

Factors Affecting Academic Performance of Dental Graduates (2008-2016): A Study from A Colombian Public University

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Abstract

Graduate follow-up studies are essential tools used by higher education institutions to evaluate training effectiveness and employment outcomes in dental education. This study analyzed survey data from 100 dentistry graduates (2008-2016) from a Colombian public university to examine the influence of academic factors on dental training and assess current employment status. Using descriptive statistics and bivariate analysis, the research revealed a high employment rate (79%) among graduates, with predominant participation in private practice and urban settings. Significant gender-based differences were found in the perception of academic training factors, while the majority of graduates reported satisfaction with their professional preparation and current employment situation. The findings challenge previous assumptions about inadequate dental education preparation for current market demands and provide valuable insights into graduates' professional trajectories, contributing to the limited literature on dental graduate outcomes in developing countries.

Keywords: Education, Dental; Employment; Professional Competence; Educational Measurement; Career Choice.

INTRODUCTION

Since 1979, higher education institutions have implemented graduate follow-up programs to evaluate job placement and assess the relevance of professional training.(Mejía 2020) These studies provide crucial data for institutional planning, curriculum development, and strengthening connections with the employment sector.(Medina et al. 2015) Graduate studies are essential tools for identifying gaps between curricular objectives and actual professional performance in the field.(Vergara-Hernández, Carbonell-Muñoz, and Díaz-Caballero 2020)

During university education, institutions maintain close relationships with their students.(Morokhovets et al. 2019) However, this connection often weakens once graduates enter the professional world.(Gillespie 2005) Therefore, universities must implement systematic graduate monitoring programs to maintain these valuable connections.(Pérez et al. 2011)

Health science programs, particularly dentistry, are recognized for their complexity and demanding nature, requiring exceptional dedication from students.(Kobale et al. 2016) Currently, new graduates face an increasingly competitive and saturated job market, making continuous professional development and skill enhancement crucial for success. Graduate follow-up studies serve as key instruments for analyzing professional trajectories and economic outcomes.(Medina et al. 2014)

This research enables educational institutions to adapt curricula to current market demands, enhance training quality and relevance, and provide realistic professional perspectives to students. It also helps identify areas for academic improvement and develop strategies to boost graduate employability. In today's rapidly evolving professional landscape, higher education institutions must maintain active dialogue with both graduates and

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employers to ensure that dental education remains relevant and effectively prepares future professionals for the dynamic challenges of the modern job market.

Significance of the Paper

This research addresses a critical gap in the understanding of dental graduates' professional trajectories in Latin American contexts. Its significance lies in providing empirical data on employment outcomes in dentistry and identifying factors that contribute to successful career development. The findings inform curriculum development and educational policy while contributing to the limited literature on dental graduate outcomes in developing countries. Furthermore, this study supports evidence-based decision-making in dental education, offering valuable insights for institutions seeking to improve their training programs.

Research Objective

This study aims to analyze graduate employment outcomes and evaluate the influence of academic factors on dental training at a Colombian public university. Our research examines current employment status and economic conditions of dental graduates from 2008-2016, identifying key academic factors influencing professional development. Additionally, we explore the relationship between training received and job market demands, while evaluating gender-based differences in professional outcomes.

MATERIALS AND METHODS

Study Design and Population

A descriptive, retrospective, and cross-sectional study with a quantitative approach was conducted. The population consisted of graduates from a Colombian public university's dental program between 2008 and 2016. From a universe of 279 graduates, a random sample of 100 participants was selected.

Selection Criteria

The inclusion criteria encompassed graduates from the program between 2008 and 2016 who were traceable and agreed to participate through informed consent. Exclusion criteria included deceased graduates, untraceable individuals, those without updated contact information, or those who declined participation.

Data Collection Instrument

A multiple-choice questionnaire was developed by the researchers and validated through a pilot test with 20 graduates from other classes. Data collection was conducted by contacting participants through various means (personal, telephone, or internet).

Statistical Analysis

Descriptive statistical tests were employed at the univariate level (measures of central tendency and dispersion). Chi-square test was used for bivariate analysis, with a significance level of 0.05. Data were tabulated and analyzed using Excel 2016.

Ethical Considerations

The study was classified as risk-free, complying with Colombian Resolution 008430 of 1993 and the Declaration of Helsinki. Participant confidentiality and anonymity were maintained throughout the research process.

Study Limitations

The main limitations included potential difficulties in contacting all graduates and the self-reported nature of the data, which could be subject to memory or social desirability biases. Despite these limitations, the methodological design allowed for a representative view of the employment and academic situation of dental graduates, providing valuable information for program evaluation and improvement.

RESULTS

The analysis encompassed data from 100 dental program graduates, revealing a predominantly female distribution (61%) compared to male (39%). The average age was 27 years, with 81% falling within the 21-30 age range. Regarding marital status, 79% were single, 10% married, and 11% in domestic partnerships.

Employment and Economic Status

The study found that 79% of graduates were actively working in dentistry. A significant majority (80%) practiced in urban areas, with 66% in the private sector, 12% in the public sector, 10% in both sectors, and 2% in NGOs (Table 1). Employment timeline analysis revealed that 69% secured employment within their first year post-graduation, 15% within one year, and 16% took more than a year to find employment.

Table 1: Distribution of Employment and Salary Characteristics of Graduates

CHARACTERISTIC	CATEGORY	PERCENTAGE
WORK AREA	Urban	80%
	Rural	20%
EMPLOYMENT SECTOR	Private	66%
	Public	12%
	Both	10%
	NGO	2%
MONTHLY SALARY (USD)	>\$578.61	52%
	\$289.30-\$578.61	22%
	\$144.65-\$289.30	12%
	<\$144.65	4%

Note: Currency converted from Colombian Pesos (COP) to USD at the time of study. Total percentage may not equal 100% due to non-responding participants

Academic Factors and Professional Development

A significant association was found between graduate gender and perception of curricular flexibility ($p < 0.05$), as illustrated in Figure 1. The analysis revealed that 74% of graduates affirmed the coherence between academic evaluation and pedagogical methods during their undergraduate studies, while 26% held contrary views.

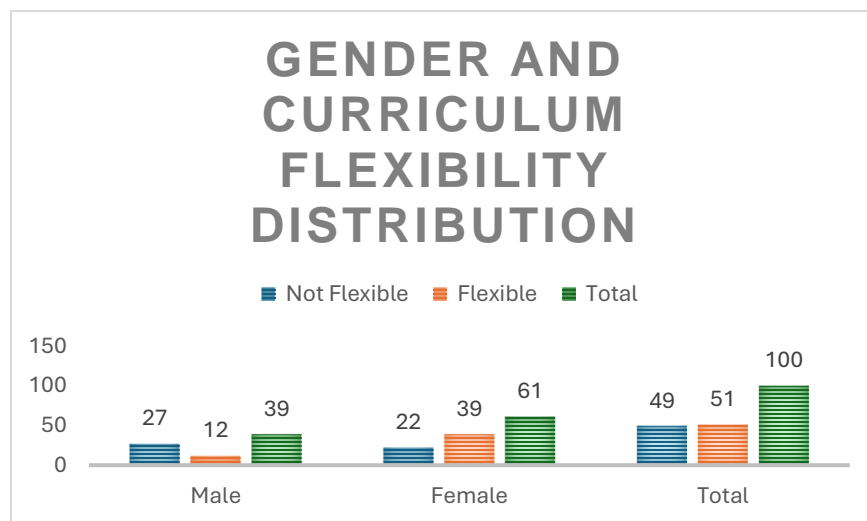


Figure 1: Gender-based Perception of Curricular Flexibility

Career choice analysis showed that 74% selected dentistry as their first option, with a significant association observed between career choice and current employment status (Figure 2). The study also revealed a meaningful correlation between teaching methodology perception and its relevance to current job performance.

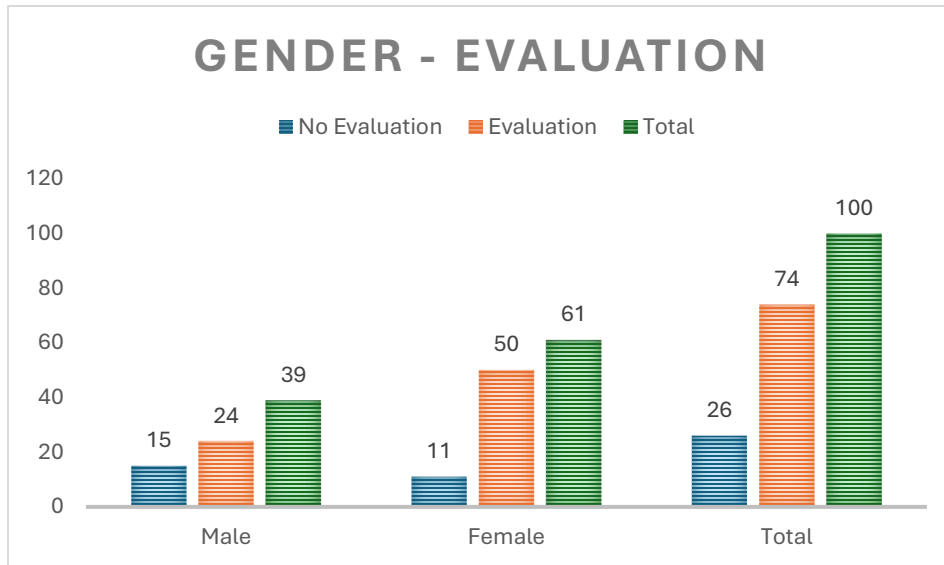


Figure 2: Relationship between First-Choice Career Selection and Current Employment Status.

Teaching Methodology and Professional Performance

The analysis demonstrated a significant relationship between teaching methodology and perceived relevance to professional performance, as shown in

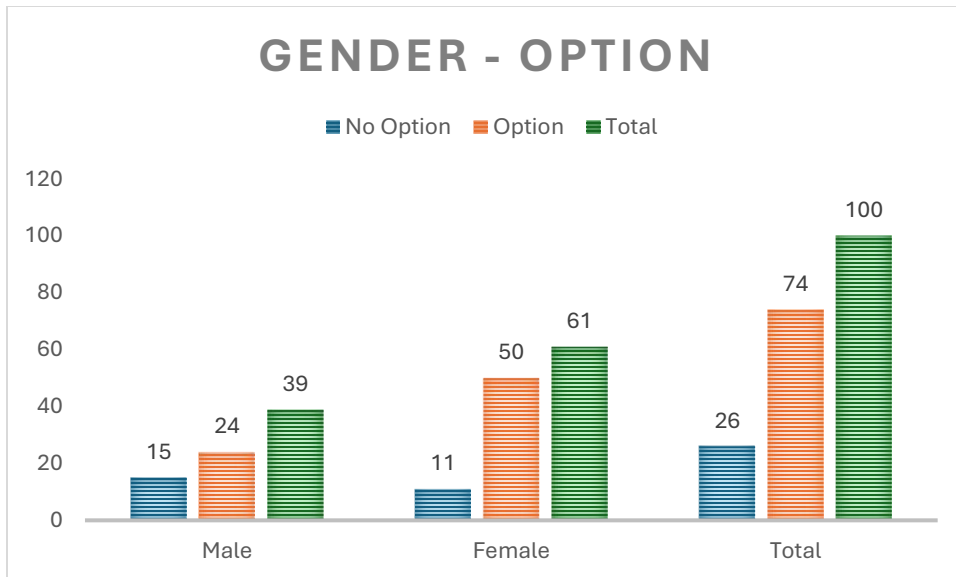


Figure 3: Correlation between Teaching Methodology and Professional Performance Relevance

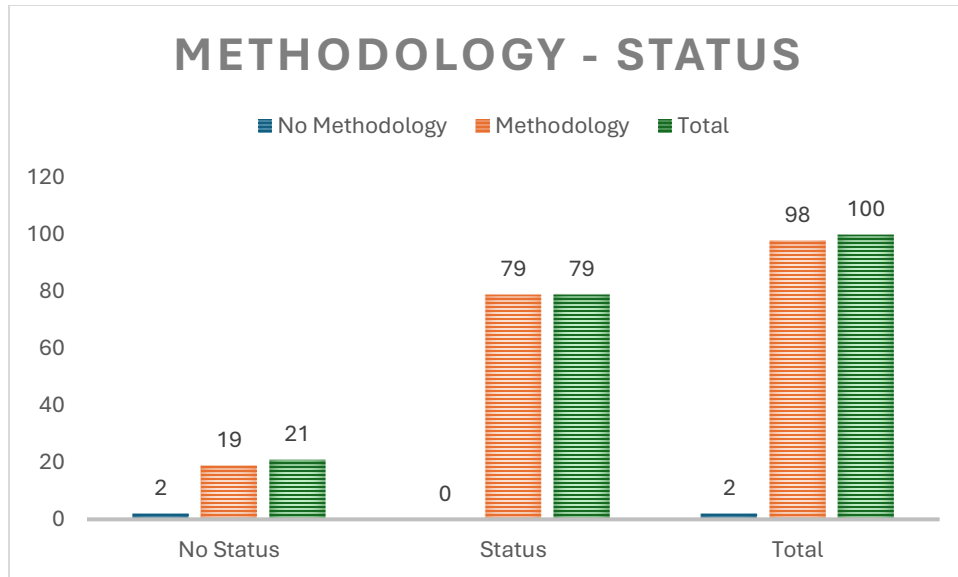


Figure 4: Assessment of Workplace Preparation Perception

Job Market Integration

Employment sector analysis revealed interesting patterns in salary distribution and professional placement, with 52% of graduates earning more than 2 million pesos monthly, 22% between 1-2 million, 12% between 500,000-1 million, and 4% less than 500,000 pesos (Figure 5).

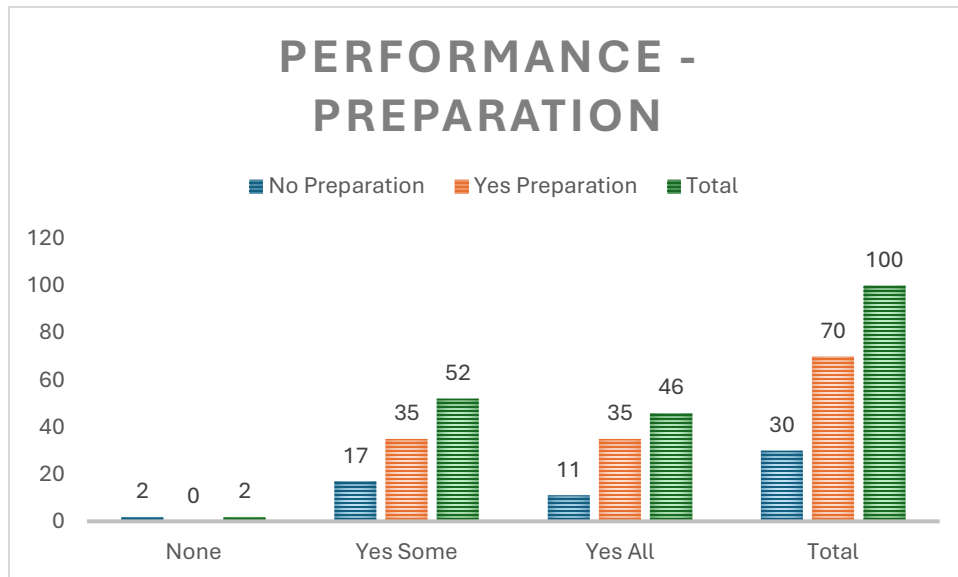


Figure 5: Monthly Salary Distribution Among Graduates

These findings provide a comprehensive overview of graduates' employment and academic situations, highlighting crucial aspects such as job placement, salary levels, and the perception of various academic factors. The identified associations between variables such as gender, career choice, and academic perceptions suggest the need to consider these aspects in the continuous planning and improvement of the dental program.

DISCUSSION

This study provides a comprehensive view of the employment and academic status of dental graduates from a Colombian public university. The high employability rate (79%) in the dental field exceeds that reported by

Rabanal Oyarce et al.(Oyarce et al. 2020), who found an average employability level of 61% among Peruvian university graduates. This difference could be attributed to the specific characteristics of the dental labor market and the specialized training received. The observed salary distribution presents an interesting contrast with findings reported by Srinivasan et al. (2016) in India, where recent graduates earn between 200-300 USD monthly, including weekend work. In our study, 52% of graduates earn more than 578.61 USD monthly, reflecting potential differences in labor markets and cost of living between countries.

The preference for urban areas (80%) differs from findings by Johnson et al.(Johnson et al. 2020) in Australia, where more than half of graduates worked in rural communities. This discrepancy might be explained by differences in public health policies and incentives for rural practice between both countries. Cui et al.(Cui, Dunning, y An 2017) reported similar results to ours, with a higher number of professionals working in metropolitan areas. This geographical distribution pattern highlights the ongoing challenge of providing dental services to rural communities.

Regarding academic aspects, the perception of curricular flexibility and pedagogical methods showed significant variations. This aligns with observations by Gordon et al.(Gordon et al. 2017) who identified multiple factors influencing the transition from training to professional practice. The high proportion of graduates (74%) who chose dentistry as their first option coincides with findings by Gallagher et al.(Gallagher, Clarke, y Wilson 2008), who identified professional status and financial benefits as career choice motivators. These findings suggest that career motivation plays a crucial role in professional development and satisfaction.

The relationship between teaching methodology and its relevance to current job performance supports the importance of maintaining an updated and relevant curriculum, as suggested by Manakil et al.(Manakil, Rihani, y George 2015). Fita et al.(Fita et al. 2020) note that factors such as gender and academic performance can influence future work and academic challenges. This finding underscores the need for continuous review of academic programs to ensure their relevance in the changing landscape of dentistry, particularly considering the evolving demands of modern dental practice.

Additionally, Dennis (Dennis 2000) emphasizes the importance of non-cognitive skills in medical training, such as care and respect for others, self-awareness, and communication skills. These aspects are equally relevant in dental education and may influence professional satisfaction and work stress management, highlighting the need for a comprehensive approach to dental education that balances technical skills with interpersonal competencies.

CONCLUSIONS

This study reveals that dental graduates from the analyzed Colombian public university generally present a favorable employment situation, with a high employability rate in their field. However, challenges are identified in a competitive and predominantly urban labor market. Academic factors, such as curricular flexibility and evaluation methods, significantly influence graduates' perceptions of their training and preparation for the workforce. The variability in these perceptions suggests the need for a more personalized approach in dental education. Continuous review of the academic program is recommended to maintain its relevance to labor market demands and consider individual differences in learning and professional expectations.

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