help from informal caregivers who are often unprepared for the demands of providing care. Evidence has shown that combining enhanced informal caregivers' practical skills, face-to-face interventions and telephone support can reduce negative consequences for caregivers, such as burden or depression. Objective: To evaluate the impact of an intervention to reduce burden by using telephone support delivered to informal caregivers, who take care of older people after a stroke, at home.

#### Methods

A quasi-experimental method, which included 3 months of followup, was conducted with 174 patients. The Control group (n = 89) received usual care available provided by healthcare units and the InCARE programme was implemented in the experimental group (n = 85), 1 week, 1 and 3 months, telephone support, counselling caregivers on the 3rd, 6th, 8th and 10th weeks at home. It aimed to facilitate the caregiver's adjustment to stroke demands, increasing knowledge and practical skills to support their decision-making. Data collection took place between February 2014 and December 2014. Results

The experimental group had a significant lower level of burden in comparison with the control group 1 and 3 months after InCARE intervention.

### Conclusions

Telephone support does not replace face-to-face interventions implemented based on structured programs, however, they are an aid for diagnosis and an important complement to all types of interventions that promote health gains of this group of informal caregivers and stroke survivors.

Trial registration

Current Controlled Trials NCT02074501

### Keywords

Stroke survivors, elderly, informal caregivers, burden, pilot study

# Hope of informal caregivers of people with chronic and advanced

Rita Margues<sup>1</sup>, Ma Anjos Dixe<sup>2</sup>, Ana Querido<sup>2</sup>, Patrícia Sousa<sup>3</sup> <sup>1</sup>Hospital de Santa Maria, Centro Hospitalar Lisboa Norte, 1649-035 Lisboa, Portugal; <sup>2</sup>Health Research Unit & School of Health Sciences, Polytechnic institute of Leiria, 2411-901 Leiria, Portugal; <sup>3</sup>Universidade Católica Portuguesa, Lisboa, 1649-023, Portugal

Correspondence: Rita Marques (ritamdmarques@gmail.com) – Hospital de Santa Maria, Centro Hospitalar Lisboa Norte, 1649-035 Lisboa,

BMC Health Services Research 2016, 16(Suppl 3):P93

## Background

Hope is a crucial factor in the lives of those who care for people with chronic and advanced disease. Therefore, the main objective of this study was to identify the predictors of hope of informal caregivers of people with chronic and advanced disease.

### Methods

This is a correlational study conducted with 314 caregivers of people with advanced and chronic disease who were admitted in medical services or on an outpatient regime in Portuguese hospitals. We conducted a structured interview to collect demographic data, caring experience and health of patient and caregiver, hope (Hope Herth Index, HHI-C) comfort (Holistic Comfort Questionnaire, HCQ-C) and quality of life (Quality of Life in Life Threatening Illness, QOLLTI-C). Throughout the study, Helsinki Declaration Principles were followed.

The 314 caregivers, mostly female (84.1 %) with an average of 63 years old ( $\pm 11$ ) had good levels of hope (3.06  $\pm$  0.49), comfort  $(4.23 \pm 0.83)$  and quality of life  $(6.15 \pm 1.12)$ . The caregivers interviewed took care of patients mainly with neoplasms (85.0 %) and severe dependence, for about 17.2 months (±16.25) and they spent about 6.2 (±3.79) hours a day taking care of them. They considered their health as poor (7.83  $\pm$  1.8) and felt quite tired (7.75  $\pm$  1.79). After performing a multiple linear regression, we verified that the explanatory variables of caregivers' hope were: comfort, quality of life, time spent on caring, health status, fatigue and self-perception of their own health

#### Conclusion

Nursing interventions should be focused on caregivers' comfort, quality of life and health status in order to maintain their hope while caring for their relatives.

### Keywords

Hope, informal caregivers, person with advanced and chronic disease, influencing variables

### Functionality and quality information from the Portuguese National Epidemiological Surveillance System

Sara Silva, Eugénio Cordeiro, João Pimentel

Unidade de Saúde Pública, Centro Hospitalar do Baixo Vouga, Aveiro, 3814-501, Portugal

Correspondence: Sara Silva (sararebelo.silva@gmail.com) – Unidade de Saúde Pública, Centro Hospitalar do Baixo Vouga, Aveiro, 3814-501,

BMC Health Services Research 2016, 16(Suppl 3):P94

In Portugal, the National System of Communicable Diseases Surveillance is a health information system for the monitoring of a number of communicable diseases and other risks to public health. The existence of a list of communicable diseases, now updated, dates back to 1949. With the introduction of a new communicable diseases information system in June 2014, it would be appropriate to evaluate its functionality and quality. Objective: The aim of this study was identify the quality of the information recorded into the National System of Communicable Diseases Surveillance.

The evaluation of filling data was made based on attributes adapted from the rules used for evaluating surveillance systems in Public Health of the Centres for Disease Control and Prevention.

Based on the attributes "Simplicity/Acceptability" and "Completeness" it was found that full information was filled in 77.4 % of the cases; in relation to the "Data Quality" it was found that in 65.0 % of the cases the information was properly filled. In 90.5 % of the cases was observed "Information Consistency" and in 51.8 % of the cases "Information Conformity". As to "Transmission Timely" information, it has been found that, depending on the user input, it should be faster.

## Conclusions

It can be concluded that it is an innovative system with great potential for improving and very useful for the rapid transmission of information, communication between the different levels and quality validation and upcoming reviews and system upgrades are expected. Keywords

Attributes, communicable diseases, health information system

### Resting metabolic rate objectively measured vs. Harris and Benedict formula

Vera Ferro-Lebres, Juliana A. Souza, Mariline Tavares Escola Superior de Saúde, Instituto Politécnico de Bragança, Bragança,

Correspondence: Vera Ferro-Lebres (vferrolebres@gmail.com) – Escola Superior de Saúde, Instituto Politécnico de Bragança, Bragança, 5300-253, Portugal

BMC Health Services Research 2016, 16(Suppl 3):P95

### Background

Resting Metabolic Rate (RMR) is the energy spent in activities necessary to maintain normal homeostasis and body functions. In the XX century, Harris and Benedict conducted a study using calorimetry to the measurement of basal metabolic rate. This study analysed physical variables (age, weight, height) and physiological data expressing the results in two formulas, one for males and another for females. Studies indicate that the data obtained in the equations are the same as those obtained by indirect calorimetry, however other studies question these results. Objective: Study the correlation between the RMR using indirect calorimetry and Harris-Benedict formula in a group of workers of granite industry.

### Methods

A quantitative cross-sectional study was developed. Data collection was performed using a sample of 30 men from two companies of granite industry. Data collection was done using anthropometric measurements and the RMR assessed using the Fitmate, Cosmed®. Statistical analysis of the data was performed using the statistical software Statistical Package for Social Sciences version 22.

### Results

The sample comprised 30 men, with a mean age of 39.8 (SD = 13.9) years. The RMR measured was in average of 1,741.0 (SD = 281.7) Kcal, and the Harris and Benedict Formula resulted in an average of 1,785.0 (SD = 229.2) Kcal. RMRs objectively measured and calculated varied on average 4.1 (SD = 14.6) % and were significantly correlated (=0.539; p-value = 0.01).

### Conclusions

The Harris-Benedict formula overestimates the RMR value at around 4.1 %, as previously mentioned.

### **Keywords**

Resting metabolic rate, Fitmate, Harris and Benedict formula

## Sustainable integrated user-centred care

#### 018

# Characteristics of non-urgent patients: Cross-sectional study of an emergency department

Mª Anjos Dixe<sup>1</sup>, Pedro Sousa<sup>1</sup>, Rui Passadouro<sup>2</sup>, Teresa Peralta<sup>2</sup>, Carlos Ferreira<sup>2</sup>, Georgina Lourenço<sup>2</sup> <sup>1</sup>School of Health Sciences, Polytechnic institute of Leiria, 2411-901

<sup>1</sup>School of Health Sciences, Polytechnic institute of Leiria, 2411-901 Leiria, Portugal; <sup>2</sup>Hospital de Santo André, Centro Hospitalar de Leiria, 2410-197 Leiria, Portugal

**Correspondence:** Pedro Sousa (pedro.sousa@ipleiria.pt) – School of Health Sciences, Polytechnic institute of Leiria, 2411-901 Leiria, Portugal *BMC Health Services Research* 2016, **16(Suppl 3):**0182

### Background

The use of Emergency Departments (ED) by non-urgent patients has shown a significant increase, creating major challenges for the health system, as well as political and financial constraints. Objectives: a) to characterize the profile of non-urgent ED users; b) to identify the determinants of non-urgent ED use.

### Methods

This cross-sectional study included 357 non-urgent users of a Portuguese ED. Data collection was conducted through questionnaire and electronic medical records. Results were analysed using descriptive statistics and parametric tests. This study has been approved by the ethics committee of the hospital.

### Results

Data analysis showed that non-urgent users are mostly female, retired, with lower education levels and with an average age of 54.51 years. Most users visited the ED by their own initiative, and only 18.3 % sought previously the primary healthcare. Most of them had access to a family doctor and the clinical motivations for the ED visit lasted for 18.8 days. Patients who considered the ED as the most appropriate service to treat their situation, had a higher number of previous ED admissions (p < 0.05). Abusive ED use seems to be associated with a high consumption pattern of global healthcare. Several reasons for the non-urgent ED use were identified.

### Conclusions

A public discussion involving clinical, political and community stakeholders is imperative. Non-urgent users' characteristics should be taken into account when designing a program against the misuse of ED, namely regarding the timely identification of hyperusers and the adequacy of the healthcare accessibility.

## Keywords

Non-urgent patients, Emergency Department, Healthcare

#### O183

## Physical fitness and health in children of the 1st Cycle of Education

João Serrano, João Petrica, Rui Paulo, Samuel Honório, Pedro Mendes Escola Superior de Educação, Instituto Politécnico de Castelo Branco, 6000-767 Castelo Branco, Portugal

**Correspondence:** João Serrano (j.serrano@ipcb.pt) – Escola Superior de Educação, Instituto Politécnico de Castelo Branco, 6000-767 Castelo Branco, Portugal

BMC Health Services Research 2016, 16(Suppl 3):0183

### Background

The interest of researchers on the assessment of physical fitness of children is crucial in a society where the activity/motion constraints are higher and may affect their health. Objectives: I) to study the impact of an oriented programme of physical activity through "Curricular Enrichment Activities" on the physical fitness of children and II) to observe if the results are within healthy regular parameters.

### Methods

We used as measuring instrument the battery of tests of Fitness-gram®, with methodological procedures according to The Cooper Institute's Application Manual for Aerobics Research [1]. The sample consisted of seventy children attending the 1st Cycle of Education, aged between 6 and 9 years old, with data collected in 2 separate moments with a time interval of three months. Statistical procedures used in the comparison of variables were performed through the chi-square and McNemar tests.

## Results

In both moments of evaluation most children obtained test results that may be considered appropriate, in terms of healthy and good organic functions. The test results evidenced a statistically significant improvement between the two moments of evaluation.

### Conclusions

Children improved their physical fitness levels from the 1st to the 2nd moment of evaluation. Thus, this leads us to conclude that the intervention developed during the programme of "Curricular Enrichment Activities" brought benefits and a positive impact on their health levels.

### References

 The Cooper Institute for Aerobics Research. Fitnessgram. Manual de aplicação de testes. Lisboa: Faculdade de Motricidade Humana Ed. 2002.

## Keywords

Physical Fitness, motricity child, physical activity and health, studies of the child

### 0184

## The impact of physical activity on sleep quality, in children

Alexandra Simões, Lucinda Carvalho, Alexandre Pereira Escola Superior de Saúde Dr. Lopes Dias, Instituto Politécnico de Castelo Branco, 6000-767 Castelo Branco, Portugal

Correspondence: Alexandra Simões (alexandraalsimoes@hotmail.com) – Escola Superior de Saúde Dr. Lopes Dias, Instituto Politécnico de Castelo Branco, 6000-767 Castelo Branco, Portugal BMC Health Services Research 2016, 16(Suppl 3):0184

### Background

Several factors contribute, positively or negatively, for the quality of sleep. One of the positive factors is regular physical activity. Physical activity should be perceived as having multiple benefits and not be reduced to the evident and proved results for the body and heart. Objective: To estimate the impact of physical activity in the quality of sleep in school-age children from 7 to 9 years old.

### Methods

The sample was collected in the several existing learning centres of the city of Almeirim, consisting of 128 individuals (55.5 % feminine and 44.5 % masculine) in 2014. The data collection for the study consisted in the use of two questionnaires: Children Sleep Habits Questionnaire and Sleep Self Report.