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**ARTICLE**

# THE EDUCATIONAL ENVIRONMENT THROUGH THE LENSES OF A PEER MENTORING GROUP FOR MEDICAL STUDENTS

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**ABSTRACT:** The perception of the learning process is shaped by individual experiences and related to the academic environment. This article aimed to evaluate the perception of the educational environment of medical students linked to the peer-mentoring group GEDAAM (Study Group on Didactics Applied to Medical Learning) at the Federal University of Minas Gerais. The data come from a cross-sectional study with 129 members of GEDAAM. The Dundee Ready Education Environment Measure (DREEM)

scale was used to assess the perception of the educational environment. Descriptive and comparative analyses were performed (Chi-square test). For almost all assessed domains, the students' perception was more positive than negative (Global score = 108.41). The longer the length of stay at GEDAAM, the worse the Global perception of the educational environment. It is suggested that participating in GEDAAM contributes to a more critical view of the medical teaching environment.

**Keywords:** medical education, mentoring, educational evaluation.

## O AMBIENTE EDUCACIONAL PELAS LENTES DE UM GRUPO DE MENTORIA ENTRE PARES PARA ESTUDANTES DE MEDICINA

**RESUMO:** A percepção do processo de aprendizagem é moldada por experiências individuais e relacionadas ao meio acadêmico. Este artigo objetivou avaliar a percepção do ambiente educacional de estudantes de medicina ligados ao grupo de mentoria entre pares GEDAAM (Grupo de Estudos em Didática Aplicada ao Aprendizado da Medicina) da Universidade Federal de Minas Gerais. Os dados são provenientes de estudo transversal com 129 membros do GEDAAM. A escala *Dundee Ready Education Environment Measure* (DREEM) foi utilizada para avaliar a percepção do ambiente educacional. Foram realizadas análises descritivas e comparativas (Teste Qui-quadrado). Para quase todos os Domínios avaliados, a percepção dos estudantes foi mais positiva do que negativa (escore Global = 108,41). Quanto maior o tempo de permanência no GEDAAM, pior a percepção Global do ambiente educacional. Sugere-se que participar do GEDAAM contribua para uma visão mais crítica do ambiente de ensino de medicina.

**Palavras-chave:** educação médica, tutoria, avaliação educacional.

## EL ENTORNO EDUCATIVO A TRAVÉS DE LOS LENTES DE UN GRUPO DE TUTORÍA DE PARES PARA ESTUDIANTES DE MÉDICA

**RESUMEN:** La percepción del proceso de aprendizaje está conformada por experiencias individuales y relacionada con el entorno académico. Este artículo tuvo como objetivo evaluar la percepción del entorno educativo de los estudiantes de medicina vinculados al grupo de mentoría entre pares GEDAAM (Grupo de Estudio de Didáctica Aplicada al Aprendizaje de la Medicina) de la Universidad Federal de Minas Gerais. Los datos provienen de un estudio transversal con 129 miembros de GEDAAM. Se utilizó la escala Dundee Ready Education Environment Measure (DREEM) para evaluar la percepción del entorno educativo. Se realizaron análisis descriptivos y comparativos (prueba de Chi-cuadrado). Para casi todos los dominios evaluados, la percepción de los estudiantes fue más positiva que negativa (puntuación global = 108,41). Cuanto más tiempo se pasa en GEDAAM, peor es la percepción global del entorno educativo. Se sugiere que la participación en el GEDAAM contribuya a una visión más crítica del entorno de la enseñanza médica.

**Palabras clave:** educación médica, tutoría, evaluación educativa.

## INTRODUCTION

The learning process is directly influenced by the personal experiences of individuals over time. For this reason, it is very difficult to establish a single model to be followed (DURKHEIM, 2011). In the context of higher education, particularly medical education, learning is strongly influenced by the volatility of students' perceptions throughout training. Physical, social, and psychological factors play an important role in the student's assimilation, which may affect their performance and mental health (SHOCHET; COLBERT-GETZ; WRIGHT, 2015; COLBERT-GETZ et al., 2016). Aspects related to

the educational environment, such as professors' aptitude, teaching approach, student assessments, and quality of facilities, can modify the global view of the students' learning process (PEROTTA et al., 2021).

A negative perception of the educational environment can directly or indirectly influence mental health and academic success, as this is dependent on the well-being and satisfaction of the student (SHOCHET et al., 2013; GRØTAN; SUND; BJERKESET, 2019). For this reason, the profile of the educational environment provides a unique way of assessing an institution's qualities and deficits, creating comparative analyses inside and outside the university to promote improvements in teaching and learning (MOURÃO; CALDEIRA; RAPOSO, 2009).

In general, the literature points out that the educational environment does not have evaluations considered exceptional among medical students, even though it is generally seen with more positive than negative aspects (OGUN; NOTTIDGE; ROFF, 2018; HYDE et al., 2018). The aspects with the worst evaluation, in international studies, are related to academic issues and social relationships within the teaching environment, exemplified in the discouragement of the course, and the ones with the best evaluation are related to learning and professors (SHAH et al., 2019; IRFAN et al., 2019). Brazilian medical students are more critical of the educational environment, pointing to the need for improvement in various aspects related to medical education, with academic and social issues being the most heavily criticized (GUIMARAES et al., 2015; ENNS et al., 2016).

In recent decades, peer mentoring has been a strategy used in some medical schools to improve students' perception of the educational environment (ANDRE; DEERIN; LEYKUM, 2017). In this learning modality, an individual more experienced in a certain area is responsible for guiding another person, to contribute to his or her personal and professional development (PEYTON et al., 2001). When compared to traditional mentoring, which occurs between professors and students, it is highlighted because it is a strategy capable of meeting the needs of students, bringing the philosophy that nothing will help the student more than the student (SULMAZ et al., 2019). In addition, peer mentoring is associated with a better perception of social support (ACHERMAN et al., 2021), an aspect strongly related to mental health (GRØTAN; SUND; BJERKESET, 2019; SHAO et al., 2020), at a better perception of academic success (ANDRE; DEERIN; LEYKUM, 2017; CREE-GREEN et al., 2020; SHAFIAAI; KADIRVELU; PAMIDI, 2020) and the better academic adaptation of the student (TANAKA et al., 2016; SULMAZ et al., 2019; SANTANA; SERVO, 2021).

Following this trend, in 2013, at the Medicine School of the Universidade Federal de Minas Gerais (UFMG), a group formed by students called the Study Group on Didactics Applied to Learning Medicine (GEDAAM-*Grupo de Estudos em Didática Aplicada ao Aprendizado da Medicina*) was created. The group aims to make medical training less exhausting and more competent. It uses mentoring among peers as its main tool, in addition to learning based on autonomy, in which knowledge sharing, encouraging student protagonism, and the development of interpersonal skills provide benefits that go beyond academic motivation (ACHERMAN et al., 2021). GEDAAM seeks to periodically assess the effects of its work on the academic and personal lives of students who belong to the group. In this sense, this study aimed to evaluate the perceptions of medical students participating in GEDAAM about the educational environment in which they are inserted.

## METHODS

### About GEDAAM

GEDAAM organizes its work with medical students based on the peer mentoring strategy (ANDRE; DEERIN; LEYKUM, 2017). In addition to discussing topics relevant to medical education and professional training, the team involved in conducting the groups aims to provide a welcoming environment, understand errors as part of teaching and learning, and respect the particularities of everyone in the process. It aims to help develop communication skills, build a network of contacts, and increase knowledge, increasing academic satisfaction and culminating in a more assertive professional path.

Each mentoring subgroup is formed by up to three mentors (students who participated in GEDAAM and who took the Training Course for Coordinators) and eight to 14 mentees from different

periods, lasting 15 half-yearly meetings. Smaller groups aim to enable greater interaction between members and customize meetings according to the peculiarities and demands of those involved. Discussions involve Management techniques (time organization, study methodologies, oratory, and presentation techniques); Clinical Cases (Evidence-Based Health and approach to knowledge of all cycles of medical education, allowing contribution from all members in the process of improving clinical reasoning), and Mental Health (social support among members and acceptance of individual issues, in addition to training of links).

New members join every six months, free of charge, upon participation in an opening symposium or master class. It is open to all students from the health area and other Higher Education Institutions (HEIs), but it concentrates on students from the Medicine course at UFMG. Approximately 200 academics from different periods join each cycle of activities.

**Data source and sample**

The data analyzed in this article come from the cross-sectional phase of the study "MOTIRÕ - GEDAAM: quality of life, self-efficacy and resilience of participants in the Study Group on Didactics Applied to Medical Learning". The objective of the study is to evaluate the repercussion of participation in the GEDAAM of UFMG medical students on the perception of the educational environment. All students who were or had been part of GEDAAM since 2013, when the group was founded, were invited to participate in the cross-sectional phase of the study, carried out between October and December 2019. The selection criterion for participation in the study was having participated in the GEDAAM at some point, regardless of the length of stay in the group.

The study complied with all ethical precepts and all participants consented to their participation online, after reading the Informed Consent Form (ICF). The study was approved by the UFMG Research Ethics Committee (COEP/UFMG), CAAE nº 19756819.0.0000.5149, opinion nº 3.586.931.

**Variables used and data analysis**

Students answered a questionnaire structured by Google Forms containing questions related to participation in GEDAAM (type of participation, length of stay, positions, study techniques used), sociodemographic information (age, gender, skin color, sexual orientation, city of origin), related to the course (cycle and situation in the course – regular or irregular) and perception of the educational environment. The educational environment was assessed using the Dundee Ready Education Environment Measure (DREEM) scale, developed in 1997 (ABDULLA, 2014). This scale allows the positive and negative points of the educational environment of each HEI to be identified and corrected (MILES; SWIFT; LEINSTER, 2012). It has 50 items on a five-point Likert scale divided into five Domains: Learning, Professors, Academic, Atmosphere, and Social (ALTAWATY et al., 2020, ABDULLA, 2014). The scale's global score ranges from zero to 200 and corresponds to the simple sum of its 50 items. The score for each Domain varies according to the number of items: Learning (0 to 48); Professors (0 to 44); Academic (0 to 32); Atmosphere (0 to 48) and Social (0 to 28). The higher the score, the better the perception of the teaching environment (ROFF et al., 1997). Items with an individual mean score $< 2$ are considered trouble spots; scores between 2.1 and 3 are considered weaknesses; between 3.01 and 3.4 are considered strong points and mean scores $> 3.5$ are considered very strong points (ROFF et al., 1997). The Brazilian version of the scale has good validity (Cronbach's alpha: 0.93) and reliability indicators that indicate its use in this population (OLIVEIRA FILHO; VIEIRA; SCHONHORST, 2005).

Descriptive analyses (by calculating frequency distributions, measures of central tendency, and dispersion) and comparative analyses were carried out using One-way ANOVA according to the number of completed semesters in GEDAAM. Data were analyzed using the Statistical Package for Social Sciences (SPSS), version 19.0.

## RESULTS

The participants in the study were 129 students, in which 45% (n=58) of them were current members of GEDAAM. Most students were regular in the course (90.7%) and were studying the basic cycle (45.7%), which corresponds to the first two years of graduation. More than half were female (55.8%), white (64.3%), heterosexual (75.2%), and had a mean age of 23.34 years (median=22 years; standard deviation=4.39). Just over a third of the respondents came from another state other than Minas Gerais (35.7%).

Most students stayed at GEDAAM for a full semester (55.9%), or two full semesters (39.0%). A smaller part answered that they had already assumed a position of coordination in one of the mentoring groups (21.2%) and 53.4% did not hold administrative positions, remaining only as a mentor in one of the groups. Administrative positions were reported by 46.6% of respondents, which include the position of group coordinator and being a member of a board (teaching, scientific, general coordination, external relations, marketing).

Among the most frequently reported study techniques there is the use of abstracts (88.4%), reading (77.5%), questions and exercises (71.3%), outlines (65.9%), and the Pomodoro method of study (63.6%). Less than half of respondents said they also use group studies (48.8%), Flashcards, and mind maps (47.3%, each). The average weekly time dedicated to studies, excluding classroom time, was 11.78 hours (Standard deviation = 7.98) (data not presented in tables).

Boxes 1 and 2 show the analysis of the perception of the educational environment evaluated by DREEM. It is possible to perceive a bad evaluation for almost all items analyzed. None of them obtained an average rating higher than 3.5, demonstrating that there is no aspect of the educational environment in which students are very satisfied. The Learning Domain was evaluated as more negative than positive (total score = 23.61). Considering the items that compose it separately, we observed that 58.3% (n=7) of them obtained an average score below 2, indicating the existence of many problems, and 41.7% (n=5) average scores between 2 and 3, indicating that they are considered weaknesses (Box 1). The students understand as problematic points the fact that teaching is not very stimulating (score = 1.33), cohesive and focused (score = 1.73), the teaching method is not aimed at developing students' confidence (score = 1.61) and neither emphasizes learning in memorable facts (score = 1.58). Furthermore, they perceive that the time spent on teaching is not well used (score = 1.41). Among the weak points, teaching that is not very focused on the student (score = 2.28) stands out, which does not encourage the process of self-learning (score = 2.32), with course objectives that are not so explicit (score = 2. 51), which do not encourage the development of skills by academics (score = 2.16), in addition to continuing education being little emphasized (score = 2.71).

The student's evaluation of the Professor's Domain showed that "they are in the right direction" (total mean score = 24.37) (Box 1). Nine of the 11 questions that make up this domain (81.8%) obtained mean scores between 2.1 and 3. As problematic points, the lack of good feedback was pointed out (score = 1.36), as well as the impatient way of dealing with patients (score = 1.88).

The Academic Domain obtained a more positive than negative general evaluation (total mean score = 17.49) (Box 2). Most items (62.5%) had means between 2.1 and 3, showing up as weak. As problematic, the perception of the difficulty of studying medicine in the same way as before (score = 1.22) and the ability to memorize everything the student needs (score = 1.72) were pointed out. Only the item related to confidence in passing the course obtained a score greater than 3.01 (score = 3.22).

The Atmosphere Domain was also evaluated by the students as having more positive aspects than negative ones (average total score = 28.14) (Box 2). Most of the items in this domain (83.3%) were considered weak points, and the best-evaluated item was related to the opportunity to develop the practice of personal relationships (score = 2.74). The items considered problematic were related to the practice of cheating on tests as something common (score = 1.32) and the stimulation of the learning environment (score = 1.99).

Box 1 - Means and standard deviations (SD) of the items and Learning and Professor Domains, evaluated using the Dundee Ready Education Environment Measure scale, Motirõ-GEDAAM Study, Brazil, 2019 (n=129)

| Domains/Items | Mean[a] | SD |
|---|---|---|
| **Learning Domain[b]** | 23.61 | 6.94 |
| 1. I am encouraged to participate in classes | 1.87 | 1.08 |
| 7. The teaching method adopted is often stimulating | 1.33 | 0.94 |
| 13. The teaching method is student-centered (more self-learning) | 2.28 | 1.11 |
| 16. The teaching method is concerned with developing my competence | 2.16 | 1.14 |
| 20. The teaching method is very cohesive and focused | 1.73 | 1.04 |
| 22. The teaching method is concerned with developing my confidence | 1.61 | 1.05 |
| 24. The teaching time is well spent | 1.41 | 1.09 |
| 25. The teaching places a lot of emphasis on learning memorable facts | 1.58 | 1.18 |
| 38. I know about the objectives of this course | 2.51 | 0.98 |
| 44. The teaching method encourages me to pursue my learning | 2.32 | 1.06 |
| 47. The importance of continuing education is emphasized | 2.71 | 1.05 |
| 48. The teaching method is very teacher-centered | 1.50 | 1.10 |
| **Professor Domain[c]** | 24.27 | 6.91 |
| 2. It is possible to understand the professors in their classes | 2.36 | 0.95 |
| 6. Professors have been patient with sick students | 1.88 | 1.05 |
| 8. Professors ridicule students | 2.54 | 1.06 |
| 9. Professors are authoritative | 2.21 | 1.08 |
| 18. Professors can communicate well with patients | 2.50 | 0.81 |
| 29. Professors give good feedback to students | 1.36 | 0.99 |
| 32. Professors give constructive criticism | 2.15 | 0.93 |
| 37. Professors give very clear examples | 2.13 | 0.91 |
| 39. Professors get nervous in class | 2.67 | 0..92 |
| 40. Professors are prepared for classes | 2.29 | 0.99 |
| 50. Students annoy professors | 2.36 | 1.02 |

Source: Created by the authors.

a. Reference values: Individual mean score $\leq$ 2: problematic; between 2.1 and 3: weak; between 3.01 and 3.4: strong; $\geq$ 3.5: very strong.

b. Reference values: 0-12 (very bad); 13-24 (more negative than positive perception); 25-36 (more positive than negative perception); 37-48 (fully positive).

c. Reference values: 0-11 (very bad); 12-22 (in need of training); 23-33 (in the right direction); 34-44 (model professors).

Box 2 - Means and standard deviations (SD) of the items and Academic, Atmosphere, Social, and Global Scale Domains, evaluated using the Dundee Ready Education Environment Measure scale, Motirõ-GEDAAM Study, Brazil, 2019 (n=129)

| Domains/Items | Mean[a] | SD |
|---|---|---|
| **Acadêmic Domain**[b] | 17.49 | 4.84 |
| 5. As I studied before, it also works in this course | 1.22 | 1.15 |
| 10. I am confident that I will pass this year | 3.22 | 0.95 |
| 21. I feel that I have been well-prepared for the profession | 2.22 | 1.05 |
| 26. The previous year's education prepared me well for this year. | 2.16 | 1.01 |
| 27. I have good memory capacity for everything I need | 1.72 | 1.24 |
| 31. I learned a lot about personal relationships in this profession | 2.74 | 0.99 |
| 41. The search for solutions has been developed in this course | 2.15 | 0.93 |
| 45. Much of what I've seen seems important to medicine. | 2.67 | 0.96 |
| **Atmosphere Domain**[c] | 28.14 | 6.68 |
| 11. The environment is peaceful during classes in the ward/health center | 2.71 | 0.93 |
| 12. This college is very punctual in the courses | 2.20 | 0.90 |
| 17. The practice of cheating on tests is common in this college | 1.32 | 1.17 |
| 23. The environment is quiet during classes | 2.64 | 0.95 |
| 30. I can develop the practice of personal relationships | 2.74 | 0.88 |
| 33. I feel comfortable in classes | 2.46 | 0.94 |
| 34. The atmosphere is relaxed during seminars | 2.47 | 1.02 |
| 35. I have found my experience here disappointing. | 2.62 | 1.11 |
| 36. I have good concentration skills | 2.12 | 1.21 |
| 42. Satisfaction is greater than the stress of studying Medicine | 2.50 | 1.23 |
| 43. The environment encourages me to learn | 1.99 | 1.11 |
| 49. I feel free to ask what I want in class | 2.16 | 1.23 |
| **Social Domain**[d] | 14.90 | 4.63 |
| 3. There is a good support program for stressed students | 1.40 | 1.06 |
| 4. I have been too tired to take this course | 1.47 | 1.11 |
| 14. I rarely feel discouraged in this course | 1.52 | 1.06 |
| 15. I have good friends in the college | 3.03 | 1.07 |
| 19. My social life is good | 2.21 | 1.17 |
| 28. I rarely feel alone | 1.94 | 1.24 |
| 46. I live in a comfortable place | 3.33 | 0.83 |
| **Global Scale**[e] (50 items) | 108.41 | 25.40 |

Source: Created by the authors.

a. Reference values: Individual mean score $\leq$ 2: problematic; between 2.1 and 3: weak; between 3.01 and 3.4: strong; $\geq$ 3.5: very strong.

b. Reference values: 0-08 (feeling of total failure); 09-16 (many negative aspects); 17-24 (more positive than negative aspects); 25-32 (self-confident).

c. Reference values: 0-12 (very poor); 13-24 (many aspects have to be improved); 25-36 (more positive than negative aspects); 37-48 (good, generally speaking).

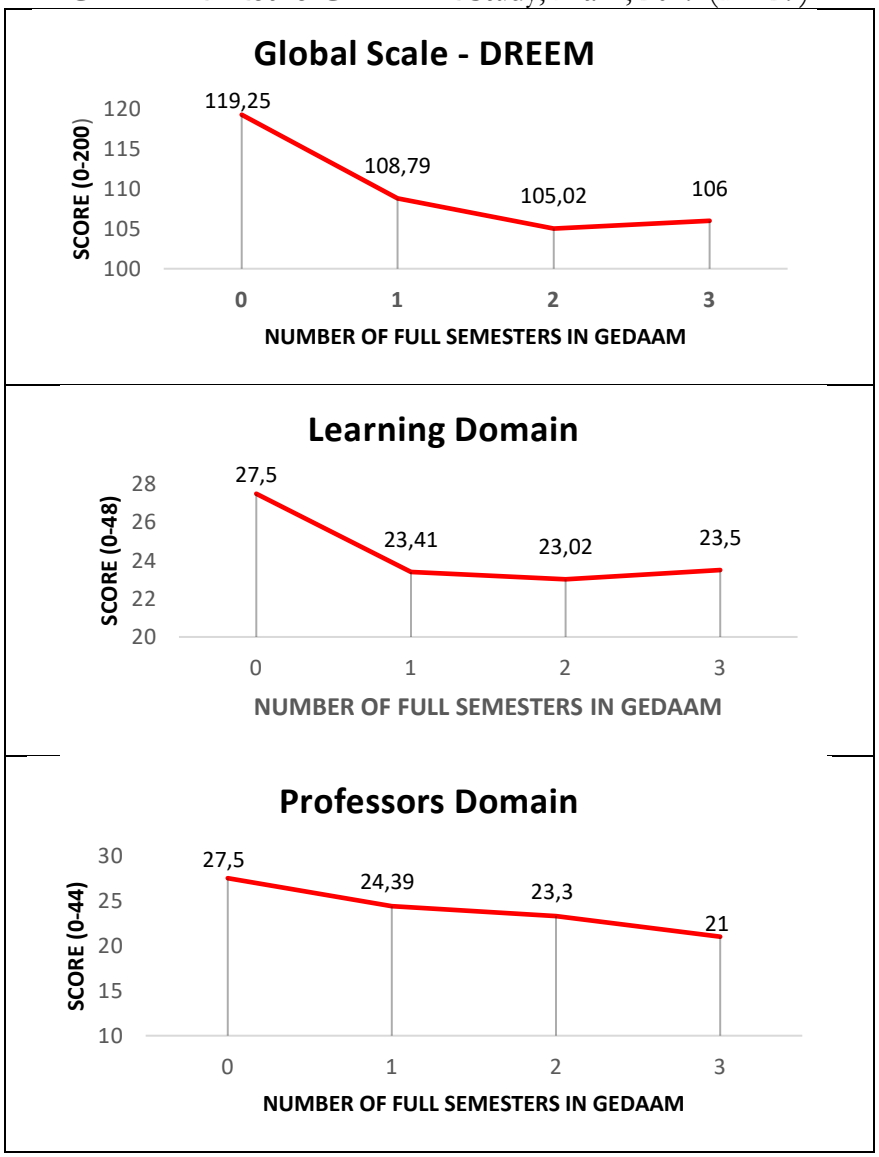
d. Reference values: 0-07 (poor); 08-14 (not very good); 15-21 (not too bad); 22-28 (very good)

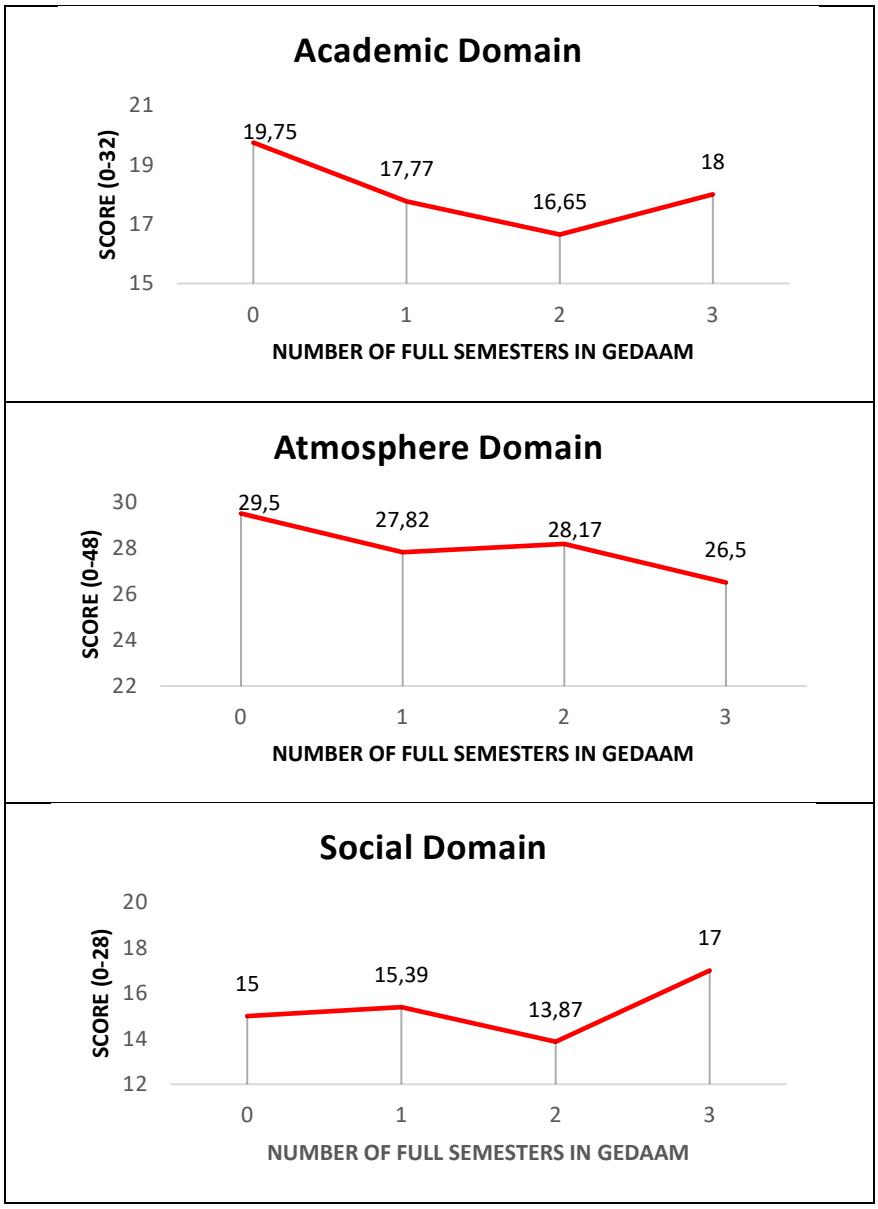
e. Reference values: 0-50 (very poor); 51-100 (with many problems); 101-150 (more positive than negative); 151-200 (excellent).

The Social Domain was considered by the students as not being very good (mean total score = 14.90) (Box 2). Only the item "my social life is good" obtained a score considered as a weak point (score = 2.21). Most items in this domain (57.1%) were considered to have many problems (scores ranging from 1.40 to 1.94). As strengths, the existence of good friends in college (score = 3.03) and the fact of living in a comfortable place (score = 3.33) stand out.

The analysis of the student's perception of the time of participation in the GEDAAM is shown in Figure 1. On the Global Scale, as the time spent in the group increases, the more critical the student becomes. There is a slight increase in score after three full semesters on the GEDAAM. This upward trend in scores after three semesters was also observed in the Learning, Academic, and Social Domains, with the latter score being higher than that obtained at the beginning of participation in the group. In the Professor Domain, a gradual decrease in scores was observed as the student stayed longer in the GEDAAM. For none of the Domains and Global Scale, such differences were statistically significant (p-value >0.05).

Figure 1 – Mean scores of the Domains and Global Scale, evaluated using the Dundee Ready Education Environment Measure scale, according to the number of completed semesters in GEDAAM. Motirõ-GEDAAM Study, Brazil, 2019 (n=129)






**Source:** Created by the authors.

## DISCUSSION

The educational environment directly impacts academic performance and the medical career since good learning experiences boost individual potential and encourage students to develop good professional performance (PAI et al., 2014; MUSHTAQ et al., 2017). Thus, assessing the perception of the educational environment at the undergraduate level can provide a broad perspective on the learning process and reveal problematic areas that can be reformulated and improved (PAI et al., 2014; MUSHTAQ et al., 2017; CHAN et al., 2018).

In general, the evaluated students had a "more positive than negative" perception of the educational environment (Global score = 108.41). This result was lower than a multicenter study carried out between 2011 and 2012, involving 22 Brazilian medical colleges, whose total average score was 119.4 (ENNS et al., 2016) and another Brazilian study carried out in 2013 with 105 medical students from the city of Petrolina (Global score = 144.4) (GUIMARAES et al., 2015). It was also lower than in a study carried out in 2014 with 423 students in the last year of graduation from four medical colleges in Saudi Arabia (Global score = 147.7) (NOUH et al., 2016) and pharmacy and medicine students from Pakistan (Global score = 130.1) (ASKARI et al., 2018). Although numerically lower than the values found in the literature, this score classifies students' perception of the educational environment in the same category according to Roff et al. (1997). To be considered excellent, the mean Global score must be greater than

151, which denotes that the analyzed students recognize positive points in the institution, but do not fail to point out weaknesses.

When analyzing the findings according to each of the domains, it is possible to observe that the Learning Domain and the Social Domain were the ones that obtained the worst evaluation. Regarding the Learning Domain, the students' perception was more negative than positive (mean score = 23.61). This result was slightly higher than a study carried out between 2015 and 2016 with 322 medical students from Mumbai, India, whose mean scores were 23.06 for students in the fifth semester and 19.77 for those in the seventh (PATIL; CHAUDHAR, 2016). In this study, all items in this Domain that were considered problematic points (score less than 2) are somehow related to the adoption of traditional teaching-learning methodologies, in which characteristics such as the centrality of teaching in the professor and the mechanical learning gain emphasis (BES et al., 2019). Thus, the student's evaluation reflected dissatisfaction with important points, such as lack of stimulation (score = 1.61) and lack of strengthening of confidence in education (score = 1.41).

As opposed to these more traditional and conservative approaches, active methodologies can provide students in general, and also medical students, with a reflective position of reality and protagonism, in which "learning to learn" gains contours of appreciation for the own curricular guidelines (MACEDO et al., 2018; DIAS-LIMA et al., 2019). According to Adada (2017), the HEI must be governed not only by guidelines strictly referring to the subject to be taught but also by themes that address the development of the student as belonging to society. This was not observed by the GEDAAM students who participated in the study, whose perception considers that the teaching-learning process is not focused on the student in its complexity (score 2.28). In this way, an urgent change is necessary so that methodologies restricted to the transmission of contents are abolished and make room for forms of teaching centered on the student since these allow the formation of an independent professional who seeks knowledge to develop appropriate knowledge in the context of life and capable of making criticisms (BERBEL, 2011; FERNANDES; MELO; VIEIRA, 2015).

The Social Domain was also negatively evaluated by the students surveyed (score = 14.90). This result was worse than a study carried out in 2014 with 595 students in Sri Lanka, which evaluated perceptions after curriculum renewal (mean score = 16.9), being the only Domain without decline after changes in the learning model, which it provided for greater integration between curriculum activities (ELLAWALA; MARASINGHE, 2021). In addition to perceiving those social relations, in general, in the academic context as "not very good", the students evaluated in the present study also pointed out the presence of tiredness and the lack of a good support program for the most stressed students. Although it has been possible to assess a direct relationship between such aspects and mental health, it can be inferred that somehow such issues, in addition to impacting social activities, can act as a coadjuvant in mental illness, so prevalent in this population group.

According to Zaidhaft (2019), medical education is permeated by a lack of pleasure due to the (mistaken) idea that "medical education" implies the annulment of the individual and his potential outside the academic environment, as if, when choosing to study medicine, the student needed to give up all his life outside the academy, impacting his perception of social support. In addition to feeling discouraged with the course and more alone, the students drew attention to the need for a good support program for stressed students. The prevalence of stress symptoms was observed in more than half of undergraduates (60.9%) in a study carried out with medical students from the first to the eighth period in Paraná, Brazil (LIMA et al., 2016) and may be related to the overload required by the voluminous content, as well as the constant state of alert and tension that medical students are conditioned to (MOREIRA; VASCONCELLOS; HEATH, 2015).

Many students perceived loneliness as a problem point (score = 1.94) and recognized their social life as a weakness (score = 2.21). We can assume that in addition to the dynamics of the course, including the extensive workload, the teaching methodology of some disciplines, contact with death and suffering, the difficulty of balancing academic life with social life outside the campus may impact social perception. Considering that approximately 36% of the members of the mentoring group in the present study come from cities other than Belo Horizonte (where UFMG is located), distancing from the family circle, without the possibility of other social support strategies, transcends the physical aspect, also

acquiring a symbolic character, personified in the inevitable feeling of longing, increasing the feeling of loneliness (CECHET, 2013; TANAKA et al., 2016).

The views of the students who participated in the study on the Academic and Atmosphere Domains were less negative, although they are not positive. In the Academic Domain, most items (62.5%) obtained mean scores between 2 and 3, indicating that such items can be considered weaknesses according to the DREEM classification (ROFF et al., 1997), among which the perception of decontextualization of what is taught with medical practice stands out. As problematic points (average score less than 2), the difficulty of studying medicine in the same way as before and the difficulty of memorizing important topics of the course stand out. Such results may signal both immaturities from the point of view of individual repertoire related to the application of more efficient learning methodologies adaptable to the medical course by academics (COLARES; OLIVEIRA, 2018) and difficulty in explaining the applicability of the knowledge that is being transmitted by the professors since the students are confident about passing the course but feel unprepared to deal with the exercise of professional life.

The training of general practitioners, as is the case at UFMG, requires the acquisition of various skills that go beyond medicine such as decision-making in an uncertain situation, managing patients' needs and available resources, and working together with the multidisciplinary team (VIEIRA et al., 2018). In this sense, sometimes students are in a scenario that requires complex skills that can be left aside in traditional teaching.

Regarding the Atmosphere Domain, the evaluated students perceived more positive aspects than negative ones, as well as 527 Indian medical students whose mean in this domain was even lower (26.00) (KAUR et al., 2021). The students in this study understand that the space intended for the study is not adequate because it is characterized by the student's lack of concentration and inhibition in asking questions in the classroom. This aspect was evidenced by Ryan and Deci (2000), who indicated that the academic environment could motivate or inhibit the student according to the level of support offered. In this sense, the academic atmosphere and the interpersonal relationships created in the educational environment can facilitate or hinder the student's need for autonomy (SOBRAL, 2003). This perception, associated with the difficulty of studying and memorizing important topics, may justify the constant practice of cheating during tests since medical students tend to have greater difficulty in time management, which consequently generates higher levels of stress and psychological symptoms in an eventually pathological phase (SANTANA; SERVO, 2021). These symptoms can generate a high degree of self-demand, so there are changes in behavior and understanding of ethical and moral values, impacting future professional life (FIGUEIREDO et al., 2014; LIMA et al., 2020).

The Professor Domain was the only domain with a more positive evaluation when compared to the others (mean score = 24.27). Although this result is lower than a study carried out in 2016 with 278 medical students from two medical colleges in India (score = 30.41), it fits into the same classification category, considering that professors are in the right direction (SENGUPTA; SHARMA; DAS, 2017). The analysis of the items in this domain separately showed that 81.8% of the evaluated aspects were classified as weaknesses and were related to the scarcity of constructive criticism and clear examples by the professors. Although students often recognize that professors are a reference in the subject taught and competent educators, they do not fail to point out the difficulty of some professors in using feedback as a teaching tool, which is also observed in the context of graduate programs (MONTES; RODRIGUES; AZEVEDO, 2019). The need to introduce communicative skills within graduation is relatively recent and has the positive point of overcoming communication deficits of professors, particularly those whose training was based on a more content-based curriculum, and creating such competence in doctors in training (TURINI et al., 2008).

The evaluation of the influence of the time spent in the GEDAAM on the students' perception suggests that, in general, the longer the time in the group, the more critical the students become regarding the educational environment. Even without a statistically significant difference, the variation in the scores for each Domain and Global DREEM scale according to time indicates some important aspects. Both the Atmosphere Domain and the Learning, Professor, and Global scale domains showed a small fluctuation in scores according to time in the GEDAAM (around 1.5 on average), but with lower average scores for students with three or more full semesters in the group. This suggests that

participation in peer mentoring groups, such as GEDAAM, can make students more critical, precisely because they have at their disposal a series of more active teaching-learning tools and a greater possibility of building skills (ACHERMAN et al., 2021).

Although the Academic Domain has shown an improvement in scores among students who remained in GEDAAM for more than three full semesters, this improvement does not exceed the perception of new students to the group for any of the DREEM Domains, except for the Social Domain. Participating in peer mentoring for more than three semesters seemed to improve students' perception of their social relationships, unlike the other domains. Although the general evaluation of this domain was classified as "not very good", when stratified by the time spent in GEDAAM, we observed that the classification category changes to "not so bad", showing the potential of this type of mentoring as a source of social support (ACHERMAN et al., 2021). Social support is closely linked to students' mental health and its lack can increase the risk of symptoms of depression and anxiety, as observed by a study carried out with 2057 Chinese medicine and pharmacy students, which revealed that academics who live alone and/or who have a bad relationship with classmates or friends have higher levels of depression and anxiety (SHAO et al., 2020).

The more negative view of professors over the semesters at GEDAAM may be related to the change in the way of relating, the core of the peer mentoring strategy, which is the hierarchical break and the acquisition of more critical thinking, contributing to the student experience is questioned with greater emphasis (CREE-GREEN et al., 2020; SHAFIAAI; KADIRVELU; PAMIDI, 2020). The mentor, in the view of the student, is less intimidating and more accessible than the traditional professor, as he is a figure who removes barriers in communication, leaving room for positioning (ANDRE; DEERIN; LEYKUM, 2017).

Thus, a good medical educational environment can value the student, in which empathy and the humanization of relationships create the basis for constant discussion and reflection (COSTA; AZEVEDO, 2010; TAVARES, 2017). The participation of academics as protagonists of their education favors the development of a more qualified learning experience that, through critical evaluation of the process, is capable of actively contributing to the promotion of improvements in their education and their peers (PAI et al. al., 2014).

## FINAL CONSIDERATIONS

The results of this study showed that the DREEM can be an important diagnostic tool, indicating priorities for carrying out curricular changes to refine the quality of the educational environment. They highlight the importance of creating and consolidating a student support environment, as well as the need to seek strategies to be implemented to improve the fragile points of the educational environment so that an efficient and healthier learning space is achieved. Finally, the results of this study showed the influence of the mentoring group on the student's perception of the educational environment in which they are inserted.

Being in the peer mentoring group seems to have provided students with a more critical eye, especially on their performance. Participation in GEDAAM may, in a way, be related to the expression of a more inquiring look at their academic experience, aimed at improving academic and professional development, in which the member expands his or her conception of teaching-learning and passes to recognize important flaws in the traditional teaching methodology, in which the student-professor relationship is usually distant, not very interactive and not very centered on the student, who becomes a passive element in the process (PAI et al., 2014; MUSHTAQ et al., 2017 ).

Although it was not possible to statistically confirm the initial hypothesis of the study, that the length of stay in GEDAAM influences the perception of the educational environment of its participants, this study was able to identify interesting trends. Our findings suggest that a longer period in GEDAAM may favor a more critical perception of medical education and a better perception of social support. We believe that carrying out the second phase of the Motirõ Study, which provides for the prospective follow-up of members, will be able to detect the role of mentoring more accurately among peers in the perception of medical students about the educational environment.

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## AUTHORS' CONTRIBUTION

Author 1 - Methodology, conceptualization, text writing, and review of the final writing.
Author 2 - Research, methodology, conceptualization, text writing, and review of the final writing.
Author 3 - Research, conceptualization, writing of the text, and review of the final writing.
Author 4 - Research, conceptualization, writing of the text, and review of the final writing.
Author 5 - Research, conceptualization, writing of the text, and review of the final writing.
Author 6 - Project coordinator, Formal analysis, data curation, supervision, validation, conceptualization, and final writing review.

## CONFLICT OF INTEREST DECLARATION

The authors declare that there is no conflict of interest with this article.