MOTIVATION TO LEARN AND DROPOUT REASONS OF HEALTH SCIENCE STUDENTS

MOTIVAÇÃO PARA APRENDER E CAUSAS DE EVASÃO DE ESTUDANTES DE CIÊNCIAS DA SAÚDE

MOTIVACIÓN PARA APRENDER Y RAZONES DE DESERCIÓN DE ESTUDIANTES DE CIENCIAS DE LA SALUD

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ABSTRACT: This study aimed to correlate dropout reasons with motivation to learn among health science students, and to correlate motivation to learn and dropout reasons with age, gender, and sleep hours. A quantitative cross-sectional study was conducted with the participation of 481 students. Correlations were found between motivation to learn and dropout reasons ($r=-0.25$; $p=0.00$); between age and extrinsic motivation ($r=-0.15$; $p\leq0.00$), intrinsic motivation ($r=0.11$; $p=0.01$), and dropout reason related to support ($r=0.09$; $p\leq0.05$); between sleep hours and dropout reasons related to institutional issues ($r=0.15$; $p\leq0.00$), vocational issues ($r=-0.10$; $p=0.02$), and performance ($r=0.11$; $p=0.01$). It was concluded that students demonstrated a good overall motivation to learn and a low to moderate tendency for dropout. Motivation positively influenced and decreased the intensity of dropout reasons.

KEYWORDS: Motivation. Student dropouts. Students' Health Occupations.

RESUMO: Este estudo objetivou correlacionar os motivos de evasão com a motivação para aprender de estudantes de ciências da saúde e correlacionar a motivação para aprender e os motivos de evasão com a idade, sexo e horas de sono. Realizou-se um estudo transversal quantitativo. Participaram 481 estudantes. Foram encontradas correlações entre motivação para aprender e os motivos de evasão ($r=-0,25$; $p=0,00$); entre a idade e a motivação extrínseca ($r=-0,15$; $p\leq0,00$), motivação intrínseca ($r=0,11$; $p=0,01$), e o motivo de evasão relacionado ao suporte ($r=0,09$; $p\leq0,05$); entre a variável horas de sono e os motivos de evasão relacionado as questões institucionais ($r=0,15$; $p\leq0,00$), vocacionais ($r=-0,10$; $p=0,02$), e desempenho ($r=0,11$; $p=0,01$). Concluiu-se que os estudantes demonstraram boa motivação geral para aprender e tendência baixa a moderada para evasão. A motivação influenciou positivamente e diminuiu a intensidade dos motivos para evasão.

PALAVRAS-CHAVE: Motivação. Evasão escolar. Estudantes de Ciências da Saúde.

RESUMEN: Este estudio tuvo como objetivo correlacionar los motivos de deserción con la motivación por aprender de los estudiantes de ciencias de la salud y correlacionar la motivación por aprender y los motivos de abandono con la edad, el sexo y las horas de sueño. Se realizó un estudio transversal cuantitativo. Participaron un total de 481 estudiantes. Se encontraron correlaciones entre la motivación para aprender y los motivos de abandono ($r=-0,25$; $p=0,00$); entre la edad y la motivación extrínseca ($r=-0,15$; $p\leq0,00$), la motivación intrínseca ($r=0,11$; $p=0,01$) y el motivo de abandono relacionado con el apoyo ($r=0,09$; $p\leq0,05$); entre la variable de horas de sueño y los motivos de abandono relacionados con cuestiones institucionales ($r=0,15$; $p\leq0,00$), vocacionales ($r=-0,10$; $p=0,02$) y rendimiento ($r=0,11$; $p=0,01$). Se concluyó que los estudiantes mostraron una buena motivación general para aprender y una tendencia baja a moderada de abandono. La motivación influyó positivamente y redujo la intensidad de los motivos de abandono.

PALABRAS CLAVE: Motivación. Deserción escolar. Estudiantes de Ciencias de la Salud.

Introduction

Admission to Higher Education constitutes a significant event in people's trajectories, representing a unique opportunity for qualified entry into the job market and for the individual's integral development. However, the Brazilian Higher Education Expansion Policy over the last 20 years has faced two challenges: student dropout and retention in Higher Education Institutions (HEIs) (Patrick; Williams, 2012). The 2021 Census by the National Institute of Educational Studies and Research Anísio Teixeira (INEP) points out that the majority of HEIs in Brazil are private, with 81% of them being colleges, while public HEIs are mainly made up of universities, 42.8% of which are state universities, 38% federal and 19.2% municipal (Brasil, 2022).

The variety of challenges experienced by university students impacts several personal aspects, including success, achievement, satisfaction and learning through frustrations (Cunha *et al.,* 2015). However, the graduation completion rate is only 62.4%, showing a significant dropout rate among university students (Sales; Balby; Cajueiro, 2016).

Given this scenario, one of the main factors that contribute to student dropout is the lack of financial resources to continue with academic life. As a measure to solve this problem, the Ministry of Education created the Student Financing Fund (FIES) in 1999, which offers student credit with reduced interest rates and encourages graduation from private institutions (Corbucci; Kubota; Meira, 2016). From 2010 onwards, with significant changes to the concession rules, FIES became an important instrument in expanding the provision of higher education in Brazil (Campos *et al.,* 2020).

However, despite the existence of FIES, evasion continues to be a complex and significant phenomenon. In 2016, the Higher Education Census, prepared by INEP, outlined the profile of Brazilian students throughout their undergraduate studies, taking into account retention, completion and dropout rates, raising several variables that may affect the possibility of a student completing the program or delay your graduation time (Costa; Bispo; Pereira, 2018).

Considering these variables, the Self-Determination Theory (TA) has been the subject of much discussion in the field of motivation in the teaching-learning process, in order to identify other factors that influence higher education students (Oliveira; Silva, 2016). Developed in 1981 by Richard Ryan and Edward Deci, professors in the Departments of Clinical and Social Science and Psychology at the University of Rochester, TA was designed to respond to the epistemological and ethical questions of the eudaimonic paradigm, which

considers health and well-being psychological consequences of commitment to life's challenges and purposes (Deci; Ryan, 2008).

TA addresses motivational components and factors that favor their promotion, emphasizing personality and human motivation as a result of evolutionary trends, innate psychological needs and conditions conducive to motivation, social functioning and personal well-being (Guimarães; Boruchovitch, 2004). In this sense, self-determination is composed of a set of behaviors and skills that enable the individual to be the agent causing their own future (Martinelli; Bartholomeu, 2007).

Therefore, the objectives of this study were to correlate the reasons for evasion with the motivation to learn of health sciences students and to correlate the motivation to learn and the reasons for evasion with age, sex, and hours of sleep.

Method

A quantitative study was carried out at an HEI in Guarulhos, São Paulo. The present study constitutes an integral part of the thesis entitled "Motivation to learn and dropout among university students: proposal for a program to prevent dropout in undergraduate health courses" (Romero, 2021).

Students were recruited via email and WhatsApp and the sample size was estimated after a pilot with 48 participants through the platform provided by the Epidemiology and Statistics Laboratory of the Instituto Dante Pazzanese de Cardiologia. The variable of interest was assumed to have a normal distribution with known standard deviation.

Considering the standard deviation (σ=7.62) and mean (μ=85.15) of the Motivation to Learn Scale, the coefficient of variation was calculated (CV=SD/Mean; CV=0.089). The maximum estimation error was estimated by multiplying the CV and σ(0.089 x 7.62), resulting in 0.681. The significance level was pre-established at 5% and the estimated sample size for applying this instrument was 481.

A systematic sampling was carried out, stratified by course, with equal probability of selecting health sciences students. The population was 5,180 in 2018, and the proposed sample size generated a sampling interval of 9 participants in the complete list that contained the 10 courses in alphabetical order, semester and period. Therefore, participants were recruited systematically from every 9th student on the list from a random start. Data collection took place between October 2018 and April 2020, using two instruments: the Motivation to Learn Scale

for University Students (EMA-U) and the Reasons for Evasion in Higher Education Scale (M-ES).

The EMA-U is based on the TA and is composed of 26 items divided into 2 factors: Intrinsic Motivation and Extrinsic Motivation, assessed using a 4-point Likert scale from "Totally Agree" to "Totally Disagree". In questions related to extrinsic motivation, this score must be reversed. The instrument's total score ranges from 26 to 104, with the higher the score, the greater the intrinsic motivational orientation (Boruchovitch, 2008a).

The M-ES was used to measure the potential reasons for dropout among higher education students. Composed of 53 items distributed into seven components (Institutional Reasons, Vocational Reasons, Reasons related to Lack of Support, Reasons related to Career, Reasons related to Academic Performance, Interpersonal Reasons and Reasons related to Autonomy), evaluated by a five-point Likert varying between "very weak" and "very strong". The total score can range from 53 to 265 and the higher the score, the greater the possibility of the student dropping out (Ambiel, 2015).

For data analysis, the DataLEE ® statistical program was used. The descriptive data were tabulated with their respective means and standard deviations. For the correlation between items of intrinsic and extrinsic factors of the EMA-U scale, the Spearman test was used, with an accepted significance of $p<0.05$.

The students were informed about the study and agreed to participate, electronically signing the Free and Informed Consent Form (TCLE). The scales were sent via an online form (Google Forms ®) and the questionnaire was completed in approximately 15 minutes. The project was approved by the Research Ethics Committee of Guarulhos University under opinion nº 2.674.748 and CAAE 88886618.8.0000.5506.

Results

481 undergraduate students participated in the study, with a mean age of 25.4 (±6.7), most of them female (n=372; 77.3%), Christian (n=472; 98.1%), single (n=363; 75%) and employed (n=261; 54%). The average number of hours worked per day was 7.7 (±1.9), hours of sleep was 6.4 (±1.4), individual income was 1.4 (±1.6) minimum wages and income family salary of 4.1 wages (±3.2).

In relation to the undergraduate course, the following is the frequency of health sciences students who participated in the study: 21.6% from psychology, 16% from dentistry, 15.8%

from veterinary science, 8.9% from nursing, 8.9% nutrition, 8.5% biomedicine, 7.9% physical education, 7.1% physiotherapy and 5% pharmacy courses.

The total average score of the participants' responses in relation to the EMA-U was 81.19 ($\pm$9.0), above the arithmetic mean of the instrument (26+104/2=65), showing a good general motivation when learning. The mean intrinsic motivation was 48.1 ($\pm$4.8) and extrinsic motivation was 26.9 ($\pm$6).

The items with the highest averages in the EMA-U were related to intrinsic factors, such as the desire to study and learn new subjects (3.81$\pm$0.82), self-perception of the importance of studying (3.82$\pm$0.48) and willingness to learn more and more (3.72$\pm$0.50) which shows that motivation is directly related to intrinsic motivation (Table 1).

Table 1 – Descriptive analysis of the items on the Motivation to Learn Scale for University Students (EMA-U).

EMA-U Items	Average	DP
01. I study because studying is important to me.	3.82	0.48
03. I want to study and learn new subjects.	3.81	0.42
09. I study because I like to acquire new knowledge.	3.75	0.48
19. I study because I want to learn more and more.	3.72	0.50
07. I do my academic work because I think it is important.	3.59	0.62
16. I get interested when my teachers start new content.	3.55	0.59
02. I go to college to get a better job.	3.54	0.69
12. I try to find out more about the subjects I like, even without my teachers asking me to.	3.45	0.65
06. I keep trying to solve a task, even when it is difficult for me.	3.41	0.63
14. I like going to college because I learn interesting subjects there.	3.40	0.67
04. I study because studying gives me pleasure and joy.	3.29	0.68
21. I study even without anyone asking me to.	3.18	0.77
22. I like studying challenging subjects.	3.17	0.73
24. I work hard on college work, even when it won't count for a grade.	3.08	0.81
11. I like studying difficult subjects.	2.83	0.73
23. I only study to have a good job in the future.	2.75	0.94
18. I prefer relatively simple and straightforward tasks.	2.65	0.91
08. I prefer to study easy subjects.	2.49	0.94
13. I only study because I want to get high grades.	2.30	0.91
10. I only study what the teachers tell me will be on the test.	2.22	0.93
20. I only study academic content that will appear on the test.	2.17	0.91
05. I only study so I don't do badly at university.	1.98	0.93
26. I believe that there is no point in doing good academic work if no one else knows about it.	1.95	1.00
17. I give up on an academic task when I encounter difficulty.	1.74	0.84
25. I study because I'm worried that people will think I'm smart.	1.73	0.91
15. I go to college out of obligation.	1.34	0.73

Note: Items not recoded for inference, just identification for the instrument's total score.
Source: Prepared by the authors.

Regarding the M-ES, the average score was 148.37 ($\pm$38.50), below the arithmetic mean of the instrument (53+265/2=159), showing a low to moderate trend in reasons for evasion (Table 2).

The items with the highest averages in the M-ES generally showed reasons for dropping out of university related to financial difficulties in paying for the course, reconciling work with academic activities and issues related to the quality of the institution, course, equipment and teachers (Table 2).

Table 2 – Descriptive analysis of the items on the Higher Education Evasion Scale (M-ES).

M-ES Items	Average	DP
24. Increase in the monthly fee.	3.98	1.18
53. The institution is disorganized.	3.89	1.22
1. Financial difficulties in paying for the course.	3.87	1.22
21. Having to stop working to have time to do internships.	3.55	1.40
19. Increased expenses at home.	3.50	1.22
45. Not having time to complete internships.	3.40	1.40
50. Lack of assistance from course coordination.	3.36	1.35
35. The way teachers teach.	3.34	1.25
11. Work at the same time as classes.	3.21	1.55
44. Laboratory equipment is outdated.	3.11	1.32
20. The job market is very limited.	3.09	1.19
52. Take on new professional assignments that make it impossible to continue studying.	3.09	1.31
16. Disappointment with the course.	3.08	1.42
17. My current job demands a lot of me at the moment.	3.08	1.45
36. The salary range for the profession is very low.	3.03	1.14
14. Low long-term professional recognition.	3.00	1.23
40. Difficulty understanding the course materials.	3.00	1.27
13. Failing several subjects.	2.99	1.58
22. Have a serious illness in the family.	2.99	1.54
42. Teachers don't pay attention to students.	2.98	1.37
26. Realizing that the course may not help you get a good job in the future.	2.91	1.29
48. Getting below average grades.	2.90	1.26
47. Difficulty accessing the internet on campus.	2.89	1.42
31. Perform poorly in some subjects.	2.82	1.29
49. Need to buy a property.	2.79	1.44
23. Realizing that the professional activity will not be as pleasant as I imagined.	2.78	1.32
4. Immaturity of colleagues.	2.76	1.33
46. The institution does not offer any pedagogical monitoring program.	2.76	1.22
9. Realizing that my higher education is not the only possibility to get a good job.	2.73	1.18
30. Not knowing exactly where I can work after graduating.	2.72	1.25
34. My career isn't what I thought it would be.	2.71	1.25
27. Living far from college/university.	2.70	1.28
38. Bad relationship with teachers.	2.69	1.41
37. There is no internet available on campus.	2.66	1.45
51. The institution does not offer exchange opportunities.	2.62	1.27
6. Failing the same subject more than once.	2.60	1.48
25. Indecision about whether or not to continue in my current higher education course.	2.60	1.36
28. Failure in a subject.	2.53	1.32
2. Having to live far from my family.	2.51	1.36
5. Doubts regarding my professional choice.	2.49	1.35
3. Not sure if I'm on the right course.	2.48	1.43
32. Desire to learn about another course.	2.46	1.16
10. Take responsibility for living alone.	2.44	1.30
18. Being at college/university due to family imposition.	2.33	1.51
33. Lack of books in the library.	2.24	1.18
43. Not getting help from colleagues when I have difficulty learning some content.	2.23	1.11
29. Realizing that people think very differently than me.	2.20	1.09
8. Bad relationship with classmates.	2.16	1.15

39. Having a different social class than my colleagues.	2.11	1.07
41. Having to live alone.	2.11	1.20
15. Need to live in a republic.	2.03	1.18
12. Not making friends at college/university.	2.01	1.10
7. Difference between my age and that of other colleagues.	1.90	0.97

Note: Items not recoded for inference, just identification for the instrument's total score.
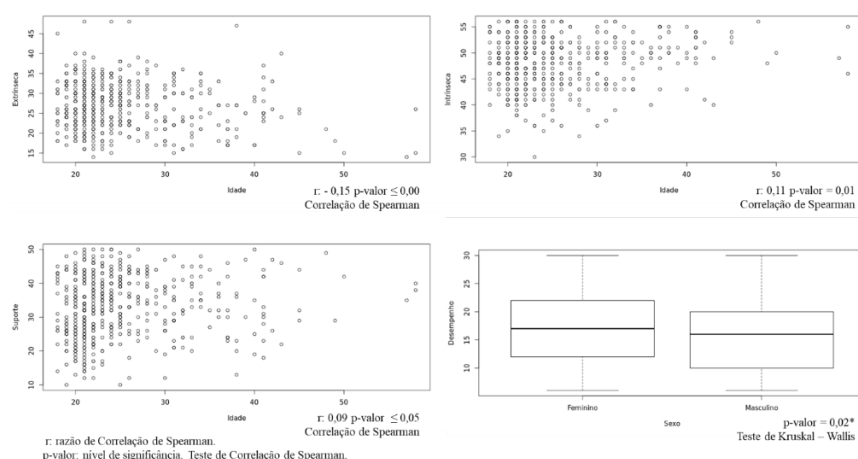Source: Prepared by the authors.

There was a statistically significant negative correlation in the association between motivation to learn and reasons for evasion ($r=-0.25$; $p=0.00$), that is, the greater the motivation, the fewer reasons for evasion.

There were statistically significant correlations between the age variable and extrinsic motivation ($r=-0.15$; $p \leq 0.00$), intrinsic motivation ($r=0.11$; $p=0.01$), and the reason for evasion related to support ($r=0.09$; $p \leq 0.05$). These data show that the older the age, the greater the intrinsic motivation and the stronger the reason for dropping out due to lack of support. However, the older the age, the lower the extrinsic motivation (Figure 1).

There was a statistically significant association between the gender variable and the performance-related reason for evasion ($p=0.02$), showing that females identified the performance-related reason for evasion as stronger. (Figure 1).

Figure 1 – Statistically significant associations of the variables age and sex with the factors/domains of the Motivation to Learn Scale for University Students and the Reasons for Avoiding Higher Education Scale
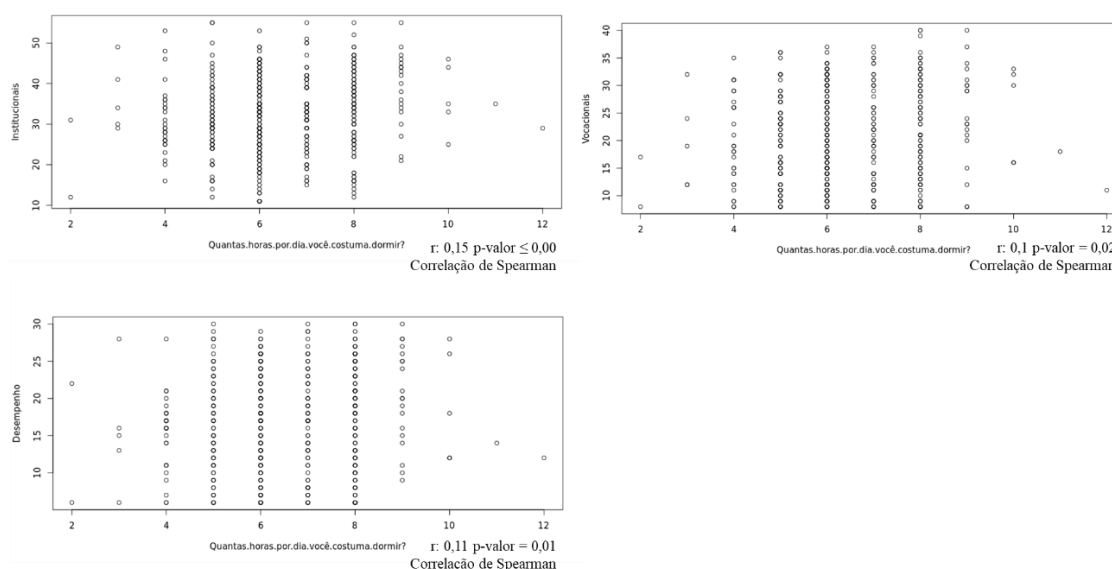

Source: Prepared by the authors.

Statistically significant correlations were found between the variable hours of sleep and reasons for dropping out related to institutional ($r=0.15$; $p \leq 0.00$), vocational ($r=-0.10$; $p=0.02$) issues, and performance ($r=0.11$; $p=0.01$), that is, the more hours of sleep, the stronger the reason for dropping out was related to the quality of the teaching staff and the student's own

academic performance at the university. However, the more hours of sleep, the weaker the reason for dropping out due to uncertainty about being on the right course.

Figure 2 – Statistically significant correlations of the variable hours of sleep with the domains of the Scale of Reasons for Avoiding Higher Education

Source: Prepared by the authors.

Discussion

Academic motivation and university dropout are closely correlated factors, and one can directly impact the other. Academic motivation can vary considerably, while some students seek to deepen their knowledge and develop skills for their future professional performance, others are more focused on obtaining their diploma (Leal; Miranda; Carmo, 2013). Studies highlight the importance of understanding the factors that influence the choice of course and satisfaction with the future profession. This can help prevent university dropouts, as providing more complete information about the course and the characteristics of the profession can help students make more informed decisions (Leal; Miranda; Carmo, 2013; Edgar *et al.,* 2019). It is known that student engagement with the course and the educational institution, in addition to the level of emotional exhaustion during this process, are important predictors for academic performance and intention to drop out (Maroco *et al.,* 2020).

Other common reasons associated with dropout are lack of aptitude for the chosen course, poor quality of teaching, poorly structured subjects, curricular matrix, teacher conduct, poor infrastructure, lack of adequate physical spaces and lighting. Furthermore, emotional and social components involved in this process must be considered, such as obtaining a job before

or during studies, lack of employment prospects, family issues and life crises (Sales; Balby; Cajueiro, 2016; Cassiano *et al.,* 2021; Campos *et al.,* 2020; Barros; Wilhelm, 2018; Kukkonen; Suhonen; Salminen, 2016). Social support is important to motivate students, especially those who need to balance studies and work. External financial support to support studies can be a relevant factor for those facing financial difficulties (Pan; Zaff; Donlan, 2017).

Furthermore, it was identified that gender and age are factors that also interfere with academic motivation. A study carried out by the author of EMA-U analyzed the motivation of 225 students in relation to learning and found that intrinsic motivation was predominant, being higher in women and increasing with the age of the students (Boruchovitch, 2008b). Another study compared the motivation of Management students and found that male students showed greater extrinsic motivation, while female students showed a greater tendency towards intrinsic motivation with increasing age (Mello; Leme, 2016).

In this sense, it is essential to carry out studies and adopt academic motivation measures to understand students' engagement with the curriculum and promote changes to improve students' academic success and psychosocial well-being (Edgar *et al.,* 2019), in addition to maintaining low levels of student burnout to prevent university dropout and offer social support and coping strategies to mitigate the problem (Marôco *et al.,* 2020).

Academic motivation and university dropout are complex and multifaceted phenomena that involve a series of individual, social and institutional factors. To ensure that students have an environment conducive to academic success, educational institutions must take measures to address these issues.

According to a study carried out at a Brazilian Federal University, teachers consider that promoting dialogue, listening and welcoming students, carrying out targeted actions during the first year of entry into the course and mediating teachers to offer support to students throughout graduation are the main strategies to prevent university dropout (Araujo; Silva; Pederneiras, 2022).

Furthermore, university managers can take several important actions to prevent university dropout, such as improving course organization, offering counseling and motivational support activities to students and choosing suitable internship locations for health courses (Ferri *et al.,* 2016). It is important to emphasize that these measures must be implemented in an integrated manner and with the involvement of the entire academic community. In summary, preventing university dropouts requires a holistic and strategic

approach on the part of educational institutions. Only through integrated and effective actions it will be possible to guarantee an environment conducive to students' academic success.

The present study has limitations in relation to the non-randomization of participants and the cross-sectional data collection, which only allows associations. Furthermore, the results refer to a particular context of healthcare undergraduates at a private university. However, the research contributes by relating the motivation to learn and the potential reasons for dropping out, supporting university dropout prevention programs in private higher education institutions.

Conclusions

Health science students demonstrated good general motivation to learn, but showed a low to moderate tendency to drop out. It was found that motivation exerted a positive influence and reduced the intensity of students' reasons for dropping out.

It was found that increasing age had a positive effect on intrinsic motivation, however, it strengthened the avoidance motive related to lack of support and reduced extrinsic motivation. In general, the positive effect of intrinsic motivation is more long-lasting and self-sustaining, while extrinsic motivation may be more effective in the short term, especially when external rewards are high or when there is a clear link between performance and rewards.

Female students identified with greater intensity the reason for dropping out due to academic performance, that is, failure in subjects, poor performance or lack of understanding of the content can keep them away from the university. Furthermore, students who reported having satisfactory hours of sleep identified more intensely the reasons for dropping out related to the quality of the teaching staff and academic performance, while they evaluated the reason for dropping out due to vocation as less relevant.

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