

ID: 680455

## **Estimating Mental Health Production Functions: What does explain the mental health status of the Portuguese population?**

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### **Objetivos (Objectives):**

According to the World Health Organization, the spread of mental illnesses is increasing: from being currently 12% of the total burden of disease, projections for 2020 reach 15%. The most important example is depressive disorders, the fourth leading cause of disease and disability, which are expected to rank second by 2020. Interventions both to promote good mental health and to tackle the consequences of poor mental health demand for information on the determinants of mental health disorders and behaviours. Nevertheless, few studies have attempted to analyse and quantify the determinants of mental health state among populations. In particular, for Portugal, little is known about the determinants of mental health state in the Portuguese population, and there is few epidemiologic related data. This study aimed at studying the determinants of mental health state in the Portuguese population.

### **Metodologia (Methodology):**

We first developed an explanatory model for mental health, so as to structure how different determinants might contribute for explaining the mental health state of an individual. Among others, these determinants include factors related with access to mental health services, personal characteristics of the individual, daily habits, stressful events, chronic disorders, and functioning and structure of public supporting services. We have used data from the 4th Portuguese National Health Survey (2005/2006) to test hypothesis defined in the mental health explanatory model, whereas diagnosed depression was taken as the proxy variable for mental health state. Using data of the survey, several studies were carried out: descriptive studies on the prevalence and incidence of depression; multivariate logistic regressions to explain the determinants of prevalent and incident individuals; and a Bayesian network tool is proposed to support general practitioners in the detection of depression in an individual (using information from the Survey).

### **Resultados (Results):**

We found out that the following population groups have higher prevalence rates of diagnosed depression: females, divorced, retired, unemployed, middle-aged, low education, with chronic anxiety or obesity, live alone or with one person, living in the

Centre region and having high income. The following explanatory factors have a positive statistically significant impact on the probability of a prevalent individual with depression: females, unemployed, retired, divorced, middle-aged, having hypertension, chronic pain, anxiety, obesity and bronchitis, and presenteeism. As opposite, the following explanatory factors were found to have a negative impact: family size and hours of work per week. For incidence, we found out that: incidence is affecting a much younger population in comparison to the prevalent population; and the determinants of incidence and prevalence quite differ. We also found out that there is a high scope for underestimation of diagnosed prevalence, given that the prevalent rate of depression (6-7%) is low when compared with data reported in other sources; and a high proportion of the population not being identified with depression has depressive symptoms and consumes sleeping pills and anxiolytic drugs. We have illustrated how a Bayesian network can be easily used by general practitioners and health care planners for diagnosing depression and planning services.

#### **Conclusões (Conclusions):**

Evidence points for an underestimation of prevalent and incident rates in the Portuguese population, which might be due to stigma of individuals seeking mental health related services, or because of lack of access of individuals to those services. It seems that special attention should be given to the incident population being at risk; and there is a need for developing additional studies so as to produce more detailed information for decision-makers in the area.