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## Development of Professional Competencies among Psychology Interns: A Comparative Analysis across Clinical Settings

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**ABSTRACT:** *The postpandemic rise in mental health disorders has intensified the demand for well-trained clinical psychologists, underscoring the importance of rigorous professional preparation. This study examined the preparedness of psychology interns completing accredited programs by assessing professional competencies across general hospitals, mental health clinics, and neuropsychological medical settings. Competency attainment was evaluated using five core domains established by the American Psychological Association's accreditation guidelines (Version 3.0): theoretical foundations, scientific thinking, values in psychological science, effective communication, and personal and professional development. The sample comprised 630 evaluations of psychology interns in Colombia (63% female) aged 22–35 years ( $M = 27.5$ ,  $SD = 5.30$ ). The results indicated that competency levels varied by clinical setting. Interns achieved the highest scores in general hospitals, reflecting greater readiness to address diverse clinical demands. In contrast, the lowest scores were*

observed in neuropsychological centers, highlighting the need to strengthen diagnostic skills and specialized communication. Interns in mental health clinics showed intermediate competency levels, suggesting ongoing professional development. Overall, these findings contribute empirical evidence on competency development in real-world training contexts and offer guidance for strengthening psychology training to enhance the quality of mental health care.

**Keywords:** Clinical Psychology, Clinical Settings, Neuropsychology Center, Psychology Internship, Professional Competencies.

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## INTRODUCTION

Recent mental health statistics highlight substantial global challenges, which are increasingly characterized as a public health crisis. Population-based studies conducted over the past nine years have reported significant increases in the prevalence of suicide, stress-related symptoms, and common mental health disorders, with consistent increases of up to 27% in the past five years compared with prepandemic levels (Reinert, Fritze, & Nguyen, 2024; Pan American Health Organization [PAHO], 2023). These trends have been accompanied by a marked increase in the demand for mental health services, placing considerable strain on existing care systems across regions such as Asia, the United States, and Latin America (Ma et al., 2023; PAHO, 2023).

The increasing prevalence of major mental disorders is frequently associated with untreated or inadequately managed conditions, which are often the result of limited access to care, disparities in service availability, and barriers to treatment, including stigma, as well as gender, racial, and ethnic inequities, all of which reflect systemic shortcomings in the timely provision of mental health services for those most in need (Nicholson Perry et al., 2020; World Health Organization [WHO], 2022).

Further concerns have been raised regarding mental health attention protocols and the preparedness of the mental health workforce in terms of numbers and the extent to which professionals are adequately trained to address the specific needs and contextual challenges of the populations they serve (Nicholson Perry et al., 2020) (Reinert et al., 2024). For example, in the United States, approximately 40% of individuals receiving mental health care in 2022 reported that the services failed to meet their needs (Reinert et al., 2024). Similarly, in South America, 70.9% of respondents stated that their mental health concerns were not adequately addressed during medical appointments, with 40.6% rating the quality of care as

very poor and only 34.4% considering it merely adequate (Ministry of Health and Social Protection, 2023).

As the mental health challenges of communities continue to evolve, the competencies of practitioners are becoming increasingly critical to ensuring the effective delivery of care. This includes the application of evidence-based interventions, systematic monitoring and evaluation of professional performance, and the rigorous documentation of best practices (Nicholson et al., 2017). Within this context, universities face a significant challenge in aligning their curricula with the competency demands of the health sector and broader labor market. Psychology undergraduate and postgraduate programs carry the social and scientific responsibility to design curricula, training plans, and evaluation strategies that foster professional profiles capable of responding to current mental health demands (Rakowska & De Juana-Espinosa, 2021).

During the transition toward professional licensure in clinical psychology, competency-based assessment plays a key role in ensuring that future practitioners are adequately prepared for the complexities of the professional field. In the mental health sciences, this competency assessment also serves an ethical function by ensuring that future professionals are equipped to deliver effective interventions to vulnerable communities. Thus, evaluating professional competencies not only affirms the technical readiness of students but also safeguards service users by promoting ethically responsible and clinically competent practices (Fouad et al., 2009). In fact, Xu et al. (2025) reported that the global landscape has changed so rapidly that graduate employability has become a matter of great interest to universities, leading educational programs to focus on developing in students the complex set of skills, competencies, and personal characteristics they will need for a successful professional future, which highlights the importance of clinical practice as a requirement for any psychology graduate.

## **LITERATURE REVIEW**

### **Professional Competencies for Psychologists in Global and Intercultural Contexts**

Early research on the evaluation of professional competencies in psychology primarily focused on which competencies should be assessed; how many overarching domains are needed; and which specific knowledge, skills, and attitudes are most relevant to clinical practice (Kuittinen & Rätty, 2015; Gonsalvez et al., 2020; Gonsalvez et al., 2021). Over time, academic and regulatory efforts have contributed to the development of increasingly standardized competency frameworks, with the American Psychological Association (APA) Guidelines for the Undergraduate Psychology Major emerging as one of the most influential references for psychology training and competency development (APA, 2023; Schaffer et al., 2013).

In particular, the latest version of the guidelines (Version 3.0) offers a comprehensive framework that defines the essential competencies expected of

psychology graduates and establishes updated standards for education and training aligned with contemporary professional demands at both the local and international levels (Halonen et al., 2023). Although these guidelines were originally developed within the United States, their most recent revision incorporated the expertise of international scholars with the explicit aim of contributing to a global community of psychology educators. As a result, the APA framework extends beyond a solely national orientation and reflects competencies that are widely recognized across higher education systems and are commonly integrated into psychology curricula worldwide. In the present study, this framework was used to assess the professional competencies of psychology interns.

Core psychological competencies are organized into five overarching domains (APA, 2023): Competency 1, “Content Knowledge and Theoretical Application”, involves mastery of fundamental psychological concepts and theories that support understanding of human behavior. Competency 2: “Scientific Inquiry and Critical Thinking” emphasizes the use of scientific reasoning and evidence-based approaches, requiring psychologists to design, implement, and evaluate interventions through appropriate qualitative and quantitative methods. Competency 3: “Values in Psychological Science” highlights ethical practice, intercultural competence, and interpersonal sensitivity, underscoring psychologists’ responsibility to engage respectfully and empathetically with diverse populations. Competency 4: “Communication, Psychological Literacy, and Technology Skills” refers to the effective transmission of psychological knowledge across written, oral, and digital formats, as well as proficiency in the use of technological tools for professional documentation. Finally, Competency 5, “Personal and Professional Development”, focuses on self-regulation, emotional awareness, and reflective practices, including the ability to manage stress, collaborate within interdisciplinary teams, and integrate supervisory feedback to support ongoing professional growth. These five competencies represent the gold standard for inclusion in program curricula (Shelley et al., 2025).

International and national organizations, including the World Health Organization, European Competency Frameworks, and local psychology regulatory bodies, have consistently emphasized competency-based training as essential for professional readiness and the delivery of high-quality mental health care. In psychology education worldwide, supervised clinical placements, internships, and practicum experiences constitute a central component of professional training curricula, as they provide students with opportunities to apply theoretical knowledge in real or simulated clinical contexts. These applied learning environments enable trainees to acquire and refine the skills needed to respond to the complex demands of contemporary mental health practices, thereby contributing not only to individual professional development but also to the effectiveness and resilience of the broader mental health workforce (Shelley et al., 2025).

Given the central role of practicum training in psychology education, the evaluation of professional competencies through standardized criteria has become

increasingly necessary to ensure the quality and consistency of professional preparation across training contexts. In this sense, competency frameworks and standardized guidelines, such as those proposed by the American Psychological Association (APA), provide structured criteria for assessing the knowledge, skills, attitudes, and ethical capacities expected of psychology trainees during their professional formation.

Accordingly, the competencies proposed by the APA represent essential skills for effective psychological practice within diverse sociocultural and professional contexts. As contemporary mental health practices increasingly involve engagement with culturally and linguistically diverse populations, these internationally recognized competencies are fundamental for fostering intercultural responsiveness, culturally sensitive decision-making, and adaptability in international and multicultural settings (Hamer et al., 2026).

From a broader perspective, these competencies are also closely connected to the development of global citizenship and identification with all humanity, understood as a sense of closeness, concern, and shared belonging with people across national, cultural, and social boundaries (Hamer et al., 2024). In increasingly interconnected societies, psychology students must cultivate the ability to engage respectfully with diverse perspectives, demonstrate empathy and social responsibility, and recognize the common human experiences that transcend cultural differences. Such competencies are particularly relevant in mental health practice, where professionals are expected to navigate diversity with ethical sensitivity, intercultural awareness, and a commitment to collaborative and inclusive care.

Only a comprehensive approach to internationalization and global education can ensure the integration of perspectives across curricula and academic programs. Therefore, examining the development of professional competencies through international standards among psychology interns contributes not only to understanding local training processes but also to broader discussions regarding how higher education institutions prepare students for culturally diverse and globally interconnected professional environments.

### **The Professional Training and Supervision of Psychologists in Colombia**

Psychology in Colombia is formally classified within the Health Sciences and regulated through Law 1090 of 2006, which recognizes psychologists as mental health professionals and establishes the criteria for ethical and competent practice (Congress of the Republic of Colombia, 2006). Psychology programs in Colombia are offered by universities accredited by the Ministry of Education, which adhere to standards aligned with those set by international accreditation bodies. These frameworks are consistent with European and North American higher education models, and accreditation processes are typically conducted and supervised through external peer review mechanisms (Ferras & Wagenaar, 2023).

With respect to curriculum design, the workload and core academic components of psychology programs in Colombia are comparable to those offered in countries with more developed economies. Most accredited curricula include

courses in developmental and personality psychology; quantitative research methods; psychological assessment; psychopathology; educational psychology; and psychobiology, as well as research projects. This demonstrates strong alignment with international academic standards in terms of structure, disciplinary foundations and methodological rigor (Cornejo Ochoa, 2018; Ferreras & Wagenaar, 2023).

Nonetheless, important contextual differences emerge when the realities of a developing economy are considered. Limited access to scholarships, limited opportunities for postgraduate education, and constraints in research infrastructure often hinder the continuation of advanced academic training. For example, whereas approximately 70% of psychology graduates in high-income countries progress to level 2 (master's) training, only approximately 25% do so in Colombia (Pinquart & Bernardo, 2014, pp. 21–44). This discrepancy is reflected in regulatory expectations: in many high-income nations, accreditation standards require at least a master's degree, preferably a doctoral degree, for independent professional practice (APA, 2015; Australian Psychology Accreditation Council [APAC], 2019). This is particularly true in specialties such as neuropsychology, where the International Neuropsychological Society (INS) (INS, 2017) specifies that competent practice demands advanced graduate-level preparation, including doctoral coursework, supervised practice, internship, and postdoctoral specialization. Similar requirements are found across other national regulatory bodies, e.g., the British Psychological Society (BPS, 2022), the Canadian Psychological Association (CPA) (CPA, 2011), and the European Federation of Psychologists' Associations (EFPA) (EFPA, 2015).

In contrast, Colombian legislation authorizes psychologists to provide professional services, including clinical and neuropsychological interventions, upon completion of their bachelor's degree and professional licensure (Congress of the Republic of Colombia, 2006, article 6). This policy responds to the country's limited availability of doctoral-level practitioners and the substantial population needs associated with mental health, social development programs, and postconflict recovery efforts following the 2016 peace accord. Consequently, national health and education policies tend to emphasize broad, applied professional preparation over highly specialized clinical training (Chaskel et al., 2015).

To support earlier transitions into professional practice, the regulatory framework mandates longer undergraduate education: psychology programs typically span five years, rather than the three- or four-year models common in higher-income countries. This structure incorporates supervised professional practice, allowing graduates to respond to local mental health demands and to engage in the community-based work that characterizes much of the psychological service provision in Colombia (Chaskel et al., 2015). It also provides students with opportunities to gain real-world experience before they enter the workforce and develop skills and competencies through practical training that strengthens critical thinking, empathy, and the ability to take effective and ethical action in addressing community problems—all of which

align with the pillars proposed by UNESCO for global citizenship education (Chen, 2025; Hamer et al., 2026).

In line with national requirements, professional qualifications in psychology include the completion of a one-year supervised internship. During this period, a minimum of sixteen weeks must be clinically focused and carried out in medical or hospital outpatient settings, ensuring direct practical exposure under supervision. The training of competencies during this phase is aligned with APA competency guidelines.

Although professional practice is regulated nationally, there is a clear effort to harmonize local standards with APA principles, particularly concerning competence development and ethical practice within health services. Accordingly, the assessment of professional competencies draws on APA guidelines (2013–2023), which outline the core skills required for clinical psychologists to address contemporary mental health challenges, integrating theoretical knowledge with professional development.

Regardless of the specific clinical setting, all the interns are expected to complete the same core tasks following a progressive delegation model. These tasks include conducting interviews, performing mental status examinations, participating in prevention and mental health promotion activities, preparing written reports, communicating diagnoses to clients, designing intervention plans, and adapting their approach to the needs of the users at their assigned training center (Decree 2376, Colombian Ministry of National Education, 2010).

Supervised clinical practice is structured to allow direct client engagement under the guidance of experienced supervisors. The program spans sixteen weeks, with interns typically completing eight hours of supervised practice per week. Competency-based evaluations are carried out by field supervisors across three clinical settings. These supervisors are clinical psychologists with at least a master's degree and extensive experience in assessment, diagnosis, treatment, and therapeutic or counseling interventions. Training is delivered in small groups, with supervisors leading sessions focused on professional case analysis and discussion of clinical challenges (Colombian College of Psychologists (COLPSIC), & Colombian Association of Psychology Faculties (ASCOFAPSI), 2024).

### **Clinical Setting in Psychology Internship**

Practice in clinical settings emerges as the opportunity for clinical psychologists in training to have the chance to apply their scientific knowledge in real environments always accompanied by specialized professionals with experience and postgraduate training in the clinical area. Clinical practice functions as a natural scenario for the objective evaluation that the supervisor can make for the competence of future professionals. These evaluations provide feedback about what makes a professional effective in their interventions and provide evidence on the outcomes of supervision and training in psychology (Callahan & Watkins, 2018; Gonsalvez et al., 2020; Dyason et al., 2019).

In each of these settings, there is a progressive delegation plan, which outlines the basic activities that each practitioner must develop, including interviews, mental examinations, prevention and health promotion, the construction of written reports, the communication of diagnoses to clients, the design of intervention plans, and adapting to the specific needs of the users of each training center (Decree 2376, National Education Ministry, 2010). Healthcare scenarios are classified into three categories on the basis of the services and care they provide to patients: “General Hospital,” “Mental Health Clinic,” and “Neuropsychological Medical Center,” as outlined in the declared services within the Special Registry of Health Care Providers (REPS, for its acronym in Spanish). (Ministry of Health and Social Protection, 2025). These classifications align with the Accreditation Standards for Psychology Programs (APAC) in Australia and the International Health Service Psychology Accreditation Procedures established by the APA in 2015.

### ***General hospitals***

A general hospital is a medical facility designed to provide acute care and specialized treatments across a wide range of services. It functions as an inpatient healthcare provider, accommodating patients who are formally admitted for medical treatment and who remain in hospital beds for at least one night. In this setting, patients receive continuous monitoring and care from a multidisciplinary team, including doctors, nurses, and, depending on the case, psychologists and social workers, as part of their ongoing treatment plans.

### ***Mental Health Clinic***

A mental health clinic is an inpatient treatment facility where patients typically stay for periods ranging from two to eight weeks. Care is provided by a multidisciplinary team comprising doctors, nurses, psychiatrists, psychologists, physiotherapists, and social workers. The clinic focuses on intensive therapeutic interventions and comprehensive support tailored to patients' mental health needs during their stay.

### ***Neuropsychology Center***

A Neuropsychology Center is a primary healthcare facility focused on preventive care and the continuity of treatments for neurological conditions. It serves as the initial point of contact for nonemergency healthcare needs. This ambulatory outpatient care system provides access to neurologists, specialists, and minor treatments without the need for formal admission to the clinic. It emphasizes ongoing management and support for neurological health in an outpatient setting.

The services provided in each setting serve different population needs. In medical general hospitals, patients are primarily treated for physical illnesses, which include intensive care units, emergency departments, oncology units, and

transplant units, as well as outpatient services for diverse conditions, such as serious illness, life-threatening infections, serious injuries from accidents, major surgery, childbirth, and cosmetic plastic surgery, among others. Mental health clinics provide services to users hospitalized for psychiatric crises, with a wide range of mental health problems, frequently concomitant with the use of psychoactive substances and suicide attempts. Finally, neuropsychological centers receive users who require evaluation and treatment for cognitive, behavioral and emotional problems derived from brain functioning, whether due to traumatic injuries, cognitive impairment, or neurologic or developmental disorders.

In some countries, particularly those with more developed healthcare and educational systems, neuropsychological centers are highly specialized facilities that exclusively serve as practice scenarios for psychology interns enrolled in doctoral programs. This exclusivity is driven by the advanced nature of neuropsychological assessments and interventions, which require extensive training and expertise that is often associated with doctoral-level education (APA, 2018; APAC, 2019). However, this is not the case in less affluent countries, such as those in Latin America, where access to doctoral programs is limited. In these regions, neuropsychological centers accommodate interns from various educational levels, reflecting the need to maximize training opportunities and address workforce shortages in specialized fields.

To better understand professional performance in psychology, evaluating how competencies are developed and demonstrated in real clinical environments is essential. This study contributes to that objective by assessing the competencies of psychology interns during their training while also considering the specific demands of different hospital settings. The research was guided by two objectives: (1) to analyze competency acquisition based on the five professional competency domains established by the APA, namely, theoretical foundations, scientific thinking, values in psychological science, effective communication, and personal/professional development; and (2) to compare competency development across clinical settings, specifically general hospitals, neuropsychological clinics, and mental health hospitals.

## **METHOD**

This study employed a quantitative, observational, cross-sectional, and comparative design using inferential statistical analyses. Numerical evaluations of professional competencies were performed to examine patterns of competency development among psychology interns across different clinical training settings. The study was observational in nature because the researchers did not manipulate variables or implement experimental interventions; instead, they analyzed competency evaluations generated during naturally occurring clinical training processes. Assessments were collected during a single stage of professional formation by the final clinical practice period. Finally, a comparative design employing one-way analyses of variance (ANOVAs) was used to examine

differences in competency development across three clinical training settings (general hospitals, mental health clinics, and neuropsychological centers). This design was appropriate because it enabled a rigorous comparison of competency acquisition across settings characterized by distinct clinical demands, patient populations, and professional responsibilities that may influence interns' professional development.

## **Participants**

The study sample included a competency evaluation of 630 psychology interns from private universities in Colombia, South America, who completed their clinical placements in hospital settings from February 2022 to June 2025. In the present study, the majority of participants were female ( $n = 403$ , 63%), which is consistent with the sex distribution commonly observed in psychology programs in Colombia. The participants' ages ranged from 22 to 35 years ( $M = 27.5$  years,  $SD = 5.40$ ). With respect to clinical practice settings, 37% of the interns were in general hospitals, 38% were in mental health clinics, and 25% were in neuropsychological centers.

## **Data Collection**

Competency-based assessments were conducted by supervisors across clinical settings during the 2022–2025 period. A total of eight supervisors participated in the evaluation process. All supervisors were licensed clinical psychologists holding at least a master's degree and were formally contracted by the university to supervise and evaluate psychology interns across the participating training centers. These psychologists possessed extensive experience in the assessment, diagnosis, and treatment of mental health conditions, as well as in providing psychotherapy and counseling services within clinical settings.

To promote consistency in evaluations across supervisors and clinical contexts, all supervisors participated in two standardized training sessions (16 hours total) prior to the evaluation process. During these sessions, supervisors were trained regarding the competencies to be assessed, the evaluation criteria, and the expected progression of interns throughout the practicum experience. Specific examples and competency indicators were discussed in detail to clarify what was expected from interns at the beginning of training and the level of competency development they were expected to achieve by the end of their clinical placement. Throughout the evaluation process, supervisors formally reported evaluations to the coordinator of clinical practice, who oversaw the collection and organization of competency assessments across all training settings.

Regardless of the clinical practice setting, all the interns were required to perform the same core tasks as outlined in a progressive delegation plan. These tasks included conducting interviews, performing mental status examinations, engaging in prevention and health promotion activities, preparing written reports,

communicating diagnoses to clients, designing intervention plans, and adapting their professional approach to the specific needs of users within each training center (Decree 2376, National Education Ministry, 2010).

### **Data Analysis**

To adapt the instrument for use with the Colombian psychology intern population, the validation process was conducted in two distinct phases with separate samples. In the first phase, a pilot test was performed on a sample of 100 participants to conduct exploratory factor analysis (EFA). This ensured that the instrument's structure was appropriate for the population and established its initial psychometric properties. Adequate values were identified during this phase: the determinant of the interitem correlation matrix was .96; the Kaiser–Meyer–Olkin (KMO) test for sampling adequacy yielded a value of .87, and Bartlett's test of sphericity produced significant results ( $p < .05$ ). The five theoretically suggested factors proposed by the APA aligned with the statistical findings, with these factors accounting for 81.20% of the explained variance. The scree plot (elbow plot) confirmed that a five-factor solution was the most desirable. In the second phase, a confirmatory factor analysis (CFA) was conducted on a separate, independent sample used for hypothesis testing, ensuring that there was no overlap between the validation and testing phases. A varimax rotation was employed during factor extraction, and the rotated component matrix is presented in Table 1. This matrix shows the factor loadings of each competency on the extracted factors after rotation, highlighting the correlations between the variables and factors and clarifying the associations between the items and their respective factors.

The internal consistency of the factors was assessed using Cronbach's alpha as the reliability estimator. The reliability of the subscales was excellent, with coefficients ranging from .91 to .96.

After ensuring the instrument's appropriateness for the target population, the second step of the analysis consisted of multiple group comparisons to identify differences in competency performance across interns in the three practice settings. To examine group differences, a one-way analysis of variance (ANOVA) was conducted. Prior to performing the ANOVA, the assumption of homoscedasticity was tested using Levene's test for equality of variance. Given that the assumption of equal variances was not met, the Games–Howell test was employed for post hoc pairwise comparisons. These comparisons revealed significant group differences in competency attainment across practice settings. All analyses were performed using the IBM Statistical Package for the Social Sciences (SPSS) version 28.

### **Ethical Considerations**

This study received approval from the Ethics Committee of Universidad de la Costa on June 14, 2024, as documented in Act No. 175. Universidad de la Costa is a registered institution under the FWA-Institutional

Review Board (IRB). All participants were of legal age and provided written informed consent for the close monitoring of their performance by designated supervisors in hospital settings. The participants were informed of the legal framework governing the use of their data for research purposes. The handling of performance-related information adhered to ethical guidelines concerning data protection and anonymity. No remuneration was provided for participation in this study.

## RESULTS

The average mean (M) and standard deviation (SD) for each competency were as follows: Theoretical Knowledge, M = 4.22 (SD = .45); Scientific Logic and Critical Thinking, M = 3.43 (SD = 1.13); Values in Psychological Science, M = 3.81 (SD = 1.02); Communication and Technological Literacy, M = 3.44 (SD = 1.63); and Personal and Professional Development, M = 3.80 (SD = 1.61). For a detailed observation of the mean scores for each professional competency across clinical settings, please refer to Figure 1. The figure illustrates the distribution of each professional competency evaluated across the three clinical practice settings (general hospital, mental health clinic, and neuropsychology center). The results highlighted significant variations in competency development, particularly the lowest scores obtained by interns in the Neuropsychology Center.

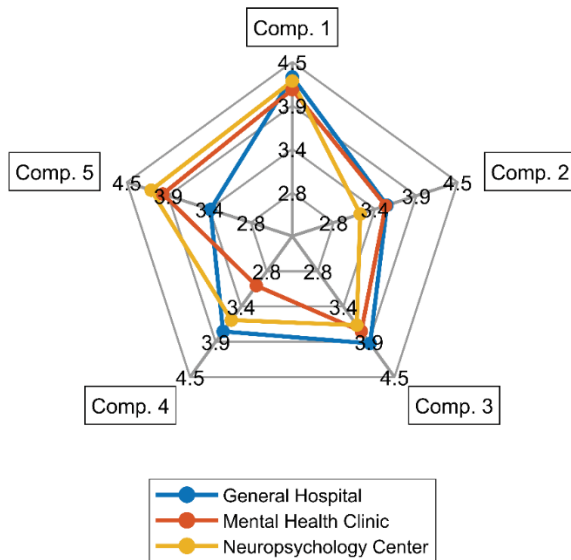


Figure 1: Distribution of professional competences across clinical settings

**Table 1: Significant Differences in Professional Competencies by Practice Setting**

Competency	Group Comparison	MD (SE)	p value	95% CI
Content Knowledge and Theoretical Application	Mental Health Clinic vs. General Hospital	.16 (.04)	.000	[.07, .26]
	General Hospital vs. Neuropsychological Center	-.11 (.05)	.046	[-.22, .00]
Scientific Inquiry and Critical Thinking	Neuropsychological Center vs. General Hospital	.55 (.17)	.003	[.16, .94]
	Neuropsychological Center vs. Mental Health Clinic	-.73 (.15)	.000	[-1.09, -.39]
Values in Psychological Science	General Hospital vs. Neuropsychological Center	.36 (.12)	.005	[.09, .64]
	General Hospital vs. Neuropsychological Center	-.81 (.16)	.000	[-1.20, -.43]
Communication, Psychological Literacy, and Technology skills	Mental Health Clinic vs. Neuropsychological Center	.55 (.17)	.003	[.16, .94]
	General Hospital vs. Mental Health Clinic	-.65 (.15)	.000	[-.99, -.31]
Personal and Professional Development	General Hospital vs. Neuropsychological Center	.73 (.15)	.000	[.39, 1.09]

*Note.* MD = mean difference; SE = standard error; CI = confidence interval. Differences were considered significant at  $p < .05$ .

Table 1 presents detailed statistics for the pair group comparisons showing the mean difference (MD) and standard error (SE) of the estimate, the p value (statistically significant) and the 95% confidence interval (the range where the

true mean difference lies with 95% confidence). The significant differences highlight the impact of clinical settings on competency development. Games–Howell post hoc analysis revealed significant differences in professional performance across the three practice settings, with statistically significant differences at  $p < .0$  or lower.

Interns at general hospitals achieved the highest scores in Competencies 1, 2, 3, and 4 but received the lowest scores in Competency 5. The scores for all these competencies differed from the overall average and from the other practice settings, as shown in Table 1. Although interns in general hospitals were rated the most favorable in Competencies 2 and 4, it is important to note that these competencies still exhibited the lowest averages across all practice scenarios. Specifically, the scores for Competency 2 ranged from  $M = 3.16$  to  $M = 3.53$ , and the scores for Competency 4 ranged from  $M = 3.03$  to  $M = 3.77$ . This pattern may indicate a generally lower level of satisfaction among supervisors regarding professional outcomes for interns in these specific competencies, regardless of the practice setting.

Interns' evaluations in Neuropsychology centers were high for Competencies 1 and 4 but did not significantly differ from those obtained by interns in General Hospitals. For Competency 1, the difference in median scores between the two groups was not significant ( $p = .485$ ). Similarly, for Competency 4, there was no significant difference between neuropsychological centers and organic clinics ( $p = .463$ ). In Neuropsychology centers, interns received the lowest median scores in Competencies 2 and 3, which were significantly different from those in other settings, as shown in Table 1. In contrast, for Competency 5, Personal and Professional Development, interns in neuropsychological centers achieved the highest scores across all groups, highlighting strengths in this area.

At mental health hospitals, interns received the lowest evaluation scores in Competencies 1 and 4. With respect to Competency 2, a similar trend of lower evaluations was observed, which is consistent with the findings in other settings. For Competencies 3 and 5, the scores were average, with no significant difference between mental health hospitals and organic clinics ( $p = .100$ ) or between mental health hospitals and neuropsychological centers ( $p = .605$ ).

## **DISCUSSION**

The present study evaluated the development of professional competencies among psychology interns during their final year of clinical practice, following the core competency framework established by the American Psychological Association (APA). In Colombia, clinical placement is mandatory and constitutes the final phase of professional preparation, making it an appropriate context for examining interns' readiness to enter the workforce. Accordingly, the first objective of this work focused on assessing overall competency development to identify which competencies appear to be more consolidated and which require further strengthening. The second objective examined differences in competency acquisition based on the type of clinical setting. From this perspective, the results

offer insights into which competencies are particularly valued and prioritized depending on the characteristics and demands of each clinical environment.

The results suggest significant variations in the acquisition of professional competencies depending on the clinical context. Interns assigned to general hospitals demonstrated the highest performance across most competencies, including theoretical foundations, scientific reasoning, and communication. This may be attributed to the multidisciplinary nature of hospital practice, where psychology students work collaboratively with medical staff to address the emotional and behavioral needs of patients dealing with physical health conditions. These settings expose interns to diverse case types (e.g., chronic illness, pediatric conditions, preventive care), requiring adaptable skillsets and an integrative approach. The high ratings reported by supervisors may indicate that interns possess solid foundational knowledge and the ability to apply psychological reasoning in a broader medical framework, which is consistent with the literature emphasizing the growing demand for psychological support in somatic healthcare settings (Nicholson et al., 2020).

In contrast, interns practicing in neuropsychological centers obtained the lowest evaluations in most competencies, which were statistically significant for scientific thinking and critical reasoning (Competency 2) and values and interpersonal responsiveness (Competency 3). These centers typically serve individuals with neurodevelopmental disorders and elderly people, requiring specialized diagnostic precision, advanced intervention planning, and a refined understanding of clinical neuropsychology. The lower scores suggest that interns may experience difficulties interpreting and integrating scientific evidence into individualized rehabilitation programs. Supervisors reported challenges in interns for proposing differentiated intervention plans, constructing formal psychological histories, and conveying information with appropriate professional language. Furthermore, slightly lower levels of empathy and sociocultural sensitivity were observed, which may reflect some difficulties in proactively responding to the needs of neurodiverse or older adult populations.

The lower evaluations observed among interns in neuropsychological centers appear to follow a logical pattern when considering the highly specialized nature of these settings. These findings align with international evidence suggesting that specialized clinical settings should ideally be reserved for professionals with advanced graduate-level training (e.g., master's or doctoral degrees), as stated in high-income countries' health regulations (BPS, 2022; CPA, 2011; EFPA, 2015; INS, 2017). Neuropsychology requires refined diagnostic reasoning, familiarity with complex cognitive profiles, and the ability to integrate scientific evidence into individualized rehabilitation plans, which are competencies that typically develop through advanced, graduate-level training and extended supervised practice. Consequently, it is not surprising that undergraduate interns, even well-trained ones, may be perceived as less prepared to respond to the demands of this discipline.

The challenges reported by supervisors, including difficulties in constructing formal neuropsychological case histories, limited precision in clinical reasoning, and inconsistent use of professional terminology, may suggest that some

expectations within these centers exceed what is realistically attainable at the undergraduate training level. This raises an important point for reflection regarding the alignment between practicum demands and the developmental stage of psychology interns. Although current Colombian regulations allow psychologists to practice independently upon completion of their bachelor's degree and internship year, the results of this study suggest that neuropsychological work may require a deeper level of specialization than what the existing training structure can provide. Therefore, rather than viewing the interns' lower scores as a deficit, these findings highlight the inherent mismatch between the complexity of neuropsychological services and the level of professional readiness typically expected from recent graduates. This mismatch underscores the need to reconsider whether highly specialized clinical placements are appropriate training sites for undergraduate interns or whether such contexts should be reserved for individuals with more advanced preparation.

Finally, in mental health hospitals, interns received statistically lower evaluations in Competency 1 (Theoretical Foundations) and Competency 4 (Communication, Psychological Literacy, and Technology Skills), while average scores were obtained for the remaining competencies. This pattern suggests that although interns demonstrate emerging proficiency, their professional skill development is still evolving. Mental health hospitals expose trainees to acute and chronic psychopathology, crisis stabilization, and complex diagnostic presentations, contexts that often require a deeper grasp of clinical theory. Furthermore, the relatively poor communication skills observed reflect the difficulties experienced by interns in conveying information with psychological literacy and constructing formal clinical histories or reports for documenting interventions.

This interpretation aligns with contemporary developmental models of competence acquisition, which highlight that mastery of clinical reasoning and psychological interventions emerges gradually through sustained, supervised exposure to diverse clinical situations (Fouad et al., 2022). Evidence from professional training research also indicates that foundational skills such as case formulation, diagnostic decision-making, and therapeutic communication strengthen progressively as trainees move from novice to more advanced stages of practice (Bernard & Goodyear, 2019). Additionally, high-intensity psychiatric environments, while rich learning contexts, pose challenges among interns who are still developing confidence and clinical judgment (Skovholt & Trotter-Mathison, 2016).

Taken together, the lower evaluations of these two competencies likely reflect the normative developmental trajectory of clinical skill acquisition rather than a deficiency in training. These findings underscore the importance of structured supervision, graduated responsibility, and scaffolded learning experiences in mental health hospital settings to ensure that interns can safely and progressively expand their professional competence.

### **Strengthening competences: Evidence-based reasoning and interpersonal values**

Across settings, Competencies 2 and 3 consistently received the lowest evaluations. On the one hand, scientific reasoning across clinical settings points to a broader developmental gap in the integration of scientific knowledge into real-time clinical decision-making. Regardless of context, interns showed limited proficiency in articulating hypothesis-driven assessments, generating differential diagnoses, and selecting interventions grounded in empirical evidence. This pattern suggests that the challenge is not merely tied to specialized environments such as neuropsychology clinics but reflects a more general difficulty in translating theoretical and methodological training into applied reasoning during client encounters. Previous research has shown that scientific reasoning and evidence-based thinking are strengthened when students participate in inquiry-oriented and active learning experiences that require them to formulate questions, evaluate evidence, and apply research knowledge to authentic problems (Arifin et al., 2025). Student-centered pedagogies, such as collaborative projects and inquiry-based activities, may therefore facilitate the development of these competencies by promoting critical analysis and applied scientific thinking.

Scientific reasoning is a higher-order cognitive skill that requires the ability to weigh competing explanations, evaluate the relevance of the empirical literature, and adapt evidence-based frameworks to the particularities of individual cases. Research in professional psychology has repeatedly shown that these competencies emerge gradually and depend on repeated practice opportunities, guided feedback, and clear modeling from supervisors (Fouad et al., 2022; Bernard & Goodyear, 2019). At the undergraduate level, however, students are often heavily exposed to research design and statistics but have fewer opportunities to apply analytical thinking in authentic clinical contexts. Opportunities to engage in simulated clinical scenarios, case study discussions, and applied decision-making exercises within coursework may therefore be essential for strengthening these competencies before professional practice. This gap may exist between theoretical formation and real-world practice during professional studies, partly explaining why interns often struggle to connect assessment findings with theoretically coherent case formulations or to justify treatment decisions on the basis of scientific evidence.

Similarly, lower performance in ethical standards, cultural responsiveness, and interpersonal values appeared low across settings. It is striking that supervisors rate interns particularly low in their capacity to engage with communities, participate in social and outreach activities, and demonstrate sensitivity, empathy, and respect for cultural diversity in their clinical encounters. This limitation does not necessarily reflect inadequate academic preparation, as these qualities are not fully developed through coursework alone. Rather, the difficulty appears to lie in expressing genuine empathic engagement, warmth, and a community-oriented attitude during practice. Such interpersonal dispositions are not easily conveyed through formal instruction or supervisory modeling; instead, they tend to emerge from personal maturity, lived experience, and sustained interaction with diverse populations (Shelley et al., 2025).

Competencies related to cultural responsiveness and interpersonal values present unique challenges and reflect the expectations of the population seeking mental health services, who often rely on practitioners' affective presence, authenticity, and genuine interest as part of the therapeutic experience. In this regard, the findings resonate with the broader debate about the extent to which universities effectively align their curricula with the competencies demanded by the workforce (Rakowska & De Juana-Espinosa, 2021) and raise important questions about how well academic training prepares students for the relational, community-oriented aspects of real-world psychological practice (Kuittinen & Rätty, 2015; Ionescu & Stan, 2019). From this perspective, recent educational research highlights the importance of exposing students to collaborative and socially demanding learning environments that require them to manage emotions, navigate interpersonal differences, and respond adaptively to diverse perspectives and cultural contexts (MacCann et al., 2020).

### **Implications for Professional Practice, Training, and Policy**

In summary, the development of professional competencies among psychology interns is shaped in meaningful ways by the clinical environments in which they train. General hospitals seem to provide more integrative learning experience, allowing interns to apply psychological principles across diverse medical and psychosocial needs. In contrast, more specialized settings, particularly mental health clinics and neuropsychological centers, place greater demands on scientific reasoning, interpersonal sensitivity, and advanced clinical judgment. These contexts require competencies that typically mature over time and often exceed what can be reasonably expected at the undergraduate level. The consistently lower performance in Competencies 2, 3, and 4 underscores the need to reinforce analytic, relational, and communication skills when preparing interns to work with populations experiencing complex cognitive, emotional, and adaptive challenges.

This study contributes to the limited empirical literature on how specific clinical contexts shape competency development in mental health training (Fouad et al., 2022), addressing the gap highlighted by Gonzalves et al. (2020) regarding the lack of context-sensitive evidence. The comparative evaluation across three distinct service settings indicates that the scientific and theoretical preparation provided by psychology faculties equips interns to respond effectively to the general population's mental health needs. Moreover, the positive association between domain-specific competencies (e.g., theory, application, scientific reasoning) and broader professional qualities, such as communication, technological fluency, empathy, and sociocultural awareness, suggests that foundational training serves as an important platform for more complex skill acquisition (Weisenmuller & Luzier, 2023).

Importantly, the findings reveal that each clinical setting presents unique learning conditions, challenges, and expectations. This finding reinforces the idea that competency development cannot be understood as a uniform process; rather, it is shaped by the characteristics, demands, and vulnerabilities of the populations

served. Despite this, the literature has historically devoted limited attention to how practice context influences professional readiness among psychologists. The present study offers evidence that clinical environments do not merely host training—they actively shape the pace, depth, and nature of competency acquisition.

Taken together, these results highlight the importance of designing training pathways that are sensitive to contextual demands and grounded in competency-based education. Future research should continue to differentiate competencies by work setting, recognizing that the health services landscape encompasses a variety of roles, service needs, and professional expectations. Strengthening this line of inquiry will be essential for ensuring that psychology programs prepare graduates who are not only clinically competent but also responsive, adaptive, and capable of addressing the diverse and evolving mental health needs of their communities.

The findings of the present study suggest the need for psychology training programs to strengthen the integration between academic preparation and applied clinical reasoning through competency-based educational strategies. Approaches such as structured case formulation exercises, supervised reflective practice, competency-based feedback, and the intentional integration of scientific evidence into practicum activities may help students develop stronger analytical and professional decision-making skills (Shelley et al., 2025).

Perhaps the most salient finding was the consistently lower performance observed in scientific inquiry and its application to real-world assessment scenarios. Interns appeared to experience considerable difficulty in linking client assessment data to theoretically coherent case formulations and justifying treatment decisions on scientific grounds. In this regard, evidence from higher education research suggests that scientific thinking skills are more effectively developed when universities intentionally promote inquiry-based learning environments, collaborative problem-solving, and access to research-oriented resources that support the practical application of analytical reasoning (Arifin et al., 2025). Such approaches may help bridge the gap between theoretical training and evidence-based professional practice.

The similarly consistent lower performance observed in communication with clients across training settings suggests that psychology programs face a dual challenge: preparing students not only to apply rigorous evidence-based reasoning but also to respond effectively and sensitively to the cultural and interpersonal complexities of contemporary mental health practice. In increasingly globalized and multicultural societies, psychologists are expected to interact with individuals from diverse cultural, linguistic, and social backgrounds while maintaining ethical, reflective, and scientifically grounded professional practices (Adeghe et al., 2024). From a global perspective, these findings reinforce the importance of competency-based training models guided by internationally recognized standards that promote intercultural responsiveness, critical thinking, emotional regulation, and adaptive professional behavior.

Likewise, the competencies associated with self-regulation and professional development are increasingly valued across international educational and

professional contexts because they facilitate collaboration, ethical sensitivity, and effective engagement with diverse populations. In this context, recent educational research highlights the importance of strengthening curricula and pedagogical strategies that foster emotional regulation and interpersonal competencies as part of students' preparation for the workforce (MacCann et al., 2020). Learning experiences such as group activities, peer assessment, and reflective practice may therefore contribute to the development of relational, self-regulatory, and culturally responsive skills among future professionals.

Collectively, these results suggest that psychology education should move beyond the development of technical clinical skills alone and place greater emphasis on the intercultural and globally transferable competencies required in contemporary professional practice. In this sense, competency-based frameworks grounded in international standards may contribute to preparing psychology graduates who are better equipped to navigate culturally diverse, technologically evolving, and globally interconnected mental health environments.

### **Study limitations**

This study had several limitations related to the instrument, the evaluators, and the type of analysis conducted. With respect to the instrument, although the evaluations were based on the APA guidelines for professional competencies in psychology, the five competency criteria may not fully capture the complexity of the behaviors required in clinical practice settings or reflect the diverse perspectives regarding what constitutes essential competencies for psychology interns.

With respect to the evaluators, the assessments were conducted solely from the perspective of internship supervisors, without incorporating the personal perspectives and lived learning experiences of the interns themselves. This limitation restricted the ability of the study to provide a more comprehensive understanding of the training experience across participants.

Another important limitation of the present study is that competency evaluations were conducted by eight different supervisors across clinical training settings. Although all the supervisors received standardized training regarding the evaluation criteria and competency expectations, the potential influence of evaluator-related variability on competency ratings was not directly examined in the statistical analyses. Nevertheless, because supervisors evaluated interns across the three clinical contexts rather than being restricted to a single setting, it is less likely that evaluator-related differences systematically influenced the comparative findings.

Future studies could strengthen methodological rigor by incorporating additional analytic approaches to control for external sources of variability, including evaluator effects, interrater reliability analyses, or multilevel modeling procedures that account for supervisor-related influences on competency assessments.

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### **Data availability**

*The dataset generated from the evaluations conducted by clinical practice supervisors is available in the Open Science Framework (OSF) repository. In addition to the dataset, the repository includes the Ethics Approval Certificate confirming ethical approval for the evaluation of student competencies. Open Science Framework (OSF) repository:*

*[https://osf.io/ufdk8/?view\\_only=193648da2cea487a936d150e365a5254](https://osf.io/ufdk8/?view_only=193648da2cea487a936d150e365a5254)*

### **Author contribution statement**

Dayana Restrepo: Conceptualization; Formal analysis; original draft. Martha Benítez-Barraza: Conceptualization; Methodology. Jharitza Pullchz: Data collection and cleaning. All the authors contributed to the manuscript, reviewed the results, and approved the final version of the manuscript.

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