-score-BMI $\geq 1 = 24.3\%$. According to the BMI cutoff points of Cole *et al.* (2000; *BMJ*, 320: 1) the percentages of overweight was 26.0% in males and 24.0% in females. Some factors studied showed relationship with overweight: a lower consumption of some foods (milk and meat) and a lower satisfaction with the own body weight.

Key words: obesity, nutritional status, adolescents

Topic: Childhood obesity, physical activity and public health

The social determinants of health: evidence from the English Review of Health Inequalities

Ilaria Geddes

Global Health Equity Group, The Marmot Review Team, University College of London, UK

i.geddes@public-health.ucl.ac.uk

This talk aims to present the key themes, findings and recommendations of the Strategic Review of Health Inequalities in England post-2010. The Review's objectives were to analyse the relationship between social factors and health outcomes in the English population, to describe the current state of health inequalities and to identify the best evidence to develop policy and practical interventions to reduce the gap in mortality and morbidity between different social classes. The Review followed the publication of Closing the Gap, the report published by the WHO Commission on the Social Determinants of Health, which highlighted how health outcomes are determined by social conditions: mortality and morbidity are determined by the conditions in which one is born, grows, lives, works and ages. Health inequalities are determined by social inequalities, by differences in such living conditions. This relationship between socio-economic status and health outcomes is finely graded, the difference is not just between those at the bottom of society and those at the top, but it runs across the middle classes through the whole of society. The level of health inequalities varies across different nations, different regions and different times in history: they are not a natural phenomenon, they are the consequence of different characteristics of society. The evidence presented in this talk aims to give a picture of inequalities in these various aspects of society which are significant determinants of health, including early child development, education and skills development, employment and work, the environment and ill-health prevention.

Key words: social determinants of health, health inequalities, mortality, morbidity

Topic: Social determinants of health

Understanding socioeconomic inequalities in obesity and physical activity: the role of physical and social neighbourhood factors

Carlijn Kamphuis

Department of Public Health, Erasmus University Medical Centre, Rotterdam, Netherlands

c.kamphuis@erasmusmc.nl

Still today, in a developed country like the Netherlands, considerable socioeconomic inequalities in health exist. Those with a lower socioeconomic position live six to seven years shorter than their higher status counterparts, and also, spend about fourteen more years in poorer health. Similarly, for lifestyle-related behaviours, such as physical activity and diet, low socioeconomic groups have worse outcomes. This also shows in the higher prevalence rates of overweight and obesity in low socioeconomic groups. Over the last decade, there has been growing recognition of the importance of environmental influences on health-behaviours, as specified in ecological models, such as the ANGELO model by Swinburn and colleagues. Environmental changes are thought to be a major underlying cause of the current obesity epidemic. If this is the case, then the question raises: do low socioeconomic groups in the Netherlands live in a more obesogenic environment? This question will be answered in the presentation, and specifically, the role of physical and social neighbourhood factors for explaining inequalities in physical activity will be discussed.

Key words: socioeconomic status, obesity, physical activity, neighbourhoods

Topic: Social determinants of health

Malaria: a selection pressure in the *PKLR* human gene?

Patrícia Machado¹, Rui Pereira², Ana Mafalda Rocha², Licínio Manco^{3,6}, Natércia Fernandes⁴, Juliana Miranda⁵, Letícia Ribeiro⁶, Virgílio E. do Rosário¹, António Amorim^{2,7}, Leonor Gusmão², Ana Paula Arez^{1*}

¹Centre for Malaria and Tropical Diseases, Malaria Unit, Institute of Hygiene and Tropical Medicine, Universidade Nova de Lisboa, Portugal; ²Institute of Molecular Pathology and Immunology, University of Porto (IPATIMUP), Portugal; ³Research Centre for Anthropology and Health (CIAS), Department of Life Sciences, University of Coimbra, Portugal; ⁴Central Hospital of Maputo and Faculty of Medicine, University Eduardo Mondlane, Maputo, Mozambique; ⁵Paediatric Hospital David Bernardino, Luanda, Angola; ⁶Haematology Department, Centro Hospitalar de Coimbra, Portugal; ⁷Faculty of Sciences, University of Porto, Portugal

* aparez@ihmt.unl.pt

Recent data have suggested that pyruvate kinase (PK)-deficiency is associated to malaria protection: in a mouse model, a loss-of-function mutation in the pyruvate kinase gene (*PKLR*) was identified as underlying malaria resistance and a significant decrease in parasite replication was observed in *in vitro* culturing of *P. falciparum* in human PK-deficient blood. However, the possibility of PK-deficiency affecting susceptibility to human malaria remains to be confirmed. Since malaria has been reported as one of the strongest known forces for evolutionary selection in the recent history of the human genome, we have looked for selection signatures in the human *PKLR* gene region to clarify if pyruvate kinase-deficiency is influencing malaria susceptibility in humans. A combined analysis of Short Tandem Repeats (STRs) and Single Nucleotide Polymorphisms (SNPs) localized near *PKLR* gene was conducted in two sub-Saharan African populations (166 human DNA samples from Angola and 150 from Mozambique) in groups with different malaria infection outcomes. A European population, from Portugal, was used as control (121 samples). Data from STR and SNP loci spread along the *PKLR* region showed a significant higher differentiation between African and Portuguese populations ($F_{ST}= 0.102$ considering STR data and $F_{ST}= 0.239$ for SNPs) than that usually found for neutral markers (about 0.05 for STRs and 0.10 for SNPs). In addition, a wider region showing strong linkage disequilibrium (LD) was found in the uncomplicated malaria group ($p \leq 0.008$ for all pairs of loci in this group) and a haplotype was found to be associated with this clinical group. Altogether, this data suggested that malaria selective pressure is shaping this genomic region. An extensive field work with accurate phenotype discrimination and identification of PK abnormal alleles has also been completed and the research of a prevalent abnormal PK variant is under way.

Key words: malaria, pyruvate kinase deficiency, selection signatures, Angola, Mozambique

Topic: Human genome diversity and diseases

Dynamics of risky sexual behaviours between gays in Portugal

Marta Maia

Centre for Resarch in Anthropology (CRIA), ISCTE-IUL, Portugal

maia_marta@hotmail.com

As part of an ethnographical research on sexual behaviours in the Portuguese population, we conducted ten interviews with gays, with ages between 20 to 65 years, in the areas of Lisbon and Porto during 2009. The standardization of the disease that brings a risk habit, now closer and better known than twenty years ago, a safe sex fatigue and the condition of oppressed minority in gay identity are conditions of having less preventive behaviours. The socially transgressive context in which their sexual exchanges take place, sets the individuals in a territory considered “out of limits”. The most part of the interviewed is having sexual relations with occasional partners, notably in meeting places and saunas. The questioned persons define these relations as sexual exchanges dominated by the only and simple quest of pleasure, anonymity and freedom. These moments, governed by transgression, are lived as parentheses in daily life. In this special context, knowing that prevention takes more the path of duty (having to protect oneself and having to protect partners) than free choice, desire and pleasure, men are occasionally breaking the safer sex rules, the rules imposed by the prevalent social norms. Such aspects have to be considered to explain the relapse of HIV prevention. This question of transgression of the actors and their practices must be added to the dynamics of risky sexual behaviours.

Key words: HIV/AIDS, risk behaviours, sexual identity, sexual practices, gays

Topic: Social determinants of health

Population genetics of red cell enzyme deficiencies in Portugal: mutation profile on PK, G6PD, P5'N and TPI deficiencies

Licínio Manco^{1*}, Letícia Ribeiro²

¹Research Centre for Anthropology and Health (CIAS), Department of Life Sciences, University of Coimbra, Portugal

²Department of Haematology, Centro Hospitalar de Coimbra, Portugal

*lmanco@antrop.uc.pt

Mutations leading to red cell enzyme deficiencies result in haemolysis that can be associated with neurological or developmental abnormalities. To improve the knowledge of red cell enzyme deficiencies in Portugal and for diagnostic purposes, we performed the molecular characterization of 107 unrelated patients with PK, G6PD, P5'N and TPI deficiencies, aged newborn to 70 years, from different regions of the country. Molecular methodology included PCR, SSCP, restriction analysis and automatic sequencing.

Among 20 PK deficient patients and 10 heterozygous individuals (14 males and 16 females), 13 different PKLR mutations were found, 8 of them for the first time. The three most common were the previously known missense mutation 1456C→T (Arg486Trp) (35.5%), and two new mutations: -72A→G, in the R-type promoter region (22.2%), and IVS8(+2)T→G (17.8%). Each of these mutations was found in the context of its own haplotype suggesting that each has a unique origin. The molecular study of 70 G6PD-deficient individuals (55 males and 15 females) revealed 14 different mutations. The most common were the African variants A- (376G/202A) (63%) and Betica (376G/968C) (14%), associated with acute haemolytic episodes. RFLP/STR haplotype analysis reflects a single origin for each variant and an older origin for Betica mutation. We found 7 rare G6PD variants restricted to the Portuguese population: Mira d'Aire (1048A), Anadia (1193G) and Coimbra (592T), associated with acute haemolysis, and Açores (595G), Covão do Lobo (1205A), Figueira da Foz (1366C) and Tondela (p.362-367del), associated with chronic haemolytic anaemia. In 5 male patients with P5'N deficiency and in 2 with TPI deficiency (1 male and 1 female) with chronic haemolytic anaemia, we identified 4 new and 2 previously described mutations in homozygous or compound heterozygous state. In conclusion, a high genetic heterogeneity was found in Portugal for all the studied red cell enzyme disorders.

Key words: red cell enzyme deficiencies, PK, G6PD, P5'N and TPI, gene mutations

Topic: Human genome diversity and diseases

Stunting and underweight prevalence in children from the Cufada Lagoon Natural Park, Guinea-Bissau

Vítor Rosado Marques

Tropical Research Institute (IICT), Lisbon, Portugal
Research Centre for Anthropology and Health (CIAS), Department of Life Sciences,
University of Coimbra, Portugal

vrosadomarques@iict.pt

Undernutrition contributes to more than one third of all deaths in children under age of five. In developing countries close to 200 million children under- five are stunted and about 130 million are underweight. According to the United Nations, Guinea-Bissau, in West Africa, was the 10th poorest country in the world in 2009. The country ranks the 5th worst place by under-five mortality rate. Malnutrition is a serious problem, with 4% of children severely malnourished and 19% suffering from moderate malnutrition, as revealed by UNICEF in 2009. A cross-sectorial study was conducted in 2010 in 917 children aged between 0.69 months and 15.44 years in the larger villages (tabancas) of the Cufada Lagoon Natural Park, Guinea-Bissau. Anthropometric measurements were performed using standard procedures. Underweight and stunting was assessed as weight-for-age (WAZ) and height-for-age (HAZ) z-score <-2 from the 2006 WHO reference population. The overall prevalence of stunting and underweight were 23.0% and 18.5%, respectively. It was observed that prevalence of stunting was significantly higher among boys (27.0%) compared with girls (18.6%). However, we did not found significantly different prevalence of underweight between boys (20.7%) and girls (16.2%). Children under 2 years have lower prevalence of stunting (18.4%) and underweight (10.5%), when compared with those between age 2 and 4 years (33.6% and 13.3%, respectively). Our results suggest that undernutrition in this group is a chronic problem and of long duration. Breastfeeding seem to have a protective role against malnutrition, as the situation gets worse from 2 years, when there is a marked reduction in breastfeeding.

Key words: undernutrition, stunting, underweight, Guinea-Bissau

Topic: Social determinants of health

Y-chromosome lineages in Coimbra district (Portugal): searching for genetic traces of historical events

Rui Martiniano^{*}, Augusto Abade, Licínio Manco

Research Centre for Anthropology and Health (CIAS), Department of Life Sciences,
University of Coimbra, Portugal

*ruidlpm@gmail.com

The genetic diversity of human populations in Portugal results from several different migrations that occurred in distinct historical periods. These include the expansion following the Last-Glacial-Maximum in the Palaeolithic era, the spread of Neolithic farmers from the Near East, and subsequent Roman and Germanic invaders, Phoenician, Greek and Sephardic-Jews migrations and, more recently, the presence of Arab-Berbers and sub-Saharan slaves. The main objective of this study was to identify paternal lineages in the population of the Coimbra district, revealing the genetic contribution of these populations in the region. A sample of 92 males from Coimbra district was studied for 12 SNPs and 7 STRs using standard molecular methodology. The typical Western European haplogroup R1b1b2-M269 was found as the most common, covering more than half of the Y-chromosomal lineages (55.4%). The haplogroup J-M304, with its origin attributed to the Middle East, scored a frequency of 16.3%; subhaplogroups J1-M267 and J*(xJ1) reached frequencies of 10.9% and 5.4% respectively. Haplogroup E1b1b1b-M81, probably diffused to Portugal by Berber individuals from the Moslem invasion during the 8th century, showed a frequency of 5.4%. Other less common haplogroups were E1b1b1a-M78 (3.3%), E1b1b1c-M123 (2.2%), G-M201 (3.3%) and I-M170 (4.3%). In the coastal area of the district (Mira) two Y-STR haplotypes indicative of Phoenician and Greek expansions were found in two individuals belonging to haplogroups J1-M267 and E1b1b1a-M78 respectively. In conclusion we have improved the characterization of Y-chromosome lineages in Coimbra district which reflects different historical and migratory events in this central region of the country.

Key words: Y-Chromosome, Y-SNPs, Y-STRs, Coimbra district, historical events

Topic: Human genome diversity and diseases

An ethnography about women with breast cancer: a case study at Portuguese Institute of Oncology (IPO) of Coimbra

Diana Isabel Silva Martins

Department of Life Sciences, University of Coimbra, Portugal

diana.martins@netcabo.pt

Breast cancer is the most common type of cancer amongst women and one out of ten women is expected to develop it throughout the life. In Portugal, there are approximately 4500 new occurrences every year, among which about 1500 are fatal. Detection and diagnosis in an initial stage can raise the survival rate up to 95% for at least a period of 5 years. It has an enormous repercussion on the public space, mainly because it affects an organ full of symbolism in motherhood and femininity. The experience of suffering from a serious illness as cancer threatens the person's physical and psychological integrity and has a profound impact in the way as she perceives herself and the others. Therefore, the study of illness (in the patient and his family and friends' perspective) and sickness (understood in the bosom of present societies) is essential for the well-being of the patient and the success of therapy. Inquiries were held to thirty-two Portuguese breast cancer patients between 34 and 72 years of age, some of their familiars and friends, and nine health professionals from the Portuguese Institute of Oncology (IPO) of Coimbra. Additionally, direct non participant observation and bibliographic research were also done. In this work, it is presented an ethnographic research about the sickness behaviour of women with breast cancer, their familiar and social support networks, and suggested measures that in the future enable patients to have a more positive response and improve their quality of life inside and outside the hospital.

Key words: breast cancer, ethnography, disease/illness/sickness, social support networks, IPO of Coimbra

Topic: Social determinants of health

Clinical and palaeopathological complementarities in the retrospective diagnosis of leprosy

Vítor Matos^{*}, Ana Luísa Santos

Research Centre for Anthropology and Health (CIAS), Department of Life Sciences, University of Coimbra, Portugal

*vmatos@antrop.uc.pt

According to written sources, leprosy is known since 600-400 BC. However, human skeletal remains presenting signs of this socially stigmatized infectious disease are scarce. This research aimed to contribute to the debate around the retrospective diagnosis of leprosy correlating clinical and paleopathological data. Two samples were analyzed: a) 300 clinical files, 150 from each leprosy type – lepromatous (LL) and tuberculoid (TT) – and 150 from each sex, belonging to the medical archives of the Hospital-Colónia Rovisco Pais (HCRP), Tocha, Portugal, representing patients aged between 4-93 years old and screened between 1947-1985; b) 191 skeletons, 148 adults and 43 non adults, from both sexes, exhumed from the St. Jørgen's medieval leprosarium (13th-16th/17th centuries) at Odense, Denmark. Osseous lesions were present in 13.0% (39/300) of the HCRP leprosy patients, mainly in those diagnosed with TT (84.6% [33/39]). The risk of developing bone changes in TT was 6.8 times higher (odds ratio, OR=6.77; IC95%=2.60-18.67) than in LL. The Odense skeletons revealed a minimum prevalence of leprosy of 32.5% (62/191), applying Andersen and Manchester (1992) and Ortner (2003) criteria, and a maximum prevalence of 42.9% (82/191), adding Møller-Christensen's (1967) criteria. The comparison between lesions distribution patterns, in the rhinomaxillary region and in the hand and foot bones, in both samples demonstrated the viability of distinguishing LL from TT in human skeletons and unveils the potential of medical archives to palaeopathological studies. The possibility of TT identification in the archaeological record brings new challenges to the understanding of leprosy evolution and history.

Key words: Hansen's disease, leprosy, palaeopathology, Hospital-Colónia Rovisco Pais, St. Jørgens Gård (Odense, Denmark)

Topic: History and evolution of diseases

Grant sponsor: Fundação para a Ciência e Tecnologia, grant: SFRH/BD/16155/2004

Effect of an exercise program on the perceived quality of life of warehouse workers

Cristina Mesquita^{1*}, José Carlos Ribeiro², Pedro Moreira³

¹Physiotherapy Department, Health School, Polytechnic Institute of Porto, Portugal

²Research Centre in Physical Activity, Health and Leisure, Sports Faculty, University of Porto, Portugal

³Nutrition's Faculty, University of Porto, Portugal

* ccm@estsp.ipp.pt

The purpose of this study was to evaluate the effect of a low back specific exercise program on the perceived quality of life of workers from a food distribution warehouse during a period of two years. Two hundred and twenty subjects were selected from a population of 557 workers from a food distribution warehouse. From these, 124 were allocated to the experimental group and 96 to the control group. All participants were asked to complete the SF-36 health status survey questionnaire prior to, 11 months and 21 months of following participation in a low back specific exercise program. The data obtained were processed and analyzed using the Statistical Package Social Science® software version 17.0 for Windows®. The student's t tests for independent and paired samples were used with a 95% significance level. The results obtained at the end of 21 months demonstrated significant improvements in dimensions physical functioning ($p=0.002$), role-physical ($p=0.007$), bodily pain ($p=0.001$), social functioning ($p=0.015$), role-emotional ($p=0.011$) and mental health ($p=0.001$). It can therefore be concluded that the implementation of a low back specific exercise program has changed positively the perception of quality of life of warehouse workers.

Key words: occupational health, quality of life, SF-36, specific exercises

Topic: Social determinants of health

Multicultural experiences in nursing: from the theoretical paradigm to the subjective experiences in clinical settings

Ana Paula Monteiro

Nursing School of Coimbra, Portugal

anapaula@esenfc.pt

Transcultural nursing is an essential area of study and practice focused on the cultural care beliefs, values, and lifestyles of people to help them maintain and/or regain their health, or to face death in meaningful ways. An open questionnaire was developed and applied to 60 nurses in the Postgraduate Course in Mental Health and Psychiatric Nursing in Nursing School of Coimbra (2009/2010/2011), aiming to analyse personal experiences and significant situations of nursing care in multicultural contexts. The experiences related by nurses were obtained in various clinical settings and contexts: Surgery units; emergency rooms; psychiatric units; maternity hospitals and operating rooms, and focused on different groups - gypsy communities, immigrants and specific groups of the Portuguese population with unique beliefs and values, such as older persons. The key issues emerging from confrontation/difficulties between carers and users are related to the understanding and acceptance of hospital routines and the refusal or difficulty to understand specific technical interventions or more invasive technical procedures, the experience of loneliness during hospitalization, the feelings of hopelessness, the collaboration with family settings, the bureaucratic problems and the difficulties in managing the physical space due to different cultural standards. Body exposure or body handling in nursing clinical care emerged as a more significant issue in reports of critical incidents focusing on multicultural contexts. Caring experiences in clinical settings showed that culture has a decisive influence on the experience and social representation of the disease and how the symptoms are experienced, expressed and interpreted, subjectively and socially.

Key words: nursing care, multicultural contexts

Topic: Social determinants of health

Physical activity, sedentariness and obesity

Jorge Mota

Research Centre in Physical Activity, Health and Leisure, Faculty of Sport, University of Porto, Portugal

jmota@fade.up.pt

Obesity is one of the most common health problems with increasing prevalence worldwide among people of all ages. Many authorities agree that genetic predisposition; physical inactivity, poor dietary choices, and a toxic environment are primary contributors to the problem of overweight children. Thus, the problem of obesity is multifactorial and thought to be a convergence of factors favouring an imbalance between energy consumed and expended. To develop effective strategies for obesity prevention, it is critical to determine the relative importance of specific obesity-related risk factors. Patterns of physical activity as well as sedentary living appear to play an important role in long-term weight regulation. Indeed a secular decrease in energy expenditure is seen to be a major cause of the recent increase in overweight and obesity. This is a critical public health concern and makes the prevention of childhood obesity a public health priority for all exercise and public health professionals. However, despite some studies addressed the question, the relationship between activity levels and obesity in children remained unclear. It has been difficult to demonstrate convincingly that physical activity plays a significant role in the development of excess body fat during childhood. In this presentation we will do an overview highlighting the main issues regarding the role of physical activity and sedentary choices in youth obesity.

Key words: prevention, childhood, obesity, physical activity

Topic: Childhood obesity, physical activity and public health

Indirect evidences of violence in African slaves buried at Lagos (Portugal) in the 15th/16th centuries: the contribution of Archeoethanatology

Maria João Neves^{1,2,3,4*}, Maria Teresa Ferreira^{1,2,3,4}, Miguel Almeida¹

¹iDryas, Portugal

²Fundação para a Ciência e Tecnologia (FCT), Portugal

³Research Centre for Anthropology and Health (CIAS), Department of Life Sciences, University of Coimbra, Portugal

⁴Centre for Forensic Sciences, University of Coimbra, Portugal

* mjoao.neves@dryas.pt

An archaeological excavation at Valle da Gafaria, just outside of Lagos' medieval walls, revealed an enormous urban discard deposit dating from the 15th-16th centuries. One hundred and fifty five individuals (99 adults and 56 sub-adults) were exhumed from this anthropic deposit. Several criteria led to the characterization of these individuals as African slaves recently arrived to Portugal, during the early decades of the Portuguese maritime expansion: (1) the morphometrical analysis of the skulls and intentionally modified teeth; (2) the association with African items; (3) the reconstitution of the burial conditions, showing little care and indirect evidences of interpersonal violence; (4) the geoarchaeological/stratigraphic context of the findings; and (5) information recovered from historical documents. The field recovery protocol included tridimensional coordination and individual recovery of every bone; geoarchaeological contextualization; taphonomic analysis; mortuary practices description; and preliminary osteological field description (including age, sex and ancestry diagnosis and lesion description). As a result, we were able to identify a diversity of atypical positions of the skeletons, denouncing uncaring inhumation of the cadavers: at least three cases of hand and/or feet bounding in adults were identified despite the absence of any archaeological evidence of the bounding systems. The identification of such past violent interactions in the absence of any material remains was only possible because of the thorough Archeoethanatomical recovery methodology implemented.

Key words: archeoethanatology, African slaves, 15th/16th Centuries, Portugal

Topic: Social determinants of health

Grant sponsor: Fundação para a Ciência e Tecnologia (MJN and MTF)

Perceptions of local neighbourhood environments and their relationship to childhood obesity

Helena Nogueira¹, Cristina Padez^{2*}, Maria Miguel Ferrão², Augusta Gama^{2,3}, Isabel Mourão⁴, Vítor Rosado Marques^{2,5}

¹Centro de Estudos em Geografia e Ordenamento do Território (CEGOT), University of Coimbra, Portugal; ²Research Centre for Anthropology and Health (CIAS), Department of Life Sciences, University of Coimbra, Portugal; ³Faculty of Sciences, University of Lisbon, Portugal; ⁴University of Trás-os-Montes and Alto Douro, Portugal; ⁵Tropical Research Institute (IICT), Lisbon, Portugal

*cpadez@antrop.uc.pt

Obesity is recognized as the most important health problem in many developed countries. Neighbourhoods in which people live influences health and behaviour by shaping norms, providing or not environmental opportunities to lead their daily lives, reducing or producing stress, and placing constraints or individual choices. However, few studies have examined relationships between the perceived physical and social environment and overweight and obesity among children. The aim of this study was to analyse whether parent's perceptions of local neighbourhood attributes were associated with overweight and obesity among children aged 3-11 year old. A cross-sectional study was done, between March to July 2009, in 1895 children living in Coimbra. Height and weight were measured and IOTF cutoffs to define overweight and obesity were used. Family characteristics (parental educational level) were assessed through questionnaire. Environmental features were assessed through the Environmental Module of the International Physical Activity Prevalence Study questionnaire (IPS). A Categorical Principal Component Analysis (CATPCA) was performed that allowed the extraction of two neighbourhood dimensions which were subsequently used as independent variables in a multinomial logistic regression: 1. infrastructures, access to destinations and physical features (as cycle paths and sidewalks); 2. neighbourhood reputation and safety (perceptions of disorder, crime, violence and safety, including traffic). The prevalence of overweight and obesity was 26.7% and significant associations with parent's neighbourhood perceptions were found. We identified two dimensions of the social and physical environment which influence children weight. These have implications for health and social policy. Enhancing the community physical and social environment, e.g., by providing and maintaining safe places for walking and cycling (through supportive infrastructures, social organization and social control) may provide effective ways to shape children weight and their actual and future health.

Key words: childhood obesity, environment, neighbourhoods, perceptions, built environment

Topic: Childhood obesity, physical activity and public health

Sponsor: PTDC/SAU-ESA/70526/2006

Paint, butterflies and metastasis: art as experience, knowledge and action on breast cancer

Susana de Noronha

Centre for Social Studies (CES), Faculty of Economics, University of Coimbra, Portugal

mail@susananoronha.com

This paper presents the results of the anthropological analysis of twenty four art projects shaped around the feminine experience of breast cancer. Contradicting the simplistic concept that defines art as a representation or reproduction of reality, we'll understand these objects and projects as a constitutive part of experience itself, immersed on the way these women live, understand and take action on cancer. Between diagnosis and the traces of mastectomies, implants and metastasis, art helps to give a meaning and a colored shape to breast cancer, sustaining and rebuilding the women who live it. Crossing an international list of projects that use photography, painting, drawing, sculpture and collage, we'll also redefine art as a form of knowledge and transformative practice, not only as a way to objectify and give personal meaning and form to inner experiences of disease, but also as a collective exercise of activism infused with social ambition. Between the unmaking and remaking of breasts, body and life, these female artists have shaped and activated hybrid objects that test a translation between art, biomedical experiences and embodied knowledge, redefining cancer as an external social construct against the notion of its spontaneous, corporal and internal reproduction. This communication summarizes the monograph now published by Edições Afrontamento.

Key words: breast cancer, art, embodied experience, transformative practices, knowledge(s)

Topic: Social determinants of health

On emerging biomedical citizenships: experiments in the collaborative production of public knowledge on health

João Arriscado Nunes

Centre for Social Studies (CES), School of Economics, University of Coimbra, Portugal

jan@ces.uc.pt

Topic: Biomedicine and biotechnologies

“Advocating rarity”: rare diseases organizations in Portugal

João Arriscado Nunes^{*}, Ângela Marques Filipe, Marta Roriz, Daniel Neves, Marisa Matias

Centre for Social Studies (CES), School of Economics, University of Coimbra, Portugal

*jan@ces.uc.pt

In the last decades, citizen, user and patient organizations have gained relevance and visibility as actors and stakeholders in the health domain. Although this is taking place in several countries across the world, it is rather significant within the European space. The EPOKS [European Patient Organizations in Knowledge Society] project seeks to investigate the contribution of such organizations to the production of knowledge and its governance, through a comparative approach among countries and health conditions, and with a focus on the Europeanization of such organizations. This paper aims to present the preliminary findings about patients' organisations (POs) in Portugal focusing on the rare diseases organisations with respect to their models. Empirical work was carried out in Portugal between 2009 and 2010 in order to characterize and compare modes of activism, engagement in research and dissemination of knowledge, as well as their contribution and participation to health policy design. This presentation offers a preliminary analysis of two kinds of qualitative data, collected throughout Portugal that include: 1) narratives of experiences of POs' representatives with four rare diseases organizations, one rare diseases coalition and two hybrid patient organizations, based on in-depth interviews; and, 2) the accounts of a focus groups with seven participants who included experts and stakeholders involved directly in rare diseases research and governance. One provisory conclusion drawn from this study is that rarity works both as a 'politics of singularity' and an 'umbrella' discourse for those diseases demanding special protection and intervention. This aspect entails a different organizational model both for the biomedical landscape and the political domain, particularly in Europe. Furthermore, the rarity model appears to provide a new mode of advocacy, discourse and organization for other POs, and health policies, such as the case of chronic diseases.

Key words: patient organizations, rare diseases, health, research, policy

Topic: Biomedicine and biotechnologies

“Humanizing childbirth”: the *motto* for childbirth movements and organizations in Portugal

João Arriscado Nunes^{*}, Daniel Neves, Marta Roriz, Ângela Marques Filipe

Centre for Social Studies (CES), School of Economics, University of Coimbra, Portugal

^{*}jan@ces.uc.pt

In recent decades, patient, user and civil society organizations have become relevant actors and stakeholders in the health domain. The EPOKS project seeks to investigate the contribution of these organizations in the co-production of knowledge and its impact in policy-making. This proposal aims at presenting the preliminary findings of the project on childbirth coalitions and organizations in Portugal. Empirical work and in-depth interviews with these organizations in Portugal were carried out between 2009 and 2010 in order to characterize and compare modes of activism and knowledge communication, as well as their contribution to and participation in health policy design. Childbirth coalitions struggle against the potential domination of medical expertise and practices on childbirth and related issues, arguing that childbirth is not a medical event, but a life event, which may need medical intervention in particular cases. They collect evidence that help contain the pervasive extension of medical knowledge to any issue related to childbirth, namely drawing on contributions from evidence-based medicine for demonstrating its inconsistencies as well as what constitutes adequate practices. Prenatal screening, episiotomy, epidurals and the increasing rates of unnecessary c-sections are clearly the result of the proliferation of medical and biotechnologies. Women’s experience, desires and choices, expert assessment of the functioning and cost-benefit relations of maternity hospitals, the know-how of midwives and the struggle for recognition, the increasing visibility of the figure of the *doula*, among others, are all contributing to the extension of the web of expertise on childbirth. Their non alignment with the biomedical world is not necessarily equal to demedicalisation. The way these organizations collect and circulate new forms of knowledge and practices on childbirth management, as well as their individual and collective empowerment vis-à-vis the medical world are the focus of the presentation.

Key words: humanization of childbirth, demedicalisation, user and civil society organization

Topic: Social determinants of health

Health, health knowledge and health information in Portugal: a preliminary outline

João Arriscado Nunes^{1*}, Rita Serra¹, Tiago Santos Pereira¹, Carlos Barradas¹, José P. Arruda¹, Maria Cristina Canavarro², Elisabete Ramos³, Fátima Pina⁴, Joaquim Valentim², Júlio Santos⁵, Manuel Quartilho⁶, Maria Rui Correia⁵

¹Centre for Social Studies (CES), School of Economics, University of Coimbra, Portugal

²Faculty of Psychology and Education Sciences, University of Coimbra, Portugal

³Faculty of Medicine, University of Porto, Portugal

⁴Biomedical Engineering Institute, University of Porto, Portugal

⁵Instituto de Biologia Molecular e Celular (IBMC), University of Porto, Portugal

⁶Faculty of Medicine, University of Coimbra, Portugal

*jan@ces.uc.pt

Within the field of social studies of medicine the debates over topics such as public knowledge on health and health information are becoming central concerns. The research project “Evaluating the State of Public Knowledge on Health and Health Information in Portugal”, as part of the Harvard Medical School-Portugal Program on Translational Research and Health Information (Foundation for Science and Technology), intends to offer a fresh look on these topics. The objectives of this project are (1) to inquire on the current state of knowledge of the Portuguese population on major health conditions/national health priorities; (2) to provide an assessment of the state of access to health information, its publics, sources, interpretations and effects on health-related practices and (3) to design and test an approach for assessing the efficacy and effectiveness of actions in health information. The theoretical framework for the project builds on contributions from a range of fields such as social studies of medicine, medical anthropology, public communication of health, cognitive psychology and public health. Drawing on this framework, we explore configurations of knowledge based on biomedical culture as well as experience-based knowledge on health. The empirical focus will be on the explanatory models and semantic networks associated with these configurations, the chains and mediations of communication on health and the efficacy and effectiveness of health information. This paper provides a preliminary outline of the theoretical-conceptual framework of the project.

Key words: health knowledge, health information, biomedical culture

Topic: Social determinants of health

Trends in childhood overweight and obesity in Portugal from 2002 to 2009: the role of socioeconomic factors

Cristina Padez^{1*}, Augusta Gama^{1,2}, Isabel Mourão³, Vítor Rosado Marques^{1,4}

¹Research Centre for Anthropology and Health (CIAS), Department of Life Sciences, University of Coimbra, Portugal

²Faculty of Sciences, University of Lisbon, Portugal

³University of Trás-os-Montes and Alto Douro, Portugal

⁴Tropical Research Institute (IICT), Lisbon, Portugal

*cpadez@antrop.uc.pt

The aim of this study was to examine the overweight and obesity prevalence trends between 2002 and 2009 and assess whether these trends relate to parental social class. Two cross-sectional studies were conducted between 2002 and 2009 in Portugal in children aged 7-9 years. In 2002, 4511 children were examined and in 2009 4143 took part in the second study. Height and weight were measured and BMI (Kg/m²) was calculated. A family questionnaire was applied and the maternal and parental education were used to assess the social class of each family. Three categories were used: Primary school, Secondary school and University level. The International obesity TaskForce (IOTF) cutoffs to define overweight and obesity were used. The prevalence of overweight/obesity changed from 31.6% in 2002 to 30.4% in 2009. The odds ratio (OR) for overweight in 2009 compared to 2002 was 1.02 and for obesity was 0.7. Compared to 2002, in 2009 age and sex adjusted OR for overweight was 1.12 in children with paternal education in the primary category, 1.03 in secondary category and 0.93 in university category. For obesity, OR in 2009 compared to 2002 were 0.82 in primary category, 0.73 in secondary category and 0.63 in university category. These results showed that children from lower socio-economic strata showed an increase in overweight prevalence and decreased less in obesity percentage than children from upper socio-economic strata. This means that it is necessary to reduce socio-economic disparities in childhood overweight and obesity.

Key words: childhood, obesity, social class

Topic: Childhood obesity, physical activity and public health

Sponsor: PTDC/SAV-ESA/70526/2006

Social determinants of child dental caries in a schoolchildren sample aged between 6 to 11 years old from Coimbra, Portugal

Liliana Pereira^{1*}, Sofia Neto Wasterlain²

¹Department of Life Sciences, University of Coimbra, Portugal

²Research Center for Anthropology and Health (CIAS), Department of Life Sciences, University of Coimbra, Portugal

*lilianapereira83@hotmail.com

Dental caries may be defined as a disease that causes the destruction of enamel, dentine and cement resulting from acid production by bacteria in dental plaque, ultimately leading to the formation of a cavity in the crown or root surface of the teeth. Between March and June 2009, dental caries was analyzed in a sample of 392 schoolchildren from both sexes (190 males, 202 females), aged 6-11 years old, living in the region of Coimbra. This study aimed to record the pattern and distribution of dental caries and report its prevalence according to sex, urbanization, food habits, oral hygiene practices, visits to the dentist and socioeconomic status of the parents. The teeth of each child were analyzed carefully, by the same oral hygienist, under good lighting conditions, using an intra-oral mirror and a dental explorer. Altogether, 9,140 teeth were analyzed, 48.9% deciduous and 51.1% permanent; 6.2% were decayed and 2.0% filled. The mean value of dmf-t (decayed/ missing/ filled deciduous teeth) was 1.67 ± 2.32 and DMF-T (decayed/ missing/ filled permanent teeth) 0.32 ± 0.83 . Deciduous dentition was significantly more affected than permanent teeth (Chi-square test; $p = 0.000$). No significant differences were reported between males and females or rural versus urban children. DMF-T and dmf-t indices were highest for children who consumed potentially cariogenic food/drinks more frequently. Lower socioeconomic status of the parents and bad oral hygiene practices revealed to increase both dmf-t and DMF-T indices. This study shows that beyond biological factors, the socioeconomic conditions are very important in children's dental caries prevalence.

Key words: dental caries, food habits, oral health, socioeconomic status

Topic: Social determinants of health

Genetic variability associated with lactase persistence in Portugal and in several African populations

Sara Pires^{*}, Licínio Manco, Augusto Abade

Research Centre for Anthropology and Health (CIAS), Department of Life Sciences, University of Coimbra, Portugal

^{*}saradanpires@gmail.com

The ability to digest dairy products during adulthood due to the persistency of the lactase enzyme, has been associated with several polymorphisms located about 14kb upstream the lactase gene (LCT), namely -13910C→T in European and -13907C→G and -14010G→C in sub-Saharan African populations. The main purpose of this work was to study the genetic variability associated to lactase persistence in population samples from Portugal, and several African countries. Samples of 285 unrelated individuals from Central and North Portugal, S. Tomé and Príncipe (STP), Angola and Guinea-Conakry and from 9 Portuguese individuals with lactose intolerance, were analyzed for the polymorphic sites 13910C→T, -13907C→G and -14010G→C using standard molecular methodology. Estimated frequencies for the -13910T allele, previously associated with lactase persistence in Europe, were: 24.6% in North Portugal, 38.0% in Central Portugal, 3.8% in STP, 2.2% in Angola and 6.1% in Guinea. These results are in accordance with previous studies. Only alleles -13907C and -14010G were found in all of the populations tested; namely in the West African populations of S. Tomé and Príncipe, Angola and Guinea. The absence of the -13907G and -14010C African lactase persistence-associated alleles in these populations could reflect a demographic composition without demographic influences of the East African pastoralists where these mutations have previously been found. In all lactose intolerant individuals (n=9) only the allele -13910T was found. This result, coupled with the fact that the 26 homozygous individuals -13910C/C from North Portugal have no symptoms related to lactose intolerance, suggest that this polymorphism is unlikely to be associated with lactase persistence in Portugal.

Key words: lactase persistence polymorphisms, lactose intolerance, Portugal, Africa

Topic: Human genome diversity and diseases

The evolution of lactase persistence

Jorge Macedo Rocha

Institute of Molecular Pathology and Immunology, University of Porto (IPATIMUP),
Portugal

Department of Biology, Faculty of Sciences, University of Porto, Portugal

jrocha@ipatimup.pt

Lactase persistence has long been recognized as a striking example of human dietary adaptations to changes in food production habits. The observation that the prevalence of the lactase persistence phenotype was positively correlated with the degree of milk dependency in several human groups has led to the formulation of an evolutionary interpretation that became known as the “culture/historical hypothesis”. This hypothesis emphasizes the influence that culturally derived selection can have on human genes by assuming that the nutritional benefits of milk drinking during adult life are selectively advantageous in pastoral groups that rely on dairying. The recent demonstration of the molecular basis of lactase persistence added a new dimension to the studies of the evolutionary history of lactase persistence by providing an opportunity to test the basic predictions of the “culture/historical hypothesis” and evaluate its merit relative to alternative explanations. Here, I will present an overview of the evolutionary history of lactase persistence by focusing on aspects that are directly connected with the predictions of the “culture/historical hypothesis”, including the correlation between lactase persistence and pastoralism, the age of lactase persistence mutations and molecular evidences for natural selection. The places of origin and geographic diffusion of lactase persistence mutations will be also discussed in the context of the population movements associated spread of pastoralism.

Key words: lactase persistence, evolution, dietary adaptations, natural selection

Topic: Human genome diversity and diseases

Chronobiology in the components of the breast milk

Cristina L. Sánchez^{1*}, Javier Cubero², Javier Sánchez³, Rafael Bravo¹, Ana Beatriz Rodríguez¹, Montserrat Rivero⁴, Carmen Barriga¹

¹Chrononutrition Laboratory, Department of Physiology, Faculty of Science, University of Extremadura, Spain

²Didactics Area in Experimental Sciences, Faculty of Education, University of Extremadura, Spain

³Metabolism Lab, Perpetuo Socorro Hospital (S.E.S.), Badajoz, Spain

⁴Scientific Division Manager, Ordesa Group, Barcelona, Spain

* crissanchez@unex.es

Proteins, lipids, carbohydrates, hormones and vitamins, among others components, makes a complex fluid in the breast milk to adapt to the neonate requirements. Its composition changes during the breastfeeding, daytime and even each feed. Although changes in some of its components are already well described, (i.e. fats), until now little is known about the circadian patterns and its causes. The aim of our studies was to clarify and to give an explanation about the circadian changes found on the breast milk during the different stages of the breastfeeding. By chromatographic techniques (capillary electrophoresis, High Performance Liquid Chromatography or tandem mass) we analyzed the content of some components of the human milk during a 24-h period (n=77). After that we realized a chronobiological study (Cosinor method) and a circadian pattern of amino acids and nucleotides were found. In addition, significant changes were obtained in the daytime concentration of protein and protein nitrogen compared to the night, in the nucleotides, the majority of them showed a circadian rhythm, and some amino acids such as tryptophan, which showed a circadian rhythm from stages as early as colostral phase maintaining this rhythm until the last stage of breast feeding (mature milk). Finally, breast milk feeding allows the nourishment and development of the intellect as well as the improvement of the immune and digestive systems of the newborn. Besides all this, the baby would be adjusting his circadian pattern in harmony with his environment (day/night), crucial for the proper functioning and synchronization of all systems in the human body.

Key words: amino acids, nucleotides, breast milk production, chromatographic techniques

Topic: Biomedicine and biotechnologies

Conceptions of quality of life, body and gender among Turkish breast cancer patients

Aysecan Terzioglu

School of Nursing and Health Sciences, Koc University, Istanbul, Turkey

aterzioglu@hotmail.com

In accord with the increasing cancer rates, cancer became a highly visible illness, and cancer patients' associations became more active and popular in Turkey. Many of those associations emphasize the concept of "quality of life", and aim at inculcating a holistic and individualistic approach on health. That concept stresses the psychological and social factors, which affect the patients' illness experience, and aims at empowering the patients by suggesting ways to improve their lives. However, the discourse on quality of life, which is shaped by the medical scientists, health care providers and cancer patients' associations, often overlooks the patients' socioeconomic status and environmental factors, which affect their illness. Therefore the concept of quality of life, which recently became popular, have different meanings for different cancer patients, depending on their demographic and socio-economic background. For the breast cancer patients with a disadvantaged background, having cancer and a good quality of life create an oxymoron, whereas the ones with a higher socioeconomic status define having a good quality of life as an attainable goal for them. In this talk, I will explore how the Turkish women with breast cancer define quality of life, and relate their conceptions of body, gender and health with that concept. My research took place in three different hospitals in Istanbul in order to canvass a broad range of cancer patients in terms of their demographic and socio-economic status. It includes semi-structured interviews with female breast cancer patients on their illness experience and conceptions of quality of life.

Key words: Turkish breast cancer patients, quality of life, conceptions of body and gender, conceptions on health, patients' associations

Topic: Social determinants of health

Application of radiological methods in the osseous changes due to mastoiditis in human prehistoric and historical skeletal material from Poland

Iwona Teul^{1*}, Wiesław Lorkiewicz²

¹Chair and Department of Human Anatomy, Pomeranian Medical University, Szczecin, Poland

²Chair of Anthropology, University of Łódź, Poland

*teul@life.pl

Otitis media (OM) is a disease that may lead to mastoiditis and severe endocranial complications. Since antibiotics have become available, OM and mastoiditis have become rare diseases in modern Western societies. However, it is still common in developing countries. In earlier historical and prehistoric times, OM and mastoiditis must have posed a serious threat to people's lives, and the prevalence of these diseases is probably underrepresented in the paleopathological literature. The present study identifies pathological changes in the pneumatized cells of the mastoid process in human skeletal samples from the area of modern Poland. The study included: 53 neolithic (4300-4000 B.C.), 150 early medieval and 82 contemporary samples from mid-XX century. The analysis of this material used macroscopic, radiological and CT investigations and draws some epidemiological conclusions as to the frequency of the disease diagnosed in the archaeological samples. Osseous changes due to mastoiditis were diagnosed in 73.6 % of the temporal bones. The frequency in the skeletal sample from early medieval skulls was higher than in the sample from neolithic and mid-XX century. In both prehistoric populations males were more often affected than females. The high frequency of the morphological changes in the pneumatized cells of the mastoid process observed was most likely due to an accumulation of osseous changes during individual lifetimes and supports the hypothesis that OM and mastoiditis were a serious health problem in prehistoric and historical human populations and diagnosis of pneumatized mastoid cells provides a useful tool for the study of pathological conditions in the middle ear region in ancient populations.

Key words: temporal bone, mastoiditis, otitis media, palaeopathology

Topic: History and evolution of diseases

Socioeconomic status and objectively measured physical activity in preschool children

Susana Vale¹, Nuno Ricardo¹, Rute Santos^{1,2}, Luísa Soares-Miranda¹, Jorge Mota¹

¹Research Centre in Physical Activity, Health and Leisure, Faculty of Sports, University of Porto, Portugal

²Maia Institute of Higher Education, Portugal

susanavale@hotmail.com

The purpose of this study was to analyze the differences between patterns of physical activity (PA) and socioeconomic status (SES). The sample consisted on 473 preschool children (53% boys) from 3 to 6 years old, were recruited from kindergartens located in the metropolitan area of Porto, in Portugal. The PA was assessed for 7 days by accelerometry (Actigraph). The SES was analyzed according to the Portuguese education system and classified as low, middle and high. We found that boys are more active than girls in total PA ($p < 0.001$), light PA ($p < 0.05$) and moderate-vigorous PA (MVPA) ($p < 0.001$). All children (boys and girls) are more active on weekdays than on weekends in all patterns of PA ($p < 0.001$). Children belonging to the highest SES are less active than children belonging to low and middle SES ($p \leq 0.001$) in all patterns of PA during the week and weekend. Altogether, 72% and 95% of the children met the National Association for Sport and Physical Education guidelines and moderate-to-vigorous physical activity recommendations respectively on weekdays, whereas compliance with both recommendations was substantially less in both sexes on weekend days ($p < 0.001$). Regarding Total PA during the week we found that the majority of children with low SES and two thirds of children of middle SES meets the recommendations. On the other hand, more than half the children of high SES does not meet these recommendations ($p < 0.001$). In our study we found that SES influences the daily patterns of PA.

Key words: preschool, physical activity, accelerometers, socioeconomic status, recommendations

Topic: Social determinants of health

Sponsor: PTDC/DES/098309/2008

LIST OF PARTICIPANTS

David ALBUQUERQUE

Research Centre for Anthropology and Health (CIAS), Department of Life Sciences
University of Coimbra, Portugal
crousetd@yahoo.fr

Ana Filipa ANTUNES

Department of Life Sciences
University of Coimbra, Portugal
anafilipa.antunes@hotmail.com

Ana Paula AREZ

Center for Malaria and Tropical Diseases,
Malaria Unit, Institute of Hygiene and Tropical
Medicine, Universidade Nova de Lisboa,
Portugal
aparez@ihmt.unl.pt

Sandra ASSIS

Research Centre for Anthropology and Health
(CIAS), Department of Life Sciences
University of Coimbra, Portugal
sandraassis78@yahoo.com

Sylwia BARAN

Faculty of Education, Sociology and Health
Sciences, University of Zielona Gora, Poland
sbaran@ipp.uz.zgora.pl

Ivone BEZERRA

Department of Life Sciences
University of Coimbra, Portugal
& Belém, Pará, Brasil
imab02@hotmail.com

Eunice CONCEIÇÃO

National Museum of Natural History & Centre
for Environmental Biology, Faculty of Sciences
University of Lisbon, Portugal
eunice.conceicao@gmail.com

Alexandra CORDEIRO

Department of Life Sciences
University of Coimbra, Portugal
alexandra.ruivocordeiro@gmail.com

Catarina COSTA

Department of Life Sciences
University of Coimbra, Portugal
catriine_costa@hotmail.com

Luís COSTA

Department of Life Sciences
University of Coimbra, Portugal
luismncosta@gmail.com

Cristina Barroso CRUZ

Research Centre for Anthropology and
Health (CIAS), Department of Life Sciences
University of Coimbra, Portugal
cbacruz@gmail.com

Sandra CRUZ

Department of Life Sciences
University of Coimbra, Portugal
sandramacruz@gmail.com

Javier CUBERO

Chrononutrition Laboratory, Department
of Physiology, Faculty of Science,
University of Extremadura, Badajoz, Spain
jcubero@unex.es

Ana CURTO

Department of Life Sciences
University of Coimbra, Portugal
a.q.curto@gmail.com

Ricardo ENCARNAÇÃO

Department of Life Sciences
University of Coimbra, Portugal
ricardo.pereira.encarnacao@gmail.com

Anita FALCÃO

Department of Life Sciences
University of Coimbra, Portugal
anitamanta@hotmail.com

Maria Miguel FERRÃO

Research Centre for Anthropology and
Health (CIAS), Department of Life Sciences
University of Coimbra, Portugal
maria.antas.ferrao@gmail.com

Luciana FILIPE

Department of Life Sciences
University of Coimbra, Portugal
lucianafilipe@hotmail.com

Augusta GAMA

Faculty of Sciences, University of Lisbon &
Research Centre for Anthropology and
Health (CIAS), University of Coimbra,
Portugal
augusta.gama@fc.ul.pt

Ilaria GEDDES

Global Health Equity Group, Marmot
Review Team, University College of
London, UK
i.geddes@ucl.ac.uk

Carlijn KAMPHUIS

Department of Public Health
Erasmus University Medical Centre
Rotterdam, Netherlands
c.kamphuis@erasmusmc.nl

Célia LOPES

Research Centre for Anthropology and Health
(CIAS), Department of Life Sciences
University of Coimbra, Portugal
lopec03@gmail.com

Patrícia MACHADO

Centre for Malaria and Tropical Diseases,
Institute of Hygiene and Tropical Medicine
Universidade Nova de Lisboa, Portugal
pmachado@gmail.com

Vânia MACHADO

Department of Life Sciences
University of Coimbra, Portugal
vania.dsp.machado@gmail.com

Marta MAIA

Centre for Research in Anthropology (CRIA)
ISCTE-IUL, Lisbon, Portugal
maia_marta@hotmail.com

Licínio MANCO

Research Centre for Anthropology and Health
(CIAS), Department of Life Sciences
University of Coimbra, Portugal
lmanco@antrop.uc.pt

Carina MARQUES

Research Centre for Anthropology and Health
(CIAS), Department of Life Sciences
University of Coimbra, Portugal
anac@ci.uc.pt

Vítor Rosado MARQUES

Tropical Research Institute (IICT), Lisbon &
Research Centre for Anthropology and Health
(CIAS), University of Coimbra, Portugal
vrosadomarques@iict.pt

Diana Isabel da Silva MARTINS

Department of Life Sciences
University of Coimbra, Portugal
diana.martins@netcabo.pt

Maria Rosário MARTINS

Research Centre for Anthropology and
Health (CIAS), Department of Life Sciences
& Fundação Museu da Ciência
University of Coimbra, Portugal
martinsr@antrop.uc.pt

Vítor MATOS

Research Centre for Anthropology and
Health (CIAS), Department of Life
Sciences, University of Coimbra, Portugal
vmatos@antrop.uc.pt

Cristina MESQUITA

Physiotherapy Department, Health School,
Polytechnic Institute of Porto, UCPE
Saúde Mental e Psiquiatria, Portugal
ccm@estsp.ipp.pt

Maria Arminda MIRANDA

Research Centre for Anthropology and
Health (CIAS), Department of Life Sciences
& Fundação do Museu da Ciência
University of Coimbra, Portugal
miranda@antrop.uc.pt

Ana Paula MONTEIRO

Nursing School of Coimbra, Portugal
anapaula@esenfc.pt

Jorge MOTA

Research Centre in Physical Activity,
Health and Leisure, Faculty of Sport
University of Porto, Portugal
jmota@fade.up.pt

Magdalena MUC

Department of Life Sciences
University of Coimbra, Portugal
magdalenamuc@gmail.com

Maria João NEVES

iDryas & Research Centre for Anthropology and Health (CIAS), Department of Life Sciences
University of Coimbra, Portugal
mjoao.neves@dryas.pt

Helena NOGUEIRA

Department of Geography & Centro Estudos Geográficos e Ordenamento do Território (CEGOT), University of Coimbra, Portugal
helenamarquesnogueira@gmail.com

Susana NORONHA

Centre for Social Studies (CES)
Faculty of Economics
University of Coimbra, Portugal
mail@susananoronha.com

João Arriscado NUNES

Centre for Social Studies (CES), School of Economics, University of Coimbra, Portugal
jan@ces.uc.pt

Cristina PADEZ

Research Centre for Anthropology and Health (CIAS), Department of Life Sciences
University of Coimbra, Portugal
cpadez@antrop.uc.pt

Carmen PEREIRA

Gabinete de Arqueologia, Arte e História, Câmara Municipal de Coimbra, Coimbra, Portugal
carmen.pereira@cm-coimbra.pt

Liliana PEREIRA

Department of Life Sciences
University of Coimbra, Portugal
lilianapereira83@hotmail.com

Sara PIRES

Research Centre for Anthropology and Health (CIAS), Department of Life Sciences
University of Coimbra, Portugal
saradanipires@gmail.com

Luís QUINTAIS

Department of Life Sciences
University of Coimbra, Portugal
lfgsq@ci.uc.pt

Jorge Macedo ROCHA

Institute of Molecular Pathology and Immunology (IPATIMUP), University of Porto & Department of Biology, Faculty of Sciences, University of Porto, Portugal
jrocha@ipatimup.pt

Maria Augusta ROCHA

Research Centre for Anthropology and Health (CIAS), Department of Life Sciences
University of Coimbra, Portugal
marocha@antrop.uc.pt

Marta RORIZ

Centre for Social Studies (CES), School of Economics, University of Coimbra, Portugal
martaroriz@ces.uc.pt

Ana Luísa SANTOS

Research Centre for Anthropology and Health (CIAS), Department of Life Sciences
University of Coimbra, Portugal
alsantos@antrop.uc.pt

Rafael Bravo SANTOS

Chrononutrition Laboratory
Department of Physiology, Faculty of Science, University of Extremadura, Badajoz, Spain
rbravosa@alumnos.unex.es

Ana Maria SILVA

Research Centre for Anthropology and Health (CIAS), Department of Life Sciences
University of Coimbra, Portugal
amgsilva@antrop.uc.pt

Marlene Alexandra Mariano da SILVA

Department of Life Sciences
University of Coimbra, Portugal
alexa_bluesky@hotmail.com

Sílvia SILVA

Câmara Municipal de Torres Vedras,
Sector de Assuntos Sociais, Saúde e Habitação,
Torres Vedras, Portugal
silviasilva@cm-tvedras.pt

Ana Filipa M. SOUSA

Department of Life Sciences
University of Coimbra, Portugal
snowwhite087@hotmail.com

Aysecan TERZIOGLU

School of Nursing and Health Sciences
Koc University, Istanbul, Turkey
aterzioglu@hotmail.com

Iwona TEUL

Department of Anatomy, Pomeranian
Medical University, Szczecin, Poland
teul@life.pl

Susana VALE

Research Centre in Physical Activity,
Health and Leisure, Faculty of Sports
University of Porto, Portugal
susanavale@hotmail.com

Beatriz XAVIER

Nursing School of Coimbra & Centro de
Estudos de Sociologia, Faculdade de
Ciências Sociais e Humanas (CESNOVA),
Universidade Nova de Lisboa, Portugal
xavier.beatriz@gmail.com

AUTHOR INDEX

A

Abade, A.	26, 41
Albuquerque, D.	11
Almeida, M.	32
Alvarez, M.	11
Amorim, A.	22
Arez, A. P.	11, 22
Arruda, J. P.	38

B

Baran, S.	12, 13
Barradas, C.	38
Barriga, C.	14, 43
Bravo, R.	14, 43

C

Cabral, F.	17
Canavarro, M. C.	38
Cardoso, H. F. V.	15
Conceição, E. N.	15
Correia, M. R.	38
Costa, L. M. N.	16
Cruz, C. B.	17
Cubero, J.	14, 43
Cunha, E.	17
Curate, F.	17

F

Fernandes, N.	22
Ferrão, M. M.	33
Ferreira, M. T.	32
Filipe, A. M.	36, 37
Franco, L.	14

G

Gama, A.	18, 19, 33, 39
Garcia, S.	15
Geddes, I.	20
Gusmão, L.	22

K

Kamphuis, C.	21
-------------------	----

L

Lima, J.	18
Lorkiewicz, W.	45

M

Machado, P.	22
Maia, M.	23
Manco, L.	11, 22, 24, 26, 41
Marques, V. R.	25, 33, 39
Martiniano, R.	26
Martins, D. I. S.	27
Matias, M.	36
Matito, S.	14
Matos, V.	28
Mesquita, C.	29
Miranda, J.	22
Monteiro, A. P.	30
Moreira, P.	29
Mota, J.	31, 46
Mourão, I.	33, 39

N

Neves, D.	36, 37
Neves, M. J.	32
Nogueira, H.	33
Noronha, S.	34
Nunes, J. A.	35, 36, 37, 38

P

Padez, C.	15, 33, 39
Paredes, S. D.	14
Pereira, L. M.	40
Pereira, R.	22
Pereira, T. S.	38
Pina, F.	38
Pires, S.	41

Q

Quartilho, M.	38
--------------------	----

R

Ramos, E.	38
Relvas, L.	11
Ribeiro, J. C.	29
Ribeiro, L.	11, 22, 24
Ricardo, N.	46
Rivero, M.	14, 43
Rocha, A. M.	22
Rocha, J. M.	42
Rodríguez, A. B.	14, 43
Roriz, M.	36, 37
Rosário, V. E.	22

S

Sampaio, D.	19
Sánchez, C. L.	14, 43
Sánchez, J.	43
Santos, A. L.	28
Santos, J.	38
Santos, R.	46
Serra, R.	38
Soares-Miranda, L.	46

T

Terzioglu, A.	44
Teul, I.	12, 13, 45
Trovoada, M. J.	11

V

Vale, S.	46
Valentim, J.	38

W

Wasterlain, S. N.	40
------------------------	----

KEY WORD INDEX

A

academic youth	13
accelerometers	46
actimetry	14
adolescents	19
Africa	41
African slaves	32
amino acids	43
Angola	22
anthropological data base	17
archeothanatology	32
art	34

B

biomedical culture	38
body mass index	12
breast cancer	27, 34, 44
breast milk production	43
built environment	33

C

Century	
15 th /16 th	32
20 th	15
childhood	31, 39
childhood obesity	31, 33, 39
chromatographic techniques	43
chronobiology	14
circadian rhythm	14
Coimbra district	26
conceptions of body and gender	44
conceptions on health	44
cure	16

D

demedicalisation	37
dental caries	40
dietary adaptations	42
disease/illness/sickness	27

E

elderly	14
embodied experience	34
environment	33
epidemiology	17
ethnography	27
evolution	42

F

fatty tissue mass	12
Felupes	16
female stature	15
ferroportin	11
food habits	40

G

G6PD	24
gays	23
gene mutations	24
growth	18
Guinea-Bissau	16, 25

H

Hansen's disease	16, 28
healing	16
health	36
inequalities	20
information	38
knowledge	38
occupational	29
oral	40
historical events	26
HIV/AIDS	23
Hospital-Colónia Rovisco Pais	28
humanization of childbirth	37

I

IPO of Coimbra	27
iron overload	11

K

knowledge(s)	34
--------------------	----

L

lactase persistence	42
polymorphisms	41
lactose intolerance	41
leprosaria	16, 28
leprosy	16, 28
lepromatous	28
tuberculoid	28
lifestyle	13

M

malaria.....	22
mastoiditis.....	45
morbidity.....	20
mortality.....	20
Mozambique.....	22
multicultural contexts.....	30

N

natural selection.....	42
neighbourhoods.....	21, 33
nucleotides.....	43
nursing care.....	30
nutritional status.....	18, 19

O

obesity.....	19, 21, 31, 39
occupational health.....	29
oral health.....	40
otitis media.....	45

P

P5'N and TPI.....	24
paleopathology.....	17, 28, 45
past populations.....	17
patient organizations.....	36
patients' associations.....	44
perceptions.....	33
physical activity.....	21, 31, 46
PK.....	24
policy.....	36
Portugal.....	15, 32, 41
preschool.....	46
prevention.....	31
psychological distress.....	13
pubertal spurt.....	12
pyruvate kinase deficiency.....	22

Q

quality of life.....	29, 44
Quilombola.....	18

R

rare diseases.....	36
recommendations.....	46
red cell enzyme deficiencies.....	24
research.....	36

risk behaviours.....	23
----------------------	----

S

secular trend.....	15
selection signatures.....	22
sexual identity.....	23
sexual practices.....	23
SF-36.....	29
SLC40A1 gene 744G→T (Q248H) mutation.....	11
social class.....	39
social determinants of health.....	20
social support networks.....	27
socioeconomic factors.....	13, 15
socioeconomic status.....	21, 40, 46
specific exercises.....	29
St. Jørgens Gård (Odense, Denmark).....	28
stunting.....	25

T

temporal bone.....	45
transformative practices.....	34
tryptophan.....	14
Turkish breast cancer patients.....	44

U

undernutrition.....	25
underweight.....	25
user and civil society organization.....	37

Y

Y-Chromosome.....	26
Y-SNPs.....	26
Y-STRs.....	26