

Training of young assistants: an analysis of the evolution of graduates at Consulting Group Ecuador

Formación de jóvenes auxiliares: un análisis de la evolución de graduados en Consulting Group Ecuador

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Abstract

The study, conducted at Consulting Group Ecuador, Sede Santo Domingo, aimed to analyze the number of graduates and desertion trends in health auxiliary degrees between 2018 and 2023. With a quantitative approach and cross-sectional descriptive design, 6,154 students from five auxiliary training and three mentions in health, such as Prehospital Care (APH, from Spanish initials) and Nursing, were studied. For data collection, a registration form was used, which included variables such as year, degree, number of enrolled students, number of dropouts, causes of desertion and graduates. The data were processed in Excel and analyzed in SPSS using ANOVA to evaluate significant differences in graduation and desertion. The results showed a sustained growth of graduates, especially in Nursing and APH. Initial desertion was higher in the first modules, decreasing progressively. The main causes of desertion were lack of vocation in the first modules, academic difficulties and economic problems, accentuated during the COVID-19 pandemic. It was concluded that although the training capacity increased, reflected in a high number of graduates and a dropout rate of less than 22%, it is recommended to reinforce early vocational orientation interventions, contributing to reduce desertion and consolidate the achievements observed in the training of health assistants.

Key words: Academic training; Graduate evolution; desertion; Consulting Group Ecuador.

Resumen

El estudio, realizado en Consulting Group Ecuador, sede Santo Domingo, tuvo como objetivo analizar el número de graduados y las tendencias de deserción en titulaciones de auxiliares de salud entre 2018 y 2023. Con un enfoque cuantitativo y diseño descriptivo transversal, se estudiaron 6,154 estudiantes de cinco formaciones de auxiliar y tres menciones en salud, como Atención Prehospitalaria (APH) y Enfermería. Para la recopilación de datos, se utilizó una ficha de registro, donde se incluyeron variables como año, titulación, número de inscritos, de desertores, causas de deserción y de graduados. Los datos fueron procesados en Excel y analizados en SPSS mediante ANOVA para evaluar diferencias significativas en graduación y deserción. Los resultados mostraron un crecimiento sostenido de graduados, especialmente en Enfermería y APH. La deserción inicial fue más alta en los primeros módulos, disminuyendo progresivamente. Las causas principales de deserción fueron la falta de vocación en los primeros módulos, dificultades académicas y problemas económicos, acentuados durante la pandemia de COVID-19. Se concluyó que, aunque la capacidad formativa aumentó, reflejada en un alto número de graduados y una tasa de deserción inferior al 22%, se recomienda reforzar las intervenciones tempranas de orientación vocacional; contribuyendo a reducir la deserción y consolidar los logros observados en la formación de auxiliares en salud.

Palabras clave: Formación académica; Evolución del graduado; deserción; Consulting Group Ecuador.

INTRODUCTION

The social situation of young people today, as well as the problems and challenges they face, is of utmost relevance due to their interrelation with the future of humanity. Young people form a unique social group, distinct in itself, which influences and is influenced by all spheres of human endeavor. Analyzing the general problems affecting young people allows us to address the particular issues that distinguish and affect them, providing a comprehensive understanding of their challenges and opportunities. By 2030, the number of young people in the world will increase by 7%, reaching almost 1.3 billion. This growth can be an advantage for the development of countries if the social participation of young people is encouraged, guided by discipline and the desire to contribute to social progress. It is crucial that governments implement educational programs aligned with the 2030 Agenda and its 17 Sustainable Development Goals. In this sense, UNESCO (2022) promotes education for sustainable development, empowering young people with knowledge and skills to improve the planet and participate in the resolution of global conflicts from the local level, within a culture of peace (Tuvilla, 2022).

According to Machado & Gómez (2006), the processes related to neoliberal globalization that have the strongest impact on young people are unemployment, drug trafficking and consumption, and the powerful influence of foreign cultural industries. Such consideration does not mean that these are the only problems, because there are others of great relevance and repercussion such as education, social security, health, housing and the formation and training of young people to face social challenges. Currently, the problems and challenges faced by young people are exacerbated by a global context marked by uncertainty and economic volatility. Growing social inequality, job insecurity and the climate crisis generate uncertainty regarding future projects, which influences the motivation and commitment of young people in their own development (UNICEF, 2021).

As is well known, Latin America is a region that faces specific challenges in education, with a history marked by inequality and poverty. In this sense, it faces particular challenges in the training of youth, because despite significant progress in the expansion of educational coverage,

the quality of this coverage remains unequal, with significant gaps among the most vulnerable and privileged populations (UNESCO, 2020). The region is also characterized by high levels of youth unemployment, especially among the most qualified young people and those from marginalized contexts (ECLAC, 2022).

The problem of youth unemployment considerably affects their educational opportunities. In Mexico, both young men and women are considered a vulnerable population in terms of unemployment. The market demands, among other things, to have work experience; however, many young people who are looking for work find the absence of work experience as an impediment, as well as the lack of market recognition of the experience they have acquired in the occupations they have been able to access (Rubio *et al.*, 2022).

The existing mismatch between the opportunities for effective social participation for young people and the concrete possibilities of inclusion offered by the labor market have a structural character, related to the effectiveness of training processes to adequately train young people according to the demands of the labor market. The type of support provided by social policies to favor the transition of young people from educational centers to the labor market and the congruence and feedback between educational and labor offers, which coexist, in most cases, in opposite dimensions, is one of the most pressing problems to be solved (Aparicio, 2008). In this perspective, the efforts invested by the State in Latin American countries to remedy the deficits of the educational system and the diversification of training and labor assistance programs implemented in the region have not been able to completely counteract the outdated quality of the educational offer, the overlapping of labor training programs, the inequality in the conditions regarding how socio-educational work is carried out in the different regions, as well as the school failure and dropout rates that mainly affect the most vulnerable sectors (Aparicio, 2008).

Specifically, Ecuador faces the complex task of offering quality education to young people. Despite having made progress in educational coverage at different levels of education, particularly in rural areas, where lack of resources and distance make access to education difficult, the country has high levels of youth unemployment, especially among young

people who do not have higher education or lack specific skills demanded by the labor market. The lack of investment in areas such as technical and professional education, the precariousness of the labor market and the limited capacity to adapt to new technologies generate a vicious circle that hinders the social and economic inclusion of youth (World Bank, 2022).

In addition, the COVID-19 pandemic exacerbated existing inequalities in the country, intensifying poverty levels and school dropout rates, especially among young people in vulnerable contexts (UNICEF, 2021). To overcome these challenges, the country needs a comprehensive approach that prioritizes investment in quality education, the promotion of vocational training and the creation of decent employment opportunities for the youth.

Studies by the Ministry of Education of Ecuador (2022) indicate that school dropout rates are higher in rural areas, especially in indigenous communities. This problem is exacerbated by youth unemployment, which affects young people between the ages of 18 and 24 from diverse socioeconomic contexts, many of whom must work due to lack of economic resources, limiting their ability to continue studying. In addition, 22.4% of global youth are in the “ni-nis” category (neither studying nor working), which has a negative impact on the economy and contributes to an increase in crime due to lack of educational and employment opportunities (Buitrón et al., 2018). Therefore, it is essential to reform the education system to address these problems.

In Ecuador, the labor market is very competitive and demands skills that the educational system does not always provide (Ramírez & Manjarrez, 2022). Medical schools and nursing training institutions, lacking a complete infrastructure, limit the quality of training and clinical practice opportunities, demotivating students and leading to student desertion (Ministry of Public Health, 2022). This is a serious problem in the face of the growing demand for health services, the complexity of diseases and the need for qualified and adaptable professionals, in a context where health education faces specific challenges WHO (2022).

In addition, outdated curricula and social inequality hinder access to health careers for young people from disadvantaged backgrounds (UNICEF, 2021). Although the graduation rate has

improved slightly, it still does not meet the needs of the health system in Ecuador (MOH, 2022). To mitigate this situation, it is essential that public policies encourage training in the health sector, prioritizing investment in infrastructure, technology and the integration of scientific research into education (UNESCO, 2021).

In this context, Consulting Group Ecuador, as a training organization, has among its essential projections to provide access to education to young people in the country, offering assistant and assistant training programs with mention, especially in health areas. The programs include a theoretical component distributed in several modules and voluntary practices that are developed in different health centers of the country. The work that this organization has been doing for 20 years is well known, but it is not known how the number of graduates that this institution delivers to society has evolved. In this sense, it is possible to pose the following scientific question: What has been the evolution of the number of graduates and the trends of desertion (including its most frequent causes) among the different types of assistant degrees and their mentions, in the trainer Consulting Group Ecuador, Sede Santo Domingo between 2018-2023?

MATERIALS AND METHODS

A quantitative approach and a cross-sectional descriptive design were used, since these allow the collection and analysis of numerical data to describe characteristics of a population at a specific time (Hernández-Sampieri and Mendoza, 2028). This approach and design made it possible to systematically examine the evolution of the number of graduates, attrition trends and their most frequent causes in the assistant degrees offered by the trainer Consulting Group Ecuador, Sede Santo Domingo between 2018-2023.

The study population consisted of the ten training courses (5 for assistants and 5 for assistants with a mention) offered by the training company Consulting Group Ecuador in the health area. The sample consisted of 6154 students who enrolled in one of the 5 assistant training programs and the 3 specialties offered by Consulting Group Ecuador in the area of health, Sede Santo

Domingo, during the period 2018-2023. The specializations were the following: Prehospital Care (APH), Nursing, Pharmacy, Laboratory, Physical Rehabilitation; and the mentions: APH-Mention: risk management, Nursing-Mention: surgical instrumentation and Pharmacy-Mention: medical visitor.

A record card was used for data collection, which facilitated the systematic organization of the data for subsequent analysis. The following variables were taken into account for the analysis: year, types of assistant degree in health areas, number of enrolled students, number of students who drop out, causes that motivate desertion and number of graduates, from the years 2018 to 2023. The form was validated by five experts in the field, who evaluated its accuracy and suitability for the study, unanimously recommending its application. The data were tabulated in Excel for subsequent analysis. Initially, the analysis was performed to answer the following question: How has the number of graduates by type of auxiliary degree varied from 2018-2023?

To analyze the trend in the number of graduates over the years for each type of degree, a longitudinal study was carried out using SPSS software. First, the data were cleaned and structured to ensure consistency in the names of the degrees and the correct coding of the years of graduation. Subsequently, the repeated measures Analysis of Variance (ANOVA) procedure was used to evaluate the significant differences among the means of the groups corresponding to each degree over time. This analysis made it possible to determine whether there are significant variations in the number of graduates between the different years and degrees.

A line graph was generated in SPSS to visualize trends. This was done using the line graph procedure, selecting the number of graduates as the dependent variable and the year of graduation as the independent variable, grouping by type of degree. The generation of this type of graph was considered because it offers a better visual representation of the evolution of the educational programs in terms of graduation.

In a second phase, the analysis made it possible to answer the following question: How does desertion (first desertion and second desertion) vary over the years 2018-2023, among the

different types of assistant degrees in the training company Consulting Group Ecuador?

A longitudinal study was conducted using SPSS software, with a procedure of repeated measures Analysis of Variance (ANOVA) to evaluate the significant differences in first and second desertion between the different types of degrees over time.

A line graph was generated using the SPSS graphing procedure, selecting attrition as the dependent variable and year of graduation as the independent variable, grouped by type of degree and type of attrition. It should be noted that the first desertion was processed as those occurring before completing the third module of the training and the second desertion as those occurring after this training stage.

The third and final phase of the analysis in this research focused on answering the research question: What has been the evolution of the number of graduates and attrition trends (including their most frequent causes) among the different types of degree programs and their mentions, in the training company Consulting Group Ecuador, Sede Santo Domingo between 2018 and 2023?

The analysis of the causes of desertion was carried out using SPSS software. The analysis procedure consisted of grouping the desertion data by year, degree and cause of desertion, and then calculating the frequency of each cause in each combination of year and degree. These data were organized into a contingency table, which was then visualized as a heat map to highlight the frequencies of the causes of desertion in a clear and concise manner. More intense colors represent higher frequencies, allowing for quick identification of the most prevalent causes of desertion. The heat map allows to quickly identify the most common causes of desertion in different degrees and years, facilitating the interpretation and analysis of desertion patterns over time.

In order to identify the causes considered in the study, we took as a reference what was proposed by Blanco *et al.* (2018). These authors mention that there are different interpretations and perspectives about attrition, but they agree that the term refers to the voluntary abandonment of the academic program. They add that, in general,

desertion is associated with socioeconomic, personal, institutional and academic factors. In this sense, it is possible to derive the following causes to be analyzed in the study:

- **Lack of vocation:** Students realize that they do not have the right vocation for the degree they are pursuing. This realization leads them to drop out of the training program to seek a career that better aligns with their natural interests and abilities.

- **Financial challenges:** Financial difficulties force students to abandon their studies to seek employment or other forms of livelihood. Despite the financial support that may be offered, some students may face economic situations that hinder their ability to continue their education.

- **Health problems:** Both physical and mental health impact students' ability to continue with their studies. Unforeseen or chronic health situations may require students to take time to recover, sometimes resulting in desertion.

- **Family obligations:** Family responsibilities, such as caring for children or sick family members, interfere with students' ability to attend classes and complete their studies. These obligations may be a priority and, in some cases, unavoidable, resulting in attrition.

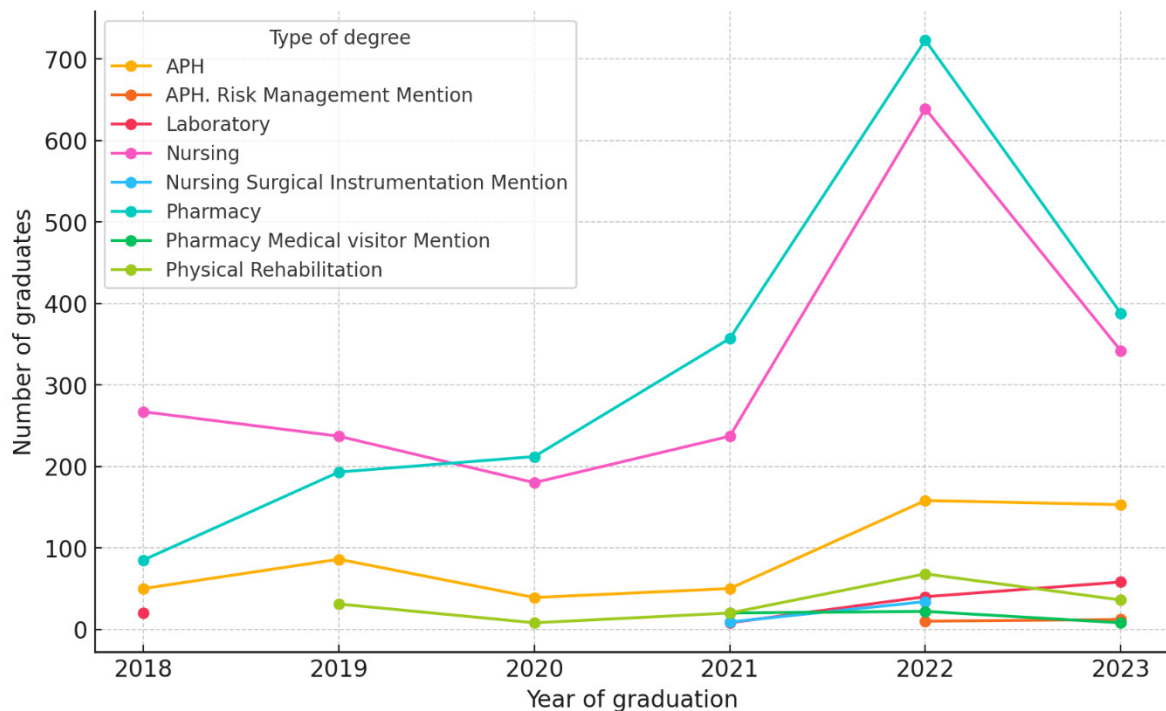
- **Academic difficulties:** Some students recognize that they do not adapt to the academic demands of the training program.

RESULTS AND DISCUSIÓN

This section presents the findings of the study, focusing on the evolution of the number of graduates, desertion trends, and the most frequent causes of desertion in the assistants and assistants with mention programs, in the trainer Consulting Group Ecuador, Sede Santo Domingo, during the period 2018-2023. Line graphs are used to illustrate the variation in the number of graduates and desertion over time, as well as a heat map to highlight the most prevalent causes of desertion by year and degree.

Figure 1.

Trend of graduates over the years by each type of degree



In Figure 1, the trend of graduates shows the evolution of the number of graduates in different types of degrees over the years, with a considerable increase from 2020 to 2022. There is a general trend of increase in most of the auxiliary degrees and their mentions, which is evidence of a growth in the training capacity of the training company Consulting Group Ecuador, Sede Santo Domingo and possibly an increase in the demand for these degrees.

The degree programs show different growth patterns, with some showing more pronounced growth than others. The degree in Nursing stands out for presenting one of the most pronounced and significant increases in the number of graduates and additional programs such as the mention in Surgical Instrumentation also show an upward trend in relation to the other mentions. These results show that the Consulting Group Ecuador in its management takes into account the needs reported by the World Health Organization (WHO, 2020), which points to a growing need for nurses to achieve higher health standards after the HIV/AIDS pandemic. WHO projects that nearly six million new nurses will be needed by 2030, especially in low- and middle-income countries, but also in advanced economies due to the aging of the current workforce. Aging also threatens the nursing workforce: one in six nurses worldwide is expected to retire in the next ten years.

Another result that agrees with the findings of this research is that of Cordero et al., (2024), who mention that, at present, nursing has consolidated its relevance and sense of belonging within the health careers in Ecuador. These studies underline the importance and growing demand for nursing both globally and locally, reinforcing the relevance of training in this area and the social commitment shown in the training capacity of the training company Consulting Group Ecuador.

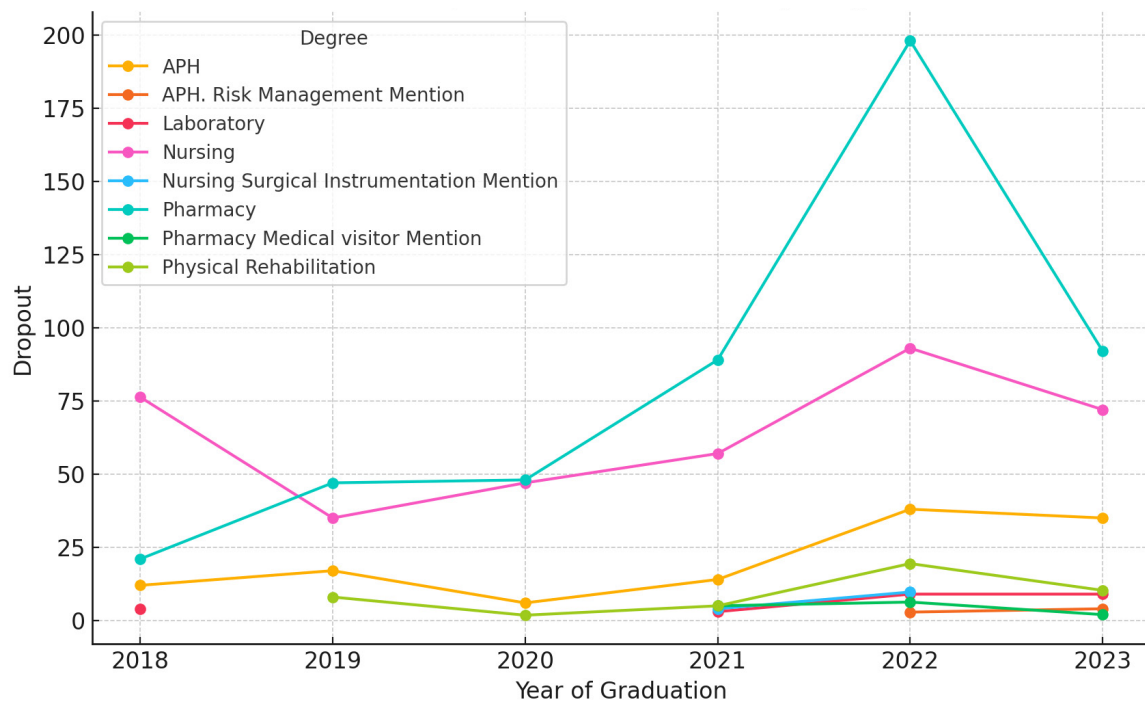
Pharmacy assistant training maintains a positive trend of increase and its mention as a health visitor shows variations over the years, with a slight upward trend in 2021. This result is aligned with the results of Skelton *et al.* (2021) that indicate a growth in opportunities for pharmacists in clinical and community areas; although it highlights that in coming years the number of pharmacy graduates is expected to decrease due to an oversupply of pharmacists, but not due to issues that directly concern the training projection of Consulting Group, which could recalibrate the supply and demand in the labor market.

On the other hand, the APH (Prehospital Care) degree shows a variation in the increase in the number of graduates, with an evident growth in 2021 to 2022, possibly due to the growing need for professionals trained in emergencies and prehospital care, as highlighted by Puente (2022), when mentioning that, in response to the high demand for paramedics, in several provinces of Ecuador the training of paramedic technologists has increased to provide them with skills that allow them to provide prehospital support, rescue and risk management.

On the other hand, the degrees of Physical Rehabilitation and Laboratory Assistant, although showing a growing trend in the number of graduates, are presented at a moderate rate compared to training courses such as Pharmacy, Nursing and APH. This may be influenced by the advance of emerging technologies in rehabilitation, which have created a greater need for specialists in these areas, as one of the healthcare demands that currently requires greater coverage. A published study consulted highlights the importance of preparing future professionals in the aforementioned areas to adapt to these technological and market changes, emphasizing the need for clinical management and leadership skills (Wang *et al.*, 2021).

Figure 2.

Trend of first-time desertion over the years by each type of degree

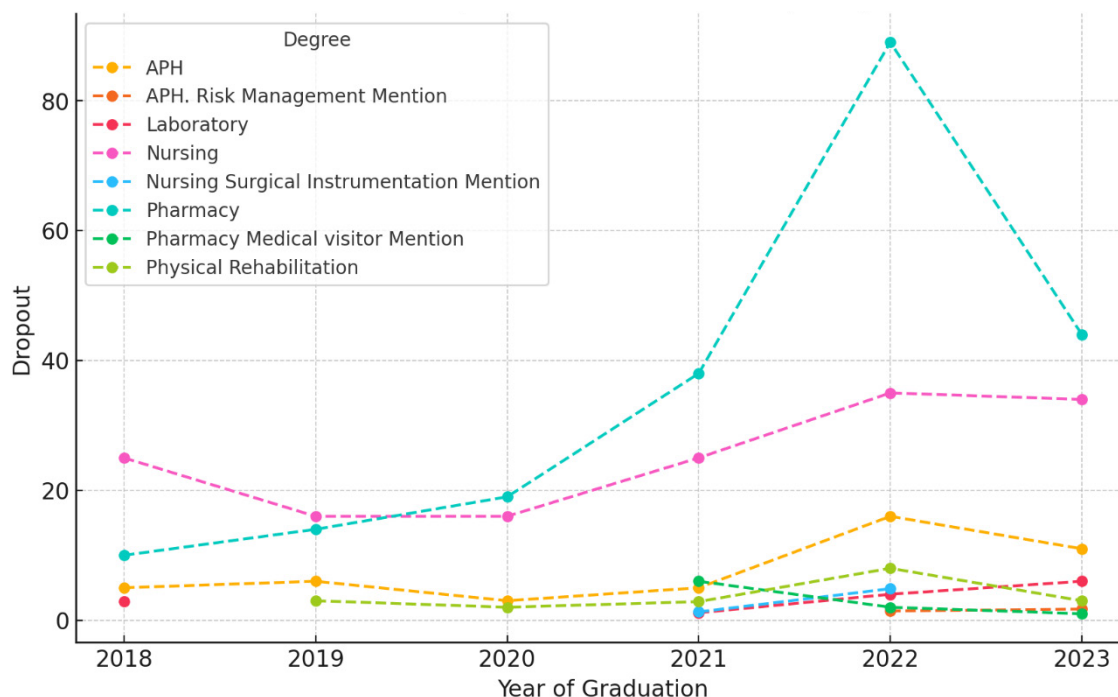


The first desertion shows significant variations over the years and among the different degrees. The degrees in Pharmacy and Nursing Assistant presented the most significant increasing trend of first desertion, with the highest increase between the years 2021 and 2022, which could be influenced by the high number of enrollees in these training programs, in response to the demand for personnel in these health specialties, in the period of the COVID 19 pandemic. In contrast, Nursing Assistant is the degree that evidences two moments with significant decreasing trend of the first desertion, marked in the years 2018-2019 and 2022-2023; in this last range of time, Farmacy Assistant showed the

most decreasing trend of desertion of all degrees. It should be noted that the peak where the drop in desertion begins in most offers is the year 2022. These findings are consistent with recent studies indicating that the attrition in health education programs is higher in the first years of study. Specifically, a study by Bakker *et al.* (2018) on physical and mental determinants of dropout and retention in nursing students highlights that the demanding physical and mental workload of nurses is one of the causes of dropout in this profession, but it has not been proven that nursing students perceive the same physical and mental load in their training and practice activity; however, dropout in this training is notorious.

Figure 3.

Trend of second-time desertion over the years by each type of degree.

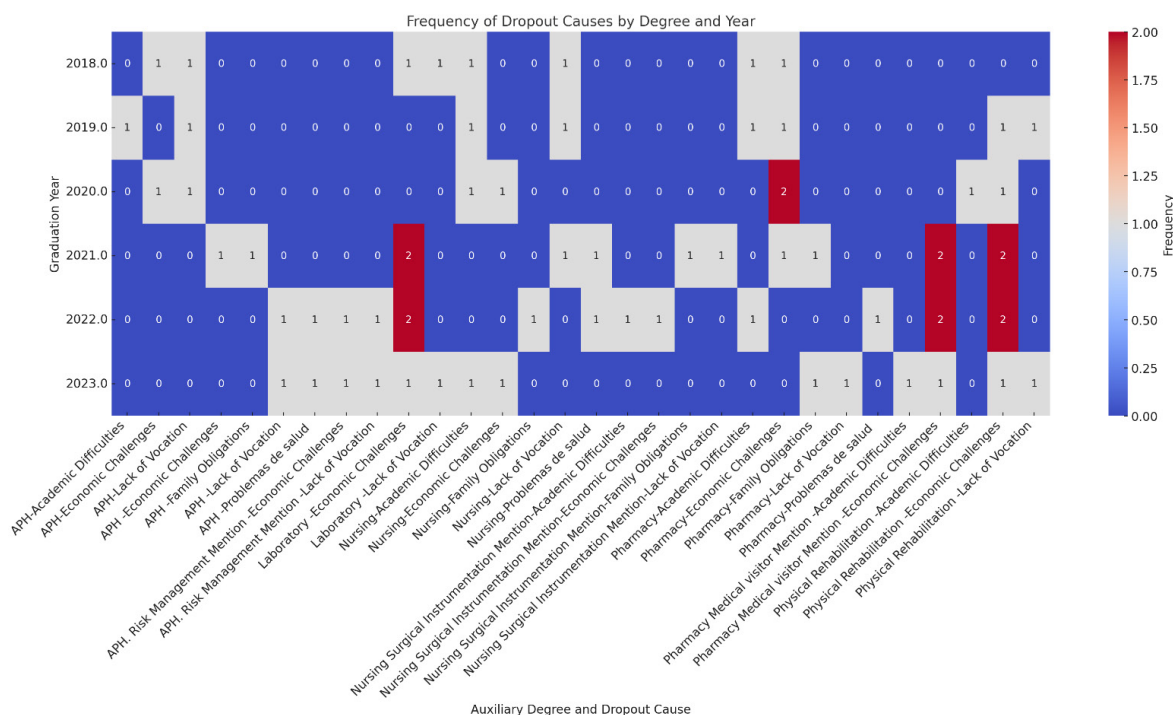


The auxiliary training programs and their mentions show a much lower and stable second attrition; the mentions Surgical Instrumentation and Medical Visitor stand out, indicating a good adjustment of students in these degrees. A slight increase was found, mainly in the training of Pharmacy Assistants, Nursing, APH and Physical Rehabilitation in the COVID 19 pandemic period, specifically between the years 2020 and 2022, then beginning to decline until 2023. These results are consistent with Escalada et al. (2022), who highlight that a large number of students, especially in rural areas, faced difficulties to stay in class. The factors were diverse, including limited access to the Internet, data restrictions in cellular plans and the lack of sufficient devices for the number of family members who required

technology to study. In addition, the family structure often did not allow for an adequate study environment. It could be seen that the second dropout was lower than the first, which is understandable since students who make it through the first few weeks of training are more likely to continue to complete their training. In this context, Blanco et al. (2018) highlight that a crucial aspect in the analysis of dropout is the moment at which it occurs during training, identifying as critical stages the admission process, the first weeks of transition between secondary and higher education, the final phase of the first year and the beginning of the second year. It also points out that there are differences in the moment of dropout, classifying it as initial, early or late.

Figure 4.

Frequency of causes of desertion by degree and years (from 2018 to 2023).



The color map shows the frequencies of causes of desertion by degree and year, providing a clear visualization of the most common causes of desertion in different degrees over time. The more intense colors represent higher frequencies, allowing the most prevalent causes of desertion to be quickly identified. In the case of the APH (Prehospital Care) degree, the most frequent cause in the first desertion is lack of vocation, while, in the second desertion, academic difficulties and economic challenges are the predominant causes, motivated by the demands of the training program.

In Nursing, lack of vocation is the most frequent cause in the first dropout, while academic difficulties predominate in the second dropout. In Pharmacy, academic difficulties and economic challenges are the most frequent causes in both the first and second dropouts. In Laboratory, lack of vocation is a common cause in the first dropout, while economic challenges are more prevalent in the second dropout. In Physical Rehabilitation, academic difficulties and economic challenges are the most frequent causes in both dropouts, probably due to the demands of the program itself.

For the auxiliary degrees with mentions, it is observed that the causes of desertion vary according to the specialization. In Nursing: Mention in Surgical Instrumentation and in APH: Mention in Risk Management, lack of vocation is a prevalent cause in the first desertion, while economic challenges become more relevant in the second desertion and in Pharmacy: Mention in Medical Visitor, academic and economic difficulties are presented as causes.

Over the years, it is noted that financial challenges have been a frequent cause of attrition, especially between the years 2020 and 2022, coinciding with the global economic impact of the COVID-19 pandemic. In this period, several degree programs, including Laboratory, Pharmacy, and Physical Rehabilitation, experienced an increase in attrition due to financial challenges. These findings are aligned with recent studies showing how the pandemic exacerbated economic hardship, leading to increased attrition and weakened recognition of face-to-face schooling. Bernardo et al. (2022) note that the transition from face-to-face to online formats during the pandemic increased barriers for many students, especially those with financial constraints, resulting in elevated dropout rates.

Contribution to knowledge

By analyzing the evolution of the number of graduates and causes of desertion in auxiliary health degrees in the period 2018-2023 in Consulting Group Ecuador, the importance of strengthening vocational guidance and addressing economic and academic barriers that could allow the reduction of desertion is highlighted. In addition, a practical approach is provided that helps to visualize these trends through graphs, an aspect that facilitates the identification of critical areas of intervention in the training of health professionals.

Limitations

The focus of this study is limited to a specific sample of health assistant degrees from the years 2018-2023, so the findings cannot be generalized to other years where these training programs have been maintained. It should also be considered that external factors, such as changes in government policies or global economic and health events, may have influenced desertion and graduation rates, limiting the interpretation of the results in a broader context. Finally, reliance on self-reporting of causes of desertion may introduce biases in the accuracy of the data collected.

CONCLUSIONS

When analyzing the evolution of the number of graduates in the Consulting Group Ecuador, Sede Santo Domingo, during the period 2018-2023, the training capacity of this center is reflected, since a positive and sustained growth is evidenced in most of the auxiliary degrees and their mentions, highlighting Auxiliary in Nursing and Auxiliary in Pharmacy, which suggests an effective alignment between the educational offer and the response of the agency to the needs of the health system.

Desertion in all auxiliary training programs and their mentions remained below 22% in the period under study (2018-2023), presenting significant variations throughout the years and among different degrees, with its highest rise in the years of COVID 19 pandemic (2021 and 2022); being lower the second desertion in all degrees. This indicator can be considered favorable taking into

account the wide access and the requirements of the academic offerings of the training company Consulting Group Ecuador.

The analysis of the causes of desertion reveals that Economic Challenges and Academic Difficulties motivated by the very demands of each training, are the most frequent causes of desertion in both the first and second desertion in several degrees. Lack of vocation is also identified as a constant cause in the first study modules. In particular, economic challenges have been a predominant cause of dropout between 2020 and 2022, coinciding with the global economic crisis caused by the COVID-19 pandemic.

Authors' contributions:

Xenia Pedraza González: Conceptualization, Data curation, Formal analysis, Research, Methodology, Validation, Visualization, Writing - original draft, Writing - revision and editing.

Marco Andrés Vaca Bedoya: Conceptualization, Formal analysis, Research, Methodology, Supervision, Validation, Writing - original draft, Writing - revision and editing.

Teresa Antonia Solís Llor: Formal analysis, Research, Methodology, Supervision, Validation, Writing - original draft, Writing - revision and editing.

Alexandra Lilibeth Zambrano Ibarra: Formal analysis, Research, Methodology, Supervision, Validation, Writing - original draft, Writing - revision and editing.

Conflicts of Interest

The authors declare that there are no conflicts of interest.

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