Antidepressants and benzodiazepines consumption in university workers

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ABSTRACT

Objectives: To estimate the prevalence in consumption of antidepressants and benzodiazepines among workers from a Portuguese university.

Methods: A cross-sectional observational study was conducted with university workers who underwent an occupational health consultation between 2013 and 2014. Data was collected by the occupational physician and entered into an anonymous database. The following characteristics were evaluated: age, gender, marital status, professional category, organizational unit, academic qualifications and pharmacotherapy. Data was analysed using the Statistical Package for the Social Sciences® (SPSS®) version 23.0 for Microsoft Windows®. The discrete variables were compared with the Chi-square test and in the multivariate analysis a logistic regression model was used to calculate Odds Ratios and 95% confidence intervals. The accepted level of significance was p <0.05.

Results: The sample was composed of 1853 workers, in which 6.3% only took benzodiazepines, 4.6% only took antidepressants, 3.8% took drugs simultaneously from both groups and 14.7% were found to consume at least one of them. The most used antidepressants are fluoxetine, escitalopram and sertraline and the most used anxiolytics are alprazolam, ethyl loflazepate and diazepam. Higher consumption of these drugs was more prevalent among females, those in lower status job categories and older workers.

Discussion/Conclusion: The consumption of antidepressants and anxiolytics is lower than that determined for the Portuguese population in 2013, seeming to support the idea that higher levels of education are a protective factor against anxiety and depression. University workers seem to be more protected against depressive disorders and anxiety. Identifying the most vulnerable groups serves as a starting point for the analysis of how labor related stress contributes to this reality and what factors can be modified.

Key words: Depression, University workers, Antidepressants, Benzodiazepines, Anxiolytics, Sedatives, Hypnotics.
INTRODUCTION

Work and the mental health of workers are two inseparable and mutually influential realities. For individuals of working age, fair and recognized employment is a fundamental right that allows social integration and economic support. Personal satisfaction with work influences the worker's health, productivity, and, ultimately, economic development. However, it is undeniable that work can be a source of stress, with consequences on the physical and mental health of individuals (Luca, 2014) (World Health Organization, 2013).

According to the ESENER study (European Agency for Safety and Health at Work (OSHA), 2010), promoted by OSHA on new and emerging risks in European companies, work-related stress is one of the three main risks identified together with accidents and musculoskeletal injuries. In the field of mental health, violence is also reported as one of the main concerns in a relatively large number of companies, particularly intimidation and harassment.

Depression is a mental illness characterized by a depressed mood, loss of interest or pleasure in daily life activities, decreased energy or fatigue, change in appetite, feelings of guilt and helplessness, pessimism, and non-adaptive emotional responses to the events of everyday life. It results from a complex interaction between social, psychological and biological factors that for some reason become stressful without the individual being able to solve them and therefore cause psychic and physical dysfunction (World Health Organization, 2012) (Sheehan, 2004). This is the mental illness that most frequently follows the increase of stress.

The importance of highlighting depression as a disease caused by work related stress relies in the fact that this negatively affects not only one's quality of life but also other societal and economical components, with decreasing productivity, increased absenteeism, and presentism (Evans-Lacko & Knapp, 2014) (Roelen, 2014).

It is estimated that globally, in 2014, depression has affected about 400 million people of all ages (World Health Organization, 2014).

In Europe the prevalence of depression calculated for one year is about 6%, and throughout life about 14% of individuals will develop at least one episode of depression (Alonso, 2004) (World Health Organization, 2013). In 2013 the National Epidemiological Study of Mental Health determined that 19.3% of the Portuguese population suffers from at least one episode of depression during their lifetime and that the annual prevalence was 7.9% (Directorate-General for Health, 2014).

This high prevalence of mental illness in Portugal, compared to other European countries, got worse since the economic crisis that hit the country and Europe in 2008. In the northern region of the country the prevalence of depression increased about 30%, accounting for an increase of 7.6% in the use of antidepressants (Sakellarides, 2014). Anxiety is the most common comorbidity in individuals suffering from depression and is estimated to reach about 50% of these, usually associated with more severe clinical conditions (Richards, 2011). In Portugal, the prevalence of anxiety disorders in 2013 was 16.5% (Directorate-General for Health, 2014).

In Europe, in 2004, the cost of depression was around 118 billion euros, corresponding to around 253 euros per person. The direct costs totalled 42 billion euros, including outpatient treatment, the cost of medication and hospital treatment. The indirect costs, due to morbidity and mortality, were estimated at 76 billion euros. Thus, depression is the most expensive brain disorder in Europe, accounting for 1% of the total European economy (Sobocki, 2016).
Associated with the increase of depressive disorders and anxiety, antidepressants are one of the therapeutic groups with greatest weight in the consumption of the National Health Service (NNS) in an outpatient setting and with a global tendency for growth (Directorate-General for Health, 2014) (Directorate-General for Health, 2015).

This therapy is associated with several side effects, namely psychomotor retardation, a decrease in concentration and memory, with consequent impact on performance and productivity (Furtado & Teixeira, 2005).

Since occupational health is an obligatory activity for all employers, whether from the public or private sector, health professionals who take part in this type of services are in a privileged position to create and implementable health promotion programs. Data about depression and the use of antidepressants in the active population are scarce for university workers, making it pertinent to study the state of mental health in this population (L., 2002).

At the same time, it is known that one of the sectors where psychosocial risks are most frequent is the education sector, alongside health and social action (European Agency for Safety and Health at Work (OSHA), 2010).

The study focused on university workers, as the university is a workplace but also an educational center, with institutional importance in the investigation and for the development of society, as it represents the formation of the future “workforce” (European Agency for Safety and Health at Work).

**AIM**

To determine the Estimate the prevalence in consumption of antidepressants and anxiolytics, sedatives and hypnotics among workers from a Portuguese university, as well as the main determinants.

**METHODS**

A cross-sectional observational study was performed. The sample was made up of university workers who attended an occupational health consultation between 2013 and 2014. The data was collected by the occupational physician, by consulting the clinical file, and entered into an anonymous database. For the individuals with multiple visits during this period, the most recent one was selected for the collection of specific information such as age, gender, marital status, professional category, organizational unit and literacy and the type of pharmacotherapy.

Pharmacotherapy was divided according to the groups and subgroups of the Pharmacotherapeutic Classification (CFT) into antidepressants and anxiolytics, sedatives and hypnotics.

The data obtained was analysed using Statistical Package for Social Sciences® (SPSS®) software version 23.0 for Microsoft Windows®. The discrete variables were compared with the Chi-square test and in the multivariate analysis a logistic regression model was used to calculate the Odds Ratios and the respective confidence intervals at 95%. The accepted level of significance was p <0.05.

The study was submitted to the Ethics Committee of the S. João Hospital/ University of Porto Medical School, which approved it - Annex I. There is no conflict of interest.
RESULTS

The sample is composed of 1853 workers, in which 57.6% are female. Most are married or in a civil union (64.8%), are Teachers, Researchers or Readers (44%) and have a high educational level - Table 1.

Table 1 - Characteristics of the sample (n = 1853) and universe (n = 3149)

|                           | University | Sample |
|---------------------------|------------|--------|
|                           | n          | %      | n     | %      |
| **Gender**                |            |        |       |        |
| Female                    | 1608       | 51.1   | 1067  | 57.6   |
| Male                      | 1541       | 48.9   | 786   | 42.4   |
| **Age**                   |            |        |       |        |
| ≤ 35 years                | 580        | 18.9   | 404   | 21.8   |
| 36 to 45 years            | 966        | 31.4   | 625   | 33.8   |
| 46 to 55 years            | 883        | 28.7   | 498   | 26.9   |
| > 55 years                | 643        | 20.9   | 323   | 17.5   |
| **Professional category** |            |        |       |        |
| Operational assistant     | 318        | 10.1   | 233   | 12.6   |
| Technical Assistant       | 416        | 13.2   | 313   | 16.9   |
| Teacher / Researcher / Reader | 1774    | 56.4   | 815   | 44.0   |
| Computer technician/ Specialist technician | 68  | 2.2   | 51   | 2.8   |
| Senior technician          | 480        | 15.3   | 376   | 20.3   |
| Director                  | 72         | 2.3    | 64    | 3.5    |
| **Qualifications**        |            |        |       |        |
| < or = 3rd cycle          | 306        | 11.0   | 240   | 13.1   |
| Secondary                 | 290        | 10.5   | 221   | 12.0   |
| Bachelor's degree / Master's degree | 981 | 35.4 | 750 | 40.8 |
| PhD                       | 1196       | 43.1   | 625   | 34.0   |
| **Marital status**        |            |        |       |        |
| Married/civil union       | 1711       | 66.3   | 1186  | 64.8   |
| Other                     | 871        | 33.7   | 645   | 35.2   |

Compared to the universe, the sample corresponds to 58.8% of the individuals. 14.7% of the workers consumed at least one of the pharmacological groups included in this study. When analysed separately, it was found that anxiolytics, sedatives and hypnotics (6.3%) were consumed more than antidepressants (4.6%) - Table 2.

Table 2 - Drug consumption

|                                            | N   | %  |
|--------------------------------------------|-----|----|
| Takes antidepressants or benzodiazepines   | 272 | 14.7|
| Takes antidepressant and benzodiazepines   | 71  | 3.8 |
The most used antidepressants are fluoxetine (22.7%), escitalopram (21.0%) and sertraline (14.2%) and the most commonly used anxiolytics are alprazolam (26.9%), ethyl loflazepate (13.7%) and diazepam (11.3%).

Chart 1 - Most prescribed drugs

| Drug                | N  | %  |
|---------------------|----|----|
| alprazolam          | 60 | 26.9|
| ethyl loflazepate   | 40 | 17.4|
| diazepam            | 30 | 14.3|
| bromazepam          | 50 | 11.3|
| cloxazolam          | 20 | 9.1 |
| fluoxetine          | 50 | 11.3|
| escitalopram        | 40 | 18.2|
| sertraline          | 30 | 14.3|
| trazodone           | 30 | 14.3|
| paroxetine          | 20 | 9.1 |

The risk of consumption of one of these psychoactive drugs was greater among females (OR 1.995% CI 1.4-2.57), workers of ages between 46-55 (OR = 6.01; 95% CI 3.66-9.88) and operational assistants (OR = 2.29; 95% CI 1.55-3.37) - Table 3.
Table 3 - Antidepressant and/or anxiolytic, sedative, hypnotic (n = 272) (Logistic regression model adjusted for gender, age and professional category)

|                      | OR (CI 95%)         | p       |
|----------------------|---------------------|---------|
| **Gender**           |                     |         |
| Male                 | 1.00                |         |
| Female               | 1.90 (1.40 - 2.57)  | < 0.001 |
| **Age**              |                     |         |
| ≤ 35 Y               | 1.00                |         |
| 36 to 45 Y           | 2.72 (1.65 - 4.49)  | < 0.001 |
| 46 to 55 Y           | 6.01 (3.66 - 9.88)  | < 0.001 |
| > 55 Y               | 4.98 (2.91 - 8.52)  | < 0.001 |
| **Job category**     |                     |         |
| Teacher/ Researcher/ Reader | 1.00             |         |
| Computer technician/ Specialist technician | 1.00 (0.38 - 2.64) | 0.995 |
| Director             | 1.01 (0.48 - 2.15)  | 0.976   |
| Technical Assistant  | 1.72 (1.15 - 2.55)  | 0.008   |
| Senior technician    | 1.93 (1.31 - 2.84)  | 0.001   |
| Operational assistant| 2.29 (1.55 - 3.37)  | < 0.001 |

Drug consumption tends to increase with up until the age of 55 – Chart 2.

Chart 2 - Consumption of antidepressant and/or benzodiazepines and age group (%)
In the separate analysis of the pharmacological groups, there was an association of the isolated consumption of anxiolytics, sedatives and hypnotics with certain ages, professional categories and educational qualifications, while females stood out in the group who just took antidepressants - Table 4.

Table 4 - Taking medication of only one type (Logistic regression model adjusted for gender, age and professional category)

| Only anxiolytic. sedative. hypnotic taken (n = 116) | Only antidepressants taken (n = 85) |
|--------------------------------------------------|-----------------------------------|
| OR (IC 95%) | p | OR (IC 95%) | p |
| Gender | | | | |
| Male | 1.00 | | 1.00 | |
| Female | 1.02 | 0.935 | 3.70 | <0.001 |
| Age | | | | |
| ≤ 35 y | 1.00 | | 1.00 | |
| 36 to 45 y | 2.52 | 0.035 | 1.56 | 0.210 |
| | (1.07 – 5.93) | | (0.78 – 3.15) | |
| 46 to 55 y | 7.67 | <0.001 | 2.20 | 0.028 |
| | (3.35 – 17.53) | | (1.09 – 4.42) | |
| > 55 y | 8.81 | <0.001 | 1.62 | 0.248 |
| | (3.74 – 20.76) | | (0.72 – 3.64) | |
| Job category | | | | |
| Teacher/ Researcher/ Reader | 1.00 | 0.427 | 1.00 | |
| Computer technician/ Specialist technician | 1.65 | 0.313 | 0.93 | 0.928 |
| | (0.48 – 5.66) | | (0.21 – 4.07) | |
| Director | 1.60 | 0.178 | 0.57 | 0.448 |
| | (0.64 – 4.01) | | (0.13 – 2.46) | |
| Technical Assistant | 1.53 | <0.001 | 1.00 | 0.995 |
| Senior technician | 2.80 | 0.016 | 0.69 | 0.281 |
| | (1.61 – 4.87) | | (0.35 – 1.35) | |
| Operational assistant | 2.00 | 0.935 | 1.22 | 0.540 |
| | (1.14 – 3.50) | | (0.65 – 2.28) | |

DISCUSSION

Of the total medication prescribed to these workers, 16.7% belonged to the studied groups, reinforcing the impact of pathologies such as depression and anxiety in the working population.

The consumption of antidepressants in the sample (8.4%) is lower than what was determined for the Portuguese population in 2013 (9.2%) (Directorate-General for Health, 2014). The same happens with the consumption of anxiolytics, sedatives and hypnotics, which was 10.1% in the sample compared to the 18.1% in the Portuguese population. This may be justified by the fact that the prevalence of mental and other diseases is lower in the employed population.

The most widely consumed antidepressants correspond to the 3 most consumed in the Portuguese population (although in reverse order), and the same was verified in relation to anxiolytics. The
benzodiazepines used, both medium and long action, are drugs with a high potential for dependence and tolerance, as well as important impacts on work capacity.

Women had a higher consumption of medication, which corresponds to the higher prevalence of stress and depression associated with females (American Psychiatry Association, 2014).

Antidepressant drugs consumption increases with age up to 55 years, decreasing slightly after this age, while in the Portuguese population the consumption continues to increase up to the age group of 65-69. Benzodiazepine drugs consumption also increases with age.

Although the National Epidemiological Study of Mental Health found an association between lower educational levels and lower risk of disruption, other studies note an opposite association in which higher levels of education are a protective factor against anxiety and depression (Nilsen, 2012) (Bjelland, 2008) (Madsen, 2010). This type of association may justify the lower intakes present in the sample, since 74.8% have a higher than secondary educational level (> 12 years of schooling), as well as the association between lower status job categories in the population studied and the consumption of these psychoactive drugs. There may be an association between less differentiated workers and greater exposure to socio-economic stressors, especially in a context of economic crisis.

CONCLUSION

University workers appear to be more protected against depressive disorders and anxiety, both according to the personal characteristics of these workers (such as higher than average academic qualifications) and to their organizational situations (fewer psychosocial risks at work such as greater stability and safety, no shifts and night time work, greater autonomy, among others).

It will be pertinent to outline strategies that allow the evaluation of the stressor factors based on the analysis of the results, especially in most affected professional groups. This type of continuity of the study can allow workplace strategies to improve workers' well-being, thus contributing to the reduction of illnesses, increased productivity and personal fulfilment.

DECLARATIONS

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