ODOVTOS
International Journal of Dental Sciences

UNIVERSIDAD DE COSTA RICA FOd Facultad de Odontología

https://revistas.ucr.ac.cr/index.php/rOdontos

CLINICAL RESEARCH:

Research in Dental Education: A Study on its Curricular Presence Across Latin American and Caribbean Universities

Investigación en educación odontológica: Un estudio sobre su presencia curricular en universidades Latinoamericanas y Caribeñas

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Received: 26-III-2025 Accepted: 5-V-2026

ABSTRACT: Research in dentistry plays a crucial role in the education and development of professionals while advancing scientific knowledge and continuously improving dental care. This study aimed to characterize research courses within dental programs at universities across Latin America and the Caribbean. A cross-sectional study analyzed 248 curricula from dental programs in the region in 2023. Of the 248 programs reviewed, 178 included a research course, with 16.85% (n=30) originating from Peru. South America had the highest representation, accounting for 74.72%, and 57.87% (n=103) of the research courses were from private institutions. Research courses are concentrated in South America, with Peru leading in the number and percentage of courses. At the institutional level, private universities had a more substantial presence of research courses compared to public institutions. Additionally, the association between the percentage of research courses and the Scimago ranking underscores the importance of research in enhancing academic prestige and driving institutional innovation.

KEYWORDS: Curriculum; Dental education; Dental research; Latin America.

RESUMEN: La investigación en odontología desempeña un papel crucial en la formación y el desarrollo de profesionales, al tiempo que impulsa el avance del conocimiento científico y la mejora continua de la atención odontológica. Este estudio tuvo como objetivo caracterizar los cursos de investigación dentro de los programas de odontología en universidades de América Latina y el Caribe. Se realizó un estudio transversal en el que se analizaron 248 planes de estudio de programas de odontología de la región en el año 2023. De los 248 programas revisados, 178 incluían un curso de investigación, de los cuales

el 16,85% (n=30) correspondían al Perú. América del Sur presentó la mayor representación, con un 74,72%, y el 57,87% (n=103) de los cursos de investigación pertenecían a instituciones privadas. Los cursos de investigación se concentran en América del Sur, siendo el Perú el país con mayor número y proporción de estos cursos. A nivel institucional, las universidades privadas presentaron una mayor presencia de cursos de investigación en comparación con las instituciones públicas. Asimismo, la asociación entre el porcentaje de cursos de investigación y el ranking Scimago resalta la importancia de la investigación para fortalecer el prestigio académico e impulsar la innovación institucional.

PALABRAS CLAVE: Currículo; Educación odontológica; Investigación odontológica; América Latina.

INTRODUCTION

Scientific research is a fundamental pillar in the education of future dental professionals. Its significance lies in generating knowledge, fostering analytical skills and critical thinking for lifelong learning, solving complex interdisciplinary problems, evaluating and reporting on new materials and innovative methods in dentistry, and developing new technologies (1, 2). Studies in higher education over recent decades highlight the numerous benefits of scientific research education for students. Those with such training exhibit stronger cognitive and personal skills and higher satisfaction with their educational experience. Moreover, research suggests that undergraduate research training can influence professional development and academic success by fostering a scientific mindset (3, 4).

Recognizing this importance, the World Congress on Dental Education in 2007 recommended the incorporation of research into undergraduate curricula. Dental schools are therefore expected to prepare future dentists to engage with and understand research processes by promoting science and innovation, integrating technological advances, and adopting evidence-based approaches (1). In addition to strengthening academic foundations, active participation in research provides students with practical skills such as data analysis, scientific communication, and the ability to connect theory with practice, all of which are essential for evidence-based dentistry and high-quality patient care (5, 6).

Experiences from other regions show that the challenge of integrating research into health sciences education is not unique to dentistry in Latin America. In pharmacy schools, for example, faculty in Qatar have described both the benefits and difficulties of research courses, pointing to the need for stronger curricular support (7) . In the United States, community colleges have introduced course-based undergraduate research experiences to give more students—especially those in allied health and underrepresented groups—access to research opportunities (8). Medical education has also shown that engaging students in research early on fosters critical thinking, enriches professional growth, and even increases the likelihood of pursuing advanced degrees, though barriers such as limited mentorship remain (9).

Closer to our region, studies in Chile have shown that while research training is included in many dental schools, it often takes a back seat to clinical instruction. Research courses tend to be more common in private universities, but this does not always translate into greater scientific productivity. Public health and research also receive comparatively less emphasis, which reflects an ongoing imbalance in curricular priorities. Although the value of research is widely recognized, it is still not fully integrated into the educational experience, leaving a gap between

what students learn in the classroom and the profession's responsibility to advance science and address public health needs (10, 11).These examples highlight a common concern about how to embed research more effectively into curricula so that it truly supports students' development and the progress of the profession.

Effectively integrating research-related courses into university curricula is crucial for understanding how research is embedded in dental education. Such integration not only strengthens students' academic foundations but also contributes to advancing dental care and promoting oral health across the region. According to the American Association for Dental Research, the future of dental professional education and the development of a competent workforce depend on the capacity of dental schools to generate new knowledge and transfer it to students, practitioners, and society at large (12). Within this framework, the aim of this study is to examinate the characteristics of research courses in dental programs at universities across Latin America and the Caribbean.

MATERIALS AND METHODS

This study employed a cross-sectional design to examine dental programs across 35 countries in the Latin American and Caribbean region, including Antigua and Barbuda, Argentina, Bahamas, Barbados, Belize, Bolivia, Brazil, Chile, Colombia, Costa Rica, Cuba, Dominica, Ecuador, El Salvador, Grenada, Guatemala, Guyana, Haiti, Honduras, Jamaica, Mexico, Montserrat, Nicaragua, Panama, Paraguay, Peru, Puerto Rico, Dominican Republic, Saint Kitts and Nevis, Saint Vincent and the Grenadines, Saint Lucia, Suriname, Trinidad and Tobago, Uruguay, and Venezuela. A non-probabilistic convenience sampling approach was employed, including 248 dental programs from universities with active educational quality certification and updated institutional websites providing access to curricula. Institutions that solely conferred technical degrees were excluded, as well as universities without published curricula on their websites and programs whose curricula did not include at least one research-related course.

The review involved analyzing the Ministry of Education websites of each country to identify the accrediting body responsible for university accreditation across the region. Accredited universities offering dental programs were then cataloged, and the websites of their dental faculties were examined, with particular attention given to those providing a complete online curriculum.

Data were collected from the dental curricula of universities that met all inclusion criteria, focusing on whether they included research courses or equivalent subjects. A database was established containing detailed information such as country, region (North America, Central America, South America, and the Caribbean), type of university (public or private), total number of courses within the program, number of research courses, titles of research courses, and the number of hours and credits associated with these courses. Additionally, it was verified whether the universities were listed in the Scimago Institutional Rankings. For those listed, values for specific indicators were obtained. The "Overall" indicator reflects an institution's general scientific performance in recent years, while the "Research" component assesses the volume, impact, and quality of research output. The "Innovation" indicator is based on patent applications and the citation of research in patents, and the "Societal" indicator evaluates the institution's web presence, backlinks, and social media mentions (13). The variables "Total number of courses in the program," "Scimago Rank," "Overall," "Research," "Innovation," and "Societal" were categorized based on their median values (Q2).

It is noteworthy that data collection was conducted by two researchers who underwent a

calibration process to ensure consistency in the classification of research courses. Inter-rater agreement was compared to a gold standard dental education expert, achieving Kappa values exceeding 0.80. Discrepancies were resolved through discussion between the researchers, and when necessary, the expert was consulted to reach a consensus.

A descriptive statistical analysis of qualitative and quantitative variables was performed. The distribution of numerical data was assessed using the Shapiro-Wilk test. Since a non-parametric distribution was observed, the Mann-Whitney U and Kruskal-Wallis tests were applied. Data were analyzed using STATA 18.0, with a 95% confidence level and a significance threshold of $p<0.05$.

RESULTS

Among the 248 dental programs reviewed across Latin America and the Caribbean, 178 included a research course within their curriculum. Of these, 16.85% (n=30) were located in Peru, followed by Brazil with 15.17% (n=27), Mexico with 14.04% (n=25), and Chile with 10.11% (n=18). Regional analysis revealed that South America had the highest representation, accounting for 74.72% (n=133), while the Caribbean had the lowest, with 4.49% (n=8). Furthermore, a breakdown by university type showed that 57.87% (n=103) of the research courses were offered by private institutions, whereas 42.13% (n=75) were provided by public institutions. The mean total number of courses per program was 61.98 (SD=13.90), with 2.91 (SD=1.69) related to research, constituting 2.77% (SD=5.04) of the total course load. Among universities offering research courses, 54.49% (n=97) were included in the Scimago Institutional Ranking, with a mean "Overall" score of 60.75 (SD=21.81), "Research" score of 59.97 (SD=20.87), "Innovation" score of 76.37 (SD=14.86), and "Societal" score of 32.29 (SD=15.75). The mean number of research courses per program was 2.91 (SD=1.69), and the mean percentage of research courses was 5.04% (SD=2.77) (Table 1).

Regarding the mean number of research courses per program, Peru and Colombia had the highest values, with 4.77 (SD=1.36) and 4.27 (SD=1.79) courses, respectively. Regionally, South America had the highest mean, with 3.05 (SD=1.79). Public universities had a mean of 2.84 (SD=1.65) research courses, while private universities had a mean of 2.96 (SD=1.72). In terms of the total number of courses in the program, the >Q2 group had a mean of 3.28 (SD=1.73), while those with a Scimago Rank had a mean of 3.06 (SD=1.76). For the >Q2 groups, the "Overall" indicator had a mean of 3.44 (SD=1.70), "Research" 3.15 (SD=1.61), "Innovation" 3.42 (SD=1.81), and "Societal" 3.14 (SD=1.71). Statistically significant differences were observed between the number of research courses per program and both the country ($p<0.001$) and innovation ($p=0.031$) (Table 2, Figure 1).

Regarding the percentage of research courses within academic programs, Peru had the highest percentage at 7.84% (SD=2.48), followed by Ecuador at 6.52% (SD=3.78). Regionally, South America had the highest mean percentage, with 5.41% (SD=2.90). Private universities had a mean percentage of 5.06% (SD=3.03), compared to 5.01% (SD=2.38) for public universities. Among programs with a higher number of courses, the >Q2 group had a mean percentage of 5.47% (SD=3.02), while those with a Scimago Rank had a mean percentage of 5.50% (SD=2.81). For the >Q2 groups, the "Overall" indicator reported a mean of 6.05% (SD=2.81), "Innovation" 6.00% (SD=3.15), and "Societal" 5.70% (SD=2.87). A statistically significant difference was found for the percentage of research courses by country ($p<0.001$) (Table 2, Figure 1).

Finally, the analysis identified a total of 96 course titles related to research. Among the most frequent subjects were Epidemiology, Research Methodology, Statistics, and Thesis Project (Table 3).

Table 1. Characterization of research courses in dentistry programs at universities in Latin America and the Caribbean.

	Variables	n/X	%/SD
Country			
	Argentina	13	7,30
	Bolivia	8	4,49
	Brazil	27	15,17
	Chile	18	10,11
	Colombia	11	6,18
	Dominican Republic	7	3,93
	Ecuador	14	7,87
	El Salvador	4	2,25
	Guatemala	2	1,12
	Honduras	3	1,69
	Mexico	25	14,04
	Panama	3	1,69
	Paraguay	11	6,18
	Peru	30	16,85
	Puerto Rico	1	0,56
	Uruguay	1	0,56
Region			
	North America	25	14,04
	Central America	12	6,74
	South America	133	74,72
	Caribbean	8	4,49
Type of university			
	Public	75	42,13
	Private	103	57,87
Number of total courses in the program		61,98	13,90
Scimago Rank			
	Yes	97	54,49
	No	81	45,51
	Overall	60,75	21,81
	Research	59,97	20,87
	Innovation	76,37	14,86
	Societal	32,29	15,75
Number of research courses in the program		2,91	1,69
Percentage of research courses in the program		5,04	2,77

n: Absolute frequency; %: Relative frequency; X: Mean; SD; Standard deviation.

Table 2. Research courses according to characteristics of dentistry programs in universities in Latin America and the Caribbean.

Variables		Number of research courses in the program			Percentage of research courses in the program		
		X	SD	p	X	SD	p
Country							
	Argentina	1,92	1,26	<0.001*	4,22	2,34	<0.001*
	Bolivia	1,63	0,52		2,87	1,07	
	Brazil	1,89	0,75		3,44	1,49	
	Chile	3,17	1,34		5,60	2,00	
	Colombia	4,27	1,79		6,21	2,46	
	Dominican Republic	2,00	0,58		2,51	0,54	
	Ecuador	3,64	2,13		6,52	3,78	
	El Salvador	3,25	0,96		4,05	1,41	
	Guatemala	1,00	0,00		1,77	0,51	
	Honduras	2,00	0,00		3,08	0,28	
	Mexico	2,58	1,44		4,44	2,12	
	Panama	3,33	1,53		4,23	2,08	
	Paraguay	1,55	0,52		2,71	0,83	
	Peru	4,77	1,36		7,84	2,48	
	Puerto Rico	3,00	.		4,23	.	
	Uruguay	1,00	.		2,56	.	
Region							
	North America	2,58	1,44	0.484*	4,44	2,12	0.005*
	Central America	2,58	1,24		3,42	1,48	
	South America	3,05	1,79		5,41	2,90	
	Caribbean	2,13	0,64		2,75	0,82	
Type of university							
	Public	2,84	1,65	0.701**	5,01	2,38	0.686**
	Private	2,96	1,72		5,06	3,03	
Number of total courses in the program							
	≤Q2	2,83	1,67	0.073**	5,47	3,02	0.093**
	>Q2	3,28	1,73		4,61	2,45	
Scimago Rank							
	Yes	3,06	1,76	0.232**	5,50	2,81	0.013**
	No	2,73	1,58		4,50	2,65	
Overall							
	≤Q2	2,73	1,77	0.023**	5,01	2,75	0.073**
	>Q2	3,44	1,70		6,05	2,81	
Research							
	≤Q2	2,98	1,92	0.399**	5,64	3,04	0.727**
	>Q2	3,15	1,61		5,37	2,62	
Innovation							
	≤Q2	2,67	1,65	0.031**	4,88	2,22	0.130**
	>Q2	3,42	1,81		6,00	3,15	
Societal							
	≤Q2	2,98	1,83	0.516**	5,29	2,77	0.496**
	>Q2	3,14	1,71		5,70	2,87	

X: Mean; SD; Standard deviation. *Kruskal-Wallis; **Mann-Whitney U.

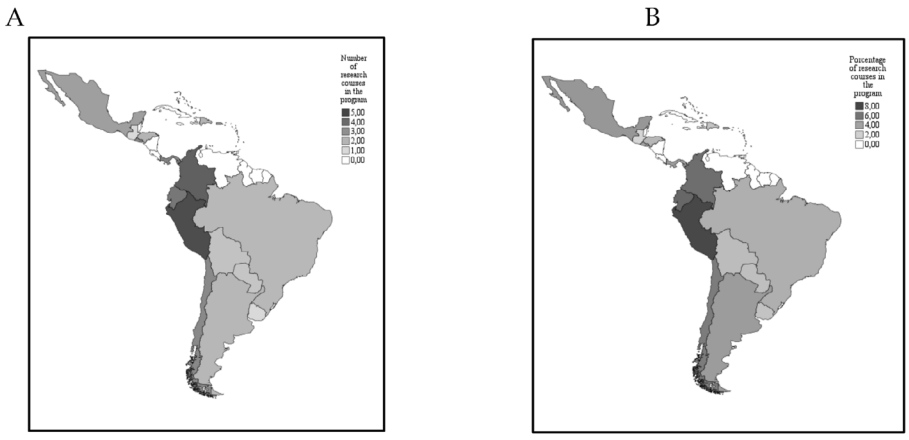

Figure 1. Research courses in dentistry programs at universities in Latin America and the Caribbean. A. Number of research courses in the program at universities in Latin America. B. Porcentage of research courses in the program at universities in Latin America.
*Countries with values of 0 had no information available.

Table 3. Names of the research courses in dentistry programs at universities in Latin America and the Caribbean.

N°	Names of research courses	N°	Names of research courses	N°	Names of research courses
1	Applied research methodology	33	Final work	65	Research in stomatology
2	Applied research workshop	34	Final work workshop	66	Research in the community
3	Applied scientific research	35	Formative research	67	Research methodology
4	Basic statistics	36	Fundamentals of research methodology	68	Research methodology and biostatistics
5	Basic tools and methods for scientific work	37	General epidemiology	69	Research methodology combined studies
6	Bibliographic research methodology	38	General epidemiology for dentistry	70	Research methodology in health sciences
7	Biostatistics	39	Health research	71	Research Methods
8	Biostatistics and demography	40	Health research and extension	72	Research methods and informatics
9	Biostatistics and demography and research methodology	41	Health research methods and applied biostatistics	73	Research methods for health professionals
10	Biostatistics and epidemiology	42	Introduction to dental research	74	Research processes
11	Biostatistics and research methodology	43	Introduction to epidemiology and biostatistics	75	Research seminar
12	Cientific investigation methodology	44	Introduction to scientific methodology	76	Research techniques
13	Clinical epidemiological research	45	Introduction to scientific research	77	Research training
14	Clinical research	46	Introduction to scientific thinking	78	Research work
15	Clinical-epidemiological research methods in dentistry	47	Investigation	79	Science and research
16	Comprehension and production of scientific texts	48	Investigation methodology	80	Scientific and biostatistical methodology
17	Critical analysis of scientific literature	49	Investigation project	81	Scientific investigation
18	Degree work	50	Methodology of scientific work	82	Scientific method and evidence
19	Dentistry research	51	Methods and techniques of investigation	83	Scientific methodology
20	Descriptive biostatistics	52	Obe and management of scientific information	84	Scientific methodology and bioethics in research
21	Descriptive research methodology	53	Project elaboration	85	Scientific methodology and course conclusion work
22	dissertation project	54	Project title	86	Scientific production
23	Documentation and introduction to research methodology in dentistry	55	Qualitative research methodology	87	Scientific reasoning
24	Epidemiology	56	Quantitative research methodology	88	Scientific writing
25	Epidemiology and collective health	57	Research and academic texts	89	Statistics
26	Epidemiology in oral health	58	Research and clinical method	90	Statistics and demography
27	Epistemiology and methodology of scientific research	59	Research and society	91	Stomatological research methodology
28	Epistemiology of dentistry	60	Research applied to health	92	Study and research techniques
29	Epistemology	61	Research bases	93	Theory and philosophy of knowledge
30	Evidence-based dentistry	62	Research designs	94	Thesis
31	Evidence-based health	63	Research in dental health	95	Thesis seminar
32	Execution of research project iv	64	Research in health sciences	96	Titling project

DISCUSSION

Although research training is crucial for dentists, it is often oriented toward obtaining academic degrees, which can result in low-quality and repetitive research (14).This approach is inconsistent with the principles of evidence-based dentistry (EBD), defined as a method of dental care based on the meticulous and systematic evaluation of high-quality scientific evidence, considering the patient's specific conditions, treatment needs, and the professional's experience (15,16).

The findings indicate that numerous universities in South America offer research courses related to dentistry, with Peru having the highest number and proportion of such courses. This may be linked to the academic requirements in the country, where presenting a research thesis is a prerequisite for obtaining academic degrees (17). Furthermore, the presence of research courses in curricula appeared to show an association with the inclusion of universities in the Scimago Institutional Rankings, suggesting a link with indicators such as 'Overall' and 'Innovation.' However, this relationship is not specific to research in dentistry, since universities offer multiple academic programs and the ranking reflects the institution's overall performance across disciplines. Therefore, other factors considered in the Scimago evaluation may also influence the institution's position, and the association should be interpreted with caution.

Dental research in Latin America faces significant challenges, such as inadequate educational infrastructure and limited resources, which contrast with conditions in more developed countries. These limitations adversely affect the region's academic quality and scientific production in dentistry. Nonetheless, efforts are being made to enhance dental research education, including internationalization, adopting emerging technologies, and promoting transnational collaborations. Initiatives such as virtual simulations and augmented reality in teaching, as well as active participation in international research networks, aim to strengthen the capabilities of future dentists (18,19,20).

The data collection was constrained by inactive websites and institutions that did not publish their curricula online, which limited comprehensive access to information. Among the available curricula, there were significant variations in how information was presented, creating heterogeneity that hindered detailed comparisons across Latin America and the Caribbean. Moreover, the methodology relied exclusively on curricula, without reviewing individual syllabi, which restricted the ability to assess course development or alignment with specific competencies. A further methodological limitation lies in the use of a non-probabilistic convenience sample, which prevents determining whether the findings are representative of the broader reality. In addition, the results regarding universities offering research courses were reported only in absolute numbers rather than in relative terms. This approach may overstate the weight of countries with larger numbers of universities while underestimating the relevance of those where research training is more widely integrated across fewer institutions.

Future research should include a critical review of syllabi within curricula to ensure that educational programs meet academic standards and equip graduates with the competencies required to address contemporary challenges in dental practice, including research and the application of evidence-based practices (1). Additionally, studies on students' self-perception regarding the development of research courses and their impact on their training and clinical practice would be valuable.

CONCLUSIONS

Research courses are predominantly concentrated in South America, with Peru exhibiting the highest number and percentage of courses dedicated to research. At the institutional level, private universities demonstrate a greater prevalence of research courses compared to their public counterparts.

FUNDING: Self-funded.

INSTITUTIONAL REVIEW BOARD STATEMENT: The ethics committee of the xxx.. approved this study on July 30, 2024.

DATA AVAILABILITY STATEMENT: Data are available upon reasonable request from the corresponding author.

CONFLICTS OF INTEREST: The authors declare no conflicts of interest.

AUTHOR CONTRIBUTION STATEMENT: Conceptualization and design, A.P.F.C., D.K.P.A., R.A.L.M. and C.M.A.; Literature Review, A.P.F.C., D.K.P.A. and M.C.G.E.; Methodology and Validation, J.A.B., RALM and C.M.A.; Formal Analysis, R.A.L.M.; Investigation and Data Collection, A.P.F.C., D.K.P.A. and M.C.G.E.; Resources, A.P.F.C., D.K.P.A., J.A.B. and M.C.G.E.; Data Analysis and Interpretation, C.M.A., R.A.L.M. and J.A.B.; Writing – Original Draft Preparation, A.P.F.C., D.K.P.A. and M.C.G.E.; Writing – Review & Editing, A.P.F.C., CMA, M.C.G.E. and J.A.B.; Supervision, R.A.L.M., and J.A.B.; Project Administration, A.P.F.C., D.K.P.A. and C.M.A.; Funding Acquisition, C.M.A., R.A.L.M., and J.A.B.

REFERENCES

1. Amir L.R., Soekanto S.A., Julia V., Wahono N.A., Maharani D.A. Impact of Undergraduate Research as a Compulsory Course in the Dentistry Study Program Universitas Indonesia. Dent J (Basel). 2022; 10 (11): 204. doi: 10.3390/dj10110204
2. Yu W., Sun Y., Miao M., Li L., Zhang Y., Zhang L., Lu E. Eleven-year experience implementing a dental undergraduate research programme in a prestigious dental school in China: Lessons learned and future prospects. Eur J Dent Educ. 2021; 25 (2): 246-260. doi: 10.1111/eje.12598
3. Van der Groen T.A., Olsen B.R., Park S.E. Effects of a Research Requirement for Dental Students: A Retrospective Analysis of Students' Perspectives Across Ten Years. J Dent Educ. 2018; 82 (11): 1171-1177. doi: 10.1111/eje.12598
4. Liu, H., Gong, Z., Ye, C. et al. The picture of undergraduate dental basic research education: a scoping review. BMC Med Educ. 2022; 22 (569): 1-21. doi: 10.1186/s12909-022-03628-9
5. Aly A., Hishari O., Stewart D., Awaisu A., Elshami S., Mukhalalati B. Exploring the perceptions of faculty members about research courses in undergraduate pharmacy curriculum: A qualitative study. PLoS One. 2024; 19 (6):e0305946. doi: 10.1371/journal.pone.0305946
6. Slavkin H.C. The Impact of Research on the Future of Dental Education: How Research and Innovation Shape Dental Education and the Dental Profession. J Dent Educ.

2017; 81 (9): eS108-eS127. doi: 10.21815/JDE.017.041
7. Nalliah R.P., Lee M.K., Da Silva J.D., Allareddy V. Impact of a research requirement in a dental school curriculum. J Dent Educ. 2014; 78 (10): 1364-71. PMID: 25281669.
8. Leonetti C.T., Lindberg H., Schwake D.O., Cotter R.L. A Call to Assess the Impacts of Course-Based Undergraduate Research Experiences for Career and Technical Education, Allied Health, and Underrepresented Students at Community Colleges. CBE Life Sci Educ. 2023; 22 (1): ar4. doi: 10.1187/cbe.21-11-0318
9. Mass-Hernández L.M., Acevedo-Aguilar L.M., Lozada-Martínez I.D., Osorio-Agudelo L.S., Maya-Betancourth J.G.E.M., Paz-Echeverry O.A., Paz-Echeverry M.J., Castillo-Pastuzan H.S., Rojas-Pimentel J.C., Rahman S. Undergraduate research in medicine: A summary of the evidence on problems, solutions and outcomes. Ann Med Surg (Lond). 2022;74:103280. doi: 10.1016/j.amsu.2022.103280
10. Moreno, X. Research training in dental undergraduate curriculum in Chile.. Journal Oral Of Research. 2014; 3: 95-99. doi: 10.17126/joralres.2014.023
11. Venturelli Garay, R.E., Watt, R.G. Review and analysis of Chilean dental undergraduate education: curriculum composition and profiles of first year dental students. Hum Resour Health 2018;16:48. doi: https://doi.org/10.1186/s12960-018-0314-8
12. Ferracane J.L., Garcia R.I., Ajiboye A.S., Mullen C., Fox C.H. Research and Dental Education: An AADR Perspective on the "Advancing Dental Education: Gies in the 21st Century" Project. J Dent Res. 2017; 96 (10): 1073-1075. Doi: doi: 10.1177/0022034517723566
13. Scimago Institutions Rankings. Available online: https://www.scimagoir.com (accessed on 20 June 2024).
14. Slavkin H.C. The Impact of Research on the Future of Dental Education: How Research and Innovation Shape Dental Education and the Dental Profession. J Dent Educ. 2017;81(9):eS108-eS127. doi: 10.21815/JDE.017.041
15. Nalliah R.P., Lee M.K., Da Silva J.D., Allareddy V. Impact of a research requirement in a dental school curriculum. J Dent Educ. 2014; 78 (10): 1364-71. PMID: 25281669.
16. Clarkson J., Worthington H. Leadership in evidence based dentistry. J Dent. 2019; 87: 16-9. doi: 10.1016/j.jdent.2019.05.012
17. Marroquín-Soto C., Padilla-Avalos C.-A., Hernández Sampieri R. Fundamentos metodológicos para investigación clínica en estomatología. Rev Estomatol Herediana. 2023; 33 (1): 56-61. doi: https://doi.org/10.20453/reh.v33i1.4435
18. Chiappelli F. Evidence-Based Dentistry: Two decades and beyond. J Evid Based Dent Pract. 2019; 19 (1):7-16. doi: 10.1016/j.jebdp.2018.05.00.
19. Gobierno del Perú. Ministerio de Educación. Ley N 30220. Available online: https://www.gob.pe/institucion/minedu/normas-legales/118482-30220 (accessed on 10 July 2024).
20. Kandelman D., Arpin S., Baez R.J., Baehni P.C., Petersen P.E. Oral health care systems in developing and developed countries. Periodontol 2000. 2012; 60 (1): 98-109. doi: 10.1111/j.1600-0757.2011.00427.x
21. Spielman A.I. Dental education and practice: past, present, and future trends. Front. Oral. Health. 2024; 5: 1368121. doi: 10.3389/froh.2024.1368121
22. Viglioni, M.T.D., de Brito, M.J. & Calegario, C.L.L. Innovation and R&D in Latin America and the Caribbean countries: a systematic literature review. Scientometrics. 2020; 125:2131–2167. doi: 10.1007/s11192-020-03714-z