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Stigma towards mental illness among medical students of the Faculty of Medicine of the University of Coimbra

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STIGMA TOWARDS MENTAL ILLNESS ON MEDICAL STUDENTS OF THE FACULTY OF MEDICINE OF THE UNIVERSITY OF COIMBRA

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ABSTRACT

INTRODUCTION: Stigma towards mental illness is considered to be a main obstacle to the provision of medical assistance to psychiatric patients, affecting the quality of their lives. This is not only present in the general population but also among health professionals. It is essential to reduce stigma in order to bring positive change in the acceptance and treatment of mental disorders; medical students could be a target population for stigma prevention measures.

The aim of this study is to assess the evolution of the attitudes of medical students from the Faculty of Medicine of the University of Coimbra (FMUC) towards psychiatric patients, before and after attending Psychology and Psychiatric courses, analysing the impact of class attendance on shaping stigmatising attitudes.

METHODS: Students from the 3rd and the 4th years of the Integrated Master's degree in Medicine of FMUC were asked to complete four questionnaires: a sociodemographic form, the MICA-2, the NEO-FFI-20 and the TEQ. The surveys were distributed during the first class of each course, at the beginning of the first semester, and again at the beginning of the second semester, after attending the courses.

RESULTS: Analysing medical students' attitudes towards psychiatric patients, measured by the MICA-2, there was a statistically significant decrease on these scores (p=0.025) between the two measurements, thus less stigma.

The baseline level of stigma was found to be negatively associated with empathy, with higher levels of empathy resulting in lower levels of stigma. A correlation between the type of personality and stigma was also found, with higher levels of openness to new experience being related to lower levels of initial stigma.

DISCUSSION AND CONCLUSION: Overall, the students' attitudes towards mentally illness patients were positive, with a decrease of the stigma value, measured by the MICA-2 questionnaire, from the first to the second semester. This corroborates the hypothesis that education and contact with people with a mental pathology shapes positive changes on attitudes and discrimination against those patients.

KEYWORDS: Social stigma; Mental disorder; Medical students; Attitudes; Psychiatry.

RESUMO

INTRODUÇÃO: O estigma face às doenças mentais é considerado como um dos principais obstáculos à prestação de serviços médicos a doentes psiquiátricos, afetando a sua qualidade de vida. Esta problemática não está presente apenas na população geral, mas também entre os profissionais de saúde. Torna-se essencial reduzir este estigma de forma a alcançar mudanças positivas na aceitação e no tratamento das doenças mentais; os estudantes de medicina podem ser uma população alvo para a introdução de medidas de prevenção de estigma.

O objetivo deste estudo é avaliar a evolução das atitudes dos estudantes de Medicina da Faculdade de Medicina da Universidade de Coimbra (FMUC) face aos doentes psiquiátricos, antes e depois de frequentar as cadeiras de Psicologia e Psiquiatria, analisando o impacto da frequência destas aulas na formação de atitudes estigmatizantes.

MÉTODOS: Foram distribuídos quatro questionários aos alunos do 3º e 4º anos do Mestrado Integrado em Medicina da FMUC: um sociodemográfico, o MICA-2, o NEO-FFI-20 e o TEQ. Estes foram distribuídos na primeira aula de cada cadeira, quer no início do primeiro semestre, como no início do segundo, após a frequência das mesmas.

RESULTADOS: Analisando as atitudes dos estudantes de medicina face aos doentes psiquiátricos, medidas pelo MICA-2, foi observada uma diminuição estatisticamente significativa dos seus valores (p = 0,025) entre as duas medições, indicando uma diminuição do estigma.

Foi ainda encontrada uma correlação inversa entre o valor do estigma inicial e a empatia, com níveis mais elevados de empatia resultando em níveis mais baixos de estigma. O tipo de personalidade encontrava-se também relacionado com o estigma medido no primeiro momento, com maiores níveis de abertura à experiência originando níveis mais baixos de estigma.

DISCUSSÃO E CONCLUSÃO: No geral, as atitudes dos estudantes de Medicina relativamente aos doentes psiquiátricos eram positivas, com uma diminuição significativa do valor do estigma, medido pelo questionário MICA-2, do primeiro para o segundo semestre. Estes resultados corroboram a hipótese de que a educação e o contacto com pessoas com uma patologia mental modificam positivamente as atitudes e discriminação contra as mesmas.

PALAVRAS-CHAVE: Estigma social; Doença mental; Estudantes de medicina; Atitude; Psiquiatria.

ABBREVIATIONS

FMUC – Faculty of Medicine of the University of Coimbra

MICA – Mental Illness Clinicians Attitudes Scale

n – Sample size

Q1 – First quartile

Q3 – Third quartile

r_P – Pearson correlation coefficient

r_S – Spearman correlation coefficient

SD – Standard deviation

TEQ – Toronto Empathy Questionnaire

1. INTRODUCTION

Mental and neurological disorders are one of the leading causes of morbidity and disability worldwide.[1] They affect one out of four people[2] and their prevalence and incidence are expected to rise in the following years.[1,2] Nevertheless, only one third of the population suffering from them has access to medical assistance.[2] Many reasons can contribute to this low rate of service use, such as financial, instrumental and attitudinal barriers,[3] but stigma and discrimination seem to have a main role as an obstacle to the provision of mental health care for people with mental illness.[2–7]

Stigma can be defined as a combination of labelling, stereotyping, separation, status loss and discrimination, that occur at the same time, linking a person to undesirable characteristics.[8,9] It's a "sign of disgrace or discredit that sets a person apart from others".[7–10]

It has been demonstrated that stigma and discrimination against mental diseases is present all around the world[5,6,11,12] and that mental illness patients are some of the most stigmatised and marginalised members of our society.[1] This occurs not only because these patients are often seen as potentially violent and dangerous,[4,5] but also because of beliefs that these diseases have a chronic course,[9] with grim prognosis and ineffective treatments.[7,13–15]

Negative attitudes towards a person that suffers from a mental illness besides compromising the level of care provided, also interfere with the quality of their lives,[8,16] preventing them from achieving a normal integration into the society by affecting their education, employability and the relationship with others.[6,8,17]

The latest studies show that stigma towards psychiatric patients is observed not only in the general population but also among health professionals;[5–7,9,11,18,19] some studies report that physicians have the highest level of stigmatising attitudes comparing with other health professionals,[18] with negative impact on patient care.

It is essential to reduce stigma in order to bring positive changes in the acceptance and treatment of mental disorders.[2] Anti-stigma programs should be implemented in medical faculties because it is believed that medical students' attitudes towards mentally ill patients are shaped during their training, offering an unique chance for intervention and stigma prevention.[5,15,19] We should also consider that the students of today will be the doctors of tomorrow.[15,19] If mental illness stigma could be reduced now, these forthcoming physicians could influence future mental healthcare.[19]

Many studies have been conducted to investigate the impact of clinical clerkships on medical students' attitudes but the results are controversial,[5,9,10] with some showing better behaviour after the clerkship and others demonstrating a negative impact on stigma among the students. Further investigations led to the hypothesis that beliefs about mental illness could be influenced by different aspects, such as socio-cultural differences[4,7,10] and level of contact with

psychiatric patients[12] and mental health care services.[17] Of great importance may also be the attitudes of the tutors in medical schools, that could strongly influence the development of stigma on students.[5,9]

Consequently, it is of extreme importance to conduct research in different countries and different universities, in order to compare all these factors and find feasible solutions to this problem. In Portugal some studies were conducted[9,17] however, the only analysed variable was the differences between students from diverse academic levels, without assessing beliefs and attitudinal changes before and after attending a psychiatric course.

The main purpose of this study is to assess the evolution of the attitudes of medical students from the Faculty of Medicine of the University of Coimbra (FMUC) towards psychiatric patients, before and after attending Psychology and Psychiatric courses, and recognise the impact of class attendance on shaping stigmatising attitudes. An additional goal is to understand if attitudes towards mentally ill people are related to sociodemographic and personal characteristics, such as sex, personality and level of empathy, and if they are influenced by the type of class attended, by the familiarity with mental illness or even by the preference of future area of specialisation.

2. METHODS

In Portugal, each Faculty of Medicine of each University has different teaching methods. In FMUC, where this study took place, the students have their first contact with Psychiatry on the first year. However, this interaction is minimal, since they only have the chance to visit the hospital's psychiatric service for two mornings, having sometimes no opportunity to speak with patients.

The real contact with this medical specialty and its patients starts on the third year, where students attend theoretical and practical classes of the "Medical Psychology" course. They are introduced to the biopsychosocial model, learning how to conduct a medical interview based on it, being able to apply these theoretical bases on patients once a week.

On the fourth year of the medical degree, during the course of "Neurosciences and Mental Health", in the class of Psychiatry, the physiopathology of psychiatric diseases, their treatment and the way of approaching the patients are taught. Besides the theoretical classes, students have to attend weekly practical classes, where they have the chance to conduct interviews and to interact with patients with different mental illnesses.

2.1 Study design and procedures

A prospective study was conducted among medical students from the third and the fourth years of the Integrated Master's degree in Medicine of FMUC, who have attended the courses of "Medical Psychology" and "Neurosciences and Mental Wealth", respectively, on the first semester of the 2018/2019 academic year.

Students were asked to answer four questionnaires during the first class of each course, at the beginning of the first semester, and again at the beginning of the second semester, after attending the courses. The last four digits of the citizen card of each student were written on the first page of the surveys. This created the opportunity to match the first questionnaires to the ones answered at the beginning of the second semester while keeping the anonymity of the responses.

The participation was voluntary, and an informed consent was signed by all the participants. (Appendix I)

2.2 Instruments

Surveys were a combination of four questionnaires: a sociodemographic form, the Mental Illness Clinicians Attitudes Scale (medical student version) (MICA-2), the NEO-FFI-20 and the Toronto Empathy Questionnaire (TEQ). (Appendix I)

- **Sociodemographic questionnaire**

The sociodemographic questionnaire collected data about the participants such as age, sex, nationality, marital status, previous bachelor or university studies, area of specialisation they intended to follow (medical or surgical) and previous contacts and personal experiences with mental illnesses.

This was assessed because these factors seem to affect the level of stigma,[4,7,14] with studies showing more negative attitudes among males,[10] younger people,[20] students that prefer surgical specialties[10] and people with no previous contact with mental illness patients.[4,10,21] Given that the influence of such variables is not consensual,[7,19] these aspects were questioned so that they could be investigated in our environment.

- **Mental Illness Clinicians Attitudes Scale- medical student version (MICA-2)**

The MICA-2 questionnaire is a survey comprising 16 items, developed to assess medical students' attitudes towards psychiatric patients,[22] taking less than 10 minutes to be completed.[19] It is rated on a 6-point Likert scale, ranging from "strongly agree" to "strongly disagree",[1,22] with a high total score representing more stigmatising attitudes concerning mental illness and psychiatry.[22]

This scale was considered to be an adequate tool to compare attitudes of medical students against mental illness patients before and after an educational intervention.[19,22]

- **NEO-FFI-20**

This scale is a reduced version of the reviewed personality inventory (NEO-PI-R) and it's an useful instrument to evaluate the five personality dimensions when personality is not the main study object.[23]

It has 20 items and is rated on a 5-point Likert scale, from 0 (strongly disagree) to 4 (strongly agree), and it takes less than 10 minutes to be responded.

- **Toronto Empathy Questionnaire (TEQ)**

The TEQ is a 16-item scale assessing different features related with the theoretical facets of empathy.[24] Each one of these items is rated on a 5-point Linkert scale (0=never, 4=always), with a higher score indicating more "self-reported emotional concern".[24,25]

This instrument is quick and easy administrated, with high internal consistency, and it assesses interpersonal sensitivity, measuring the empathy of individuals.[24]

2.3 Statistical analysis

Data were described according to its measurement levels, using absolute and relative frequencies whenever data were categorical or mean and standard deviation, median and

quartiles whenever data were quantitative. Data distribution and adjustment to a gaussian distribution was evaluated thought the Shapiro-Wilk test.[26]

Parametric tests were applied if data were normally distributed or if data presented symmetric distribution and its deviation from the gaussian curve was residual. When these assumptions were met, the comparison of independent measures was performed applying the Student's t-test for two independent samples or the one-way ANOVA when three or more groups were in evaluation, while the comparison of paired measures was performed through the Student's paired t-test. On the other hand, when data presented large asymmetry and, thus, large deviations from a normal distribution, non-parametric tests such as Mann-Whitney and Kruskal-Wallis respectively for two or three independent samples comparison were applied, or Wilcoxon for the comparison of two paired samples.

In order to ascertain the evolution of stigma and its interaction with demographic and personality characteristics, mixed repeated measures ANOVA or mixed repeated measures ANCOVA were applied, after evaluating its major assumptions of applications, such as the normal distribution of the residuals and homogeneity of variance-covariance matrices through the Box M test. As there are only two moments, the sphericity assumption is not needed.

Statistical analysis was performed using the SPSS package, version 25, and was analysed at a 5% significant level.

2.4 Ethics

This study was approved by the Ethics Committee of the Faculty of Medicine of the University of Coimbra. (Appendix II)

3. RESULTS

3.1 Sample characteristics

On the first measurement, the questionnaires were answered by 190 students, having decreased on the second one to 138. The sample of pairs with values in both moments of surveys' distribution is composed by 101 students, being this the study sample.

All the participants were single, 74 (73.3%) were female and 27 (26.7%) were male, being this distribution similar to the one observed in the population of the medical students of FMUC (71.7% females and 28.3% males). Their age ranged from 19 to 24 years, with a mean of 20.67 $\pm$ 0.88 years.

Most students attended the fourth year (n=65; 64.4%), and the remaining were from the third. Among the 101 participants, one had a previous degree in Basic Sciences of Oral Health.

The majority of the respondents were Portuguese (97%), one was from Brazil, one from Venezuela and one from France.

Approximately 53.5% of the participants (n=54) reported previous personal experience with mental illness: 40 (74%) of them through contact with relatives, 14 (25.9%) through friends suffering from a psychiatric disease and 7 students (12.9%) admitting having suffered a mental disease themselves.

Students who already knew the specialty they intended to follow are similarly divided by medical (29 cases; 28.7%) and surgical specialties (28 cases, 27,7%). The remaining 44 (43.6%) didn't yet know which one they wanted to follow.

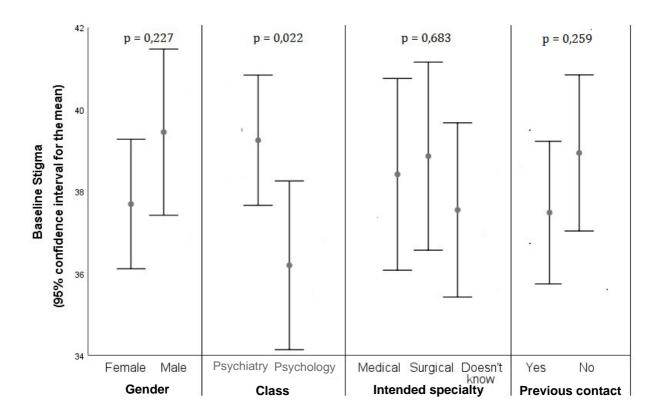### 3.2 Baseline stigma and sociodemographic and personal characteristics

The mean results of the MICA-2 questionnaire on the initial evaluation were similar between females and males (p=0.268). They were also similar between the population of students who wanted to follow different specialties (p=0,212) and among students with and without prior contact with psychiatric patients (p=0.259), as observed on table I and on figure 1.

When comparing the stigma among students attending Psychology or Psychiatry classes, a higher initial value is perceived in the ones attending psychiatric lessons, with an average difference of about 4 points, thus being statistically significant (p <0.001).

Table I: Description and comparison of initial stigma values with respect to gender, specialty to follow, previous contact with patients and class.

Stigma (baseline)		n	Min-Max	Average (SD)	Median [Q1 – Q3]	p
Gender	Female	74	23 - 53	37,69 (6,82)	37 [37 - 41]	0,227*
	Male	27	25 - 47	39,44 (5,12)	39 [39 - 44]	
Specialty	Medical	29	25 - 53	38,41 (6,15)	39 [39 - 42]	0,683**
	Surgical	28	30 - 51	38,86 (5,92)	38 [38 - 40,5]	
	Doesn't know	44	23 - 53	37,55 (6,99)	37,5 [37,5 - 42]	
Previous contact	Yes	54	25 - 51	37,48 (6,37)	37,5 [33 - 42]	0,259*
	No	47	23 - 53	38,94 (6,48)	39 [34 - 42]	
Class	Psychiatry	65	23 - 53	39,25 (6,41)	39 [39 - 43]	0,022*
	Psychology	36	25 - 49	36,19 (6,08)	37 [37 - 39]	

*Students' t-test for independent samples; **One-way ANOVA; Min-Max=minimum and maximum values; SD=standard deviation; Q1-Q3=1st and 3rd quartiles of distribution.

Figure 1: Average and 95% confidence interval for the average of the initial stigma according to gender, class, intended specialty and previous contact with mentally illness patients.

The initial stigmatising attitudes values show an inverse correlation with empathy (r_P = -0.477; p <0.001) as noted on table II. On the other hand, the initial stigma seems to be independent from the personality traits evaluated by the NEO-FFI-20 questionnaire, although medical students with greater openness to experience tend to have less stigma in a very tenuous way (while statistically significant correlation between stigma and openness to new experiences is found, the values of the correlation coefficient show that the strength of that association is very weak).

Table II: Values of the correlation coefficient (and respective p-value) between stigma, age, personality traits measured by the NEO-FFI-20 and empathy.

	Stigma
Age	-0,002 (0,975) *
Neuroticism	0,009 (0,928) **
Extraversion	0,114 (0,258) **
Openness to experience	-0,357 (< 0,001) **
Agreeableness	-0,143 (0,154) **
Conscientiousness	-0,112 (0,264) **
Empathy	-0,477 (< 0,001) **

*Test to Spearman correlation coefficient (r_S); **Test to Pearson correlation coefficient (r_P)

3.3 Evolution of medical students' attitudes towards mentally ill patients

The baseline mean score of the MICA-2 questionnaire was 38.16, with a maximum possible score of 96, being the mean score on the follow-up 36.72. Between the two measurements, there was a statistically significant difference on these scores (p=0.025), with a loss of 1.5 points on average.

Each item comprised on this survey was evaluated using the Wilcoxon test for paired data, as shown in table III, relating the mean values of every one of them in both moments. with three matters showing a significant change on scores on a positive way. The items 'People with a severe mental illness are dangerous more often than not' and 'General practitioners should not be expected to complete a thorough assessment for people with psychiatric symptoms because they can be referred to a psychiatrist' were reverse scored, being a higher value of both considered as better attitudes of the students. They scored 4.3 and 4.67, respectively, on the first moment, changing for 4.66 and 4.66 on the second. The other sentence presenting an evolution on a positive way was 'The public does not need to be protected from people with a severe mental illness', from 3.63 to 3.37.

Table III: Comparison of MICA-2 median response items between the first and the second application of the questionnaires (Wilcoxon p-values). Mean values for each item are also presented.

MICA	Moment 1		Moment 2		p*
	Mean (SD)	Median [Q1 - Q3]	Mean (SD)	Median [Q1 - Q3]	
1. I just learn about psychiatry because it is in the exam and would not bother reading additional material on it	4,52 (1,29)	5 [4 - 6]	4,32 (1,42)	5 [3 - 6]	0.091
2. People with a severe mental illness can never recover enough to have a good quality of life	5,04 (0,9)	5 [5 - 6]	5,10 (0,89)	5 [5 - 6]	0.481
3. Psychiatry is just as scientific as other fields of medicine	1,53 (0,86)	1 [1 - 2]	1,63 (0,98)	1 [1 - 2]	0.302
4. If I had a mental illness, I would never admit this to any of my friends because I would fear being treated differently	4,28 (1,18)	4 [3 - 5]	4,36 (1,15)	4 [4 - 5]	0.585
5. People with a severe mental illness are dangerous more often than not	4,30 (0,89)	4 [4 - 5]	4,66 (0,89)	5 [4 - 5]	0.001
6. Psychiatrists know more about the lives of people treated for a mental illness than do family members of friends	3,57 (1,21)	3 [3 - 5]	3,62 (1,26)	4 [3 - 5]	0.758
7. If I had a mental illness, I would never admit this to any of my colleagues for fear of being treated differently	3,58 (1,08)	4 [3 - 4]	3,75 (1,21)	4 [3 - 5]	0.208
8. Being a psychiatrist is not like being a real doctor	5,65 (0,57)	6 [5 - 6]	5,71 (0,52)	6 [5 - 6]	0.300
9. If a consultant psychiatrist instructed me to treat people with a mental illness in a disrespectful manner, I would not follow their instructions	1,86 (1,24)	2 [1 - 2]	1,79 (1,18)	1 [1 - 2]	0.652
10. I feel as comfortable talking to a person with a mental illness as I do talking to a person with a physical illness	3,31 (1,27)	3 [2 - 4]	3,11 (1,19)	3 [2 - 4]	0.093
11. It is important that any other doctor supporting a person with a mental illness also assesses their physical health	1,60 (0,65)	2 [1 - 2]	1,58 (0,67)	1 [1 - 2]	0.752
12. The public does not need to be protected from people with a severe mental illness	3,63 (1,07)	4 [3 - 4]	3,37 (1,21)	3 [3 - 4]	0.031
13. If a person with a mental illness complained of physical symptoms (such as chest pain), I would attribute it to their mental illness	4,89 (0,87)	5 [4 - 6]	4,93 (0,83)	5 [4 - 6]	0.723
14. General practitioners should not be expected to complete a thorough assessment for people with psychiatric symptoms because they can be referred to a psychiatrist	4,67 (1,23)	5 [4 - 5]	4,96 (1,01)	5 [4 - 6]	0.025
15. I would use the terms 'crazy', 'nutter', 'mad' etc. to describe people with a mental illness who I have seen in my work	5,32 (0,99)	6 [5 - 6]	5,31 (0,99)	6 [5 - 6]	0.790
16. If a colleague told me they had a mental illness, I would still want to work with them	2,05 (0,99)	2 [1 - 2]	1,96 (0,95)	2 [1 - 2]	0.357

* Wilcoxon Test for paired data

Analysing the evolution of these attitudes in each gender, we verified that, in females, there are statistically significant alterations between the two moments, as observed in the following figure 2 and table IV. However, although the loss is statistically significant for the female gender, there is no interaction between gender and the evolution of stigma (p = 0.344)

indicating that medical students have a similar behavior in the evolution of this parameter between the two moments of evaluation.

Table IV: Description of initial and final stigma values with respect to gender.

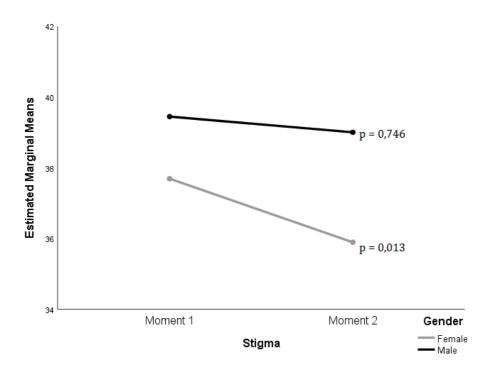|	*Gender*	*n*	*Mean*	*SD*
MICA – 1	Female	74	37,69	6,820
(Baseline	Male	27	39,44	5,124
stigma)	Total	101	38,16	6,434
MICA - 2	Female	74	35,89	7,331
(Follow-up	Male	27	39,00	7,791
stigma)	Total	101	36,72	7,545

Figure 2: Evolution of the stigma values (estimated marginal means) in each gender.

The evolution of the medical students' attitudes showed no interaction with the desired specialty (p=0.285). However, for students initially undecided about the specialty they wanted to follow, there were statistically significant changes in mean stigma values (p=0.004) as shown in the following figure 3.
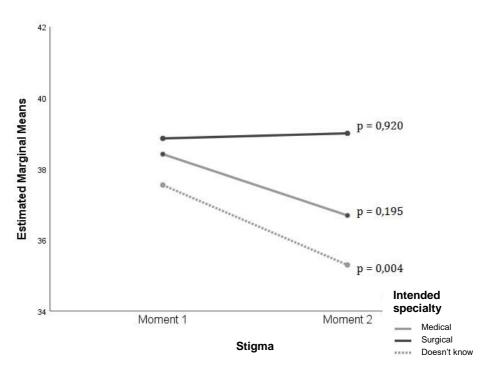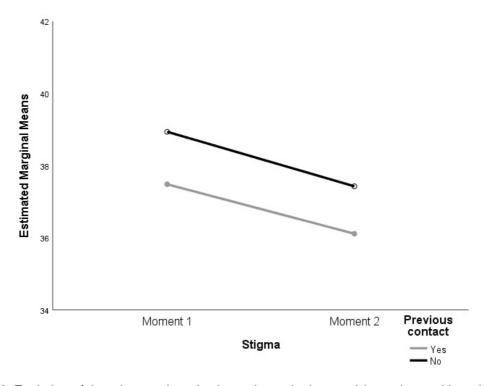
Figure 3: Stigma evolution (estimated marginal means) according to students' desired specialty.
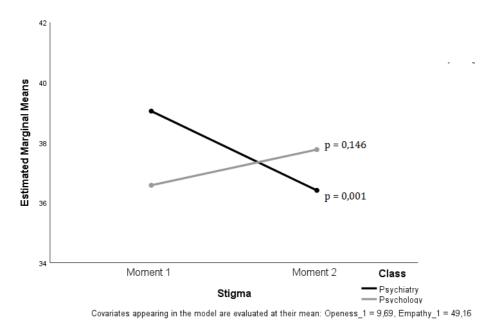
Considering previous contact with mentally ill patients, a statistically significant interaction was not found between this and the evolution of stigma values (p = 0,912), with similar evolution in both groups, as shown in figure 4.

Figure 4: Evolution of the stigma values (estimated marginal means) in students with and without previous contact with mentally ill patients.

The initial stigma value depended on the class attended (psychiatry/psychology) and was associated with empathy and openness to new experiences. The longitudinal analysis of stigma regarding the type of class was adjusted to these variables.

It has been observed that the evolution of stigma occurs differently for students who had psychology or psychiatry (p = 0.004), with a statistically significant decrease in mean values of stigma in students who had psychiatry (p = 0.001), and a slightly increase mean, although not statistically significant, in students who had the curricular unit of psychology (figure 5). Nevertheless, there's no interaction between stigma evolution and empathy (p = 0.466) or openness to new experiences (p = 0.719).

Covariates appearing in the model are evaluated at their mean: Openess_1 = 9,69, Empathy_1 = 49,16

Figure 5: Evolution of the stigma values (estimated marginal means) in students who attended Psychiatry and Psychology classes.

4. DISCUSSION

The current study set out to investigate the evolution of the stigma of medical students towards mentally ill patients, before and after attending Psychology and Psychiatric courses.

Attitudes towards psychiatric patients were measured by the MICA-2 questionnaire. The baseline and following scores presented different values, with the second moment of the survey distribution having a lower score, demonstrating a statistically significant improvement on medical students' attitudes and, thus, less stigma. These results were consistent with other studies,[1] with some authors suggesting that education and contact with people with a mental pathology shaped positive changes on students' discrimination attitudes[1,5,14,17,21] (contact theory).

Two out of the three items of the MICA-2 questionnaire that contributed for the improvement of final scores were the ones related to the perceived dangerousness of the patients. This represents a major improvement since one of the main characteristics attributed to psychiatric patients is their aggressiveness and violence potential.[7,13–15] The better understanding of this misinterpretation is a way to fight stigma, since it is believed that the perception of the violence of the psychiatric patients comes from the way they show their symptoms.[7] Therefore, managing and controlling the diseases could reduce this idea.[1,7]

Although the aforementioned contact theory could also explain that students with a personal contact with mental illness (personal, a familiar or friend with a mental disease) had less stigma,[5,13] this was not observed in this study. However, this corroborates other findings.[19] In fact, some authors defend that it's not the contact with mentally ill patients that reduces the stigma, but the better knowledge about their diseases,[7] being known that contacting with these patients does not mean having more information about the characteristics of their illnesses. This could also justify the differences between the students that attended the classes of Psychology and Psychiatry, with the firsts having a slight increase in stigma values (not statistically significant) after attending the course and the others showing a significant decreased evolution. On Psychiatry it is taught the physiopathology and treatment of each psychiatric disease, while on Psychology the main focus is the communication with patients and not the disease itself. Furthermore, the fact that students in the 3rd year had lower stigma that 4th year students, in the first measurement, might decrease the margin for improvement after the Psychological course.

An association between stigma values and gender was not found, even though females had a significant decrease on the follow-up.

Some studies describe lower levels of stigma between students who want to follow a medical specialty comparing to the ones that want to follow a surgical one,[10] but this was not observed on our data. Instead, we found a statistically significant improvement on the values of the

students who didn't know, at the time they filled the surveys, the specialty they intended to follow. We could speculate that the level of uncertainty of these students could be related to an open-minded attitude, thus greater ability to accept improvements on stigma.

Personality type had no impact on the evolution of medical students' attitudes, although students with more openness to new experiences had, on the first measurement, lower levels of stigma (correlation not observed on the second moment). Similar findings were also reported in other studies.[11,12] Higher levels of openness to new experiences are related to better knowledge which depends on study and acceptance of new information.[11] People with more information about mental illness have less stigmatising attitudes, as discussed earlier. The stigma being, for these students, lower on the first moment, leaves less opportunity for further improvements,[11] explaining the lack of association between stigma and levels of openness to new experiences on the second moment. Some studies[11,12] also report an association between the level of agreeableness and some aspects of stigma, but this was not found in our results.

The baseline level of empathy was found to be negatively associated with stigma, with higher levels of empathy resulting in lower levels of stigma. This could be explained by the fact that empathy can be defined as "the ability to understand another person's feelings, experiences, etc.".[27] This relation was not maintained on the second moment of evaluation. Since the levels of stigma were already lower for students with more empathy, it could be more difficult for them to achieve changes.

Study limitations

One of the study limitations was the sample size. The attendance of theoretical classes of both courses is not mandatory, and students tend to frequent classes more at the beginning of the semester, limiting the number of answers possibly obtained. To avoid this, the second moment of distribution of the questionnaires took place not on the final classes of the first semester, but on the beginning of the second semester. However, the results were still below the expectations.

The lack of matching between the first and second semester answered questionnaires was also a limitation. As the confidentiality of the participants needed to be maintained, only the four last digits of the ID card were asked, but some students didn't want to share them. So, despite the larger number of answers obtained, it was not possible to use them all because of the lack of information needed to match the questionnaires from the first and the second moment.

Lastly, it is believed that the changes on the attitudes of medical students against mentally ill people tend to decrease with time.[1,6,21] With the second measurement taking place on the

beginning of the second semester, almost one and a half months after finishing the classes, this could have delivered results not representative of the real change.

5. CONCLUSION

This study showed that attitudes of a sample of Portuguese medical students towards psychiatric patients improved after the attendance of Psychiatry classes but not after Psychology courses.

As comprehension of the physiopathology mechanisms involved in mental illnesses as well as their treatment basis seem to be important in changing students' beliefs and attitudes towards mentally ill patients, efforts should be applied to provide them, as early as possible.

Implementing anti-stigma programs inside medical schools could be an effective strategy to reduce or even eliminate stigma among future doctors. Psychology and Psychiatry courses should take active part on these programs.

Further investigation could be developed to assess students' attitudes towards mental health patients through the rest of their medical studies and training.

6. AKNOWLEDGMENTS

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8. APPENDIX

APPENDIX I: Informed consent and questionnaires applied

<u>Consentimento Informado</u>

No âmbito do Mestrado Integrado em Medicina, na Faculdade de Medicina da Universidade de Coimbra, está a ser desenvolvido um projeto de investigação denominado *''O estigma e a psiquiatria em estudantes do Mestrado Integrado em Medicina da Universidade de Coimbra'',* que visa estudar a prevalência do estigma em psiquiatria nos alunos do 3º e 4º ano do Mestrado Integrado em Medicina da Faculdade de Medicina da Universidade de Coimbra e comparar os dados recolhidos no início do ano letivo, anteriormente à assistência de aulas de psiquiatria e de psicologia médica, com dados recolhidos no final do semestre para perceber se esta variável melhora, permanece igual, ou piora à medida que os estudantes aumentam o seu contacto com patologias psiquiátricas.

Para tal, solicito a sua participação no preenchimento de um breve questionário, com uma duração total de aproximadamente 10 minutos. Não existem respostas certas nem erradas, o que interessa é o que pensa e sente realmente. É importante que leia atentamente e responda a todas as questões. Se eventualmente se enganar a assinalar a sua resposta, deverá riscá-la e preencher o quadrado correspondente à resposta que realmente pretende.

A participação nesta investigação tem um carácter voluntário, pelo que pode negá-la ou decidir interromper o preenchimento do questionário, a qualquer momento, se assim o entender.

Todos os dados recolhidos são anónimos e confidenciais.

O próprio investigador financiará o estudo e não há pagamento a investidores ou participantes.

Se pretender algum esclarecimento sobre este estudo, poderá contactar a investigadora principal Rita Queirós pelo e-mail rpvqueiros@gmail.com.

O investigador:

Assinatura: Data:

~~~~~~

Declaro ter lido e compreendido este documento, bem como as informações verbais que me foram fornecidas pela/s pessoa/s que acima assina/m. Foi-me garantida a possibilidade de, em qualquer altura, recusar participar neste estudo sem qualquer tipo de consequências. Desta forma, aceito participar neste estudo e permito a utilização dos dados que de forma voluntária forneço, confiando nas garantias de confidencialidade e anonimato que me são dadas pelo/a investigador/a.

Nome: _____

Assinatura: Data:

Este documento, composto por uma página, é feito em duplicado: uma via para o/a investigador/a, outra para a pessoa que consente.

DATA DE PREENCHIMENTO DO QUESTIONÁRIO**:** ___/___/201__

1. Por favor, indique os últimos 4 algarismos do seu Cartão de Cidadão: ___ ___ ___ ___

2. Qual a sua **idade**? _____

3. Sexo: Feminino   Masculino

4. Em que **país** nasceu? (Preencher apenas caso <u>não</u> tenha nascido em Portugal.) _____

5. Qual é o seu **estado civil**? Por favor, coloque uma cruz (X) na resposta que se aplica a si:

    Solteiro

                                                  Viúvo

    Casado/ Em união de facto

                                                  Divorciado/ Separado

    Outro, qual? _____

6. Quando ingressou em Medicina já era detentor de alguma Licenciatura ou Mestrado?

    Sim   Não

   6.1 Se respondeu **sim** à última questão, indique qual: _____

7. Que **tipo de especialidade** gostaria de seguir? Por favor, coloque uma cruz (X) na resposta que se aplica a si:

    Médica

                                                Não sei

    Cirúrgica

8. Já teve **contacto prévio** com alguma pessoa com **patologia mental?** Por favor, coloque uma cruz (X) na resposta que se aplica a si:

    Sim   Não

   8.1 Se respondeu **sim** à última questão, em que circunstância aconteceu esse contacto? (pode escolher mais do que uma resposta)

    Prática clínica   Familiar com patologia mental

    Antecedentes pessoais de patologia   Amigo com patologia mental
    mental

    Outro

Os questionários que se seguem relacionam-se com o seu MODO HABITUAL DE SER, PENSAR OU AGIR. Por favor, <u>coloque uma cruz na resposta que melhor se aplica a si,</u> usando as escalas de resposta indicadas. Não há respostas certas ou erradas.

Doença Mental: Escala de Atitudes para Clínicos

(versão para estudantes de Medicina)

MICA-2

Nota para os investigadores: por favor, utilize este instrumento só depois de ler as instruções que constam no "Manual para Investigadores".

Instruções: para cada uma das questões 1-16, responda assinalando apenas um quadrado. A expressão "Doença Mental" utilizada nesta escala refere-se às situações que levam a que uma pessoa seja vista por um psiquiatra.

		Concordo totalmente	Concordo	Concordo parcialmente	Discordo parcialmente	Discordo	Discordo totalmente
1	Só estudo psiquiatria porque é uma matéria avaliada em exame, e não me iria preocupar em fazer leituras adicionais.	☐	☐	☐	☐	☐	☐
2	As pessoas com uma doença mental grave nunca poderão recuperar o suficiente para ter uma boa qualidade de vida.	☐	☐	☐	☐	☐	☐
3	A psiquiatria é tão válida cientificamente como os outros campos da medicina.	☐	☐	☐	☐	☐	☐
4	Se eu tivesse uma doença mental nunca o iria admitir a nenhum dos meus **amigos**, com receio de ser tratado de modo diferente.	☐	☐	☐	☐	☐	☐
5	As pessoas com uma doença mental grave são habitualmente perigosas.	☐	☐	☐	☐	☐	☐
6	Em comparação, os psiquiatras sabem mais sobre a vida das pessoas que tratam do que os próprios familiares e amigos destes.	☐	☐	☐	☐	☐	☐
7	Se eu tivesse uma doença mental, nunca o iria admitir aos meus **colegas de trabalho**, com receio de ser tratado de modo diferente.	☐	☐	☐	☐	☐	☐
8	Ser psiquiatra **não** é a mesma coisa que ser um verdadeiro médico.	☐	☐	☐	☐	☐	☐
9	Se um psiquiatra mais graduado me obrigasse a tratar as pessoas com uma doença mental de uma forma menos respeitosa, **não** seguiria as suas indicações.	☐	☐	☐	☐	☐	☐

Doença Mental: Escala de Atitudes para Clínicos

(versão para estudantes de Medicina)

MICA-2

Nota para os investigadores: por favor, utilize este instrumento só depois de ler as instruções que constam no "Manual para Investigadores".

Instruções: para cada uma das questões 1-16, responda assinalando apenas um quadrado. A expressão "Doença Mental" utilizada nesta escala refere-se às situações que levam a que uma pessoa seja vista por um psiquiatra.

		Concordo totalmente	Concordo	Concordo parcialmente	Discordo parcialmente	Discordo	Discordo totalmente
10	Sinto-me tão à vontade a conversar com uma pessoa com uma doença mental, como com outra pessoa que tenha uma doença física.						
11	E importante que qualquer médico que acompanhe uma pessoa com uma doença mental avalie também a sua condição física.						
12	O público **não** necessita de ser protegido das pessoas com uma doença mental grave.						
13	Se uma pessoa com uma doença mental se queixar de sintomas físicos (como dor no peito), eu irei atribuir esses sintomas à sua doença mental.						
14	Não é expectável que os médicos de família façam uma avaliação detalhada a pessoas com sintomas psiquiátricos, uma vez que estas podem ser referenciadas para um psiquiatra.						
15	Eu utilizaria termos como 'louco', 'maluco', 'doido', etc., para descrever pessoas com doença mental que tivesse visto no meu local de trabalho.						
16	Se um colega de trabalho me dissesse que tinha uma doença mental, eu ainda continuaria a querer trabalhar com ele.						

Muito obrigado pela sua colaboração.

Leia cada afirmação com atenção. Para cada afirmação, nas páginas seguintes, marque com ⊠ apenas a coluna que melhor corresponde à sua opinião. Se mudar de opinião ou se se enganar apague completamente a resposta ou, no caso de isso não ser possível, preencha o ▓ errado e assinale com um ⊠ a sua resposta final. Não existem respostas certas nem erradas. Descreva as suas opiniões rápida, espontânea e honestamente. Responda a todas as questões.

Assinale **Discordo Fortemente** se a afirmação for definitivamente falsa ou se discordar fortemente dela. Assinale **Discordo** se a afirmação for, na maior parte das vezes, falsa ou se discordar dela. Assinale **Neutro** se a afirmação for igualmente falsa e verdadeira, se não se decidir ou se a sua posição perante o que foi dito é completamente neutra. Assinale **Concordo** se a frase for, na maior parte das vezes, verdadeira ou se concordar com ela. Assinale **Concordo Fortemente** se a frase for definitivamente verdadeira ou se concordar fortemente com ela.

	Discordo Fortemente	Discordo	Neutro	Concordo	Concordo Fortemente
1. Raramente estou triste ou deprimido(a).	☐	☐	☐	☐	☐
2. Sou uma pessoa alegre e bem disposta.	☐	☐	☐	☐	☐
3. A poesia pouco ou nada me diz.	☐	☐	☐	☐	☐
4. Tendo a pensar o melhor acerca das pessoas.	☐	☐	☐	☐	☐
5. Sou eficiente e eficaz no meu trabalho.	☐	☐	☐	☐	☐
6. Sinto-me, muitas vezes, desamparado(a), desejando que alguém resolva os meus problemas por mim.	☐	☐	☐	☐	☐
7. Muitas vezes, sinto-me a rebentar de energia.	☐	☐	☐	☐	☐
8. Às vezes ao ler poesia e ao olhar para uma obra de arte sinto um arrepio ou uma onda de emoção.	☐	☐	☐	☐	☐
9. A minha primeira reacção é confiar nas pessoas.	☐	☐	☐	☐	☐
10. Sou uma pessoa muito competente.	☐	☐	☐	☐	☐
11. Raramente me sinto só ou abatido(a).	☐	☐	☐	☐	☐
12. Sou uma pessoa muito activa.	☐	☐	☐	☐	☐
13. Acho as discussões filosóficas aborrecidas.	☐	☐	☐	☐	☐
14. Algumas pessoas consideram-me frio(a) e calculista.	☐	☐	☐	☐	☐
15. Esforço-me por ser excelente em tudo o que faço.	☐	☐	☐	☐	☐
16. Houve alturas em que experimentei ressentimento e amargura.	☐	☐	☐	☐	☐
17. Sou dominador(a), cheio(a) de força e combativo(a).	☐	☐	☐	☐	☐
18. Não dou grande importância às coisas da arte e da beleza.	☐	☐	☐	☐	☐
19. Tendo a ser descrente ou a duvidar das boas intenções dos outros.	☐	☐	☐	☐	☐
20. Sou uma pessoa aplicada, conseguindo sempre realizar o meu trabalho.	☐	☐	☐	☐	☐

NEO-FFI-20 desenvolvido por Bertoquini, V. & Pais Ribeiro, L. (2005).

Em baixo irá encontrar uma lista de afirmações. Por favor leia cada afirmação cuidadosamente e classifique quão frequentemente se sente ou comporta da maneira descrita. Assinale a sua resposta na coluna adequada. Não existem respostas certas ou erradas ou perguntas "traiçoeiras". Por favor responde a cada questão tão honestamente quanto consiga.

	Nunca	Raramente	Por vezes	Frequente	Sempre
1. Quando outra pessoa se sente animada, tenho tendência a sentir-me animado(a) também.					
2. Os infortúnios dos outros não me perturbam muito.					
3. Incomoda-me ver alguém ser tratado de forma desrespeitosa.					
4. Permaneço indiferente quanto alguém que me é próximo está feliz.					
5. Tenho prazer em fazer as outras pessoas felizes.					
6. Tenho sentimentos de compaixão e preocupação com pessoas menos afortunadas que eu.					
7. Quando um(a) amigo(a) começa a falar dos seus problemas, tenho dificuldade em mudar o tema da conversa.					
8. Consigo perceber quando outras pessoas estão tristes, mesmo quando não dizem nada.					
9. Perceber que estou "sintonizado(a)" com o estado de ânimo das outras pessoas.					
10. Não sinto simpatia por pessoas que causam as suas próprias doenças graves.					
11. Sinto-me irritado quando alguém chora.					
12. Não me interesso realmente pela forma como as outras pessoas se sentem.					
13. Sinto um forte impulso para ajudar quanto vejo alguém em dificuldades.					
14. Quando vejo alguém a ser tratado(a) de forma injusta, não sinto muito pena dele(a).					
15. Acho tolo que as pessoas chorem de felicidade.					
16. Quando vejo alguém ser explorado(a), sinto vontade de o(a) proteger.					

Obrigado pela sua participação.

Por favor verifique se respondeu a todas as questões.

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FMUC FACULDADE DE MEDICINA
UNIVERSIDADE DE COIMBRA

COMISSÃO DE ÉTICA DA FMUC

Of. Refª **109-CE-2018**

Data 29 / IX /2018

C/C aos Exmos. Senhores
Investigadores e co-investigadores

Exmo. Senhor
Prof. Doutor Duarte Nuno Vieira
Director da Faculdade de Medicina de
Universidade de Coimbra

Assunto: Pedido de parecer à Comissão de Ética - Projeto de Investigação autónomo (refª CE-105/2018).

Investigador(a) Principal: Rita Paiva Vilar Queirós

Co-Investigador(es): Nuno Gonçalo Gomes Fernandes Madeira, Vítor Manuel Oliveira Rodrigues Santos, António João Ferreira Macedo Santos, Ana Sofia Rocha Ramos Ferreira e Marta Catarina Costa Coimbra Lages

Título do Projeto: *"O estigma e a psiquiatria em estudantes do Mestrado Integrado em Medicina da Universidade de Coimbra".*

A Comissão de Ética da Faculdade de Medicina, após análise do projeto de investigação supra identificado, decidiu emitir o parecer que a seguir se transcreve:

"Parecer favorável não se excluindo, no entanto, a necessidade de submissão à Comissão de Ética, caso exista, da(s) Instituição(ões) onde será realizado o Projeto".

Queira aceitar os meus melhores cumprimentos.

O Presidente,

Prof. Doutor João Manuel Pedroso de Lima

HC