Onset of depressive symptomatology in a sample of university students

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Abstract

The aim of the study was to evaluate depressive symptomatology within the student population of the University of Palermo (Italy). An anonymous online questionnaire was provided to the students of the University of Palermo. The first section investigated demographic and social data, while in the second section the QIDS-SR16 (Quick Inventory of Depressive Symptomatology Self-Report) test was administered. 539 students (68.3% female) gave informed consent and completed the questionnaire. Considering as a dependent variable: Depressive symptomatology moderate-severe-very severe, the statistically significant independent variables associated from longitudinal studies show that these symptoms persist for a long period of time if students do not receive appropriate help, it is also shown that mood disorders are the psychiatric conditions most frequently encountered in young adults. Psychological morbidity in undergraduate students represents a neglected public health problem. In terms of life quality, understanding the impact of this phenomenon on one’s educational attainment and prospective occupational success is very important. In this context we insert our observational study, in order to focus attention on the mood disorders of university students, to improve the quality of life and to prevent the future development of pathologies. The objective of the study was to estimate the prevalence and examine the socio-demographic correlates of depressive disorder among university students in Palermo, Italy.

Materials and Methods

In the months of September and October 2017, an anonymous online survey was provided, accompanied by informed consent, sent to 1000 students enrolled in the mailing list of the Regional Authority for the Right to University Study (ERSU) of the University of Palermo.

Introduction

The university period may represent a moment in which the mental well-being of students is subjected to stress with relative predisposition to the development of diseases related to mood disorders. These can lead to the onset of depressive and anxiety symptoms, abuse of alcoholic beverages and to a reduction of academic achievement. Depressive symptoms are negatively correlated with emotional stability and positively correlated with vulnerability to stress factors, representing a common health problem for students all over the world. Data from longitudinal studies show that these symptoms persist for a long period of time if students do not receive appropriate help, it is also shown that mood disorders are the psychiatric conditions most frequently encountered in young adults. Psychological morbidity in undergraduate students represents a neglected public health problem. In terms of life quality, understanding the impact of this phenomenon on one’s educational attainment and prospective occupational success is very important. In this context we insert our observational study, in order to focus attention on the mood disorders of university students, to improve the quality of life and to prevent the future development of pathologies. The objective of the study was to estimate the prevalence and examine the socio-demographic correlates of depressive disorder among university students in Palermo, Italy.

For all qualitative variables absolute and relative frequencies have been calculated; categorical variables were analyzed by Pearson’s Chi-square test ($\chi^2$). A multivariable logistic regression was performed, considering it as a dependent variable depressive symptomatology moderate-severe-very severe, in order to evaluate the role of the variables in the first section of the questionnaire. The statistical significance level chosen for all analyzes was 0.05. The results were analyzed using the STATA statistical software version 14. Results are expressed as adjusted Odds Ratio (aOR) with 95% Confidence Intervals (95% CI).
Results

539 students agreed to the informed consent and completed the questionnaire. The average age of the sample is 22.65 years (SD=2.95), 68.27% of the interviewees are women, 98.89% were born in Italy, 75.51% are single, 56.03% report to attend a scientific degree course, 61.78 were off-site students, 29.13% live with their families, 89.42% report that they currently have a job, 91.65% report a low perceived economic status, 28.57% currently smoke, 59.93% do not perform regularly exercise, 41.93% report a low perceived health status, 31.73% of the interviewees have moderate, severe or very severe depressive symptoms (Table 1). Regarding bivariate analysis (Table 2), only statistically significant results are reported in this section. 30.70% of unemployed students have moderate, severe or very severe depressive symptoms compared to 40.34% of those currently in employment. To the question: Do you currently smoke? 43.51% of smokers report moderate-severe-very severe depressive symptoms, compared to 27.01% of non-smokers. 49.56% of those interviewed who perceive a low state of health have moderate, severe or very severe depressive symptoms compared to 18.86% of non-smokers. 49.56% of those interviewed who perceive a low state of health have moderate, severe or very severe depressive symptoms compared to 18.86% of non-smokers.

Table 1. Description of the sample.

| Variables                                           | Dichomization | N (%) |
|-----------------------------------------------------|---------------|-------|
| Age class                                           |               |       |
| >22 years old                                       | 221 (41.00)   |       |
| ≤22 years old                                       | 318 (59.00)   |       |
| Gender                                              |               |       |
| Female                                              | 568 (88.27)   |       |
| Male                                                | 171 (31.73)   |       |
| Country of birth                                    |               |       |
| Italy                                               | 533 (98.89)   |       |
| Other                                               | 6 (1.11)      |       |
| Are you engaged or single?                          |               |       |
| Engaged                                             | 132 (24.49)   |       |
| Single                                              | 407 (75.51)   |       |
| What is your field of study?                        |               |       |
| Scientific                                          | 302 (56.03)   |       |
| Humanistic                                          | 237 (43.97)   |       |
| Are you a student off-site or in-site?              |               |       |
| In-site                                             | 206 (38.22)   |       |
| Off-site                                            | 333 (61.78)   |       |
| Do you live with your family?                       |               |       |
| Yes                                                 | 382 (70.87)   |       |
| No                                                  | 157 (29.13)   |       |
| Do you have a job right now?                        |               |       |
| Yes                                                 | 57 (10.58)    |       |
| No                                                  | 482 (89.42)   |       |
| Perceived economic status                           |               |       |
| Medium-high                                         | 45 (8.55)     |       |
| Low                                                 | 494 (91.65)   |       |
| Do you currently smoke?                             |               |       |
| No                                                   | 385 (71.43)   |       |
| Yes                                                  | 154 (28.57)   |       |
| Do you perform regular physical activity?           |               |       |
| Yes                                                  | 216 (40.07)   |       |
| No                                                   | 233 (59.93)   |       |
| Perceived health status                             |               |       |
| Medium-high                                         | 313 (58.07)   |       |
| Low                                                 | 226 (41.93)   |       |
| Depressive symptomatology                           |               |       |
| None                                                | 161 (29.87)   |       |
| Mild                                                | 207 (38.40)   |       |
| Moderate                                            | 119 (22.08)   |       |
| Severe                                              | 45 (8.35)     |       |
| Very severe                                         | 7 (1.30)      |       |

Table 2. Bivariate associations between the depressive symptomatology and the variables of the first section of questionnaire. Used Pearson’s Chi-square test.

| Variables                                                  | Dichomization   | N (%) |
|------------------------------------------------------------|-----------------|-------|
| Age class                                                  |                 |       |
| >22 years old                                              | 70 (31.67)      |       |
| ≤22 years old                                              | 91 (28.62)      |       |
| Gender                                                     |                 |       |
| Male                                                       | 57 (33.33)      |       |
| Female                                                     | 104 (28.26)     |       |
| Country of birth                                           |                 |       |
| Italy                                                      | 159 (29.83)     |       |
| Other                                                      | 2 (33.33)       |       |
| Are you engaged or single?                                 |                 |       |
| Engaged                                                    | 46 (34.85)      |       |
| Single                                                     | 115 (28.29)     |       |
| What is your field of study                                |                 |       |
| Scientific                                                 | 87 (28.81)      |       |
| Humanistic                                                 | 74 (23.12)      |       |
| Are you a student off-site or in-site?                     |                 |       |
| In-site                                                    | 69 (35.50)      |       |
| Off-site                                                   | 92 (26.73)      |       |
| Do you live with your family?                              |                 |       |
| Yes                                                        | 122 (31.94)     |       |
| No                                                         | 39 (24.84)      |       |
| Do you have a job right now?                               |                 |       |
| Yes                                                        | 8 (14.04)       |       |
| No                                                         | 153 (31.74)     |       |
| Perceived economic status                                  |                 |       |
| Medium-high                                                | 14 (31.1)       |       |
| Low                                                        | 147 (29.76)     |       |
| Do you currently smoke?                                    |                 |       |
| No                                                         | 127 (32.99)     |       |
| Yes                                                        | 34 (22.06)      |       |
| Do you perform regular physical activity?                  |                 |       |
| Yes                                                        | 76 (35.16)      |       |
| No                                                         | 85 (26.32)      |       |
| Perceived health status                                    |                 |       |
| Medium-high                                                | 125 (40.88)     |       |
| Low                                                        | 33 (14.60)      |       |

Average age of the sample is 22.65 years (SD=2.95), 68.27% of the interviewees are women, 98.89% were born in Italy, 75.51% are single, 56.03% report to attend a scientific degree course, 61.78 were off-site students, 29.13% live with their families, 89.42% report that they currently have a job, 91.65% report a low perceived economic status, 28.57% currently smoke, 59.93% do not perform regularly exercise, 41.93% report a low perceived health status, 31.73% of the interviewees have moderate, severe or very severe depressive symptoms (Table 1). Regarding bivariate analysis (Table 2), only statistically significant results are reported in this section. 30.70% of unemployed students have moderate, severe or very severe depressive symptoms compared to 40.34% of those currently in employment. To the question: Do you currently smoke? 43.51% of smokers report moderate-severe-very severe depressive symptoms, compared to 27.01% of non-smokers. 49.56% of those interviewed who perceive a low state of health have moderate-severe-very severe depressive symptoms compared to 18.86% of non-smokers.
those who perceive a medium-high state of health. Table 3 shows the adjusted Odds Ratio (aOR), considering as a dependent variable: Depressive symptomatology moderate-severe-very severe, the statistically significant independent variables associated are I don’t live with my family (aOR 1.63, 95% CI 1.01-2.63, P=0.043), I currently smoke (aOR 1.55, 95% CI 1.01-2.39, P=0.048) e Low perceived health status (aOR 4.14, 95% CI 2.73-6.28, P<0.001); each independent variable is adjusted for all the other independent variables in Table 3.

**Discussions and Conclusions**

Similarly to what has already emerged in the literature from a study carried out at the University of Palermo, about 32% of students have moderate, severe and very severe depressive symptoms. There were no statistically significant differences related to gender and field of study regarding the severity of depressive symptomatology. The results of the study regarding the prevalence of severe symptomatology show values that can be overlapped by European Countries.

The multivariable analysis shows that those who perceive a low state of health are assigned to reference categories with greater risk for the onset of depressive symptoms. This result is reflected in the fact that those who perceive a low state of health are subjected to stress that can lead over time to the development of depressive symptoms. Smoking is shown to be a factor that increases the likelihood of developing depressive symptomatology in our study smokers are more likely to have moderate, severe or very severe symptoms than those who do not smoke (Table 3). Finally, it emerges that not living with one’s own family increases the risk of incurring depressive symptoms. In fact, a subject isolated from his affections becomes easily vulnerable to lack of help that contributes to minimizing the onset of symptoms.

The study has limitations: it is a cross-sectional study, several independent variables could not be evaluated for the cause and effect associations; the questionnaire included only a limited number of questions and probably some factors that could be associated with depressive symptomatology were not taken into consideration; moreover, being addressed to students of a single University campus, it does not allow to generalize the results to other Universities of the Regional or National territory despite the large number of the sample being relevant compared to other cognitive surveys on the treated topics present in the literature.

It is therefore essential that prevention interventions are an integral part of coherent local, Regional and National strategies based on evidence of agreed effectiveness, in this context fits the activity of the University Medical Outpatient Department (Ambulatorio Medico Universitario in Italian), born from an initiative of the University of Palermo in partnership with the University Polyclinic Hospital Paolo Giaccone of Palermo, which offers a multidisciplinary outpatient medical assistance service to University students including psychological and psychiatric counseling. Mental health promotion campaigns for the assessment of the appearance of depressive symptomatology with periodic and timely surveys through dedicated surveys, organization of seminars on youth issues for students and active support from physicians and psychologists present in the University structures could be the measures to be taken adopt in consideration of the results achieved in our study.

**Table 3. Multivariable logistic regression. Adjusted Odds Ratio are presented. Each independent variable is adjusted for all the other independent variables.**

| Independent Variables | Depressive symptomatology (moderate-severe-very severe) |
|-----------------------|--------------------------------------------------------|
|                       | aOR (95% CI)                                           | p-value |
| Age class             |                                                        |         |
| >22 years old         | 1                                                      | 0.357   |
| ≤22 years old         | 1.21 (0.81-1.83)                                       |         |
| Gender                |                                                        |         |
| Male                  | 1                                                      |         |
| Female                | 0.98 (0.63-1.52)                                       | 0.926   |
| Country of birth      |                                                        |         |
| Italy                 | 1                                                      |         |
| Other                 | 0.70 (0.47-1.13)                                       | 0.702   |
| Are you engaged or single? |                                       |         |
| Engaged               | 1                                                      |         |
| Single                | 1.35 (0.83-2.20)                                       | 0.229   |
| What is your field of study? |                                             |         |
| Scientific            | 1                                                      |         |
| Humanistic            | 0.74 (0.48-1.13)                                       | 0.163   |
| Are you a student off-site or in-site? |                             |         |
| In-site               | 1                                                      |         |
| Off-site              | 0.89 (0.56-1.41)                                       | 0.626   |
| Do you live with your family? |                     |         |
| Yes                   | 1                                                      |         |
| No                    | 1.63 (1.01-2.63)                                       | 0.043   |
| Do you have a job right now? |                        |         |
| Yes                   | 1                                                      |         |
| No                    | 0.62 (0.33-1.15)                                       | 0.128   |
| Perceived economic status |                                                  |         |
| Medium-high           | 1                                                      |         |
| Low                   | 1.55 (0.71-3.40)                                       | 0.269   |
| Do you currently smoke? |                                              |         |
| No                    | 1                                                      |         |
| Yes                   | 1.55 (1.01-2.39)                                       | 0.048   |
| Do you perform regular physical activity? |                    |         |
| Yes                   | 1                                                      |         |
| No                    | 0.90 (0.59-1.38)                                       | 0.628   |
| Perceived health status |                                              |         |
| Medium-high           | 1                                                      |         |
| Low                   | 4.14 (2.73-6.28)                                       | <0.001  |
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