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Reflections on the Impact of Sexuality in Mental Health of Medical Students: A Quantitative Study in a Brazilian University

Reflexões sobre o Impacto da Sexualidade na Saúde Mental de Estudantes de Medicina: Um Estudo Quantitativo em uma Universidade Brasileira

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Abstract

Introduction: Some specific groups seem to show a higher prevalence of depression when compared to the general population, and that seems to be the case within the LGBT medical students population. This study aims to find out if there are repercussions in students' mental health according to their sexual orientation and to discover indications of depression in the participants according to their sexual orientation in the medicine course of the Federal University of Sergipe, in Aracaju.

Methods: A quantitative study was carried out at the Federal University of Sergipe, in Aracaju, Sergipe with 310 medical students who answered four questionnaires: Demographic characteristics, Beck Depression Inventory, LGBT Campus Climate Scale and the Scale of Perception of Social Support.

Results: About the stratification of depression according to sexual orientation, the prevalence of depression in LGBTI+ medical students were higher than that found in the heterosexuals students. Furthermore, both groups presented a lack of knowledge about specific public policies for this population.

Conclusion: It is extremely important that there are discussions that address both themes, sexuality and mental health, aiming to offer psychosocial support to those who are suffering in both groups, however, to those in need, with particular focus in those who show higher depression rates.

Resumo

Introdução: Alguns grupos específicos parecem apresentar maior prevalência de depressão quando comparados à população geral, como: estudantes de medicina e população LGBT. Este estudo tem como objetivo descobrir se há repercussões na saúde mental dos estudantes de acordo com sua orientação sexual e descobrir sinais de depressão nos participantes de acordo com sua orientação sexual no curso de medicina da Universidade Federal de Sergipe, em Aracaju.

Métodos: Foi realizado um estudo quantitativo na Universidade Federal de Sergipe, em Aracaju, Sergipe com 310 estudantes de medicina que responderam a quatro questionários: Características Demográficas, Inventário de Depressão de Beck, Escala de Clima do Campus LGBT e Escala de Percepção de Apoio Social.

Resultados: Quanto à estratificação da depressão de acordo com a orientação sexual, a prevalência de depressão em estudantes de medicina LGBTI+ foi maior do que a encontrada nos heterossexuais, além disso, ambos os grupos apresentaram desconhecimento sobre políticas públicas específicas para essa população.

Conclusão: É de extrema importância que haja discussões que abordem os dois temas, sexualidade e saúde mental, visando oferecer apoio psicossocial aos que sofrem em ambos os grupos, porém, com maior foco no grupo em que os índices de depressão são maiores.

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INTRODUCTION

Depression can be defined as a mental disorder characterized by persistent low mood, as result of a combination of genetic and environmental factors. Depression is a common illness in the Primary Health Care and its prevalence is increasing globally. In 2019, the World Health Organization estimated that more than 400 millions of people live with depression in the world, about 5.3% of the world population. In Brazil, the prevalence of depression is 5.8% (11 million people).¹⁻⁴

Even though there is an increasing acceptance of the lesbian, gay, bisexual, transgender and intersex (LGBTI+) population group in society, LGBTI+ people still experience discrimination, harassment and violence in social situations. This exposure to many stressors, consequently, contributes to an intense psychic suffering.^{5,6} The scientific literature says that mental disorders affect LGBTI+ people at higher rates than the heterosexual population.⁷⁻¹⁶

It is worth mentioning that there is few researches on LGBTI+ medical students due to the taboo and prejudice that surround this topic. Therefore, this study aims to elicit a discussion about mental health and the repercussion of sexuality as a potential trigger for the development of higher depressive disorder in the LGBTI+ medical students. In order to achieve that, this research aims to discover signs of depression in the participants according to their sexual orientation in the medical course of the Federal University of Sergipe.

MATERIAL AND METHODS

a. Study Setting

A cross-sectional, quantitative, analytical study was carried out at the Federal University of Sergipe (UFS), in Aracaju, Sergipe. For a population of 581 medical students at UFS and estimating that 10% of them have some kind of suffering related to their sexual orientation, sample size calculation for finite populations (within 95% confidence level and sampling error of 5%) found a minimum sample of 231 participants.¹⁷ In our study, it was possible to collect data from 310 medical students at UFS.

b. Data Collection Process

The recruitment took place over 5 months (between April and August 2018). The purpose of the study was explained and the consent was obtained before handing out the self-applied questionnaires to the participants. The eligibility criteria for inclusion in the survey were to sign the Term of Free and Informed Consent and be over 18 years old.

c. Questionnaires

During data collection, a sample of 310 medical students answered to four self-applied questionnaires. The first one was a socio-demographic questionnaire to evaluate

the profile of our sample. Then, the students answered the Brazilian Portuguese version - validated in 2012 - of Beck Depression Inventory (BDI), a self-report inventory created by Aaron T. Beck and first published in 1961.¹⁸ This instrument is used worldwide for detecting depressive symptoms and it is adequate to the diagnostic criteria of the Diagnostic and Statistical Manual of Mental Disorders. The test contains 21 questions and a value of 0 to 3 is assigned for each answer. Then, the total score is compared to determine the level of severity: scores 0-11 indicates minimal depression, 12-19 a soft depression, 20-35 a moderate depression and 36-63 a severe depression.

The third questionnaire was the LGBT Campus Climate Scale. This instrument is a scale designed to assess views of the university campus climate concerning LGBTQ students and issues through five main domains: LGBT Policy inclusion, LGBT Support and institutional commitment, LGBT Academic Life, LGBT Student Life and LGBT Counseling and Health. Through this tool, it is also possible to assess whether academics are aware of public policies and institutional actions directed at the LGBTI+ population on campus.¹⁹

Finally, the last questionnaire given to the students was the Perceived Social Support Scale, a 6-item scale designed to measure perceived social support from some sources, such as family members and friends.²⁰ This instrument is used globally as a safe assessment tool and its translation into Portuguese has already been used and evaluated in a previous study in Brazil with a fair methodology for the cross-cultural validation.²¹

d. Data Analysis

The data were described by means of simple frequency and percentage when categorical or average and standard deviation when interval. Fisher's exact test was used to evaluate association between categorical variables. To assess the differences in the responses to the Perceived Social Support Scale, considering sexual orientation with the Beck Depression Inventory, a generalized linear model with multinomial distribution and the Cumulative Logit link function was applied and its significance assessed by the Wald's Chi-Square Test. The significance level adopted was 5% and the software used was the R Core Team 2017.

RESULTS

a. Sample Characteristics

Students from all stages of medical college answered the questionnaires. From our sample of 310 students, there is a predominance of male students (58.3%) over female students (41.7%). Most respondents (98.7%) are in the age group between 18 and 35 years old. As for religion, the main highlights were Catholics (35.8%) and without religious practices (20.6%).

Regarding ethnicity, all students were grouped into three of the five possible categories, *pardo* (brown or mixed-race) (55.1%), white (36.4%) and black (8.3%), contrary to other data found in the literature in which the majority of medical students call themselves white. In the sample surveyed, the majority declared themselves to be mixed race and this change in the ethnic profile of medical students can be justified by the insertion of public policies of a social and racial nature, such as, for example, the quota policy that was implemented at UFS in the selection process of 2010, thus contributing to this change in the sociodemographic profile.

Regarding sexual orientation, 237 (76.5%) of medical students at UFS identified themselves as heterosexual. In our group, there are 73 (23.5%) LGBTI+ medical students. Among those who identify themselves as LGBTI+, 46 are homosexual, 25 are bisexual and only 2 are asexual. Table 1 shows the distribution of demographic characteristics from our population by sexual orientation.

Table 1. Demographic characteristics according to sexual orientation

	Heterosexual N (%)	LGBTI+ N (%)	<i>p</i> -value*
1. Gender identity			
Female	101 (42.6)	28 (38.4)	0.585
Male	136 (57.4)	45 (61.6)	
2. Age range			
18 to 25 years	202 (85.2)	58 (80.8)	0.765
26 to 35 years	32 (13.5)	13 (17.8)	
36 to 45 years	3 (1.3)	1 (1.4)	
3. Color/ race			
White	82 (34.6)	31 (42.5)	0.466
Black	21 (8.9)	5 (6.8)	
<i>Pardo</i> (brown or mixed-race)	134 (56.50)	37 (50.7)	
4. Medical school years			
1 st year	25 (10.5)	5 (6.8)	0.013
2 nd year	50 (21.1)	14 (19.2)	
3 rd year	48 (20.3)	10 (13.7)	
4 th year	29 (12.2)	7 (9.6)	
5 th year	48 (20.3)	11 (15.1)	
6 th year	37 (15.6)	26 (35.6)	

*Fisher's exact test

e. Analysis of Depression Levels

Based on Beck Depression Inventory, 29% of respondents showed some degree of commitment. This study found out that 220 (71%) of the students were classified as minimal depression, 60 (19.4%) presented soft depression and 29 (9.4%) moderated depression. It was also identified that only 1 (0.3%) student presented severe depression.

The Table 2 correlates depression's severity and sexual orientation of our population. In general, the prevalence of some level of depression among heterosexuals was 24% and in LGBT people was 45.2%.

Table 2. Depression's severity according to sexual orientation

	Heterosexual N (%)	LGBTI+ N (%)	<i>p</i> -value*
Depression			
Minimal	180 (75.9)	40 (54.8)	0.001
Mild	37 (15.6)	23 (31.5)	
Moderate	20 (8.4)	9 (12.3)	
Severe	0 (0.0)	1 (1.4)	

*Fisher's exact test

f. Perception of Support from Society and the Academic Environment

Regarding the perception of social support, it was shown (Table 3) that medical students from both groups showed high levels of this type of social support. When it comes to

the Scale of Evaluation of the Academic Environment Facing the Needs of the LGBTI+ Population, it was seen that the majority of university students are unaware of aspects that involve LGBTI+ life in the university - Table 4.

Table 3. Answers to the Perceived Social Support Scale

		Strongly Agree N (%)	Mildly Agree N (%)	Strongly disagree N (%)	Mildly disagree N (%)	Neutral N (%)	<i>p</i> -value*
1. The people around me let me know that they care about me	Heterosexual	79 (33.3)	83 (35.0)	8 (3.4)	21 (8.9)	46 (19.4)	0.59
	LGBTI+	23 (31.5)	27 (37.0)	0 (0.0)	8 (11.0)	15 (20.5)	
2. I have someone whose opinions i have confidence in	Heterosexual	155 (65.4)	57 (24.1)	5 (2.1)	8 (3.4)	12 (5.1)	0.087
	LGBTI+	37 (50.7)	27 (37.0)	0 (0.0)	3 (4.1)	6 (8.2)	
3. I have someone tha i feel i can completely trust	Heterosexual	159 (67.1)	48 (20.3)	7 (3.0)	8 (3.4)	15 (6.3)	0.004
	LGBTI+	35 (47.9)	29 (39.7)	2 (2.7)	0 (0.0)	7 (9.6)	
4. I have people around me who help me keep my mood high	Heterosexual	137 (57.8)	61 (25.7)	3 (1.3)	11 (4.6)	25 (10.5)	0.154
	LGBTI+	32 (43.8)	28 (38.4)	0 (0.0)	3 (4.1)	10 (13.7)	
5. There are people in my life who make me feels good about who i am	Heterosexual	150 (63.3)	60 (25.3)	4 (1.7)	9 (3.8)	14 (5.9)	0.377
	LGBTI+	40 (54.8)	25 (34.2)	0 (0.0)	2 (2.7)	6 (8.2)	
6. I have at least onde friend or relative that i wuant to be with when i'm feeling down	Heterosexual	164 (69.2)	40 (16.9)	7 (3.0)	6 (2.5)	20 (8.4)	0.069
	LGBTI+	41 (56.2)	23 (31.5)	1 (1.4)	3 (4.1)	5 (6.8)	

*Fisher's exact test

Table 4. Answers to the Scale of Assessment of the Academic Environment Facing the Needs of the LGBT Population

		No N (%)	Don't know N (%)	Yes N (%)	<i>p</i> -value*
LGBT policy inclusion					
1. Does your campus prohibit discrimination based on sexual orientation ?	heterosexual	22 (9.3)	149 (62.9)	66 (27.8)	< 0.001
	LGBTI+	19 (26.0)	49 (67.1)	5 (5.8)	
2. Does your campus explicitly include the term "sexual orientation" when publicly discussing multicultural and/or diversity issues on campus ?	heterosexual	31 (13.1)	168 (70.9)	38 (16.0)	< 0.001
	LGBTI+	26 (35.6)	41 (56.2)	6 (8.2)	
3. Does your campus prohibit discrimination based on gender identity ?	heterosexual	15 (6.3)	155 (65.4)	67 (28.3)	< 0.001
	LGBTI+	17 (23.3)	48 965.8)	8 (11.0)	
LGBT Support and Institutional Commitment					
4. Does your campus have an LGBTQ concerns office or an LGBTQ student resource center (an institutionally funded space specifically for LGBT gender and sexuality education and/or/ support services)?	heterosexual	58 (24.5)	172 (72.6)	7 (3.0)	< 0.001
	LGBTI+	36 (49.3)	34 (46.6)	3 (4.1)	
LGBT Academic life					
5. Does your campus make a concerted effort to incorporate LGBT issues into existing courses and/or do administrators/faculty address heteronormativity and gender normativity inthe curriculum/classroom?	heterosexual	37 (15.6)	108 (45.6)	92 (38.8)	0.006
	LGBTI+	22 (30.1)	21 (28.8)	30 (41.1)	
6. Does your campus have a significant number of books/ periodicals in the campus library/libraries tha speak to experiences of LGBT people?	heterosexual	127 (11.4)	198 (83.5)	12 (5.1)	0.005
	LGBTI+	20 (27.4)	50 (68.5)	3 (4.1)	

		No N (%)	Don't know N (%)	Yes N (%)	<i>p</i> -value*	
LGBT student life						
7.	Does your campus regularly offer activities and events to increase awareness of the experiences and concerns of LGBT people ?	heterosexual	58 (24.5)	131 (55.3)	48 (20.3)	< 0.001
		LGBTI+	38 (52.1)	25 (34.2)	10 (13.7)	
8.	Does your campus regularly hold social events specifically for LGBT students ?	heterosexual	51 (21.5)	162 (68.4)	24 (10.1)	< 0.001
		LGBTI+	38 (53.4)	28 (38.4)	6 (8.2)	
9.	Does your campus have at least one college/university recognized student organization for LGBT students and allies ?	heterosexual	32 (13.5)	137 (57.8)	682 (8.7)	< 0.001
		LGBTI+	29 (39.7)	28 (38.4)	16 (21.9)	
10.	Does your campus have college/university-recognized student organizations that primarily serve the needs of LGBT people ?	heterosexual	10 (4.2)	115 (48.5)	112 (47.3)	< 0.001
		LGBTI+	141 (9.2)	24 (32.9)	35 (47.9)	
LGBT Counseling and Health						
11.	Does your campus offer a support group(s) that assists individuals in the process of acknowledging and disclosing the following identities and their related concerns ?	heterosexual	21 (8.9)	206 (86.9)	10 (4.2)	< 0.001
		LGBTI+	30 (41.1)	41 (56.2)	2 (2.7)	
12.	Does your campus provide annual trainings for health center staff to increase their awareness of and sensitivity to the health care needs of LGBT people ?	heterosexual	28 (11.8)	195 (82.3)	14 (5.9)	< 0.001
		LGBTI+	28 (38.4)	43 (58.9)	2 (2.7)	

*Fisher's exact test

DISCUSSION

In our survey, 29% medical students presented some level of depression. A meta-analysis data extracted from 167 cross-sectional studies and 16 longitudinal studies from 43 countries also found that medical students has higher rates of depression than general population.²²

Based on the answers to the Beck Depression Inventory, there was significant correlation between homosexuality and depression (*p*-value = 0.001). In our sample, 23% medical students identify as a LGBTI+ person. However, it's important to mention that the data may be underestimated. Even though the anonymity was assured, the participants may have presented discomfort in answering questions about sexuality and sexual orientation.^{15,16}

The prevalence of minimal/ no depression was highest in heterosexual participants. When it comes to soft and moderate depression, prevalence was highest among LGBTI+ population. It is worth mentioning that the only case of severe depression was presented by a LGBTI+ person. To sum up, the prevalence of some level of depression among heterosexual and LGBTI+ medical students was 24% and 45.2%, respectively. Other studies also revealed that, for depression, LGBTI+ students experience higher rates of poor outcomes relative to heterosexual people.⁸⁻¹⁴

It is understandable and worrying these high rates of depression in this specific group. An issue that can contribute to this higher prevalence are the obstacles that occurred in a stigmatizing, segregating and discriminatory context, which can trigger a sense of personal inadequacy, leading to a possible risk of personal rejection, social isolation, and family mistakes that may be responsible for intense psychological suffering.⁵

Other factors that may be involved in the development of mental illness in the LGBTI+ group include: the

impossibility of talking openly about their own sexual orientation due to the possible negative reactions and academic losses, the lack of LGBT+ representation among medical doctors, personal and family issues related to their sexuality. Consequently, these people have to suppress their feelings and desires because of the fear of homophobia. Given the above, it is understandable why LGBTI+ medical students experience a greater prevalence of depression than their heterosexual classmates.²³

When it comes to Perceived Social Support, there is high levels of social support among these students. In the literature it is well documented that a psychosocial support network, made up of bonds and social relationships is fundamental in the context of mental health care.²⁴ Thus, solid social support and a good use of available resources for social integration are considered as factors capable of protecting and promoting mental health.^{25,26}

Regarding the Scale of Assessment of the Academic Environment Facing the Needs of the LGBT Population, the majority of medical students, regardless of sexual orientation, claim to be unaware of the aspects that involve LGBT life at the university, whether within public policies, actions that integrate academic and student lives, whether in support of the institution to this population specifically. These results are consistent with a previous finding in other study also carried out in Aracaju with medical students.²⁷ This lack of knowledge may occur for some reasons, such as the university's lack of mention of the topic or even the students' lack of interest in seeking information about this topic, disregarding its relevance.

In the term of free and informed consent, we asked our participants to declare interest in mental health help and only 1 out of 310 students manifested interest in that. These high refusal rates may be occurred due to the ignorance of what

is a psychotherapy, because of the stigma related to depression and mental health services or due to the disregard for this therapeutic modality (either because of disbelief or because of lack of time and money).

This study has a few limitations that can affect the obtained results. The main one is the possible discomfort in answering the questionnaires, once they had questions about topics that are forgotten in the discussions, such as sexuality and depression. All things considered, the creation of a space in graduation that allow knowledge and clarification of uncertainties is essential to facilitate access to this forgotten topics. Furthermore, there must be more studies to achieve more reliable results.

CONCLUSION

During medical graduation, students face many sources of stress and pressure, which could lead to the development

of mental disorders. As shown in this study, the prevalence rate of depression in this group was 29%.

In this survey, the LGBTI+ group represent 23% of our sample. The current study also found that LGBTI+ medical students is more vulnerable to the depression. The prevalence of some level of depression in the this group was 45.2%, compared with 24% of heterosexual students. It is worth mentioning that the only case of severe depression (1.4%) was presented by a LGBTI+ person.

Both groups presented high levels of perception of social support. However, they demonstrated a lack of knowledge about specific public policies offered by the UFS for this population.

Given the results obtained, it is extremely important that there are discussions that address both themes, sexuality and mental health, aiming to offer psychosocial support to those who are suffering in both groups, however, with more focus in the group with the higher rates of depression.

Declaração de Contribuição

All authors participated equally in the development of the research and writing of the paper.

Contributorship Statement

All authors participated equally in the development of the research and writing of the paper.

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