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# FACTORS ASSOCIATED WITH THE RETENTION AND INTENTION TO DROP OUT IN A PHARMACY UNDERGRADUATE DEGREE AT A PUBLIC UNIVERSITY IN NORTHEASTERN BRAZIL

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**ABSTRACT:** The study aimed to evaluate possible factors associated with retention and dropout at the Pharmacy degree of a public university in the Brazilian Northeast. This cross-sectional study was conducted between July and December 2019 with students of two Pharmacy undergraduate degrees at the Federal University of Sergipe. To collect data, we used an instrument that included: 1) socio-demographic data and 2) factors related to dropout intentions, questions about leave of absence, and failure in modules/disciplines. Three hundred thirty-five students participated, 132 from the Lagarto campus and 203 from São Cristóvão. Out of those, 69.30% (n = 232) were women, the majority (81.20%) between 18 and 24 years old, 60.90% (n = 204) declared themselves mixed race, 96.70% were single, and 5.10% (n = 17) had children. Regarding failure and intention to drop out, 176 (52.50%) stated that they had already failed, and 62.10% (n = 208) intended to drop out of the course. Among the factors that lead

to dropout intentions are: "schedule of the disciplines offered," "curriculum matrix," "teaching methodology," "form of evaluation," "relationship between student and teacher/coordinator," "interpersonal relationships," "student assistance," "low remuneration of the professional," "financial difficulties," "lack of study skills," "difficulties of adaptation to the university," "discontent or demotivation with the course," "learning difficulties, translated into disapproval and low frequency," "non-adaptation to the course," and "mental health problem." The results reinforce the need for strategies that support students during undergraduate studies to reduce the impact of retention and dropout in higher education.

**Keywords**: School dropout, School retention, Pharmaceutical Education, Higher Education.

## FATORES ASSOCIADOS À RETENÇÃO E INTENCIONALIDADE DE EVASÃO NOS CURSOS DE FARMÁCIA DE UMA UNIVERSIDADE PÚBLICA DO NORDESTE BRASILEIRO

**RESUMO:** O estudo objetivou avaliar possíveis fatores associados à retenção e à intencionalidade de evasão do curso de Farmácia de uma universidade pública do Nordeste. Trata-se de um estudo transversal realizado entre julho e dezembro de 2019 com estudantes dos dois cursos de graduação em Farmácia, da Universidade Federal de Sergipe. Para coleta de dados, utilizou-se um instrumento que contemplava: 1) Dados Sociodemográficos; e 2) Fatores ligados à intencionalidade de evasão, questões sobre trancamento e reprovação em módulos/disciplinas. Participaram da pesquisa 335 estudantes, sendo 132 do Campus Lagarto e 203 estudantes de São Cristóvão. Desses, 69,30% (n = 232) eram mulheres; a maioria (81,20%) apresentou idade entre 18 e 24 anos; 60,90% (n = 204) se autodeclaram pardos; 96,70% eram solteiros; e 5,10% (n = 17) possuíam filhos. Quanto à reprovação e intencionalidade de evasão, 176 (52,50%) afirmaram já terem reprovado, e 62,10% (n = 208) apresentaram a intenção de desistir do curso. Entre os fatores que apresentam impacto na intencionalidade da evasão, destacaram-se: "horário das disciplinas ofertadas," "matriz curricular," "metodologia de ensino," "forma de avaliação," "relação entre aluno e professor/coordenador," "relações interpessoais," "assistência aos alunos," "baixa remuneração do profissional," "dificuldades financeiras," "falta de habilidades de estudo," "dificuldades de adaptação à universidade," "desencanto ou desmotivação com o curso," "dificuldades de aprendizagem, traduzidas em reprovação e baixa frequência," "inadaptação com o curso" e "problema de saúde mental." Os resultados reforçam a necessidade de estratégias que subsidiem os estudantes durante a graduação, a fim de reduzir o impacto das variáveis identificadas na retenção e na evasão escolar no Ensino Superior.

**Palavras-chave:** evasão escolar, retenção escolar, educação farmacêutica, Ensino Superior.

## FACTORES ASOCIADOS A LA RETENCIÓN E INTENCIONALIDAD DE EVASIÓN EN CURSOS DE FARMACIA DE UNA UNIVERSIDAD PÚBLICA DEL NORESTE DE BRASIL

**RESUMEN:** El estudio tenía como objetivo evaluar posibles factores asociados a la retención e intencionalidad de la evasión del curso de Farmacia de una Universidad Pública del Noreste brasileño. Estudio transversal realizado entre julio y diciembre de 2019, con estudiantes de los dos cursos de Farmacia de la Universidad Federal de Sergipe. Se recopilaron los siguientes datos: 1) datos sociodemográficos; 2) Factores relacionados con la intencionalidad de la evasión, preguntas sobre bloqueo y retención en módulos/disciplinas. Participaron del estudio 335 estudiantes, 132 del campus de Lagarto y 203 de São Cristóvão. De ellos, 69,30% (n = 232) eran mujeres, la mayoría (81,20%) entre 18 y 24 años, 60,90% (n = 204) se declararon pardas, 96,70% eran solteras y 5,10% (n = 17) tenían hijos. Sobre la retención y la intencionalidad de la evasión, 176 (52,50%) afirmaron que ya habían reprobado y 62,10% (n = 208) tenían la intención de evasión. Se destacaron los siguientes factores de intencionalidad de la evasión: "programa de las disciplinas ofrecidas," "matriz curricular," "metodología de enseñanza," "forma de evaluación," "relación entre estudiante y profesor/coordinador," "relaciones interpersonales," "asistencia al estudiante," "baja remuneración del profesional," "dificultades financieras," "falta de habilidades de estudio," "dificultades de adaptación a la universidad," "desencanto o desmotivación con

el curso," "dificultades de aprendizaje, traducidas en desaprobación y baja frecuencia," "inadaptación con el curso" y "problema de salud mental." Los resultados refuerzan la necesidad de estrategias que apoyen a los estudiantes durante la graduación, con el fin de reducir el impacto en la retención escolar y la deserción escolar en la educación superior.

**Palabras clave:** Evasión escolar, Retención escolar, Educación Farmacéutica, Educación Superior.

## INTRODUCTION

The search for an in-depth understanding of the evasion process in Higher Education has been happening continuously over the years (TINTO, 1975; BRASIL, 1996; DURSO; CUNHA, 2018; TEIXEIRA; MENTGES; KAMPFF, 2019; COIMBRA; SILVA; COSTA, 2021). In general, this educational phenomenon can be defined as dropping out of the course before its completion, configuring itself as a multifactorial event that causes impacts on individuals, society, and the educational system (SANTOS JUNIOR, 2015; DURSO; CUNHA, 2018). Such a phenomenon is considered one of the problems that most concern institutions of Higher Education, making the search for its causes the object of inquietudes and studies focused on education (TEIXEIRA; MENTGES; KAMPFF, 2019).

Among the models that seek to explain educational dropout already conceived, the one proposed by Vicent Tinto has been the most used as a reference, called the Theory of Student Integration (TIE). The author proposes that the main factors related to the dropout phenomenon involve the relationship between the student and the academic and social systems. Thus, students with less involvement with educational institution tend to drop out of higher education due to their lack of integration with other students or the institution as a whole. Such perceptions brought in their studies have been revised over the years, considering changes related to social, economic, and political issues (TINTO, 1975, 1982, 1993, 2006).

In Brazil, the first efforts to identify the possible causes of educational evasion date back to 1995, from the creation of the Special Commission for Studies on Evasion in Brazilian Public Universities (SANTOS JUNIOR; REAL, 2017). Among the results presented by the commission are the possible factors related to evasion, which are divided into three groups: 1) factors referring to the individual characteristics of the student, which encompass aspects related to personality, previous schooling, study skills, among others; 2) factors internal to the institutions that encompass academic issues, didactic-pedagogical issues, infrastructure issues, and others; and 3) factors external to the institutions that are related, for example, to the labor market, social recognition of the chosen career, devaluation of the profession, among others (BRASIL, 1996).

Understanding the factors associated with the dropout and failure of students in Higher Education is extremely important and should be obtained critically and reflectively. Understanding these factors allows us to find academic processes that need to be reviewed or even implemented in order to solve this problem. Moreover, it reinforces the need for studies focused on Pharmacy undergraduate studies, given the scarcity of information on dropout in this course (LAMERS; SANTOS; TOASSI, 2017; CARVALHO, 2018) and the need for the development of educational and/or organizational strategies appropriate to the needs and particularities of this course.

According to the Ministry of Education (MEC) (BRASIL, 2019), Brazil currently has 762 Pharmacy courses in activity throughout the country. The literature points out that Pharmacy courses have an average dropout rate of 18.7% (i.e., almost two out of ten entrants in the course drop out) (LOZZI *et al.*, 2016). In this sense, facing an increasing number of vacancies for training new pharmacists, the evaluation of dropout and failure becomes essential for the search for facilitating tools that allow the maintenance of students in pharmacy courses (POIRIER; KERR; PHELPS, 2013).

Thus, this study aimed to evaluate the possible factors associated with retention and intentionality of dropout in the Pharmacy course of the Public University of Sergipe, considering that the knowledge of these elements allows the development of educational and/or organizational strategies for the maintenance of the student in the university

## METHODOLOGY

This is a cross-sectional study conducted with students from the Pharmacy undergraduate courses at the Universidade Federal de Sergipe, São Cristóvão Campus, and Lagarto Campus, from July to December 2019. The Pharmacy course at the São Cristóvão Campus started in 2000 and has a total workload of 4,365 hours. Currently, the course is taught in the afternoon shift, using traditional teaching-learning methodologies The Pharmacy course at the Lagarto Campus, opened in 2011, has a total workload of 4,410 hours and is held full-time, employing active teaching-learning methods, especially Problem-Based Learning (PBL).

Convenience sampling was used, and thus the sample was composed of students enrolled in Pharmacy Courses at the mentioned campuses and over 18 years old. The sample size calculation was performed based on the institution's data in July 2019, considering the total population of 373 students enrolled in the São Cristóvão Campus and 218 students in Lagarto. For this, the sample calculation considered 5% error and 95% confidence, thus totaling the minimum sample of 234 students of the total population.

Given the little contact with the course, students who were in their first semester of undergraduate study during data collection were excluded from the study. At the time of intake and invitation, the research objectives and methods were presented, as well as the voluntary nature of the research, the confidentiality of information, and the risks involved to the students.

An instrument was used and applied both remotely and in person for data collection. It is worth mentioning that the application of both strategies does not influence the results obtained (KONGSVED *et al.*, 2007; DESCONBE, 2008). For the remote application, the questionnaire was inserted into the GoogleForms® platform and sent to the students' emails, provided by the Pharmacy departments of the respective campuses, Lagarto and São Cristóvão, while for the face-to-face application, the instruments were printed and made available by the researchers to the students in the classroom.

The instrument used consisted of a self-administered questionnaire prepared by the researchers based on the instrument developed by Feitosa (2016). It was divided into two parts: 1) Socio-demographic data, such as age, gender, place of birth, family and individual income, the exercise of paid activity, education (Illiterate, Elementary School Incomplete, Elementary School Complete, High School Incomplete, High School Complete, Higher Education Incomplete, Higher Education Complete, Post-graduation), and others; and 2) Evaluation of factors related to the intentionality of dropping out, in addition to addressing questions about dropping out and failure in modules/subjects.

It is worth mentioning that the data collected related to the variable "Education" were categorized for the statistical analyses, in which the Low Education category represented the education levels "Illiterate," "Elementary School Incomplete," or "Elementary School Complete"; the Medium Education category characterized the levels "High School Incomplete or High School Complete"; and the High Education category was equivalent to the levels "Higher Education Incomplete," "Higher Education Complete," or "Postgraduate."

The possible dropout factors were classified into three domains according to the Ministry of Education (1996): "Institutional Factors," "External Factors," and "Personal Characteristics of the student." The influence of each factor on the intention to drop out was evaluated by the five-point Likert Scale, ranging from "Strongly Disagree" to "Strongly Agree." It is worth noting that only students who had already presented the intentionality to drop out should respond to the influence of each of the items.

The data collected were tabulated and organized in Microsoft Office® Excel 2017 spreadsheet. For descriptive statistics of the data obtained, the absolute and relative frequency (%) was used for categorical variables; for quantitative variables, the mean and standard deviation, or median, minimum and maximum, were used.

Statistical analyses were performed using the JASP program (v. 0.12.2)[1] . Potential associations between socio-demographic variables and failure or intention to drop out were analyzed

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[1] Jeffreys's Amazing Statistics Program (JASP) is a free, open-source program for statistical analysis.

using the Chi-square test. The Mann-Whitney Test was used to compare the scores of factors related to the intentionality of dropping out according to the campuses studied. In this study, the factors related to the intentionality of dropping out were considered important when they presented a median equal to or greater than three.

The present study was submitted to the Research Ethics Committee of the University Hospital of the Federal University of Sergipe, in accordance with CNS Resolution No. 466/2012, and approved by Opinion number 3,467,504.

## RESULTS

The instrument application obtained answers from 335 students, 132 from the Lagarto Campus, and 203 from São Cristóvão. The socio-demographic data of the students from each campus are detailed in Table 1. Among the participants, 69.30% (n = 232) were women, and the majority (81.20%) were between 18 and 24 years old. At the same time, 60.90% (n = 204) declared themselves to be brown; 96.70% (n = 324) were single, and only 5.10% (n = 17) said they had children. Regarding housing, 54.60% (n = 183) lived ON their own property, and 51.30% (n = 172) did not need to move to another state and/or city to have access to the university.

**Table 1** - Socio-demographic characterization of the study sample (Universidade Federal de Sergipe, 2019).

| Variables | São Cristóvão Campus | | Lagarto Campus | | General | |
|---|---|---|---|---|---|---|
| | N | % | N | % | N | % |
| **Sex** | | | | | | |
| Male | 60 | 29.60 | 43 | 32.60 | 103 | 30.70 |
| Female | 143 | 7.40 | 89 | 67.40 | 232 | 69.30 |
| **Age Group** | | | | | | |
| 18 to 24 years old | 164 | 81.30 | 106 | 81.10 | 272 | 81.20 |
| 25 to 29 years old | 21 | 10.30 | 18 | 13.60 | 39 | 11.60 |
| 30 years or older | 13 | 6.40 | 4 | 3.00 | 17 | 5.10 |
| NI* | 4 | 2.00 | 3 | 2.30 | 7 | 2.10 |
| **Race** | | | | | | |
| Yellow | 9 | 4.40 | 4 | 3.00 | 13 | 3.90 |
| White | 47 | 23.20 | 23 | 20.50 | 74 | 22.10 |
| Brown | 116 | 57.10 | 88 | 66.70 | 204 | 60.90 |
| Black | 27 | 13.30 | 13 | 9.80 | 40 | 11.90 |
| Does not know | 4 | 2.00 | 0 | 0.00 | 4 | 1.20 |
| **Marital Status** | | | | | | |
| Single | 195 | 96.00 | 129 | 97.70 | 324 | 96.70 |
| Married | 5 | 2.50 | 3 | 2.30 | 8 | 2.40 |
| Divorced | 3 | 1.50 | 0 | 0.00 | 3 | 0.90 |
| **Children** | | | | | | |
| Yes | 9 | 4.40 | 8 | 6.10 | 17 | 5.10 |
| No | 194 | 95.60 | 124 | 93.90 | 318 | 94.90 |
| **Type of home** | | | | | | |
| Own Property | 113 | 55.70 | 70 | 53.00 | 183 | 54.60 |
| Rented Property | 74 | 36.50 | 45 | 34.10 | 119 | 35.50 |
| University Residence | 8 | 3.90 | 12 | 9.10 | 20 | 6.0 |
| Other | 8 | 3.90 | 5 | 3.80 | 13 | 3.90 |
| **Change of city and/or state** | | | | | | |
| Yes, city only | 47 | 23.20 | 34 | 25.80 | 81 | 24.20 |
| Yes, change of state | 46 | 22.70 | 33 | 25.00 | 79 | 23.60 |

| | | | | | | |
|---|---|---|---|---|---|---|
| No | 108 | 53.20 | 64 | 48.50 | 172 | 51.30 |
| NI* | 2 | 1.00 | 1 | 0.80 | 3 | 0.90 |
| **Father's Education** | | | | | | |
| Low Schooling | 67 | 33.00 | 54 | 40.90 | 121 | 36.10 |
| Average Education | 94 | 46.30 | 57 | 43.20 | 151 | 45.10 |
| High Schooling | 35 | 96.60 | 16 | 12.10 | 51 | 15.20 |
| NI* | 7 | 3.40 | 5 | 3.80 | 12 | 3.60 |
| **Mother's Education** | | | | | | |
| Low Schooling | 38 | 18.70 | 41 | 31.10 | 79 | 23.60 |
| Average Education | 108 | 53.20 | 56 | 42.40 | 164 | 49.00 |
| High Schooling | 57 | 28.10 | 35 | 26.50 | 92 | 27.50 |
| **Family Income** | | | | | | |
| Up to 1 minimum wage | 44 | 21.70 | 41 | 31.10 | 85 | 25.40 |
| Between 1 and 2 minimum wages | 74 | 36.50 | 46 | 34.80 | 120 | 35.80 |
| Between 2 and 3 minimum wages | 36 | 17.70 | 25 | 18.90 | 61 | 18.20 |
| Between 3 and 4 minimum wages | 24 | 11.80 | 10 | 7.60 | 34 | 10.10 |
| Over 4 minimum wages | 25 | 12.30 | 10 | 7.60 | 35 | 10.40 |
| **Performs a paid activity** | | | | | | |
| Yes | 57 | 28.10 | 28 | 21.20 | 85 | 25.40 |
| No | 146 | 71.90 | 104 | 78.80 | 250 | 74.60 |
| **High School** | | | | | | |
| All in Public School | 105 | 51.70 | 79 | 59.80 | 184 | 54.90 |
| All in Private School | 88 | 43.30 | 47 | 35.60 | 135 | 40.30 |
| Mostly in Public School | 2 | 1.00 | 2 | 1.50 | 4 | 1.20 |
| Mostly in Private School | 5 | 2.50 | 2 | 1.50 | 7 | 2.10 |
| NI* | 3 | 1.50 | 2 | 1.50 | 5 | 1.50 |

*NI= Not Informed.
**Source:** The authors.

Regarding the type of school, according to the administrative dependence where they attended High School, 54.90% (n = 184) of students attended entirely in Public School. Regarding the parents' level of education, 45.10% (n = 151) stated that the father has a medium level of education, while 49.00% (n = 164) informed that the mothers also have a medium level of education. Regarding family income, 35.80% (n = 120) of the participants had between one and two minimum wages as income, while 74.60% (n = 250) had no paid activity.

Other data obtained cover the time spent and the means of transportation the student uses to get to the university. In general, 47.80% (n = 160) of the participants take up to 30 minutes to go to the university, while 60.60% (n = 203) use public transportation. The same can be noticed if the campuses are analyzed separately. At São Cristóvão Campus, 68.00% (n = 138) use public transportation, and 43.30% (n = 88) take up to 30 minutes to make the trip. At the Lagarto Campus, 54.50% (n = 72) of the students complete the trip to the HEI in up to 30 minutes, and 49.25% (n = 65) also use public transportation.

Regarding the data on students' failure in undergraduate courses, 176 (52.50%) stated that they had already failed some courses. In the São Cristóvão Campus sample, this corresponded to 54.20% (n = 110) of the students, while at the Lagarto Campus this value dropped to 50.00% (n = 66). In general, the average number of times students failed was 2.91. Regarding the students' intention of dropping out of the course, 62.10% (n = 208) of the students have already presented, at some point, the intention of dropping out. The same profile can be noticed on both campuses, with 61.10% (n = 124) of students at São Cristóvão Campus and 63.60% (n = 84) of students at Lagarto Campus already showing this intention.

Through statistical analysis, an association was found between the fact that the student failed some subject/module intending to drop out (p = 0.002). Table 2 presents the other possible associations

between socio-demographic data and commuting to the university with the student's failure during graduation and intentionality to drop out. Variables "age group," "children," "family income" (one to two minimum wages), "High School" (entirely in Public School) and "means of transportation to the University" (public transportation) showed statistical significance (when $p < 0.05$).

**Table 2** -Associations of socio-demographic data and data on commuting to the university with failure and intentionality of dropout of Pharmacy Course students (Federal University of Sergipe, 2019).

| Variables | Failure | | p | Intention to drop out | | p |
|---|---|---|---|---|---|---|
| | Yes | No | | Yes | No | |
| **Sex** | | | | | | |
| Male | 57 | 46 | 0.494 | 65 | 38 | 0.798 |
| Female | 119 | 113 | | 143 | 89 | |
| **Age Group** | | | | | | |
| 18 to 24 years old | 126 | 146 | | 172 | 100 | |
| 25 to 29 years old | 32 | 7 | <0.001* | 24 | 15 | 0.409 |
| 30 years and older | 16 | 1 | | 8 | 9 | |
| **Race** | | | | | | |
| Yellow | 8 | 5 | | 9 | 4 | |
| White | 37 | 37 | | 43 | 31 | |
| Brown | 110 | 94 | 0.880 | 126 | 78 | 0.717 |
| Black | 19 | 21 | | 28 | 12 | |
| Does not know | 2 | 2 | | 2 | 2 | |
| **Marital Status** | | | | | | |
| Single | 169 | 155 | | 201 | 123 | |
| Married | 4 | 4 | 0.253 | 4 | 4 | 0.312 |
| Divorced | 3 | 0 | | 3 | 0 | |
| **Children** | | | | | | |
| Yes | 14 | 3 | 0.012* | 11 | 6 | 0.819 |
| No | 162 | 156 | | 197 | 121 | |
| **House** | | | | | | |
| Own property | 94 | 89 | | 116 | 67 | |
| Rented Property | 67 | 52 | 0.695 | 73 | 46 | 0.899 |
| University Residence | 9 | 11 | | 11 | 9 | |
| Other | 6 | 7 | | 8 | 5 | |
| **Father's Education** | | | | | | |
| Low Schooling | 62 | 59 | | 75 | 46 | |
| Average Education | 74 | 77 | 0.085 | 93 | 58 | 0.922 |
| High Schooling | 34 | 17 | | 33 | 18 | |
| **Mother's Education** | | | | | | |
| Low Schooling | 39 | 40 | | 46 | 33 | |
| Average Education | 89 | 75 | 0.771 | 103 | 61 | 0.705 |
| High Schooling | 48 | 40 | | 59 | 33 | |
| **Family income** | | | | | | |
| Up to 1 minimum wage | 40 | 45 | | 49 | 36 | |
| 1-2 minimum wages | 70 | 50 | | 79 | 41 | |
| 2-3 minimum wages | 26 | 35 | 0.038* | 40 | 21 | 0.669 |
| 3-4 minimum wages | 24 | 10 | | 19 | 15 | |
| Over 4 minimum wages | 16 | 19 | | 21 | 14 | |
| **Paid activity** | | | | | | |
| Yes | 47 | 38 | 0.556 | 55 | 30 | 0.565 |
| No | 129 | 121 | | 153 | 97 | |
| **High School** | | | | | | |
| All in public school | 104 | 80 | | 113 | 71 | |
| All in private school | 62 | 73 | 0.060* | 84 | 51 | 0.912 |
| Mostly in public school | 4 | 0 | | 2 | 2 | |
| Mostly in private school | 3 | 4 | | 5 | 2 | |
| **Change of city** | | | | | | |
| Yes. just city | 45 | 36 | | 51 | 30 | |
| Yes. change of state | 43 | 36 | 0.775 | 48 | 31 | 0.922 |
| No | 88 | 84 | | 109 | 63 | |

| Means of travel | | | | | | |
|---|---|---|---|---|---|---|
| On foot | 41 | 49 | | 52 | 38 | |
| Personal Transportation | 17 | 19 | 0.011* | 23 | 13 | 0.708 |
| Public Transportation | 115 | 82 | | 127 | 70 | |
| Private Transportation | 1 | 8 | | 5 | 4 | |
| **Travel Time** | | | | | | |
| Up to 30 minutes | 73 | 87 | | 94 | 66 | |
| 31-45 minutes | 33 | 19 | 0.067 | 36 | 16 | 0.219 |
| 46-60 minutes | 42 | 28 | | 40 | 30 | |
| Over 60 minutes | 28 | 24 | | 37 | 15 | |
| **Quotas** | | | | | | |
| Yes | 92 | 73 | 0.245 | 102 | 63 | 0.920 |
| No | 84 | 86 | | 106 | 64 | |

*p<0.05

Source: The authors.

Data regarding the analysis of factors that may be related to the intention to drop out are presented in Table 3. Among the institutional factors, after the analysis, taking into account the median values obtained, it is possible to identify that the factors "schedule of subjects offered," "curriculum matrix," "teaching methodology," "form of assessment," "relationship between student and teacher/coordinator," "interpersonal relationships" and "assistance to students" are presented as impacting the intention to drop out of the students participating in the research.

Moreover, it is also possible to note that there are statistical differences between the two campuses regarding the influence of some factors on a possible evasion. The factors "schedule of subjects offered" and "curricular matrix" have a greater impact on the intentionality of dropping out for students from São Cristóvão Campus. In comparison, the factor "form of evaluation" was identified as a variable with more impact on the intentionality of dropping out among students from Lagarto Campus.

As for the domain of "external factors," it was possible to realize that the factors "low professional remuneration" and "financial difficulties" are associated with the intentionality of dropping out by the research participants, being considered as impacting and important aspects associated with a possible occurrence of this phenomenon. In contrast, the factor "low professional remuneration" presents the statistical difference between the two campuses (i.e., this variable is more influential in relation to the intentionality of dropping out among students of São Cristóvão Campus, if compared to Lagarto Campus).

Regarding the domain "students' personal characteristics," it is perceived that the aspects "lack of study skills," "difficulties in adapting to the university," "disenchantment or demotivation with the course," "learning difficulties, translated into failure and low attendance," "maladjustment with the course" and "mental health problem" are considered important factors in the intentionality of dropping out. It is also noticed that the topics "lack of study skills" and "unsuitability with the course" showed a greater association with the intentionality of dropping out of the student at the Lagarto Campus compared to the São Cristóvão Campus.

**Table 3** - Factors related to the intentionality of dropping out of the Pharmacy course (Federal University of Sergipe, 2019).

| Factors for dropout | São Cristóvão (n = 122) | Lagarto (n = 83) | p | Total (n = 205) |
|---|---|---|---|---|
| | Md (Q1-Q3) | Md (Q1-Q3) | | Md (Q1-Q3) |
| **Institutional factors** | | | | |
| Course equipment and facilities | 1 (1-3) | 1 (1-1) | 0.002* | 1 (1-2) |
| Timetable of the courses offered | 3 (1-4) | 2 (1-3) | 0.005* | 2 (1-4) |
| Curriculum matrix | 3 (2-4) | 2 (1-4) | 0.011* | 3 (1-4) |
| Quality of education | 2 (1-3) | 1 (1-3.75) | 0.765 | 2 (1-3) |
| Teaching methodology | 3 (2-4) | 4 (2-4) | 0.118 | 3 (2-4) |
| Form of evaluation | 3 (2-4) | 4 (3-5) | 0.005* | 4 (2-4) |
| Relationship between student and teacher/coordinator | 3 (2-4) | 3 (1-4) | 0.954 | 3 (2-4) |
| Interpersonal relationships | 3 (2-4) | 3 (1-4) | 0.778 | 3 (1-4) |
| Assistance to students | 3 (2-4) | 3 (1-4) | 0.184 | 3 (2-4) |
| **External factors** | | | | |
| Saturated labor market | 2 (1-3) | 1 (1-3) | 0.401 | 1 (1-3) |
| Low professional remuneration | 3 (1-4) | 2 (1-3) | 0.038* | 2 (1-4) |
| Unstable career | 2 (1-3) | 1 (1-3) | 0.544 | 2 (1-3) |
| Marriage, pregnancy/children | 1 (1-1) | 1 (1-1) | 0.057 | 1 (1-1) |
| Financial difficulties | 3 (1-4) | 3 (1-4) | 0.774 | 3 (1-4) |
| Location of the institution x housing | 2 (1-4) | 1 (1-3.75) | 0.448 | 2 (1-4) |
| Work | 1 (1-3) | 1 (1-2) | 0.032 | 1 (1-3) |
| Low quality of basic education | 2 (1-4) | 1 (1-3) | 0.064 | 1 (1-3) |
| Health problems of family members | 1 (1-3) | 1 (1-3) | 0.931 | 1 (1-3) |
| **Personal characteristics** | | | | |
| Early choice of profession | 2 (1-4) | 2 (1-3) | 0.921 | 2 (1-4) |
| Lack of study skills | 3 (1-4) | 3 (2-4) | 0.048* | 3 (1-4) |
| Personality problems | 2 (1-4) | 3 (1-4) | 0.026* | 2 (1-4) |
| Deficiency of previous schooling | 2 (1-4) | 3 (1-4) | 0.296 | 2 (1-4) |
| Difficulties in adapting to university | 3 (1.75-4.25) | 4 (2.25-4) | 0.281 | 4 (2-4) |
| Incompatibility between academic life and work | 1 (1-3) | 1 (1-3) | 0.710 | 1 (1-3) |
| Misinformation about the course | 2 (1-3) | 1 (1-3) | 0.475 | 1 (1-3) |
| Disenchantment or lack of motivation with the course | 3 (2-4) | 3 (1-4) | 0.146 | 3 (1-4) |
| Learning difficulties translated into failure and low attendance | 2 (1-4) | 3 (1-4) | 0.911 | 2 (1-4) |
| Inadaptation to the course | 2 (1-3) | 3 (1-4) | 0.026* | 2 (1-4) |
| Discovering new interests and searching for a new profession | 1.5 (1-3.25) | 1 (1-3) | 0.627 | 1 (1-3) |
| Physical health problems | 1 (1-2.25) | 1 (1-3) | 0.441 | 1 (1-3) |
| Mental health problems | 3 (1-4) | 3 (1-5) | 0.214 | 3 (1-4) |

*$p < 0.05$

Source: The authors.

## DISCUSSION

Generally, it is possible to realize that both campuses have similar socio-demographic profiles. The feminization of the course can be perceived in the sample studied, which is corroborated by studies that show this process among entrants in health courses (MATOS; TOASSI; OLIVEIRA, 2013; DE MELO COSTA *et al.*, 2017). It is also noticed that, concerning race, the sample has just over 10% of self-declared blacks, which points to the still slow progress of Affirmative Action Policies (NEVES; FARO; SCHMITZ, 2016; TREVISOL; NIEROTKA, 2016; ANDIFES, 2019).

Still, in the context of the analysis of socio-demographic factors, the theoretical model proposed by Tinto (1975, 1982, 1993, 2006), widely used by researchers in the area for the understanding of such phenomena, does not bring these factors as protagonists in the process of dropout and retention, emphasizing interpersonal relationships between students and components of educational institutions. In this aspect, one can also see the need to be careful when using such an explanatory model within the national scenario, mainly due to its limitations in cross-cultural adaptation. The studies presented by Tinto

have as research scenarios environments composed mostly of white, high-income individuals, which sometimes is not similar to the Brazilian reality, as could be seen in this study. Thus, based on these analyses, it is possible to infer the need and importance of understanding the socio-demographic profile of the group studied to obtain a profile that represents the reality of the object of study.

Another point perceived in this statistical analysis that deserves to be highlighted is the association between the students' failure in subjects/modules and their intention to drop out of the higher education course. Santos Júnior and Real (2020) present in their study that the failures directly influence the increase of the length of stay of the student in the course due to the possible retention, which configures an important factor for the evasion or, in this case, possible evasion. It is worth noting that failures, whether single or multiple, consecutive or not, tend to make the student unmotivated and frustrated with the continuation of their educational process, leading them to reflect on their permanence in undergraduate studies (SILVA *et al.,* 2005; PINTO; SANTOS; DE ANDRADE SANTOS, 2019).

Regarding other variables, through the analysis, it is possible to make associations between the students' failure and the means of transportation used to travel to the university. Santos *et al.* (2019) reported that the lack of own transportation is one of the common characteristics among students who drop out of Higher Education and that, for part of these students, the means of transportation can be classified as "important" or "very important" in staying in a higher education course, taking into account that this factor is directly associated with the ease of access to the university facilities. With this in mind, the need to implement strategies that can offer university transportation to reduce this barrier and favor the improvement of student performance and their permanence in the institution becomes evident.

As for the need to move to another state and/or city for the student to have access to the university, it could be noticed that, in general, this phenomenon did not occur for most of the research participants. This fact may be associated with the expansion and interiorization policies of Higher Education. The Lagarto Campus is located in central-southern Sergipe, allowing local students and students from neighboring towns to access the institution. Such policies arose due to the constant disadvantage of the populations farther away from the big urban centers, which ended up causing the migration of students, usually permanently, to places where there was a wide and diversified offer of Higher Education. Consequently, the abandoned regions lost qualified professionals, and the financially disadvantaged population was prevented from migrating and seeking professional qualifications (BRASIL, 2014).

Other socio-demographic data draw attention from the statistical analysis. Variables such as "children," "family income," "high school" and "age group" demonstrate the impact and importance in the face of failure. Children, whether planned or unplanned, born during graduation or not, may be associated with dropping out and failing grades, which, in turn, may be linked to the reduction of time available for the execution of academic activities. Even in the case of a small portion of the research participants, Santos Baggi and Lopes (2011) highlight the factor "children" as directly related to possible dropouts and failures during higher education. It is worth noting that data regarding the ages of the students' children were not collected, which limits the deeper understanding of the association between this variable and failure because this factor can directly influence the availability of time for the implementation of activities related to graduation and the students' formative process.

Furthermore, another aspect that deserves to be highlighted is the discussion of policies of access and permanence in Higher Education for women. The insertion of women in universities presents a history of struggles for the end of unequal access and opportunities. As a result of this struggle, current policies allow the insertion of women in the university and, consequently, in the labor market, through strategies aimed at housing, food, transportation, and even access to daycare centers for those who have children. This scenario corroborates the need for strengthening these strategies, given that this is an impacting factor for students' failure (BRASIL, 2010; RICOLDI; ARTES, 2016; PEREIRA; NUNES, 2018).

The socio-demographic factor "family income" is highlighted as an aspect associated with dropout and failure during graduation (LOZZI *et al.*, 2016; SILVA, 2016; BARRETO *et al.*, 2019). The same could be perceived in the data obtained in this research. Data revealed an association between family income, especially of those with earnings between one and two minimum wages, with failures in modules/disciplines, which drives a direction for the implementation and maintenance of policies for

granting student scholarships in order to ensure the majority dedication of the student in carrying out the undergraduate activities. Moreover, this low income can be aggravated if we take into account the current situation of the country, in which these same policies have suffered drastic reductions, making it difficult for students considered financially vulnerable to access this subsidy; as a result, aspects that have a direct relationship with economic factors (housing, food, commuting etc.) are affected, directly impacting on the learning achievement by the student (VARGAS; HERINGER, 2017).

The variable "age group" also showed a statistical association with failure among students participating in the research. Thus, it is worth noting that this factor could also be perceived in previous studies (FERREIRA, 2016; BARRETO *et al.,* 2019). Still, in this sense, it becomes important to understand that in the present study, the age range "25 to 29 years" was the determinant for the statistical association. This fact may be related to the higher number of failures and consequent retention in the course, which directly influences the length of stay in the undergraduate course, leading to the inference that students may fall into a higher age bracket for staying longer in the course.

Another point evaluated, still in the socio-demographic variables, deals with the type of high school presented by the students who make up the study sample. Most students attended high school entirely in public schools. This factor may be associated with higher failure rates in modules/subjects, as shown by Diogo *et al.* (2016) in their study, in which it was noticed that, regardless of the course or area of study, students, when they come into contact with higher education, are faced with differences concerning high school, having to deal with modules/subjects of high complexity, which can generate a feeling of unpreparedness. This aspect reinforces the need for the implementation of strategies, such as leveling courses, so that the effects of this transition are minimized, both for public school graduates and students coming from private education (LOZZI *et al.*, 2016; PINTO; SANTOS; DE ANDRADE SANTOS, 2019).

All the aforementioned socio-demographic factors are interrelated, making a broad understanding of failure during graduation even more complex. It can be seen that one aspect ends up influencing another, which suggests the need to discuss policies for student access and permanence in Higher Education. Through the analysis of the results obtained concerning the factors that have importance and impact on the intention to drop out by the students participating in the survey, possible associations can be established. It is worth mentioning the fact that most of the research participants present or have presented the intention to drop out; thus, understanding the impact of factors related to the institution, external to the institution, and personal, is of fundamental importance to design measures for student permanence in Higher Education.

As for institutional factors, aspects such as "curricular matrix," "teaching methodology," and "form of assessment" draw attention, considering that they had an impact on the intention to drop out differently among the campuses. Thus, it is worth noting that since its creation, the Lagarto Campus has adopted active methodologies for training new health professionals, allowing students to play a leading role in the pursuit of knowledge. At the same time, the São Cristóvão Campus uses traditional methodologies associated with occasional initiatives of the use of active methodologies.

The aspects related to the structure of the curriculum and the teaching-learning method used in the Pharmacy course at São Cristóvão Campus demonstrated a greater impact on the possible dropout of these students. It can be observed that, through the use of traditional teaching methodologies, the knowledge is centered on the teacher, which reduces the role of the student and generates a resulting lack of interest in the teaching-learning process (DE SOUZA; LOPES, 2018). In addition, the need for a readjustment in how the curricular structure of this course is planned, taking into account the new demands and the need for continuity in the training of critical, humanized, and competent pharmacists for professional practice (BRASIL, 2017).

At the same time, it was possible to identify the most impacting association between the forms of assessment employed in the Pharmacy course of the Lagarto Campus with the intentionality of students' dropout. Minuzi *et al.* (2019) bring in their study that, even observing a potentiality in the desire to innovate in the forms of evaluation in active methodology, teachers tend to remain in the application of traditional techniques for the measurement of knowledge, which deserves to be reviewed. This behavior is perceived in some disciplines/modules that make up the Pharmacy course curriculum at the Lagarto Campus. It is noticed a duality in the application of methodologies (i.e., while active methods are

used for teaching, the application of traditional methods of assessment is maintained by the faculty), a fact confirmed by the last Pedagogical Project of the Course, which impacts the intentionality of the students' dropout (UNIVERSIDADE FEDERAL DE SERGIPE, 2015).

Other institutional factors also show significance on the intentionality of dropout: "relationship between teacher/coordinator" and "interpersonal relationships" impact possible dropout among students from both campuses. Tinto (1975, 1982, 1993, 2006) presented in his studies that the relationships created among students are a relevant factor for academic integration, which works very well as a tool to avoid dropout from higher education. At this point, the university can make itself present by stimulating moments of integration among the institution's students, teachers, and technicians, besides supporting student entities, such as Academic and Athletic centers, which strengthen the process of social integration.

Furthermore, in institutional aspects, issues related to student assistance and an aspect linked to financial difficulties, pointed out in the block of external factors, present a vital association on both campuses with the intentionality of dropout. In general, educational institutions tend to take responsibility for maintaining basic rights for students who do not have resources (SOUZA, 2017; IMPERATORI, 2017). Students in situations of social vulnerability are the focus of permanence policies. Due to the continuous expansion of Higher Education, access by this population has increased, demanding specific actions to meet their needs. In this aspect, claims and struggles are raised, directly linked to the creation of the student movement in a search for students' rights (SANTANA, 2015).

Another aspect addressed, already among the external factors, which showed statistical significance in the association with dropping out, especially at the São Cristóvão Campus, concerns the low remuneration of the professional pharmacist. This can be justified because São Cristóvão Campus is located near the state capital; therefore, students tend to live in or near the capital. Thus, there is a higher cost of living, which tends to reflect on their earnings projections after graduation. The Lagarto Campus, on the other hand, is located in the state's countryside and demands a lower cost of living when compared to the capital Aracaju.

Regarding the group of factors related to the students' characteristics, it can be seen that some aspects impact the intentionality of dropping out by students on both campuses. These aspects deal with learning difficulties and maladaptation with the university. In this way, students' distinct learning styles and profiles in both active and traditional methodologies must be considered. Identifying these styles allows the teacher to plan strategies to be used in the modules/disciplines to minimize the difficulties noted by Pharmacy students from both campuses. (DE JESUS *et al.*, 2017). Moreover, it is necessary to implement and maintain strategies that allow students to get closer to the university at the beginning of their undergraduate studies since demotivation and disenchantment with the course generally occur in the first semesters when the student-institution relationship is not yet well established and strengthened (SILVA FILHO *et al.*, 2007).

Other factors linked to personal characteristics, such as lack of study skills and unsuitability with the course, have a greater impact on a possible dropout by students of the Lagarto Campus, which can be justified if we take into account the transition process between the types of teaching-learning methodologies (traditional to active) to which the student is subjected. Such aspects reinforce the need for reflection on the faculty's teaching-learning process so diagnostic and intervention actions can be taken (DORNELAS *et al.* , 2016).

Finally, Castro (2012) highlights that most studies directed at understanding these educational phenomena are carried out in specific scenarios and focused on local issues. Such studies are mostly descriptive and exploratory, which characterizes the present analysis. Nevertheless, it also highlights the importance of such research for maintaining public policies, just as it points out the importance of implementing new strategies and programs, whether departmental and/or institutional, that support students during graduation in order to reduce the impact of the variables previously mentioned in retention and dropout in higher education.

**CONCLUDING REMARKS**

Our study showed that socio-demographic and socioeconomic factors, as well as variables related to institutional, external to the institution, and personal factors, were related to the intention to drop out and the retention of students analyzed on both campuses. Factors such as "means of transportation," "children," "family income" and "type of high school" that showed a relationship with retention among the participants point to the importance of understanding the socio-demographic and socioeconomic variables to minimize this educational phenomenon.

Moreover, through analyzing factors related to the institution, external to the institution and personal, it was also possible to deduce important data to understand the intentionality of dropouts among the research participants. It is important to highlight that such analysis enabled a greater understanding of the two campuses in a comparative and isolated way about this phenomenon, besides highlighting the role of teachers and course coordinators, as well as the students themselves in these scenarios.

Given the above, it is worth noting that this study had limitations that did not allow the exhaustion of all the statistical analyses that could be proposed, suggesting the prospecting of new developments, such as understanding what would be the minimum income range to enable the maintenance of the student in Higher Education and evaluating the influence of the age of the students' children in their failure and/or possible dropping out. It is also suggested that students who have already dropped out of courses be evaluated to obtain information about the reasons behind this recurring educational phenomenon through qualitative and longitudinal research. It is also worth mentioning the need to expand studies on dropout and retention, both in the general scope of Higher Education and in the area of Pharmaceutical Education, considering that this area is still incipient, especially in Brazil.

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**AUTHORS' CONTRIBUTIONS**

Author 1 - Data collection, data analysis, and writing the text.
Author 2 - Data collection and review of final writing.
Author 3 - Data collection.

Author 4 - Data collection.
Author 5 - Active participation in data analysis and review of final writing.
Author 6 - Active participation in data analysis and review of final writing.
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All authors have read and approved the final version of this article.

## DECLARATION OF CONFLICT OF INTEREST

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