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Social determinants of health

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“Social determinants of health – Swedish-Brazilian exchange program and Sweden-Brazil comparisons” is a program of research and exchange, funded by the Swedish Foundation for International Cooperation in Research and Higher Education (STINT in Swedish). STINT overall objective is to strengthen Swedish research and higher education by means of international cooperation.

The above mentioned program is a close collaboration between the Centre for Health Equity Studies (CHESS) and the “Instituto de Medicina Social (IMS), Universidade do Estado do Rio de Janeiro”. It includes junior and senior researchers. One of its aims is to foster training in research activities. Project leaders are Professors Johan Fritzell at CHESS and Antonio Ponce de Leon at IMS/UERJ (for further information and details about the program see http://www.chess.su.se/pub/jsp/polopoly.jsp?d=7826&a=33511).

The 1st IMS/CHESS Workshop took place in December 2008 at the beautiful scenery of the Tijuca Forest National Park, gathering more than fifty researchers during three days. The 2nd IMS/CHESS Workshop occurred a year later with a similar attendance while its venue was also breathtaking: the site of the Physical Education School of the Brazilian Army, at Urca.

This series of workshops offer all participants an opportunity to deepen their knowledge on social determinants of health, and related areas, and to establish contacts with Swedish researchers within their field of research. Also, master, doctoral students, and post docs are given an opportunity to make presentations and get valuable comments on their work.

The venue of the 3rd IMS/CHESS Workshop is the Petrobras's building situated at Cidade Nova in Rio de Janeiro, close to Rio de Janeiro City Council. It can be reached easily by many buses and is close to 3 underground stations. This year, we hope to keep the tradition of high-standard presentations, comments, and discussions. We are sure all of you will learn substantially from the workshop and we hope that this 3-day scientific meeting will give rise to more partnerships between Swedish and Brazilian researchers.

Antonio Ponce de Leon (IMS) & Johan Fritzell (CHESS)
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Program

December 7

8:00 – 8:30 Registration

8:30 – 9:10 Coffee

9:10 – 9:40 Welcome by Antonio Ponce de Leon and Johan Fritzell

9:40 – 10:00 Presentation by Petrobras

10:00 – 11:00 Lecture by Johan Fritzell

“A lost paradise? Social and health inequalities in the Nordic welfare states.”

11:00 – 12:00 Lecture by Guilherme Werneck

“Perspectives of using high resolution remote sensing images in epidemiologic research of vector-borne diseases in urban settings”

12:00 – 13:30 Lunch Break

Environmental epidemiology

13:30 – 14:10 Presentation by Ludmilla Viana

Comments: Johan Fritzell

“Association between fine particulate matter and the peak expiratory flow of schoolchildren in the Brazilian subequatorial Amazon: a panel study.”

Migrants and health inequalities

14:10 – 14:50 Lecture by Mikael Rostila

“Mortality differentials by immigrant group in Sweden.”

14:50 – 15:30 Presentation by Alexander Miething

Comments: George Kornis

“Comparing income and its consequences for health in Sweden, East and West Germany.”

15:30 – 16:00 Coffee Break
Indicators of private health care systems

16:00 – 16:40  Presentation by Jurema Salles
   Comments: Antonio Ponce de Leon
   “Offer of services health plans of lower price: an analysis of network of accredited companies in the municipality of Rio de Janeiro.”

16:40 – 17:30  Presentation by Gislaine Afonso-Souza
   Comments by Bo Burström and Antonio Ponce de Leon
   “Notification of Preliminary Investigation (NPI) in the Brazilian private health sector: a novel approach based on Empirical Bayes”
December 8

9:00 – 10:00  Lecture by Maurício Barreto
“Determinants os asthma in Latin America: findings of an ongoing multidisciplinary research programme”

10:00 – 10:30  Coffee Break

Physical activity in epidemiologic studies

10:30 – 11:10  Lecture by Geraldo Maranhão Neto
“Effectiveness of the Physical Activity Readiness Questionnaire in elderly women attended in a University Care Center.”

11:10 – 11:50  Presentation by Aldair Oliveira
Comments: Kristina Johnell
“Social support and leisure-time physical activity: longitudinal evidence from the Brazilian Pró-Saúde cohort study.”

11:50 – 13:20  Lunch Break

Physical activity in epidemiologic studies

13:20 – 14:00  Presentation by Lilian Cristina Martins
Comments: Aldair Oliveira
“Job stress, mental health and physical activity among military personnel.”

14:00 – 14:40  Presentation by Karine Boclin
Comments: Bo Burström
“Neighborhood social characteristics are independently associated with leisure-time physical activity in Rio de Janeiro, Brazil: The Pró-Saúde Study.”

Social, ethnic and national inequalities in health

14:40 – 15:20  Presentation by Roger K. Celeste
Comments: Maurício Barreto
“ Tooth loss associated with racial/ethnic disparities: the Pró-Saúde study.”

15:20 – 15:50  Coffee Break
Social, ethnic and national inequalities in health

15:50 – 16:30 Lecture by Kristina Johnell
   “Inequalities in older people’s drug use - findings from Swedish register data.”

16:30 – 17:10 Presentation by Roger K. Celeste
   Comments: Alexander Miething

17:10 – 17:50 Presentation by Jonas Wastesson
   Comments: Guilherme Werneck
   “Inequality in osteoporosis drug treatment – a nationwide register-based study of over 600,000 older women and men.”
December 9

9:00 – 10:00  Lecture by Bo Burstrom
   “How can health services impact on equity in health?”

10:00 – 10:30  Coffee Break

Workplace, work conditions and health effects

10:30 – 11:10  Lecture by Susanna Toivanen
   “Times are changing? – An interview study with social partners in the labor market about futures working life.”

11:10 – 11:50  Presentation by Andréa Tenório
   Comments: Mikael Rostila
   “Burnout and depression in professionals of the Family Health Program in São Paulo.”

11:50 – 13:20  Lunch Break

13:20 – 14:00  Presentation by Luciana Portela
   Comments: Susanna Toivanen
   “The influence of domestic overload on the association between job strain at work and ambulatory blood pressure among female nursing workers.”

Methods and applications of health impact assessment

14:00 – 14:40  Lecture by Kristina Burström
   “Population health and inequalities in health – measurement of health-related quality of life and QALYs. Results from Sweden and China.”

14:40 – 15:20  Presentation by Luciana Castaneda
   Comments: Jonas Wastesson
   “Prevalence of disability in persons with Parkinson’s Disease according to International Classification of Functioning (ICF)”

15:20 – 15:50  Coffee Break
Quality of life

15:50 – 16:30  Presentation by Erika Naegele
   Comments by Kristina Burström
   “Use of concept of quality of life as a measure of the value of occupational medical and dental examinations”

CLOSING

16:30 – 17:10  “Summary of preliminary results concerning the current project and thoughts for writing up a proposal for the 2nd CAPES/STINT call for exchange and international collaboration”
Lecture - A lost paradise? Social and health inequalities in the Nordic welfare states

Johan Fritzell1

1 Centre for Health Equity Studies (CHESS), Stockholm University & Karolinska Institute & Institute for Futures Studies, Stockholm

This lecture will first give a background to some of the foundations of the Nordic welfare states. In contemporary welfare state research and social policy discussions the Nordic countries are often seen as a successful model for achieving equality, raise living standard for all, without compromising economic growth. For many policy makers around the World “the Nordic model” thereby has been seen as an alternative to more neo-liberal ideas of organising societies.

At the same time, the image of the Nordic countries has been somewhat questioned. The lecture will present recent development with a focus on changing inequalities, both with regard to health outcomes, poverty and income inequalities. The lecture will present results from recent European research that has highlighted that health inequalities are continuing to be profound also in the egalitarian Nordic countries. The issue of policy evaluation and health inequality measurements will here be scrutinized. Recent findings that the Nordic countries do not seem to be immune against the general pictures of growing income inequalities in the Western countries will be presented. So are the Nordic countries still a distinct family of their own?
Remote sensing provides an efficient way of assessing environmental variables that might be linked to the occurrence of vector-borne diseases. Images obtained by sensor onboard of satellites that can capture electromagnetic energy reflected by the earth surface started to be available in the beginning of the 1970s. However, initial experiences using such tools in the field of epidemiology of vector-borne diseases appeared only in the late 1980s, most of the applications interested in predicting high-risk areas for transmission of malaria in rural settings. In such areas, medium resolution satellite images might be appropriate, but in urban settings, where the environment is too complex and patchy, such images provide only a rough perspective of land use and land cover features. In Brazil, two of the most important vector-borne diseases, dengue fever and visceral leishmaniasis, predominate in urban areas and are associated with vectors that breed in small habitats. Visceral leishmaniasis, in particular, is transmitted within small focuses. If remote sensing would be of any value to study such diseases, the use of high-resolution images is mandatory. Building upon some examples, we present some challenges and perspectives of using high-resolution images in epidemiologic studies of vector-borne disease in urban settings.

**Key words:** remote sensing, vector-borne diseases, urban health, environment
Asthma in Latin America is a growing public health problem and seems to be most prevalent and cause most morbidity among poor urban populations. According to one of the most influential explanation for explaining asthma and allergies “epidemic” worldwide the “hygiene hypothesis” this high prevalence in LA in unexpected. Because of the enormous social, genetic, and environmental contrasts within and between Latin American countries, and the large differences in prevalence associated with these differences, the investigation of asthma in Latin America provides important research opportunities to identify the social and biological mechanisms that underlie asthma development. A research programme is ongoing in Brazil and Ecuador involving a multidisciplinary team. Most childhood asthma in Latin America is non-atopic for which important risk factors are those of poverty including poor hygiene (i.e. dirt), poor diet and increased obesity, and psychosocial stress. There is evidence that exposures to infections in early childhood reduce atopy but not asthma. Research is needed to identify causes of non-atopic asthma that may be suitable for public health intervention strategies for asthma in Latin America.
Lecture - How can health services impact on equity in health?

Bo Burström

1 – Department of Public Health Sciences, Division of Social Medicine, Karolinska Institute

In most countries there are social gradients in health, to the detriment of lower socioeconomic groups. In Sweden as in many countries, the aim of health services is to provide health care on equal terms, based on need. If health care utilization would be based on need, we would expect higher utilization of health care among lower socioeconomic groups, who have a greater need. However, this is not always the case, as there are socioeconomic and other differentials in how individuals seek care. Increased market orientation of health care services may further exacerbate “the inverse care law” (Tudor Hart, 1971). The lecture will discuss potential mechanisms in the obstacles to equity in access and utilization of health care.
Lecture - Mortality differentials by immigrant group in Sweden: the contribution of socioeconomic status

Mikael Rostila¹, Johan Fritzell¹

1- CHESS Centre for Health Equity Studies

Background: As migrants have been singled out as a social category with troublesome living conditions, the study of migrant’s health and social conditions deserves further attention. We studied mortality differentials between specific groups of foreign-born immigrants in Sweden and whether SES could account for such differences. Data and methods: We conducted a follow-up study based on data from a multiple-linked database of national Swedish total-population registers. We examined mortality risks in the largest immigrant groups in Sweden between 1998 and 2006 using Cox regressions. Deaths from all causes, circulatory disease, cancer, and external causes were examined. Results: We found higher all-cause mortality among most immigrant categories. When studying cause-specific mortality we found largest differentials in deaths from circulatory disease while disparities in cancer mortality were much smaller. SES, and especially occupational class, accounted for most of the differentials by country of birth in mortality from all-causes, external causes and circulatory disease while the contribution of SES for cancer mortality among immigrant’s was relatively small. Conclusion: Although policies that aim to improve immigrant’s socioeconomic conditions might be beneficial for health and longevity our findings indicate that such policies might have varying effects depending on the cause of death.
Lecture - Effectiveness of the physical activity readiness questionnaire in elderly women attended in a university care center

Geraldo A. Maranhão Neto¹,²,³ Antonio Ponce de Leon², Paulo T.V. Farinati³,⁴

¹- Gama Filho University, Rio de Janeiro, Brazil; ²- Institute of Social Medicine, Rio de Janeiro State University, Rio de Janeiro, Brazil; ³- Laboratory of Physical Activity and Health Promotion, Rio de Janeiro State University, Rio de Janeiro, Brazil; ⁴- Salgado de Oliveira University, Niterói, Brazil.

Background and Objective: The physical activity readiness questionnaire (PAR-Q) has been adopted as a simple method of screening for people who intend to engage in exercise programs. The present version was proposed in order to reduce the number of unnecessary exclusions. Despite of the recommendations indicating that the instrument should be applied in the age range from 15 to 69 years, the questionnaire has been widely used in elderly people. The PAR-Q sensitivity (Se) and specificity (Sp) has been reported to be high (100% and 80%, respectively). However, to our knowledge no studies have addressed these characteristics in older adults. The aim of this study was to assess the Se and Sp of PAR-Q in elderly women with respect to absolute and relative contra-indications to exercise. Methods: Eighty nine subjects (61-89 years) admitted to the Elderly Care Center - Open University of the Third Age (UNATI) of the Rio de Janeiro State University (UERJ) participated in the study and went through clinical exams and exercise testing. The influence of educational status, age and cognitive state (Mini-Mental State Examination, MMSE) on the PAR-Q responses was analyzed by logistic regression. Results and Conclusion: The occurrences of absolute and relative contra-indications were respectively 9% and 22%. The Sp and Se were 8.4% and 88.9% (absolute) and 19.7% and 77.8% (relative). The PAR-Q results were not influenced by educational status: 1.04 (IC95% 0.66-1.66); age: 1.01 (IC95% 0.92-1.11), or cognitive state: 1.27 (IC95% 0.41-3.87). The questionnaire still showed a high unnecessary exclusion rate (false positives) in elderly women. On the other hand, there were few false negatives cases, ratifying previously reported Sp values. The low Se suggests that PAR-Q should be used with caution when dealing with elderly groups, which warrants additional studies to confirm the applicability of the instrument in elderly populations.

Key-Words: Questionnaire; Elderly; Physical Activity; Validation
Lecture - Inequalities in older people's drug use — findings from Swedish register data

Kristina Johnell

1- Aging Research Center, Karolinska Institute and Stockholm University

The worldwide aging of the population imposes great demands on the society and health care system, where the increased use of pharmacological drugs is an important challenge.

Drugs are used extensively by older people and any amount of inequality points to a potential inequity and, therefore, an important area for improvement. Yet, inequalities have been less well studied in older people than in younger age groups. In addition, research on inequalities has most often focused on diseases and not on treatments and many studies have been limited by small and selected samples.

We have analyzed record-linked Swedish register data (i.e. The Swedish Prescribed Drug Register, The Patient Register and The Education Register) to investigate age, gender and educational level in relation to drug use in people aged 75-89 years (n>600 000). So far, we have shown that there are age, educational and gender differences in e.g. polypharmacy (i.e. use of many different drugs), use of newly marketed drugs, drugs considered inappropriate for older people and anti-dementia drugs.

Sweden has a health care system with presumably equal access to medical care. Still, we have found inequalities in drug therapy in the elderly population in Sweden.
Lecture - Times are changing? – An interview study with social partners in the labor market about futures working life 2025

Susanna Toivanen

1 -CHESS Centre for health Equity Studies, Stockholm University / Karolinska Institute

Aims: The literature of futures working life and workplaces identifies several so called megatrends as influential for the development of working life. In order to get a more nuanced view of these megatrends and their potential meaning for the working life in Sweden in the future, interviews with the social partners in the labor market were conducted (i.e. labor market parties as follows: (1) representatives for the employer organizations, (2) union leaders and (3) politicians). Methods: An interview guide was prepared based on a previous literature review as well as information from the interview persons’ (IP) organizations. The interview guide focused on six main themes: (1) globalization, (2) the demographic profile of the future labor force, (3) working conditions, (4) employment conditions, (5) work environment, and (6) work related health. Questions focused on the challenges and possibilities that these themes present for futures working life 2025. A strategic sample of potential IPs was identified and contacted by e-mail and invited to participate in an interview. In case of refusal, the IP was asked to recommend another potential IP from the same organization. Eleven interviews of 40 minutes of average length were performed, and they were digitally recorded and transcribed verbatim afterwards. As a first step of the analysis, the transcripts were coded and categorized. Then, a content analysis was performed in order to get a systematic quantitative description of the content of the interviews as presented in tables (not shown here) and to illustrate variation in the data. Focusing on the manifest content of the interviews, some preliminary results regarding globalization are presented below. Preliminary results: The mutual understanding of globalization between the IPs and the interviewer was defined as the rapid increase in cross-border economic, social, technological, and cultural exchange. Initially the IPs discussed some features of globalization that are already present in time such as the competition from low income countries which contributes to the outsourcing of operations from high income countries to low income countries. The free movement of workforce may challenge the occupational safety and health (OSH) levels in Sweden as workers with lower safety awareness could be part of the labor force in the future. Thus, more long-term initiatives and monitoring, and resources are needed in OSH campaigns. Some IPs foresee an increased demand of competent and highly qualified labor force in the future due to that well educated swedes migrate in a higher extent than Sweden manages to attract workers from abroad. Some IPs ponder how to strengthen the attractiveness of Sweden as a labor market of the future. A larger share of the workforce will be multi-cultural in the future in Sweden 2025 which some IPs see as problematic and others as a great possibility and a way of improving the knowledge level and “creativity” of the workforce. In general, the competition in the labor market is foreseen to become harder and Swedish companies are already recruiting staff from abroad. Also, a polarization of the labor market may become more accentuated so that those with high education will be able to choose among employers and the low educated are increasingly facing isolation. This development needs to be met with adjustments in the educational system and labor market policies.
Lecture - Population health and inequalities in health – measurement of health-related quality of life and QALYs Results from Sweden and China

Kristina Burström¹

¹- Karolinska Institutet Dept. of Learning, Informatics, Management and Ethics Medical Management Centre; Health Economics Research Group & Dept. of Public Health Sciences Div. of Social Medicine Equity and Health Policy Research Group

People live longer, but not all years are lived in full health. A health policy which aims to improve both the average level of health and reduce inequalities in health needs a global measure which can be monitored over time. A summary measure of population health ideally should combine quantity (survival) and quality (health status or health-related quality of life) into a single measure. Such a measure, quality-adjusted life year, (QALY), has been developed in the field of health economics. Estimation of QALYs requires data on survival and the corresponding health state score reflecting HRQoL in a scale where 0= dead and 1= full health.

Several instruments are available to measure HRQoL, among them the generic EQ-5D. This instrument has been used world-wide in population studies, in clinical studies and in economic evaluation.

When measuring HRQoL, research questions as who should value health status and which methods to be used are highlighted. Mode of administration is central when collecting population data and is related to different countries but also to which groups to capture.

We will discuss different methodological concerns related to measuring HRQoL and discuss population HRQoL data obtained in health surveys in Sweden and in China, presented by socio-economic status. Calculations of QALYs over time in Sweden will be presented. Reflections on population studies using EQ-5D in some countries in Latin America.
Presentation - Income and health in different welfare contexts: a comparison of Sweden, East and West Germany

Alexander Miething¹

1- CHESS Centre for Health Equity Studies

Background: The aim of the present study is to explore whether the association between income and self-rated health in Sweden is similar to that in Germany. Both countries represent relatively similar economic contexts, but also different welfare traditions. Hence, the study accounts for the distinct context of Sweden, and distinguishes further between East and West Germany with regard to the after-effects of reunification and the transformation from state socialism to a free-market economy in East Germany. Methods: The association between adjusted disposable household income and self-rated health is investigated by exploring cross-sectional survey data for the year 2000. In a sequence of logistic regression models, the risk for poor self-rated health across income quintiles is analysed, controlling for socio-economic variables based on educational status and occupational position and income satisfaction. Sources of data are the Swedish Level-of-Living Survey and the German Socio-Economic Panel. Results: A very similar relationship between income and health was observed for West Germany and Sweden, before as well as after controlling for education and occupational position. The results demonstrated similar magnitudes of income-related poor health, although Germans report poor health more often on the absolute level. For East Germany, no gradient in the relationship was found. Highest risks for poor health were reported among middle income groups. Enhanced models accounted for ‘satisfaction with income’ in order to assess own income in relation to that of others. The analysis revealed that dissatisfaction with income is associated with poor health in all of the three settings, but most highly in East Germany where the association between household income and health is relatively weak. Thus, we conclude that income and income satisfaction operate complementary. Accounting for income satisfaction may provide an approach to investigate the role of social comparison within the relationship of income and health.
Presentation - Association between fine particulate matter and the peak expiratory flow of schoolchildren in the Brazilian subequatorial Amazon: a panel study

Ludmilla da Silva Viana Jacobson¹,²; Sandra de Souza Hacon³; Hermano A. Castro³; Eliane Ignotti⁴; Paulo Artaxo Netto⁵; Antônio Ponce de Leon²

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Background: Exposure to current levels of PM2.5 resulting from biomass burning in the subequatorial Amazon region may be risky to human health.

Objective: To investigate the association between exposure to PM2.5 and the daily peak expiratory flow (PEF) in schoolchildren living in the Brazilian Amazon.

Methods: A panel study consisting of 309 schoolchildren aged 6 to 15 years. PEF was repeatedly measured from August to December 2006. Daily measurements of PM2.5, temperature, humidity, and respiratory symptoms were recorded during the study. For statistical analysis, the average morning or afternoon PM2.5 and the 24-hour average exposures were used. To account for individual features, mixed effects models were applied. The effects were evaluated considering the air pollution levels on the current day or at 1- or 2-day lags and the averages of 0-1-day lags, 1-2-day lags and 0-, 1-, and 2-day lags.

Results: The 24-hour PM2.5 averages ranged from 6.39 to 99.91 µg/m³. The adjusted models for the entire group of children revealed adverse effects. For each increase of 10 µg/m³ in PM2.5, the reduction in the PEF average varied between 0.26 l/min (95% CI: -0.48; -0.04) and 0.39 l/min (95% CI: -0.72; -0.05). For the subgroup of non-asthmatic children, there was a reduction in the PEF average that ranged from 0.38 l/min (95% CI: -0.62; -0.13) to 0.53 l/min (95% CI: -0.9; -0.16). There was no significant effect in the asthmatic group. The effects of air pollution on PEF were significant only for the afternoon shift. For an increase of 10 µg/m³ in PM2.5, there was a reduction in the PEF average that ranged from 0.42 l/min (95% CI: -0.78; -0.07) to 0.50 l/min (95% CI: -0.92; -0.08).

Conclusion: Exposure to current levels of PM2.5 was associated with reductions in the lung function of schoolchildren. Non-asthmatic children and children that studied during the afternoon shift were particularly sensitive.

Key words: Air Pollution; Children; Peak Expiratory Flow; Panel Study; Amazon region.
Presentation - Social support and leisure-time physical activity: longitudinal evidence from the Brazilian Pró-Saúde cohort study

Aldair José de Oliveira¹, Claudia de Souza Lopes¹, Antônio Ponce de Leon¹, Mikael Rostila², Rosane Härter Griep³, Guilherme Loureiro Werneck¹, Eduardo Faerstein¹.

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Background: Although social support has been observed to exert a beneficial influence on leisure-time physical activity (LTPA), multidimensional approaches examining social support and prospective evidence of its importance are scarce. The purpose of this study was to investigate how four dimensions of social support affect LTPA engagement, maintenance, type, and time spent by adults during a two-year follow-up. Methods: This paper reports on a longitudinal study of 3,253 non-faculty public employees at a university in Rio de Janeiro (the Pró-Saúde study). LTPA was evaluated using a dichotomous question with a two-week reference period, and further questions concerning LTPA type (individual or group) and time spent on the activity. Social support was measured by the Medical Outcomes Study Social Support Scale (MOS-SSS). To assess the association between social support and LTPA, two different statistical models were used: binary and multinomial logistic regression models for dichotomous and polytomous outcomes, respectively. Models were adjusted separately for those who began LTPA in the middle of the follow up (engagement group) and for those who had maintained LTPA since the beginning of the follow up (maintenance group). Results: After adjusting for confounders, statistically significant associations (p<0.05) between dimensions of social support and group LTPA were found in the engagement group. Also, the emotional/information dimension was associated with time spent on LTPA (OR=2.01; 95% CI 1.2-3.9). In the maintenance group, material support was associated with group LTPA (OR=1.80; 95% CI; 1.1-3.1) and the positive social interaction dimension was associated with time spent on LTPA (OR=1.65; 95% CI; 1.1-2.7). Conclusions: All dimensions of social support influenced LTPA type or the time spent on the activity. However, our findings suggest that social support is more important in engagement than in maintenance. This finding is important, because it suggests that maintenance of LTPA must be associated with other factors beyond the individual’s level of social support, such as a suitable environment and social/health policies directed towards the practice of LTPA.
Presentation - Job stress, common mental disorders and physical activity among military personnel

Lilian Cristina X Martins¹², Claudia S Lopes¹

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Background: The physical fitness is one of the most important qualities required from the military personnel in the Armed Forces. Physical activity presents several benefits to well being and quality of life that transcend the biological ones. However, a stressful work environment and psychological distress can play a negative effect on the practice of physical activity among military. In despite of it, little is known yet about these determinants. Objective: This study sought to evaluate the role of job stress and common mental disorders (CMD) on the levels of physical activity in Brazilian military personnel of the army. Methods: This was a cross-sectional study, in a census population of a department of the army and its subordinated military units. The final sample was composed of 506 participants. The outcome variable was physical activity and the exposures were job stress (under the effort-reward imbalance model) and CMD. Multiple linear regressions were performed to evaluate the associations. Results: The fully adjusted linear models showed that “high efforts and low rewards” were associated to more physical activity at work (β = 0.243 - 95%CI 0.124; 0.343, p < 0.001) and to less physical activity in sports/exercises in leisure time (β = -0.241; 95%CI -0.418; 0.064, p = 0.008). Common mental disorders were associated to less physical activity in sports/exercises in leisure time (β = -0.153; 95%CI -0.286; -0.021). Conclusions: This was the first study to evaluate the relation of the psychosocial aspects involved in the practice of physical activity in military. Our findings highlight the relevance of environment at work and mental health for the military personnel related to physical activity, which is the pathway to the troop to reach the desirable and necessary physical fitness.
Presentation - Neighborhood social characteristics are independently associated with leisure-time physical activity in Rio de Janeiro, Brazil: The Pró-Saúde Study.

Karine Boclin

1- Institute of Social Medicine, Rio de Janeiro State University, Rio de Janeiro, Brazil;

INTRODUCTION: Regular physical activity is associated with reduced morbidity and mortality. Leisure-time physical activity (LTPA) is related to proximal and distal determinants at individual level, but it can also be influenced by contextual factors, for example, related to characteristics of one’s neighborhood. Although interest in the relationships between contextual determinants and health outcomes is growing, approaches using the neighborhood as the unit of analysis in studies involving LTPA are relatively new in Brazil. OBJECTIVE: To examine the association between neighborhood contextual variables and LTPA.

METHODS: We analyzed data from self-administered questionnaires of 2,733 civil servants at a university in Rio de Janeiro, Brazil, during baseline data collection (1999-2001) of the longitudinal Pró-Saúde Study. Practice of LTPA was defined dichotomously (yes, no) in relation to the previous 2 weeks. Individual covariables investigated were sex, age, income, education, marital status, self-perceived health and body mass index. Contextual neighborhood variables analyzed were Social Development Index (SDI), Theil index, and the proportional area of parks, squares and gardens in the neighborhood (PPSG). Crude and adjusted odds ratios (ORs) and 95% confidence intervals (CI) were estimated using multilevel logistic regression models. RESULTS: The prevalence of LTPA was higher among participants living in neighborhoods with larger SDI (ranging from 32.8% to 55.4% across quintiles) and PPSG (36.5% to 52.0%). The adjusted ORs for individual and contextual variables were 1.5 (95%CI: 1.1-2.0), 1.5 (95%CI: 1.1-2.1) and 1.9 (95%CI: 1.3-2.8) respectively among those living in neighborhoods in the third, fourth and fifth quintiles of SDI compared to those who lived in the first quintile. The odds ratios for PPSG were not statistically significant after adjustment for other contextual variables. CONCLUSION: In this study, LTPA was more common among residents of neighborhoods in Rio de Janeiro with the highest SDI and PPSG, independently of their individual characteristics.

Keywords: Leisure-time physical activity, neighborhood contextual effects, multilevel models.
Presentation - Notification of Preliminary Investigation (NPI) in the Brazilian private health sector: a novel approach based on Empirical Bayes

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Introduction: The aim of the Brazilian National Agency of Supplementary Health (NASH) is to supervise and regulate health carriers. Recently, a procedure entitled “Notification of Preliminary Investigation (NPI)” was implemented. Its aim is to create an agile link between users and health carriers if a denial of coverage is denounced. Objective: Propose an indicator capable to detect bad practices from carriers and to monitor trends on such behavior over time. Methods: The data set consists of all complaints captured by the NPI from November 2010 until March 2011. After recording a complaint three outcomes (dimensions) may happen: (i) it is unfounded; (ii) it is promptly repaired; or (iii) the procedure is denied. From the raw data set, standardized occurrence rates for each outcome, per carrier, were worked out. Following this, a smoothing technique known as empirical Bayes was applied. The result is a ranking of health carriers. Results: A total of 368 carriers were included in the initial study. Each dimension was analyzed separately. Under the first dimension, 6 carriers presented values above the ideal. Under the second dimension 5 carriers were regarded off target in three quarters. Finally, under the third dimension there was no clear pattern. Conclusion: Despite the main feature of the NPI consisting of resolving conflicts between the parts when coverage is denied, health carriers seem to use the second dimension in excess, which is worrying. Nevertheless, the proposed indicator seems to capture this tendency well.

Key-words: private health sector; denial of coverage; health carriers; standardization; empirical Bayes
Presentation - Tooth loss associated with racial/ethnic disparities: the Pró-Saúde study

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Tooth loss is the accumulation of oral health hazards such as lack of access to dental care, inappropriate health behavioural, low socioeconomic status. Studies have also shown more tooth loss among racial/ethnic minorities. Racial discrimination has been associated with racial/ethnic disparities in health, affecting the individual and population health. The study aims to evaluate the association between race-ethnicity and tooth loss and the role of socioeconomic status, health behaviours, health services access and self-reported discrimination. Baseline cross-sectional data were obtained from the Pro-Saude Cohort Study (Rio de Janeiro-Brazil) in 4030 civil servants, and analyzed with ordered logistic regression. The outcome was self-reported tooth loss measured in four ordered categories. The unadjusted model violated proportional odds assumption; therefore we present only the OR for the first cut-off-point (no missing teeth vs any). In this model, browns, and blacks presented increased chances of having more missing teeth if compared to white, respectively for 2.69 (2.20-3.28) and 5.06 (3.88-6.58). In the full model, adjusted for behavioural, socioeconomic, dental care and demographic variables, the OR decreased to 1.31 (1.10-1.55) and 1.46 (1.21-1.77) respectively for browns, blacks. There was no significant association between tooth loss and self-reported discrimination. We conclude that socioeconomic and behavioural factors account for most, though not all, of the ethnic disparities and self-reported discrimination does not seem to play a role.

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OBJECTIVE: To evaluate the association between overweight/obesity and tooth loss in adults. DESIGN: A cross-sectional Study. SUBJECTS: Three thousand and nine hundred and thirty adults (1,744 males and 2,186 females; median age of 40y and range 20-59; 661 obese; 285 ) MEASUREMENTS: A self-administered questionnaires of tooth loss (4 categories), diet, access and utilization of health services, socioeconomic factors, health habits and behaviours, demographic data and anthropometric measurements. RESULTS: Compared with those with BMI< 25 kg/m², overweight people (BMI ≥ 25 and <30 kg/m²) and obesity (BMI ≥ 30 kg/m²) had a greater chance of tooth loss, OR=1.6 (95% CI 1.4-1.9) and OR=2.1 (95% CI 1.8-2.5), respectively. Adjusting for potential confounding factors, overweight and obese participants showed no statistically significant higher odds for tooth loss, respectively, OR=0.8 and OR=0.9. CONCLUSION: The results are consistent with the hypothesis that the association between obesity and tooth loss is the result of common risk factors.
Presentation - Inequality in osteoporosis drug treatment – a nationwide register-based study of over 600,000 older women and men

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Background: Osteoporosis and osteoporotic fractures are major public health problems worldwide. Yet, little attention has been given to possible inequalities in osteoporosis drug treatment in elderly women and men. Methods: By record-linkage of The Swedish Prescribed Drug Register, The Swedish Patient Register and The Swedish Education Register, we obtained information on filling of prescriptions for osteoporosis drugs (i.e. bisphosphonates, calcium/vitamin D combinations and selective estrogen receptor modulators (SERMs)) from July to October 2005, osteoporotic fractures from 1998 to 2004 and educational level for 645,429 people aged 75-89 years. Results: Higher education was associated with use of osteoporosis drugs for both men and women, after adjustment for age, osteoporotic fractures and co-morbidity (i.e. number of other drugs). Among those who had sustained a fracture (n=57,613), the educational differences in osteoporosis drug treatment were more pronounced in women than in men. Further, women were more likely to receive osteoporosis drug treatment after osteoporotic fracture than men. Discussion: Osteoporosis drug therapy seems to be unequally distributed in the elderly population, even in a country with presumably equal access to health care.
Presentation - Burnout and depression in professionals of the family health program in São Paulo

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**Background and Objective:** Burnout and common mental disorders (CMD), especially depression, have been identified as problems associated with high costs to the health of individuals and organizations, and as conditions often found in various professional groups. These problems have increasingly being investigated among health professionals. In 1994, the Brazilian Ministry of Health created the Family Health Program (FHP), to promote the reorganization of primary care and nowadays it is responsible for the care of 103 million people in Brazil. By taking the complex task of longitudinal and comprehensive care of the population, FHP’s professionals are faced with difficulties of their local communities, such as poor socioeconomic conditions. Thus, these professionals may be at risk for burnout and depression, similar to the high prevalence found in community health workers in São Paulo. **Method:** we intend to perform a cross-sectional study to investigate burnout and depression among 3,000 FHP’s workers in São Paulo. Burnout will be evaluated with the Maslach Burnout Inventory, depression with the Patient Health Questionnaire and stress at work with the Job Stress Scale. A multilevel analysis will be used to identify factors associated with depression and burnout at the individual, team, primary care unit and institution management levels. **Results:** the data collection has begun. **Conclusion:** The investigation of these health problems and of the variables related to the management of family health teams, individual characteristics and job conditions, will help to identify the predictors of burnout and depression, and to provide guidance for interventions, with repercussions on the health of these workers and the quality of services rendered to the population.

**Key-words:** Depression, burnout, health personnel, job stress
Presentation - The influence of domestic overload on the association between job strain at work and ambulatory blood pressure among female nursing workers

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Background and objectives: Hypertension is a common health problem and evidences suggest that the workplace plays an important etiologic role. Results concerning female samples are still controversial, and some authors have suggested that domestic/family environment is an important factor in this relationship. The aim of this study is to assess whether the combination of job strain (JS) is associated with 24-hour ambulatory blood pressure (ABP) measurements within a sample of female nursing workers considering the potential role of the domestic overload. Methods: A cross-sectional study was conducted in a group of 175 daytime female workers. Subjects wore an ambulatory BP monitor for 24 hours during a working day. Mean systolic and diastolic blood pressure were calculated. Job strain was evaluated using the Demand-Control Model. Domestic overload was based on the level of responsibility in relation to four basic household tasks (cleaning, ironing, washing and cooking) and the number of beneficiaries. Workers were stratified into those with domestic overload (values in the highest tercile) and those without domestic overload. Statistical analysis involved multivariate general linear models. Results: After adjusting for age and use of anti-hypertensive drugs, high JS was associated with elevated systolic ABP at home and diastolic ABP during whole 24hours, at home and during sleep only among women with domestic overload. No significant association was detected between high JS and blood pressure for the whole group, nor for women without domestic overload. Conclusions: Domestic overload was a relevant factor in the association between JS and the levels of blood pressure at home, at work and during sleep for this particular sample. These results reveal the importance of domestic work, which is rarely considered in studies of female workers.

Keywords: job strain, nursing personnel, domestic work, blood pressure
Presentation - Prevalence of disability in persons with Parkinson's Disease according to International Classification of Functioning (ICF).

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Background and Objective: The prevalence of chronic conditions with no eminence of cure like Parkinson’s disease (PD), requires information about consequences of diseases. This kind of information serves as a tool for improves the formulation of public health policies for this specific population. In this way, the International Classification of Functioning (ICF), as a part of international classifications of the World Health Organization (WHO), provides a common framework for classifying and describing health and disability. WHO recommends that International Classification of Diseases (ICD) and ICF should be used in a complementary way. The objective of this study is checking the prevalence of disabilities in persons with PD, according to the ICF language.

Methods: Cross-sectional study realized in Deolindo Couto Neurology Institute of the Rio de Janeiro Federal University. Data of disability were collected using the ICF Checklist. Each category was transformed into a question with the aim to check the self-perception of the disease.

Results and Conclusion: The sample was comprised of 16 persons with PD. Seventy-two percent of the patients were male. Mean age was 66(±10, 3) years and disease duration was 7,6(±6) years. The task of Walk was reported as a limitation by 91% of the patients, following by Realization of Housework (73%) and by Solving Problems (73%); restriction in Recreation and Leisure was checked in 73% of the sample. The ICF is considered and adequate health reference system in the approach of impairment and disability in chronic diseases. The use of the ICF as an epidemiology framework can improve the public health information system.

Key words: Parkinson Disease, International Classification of Functioning, Health System
Presentation - Offer of services health plans of lower price: an analysis of network of accredited companies in the municipality of Rio de Janeiro.

Jurema Salles Fonseca


Background: This work focuses on the emergence of private health plans market segmentation in Brazil: the marketing of products with prices below the current average in the last decades of the last century and the beginning of the current. Products that provide access to and use of services by offering a reduced nominal relationship between professionals and merchants, or themselves. Objective: The objective is to relate the coverage of health plans with the lowest price needs to access and use of services, considering the burden of disease studies; detailing the relationship between price and the extension of the plan and offer specialty services health; and to verify the compatibility of networks of accredited health plans with health needs parameterized by the burden of disease observed in Brazil.

Methods: For this reason was developed a descriptive study of companies that sell products at prices below the average in the municipality of Rio de Janeiro, in 2008. We used the documents submitted by contractors, the database of the National Health Insurance, the data from the study of the global burden of disease in the state of Rio de Janeiro, and data from the National Registry of Health.

Results: It was observed that this new market niche has predominately small businesses. Consequently, inadequate scale to manage risks of greater magnitude including those appointed by the burden of disease studies, aimed to signal the prospects for organization of cost-effective systems.

Conclusions: The evidence produced here suggests that the quality and extent of coverage of care are directly proportional to the price of health insurance. Moreover, the procedures and service offerings, especially when the burden of disease observed, are not organized according to the current health needs of the population. However, the most compromised issues in the Brazilian Health system are the conditions of access, use and provision of health services, which also leads to a disruption of the inflows in services of the Unified Health System.

Keywords: Prepaid Health Plans Supplemental Health, Health System - Brazil, Quality-Adjusted Life Years.
Presentation - Use of concept of quality of life as a measure of the value of occupational medical and dental examinations

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1- Petrobras

Background and Objective: According to Brazilian law and to Petrobras internal company rules, annually each employee is offered occupational medical and dental examinations. Besides the Certificate of Suitability for Work and the early identification of health problems, the concept of quality of life was used as a way to measure the patient perception of the impact of annual examinations. The aim was to develop a method to evaluate the value of occupational medical and dental examinations, through the patient’s perception. Methods: Professional and patients focus groups were conducted in order to define the attributes to be included in the evaluation. A questionnaire was designed, pre-tested and adjusted, comprising two axis: value attributed and satisfaction. Six hundred and twenty patients were interviewed by one trained technician. The results were plotted in graphics and satisfaction rates calculated. Results: In 2010, the favorability of the satisfaction rate was of 76%. Most attributes were considered of high importance and achieved high satisfaction. Personnel performance must be enhanced in order to address adequately social, emotional, professional, intellectual and spiritual dimensions of quality of life. Conclusion: Understanding patient’s expectations and perceptions is essential to improve healthcare quality. This method provides an indicator that can be compared over the years and information on key issues that must be addressed in order to maximize the value added to the service.

Key words: quality, health services, indicator