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Dental education and its impact on contemporary public health

Meta synthesis of the Paraguayan curriculum and its alignment with primary health care

UPDATE

La educación odontológica y su impacto en la salud pública contemporánea

Metasíntesis del currículo paraguayo y su alineación con la atención primaria de salud

Educação odontológica e seu impacto na saúde pública contemporânea

Metassíntese do currículo paraguaio e seu alinhamento com a atenção primária à saúde

Abstract

Dental education in Paraguay faces the challenge of aligning with contemporary Primary Health Care (PHC) strategies. The high prevalence of preventable diseases and low professional coverage at the PHC level warrant a rigorous curricular review.

» **Objective.** To systematically analyze the congruence between the dental curriculum in Paraguay and current public health strategies, identifying educational and methodological shortcomings.

» **Materials and methods.** A qualitative systematic review with meta-synthesis of the literature (2019-2025) was conducted, following PRISMA guidelines. The Scopus, SciELO, PubMed, and Google Scholar databases were consulted, and 35 studies were included after applying the CASP tool. The synthesis was based on thematic content analysis. Study limitations include the absence of PROSPERO registration and the lack of direct empirical evaluation.

» **Results.** A curricular bias was identified (88.6% of the studies focus on clinical-restorative disciplines), misaligned with epidemiological needs. Only 31.4% of the evidence addresses Interprofessional Education (IPE), and a high proportion of studies discuss the limitations of traditional methods (80%).

» **Conclusion.** The curriculum requires structural reform to strengthen ethical, community, and methodological training. The active integration of PHC, bioethics, and active pedagogical approaches is essential to train professionals capable of responding to population needs.

Keywords: Dental education; Primary health care; Curriculum; Public health; Systematic review.

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Resumen

La educación odontológica en Paraguay enfrenta el desafío de alinearse con las estrategias contemporáneas de la Atención Primaria de Salud (APS). La alta prevalencia de enfermedades prevenibles y la baja cobertura profesional en APS exigen una revisión curricular profunda.

» **Objetivo.** Analizar sistemáticamente la congruencia entre el currículo de Odontología en Paraguay y las estrategias actuales de salud pública, identificando deficiencias formativas y metodológicas.

» **Materiales y métodos.** Se realizó una revisión sistemática cualitativa con metasíntesis de la literatura (2019-2025), siguiendo la guía PRISMA. Se consultaron las bases de datos Scopus, SciELO, PubMed y Google Scholar y, tras aplicar la herramienta CASP, se seleccionaron 35 estudios. La síntesis se basó en el análisis de contenido temático. Entre las limitaciones del estudio cabe señalar la ausencia de registro PROSPERO y la carencia de evaluación empírica directa.

» **Resultados.** Se identificó un sesgo curricular (88.6% de los estudios se enfocan en disciplinas clínico-restauradoras), desalineado con las necesidades epidemiológicas. Solo el 31.4% de la evidencia aborda la Formación Interprofesional (FIP) y existe un alto nivel de discusión sobre las limitaciones de los métodos tradicionales (80%).

» **Conclusión.** El currículo requiere una reforma estructural que fortalezca la formación ética, comunitaria y metodológica. La integración activa de APS, bioética y pedagogía activa es esencial para formar profesionales capaces de responder a las necesidades poblacionales.

Palabras clave: Educación odontológica; Atención primaria de salud; Plan de estudios; Salud pública; Revisión sistemática.

Resumo

A educação odontológica no Paraguai enfrenta o desafio de se alinhar às estratégias contemporâneas de Atenção Primária à Saúde (APS). A alta prevalência de doenças preveníveis e a baixa cobertura profissional na APS exigem uma revisão curricular completa.

» **Objetivo.** Analisar sistematicamente a congruência entre o currículo de Odontologia no Paraguai e as estratégias atuais de saúde pública, identificando deficiências formativas e metodológicas.

» **Materiais e métodos.** Foi realizada uma revisão sistemática qualitativa com metassíntese da literatura (2019-2025), seguindo as diretrizes PRISMA. As bases de dados Scopus, SciELO, PubMed e Google Acadêmico foram consultadas, e 35 estudos foram selecionados após a aplicação da ferramenta CASP. A síntese foi baseada na análise de conteúdo temática. Entre as limitações do estudo, vale destacar a ausência de um registro PROSPERO e a falta de avaliação empírica direta.

» **Resultados.** Foi identificado um viés curricular (88,6% dos estudos se concentram em disciplinas clínico-restauradoras), desalinhado com as necessidades epidemiológicas. Apenas 31,4% das evidências abordam a Formação Interprofissional (IPT), e há um alto nível de discussão sobre as limitações dos métodos tradicionais (80%).

» **Conclusão.** O currículo requer uma reforma estrutural que fortaleça a formação ética, comunitária e metodológica. A integração ativa da APS, da bioética e da pedagogia ativa é essencial para formar profissionais capazes de responder às necessidades da população.

Palavras-chave: Educação odontológica; Atenção primária à saúde; Currículo; Saúde pública; Revisão sistemática

Introduction

Contemporary dentistry has redefined its practice, becoming a cornerstone of public health and the overall well-being of populations.[1] This shift requires the dentist's role to move beyond the traditional clinical-restorative focus to that of a health agent with a public health and community-oriented perspective, as emphasized by Arévalo de Roque.[2]

The regional epidemiological context imposes an urgent need for action. Although highly preventable, oral diseases remain highly prevalent, impacting quality of life and overall well-being.[3]

Addressing oral health in the school-age population is a critical challenge that requires a strong curricular emphasis on primary prevention and early diagnosis, both essential for overall well-being from childhood onward.[4]

In Latin America, and specifically in Paraguay, university education faces the challenge of aligning curricula with these demands. An imbalance persists, as teaching tends to favor complex restorative techniques over prevention and community-based management,[5] a structural obstacle in training identified by Brandizzi et al.[6]

The regulatory framework, represented by the National Agency for the Evaluation and Accreditation of Higher Education in Paraguay (ANEAES), must ensure the social relevance of programs, ensuring that curricula reflect this public health orientation. This translates into an ongoing effort toward institutional innovation and the refinement of self-evaluation processes.[7]

The comprehensive adoption of the competency-based education model is the structural response to this mismatch. This model requires curriculum to be oriented toward what graduates are expected to achieve, integrating technical, cognitive, and social skills.[8] This approach is vital to ensure that future professionals acquire both the capacity for critical reflection and the resilience necessary to navigate the complexities of modern professional practice.[9] However, this transition requires overcoming the limitations of traditional teaching methods.

Conventional supervised practice may present certain limitations in the acquisition of specific ethical and social competencies;[10] therefore, learning environments must be conceptualized holistically to facilitate the transfer of knowledge to real-world practice.[11] Couto et al. emphasize that this change must be planned and measured.[12] In this context, active methodologies are established as indispensable pedagogical tools.

In this regard, Problem-Based Learning (PBL) has demonstrated its effectiveness in improving interpretive skills and logical thinking, surpassing rote learning.[13] This approach is key to developing social competencies and solving real-world problems in the community, as demonstrated by Camacho et al.[14]

At the same time, technological innovation is unavoidable. The use of clinical simulation[15] and extended reality (XR)[16] has a positive impact on safe skills training.[17] However, the effectiveness of these innovations depends on the evaluation of teaching competencies[18] and the continuous professional development of faculty,[19] reflecting a global trend toward clinical and population-based relevance.[20]

Beyond technical skills, ethical and social education is vital. Bioethics must be integrated early to shape clinical and social judgment,[21, 22] thereby strengthening reflection on professional ethics to ensure quality care.[23]

Knowledge of the duties and obligations of dental practice in Paraguay also needs to be reinforced[24] especially in sensitive areas such as pediatric dentistry, where empathy is crucial.[25] This social orientation is complemented by Interprofessional Education (IPE), which prepares dentists to collaborate effectively at the primary care level.[26] Acero-González et al. note that IPE improves the effectiveness of patient care and optimizes resources by promoting teamwork,[27] a position also supported by Oudbier et al.[28]

Experiences stemming from the pandemic accelerated the need for flexibility, establishing teledentistry as a fundamental tool.[29] Students' positive assessment of virtual classes fostered innovative alternatives,[30, 31] although Vásquez and Orellana caution that a balance with essential clinical practice is required.[32] Environmental sustainability awareness also represents an emerging and necessary trend for responsible practice.[33, 34] The need to update professional profiles is imperative.[35]

In view of the above, a rigorous analysis of the current alignment of dental education is warranted.[35] This study aims to systematically analyze the consistency between the dental curriculum in Paraguay and current public health strategies, identifying educational and methodological shortcomings.

Methodology

Study design

A qualitative systematic review with a meta-synthesis approach (thematic synthesis of findings) was conducted following the PRISMA 2020 guidelines. The objective was to analyze the alignment between the Paraguayan dental curriculum and public health strategies, with a focus on primary health care (PHC), bioethics, and active methodologies.

Search strategy

The Scopus, SciELO, PubMed, and Google Scholar databases were searched. The following search terms were used in combination with Boolean operators: "dental education" AND "curriculum" AND "Paraguay"; "public health" AND "PHC" AND

"professional training"; "active methodologies" OR "PBL" OR "clinical simulation"; "bioethics" AND "social competencies". The search was limited to documents published between January 2019 and September 2025, in Spanish or English, with full-text access.

Inclusion criteria

Studies published between 2019 and 2025 addressing dental curriculum, active methodologies, social competencies, bioethics, or PHC in Paraguay or Latin America. Exclusion criteria: Clinical studies without an educational focus, opinion pieces without methodological support, documents without full-text access, or without peer review.

Quality assessment

The Critical Appraisal Skills Programme (CASP) tool was applied to qualitative studies. Only studies with sufficient methodological rigor were included. The clarity of objectives, methodological appropriateness, relevance of results, and validity of conclusions were assessed. All included studies met methodological rigor criteria.

Data coding tool

Thematic coding was performed through manual analysis in Excel spreadsheets (including independent double review) to ensure the validity of categorization. Study selection: A total of 88 records were identified. After applying the inclusion and exclusion criteria, 35 studies were included in the analysis. Selection was conducted in three phases: screening of titles and abstracts, full-text assessment, and application of the CASP tool.

Data synthesis and meta-synthesis process

The final selection comprised 35 studies for analysis (**Figure 1**). Data were synthesized using thematic content analysis. Information was extracted from each study across four key domains: (a) Curricular approach (clinical-restorative vs. public health); (b) Pedagogical methodologies used; (c) inclusion of ethics and social responsibility; and (d) Technological challenges and Interprofessional Education (IPE). Based on this extraction, the frequency of topic mentions and the methodological distribution of the studies were quantified to generate descriptive tables (**Tables 1**–**5**), thereby systematizing the reviewed qualitative evidence.

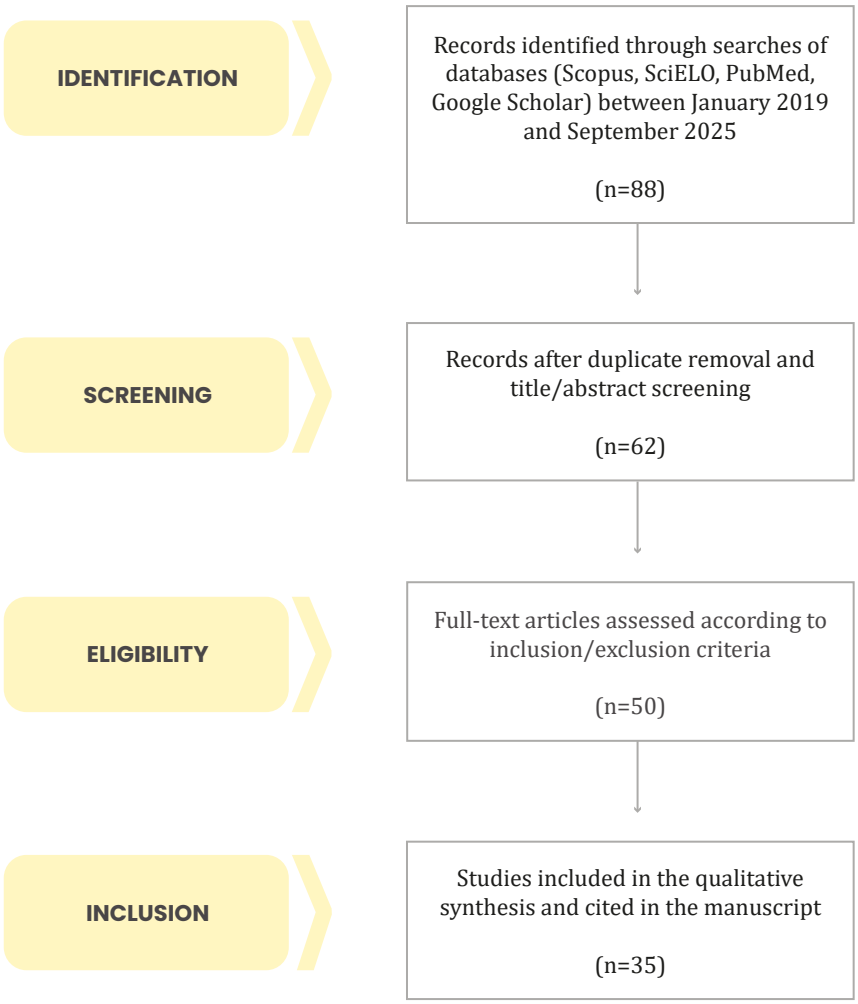

Figure 1. PRISMA 2020 Flow Diagram Applied
A detailed description of the PRISMA flow diagram is provided in the Methodology section.

Results synthesis

Application of the selection criteria resulted in the inclusion of 35 articles for data extraction and synthesis. The findings are grouped into five areas addressing the methodological characterization of the evidence, curricular orientation, methodological trends, ethical training, and strategic projections.

Methodological and Thematic Characterization of the Evidence

This section describes the demographic and methodological characteristics (**Table 1**), as well as the thematic focus of the 35 studies included in the review.

Table 1
Methodological and Thematic Characterization of Studies Included in the Meta-synthesis (N=35)

Characteristic	Category	Frequency (n)	Percentage (%)
A. Methodological Characterization			
Publication Year	2023-2025	15	42.9
	2021-2022	12	34.3
	2019-2020	8	22.8
Main Methodology	Literature/Documentary Review	16	45.7
	Descriptive Studies/Surveys	10	28.6
B. Curricular Orientation Analyzed			
Clinical-Restorative Disciplines		31	88.6
Public Health/Community Dentistry		20	57.1
Ethical and Bioethical Education		15	42.9
Interprofessional Education (IPE)		11	31.4

The table summarizes the methodological characteristics and the main thematic focus of the 35 studies included in the meta-synthesis, highlighting the emphasis on clinical technique.

Implementation of Active Methodologies

The analyzed literature identifies a clear need to transition toward active methodologies for the development of social and management competencies. The frequency with which these methodologies are addressed in the studies is presented below, reflecting their level of discussion in the academic sphere (**Table 2**).

Table 2. Frequency of Discussion of Active and Technological Methodologies in the Reviewed Literature (N=35)

Active/innovative methodology	Frequency of discussion (n)	Percentage of studies (%)
Lectures/Traditional Methods	28	80.0
Problem-Based Learning (PBL)	19	54.3
Clinical/Technological Simulation	13	37.1
Interprofessional Education (IPE)	11	31.4
Extended Reality (XR) / Teledentistry	9	25.7

The high proportion of discussion of lectures and traditional methods indicates that most studies address the limitations of passive methodologies.

Ethical and Social Education

Findings on bioethics and professional responsibility focus on identifying the need for their integration rather than on presenting successful models. Accordingly, the main qualitative findings extracted from the literature regarding non-technical competencies are categorized (Table 3).

Table 3. Key Ethical and Social Education Themes Extracted from the Literature (N=35)

Ethical/social theme	Frequency of identification (n)	Percentage of studies (%)
Need for Curricular Integration of Bioethics	12	34.3
Need to Strengthen Legal Duties and Obligations	8	22.8
Importance of Environmental Awareness	5	14.3
Sensitivity in Pediatric/Vulnerable Dentistry	4	11.4

The need to integrate bioethics across the curriculum was the most recurrent qualitative finding in this area, followed by the need to address the profession's legal framework.

Challenges and Technological Adaptation

A substantial portion of the reviewed literature (n=20) focuses on challenges in teaching and its adaptation, intensified by events such as the COVID-19 pandemic. This section illustrates the divergence in findings regarding the effectiveness of digital tools (Table 4).

Table 4. Evaluation of the Effectiveness of Remote and Technological Teaching in the Literature (N=20 studies addressing this topic)

Reported Finding	Frequency of Studies (n)	Percentage (%)
Positive Impact/Successful Adaptation (Virtual Classes/Simulation)	13	65.0
Technical Challenges/Fundamental Clinical Limitations	7	35.0

Most studies reporting a positive impact focus on the evaluation of virtual lectures and skills simulation.

Link Between Curricular and Epidemiological Challenges

Finally, a synthesis of the relationship between curricular deficiencies and social impact in Paraguay is presented, drawing on institutional reports and contextual literature (Table 5).

Table 5. Correlation Between Educational Mismatch and Human Resource Needs in Primary Health Care (PHC)

Indicator of Social Need	Related Curricular Finding	Reported Frequency in Key Reports (ANEAES, PAHO*, MSPBS**)
High Prevalence of Preventable Conditions (Caries/Gingivitis)	Clinical Bias (Low percentage of PHC workload)	Very high
Low Dental Coverage at the Primary Care Level	Absence of IPE and Active Methodologies (Low development of social and management competencies)	High
Ethical-Legal Knowledge	Among Professionals Limited Curricular Integration of Bioethics	Moderate

This table is based on the conceptual synthesis of reports from regulatory and health agencies: ANEAES, the Ministry of Public Health and Social Welfare (MSPBS), and the Pan American Health Organization (PAHO), which served as essential secondary sources for the review.

Discussion

The systematic review with meta-synthesis confirms a pattern of educational inertia in dental education that hinders the full integration of future professionals into the public health system.[1]

Table 1 shows the central finding: a marked “curricular bias,” with 88.6% of the analyzed evidence focusing on clinical-restorative disciplines, which does not correspond to the country’s epidemiological needs. This imbalance results in professionals with an uneven profile, prioritizing restoration over prevention and thereby compromising their effectiveness in addressing population health problems.[2]

The regional context, which has a high prevalence of preventable oral diseases and low coverage at the primary care level, renders this structural bias unsustainable. This misalignment has previously been documented in the Latin American context by Brandizzi et al.[6] and Alfaro Macías.[5]

Our synthesis (Table 5) establishes a direct correlation between this training bias and the need for human resources in Primary Health Care (PHC) in Paraguay.

The imperative for change translates into a regulatory mandate; and the persistence of a high prevalence of these conditions places an obligation on the ANEAES to strengthen the assessment of the social relevance of academic programs, as required by the Paraguayan context.[7]

The structural response to this mismatch, as suggested by the literature,[8] entails changes such as the comprehensive adoption of competency-based education. This approach seeks to ensure that graduates acquire the capacity for critical reflection and the resilience necessary to navigate the complexity of modern professional practice. Accordingly, updating the curriculum is not only an academic objective but also an ethical imperative in response to the social need for curricular flexibility.[8, 9, 23]

From a methodological perspective, the analyzed evidence (**Tables 2** and **4**) indicates that competency development is hindered by the persistence of ineffective methodologies. The fact that 80% of the literature focuses on discussing the limitations of lectures and traditional methods[32] highlights a crisis of pedagogical inertia.

This situation contrasts sharply with the limited implementation of essential tools such as Interprofessional Education (IPE), which is addressed in only 31.4% of the evidence. This gap is critical, as IPE is essential for multidisciplinary work and community-based management, as demonstrated by Acero-González et al.[27] and Oudbier et al.,[28] improving the effectiveness of care.

Similarly, the limited use of established active methodologies, such as Problem-Based Learning (54.3% of discussions), constrains the development of critical thinking and the management of real-world problems,[13, 14, 20] thereby perpetuating a rote-learning approach.

Finally, the integration of ethical and technological dimensions presents clear opportunities and challenges. The findings on ethical and social education (**Table 3**) underscore the need for the integration of bioethics (34.3%), a core component of clinical and social judgment.[21–23] Knowledge of professional duties and obligations,[24] as well as environmental awareness,[33, 34] is essential for contemporary practice, which must extend beyond technical skills—particularly in sensitive areas such as pediatric dentistry, where empathy is crucial.[25]

Regarding technology, although the literature reports positive perceptions of simulation and distance learning (65%, **Table 4**), Cayo-Rojas and Agramonte-Rosell[30] caution that innovation alone is insufficient. The effectiveness of these tools depends directly on rigorous faculty training[18, 19] and holistic curriculum planning[11, 12] that ensures the transfer of knowledge into practice.

In summary, curriculum reorientation in Paraguay must simultaneously address clinical bias, the methodological crisis, and the need for in-depth ethical training. The evidence indicates that the role of dentists must evolve into that of public health-oriented practitioners,[1, 29] a transformation that requires institutional

leadership[9] and sustained investment in active methodologies and in faculty development capable of leading this change.[12, 35]

Competency-based education emerges as the key mechanism for implementing this reform, ensuring that the Paraguayan curriculum is aligned with 21st-century public health strategies.

Conclusion

This review shows that the Paraguayan dental curriculum has a disproportionate focus on clinical-restorative training, thereby limiting the ethical, community-oriented, and preventive education required by the Primary Health Care (PHC) system.

The shortage of dentists at the primary care level and the high prevalence of dental caries reflect a mismatch between professional training and the country's epidemiological needs.

From a curriculum policy perspective, regulatory bodies such as ANEAES should prioritize social relevance in accreditation processes and incorporate criteria that value Interprofessional Education (IPE), bioethics, and a population-based approach. Based on the evidence from this meta-synthesis, it is concluded that curricular transformation is essential to train dentists capable of acting as agents of change in Paraguayan public health. To this end, dental schools should redefine the graduate profile to prioritize Primary Health Care (PHC) and Interprofessional Education (IPE) as core competencies for community management and leadership.

It is also necessary to integrate bioethics and the legal framework of the profession across the curriculum through reflective clinical case methodologies, as well as to invest in faculty training specialized in the use of Problem-Based Learning and high-fidelity simulation for the development of social and management competencies.

Among the limitations of this study is the absence of direct empirical evaluation and formal registration on platforms such as PROSPERO, given its qualitative approach. However, the CASP tool was applied to ensure methodological rigor.

Future research should include comparative studies among Latin American institutions, surveys of faculty and graduates regarding PHC competencies, and exploration of the relationship between ethics training and professional performance in vulnerable contexts

REFERENCES

1. Organización Panamericana de la Salud (OPS). Estrategias para la integración de la salud bucal en la atención primaria. Washington, DC: OPS/OMS; 2024.

2. Arévalo de Roque Y. El papel de los odontólogos en la salud pública: elementos indispensables en el concepto de salud y bienestar social. Crea Ciencia. 2025;16(2):6–8.

3. Peña S. El rol de la odontología en la salud pública: experiencia multidisciplinaria en la administración pública federal. Rev Investig Adm Pública. 2024;12(3):88–105.

4. Sánchez Sandoval G., Vargas Zafra L. El papel de la salud bucal en el bienestar integral en escolares de educación primaria. Rev. Espacios. 2025;46(3):120–9.

5. Alfaro Macías A. Análisis prospectivo de la educación odontológica en Latinoamérica: revisión bibliográfica. UNESUM - Ciencias. 2024;8(3):217–26. Disponible en: https://revistas.unesum.edu.ec/index.php/unesumciencias/article/download/860/945

6. Brandizzi D, Chicatun M, López Jordi M del C, Rojas G, López de Blanc S, Escobar A, et al. Hacia dónde vamos en la educación para la salud bucal en Latinoamérica. Rev Asoc Odontol Argent. 2023;111(1):e1110401. doi: 10.52979/raoa.1110401.1218

7. Orue Sotelo A, Aguilera Antúnez C. Propuesta de innovación en los procesos de autoevaluación y acreditación en Paraguay. ACADEMO. 2024;11(1):51–63.

8. Pereira P, Quiroz C. La educación por competencias: un cambio de paradigma en el modelo de enseñanza-aprendizaje de la odontología. Rev Argent Educ Super. 2020;12(1):89–107.

9. Dominguez Torres LC, Vega Peña NV. Mirando al futuro: ¿qué esperan para su bienestar los próximos residentes de cirugía? Educ médica. 2021;22(5):261–6. doi: 10.1016/j.edumed.2021.05.006

10. Diéguez P, Burgueño T, Real B, Rodríguez P. Certezas manifestadas por el alumnado con relación a la adquisición de competencias específicas en la modalidad de prácticas tuteladas de la asignatura Clínica Odontológica Integrada del Grado de Odontología [Tesis o documento institucional]. 2020.

11. Guppen L, Irby D, Durning S, Maggio L. Conceptualizing learning environments in the health professions. Acad Med. 2019;94(7):969–74. doi: 10.1097/ACM.0000000000002702

12. Couto E, Lins P, Torres R. La planificación y medición del cambio curricular: la transición hacia la educación por competencias. Rev Educ Super Cienc Salud. 2023;25(4):112–25.

13. Luke A, Mathew S, Kuriadom S, George J, Karobari M, Marya A, et al. Effectiveness of problem-based learning versus traditional teaching methods in improving acquisition of radiographic interpretation skills among dental students: a systematic review and meta-analysis. Biomed Res Int. 2021; 2021:9630285.

14. Paquita Camacho E, Cueva Almeida M, Sarmiento N, Zhumi J. Revisión sistemática del aprendizaje basado en problemas en la enseñanza de la matemática: un análisis mediante la metodología PRISMA. ASCE Magazine. 2025;4(2):401–25.

15. Miquel-Luco M. Impacto de la simulación clínica en la educación en odontología: una reflexión actualizada. ARS Médica (Santiago). 2024;49(4):74–7. doi: 10.11565/arsmed.v49i4.2096

16. Vacca C. La integración curricular de la realidad extendida en la práctica odontológica: un estado de arte [Tesis o informe institucional]. Universidad de San Buenaventura; 2022.

17. Zhan Y, Wang M, Cheng X, Li Y, Shi X, Liu F. Evaluation of a dynamic navigation system for training students in dental implant placement. J Dent Educ. 2021;85(2):120–7. doi: 10.1002/jdd.12399

18. Rivero González M, Rodrigo Redondo L, de Pedro Herráez M. Evaluación de las competencias docentes del profesor de odontología en España. REA. 2022;15(29):118–28. doi: 10.55777/rea.v15i29.4174

19. Medina León T, Vera Ibarrola N. Formación continua docente como motor de innovación pedagógica en educación superior. Rev Analis Difus Perspect Educ Empres. 2025;5(11):43–54.

20. Marroquín González L. Tendencias en los métodos de enseñanza en odontología: revisión sistemática de la literatura 2016–2022 [Tesis doctoral]. Universidad Cooperativa de Colombia; 2022.

21. Revelo Motta G. Bioética en la educación odontológica latinoamericana: revisión de la literatura. Rev colomb bioét. 2023;18(2):7. doi:10.18270/rcb.v18i2.4488

22. Morales Cifuentes C, et al. Criterio clínico y social en la práctica odontológica. Madrid: Editorial Médica Panamericana; 2023.

23. Medina M, Coscarelli N, Seara S, Saporitti F, Conte M, Tapia G. La ética profesional en la formación de los futuros odontólogos. En: XV Encuentro de Universidades Nacionales (EUNa). Universidad Nacional de Jujuy; 2018.

24. Brítez-Distéfano S, Bañuelos-Gómez F, Mireya-Jara C. Conocimiento sobre deberes y obligaciones que rigen la práctica odontológica en Paraguay. Mem Inst Investig Cienc Salud. 2022;20(1):6–13.

25. Motta G, Vidale M, Albuja M. Formación de los estudiantes en odontología pediátrica: revisión narrativa. En: Actas del I Congreso Latinoamericano de Educación en Odontopediatría. 2024;14(Supl).

26. Santa Cruz González N, Pérez Aquino C, Villagra Rivera N, Achucarro Galeano S. Nivel de conocimientos y prácticas sobre salud bucodental de estudiantes de posgrado de la carrera de enfermería de la Facultad de Ciencias de la Salud de la Universidad Católica de Asunción. Mem Inst Investig Cienc Salud. 2019;17(2):56–63.

27. Acero-González Á, Toro-Herrera S, Ruiz-Moreno L, Romero-Tapia Á, Yaver-Suárez N. Formación interprofesional en salud mental: un reto posible. Rev Chil Neuro-Psiquiatr. 2022;60(3):243–50. doi:10.4067/s0717-92272022000300243

28. Oudbier J, Verheijck E, van Diermen D, et al. Mejora de la eficacia de la educación interprofesional en la formación en ciencias de la salud: una revisión de vanguardia. BMC Med Educ. 2024; 24:1492. doi: 10.1186/s12909-024-06466-z

29. Morón A. Teledentistry: a fundamental tool in times of pandemic and post COVID-19; its usefulness in different dental specialties. Int. J. Odontostomat. 2021;15(1):43–50.

30. Cayo-Rojas C, Agramonte-Rosell R. Desafíos de la educación virtual en odontología en tiempos de la pandemia COVID-19. Rev Cubana Estomatol. 2020;57(3).

31. Gavilán Mareco L, Morel-Barrios M. Valoración de estudiantes de odontología paraguayos sobre la calidad de clases virtuales durante la pandemia de COVID-19. RECIFFUNA. 2024;19(1).

32. Vásquez D, Orellana C. Desafíos y alternativas en la educación dental durante la pandemia del COVID-19: revisión integrativa de la literatura. Univ Odontol. 2020;39(3):299–309. doi: 10.11144/Javeriana.uo39.cade

33. Bamedhaf O, Salman H, Tegginmani S, et al. Sostenibilidad ambiental en el currículo de odontología: una revisión exploratoria. BMC Med Educ. 2025; 25:844. doi: 10.1186/s12909-025-07441-y

34. Wang K, Zhang L, Ye L. A nationwide survey of online teaching strategies in dental education in China. J Dent Educ. 2021;85(2):128–34. doi: 10.1002/jdd.12413

35. Navarrete-Marabini N, Vizoso-Noval B, Muñoz-Corcuera M. Innovación educativa en odontología: espacios, estilos y modelos de enseñanza y aprendizaje. REA. 2022;15(29):1–4. doi: 10.55777/rea.v15i29.4226

Data availability

The complete dataset supporting the results of this study (meta-synthesis findings, frequency tables, and thematic analysis results) is published within the article.

Conflict of interest

The author declares no financial, personal, or academic conflicts of interest that could have influenced the results of this study.

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Ethics committee

This study is a systematic review of published literature (meta-synthesis); therefore, it did not involve direct human participation or the use of sensitive, non-anonymized data and is exempt from formal Ethics Committee approval.

Authors contributions

Full name of athors	Academic collaboration													
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Emiliano Sotelo Segovia	x		x	x	x	x	x	x	x	x	x	x	x	x

1. Administración del proyecto
2. Adquisición de fondos
3. Análisis formal
4. Conceptualización
5. Curaduría de datos
6. Escritura - revisión y edición
7. Investigación
8. Metodología
9. Recursos
10. Redacción - borrador original
11. Software
12. Supervisión
13. Validación
14. Visualización

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