Educación Médica 27 (2026) 101109

Educación Médica

www.elsevier.es/edumed

ORIGINAL ARTICLE

Exploring the geriatrics curriculum in Peruvian medical schools: An analysis of course characteristics and topics covered

José F. Parodi[a,1], Fabian A. Chavez-Ecos[b,c,1], Rodrigo Chavez-Ecos[b], Wagner Rios-Garcia[b,c], Martin Montenegro-Guerra[c], Javier A. Flores-Cohaila[d,e], Fernando M. Runzer-Colmenares[b,*]

[a] *Universidad de San Martín de Porres, Facultad de Medicina, Centro de Investigación del Envejecimiento (CIEN), Lima, Peru*
[b] *CHANGE Research Working Group, Carrera de Medicina Humana, Facultad de Ciencias de la Salud, Universidad Científica del Sur, Lima, Peru*
[c] *Sociedad Científica de Estudiantes de Medicina de Ica (SOCEMI), Facultad de Medicina Humana "Daniel Alcides Carrion", Universidad Nacional San Luis Gonzaga, Ica, Peru*
[d] *Centro de Investigación de Educación Médica y Bioética — EDUCAB-UPT, Facultad de Ciencias de la Salud, Universidad Privada de Tacna, Peru*
[e] *Hospital Nacional Victor Larco Herrera, Lima, Peru*

Received 3 March 2025; accepted 7 September 2025
Available online xxxx

KEYWORDS
Geriatrics;
Peru;
Medical Education;
Universities;
Curriculum

Abstract
Introduction: This study aimed to analyze the current status of the geriatrics curricula in Peruvian faculties, identifying gaps and challenges for improving medical education in this specialty.
Material and methods: This observational study evaluated the geriatric course syllabi of undergraduate medical programs of Peruvian-licensed universities authorized by the National University Higher Education (SUNEDU). Data on course characteristics, including whether the course was stand-alone or attached to another course, were collected and evaluated. Competencies were evaluated using the 5M framework.
Results: Of the 44 universities selected, 27 offered a geriatrics course, the majority being private institutions. This course was mostly taken in the fifth year, and in 70.37% (n = 19 universities), it was considered a single course. None of the courses fully complied with the 5M framework, demonstrating deficiencies in teaching. Additionally, the study detected a shortage of geriatricians and a lack of standardization in training among institutions.

* Corresponding author at: Av. República de Panamá 3944, Surquillo 15047, Peru.
E-mail address: frunzer@cientifica.edu.pe (F.M. Runzer-Colmenares).
[1] Have contributed equally to this work, share the first authorship.

https://doi.org/10.1016/j.edumed.2025.101109

Conclusions: There continue to be critical opportunities for bettering the geriatric curricula of Peruvian medical schools and undergraduate medical programs must be optimized to respond to the needs of older people as one of the main users of medical services. It is crucial to address these deficiencies by aligning university curricula with the epidemiological and demographic reality, equity and efficiency in providing services, and international recommendations on competencies in geriatrics and gerontology.

PALABRAS CLAVE
Geriatría;
Perú;
Educación Médica;
Universidades;
Currículo

Explorando el Currículo de Geriatría en las Facultades de Medicina del Perú: Un análisis de las características de los cursos y los temas tratados

Resumen
Introducción: Este estudio tuvo como objetivo analizar el estado actual de los planes de estudio de geriatría en las facultades peruanas, identificando brechas y desafíos para mejorar la educación médica en esta especialidad.
Material y métodos: Este estudio observacional evaluó los programas de los cursos de geriatría de los programas de pregrado en medicina de universidades peruanas autorizadas por la Universidad Nacional de Educación Superior (SUNEDU). Se recopilaron y evaluaron datos sobre las características del curso, incluido si el curso era independiente o estaba adscrito a otro curso. Las competencias se evaluaron utilizando el marco de las 5M.
Resultados: De las 44 universidades seleccionadas, 27 ofrecían un curso de geriatría, la mayoría de ellas privadas. Este curso se cursó mayoritariamente en el quinto año, y en el 70,37% (*n* = 19 universidades) se consideró un curso único. Ninguno de los cursos cumplió plenamente con el marco de las 5M, lo que demuestra deficiencias en la enseñanza. Además, el estudio detectó una escasez de geriatras y una falta de estandarización en la formación entre las instituciones.
Conclusiones: Siguen existiendo oportunidades críticas para mejorar los planes de estudio geriátricos de las facultades de medicina peruanas, y los programas de pregrado en medicina deben optimizarse para responder a las necesidades de las personas mayores como uno de los principales usuarios de los servicios médicos. Es crucial abordar estas deficiencias alineando los currículos universitarios con la realidad epidemiológica y demográfica, la equidad y eficiencia en la prestación de servicios, y las recomendaciones internacionales sobre competencias en geriatría y gerontología.

Introduction

The global population is aging at an accelerated rate. The World Health Organization projects that by 2030, the population of older adults (OAs) in Latin America and the Caribbean (LAC) will increase by 6%; that is, one in every six individuals in LAC will be 65 years old by 2030.[1,2] In Peru, this demographic transition is marked by rapid aging, which has been observed across LAC countries.[3] Furthermore, the high medication consumption by this demographic group requires socioeconomic changes for OAs, affecting mainly low-income groups.[4] The aging population in Peru and the LAC countries has led to an increased demand for health services tailored to the unique needs of OAs.[5] Chronic illnesses and high usage among this demographic highlight the need for healthcare systems to adapt. This trend underscores the imperative for a clinical transition in care, aligning healthcare systems and medical training with the new user profile of OAs, thereby ensuring better health outcomes and quality of life for this growing population.

There is a significant shortage of geriatricians, which is a pressing issue. This shortage is attributed to several factors, including financial constraints, a lack of interest among physicians in the treatment of "incurable" diseases, and a tendency to choose other more highly paid specialties.[6,7] Additionally, there is a dearth of training opportunities in this specialty. In Europe, medical schools dedicate only 49–56 teaching hours to geriatrics.[8] These factors contribute to the insufficient number of geriatricians, which limits the capacity to meet the healthcare needs of the aging population. Limited training opportunities further exacerbate the problem, as medical professionals are not adequately prepared to handle the complexities of geriatric care.[7,9] Addressing this shortage is crucial for optimizing aging and providing comprehensive and person-centered care for OAs. Incorporating geriatric training into undergraduate education of all health careers is essential to bridge this gap and ensure adequate care for the aging population.

Geriatrics is a crucial course for optimizing the aging process and addressing health problems in a comprehensive way.[10] Despite its importance, there is a shortage of geriatricians in our country and LAC. This shortfall makes it impractical to provide adequate care to the aging population. The lack of geriatricians highlights the need to integrate geriatric training into the undergraduate curriculum for all health careers, similar to the approach taken with other courses such as pediatrics, for example.[11] This integration would better prepare healthcare professionals to meet the demands of an ever-growing OA population. The objective of this study was to analyze for the first time the current situation of the geriatric curriculum in Peruvian medical schools, identifying gaps and opportunities to strengthen the training of professionals capable of responding to the health needs of OAs.

Methods

This study was an analysis aimed at assessing the programs available for the geriatric curriculum in Peru.

Study design and population

We conducted an observational study to evaluate the curriculum of the geriatric courses for undergraduate medical students at Peruvian universities. We defined curriculum as "planned educational experience".[12] The curriculums from public and private universities published between 2022 and 2024 were included, according to availability. The geriatrics course was defined as a course on the care and treatment of the elderly that was included in the curricula of universities with a faculty of human medicine; these courses could be stand-alone or integrated in courses such as "Internal Medicine". Ethical approval was obtained for the project was registered with the Research Department of the Universidad Científica del Sur under code PI-15-2024-0362.

Procedures

To select the universities and obtain the curriculum, the following steps were considered: (1) We identified the universities licensed by the *Superintendencia Nacional de Educación Superior Universitaria* (*SUNEDU*) up to March 2024 were identified; (2) After that, the universities offering a career in human medicine were selected; (3) Then, it was verified that the universities had at least one graduating class, to corroborate that all the required courses had been taken; (4) the degree programs were then evaluated to ascertain whether they included courses in geriatrics and/or gerontology. This was done by accessing the websites of the respective universities; (5) finally, where no specific academic program was available, the curriculum was requested from the scientific societies and/or students of the universities included.

Variables

For each medical school that offered a course in geriatrics, the following data were collected: type of university (public or private), name of the course, and whether the course was stand-alone (defined as taking an entire semester) or part of another course. In addition, the academic year in which the course is taken (1–6 years), the number of credits for each course, and the total hours (theoretical and practical).[13] If a geriatrics course was a unit of another course, only the hours of the unit were counted. Additionally, the number of instructors teaching the course (main and practice teachers) was collected. It was evaluated whether the instructors had a specialty in geriatrics and/or another specialty or postgraduate degree through the web page of the Medical College of Peru (CMP) (https://www.cmp.org.pe/conoce-a-tu-medico), which is an entity that provides information on registered physicians in the country, including their specialty, location, and contact information.

Evaluation of competencies

For each curriculum, two reviewers (Fabian Chavez and Martin Montenegro) evaluated the competencies of the curriculum. In the event of a discrepancy, each of the competencies was discussed until consensus was reached by all the authors. The competencies were evaluated using the tool by Leipzig et al.,[14] which was first proposed in 2009 and then updated by Tinetti et al. in 2024.[15] This tool focuses on five key areas of geriatric care, known as the Geriatric 5Ms., which represent the essential targets for high-quality care in aging populations. The "Ms" stands for mind, mobility, medications, multicomplexity, and what matters most, encompassing a total of 27 items. Each item was scored according to its presence in the syllabus: a score of 1 was assigned if the competency was explicitly described with sufficient detail to indicate that it would be taught (e.g., specific objectives, dedicated content, or planned learning activities), and 0 if the competency was absent or only mentioned superficially. Thus, the maximum possible score per curriculum was 27 points. For descriptive purposes, scores were categorized into three levels: low (0–9), intermediate (10–18), and high (19–27).

Statistical methods

Data were subjected to descriptive analysis employing frequencies and percentages. Additionally, the results were presented in tabular form. For numerical variables, the median (min and max) was utilized for presentation.

Ethical considerations

The need for approval by an Ethics Committee was waived as the data analyzed did not involve any human subjects. The project was registered with the Research Department of the Universidad Científica del Sur under code PI-15-2024-0362, which also provided logistical support, English language review, and the license for Stata version 18.0.

Results

General characteristics of the curriculum included

A review of the list of universities validated by *SUNEDU* revealed that 44 institutions met the study criteria. Of the

aforementioned universities, 27 (61.2%) reported offering a course or chapter in geriatrics.

Furthermore, 16 (59.3%) of the 27 universities were private institutions. Regarding the academic year, the geriatrics course/chapter was offered in the fifth year at 13 (48.1%) universities, followed by the fourth year at 9 (33.3%) universities. A total of 19 universities (70.3%) considered geriatrics to be a stand-alone course, while 8 universities (29.63%) considered geriatrics as a chapter that is part of the internal medicine or medical clinic course. Regarding the number of professors, the universities with the highest number of professors were the *Universidad Científica del Sur and the Universidad de San Martín de Porres*, with 24 professors in total. Of these, 23 were geriatricians and one professor held another specialty. In contrast, the universities with only one professor dedicated to geriatrics were *the Universidad Cesar Vallejo, Universidad Nacional Daniel Alcides Carrión, Universidad Nacional Jorge Basadre Grohmann, Universidad Nacional de San Martín, Universidad Peruana Unión*, and the *Universidad San Ignacio de Loyola*. Similarly, the median theoretical and practical hours were 29 and 44, respectively. Regarding credits, the median was 3 (Table 1).

Competencies evaluated with 5M

Competencies were assessed with the 5M tool. Overall, the total of competencies was 7 (min: 1–max: 18) for each university. The scores of the 5 domains were: **Mind** 9.8 (cognitive concerns: 18/27; capacity: 1/27; diagnosis of delirium: 17/27; management of agitation: 3/27); **Mobility** 14.3 (functional assessment: 22/27; fall risk detection: 11/27; fall risk management: 10/27). **Medication** 5.7 (medication reconciliation: 8/27; geriatric pharmacology: 9/27; prescription cascades: 4/27; deprescribing: 2/27); **Multicomplexity** 6.6 (health equity: 1/27; care transitions: 0/27; hospitalization risk: 0/27; atypical presentation: 4/27; aging physiology: 21/27; frailty: 16/27; prognosis: 0/27; personalized recommendations: 2/27; sensory impairment: 2/27; pressure injuries: 12/27; urinary incontinence: 15/27), and **the Most important things** 2.4 (communication: 3/27; spiritual needs: 0/27; symptom assessment: 1/27; patient priorities: 2/27; advance care planning: 6/2) (Fig. 1).

Discussion

Summary of findings

Here, we conducted an observational descriptive study to evaluate the curriculum of the geriatric course in medical schools in Peru. Our main findings are as follows: (1) Solely 27 out of 44 (61.2%) universities offered a geriatrics course, (2) Among universities offering geriatrics course, 19 (43.1%) had a stand-alone course, while only 8 (18.1%) offered it as a part of another course, (3) All courses did not reach an acceptable score in the 5M, with the Mobility dimension with highest scores, while the most important thing dimensions with the lowest, and (4) Teaching of geriatrics course content and methodology were highly heterogeneous among universities.

Need for greater presence of geriatrics in plans and curricular frameworks

We found that 17 (38.8%) of 44 medical schools did not cover geriatric education in their current curricula. Furthermore, most schools consider geriatrics a stand-alone course, yet some include it within other courses, such as internal medicine. Only 19 (43.1%) medical schools had a geriatrics course as part of their curriculum, while 100% had a pediatrics course. This is in accordance with The Pan American Health Organization (PAHO) and the Merck Institute of Aging & Health report, published in 2003, which states that "Only 14% of medical schools in LAC have geriatrics programs, and less than 2 percent of advanced nursing programs have full-time faculty trained in geriatric nursing." At that time, in Perú, only 5% of medical schools had a course on geriatric medicine in their curricula. Similarly, a worldwide study published in 2014, conducted on 308 medical schools, revealed that only three out of ten medical schools offered geriatrics training.[11] This reflects the deficiency in undergraduate geriatrics training. This may be explained due to the shortage of geriatrics teachers, time constraints, or the absence of policies on geriatrics training, as highlighted by previous research.[16] Furthermore, specific contextual factors, such as the lack of an accreditation body for medical education in Peru and the absence of a core curriculum for undergraduate education, may contribute to this gap. This situation contrasts with countries such as Canada or Japan, which have structured medical education systems.[17,18] Our findings should alert decision-makers and key stakeholders to allocate resources to facilitate undergraduate training. In line with the 5M framework, strategies should specifically aim to: strengthen teaching on mind (cognitive and mental health competencies) through interdisciplinary collaboration; improve training on mobility by integrating practical sessions and simulation; ensure rational prescribing in medications through case-based learning; address multicomplexity by incorporating multimorbidity and social determinants into the curriculum; and emphasize what matters most by promoting communication skills and patient-centered care. Anchoring recommendations to these five domains allows medical schools to overcome structural barriers while ensuring a competency-based approach in geriatrics education. Additionally, implementing techniques, such as simulated patients and interactive or group-based learning, can enhance geriatric education, thereby addressing the current shortcomings.[19,20]

Need for more teachers of geriatrics

The lack of faculty in geriatrics may lead to major problems, with the most significant being – absence of role modeling.[21] Although the curriculums of most medical schools include at least one geriatrics specialist, the majority had fewer than ten per course. This threatens the student-faculty ratio and may result in many students lacking contact with the specialty of geriatrics. From an educational perspective, this hinders the acquisition of competencies, such as empathy, communication, and collaboration. Furthermore, a lack of exposure to the specialty of geriatrics can lead to lower intentions to pursue geriatric care.[22] The main challenge remains the relatively limited number of training positions in geriatrics; however, in recent years, there has

Table 1 Characteristics of the universities included.

University	Type of university	Course name	Year	Credits	Type of course	Theory hours/ practice hours	Number of professors	Professors with geriatric specialty	Other specialty	Competences evaluated "5M"
UC *	Private	Medical Clinics 3	5	8 **	Yes/Internal medicine	8/16	NR	NR	–	**3**
UCSM *	Private	Medicine III	6	NR	Yes/Internal medicine	4/8	7	4	3	**1**
UCSTM *	Private	Medical Clinics IV	5	3 **	Yes/Medical clinic	0/48	10	4	6	**3**
UCSUR	Private	Geriatrics	4	2	Stand-alone	16/32	24	23	1	**9**
UCV	Private	Gerontology and geriatric	4	3	Stand-alone	16/48	1	1	–	**5**
UNAP	Public	Geriatric	6	3	Stand-alone	16/64	7	1	6	**7**
UNCP *	Public	Medical Clinics IV	5	7 **	Yes/Internal medicine	8/12	17	1	16	**6**
UNDAC	Public	Geriatrics and Semiology	5	3	Stand-alone	NR	1	–	1	**4**
UNFV	Public	Geriatrics	6	NR	Stand-alone	32/64	4	4	0	**13**
UNJBG	Public	Geriatrics	4	3	Stand-alone	36/36	1	–	1	**10**
UNJFSC *	Public	Internal Medicine III	4	8 **	Yes/Internal medicine	20/24	8	2	6	**4**
UNMSM	Public	Geriatrics	5	3	Stand-alone	32/32	9	7	2	**12**
UNP	Private	Gerontology and geriatric	5	4	Stand-alone	32/64	12	1	11	**5**
UNSCH *	Public	Internal Medicine I	NR	NR	Yes/Internal medicine	NR	2	NR	NR	**2**
UNSLG	Public	Geriatrics	5	3	Stand-alone	32/32	3	1	2	**12**
UNSM	Public	Geriatrics	4	4	Stand-alone	32/64	1	1	–	**10**
UNU	Public	Geriatrics	5	3	Stand-alone	16/32	2	1	1	**10**
UNW	Private	Geriatrics and Rehabilitation	4	4	Stand-alone	32/64	NR	NR	NR	**6**
UPC	Private	Geriatrics	5	3	Stand-alone	32/32	16	11	5	**10**
UPeU	Private	Elderly care	5	4	Stand-alone	128 *	1	1	–	**9**
UPLA	Private	Geriatrics	4	3	Stand-alone	64/32	3	2	1	**9**
UDEP	Private	Geriatrics	5	3	Stand-alone	32/32	6	6	–	**7**
UPSJB *	Private	Clinics and therapeutics I	4	11 **	Yes/Internal medicine	64/224	3	–	3	**2**
UPT *	Private	Medicine IV	5	14 **	Yes/Internal medicine	40/60	10	2	8	**2**
USIL	Private	Geriatrics	4	3	Stand-alone	62	1	–	1	**9**
USMP	Private	Geriatrics	5	3	Stand-alone	32/32	24	23	1	**18**
USS	Private	Elderly medicine	NR	NR	Stand-alone	32/32	5	3	2	**2**

NR = Not reported.
Universidad Continental = **UC**; Universidad Católica Santa María = **UCSM**; Universidad Católica Santo Toribio de Mogrovejo = **UCSTM**; Universidad Científica del Sur = **UCSUR**; Universidad César Vallejo = **UCV**; Universidad Nacional de la Amazonía Peruana = **UNAP**; Universidad Nacional del Centro del Perú = **UNCP**; Universidad Nacional Daniel Alcides Carrión = **UNDAC**; Universidad Nacional Federico Villarreal = **UNFV**; Universidad Nacional Jorge Basadre Grohmann = **UNJBG**; Universidad Nacional José Faustino Sánchez Carrión = **UNJFSC**; Universidad Nacional Mayor de San Marcos = **UNMSM**; Universidad Nacional de Piura = **UNP**; Universidad Nacional de San Cristóbal de Huamanga = **UNSCH**; Universidad Nacional San Luis Gonzaga = **UNSLG**; Universidad Nacional Santa María = **UNSM**; Universidad Nacional de Ucayali = **UNU**; Universidad Norbert Wiener = **UNW**; Universidad Peruana de Ciencias Aplicadas = **UPC**; Universidad Peruana Unión = **UpeU**; Universidad Peruana de Los Andes = **UPLA**; Universidad de Piura = **UDEP**; Universidad Privada San Juan Bautista = **UPSJB**; Universidad Privada de Tacna = **UPT**; Universidad San Ignacio de Loyola = **USIL**; Universidad San Martín de Porres = **USMP**; Universidad Señor de Sipán = **USS**.
* Universities where included geriatric course as part of internal medicine.
** These credits correspond to the internal medicine course.

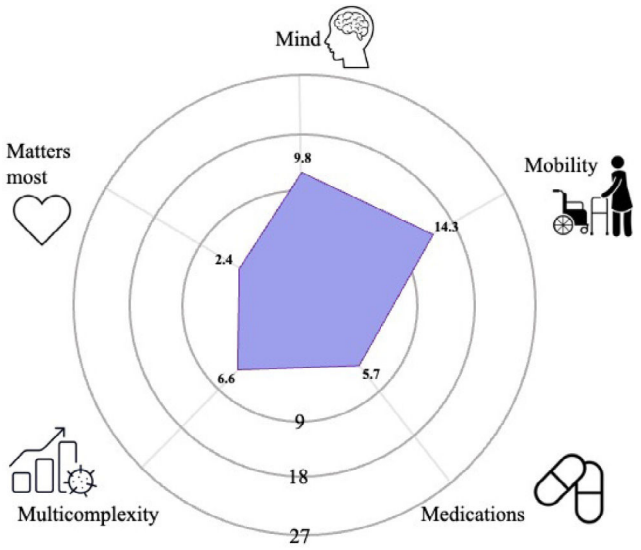

Figure 1 Radar graphic of the overall competencies evaluated. Mind: 9.8; Mobility: 14.3; Medications: 5.7; Multicomplexity: 6.6; Matters most: 2.4.

been a steady growth in both the number of programs and the availability of residency slots. The main challenge remains the relatively limited number of training positions in geriatrics; however, in recent years, there has been a steady growth in both the number of programs and the availability of residency slots. For example, in 2023, a 25% increase in positions was offered for the medical residency competition, and all places were allocated as first choice by the applicants, reflecting a positive trend compared with previous years when fewer programs were available. Rather than indicating a lack of interest, this increase highlights the progress made in strengthening geriatrics training and the growing recognition of its importance. Addressing this issue is crucial to ensure that students acquire essential competencies and are encouraged to pursue geriatrics. Increasing the number of faculty in geriatrics and improving the student-faculty ratio can further enhance student exposure and consolidate this positive trajectory, ultimately contributing to reducing the shortage of geriatricians (Fig. 2). Addressing this issue is crucial to ensure that students acquire essential competencies and are encouraged to pursue geriatrics. Increasing the number of faculty in geriatrics and improving the student-faculty ratio can enhance student exposure and interest in the specialty, ultimately addressing the shortage of geriatricians.

Despite this major problem, efforts have been scarce in Peru. For example, the Latin American Academy of Medicine for Older Adults – ALMA, made efforts to enhance geriatrics training in Peru in 2005, with the publication of the "*Declaración de Lima sobre Enseñanza de Geriatría y Gerontología en el Perú*" guidelines for geriatrics training.[23] Moreover, it offers courses for geriatricians to enhance their clinical and teaching skills. However, the absence of interinstitutional collaborations impedes further advancement in this field.

Need to update and align competencies and priorities to international recommendations

The absence of individualized priorities and care in OA is a significant concern in healthcare systems worldwide. Our study showed a low score in matters most and multicomplexity, according to the 5M tool. A possible explanation for these results is that the 5M tool is recent, and some of the university courses on geriatrics were guided by the Proposal for Minimum Content for Undergraduate Teaching Programs in Geriatric Medicine in Latin America published by ALMA in 2005.[24] However, an update of the course content is required, making important topics more visible, such as those that we detected which are not mentioned. While it is true that there are global recommendations on competencies and content for undergraduate geriatrics programs, it is also true that these must be adapted to respond to the performance scenarios and the particular needs of each context. Studies have shown that older adults often lack personalized care due to systemic problems, such as insufficient training in geriatrics, inadequate healthcare policies, and a shortage of specialized healthcare providers.[25,26] For example, research indicates that many healthcare providers are not adequately trained to address the unique needs of OAs, which highlights the urgent need to strengthen geriatrics training during undergraduate medical education. This lack of personalized care can result in poorer health outcomes for older adults, as their specific medical, psychological, and social needs are not adequately addressed. For example, OAs can have multiple chronic conditions requiring tailored treatment plans that consider their overall personal well-being preferences, and even spiritual needs.[27] While other specialties, such as palliative care, also address important emotional and spiritual dimensions, strengthening geriatric training remains essential to ensure that the specific and multifaceted needs of older adults are adequately recognized. Furthermore, healthcare policies often prioritize acute care over chronic disease management, further marginalizing the needs of OAs. Addressing this issue is crucial for improving the quality of life of older adults. Implementing policies that prioritize geriatric care, expanding the workforce of trained geriatric specialists, and promoting individualized care plans can help ensure that the unique needs of OAs are met. This, in turn, can lead to better health outcomes and enhanced well-being for this growing population segment.[28,29]

Implications

To our knowledge, this is the first study that uses the 5M tool to conduct curriculum evaluation, and additionally, it is the first to evaluate education in geriatric care in Peru. This study reveals significant opportunities for improvement in the geriatric curriculum in Peruvian medical schools, underscoring the need for a revised approach to medical education. Theoretically, these findings challenge the suitability of current educational models that do not fully address the needs of an aging population. Incorporating comprehensive geriatric training into medical programs could enhance the ability of healthcare professionals to manage the complexities of elderly care. The 5M Tool is a

good way to improve teaching in different countries. Indeed, an adaptation of this tool was developed in Canada.[30] However, its relevance for LAC is particularly significant, as the region faces rapid population aging, limited specialized faculty, and scarce integration of geriatrics into undergraduate curricula. Implementing the 5M Tool could therefore serve as a structured and feasible approach to strengthen geriatric education in this setting.

In Perú, the most rapidly growing population group is individuals over 80 years of age, almost tripling between 2010 and 2030 and expected to increase six-fold in 2050. Despite the pressing health needs resulting from demographic and epidemiological changes, 38.8% of licensed Peruvian medical schools still do not offer a geriatrics chapter or course in their curriculum. This underscores the urgent need for improved geriatrics education and a call for immediate action and responsibility. The presence of geriatrics courses in medical education in Peru has improved, but more is needed to follow the needs of demographic, epidemiological, and clinical transitions. This is supported by the fact that currently, the population aged 60 and over is more significant than that between 0 and 5 years of age and that the population aged 80 and over is the fastest growing. The credit hours of the geriatric courses are at most 3, while the credit hours dedicated to pediatric courses are 4–5 times greater.

The presence of geriatrics courses or chapters in curricular plans and frameworks still needs improvement. Although there is a greater presence, the assessment given to the topic is still very low (measured by hours/credit) for the needs of health services. The teaching design of the courses and chapters is still very heterogeneous regarding methodology, teaching training, and skills to be acquired at the end of the course. At the same time, the scenarios of the performance of health professionals related to aging must be optimized. Learning about geriatrics during a medical career is key for the same professionals to become change leaders.

In terms of policy, this study advocates for increased support and funding for education related to the field of geriatrics and the establishment of national standards to ensure consistency in training. Future research should focus on evaluating different training models and their impact on patient outcomes, while also investigating the longitudinal effects of improved education. In general, addressing these gaps is crucial for optimizing care in older adults and improving the responsiveness of healthcare systems to

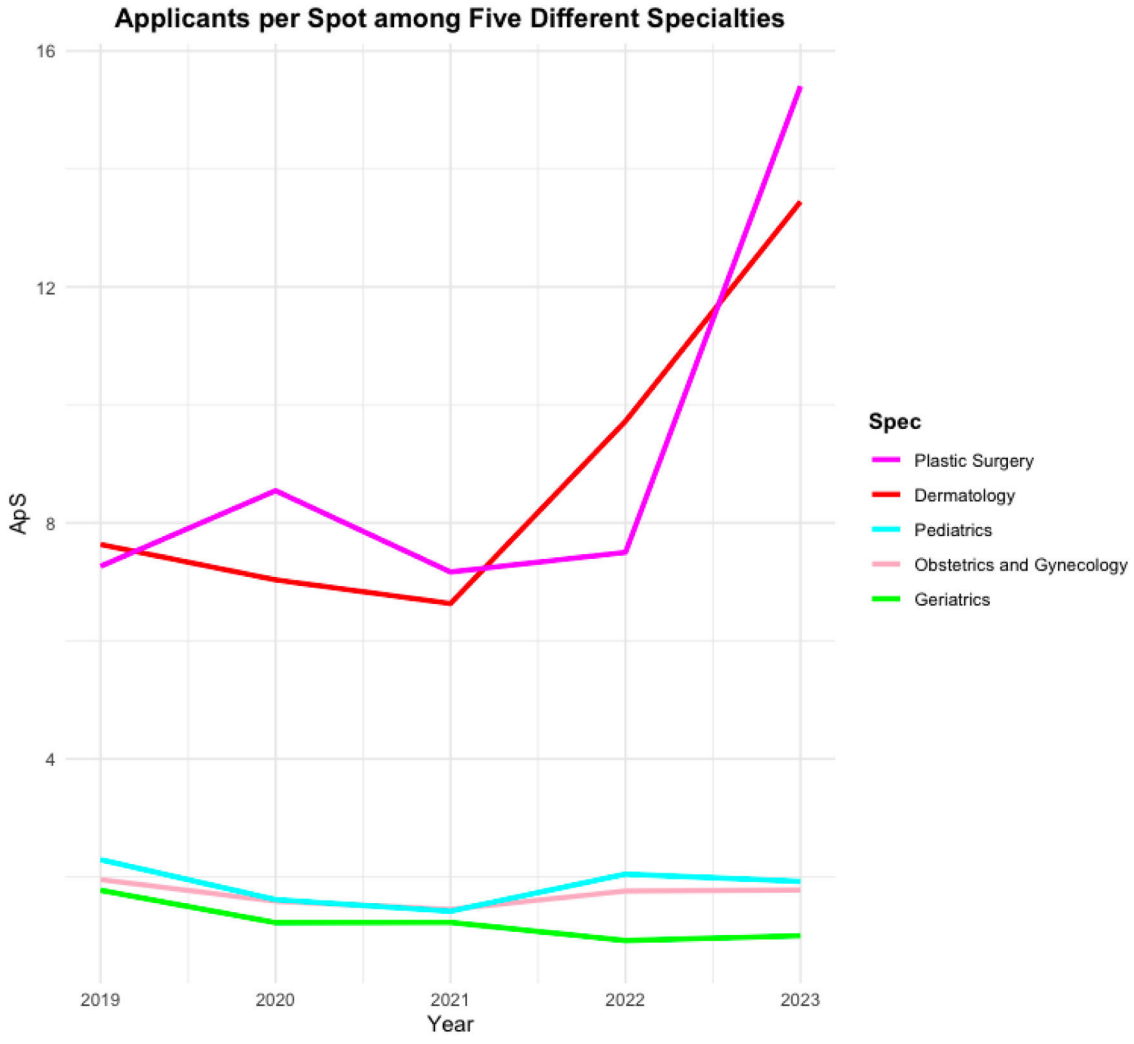

Figure 2 Applicants per spot among five different Spec.

demographic changes. Therefore, while our findings may seem alarming, they bring a breath of hope for future Peruvian medical education.

Strengths and limitations

This study offers the first comprehensive analysis of the geriatric curriculum in Peruvian medical schools, using a rigorous methodology and the updated 5M tool to assess competencies in detail. Our two findings are highly relevant to public health, emphasizing the need for tailored health services for the aging population in Peru and the countries of LAC. The detailed approach ensures reliable and accurate results, providing valuable insights to policymakers and educational institutions to improve geriatric training. However, the study is limited by its focus on Peruvian medical schools, which can limit generalizability and rely on available curricula that may be incomplete. Additionally, as an observational study, it captures a specific point in time and may not reflect ongoing changes or causal associations. Competency evaluation, while consensus-based, may introduce subjective bias, and the study does not explore specific strategies to address the highlighted resource limitations, such as the shortage of geriatricians and training opportunities. The British Geriatric Society published an update to the recommendations on minimum competencies for undergraduate medical students in geriatrics. This new curriculum is based on seven core geriatric medicine concepts and has been developed by a multidisciplinary team using a nominal group technique. These recommendations are aimed at medical schools and medical students in the United Kingdom. They are written to reflect the standard expected of a doctor upon graduation from medical school and can be used in future studies. Doing geriatrics requires teamwork, so educational models of inter- or transdisciplinary training can be the next step.

This study highlights important opportunities for improvement in the geriatric curricula of Peruvian medical schools. There is a need to improve the presence (courses) and value (credit) of geriatric courses and chapters. This becomes more relevant when assessing the presence of pediatrics and relating it to demographic, epidemiological, and clinical transitions. There is still a critical shortage of geriatricians, a need for greater opportunities for faculty training, and the homogenization of competencies and content of the subject in line with international recommendations. The present findings emphasize the need to integrate comprehensive geriatric education into undergraduate medical programs to better prepare future health professionals. Addressing these gaps through specific policies, increased resource allocation, and the adoption of innovative teaching methods is crucial for adapting services to integrated, person-centered care in Peru and similar contexts in Latin America.

Ethics

The need for approval by an Ethics Committee was waived as the data analyzed did not involve any human subjects. The project was registered with the Research Department of the Universidad Científica del Sur under code PI-15-2024-0362.

Funding

The study did not receive funding from academic or private entities; it was financed with the researchers' own resources.

Conflict of interest

The authors declare that they have no conflicts of interest.

Acknowledgments

No acknowledgements.

References

1. Ageing and health. https://www.who.int/news-room/fact-sheets/detail/ageing-and-health (18 July 2024, date last accessed).
2. Tan MP. Healthcare for older people in lower and middle income countries. Age Ageing. 2022;51:afac016.
3. Robledo LMG, Cano-GutiéRrez C, Vega-García V., Healthcare for older people in Central and South America, *Age Ageing*, **51**, 2022, 1–4.
4. Hernández-Vásquez A, Rojas-Roque C, Santero M, Prado-Galbarro FJ, Rosselli D. Gasto de bolsillo en salud en adultos mayores peruanos: análisis de la Encuesta Nacional de Hogares sobre condiciones de vida y pobreza 2017. Rev Peru Med Exp Salud Publica. 2018;35:390–9.
5. Santamaria-Garcia H, Sainz-Ballesteros A, Hernandez H, Moguilner S, Maito M, Ochoa-Rosales C, Corley M, Valcour V, et al. Factors associated with healthy aging in Latin American populations. Nat Med. 2023;29:2248–58.
6. Nuss V, Barben J, Laborde C, Vovelle J, Deidda M, Mihai AM, Putot A, Manckoundia P. Factors determining the choice of a career in geriatrics among students in geriatric in-hospital training: a prospective. study of 74 medical students, Geriatrics. 2020;5:1–12.
7. Meiboom AA, De Vries H, Hertogh CMPM, Scheele F. Why medical students do not choose a career in geriatrics: a systematic review. BMC Med Educ. 2015;15:101.
8. Gordon AL, Blundell A, Dhesi JK, Forrester-Paton C, Forrester-Paton J, Mitchell HK, et al. UK medical teaching about ageing is improving but there is still work to be done: the second national survey of undergraduate teaching in ageing and geriatric medicine. Age Ageing. 2014;43:293–7.
9. Masud T, Ogliari G, Lunt E, et al. A scoping review of the changing landscape of geriatric medicine in undergraduate medical education: curricula, topics and teaching methods. Eur Geriatr Med. 2022;13:513–28.
10. Morales-Martínez F. A teaching geriatric hospital. J Nutr Health Aging. 2019;23:4–8.
11. López JH, Reyes-Ortiz CA. Geriatric education in undergraduate and graduate levels in Latin America. Gerontol Geriatr Educ. 2015;36:3–13.
12. Thomas PA, Kern DE, Hughes MT, Chen BY. Curriculum development for medical education: a six-step approach. Johns Hopkins University Press; 2015.
13. Alarcon-Ruiz CA, Soriano-Moreno DR, Taype-Rondan A. Undergraduate courses of evidence-based medicine in Peruvian medical schools: characteristics and addressed topics. Heliyon. 2023;9:e13320.
14. Leipzig RM, Granville L, Simpson D, Anderson MB, Sauvigné K, Soriano RP. Keeping granny safe on July 1: a consensus on minimum geriatrics competencies for graduating medical students. Acad Med. 2009;84:604–10.

15. Tinetti M, Huang A, Molnar F. The geriatrics 5M's: a new way of communicating what we do. J Am Geriatr Soc. 2017;65:2115.
16. Bardach SH, Rowles GD. Geriatric education in the health professions: are we making progress? Gerontologist. 2012;52:607.
17. Yogaparan T, Burrell A, Talbot-Hamon C, Sadowski CA, Grief C, MacDonald E, et al., The aging care 5Ms competencies: a modified Delphi study to revise medical student competencies for the care of older adults, *Acad Med*, **99**, 2024, 198–207.
18. Arai H, Chen L-K. Aging populations and perspectives of geriatric medicine in Japan. Glob Health Med. 2024;6:1.
19. Ong EY, Bower KJ, Ng L. Geriatric educational interventions for physicians training in non-geriatric specialties: a scoping review. J Grad Med Educ. 2021;13:654–65.
20. Siew AL, Wong JW, Chan EY. Effectiveness of simulated patients in geriatric education: a scoping review. Nurse Educ Today. 2021;100:104856.
21. Benbassat J. Role modeling in medical education: the importance of a reflective imitation. Acad Med. 2014;89:550–4.
22. Meiboom A, Diedrich C, De Vries H, Hertogh C, Scheele F. The hidden curriculum of the medical care for elderly patients in medical education: a qualitative study. Gerontol Geriatr Educ. 2015;36:30–44.
23. Parodi JF, Zuniga C. I foro nacional sobre enseñanza de geriatría y gerontología en el Perú. Ministerio de Salud; 2005.
24. Cano C, Gutiérrez LM, Marín PP, Morales Martínez F, Peláez M, Rodríguez Mañas L, et al. Propuesta de contenidos mínimos para los programas docentes de pregrado en Medicina Geriátrica en América Latina. Rev Panam Salud Publica. 2005;17:429–37.
25. Akishita M, Ishii S, Kojima T, Kozaki K, Kuzuya M, Arai H, et al. Priorities of health care outcomes for the elderly. J Am Med Dir Assoc. 2013;14:479–84.
26. Tinetti ME, Hashmi A, Henry N, Doyle M, Goto T, Esterson J, et al. Patient priorities-aligned care for older adults with multiple conditions: a nonrandomized controlled trial. JAMA Netw Open. 2024;7:E2352666.
27. Etkind SN, Bone AE, Lovell N, Higginson IJ, Murtagh FEM. Influences on care preferences of older people with advanced illness: a systematic review and thematic synthesis. J Am Geriatr Soc. 2018;66:1031.
28. Pearson GME, Winter R, Blundell A, Masud T, Gough J, Gordon AL, et al. Updating the British Geriatrics Society recommended undergraduate curriculum in geriatric medicine: a curriculum mapping and nominal group technique study. Age Ageing. 2023;52(2):afac325.
29. Walston J, Varadhan R, Xue QL, Buta B, Sieber F, Oni J, et al. A Study of Physical Resilience and Aging (SPRING): conceptual framework, rationale, and study design. JAGS. 2023;71(8): 2393–405.
30. Masud T, Blundell A, Gordon AL, Mulpeter K, Roller R, Singler K, et al. European undergraduate curriculum in geriatric medicine developed using an international modified Delphi technique. Age Ageing. 2014;43:695–702.