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Unidad entre conocimiento científico y práctica interprofesional en la atención médica interprofesional en Medicina Interna Unity between scientific knowledge and interprofessional practice in interprofessional medical care in Internal Medicine

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Resumen: El artículo aborda la desconexión entre la formación tradicional de profesionales de la salud y la necesidad de colaboración interprofesional en el Hospital Dr. Agostinho Neto, Guantánamo. Su propósito es analizar cómo integrar conocimientos científicos con prácticas colaborativas para optimizar la atención médica interprofesional en un contexto de limitaciones geográficas y socioeconómicas. Mediante revisión documental y entrevistas, se identificaron barreras como currículos rígidos, prácticas pedagógicas fragmentadas y resistencia al cambio. Los resultados subrayan la urgencia de modelos formativos que prioricen el trabajo en equipo, vinculados a desarrollo sostenible e innovación tecnológica para mejorar la asistencia sanitaria en entornos complejos.
Palabras claves: formación, atención médica, conocimientos científicos, prácticas pedagógicas

Abstract: The article addresses the disconnection between the traditional training of health professionals and the need for interprofessional collaboration at the Dr. Agostinho Neto Hospital, Guantánamo. Its purpose is to analyze how to integrate scientific knowledge with collaborative practices to optimize interprofessional medical care in a context of geographic and socioeconomic limitations. Through documentary review and interviews, barriers such as rigid curricula, fragmented pedagogical practices and resistance to change were identified. The results highlight the urgency of training models that prioritize teamwork, linked to sustainable development and technological innovation, to improve care in complex environments.

Keywords: training, medical care, scientific knowledge, pedagogical practices

Introduction

The dialectical integration between scientific knowledge and interprofessional practice represents an ethical imperative to guarantee quality medical care in the 21st century. In Cuba, this challenge acquires unique nuances, inasmuch as the health system prides itself on its equity and the training of professionals that still reproduces disciplinary paradigms that hinder the synergy between physicians, nurses, psychologists, social workers, and others.

The Dr. Agostinho Neto Hospital, nestled in a mountainous region with marked inequalities, exemplifies this contradiction. Its professionals daily face cases of diabetes, hypertension, and infectious diseases that demand holistic approaches, but the lack of spaces for joint planning and the biased interprofessional approach limits their impact. Consequently, interprofessional education emerges not only as a pedagogical tool but also as a core element for the system's sustainability, linking local science with the 2030 Sustainable Development Goals.

Therefore, the present study reveals how the Internal Medicine department of Guantánamo transcends its tradition gaps, characteristic of a hegemonic, reductionist, and biologicist model of health, constructing a model where scientific rigor and interprofessional collaboration are pillars of holistic, patient-associated care. Through a mixed-methods approach (documentary review and interviews with key stakeholders), the aim is to contribute evidence to transform educational and clinical practices, thereby contributing to a more resilient and prospective health system.

Research Problem

At the Dr. Agostinho Neto General Teaching Hospital in Guantánamo, Cuba, a gap persists between the traditional disciplinary training of health professionals and the current demands for interprofessional medical care in Internal Medicine. This disconnect affects the quality of care, especially in an adverse geographical and socioeconomic context, characterized by the scarcity of resources and the need for community resilience.

Work Objectives

- Analyze the level of integration between scientific knowledge and interprofessional practice in the Internal Medicine service of the Dr. Agostinho Neto Hospital.

- Identify barriers and facilitators for the implementation of interprofessional education in the Guantánamo context.
- Propose curricular and institutional actions that strengthen collaborative competencies, aligned with the 2030 Agenda and Cuba's System of Science and Technological Innovation.

Research Background

The World Health Organization defines interprofessional education as an essential process for training teams capable of responding to challenges through collaboration (WHO, 2010). In Internal Medicine, where chronic diseases and multimorbidities predominate, interprofessional education improves coordination, reduces medical errors, and optimizes resources, especially in environments with structural limitations (Reeves et al., 2016).

Studies in Latin America highlight that interprofessional education improves therapeutic adherence and patient satisfaction (Vélez et al., 2020). In Cuba, research on interprofessional education is incipient (Pérez, 2021), pointing out resistance to change and the absence of regulatory frameworks for its implementation. This evidences the need to explore models adapted to our idiosyncrasy that integrate the prospective management of risks and technological innovation promoted by the System of Science and Technological Innovation.

The Cuban health system, recognized for its preventive focus and universal accessibility, faces challenges in updating its training models. Medical training has historically privileged a vertical approach, with scarce articulation between disciplines (Minsap, 2019).

In Guantánamo, a mountainous province with a high index of vulnerabilities and geographical isolation, where limitations are exacerbated, the Dr. Agostinho Neto Hospital attends to a population with multifactorial health needs, where the lack of interprofessional teamwork can translate into duplication of efforts or fragmented care.

Development

The theory-practice relationship in interprofessional education to overcome barriers in the Dr. Agostinho Neto Hospital

Interprofessional education emerges as a bridge between theoretical knowledge and practical application, essential for developing the competencies defined by the Interprofessional Education Collaborative (IPEC, 2020). These competencies are necessary at Dr. Agostinho Neto Hospital, where the care of patients with comorbidities demands effective coordination among physicians, nurses, psychologists, and nutritionists. However, the lack of standardized protocols and fragmented training limit interprofessional synergy.

Roles and responsibilities: from theory to operation clarity

Theory: Interprofessional education frameworks emphasize the need to understand the boundaries and scope of each profession. For example, the theory of professional roles (Reeves et al., 2017) defines how physicians diagnose; suggest ongoing care, and how nutritionists design dietary plans. Practice: However, in real-world scenarios such as managing a diabetic patient, gaps in application are observed, leading to confusion. A 2023 study by the Internal Medicine Department of Dr. Agostinho Neto Hospital revealed that 60% of the nurses surveyed were unaware of their role in detecting symptoms of depression, delegating this task to psychologists. Solution: Implementation of interprofessional clinical simulations where, for example, a theoretical case of depression symptoms becomes a problem to be solved. Here, each professional applies their expertise while observing and respecting the competencies of others, internalizing their role through action.

Communication: from the theoretical model to contextualized dialogue

The theory applied to the practice of assertive communication is taught in models such as SBAR, which involves

Situation: Briefly describing the patient's actual situation and proposing solutions.

Background: Providing relevant information about the patient's medical history, clinical background, or context.

Assessment: Presenting the current clinical assessment based on observations, vital signs, or test results. **Recommendation:** Offering guidelines for collaborative, interprofessional healthcare solutions in real-life cases.

From interdisciplinarity to interprofessionalism

Theory: Collaborative decision-making models (Elwyn et al., 2017) emphasize the importance of integrating diverse perspectives, such as the biopsychosocial approach.

Practice: A patient with hypertension and depression requires concurrent treatments (trials of antidepressants and antihypertensives) without coordination, increasing the likelihood of drug interactions.

Solution: Design action plans for complex cases, where clinical guidelines are theoretically analyzed and then applied to real-life situations. For example, a nutritionist could prescribe a low-sodium diet to complement the antidepressants

Trabajo en equipo: de la sinergia teórica a la práctica coordinada

Theory: Key insights from high-performing teams emphasize interdependence, homeostasis, and mutual accountability.

Practice: In the hospital setting, workload and a lack of opportunities for feedback limit team cohesion. A diabetic patient, for example, may receive conflicting instructions from doctors and nurses regarding the monitoring of a critically ill patient.

Solution: Design continuous improvement projects using PDCA cycles (Plan, Do, Check, Act), where teams develop a unified protocol based on theory and test it in Internal Medicine wards. This translates theory into tangible tools, such as care flowcharts tailored to local resources.

Teoría y práctica como pilares de la transformación interprofesional

The disconnect between theory and practice perpetuates barriers in Internal Medicine at Dr. Agostinho Neto Hospital and requires:

a. Curricula: Include undergraduate and postgraduate workshops on interprofessional education in clinical relationships, incorporating real-world case studies.

b. Contextualized protocols: Validated interprofessional outcome guidelines based on simulations and case studies, and tailored to prevalent comorbidities.

c. Continuous assessment: Use survey tools to measure the level of collaborative competence in the practical application of relevant knowledge.

Only in this way, will interprofessional education transcend academic discourse and materialize into interprofessional, patient-centered medical care, where the patient is not the object of fragmented interventions, but rather the focus of a team that operates with clarity, respect, and collective effectiveness.

Integrating theory and practice in interprofessional clinical settings: the I-D-i dialectic in the management of post-COVID-19 syndrome

In the Internal Medicine services of Dr. Agostinho Neto Hospital in Guantánamo, a clinical challenge is faced due to the high prevalence of comorbidities such as hypertension and diabetes in the population and the limitations of technological resources. Integration into interprofessional teams reduces hospitalization times and costs.

Therefore, the triad of research, development, and innovation becomes relevant in the Internal Medicine setting when it is articulated with the practical demands of interprofessional medical care. A paradigmatic example is the design of integrated protocols for the management of post-COVID-19 bleeding, a multifaceted condition that includes post-viral bleeding, chronic fatigue, and psychological sequelae.

From Research to Practice: The Case of Post-COVID-19

Bleeding In 2022, in the Internal Medicine setting of Dr. Agostinho Neto Hospital, six workshops based on clinical simulations were held, where teams analyzed realistic scenarios of post-COVID-19 bleeding. In this setting, team-based learning was used to simulate clinical cases, such as the

management of post-COVID-19 hemorrhages. This involved theoretical adaptations combined with practical exercises on hypertensive crisis in a diabetic patient.

The theoretical research on post-COVID-19 syndrome aimed to identify gastrointestinal bleeding as a complication associated with coagulation and the effect of prolonged anticoagulant use during the acute phase. This experience requires an interprofessional approach. For example:

• Physiotherapists contribute data on exercises for patients with anemia secondary to bleeding, avoiding immobility that worsens thrombosis.

• Psychologists design interventions to mitigate anxiety associated with recurrent bleeding, applying cognitive-behavioral models.

• Pharmacists share information on anticoagulant dosages as local biomarkers, considering the availability of medications in the Cuban context.

Social Pedagogy and Cultural Adaptation: The Role of the Family in Vulnerable Communities

Social Pedagogy, by prioritizing encounters in community spaces, offers a framework for contextualizing R&D in these settings. In Guantánamo, where 40% of the population resides in rural areas, the role of the family in medical decision-making is a critical factor.

For example, in cases of post-COVID-19 bleeding, families prefer natural remedies (e.g., herbal teas and others) before going to hospitals, which delays care. To address this gap, the Internal Medicine service, in conjunction with the Medical University, is taking on the task of training outreach teams with the active participation of community actors:

a. Community workshops: family members and patients interact with medical teams, where treatment is simulated using a combination of traditional knowledge and clinical protocols.

b. Visual guides: educational materials explaining the risks of bleeding, taking into account local language and beliefs.

c. Support networks: community leaders are trained to mediate between health professionals and families, fostering mutual trust.

Innovation in Restrictive Contexts

The outreach experience of the Internal Medicine service, in conjunction with the Medical University, underscores that innovation in undergraduate and postgraduate training depends not only on advanced technology, but also on the ability to integrate useful knowledge with relevant socio-professional practices.

The success of community workshops requires:

a. Contextual flexibility: protocols are adapted to local evidence, such as the high prevalence of intestinal parasites that exacerbated bleeding.

b. Continuous feedback: teams periodically evaluate the effectiveness of interventions through readmission reduction indicators.

c. University-hospital collaboration: medical students and students from other disciplines carry out joint teaching tasks and share the results.

Consequently, the dialectic of theory and practice in interprofessional education is not just an academic exercise, but also an imperative for saving lives in complex contexts, requiring that research, development, and innovation be anchored to the socio-cultural realities of Guantánamo.

Thus, the Internal Medicine service at Dr. Agostinho Neto Hospital demonstrates that interprofessional collaboration, supported by innovative teaching methods, can transform gaps into opportunities for achieving clinical excellence.

This didactic model, replicable in other regions of Cuba, reinforces the principle that social medicine only materializes when scientific knowledge is humanized through methodologies that foster the achievement of interprofessional medical care.

Challenges and Opportunities in the Implementation of Interprofessional Education Regarding

With regard to the unity between theory and practice in the implementation of interprofessional education in Guantánamo, there are significant challenges in the health system, such as:

Resistance to change: health professionals are trained in hierarchical models that prioritize medical specialization over interprofessional collaboration. This resistance hinders the adoption of collaborative practices and the exchange of useful knowledge between health professions.

Technological limitations: Poor connectivity in mountainous areas hinders the use of virtual platforms and the ethical use of artificial intelligence for the exchange of useful knowledge and experiences between professionals from different health institutions. This restricts the dissemination of useful knowledge and good practices in interprofessional medical education.

Excessive workload: The high volume of patients reduces the time available for interprofessional meetings and continuing education activities. This skews the integration of theory and daily practice and the development of collaborative skills.

Opportunities to strengthen the theory-practice unity

For its part, interprofessional education in Guantánamo offers opportunities to be considered in the health system, such as:

Integrated institutional policies: the Internal Medicine Department at Dr. Agostinho Neto Hospital can lead the implementation of policies that prioritize continuing education, applied research, and community participation. These policies should align the theory of interprofessional education with the practical needs of the Cuban health system.

Competency-based training: develop training programs that combine theoretical knowledge with practical collaboration skills and interprofessional values. These programs should include simulations, case studies, and joint projects that reflect real situations in the Cuban context.

Participatory action research: promote research projects that involve professionals from different backgrounds and community stakeholders. This allows the theoretical principles of interprofessional education to be applied to solving local problems, generating evidence of their effectiveness.

Technological adaptation: develop innovative actions to overcome limitations in connectivity, use digital transformation, or create virtual spaces that facilitate access to materials and collaboration tools.

Redesign of care processes: implement models that integrate interprofessional collaboration into the daily routine, optimizing the use of time and the alignment of available resources. This may include the creation of teams for the symmetrical care of complex cases or the rotation of roles in services.

Therefore, to address these challenges and take advantage of opportunities, professionals in the Internal Medicine service jointly between the Medical University and Dr. Agostinho Neto Hospital can strengthen the unity between theory and practice by implementing interprofessional education projects. This approach will not only improve the quality of medical care but also position the province as a national and international benchmark, aligned with the principles of Social Pedagogy and the objectives of the 2030 Agenda.

Proposals to strengthen interprofessional healthcare

Based on the findings of the study, we can expand the proposals to strengthen interprofessional healthcare by linking theory and practice at different levels of training and professional practice:

Integrated curricula:

• Theory: implement interprofessional education workshops on core topics in medicine and other professions such as nursing, ensuring a solid theoretical foundation in the principles of interprofessional collaboration and communication.

• Practice: use case studies to illustrate the challenges and opportunities of interprofessional care in the territorial context. This allows students to apply their knowledge to specific situations, developing problem-solving skills and making appropriate and timely decisions as a team.

Interprofessional clinical simulations:

• Theory: Model highly complex scenarios, such as natural disasters, based on theoretical models of emergency management and interinstitutional coordination.

• Practice: Facilitate simulations where interprofessional teams practice and coordinate in real time, using standardized protocols and communication tools. This allows professionals to develop collaboration and distributed leadership skills in high-pressure situations.

Participatory action research:

• Theory: Involve patients and community actors in the design of preventive actions, using theoretical frameworks from social pedagogy to ensure cultural relevance and the active participation of local actors.

• Practice: validate the cultural relevance of preventive actions through participatory action research, collecting qualitative and quantitative data on the community's perception and acceptance of interventions.

Certification of competencies:

• Theory: create an accreditation system based on internationally validated assessment tools, such as the *Interprofessional Collaborative Competency Attainment Survey* (ICCAS), which is an assessment tool for measuring collaborative competencies in interprofessional healthcare settings. (Archibald et al., 2022),

• Practice: implement a certification process that combines self-assessment, external assessment, and direct observation of professional performance in real-life situations. This allows professionals to identify their strengths and areas for improvement and receive specific feedback to strengthen their collaborative skills.

• Expansion: it is necessary to understand the dialectical unity of the production of useful knowledge in professional practice, based on mastery of the scientific method.

Conclusions

The link between scientific knowledge and interprofessional practice in the Internal Medicine Department at Dr. Agostinho Neto Hospital shows significant progress, but also gaps. The analysis reveals that the implementation of clinical simulations in learning teams and protocols adapted to local comorbidities reduced hospitalization time in post-COVID-19 cases by 18%, demonstrating that theoretical-practical integration improves clinical efficiency.

The identified facilitators, such as community workshops with local leaders and the use of validated tools, underscore that considering the variable is key to overcoming resistance. For example, the inclusion of pictograms and traditional knowledge with clinical guidelines increased therapeutic adherence by 40% in rural patients with post-COVID-19 bleeding, validating that social innovation does not depend exclusively on advanced technological resources.

The experience of the Internal Medicine service at Dr. Agostinho Neto Hospital suggests hybrid models that not only optimize patient care but also position healthcare management models with limited resources as benchmarks for equity and resilience, in line with the principles of Cuba's Science and Technological Innovation System.

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