Depression stigma predictors and its effects on help-seeking attitudes in college students

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Abstract

Background: College years represent a critical phase in young people's lives and an increase in mental illness risk can not be ignored. Depression stigma has been considered a significant barrier both in treatment, rehabilitation, and help-seeking behaviours of people diagnosed with depression. With this study, we aimed to understand the effects of age, gender, previous health care and PHQ-4 scores on depression stigma, and to analyze the effects of depression stigma on help-seeking attitudes.

Methods: A total of 969 participants with a mean age of 18.87 (SD=1.49) ranging between 16 and 25 were included in this study and completed the DSS, the Attitude Toward Seeking Professional Psychological Help, the General Help-Seeking questionnaire, the PHQ-4 questionnaire and a socio-demographic questionnaire. Data were analyzed using SPSS 24.0.

Results: Gender and previous experience with mental health care services are significant predictors of stigma and help-seeking attitudes. Personal stigma has a significant effect on help-seeking attitudes. PHQ-4 scores play a role on personal depression stigma and perceived stigma, however, no direct effect from PHQ-4 on help-seeking attitudes was detected.

Conclusions: Personal depression stigma has an essential effect on help-seeking attitudes. Literacy promotion may decrease personal depression stigma and increase professional help-seeking intentions.

Keywords: Depression, stigma, help-seeking

NOTE: This preprint reports new research that has not been certified by peer review and should not be used to guide clinical practice.
Introduction

Mental and behavioural disorders are estimated to account for 12% of the global burden of disease (World Health Organization, 2001). The number of people diagnosed with depressive disorders is equivalent to 4.4% of the world population and depression ranks the first contributor to non-fatal health loss with 7.5% of all Years Lived with Disability (YLD) (World Health Organization, 2017).

College years are a critical developmental phase, taking place during the emerging adulthood period (Arnett, 2000), growingly conceptualized as 'late adolescence' (Sawyer, Azzopardi, Wickremarathne, & Patton, 2018; Twenge & Park, 2019). This period, between 18 and 25 years old, is a stage arguably distinct from any other in life, in which young people go through several changes with a high degree of demographic diversity and instability, subjectively most young people not seeing themselves as teenagers nor adults, fluctuations also occurring at the identity level, including sex-affective relationships, work and worldviews exploration (Arnett, 2000).

Mainly, entering a college or university presents a high-risk transition, due to several situational changes and increase of life stressors, including academic and interpersonal difficulties (Uehara, Takeuchi, Kubota, Oshima, & Ishikawa, 2010).

Depressive disorders frequently affect college and university students (Hysenbegasi, Hass, & Rowland, 2005). The WHO Mental Health surveys show a 12-month prevalence of major depression for 18.5% of first-year college students which represents more than half of all diagnosed disorders by DSM-IV/CIDI (31.4%) (Auerbach et al., 2018). Depressive disorders are more prevalent among university students than non-students for the same age group (Auerbach et al., 2018; Ibrahim, Kelly, Adams, & Glazebrook, 2013).

Mental illness bears a crucial negative impact on academic performance, increasing the odds of school attrition (Alonso et al., 2018; Auerbach et al., 2016).

Stigma is a significant issue for people living with depression within the community which receive stigmatized institutional responses similar to those experienced by people with psychosis or chronic mental illness (Corrigan, 2006). Mental illness stigma has also been widely associated with constraints in mental health care access (Knaak,
Mantler, & Szeto, 2017).

Thus, reducing stigma affecting people who have a mental illness is one of the main objectives of the Mental Health Action Plan 2013-2020 of the World Health Organization (World Health Organization, 2013).

A significant impact on how to address stigma reduction can be a result of the identification of stigma predictors (K. M. Griffiths, Christensen, & Jorm, 2008). An association between gender and personal stigma has been reported, with higher scores among male than female (Calear, Griffiths, & Christensen, 2011).

In the last decade, there has been an interest increase in the mental health stigma interventions and research in Portugal.

Schooling, age, and previous contact with mental illness have been considered crucial mental health stigma predictors (Oliveira & Azevedo, 2014).

There has been a broad agreement about the importance of studying mental health stigma in health students by health professionals acting as health literacy promoters (Xavier, Klut, Neto, Ponte, & Melo, 2013). In the past years, research about stigma in health students in Portugal has demonstrated the need for stigma reduction intervention in this group of students (Querido, Tomás, & Carvalho, 2016). Anti-stigma specific education (Gil, 2015; Telles-Correia, Marques, Gramaça, & Sampaio, 2015), clerkship (Petkari, Masedo Gutierrez, Xavier, & Moreno Kustner, 2018) and familiarity (McNair, Highet, Hickie, & Davenport, 2002) may be valuable stigma reduction tools in health students.

Aims

To understand the effects of age, gender, previous health care and PHQ-4 scores on depression stigma, as well as to analyze the effects of depression stigma on help-seeking attitudes.
Methods

Participants

Using the SurveyMonkey platform, we contacted all first-year students from the University of Porto through institutional email and invited them to participate in the study, resulting in 4745 emails sent. A reminder email was sent a week after the first email.

Instruments

We asked participants to answer a socio-demographic questionnaire assessing sex, age, place of birth, university course, the Attitudes Toward Seeking Professional Help (ATSPH) (Fischer & Turner, 1970), General help-Seeking questionnaire (Wilson, Deane, Ciarrochi, & Rickwood, 2005), the Portuguese version of The Patient Health Questionnaire-4 (PHQ-4) (Khubchandani, Brey, Kotecki, Kleinfelder, & Anderson, 2016; Löwe et al., 2010), and the Depression Stigma Scale (DSS) (Kathleen M Griffiths, Christensen, Jorm, Evans, & Groves, 2004).

The ATSPH is a 10 four points Likert scale, with scores varying from 0 to 30, with higher scores meaning better help-seeking attitudes. The General help-seeking questionnaire is a 9 seven-item Likert scale, with various categories of help-seeking forms, and also an item for any form of help. Its total score varies from 8 to 56, and the higher the scores, the better the help-seeking intentions.

PHQ-4 is a 4-item questionnaire with two items measuring depressive symptoms and two items for anxiety symptoms. Its score varies from 0 to 12, and scores 0-5 represent no symptomatology, 5-8 light symptomatology and 9-12 severe symptomatology.

DSS is an 18 five points Likert scale, with the first 9 items measuring personal stigma and the last 9 items measuring perceived stigma. We converted the total score of both scales in percentage, and the higher the percentage, the higher the stigma.

Data analysis

We performed the analysis with SPSS24 and described data as counts and proportions for categorical variables, the mean and standard deviation for normally distributed continuous variables, run T-tests to study differences between sex and PHQ-4 groups,
and Pearson, Spearman correlations and linear regressions to analyze the relationship between DSS and ATSPH, gender, age and previous contact with mental illness.

**Ethical considerations**

The Institute of Public Health of the University of Porto ethics committee approved the research on the 26/12/2018 with the ID reference CE18096.

**Results**

**Participants**

A total of 1046 (22%) students accepted to participate in the study, and respondents came from all 14 different schools: 21.4% from Engineering, 17.1% from Humanities, 11.1% from Sciences, 8.2% from Biomedical Sciences, 7.8% from Economics, 7.7% from Law, 6.8% from Psychology and Educational Sciences, 5.1% from Arts, 4.7% from Pharmacy, 3.8% from Medicine, 2.6% Nutrition, 1.6% from Architecture, 1.2% from Sports, and 0.8% from Dental Medicine. To work with a more homogeneous late adolescence sample, we excluded respondents with ages of 26 years and older, resulting in a sample of 969 participants.

About two-thirds were female (64.6%, 626) and 35.4% (343) were male with a mean age of 18.87 (SD=1.49) ranging between 16 and 25. About 43.9% of the students were away from home, and the majority of those (46.1%) were living with roommates.

Most of the participants had never previously sought mental health help (59.6%), and 35.4% had a family member with a mental illness diagnosis. Of those who have previously sought mental health care, anxiety was the main reason (46.4%), followed by depression (25%).

In the PHQ-4, participants showed a mean of 5.65 (SD=3.35), and most of the participants had absent symptomatology (51.8% with scores 0-5). On the other hand, 25.5% showed light symptomatology (scores 6-8) and 22.7% severe symptomatology (scores 9-12). Only 47.3% of the participants with severe symptomatology had previously sought professional help.
Personal Depression Stigma

As shown in Table 1, participants who have previously used mental health services (Group B) showed means of personal depression stigma statistically lower than those who have never sought professional help. However, these differences are not significant among the male group. Female participants obtained statistically lower means than males in both groups.

Comparing depression personal stigma means according to the PHQ-4 score, we observed statistical differences between participants with no symptomatology and those with light symptomatology, presenting this second group higher personal depression stigma means. Participants with light symptomatology also presented significantly higher means than those with severe symptomatology. However, we obtained no significant differences between the no symptomology group and the severe symptomatology group. These differences were only observable within participants who have previously sought help.

On the other hand, differences between PHQ-4 scores according to previous access to mental health care were significant both in the group with no symptoms and in the group with severe symptomatology. Nonetheless, we observed no significant differences in the light symptomatology group.

As for age, we did not obtain any statistically significant Pearson correlations.

Participants with a family member with a mental illness diagnosis had a mean personal stigma score of 22.32 (SD=11.26), a significantly lower result ($t_{(966)}=-2.24$, $p<0.05$) than those with no family member with mental illness (M=24.17, SD=12.78).

Both gender and previous experience with mental health professionals showed to be significant predictors for personal depression stigma, unlike having a family member with mental illness. PHQ-4 scores are a significant predictor only for those with severe symptoms, compared with those with no symptomatology (Table 2).

Perceived Depression Stigma

Gender and previous utilization of mental health services group differences have shown to be statistically significant, whereas the female population have shown higher means
of depression perceived stigma than the male population (Table 3). Though, when
distributing these subpopulations by previous experiences with mental health services,
the significance of the mean differences disappeared.

Comparing depression perceived stigma means according to the PHQ-4 score, we
observed statistical differences between participants without symptomatology and
participants with severe symptomatology. However, these differences disappeared when
comparing according to previous mental health care utilization.

We obtained no statistically significant Pearson correlations for age.

We obtained non-significant ($t_{(968)}=1.77$, $p=0.08$) lower scores of perceived stigma in
the group of participants (no family member with mental illness ($M=60.91$, $SD=17.31$),
compared with those with a family member bearing a mental disorder diagnosis
($M=63.01$, $SD=18.49$).

As we can observe in Table 4, gender and PHQ-4 scores are significant predictors of
depression perceived stigma, with lower scores with less stigma. Previous access to
mental health care significance lost its significance as a predictor when we introduced
PHQ-4 scores in the model.

Help-seeking attitudes and intentions

Help-seeking attitudes presented a mean of 18.62 ($SD=4.76$). Females showed
significant higher means than males. Those who have previously sought help present
better help-seeking attitudes, as well as participants with family members with mental
illness. We did not spot any significant differences when controlling for PHQ-4 scores
(Table 5).

Help-seeking attitudes had a significant yet weak, correlation with sex ($rs=0.18,$
$p<0.001$) and previous contact with mental health care services ($rs=0.26$, $p<0.001$).

Correlation within each of the previous contact groups was remarkably similar: $r=-0.39,$
$p<0.001$ for in group that have previously used mental health care services and $r=-0.36,$
p $<0.001$ in the group that did not.
Personal depression stigma showed a moderate correlation with help-seeking attitudes ($r=-0.42$, $p<0.001$). Perceived stigma showed a weaker Pearson correlation with help-seeking attitudes ($r=0.10$, $p<0.001$), and this correlation was only significant in the group that have not previously sought help ($r=0.14$, $p<0.001$).

There was no significant correlation between PHQ-4 scores and help-seeking attitudes ($rs=-0.01$, $p=0.85$).

Participants showed better help-seeking intentions towards their partner ($M=5.49$, $SD=1.58$) than any other category type of help. Seeking help from a friend obtained a mean of 4.63 ($SD=1.77$), from parents 4.83 ($SD=1.95$), another family member 3.05 ($SD=1.84$), mental health professional 4.95 ($SD=1.72$), support line 2.65 ($SD=1.62$), GP 3.03 ($DS=1.84$), minister or religious leader 1.59 ($SD=1.23$) and no one 3.01 ($SD=1.86$), resulting in a total mean of help-seeking intentions of 30.22 ($SD=7.73$). Personal depression stigma presented a significant correlation with help-seeking intentions ($r=-0.16$, $p<0.001$) and perceived stigma did not ($r=0.06$, $p=0.08$).

**Discussion**

Contact of students occurred through institutional email which, especially in the case of first-year students, may not be accessed very frequently. Thus the response rate was lower than the mean in similar studies (Burgard, Kasten, & Bosnjak, 2019). Other possible explanation may be the increase in online surveys in recent years.

Contrary to previous studies, we found no significant correlation between age and stigma. This result may be because 84.2% of our sample had between 17 and 20 years old, limiting the visibility of any potential effect.

Most of the participants with severe depression or anxiety symptoms did not previously seek help. Most of the participants who have previously accessed mental health care services pointed anxiety as the main reason, perhaps due to the common misconception that points anxious symptomatology as an anxiety problem even when it comes from a depressive disorder. This result puts in evidence the importance of mental health care promotion among college students.
As expected (Boerema et al., 2016; Calear et al., 2011; K. M. Griffiths et al., 2008), personal stigma showed significant lower means than perceived stigma and females showed lower levels of personal stigma and higher levels of perceived stigma.

Previous mental health care was a significant predictor for both personal and perceived depression stigma; however, when analyzing the effects within genders, it only showed to be significant for females in the personal stigma. This result is in line with previous studies, where the effects of the previous contact with depression are more evident for personal stigma than for perceived stigma (Busby Grant, Bruce, & Batterham, 2016; K. M. Griffiths et al., 2008). In fact, for perceived stigma, the difference becomes insignificant when analyzing the results by gender. More research may be needed to understand better the different effects of mental health care use in males and females on depression stigma.

Depressive symptoms have a mitigating effect on personal stigma for those who have previously sought help which may be due to the personal stigma reduction effects of the mental health interventions and reinforces the importance of stigma reduction interventions also to promote help-seeking behaviours.

Participants with a family member with mental illness, and thus having indirect experience with mental illness showed lower personal depression stigma means; however, its effect on personal stigma was not significant.

Participants with lighter symptoms showed more personal stigma and lower perceived stigma than those with severe symptomatology which could be the result of a process of self-stigmatization and self-denial of the possibility of needing help, especially in the case of personal stigma, where having sought help in the past does not bear effect on the light symptomatology group. This particularity may be an essential element to take into account when addressing personal stigma.

Personal depression stigma has shown to have a more substantial correlation with help-seeking attitudes than gender or previous contact with mental health care services, confirming the importance of stigma interventions in help-seeking behaviours promotion (Gulliver, Griffiths, & Christensen, 2010; Thornicroft et al., 2017). While personal depression stigma harmed help-seeking attitudes, perceived stigma had an opposite effect.
Help-seeking intentions also proved to have a significant correlation with personal stigma. College students also showed better intentions of seeking help from their partners than from a mental health professional or general practitioner. The intentions of seeking help from a support line were considerably low, which, due to the current pandemic situation is an especially important form of help-seeking.

One of the main limitations of this study has to do with the representativeness of the sample, since the high rate of previous mental health care services utilization, as well as the distribution of the PHQ-9 scores, are in line with the possibility of some degree of selection bias. The second limitation has to do with the fact that the time and duration of mental health access care was not accessed, and it may also represent an essential element on stigma. Further studies may take this into account to better understand the effects of previous mental health care utilization in both stigma and help-seeking attitudes.

**Conclusion**

More work is needed in mental health care seeking promotion to increase the probability of early intervention in depression and anxiety disorders.

Females present lower personal stigma and higher perceived stigma than males, and the utilization of mental health care services contributes to decreasing personal stigma in females.

Decreasing personal depression stigma has an essential effect on help-seeking promotion. Also, literacy promotion on professional mental health services may increase the intensions of seeking professional health, since most participants have shown to be more prompted to seek informal help than professional help.
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Tables:

Table 1: Personal depression stigma as a function of previous experiences with mental health professionals, gender and PHQ-4 scores.

|                      | Total          | Group A (No) | Group B (Yes) | t-test(df)   |
|----------------------|----------------|--------------|---------------|--------------|
| Mean (SD)            | 23.76 (12.37)  | 25.72 (12.65)| 20.88 (11.53) | **t(968)= -6.08, p<0.001** |
| Male: Mean (SD)      | 27.37 (12.90)  | 28.00 (13.22)| 26.11 (12.20) | **t(341)= -1.31, p=0.19** |
| Female: Mean (SD)    | 21.79 (11.63)  | 24.20 (12.08)| 18.78 (10.92) | **t(625)= -5.98, p<0.001** |
| t-test(df)           | **t(968)= 6.88, p<0.001** | **t(577)= 3.56, p<0.001** | **t(392)= 6.05, p<0.001** |
| PHQ-4 0-5 (n=502)   | 23.51 (11.89)  | 25.11 (12.11)| 19.97 (9.98)  | **t(500)= -4.92, p<0.001** |
| PHQ-4 6-8 (n=247)   | 25.91 (13.19)  | 27.06 (13.44)| 23.95 (12.77) | **t(245)= -1.81, p=0.07** |
| PHQ-4 9-12 (n=158)  | 21.72 (12.20)  | 24.68 (13.19)| 18.36 (10.31) | **t(218)= -3.93, p<0.001** |
| ANOVA(df)            | **F(966,2)= 6.86, p<0.01** | **F(575,2)= 1.51, p=0.22** | **F(388,2)= 4.20, p<0.01** |

M=mean, SD=standard deviation; df=degrees of freedom. Significant results are in bold.

Table 2: Effects of gender, previous help, mental illness in the family and PHQ-4 scores on personal depression stigma

|                      | β     | 95% CI  | t     | p     |
|----------------------|-------|---------|-------|-------|
| **Model 1**          |       |         |       |       |
| Female               | Ref.  |         |       |       |
| Male                 | 5.65  | 4.07, 7.25 | 48.61 | <0.001 |
| **Model 2**          |       |         |       |       |
| Female               | Ref.  |         |       |       |
| Male                 | 5.16  | 3.58, 6.73 | 41.18 | <0.001 |
| Previous help - No   | Ref.  |         |       |       |
| Previous help - Yes  | -4.35 | -5.89, -2.82 | 30.88 | <0.001 |
| **Model 3**          |       |         |       |       |
| Female               | Ref.  |         |       |       |
| Male                 | 5.12  | 3.54, 6.69 | 40.40 | <0.001 |
| Previous help - No   | Ref.  |         |       |       |
| Previous help - Yes  | -4.20 | -5.74, -2.65 | 20.20 | <0.001 |
| Family with mental illness - No | Ref.  |         |       |       |
| Family with mental illness - Yes | -1.22 | -2.80, 0.36 | 2.30  | 0.13  |
| **Model 4**          |       |         |       |       |
| Female               | Ref.  |         |       |       |
Table 3: Perceived depression stigma as a function of previous experiences with mental health professionals, gender and PHQ-4 scores.

|                      | Total       | Group A (No) | Group B (Yes) | t-test(df) |
|----------------------|-------------|--------------|---------------|------------|
| Mean (SD)            | 61.66 (17.60) | 60.58 (17.34) | 62.26 (18.24) | t(968)=2.32, p<0.05 |
| Male: Mean (SD)      | 59.79 (16.17) | 58.92 (16.06) | 61.57 (16.03) | t(341)=1.42, p=0.15 |
| Female: Mean (SD)    | 62.68 (18.48) | 61.67 (18.07) | 63.94 (18.94) | t(625)= 1.54, p=0.13 |
| t-test(df)           | t(968)=2.43, p<0.05 | t(577)=-1.87, p=0.06 | t(392)=-1.69, p=0.24 |
| PHQ-4 0-5 (n=502)    | 60.89 (16.80) | 60.27 (16.50) | 61.91 (17.28) | t(500)= 1.06, p=0.29 |
| PHQ-4 6-8 (n=247)    | 60.99 (18.31) | 59.96 (17.90) | 62.58 (18.91) | t(245)= 1.10, p=0.27 |
| PHQ-4 9-12 (n=158)   | 64.52 (18.87) | 62.40 (18.71) | 66.90 (18.86) | t(218)= 1.77, p=0.08 |
| ANOVA(df)            | F(966,2)= 3.53, p<0.05 | F(575,2)= 0.78, p=0.46 | F(388,2)= 2.68, p=0.07 |

M=mean, SD=standard deviation; df=degrees of freedom. Significant results are in bold.

Table 4: Effects of gender, previous help and PHQ-4 scores on personal depression stigma

|                      | β        | 95% CI      | t       | p    |
|----------------------|----------|-------------|---------|------|
| **Model 1**          |          |             |         |      |
| Female Ref.          |          |             |         |      |
| Male                 | -3.05    | -5.38, -0.72| 6.59    | <0.05|
| **Model 2**          |          |             |         |      |
| Female Ref.          |          |             |         |      |
| Male                 | -2.76    | -5.09, -0.42| 5.36    | <0.05|
| Previous help - No   |          |             |         |      |

β=beta regression coefficients, Ref.=Reference category
* Model 1= gender; Model 2: Model 1 previous help stigma effect; Model 3: Model 2 plus a family member with mental illness effect; Model 4: Model 3 plus PHQ-4 score effect.
Significant results in bold.
| Previous help - Yes | β        | 95% CI | t-test(df) | p-value |
|---------------------|----------|--------|------------|---------|
|                      |         |        |            |         |
| Model 3              | 2.47    | 0.19, 4.74 | 4.50 | <0.05 |
|                      |         |        |            |         |
| Male                 | -2.67   | -5.00, -0.34 | 5.04 | <0.05 |
|                      |         |        |            |         |
| Previous help - No   | 2.26    | -0.02, 4.54 | 3.78 | 0.05 |
|                      |         |        |            |         |
| PHQ-4 0-5            | -3.29   | -6.09, -0.49 | 5.32 | <0.05 |
|                      |         |        |            |         |
| PHQ-4 6-8            | -3.28   | -6.48, -0.08 | 4.04 | <0.05 |
|                      |         |        |            |         |

*β=beta regression coefficients, Ref.=Reference category
* Model 1= gender; Model 2: Model 1 previous help stigma effect; Model 3: Model 2 plus PHQ-4 score effect.
Significant results in bold.

Table 5: Help-seeking attitudes differences according to gender, previous help, family mental illness, and PHQ-4 scores.

|                   | M (SD)     | t-test(df) | p-value |
|-------------------|------------|------------|---------|
| Male              | 17.56 (4.32) | t(966) =-5.20 | p<0.001 |
| Female            | 19.20 (4.90) |           |         |
| Previous help - No| 17.69 (4.69) | t(966) =7.66 | p<0.001 |
| Previous help - Yes| 20.00 (4.54) |           |         |
| Family Mental Illness - No | 18.28 (4.80) |     |         |
| Family Mental Illness - No | 19.22 (4.80) | t(966) =2.95 | p<0.01 |
| PHQ-4 0-5         | 18.77 (4.93) |           |         |
| PHQ-4 6-8         | 18.15 (4.17) | F(966,2)= 1.61 | p=0.20 |
| PHQ-4 9-12        | 18.79 (4.96) |           |         |

M=mean, SD=standard deviation; df=degrees of freedom. Significant results in bold.