

Recruitment of nursing students in the context of the COVID-19 pandemic in Mexico. A rapid response to the health emergency

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Abstract *The Mexican government implemented a strategy to increase nursing staff in response to COVID-19, including the early graduation of university students, to incorporate them into the care frontline. This exploratory qualitative study aimed to analyze nursing students' experiences recruited by health institutions to care for COVID patients. It included 12 participants who received and accepted job proposals in health institutions for patient care during their internship. Data were collected through semi-structured interviews with prior informed consent. The experiences of the participants were integrated into three themes: the students took advantage of the modified social service regulations to be recruited by an institution and integrate into COVID-19 care; the recruitment and remuneration conditions were plagued with anomalies and important informalities in the process; and the preparation for care was very incipient, so learning occurred in the very care process. The pandemic allowed the participants to enter the nursing labor market in extraordinary and substandard conditions.*

Key words *Labor market, nursing students, COVID-19, Mexico*

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Introduction

The COVID-19 pandemic has exposed health systems' weaknesses and challenges, particularly in addressing care for emerging diseases. Countries developed several political, economic, and health strategies¹ to address it. A speedy response allowed some countries to flatten the curve of infections and deaths quickly, based upon effective response¹.

Other countries did not achieve this purpose, and the number of infections hiked exponentially, as in Mexico². Infections and deaths exceeded expectations. The World Health Organization dashboard on coronaviruses ranked Mexico 18th in cases of infections and fifth in number of deaths^{3,4}. Furthermore, the National Institute of Statistics and Geography (INEGI) estimated excess mortality potentially related to COVID-19 of 758,826⁵ for 2022.

Several reasons explain this behavior. Among them is the erratic posture of the Mexican government's policy that failed to contain the virus by not considering the WHO recommendations, particularly regarding implementing virus detection tests in the population and using face masks. The government directed its expectations to the arrival of imported vaccines, which were accessible in the country per the availability of the global market². In the end, 12,248,795,623 doses had been administered in the country by June 2022.

Another aspect that generated enormous concern since the onset of the pandemic was the lack of nursing human resources for patient care, their inequitable distribution, and the risk they could run by being part of the first line of care. The shortage of nurses in Mexico is expressed by the OECD, noting that the country has an estimated availability of 2.9 nurses per 1,000 inhabitants, a figure that includes all training levels, against the mean number of nurses in the OECD as a whole, which is 8.8⁶.

The Mexican government implemented several strategies to prepare health units for the care of COVID-19 patients: 1) establishing an agreement to offer exemptions from participation to health personnel with risk factors for complications from COVID-19 infection⁷, which reduced approximately 10% of the personnel available for care; 2) deploying logistics for equipping public care units and the creation of other mixed, temporary units (with public-private collaboration); 3) establishing an agreement that allowed recruiting new health staff to respond to the growing demand for this resource⁸.

Health institutions have differentiated recruiting arrangements for their workers (not students), and social security historically offered the most significant labor protection. In recent years, public and private institutions have offered many jobs in substandard conditions⁹. The students were recruited under temporary contracts, like the contracts offered by private institutions. The existing regulations for entering the labor market¹⁰ were modified to comply with hiring students, which favored public and private health institutions that recruited nursing students in the last year of their training. We should highlight that the health units that emerged from an agreement between the government and the private initiative (called mixed units) played an essential part in containing the pandemic¹¹.

The last year of training for university students, including doctors and nurses, is known as social service. Students are typically assigned to different health units to submit to clinical practices supervised by personnel recruited by the receiving institutions. Because the universities were unwilling to have their students assigned to the COVID-19 units due to the inherent risk of infection, illness, and death, the health authorities mandated their early release from the social service, which implied suspending the year of educational practice. This situation led students to enter the labor market directly, and massive recruitment of recent graduates¹² occurred after their release.

We should emphasize that students consider the social service year a critical moment to develop clinical competencies they wish to consolidate under the supervision of a qualified professional. A university degree is required, and social service is an opportunity to identify strengths and preferences to face the job market with less uncertainty. Moreover, under normal conditions, before entering the labor market, individuals must apply for a practice license (professional certificate) at the Ministry of Public Education. Regulations establish that one can only work formally with a professional license, after obtaining the university degree.

An important aspect is the vulnerable condition of recent graduates who entered the labor market prematurely. The following conflicting dichotomies stand out: a) little or no work experience vs. urgency to enter a labor market¹³; b) risk of infection vs. participating in the first line of response to the health crisis¹⁴; c) possibility of obtaining an income vs. risk of death^{14,15}. Despite these circumstances, many students in the

internship year decided to accelerate the process of social service to be employed in health institutions under temporary contracts. This study analyzed the work experiences of nursing interns hired by health institutions to care for COVID patients.

Methods

An exploratory qualitative study¹⁶ was conducted to delve into the study situation from the experiences of the informants. Twelve interns from public schools (National Autonomous University of Mexico and National Polytechnic Institute) who were in their year of social service participated. The participants were purposely selected through an “ideal-typical” sampling¹⁷, which, for this study, corresponded to nursing students of both sexes who received job offers for providing care to COVID patients and decided to accelerate their release from social service and agreed to work in public, private, or mixed health institutions during the 2019-2020 internship year. Four participants were recruited in public institutions, four in private institutions, and four in mixed institutions. The characteristics of the contracting institutions were:

1. Public institution with High-Specialty services (18 medical specialties). This unit was transformed into a “hybrid” hospital during the pandemic. It allocated 68 beds for the care of the population with COVID-19 diagnosis, distributed into Internal Medicine (32), Intermediate Therapy (8), Intensive Care (14), and Severe Acute Respiratory Infections (SARI) services (14).

2. Private institution with highly specialized services. It was declared a “hybrid” hospital during the pandemic, assigning 46 census beds in the Intensive Care service and 95 in the Hospitalization service for COVID patients with the ability to pay.

3. Mixed institution. The temporary unit was created during the pandemic with the participation of the government and private companies, with exclusive care to COVID patients who could have social security. The project had 607 census beds, 54 in the Intensive Care, 98 in the Intermediate Care, and 455 in Hospitalization services. This unit served 9,088 people during the 413 operational days.

The information was collected during July and August 2020 through semi-structured interviews conducted via Zoom, at times proposed

by the participants and from their place of residence due to their safety and comfort. The Zoom platform facilitated access to the participants in their confinement conditions. A flexible question guide built by the researchers from the reflection of the event to be studied was employed for collecting information. This tool included information on the recruitment and social service release processes, remuneration conditions, and experiences and learning from their recruitment.

All the respondents were informed of the details of the investigation. The consent was sent to them in digital format, and they were asked to sign and forward it to the research team before the interviews. The information collected was audio-recorded, transcribed verbatim, and analyzed based on the Strauss and Corbin¹⁸ proposal. The process consisted of (a) reading thoroughly the transcripts, (b) generating labels from the identification of similarities, (c) integrating similarities into categories and subcategories, and (d) describing the event reported by the participants. Only the researchers had access to the files, which were protected and labeled to identify the information contained without the participant's identity.

Once the results were integrated, three researchers reviewed and contrasted the information to confirm what was expressed by the participants and reduce possible biases. Due to the cessation of regular activities, the research protocol still needed to be submitted to the institutional ethics committee. However, the research was part of the titling process of one of the researchers, so it was approved by a review committee that evaluated the document as a whole (methodological and ethical aspects). The autonomy of the participants was respected at all times. Their identity was protected, and the data collected were safeguarded.

Results

The information collected was integrated into three themes: 1) social service release processes, 2) contracting and remuneration conditions, and 3) work experiences (see Chart 1). Chart 2 briefly describes the characteristics of the participants.

Social service release process

One aspect to highlight is that the participants were in their training period when they received the job offer and decided to accept it. The private

and mixed institutions managed the early release from social service to the students hired to care for COVID patients, as had been agreed with the health authorities. However, the informants who worked in public institutions stated that the letter of release from social service was delivered to them on the same date as the other interns who continued to provide social services but were not assigned to care for COVID patients. This letter proved that the intern complied with the requirement to provide social service.

FV.PU3: *It would be like an early release that went hand in hand with my peers who didn't go to work. The only benefit we were going to get is that they were going to pay us, and they were not [...].*

BN.MX1: *[It refers to the delivery of his letter of termination of social service] The truth is that it was swift [...], we only went to the unit where I was doing social service, and they gave us two sheets [...], one addressed to my school and the other to the Ministry of Health [...].*

AG.PR2: *[...] if we went to work in the COVID area, they would automatically give us the release letter [...].*

1.1 Regulatory adjustment to allow the recruitment of personnel without title

Students were recruited under an exception measure to solve the shortage of personnel in the health units. For this purpose, the recruitment guidelines established in the national regulations were relaxed because these students were employed without a title and professional card. On the other hand, the contracts were offered under specific conditions for short periods (1-3 months), without a copy for the employee, and some without legal benefits. These conditions violated workers' labor rights and opened a niche of precariousness, which, in this case, received support from the State, the governing body and guarantor of labor rights.

DO.PU1: *[referring to own contract] there must be a clause, we are many workers working without a title and professional card [...].*

FV.PU3: *The Education Head was directly involved with human resources and nursing supervision so that these slots were assigned to us despite not having a title and card [...].*

JA.MX2: *[...] No, they didn't give you a copy of the contract, and you couldn't even snap a picture; it was only signing the contract. The first contracts were renewed monthly, from then on, every three months. I think that the last two have been monthly [...].*

Contracting and remuneration conditions

Public and private institutions directly informed their interns about employment opportunities. Regarding the mixed institution, calls were issued on different Internet pages¹⁹⁻²¹. Internships' personal and academic documents were requested to register during the contracting process. They were then granted 1-3 months temporary contracts with the possibility of renewal.

SO.PR1: *As interns in the hospital, they turned to us after a month and told us that we had reached an agreement where we could go to work [...].*

BN.MX1: *I attended the call i saw on the internet on a blog we have in the faculty [...].*

Hiring process

The working conditions were different among the receiving institutions. The public institution gave the interns a category of the professional nursing staff and benefits such as Social Security, severance package, rest days, and life insurance. The private institution generated a new category for temporary workers called "nursing assistant". Benefits similar to public institutions were granted, besides transportation and food allowances. The interns hired by the mixed institution did not enjoy any benefits. The alternative for these

Chart 1. Integration of findings in categories and subcategories.

Themes	Sub-themes
1. Social service release processes	1.1 Regulatory adjustment to allow the recruitment of personnel without title
2. Recruitment conditions and remuneration	2.1 Recruitment process 2.2 Labor context
3. Work experiences	3.1 Motivation and personal challenges 3.2 Perception and institutional attention to the risk of infection.

Source: Authors.

Chart 2. Characteristics of the study participants.

Participants	Description of the participants					
	Characteristics					
	Sex	Age	Working institution type	University of origin	Contract start date	Work field
DO.PU1	Male	25 years	Public	UNAM – FES Iztacala*	April 2020	COVID Internal Medicine
BT.PU2	Female	23 years	Public	UNAM – FENO**	April 2020	COVID Intensive Therapy
FV.PU3	Female	24 years	Public	UNAM – FES Zaragoza***	April 2020	COVID Intensive Therapy
MG.PU4	Female	24 years	Public	UNAM – FES Zaragoza	April 2020	COVID Intermediate Therapy
SO.PR1	Male	23 years	Private	UNAM – FES Iztacala	April 2020	COVID Internal Medicine
AG.PR2	Female	23 years	Private	UNAM – FES Iztacala	April 2020	COVID Intensive Therapy
CR.PR3	Male	23 years	Private	UNAM – FES Iztacala	April 2020	COVID Internal Medicine
KA.PR4	Female	26 years	Private	UNAM – FES Iztacala	April 2020	COVID Intensive Therapy
BN.MX1	Female	26 years	Mixed	UNAM – FES Zaragoza	April 2020	COVID Intensive Therapy
JA.MX2	Male	24 years	Mixed	IPN – ESEO****	April 2020	COVID Intensive Therapy
JJ.MX3	Male	24 years	Mixed	UNAM – FENO	April 2020	COVID Intensive Therapy
AS.MX4	Female	23 years	Mixed	UNAM – FES Iztacala	June 2020	COVID Intensive Therapy

Source: Authors.

institutions was an integrated salary (including ordinary salary, an extra amount that compensated for the value corresponding to legal social benefits). This alternative represented a competitive salary for some interns.

Extra support for all the interns recruited in the COVID area (regardless of their place of residence) was free lodging to have a space to spend the night and avoid their return to their usual residence places, thus reducing the risk of transmitting a possible infection to their family members.

The working hours in the public and mixed institutions were similar, approximately 40 weekly hours with two rest days. Personnel was distributed over three shifts: morning, evening, and night. On the other hand, the private institution's working hours were approximately 48 weekly hours with one rest day. Staff were distributed over morning and evening shifts. Salaries ranged

from \$12,000 to \$25,000 MNX/month (equivalent to USD 300 and 600, respectively).

DO.PU1: *The contract clause stipulates work five days a week, two mandatory rest days according to the needs of the service. Work is scheduled from 14:00 to 21:30 hrs. [...] Some interns work in the three shifts: morning, evening, and overnight (night time).*

JA.MX2: *We have no benefits within our recruitment other than our fees [...] The salary is equivalent to a specialist's salary in specific institutions. Thus, they pay us above the normal salary in any other institution.*

SO.PR2: *They offered us food stamps (to purchase food) of around \$ 2,000-\$ 2,500 pesos per month. They offered us a dining area and spaces for therapy with the psychologist [...] the salary was approximately \$ 8,500 pesos besides food stamps, including free meals and life insurance.*

Work context

In the receiving institutions, the interns rotated in the services of intensive therapy, intermediate therapy, urgent care, shock, and hospitalization for COVID-19. The interns recruited in the public institution assumed total responsibility for the care of the patients. The mixed institution delegated the same care responsibility to its workers, assigning administrative activities such as “area leaders” or “service leaders”. On the other hand, the private institution established tasks limited to its personnel by contingency, supervised at all times by a clinical guardian with a professional degree and card.

Regarding training, the public institution should have trained the contracted students before joining their work area. The private and mixed institutions provided previous training on wearing and removing workers’ protective equipment, correct use of biomedical equipment, unit protocols, hand hygiene, and patient safety. Subsequently, staff training was continued based on the identified opportunity areas.

JA.MX2: *When we joined, they gave training on protective equipment, management of internal hospital agreements, Biological-Infectious Hazardous Waste, management of critical patients, and mechanical ventilation [...].*

MG.PU4: *When we joined [the public hospital], they told us they would train us for a week, but we never received any training.*

CP.PR3: *Yes, when we joined, the hospital assigned to us a category that does not exist as such in any other hospital [...] The responsibility was shared, we had a tutor, and they put us in charge of that tutor during the shift.*

The respondents reported having interacted well with the multidisciplinary team within their work area, highlighting the harmony, professionalism, and empathy of the more experienced nursing staff. On the other hand, they secured sufficient supplies for patient care and personal protection. They were provided with eye protection, barrier equipment, and airway protection equipment.

DO.PU1: *I consider that [the relationship among the work team] is excellent, [...]it has motivated us to take care of each other because we all detect any area of opportunity. [...] Including the basic services personnel, the stretcher-bearers: we have an enjoyable atmosphere here.*

Work experiences

The contracted personnel were assigned to highly complex services, which implied having complex knowledge and high-level clinical responses to implement the assigned tasks adequately. The respondents mentioned that they needed to prepare at the onset of their contract due to the demands of caring for critical patients. This situation generated uncertainty, insecurity, fear, and anxiety during the first working days. For some, facing this extraordinary situation became a professional and personal challenge. In contrast, it became a motivation for others to improve themselves by having the opportunity to join the nursing labor market and gain care experience.

JA.MX2: *Prepared, well, no. You are never prepared to know what awaits you in a critical area because I have known slightly different critical areas in my previous experience. So, we are never sufficiently prepared.*

AS.MX4: *[...] more than 90% of everything I do right now I learned in therapy [...] I used my ability and tried to continue learning [...] Now I can perform procedures that I never would have imagined.*

Motivations and personal challenges

The respondents refer that the learning acquired during the pandemic favored their professional development by honing practical skills and sharpening clinical judgment. Knowledge acquired, economic income, familiarity with the protocols of the receiving institution, work experience, early release from social service, and the opportunity to keep their jobs later stand out as some motivations for accepting this job opportunity.

AS.MX4: *I feel satisfied because I know I am prepared to face it. It taught me a lot from the onset of the pandemic to date. I played a great role despite being an intern [...] I was up to the level of facing this whole situation [...] I had a great experience.*

DO.PU1: *Besides the possibility of staying there to continue working later [...] I really see it.*

On the other hand, the complex responsibility that fell on the interns was an essential factor in reflecting on the status of the occupation, the State’s role, the challenges for future health emergencies, and the permanence of the jobs acquired.

FV.PU3: *First of all, as a nurse, I began to love and respect my profession even more for all the work that nursing does [...] on a personal level,*

it leaves me thinking that you can do more things than you think, that your fears cannot hold you back. In that aspect, surpassing myself is something that has filled me.

CP.PR3: *Mexico is not prepared to deal with a health emergency of this magnitude [...] I think that health personnel are highly undervalued in this country.*

Self-perception and institutional attention to the risk of infection

Most informants considered the risk of latent infection due to proximity to the infectious agent. Some reported having risk factors that made them vulnerable to infection. However, particular reference was made to the fear of infecting their relatives. Some testimonies related the infection of personnel by omitting specific steps while donning and removing personal protective equipment.

DO.PU1: *I indeed consider that I have a greater risk due to my body mass index and because I have a history of smoking [...] I think that the main fear is [infecting] our family.*

MG.PU4: *Some peers got infected, and I cannot tell you that maybe it was because of the bad removal. However, we concluded that these people no longer used the mask but bought some super huge glasses [...] which cover mouths, and it was the only thing they entered with.*

The contracting institutions adopted care protocols in case of suspected infection, where they had to attend the epidemiology service for medical review, carry out the corresponding laboratory and diagnostic studies, and, if necessary, were granted a leave of absence upon detecting symptoms. The private and mixed institutions ran random control tests to detect asymptomatic personnel infected with SARS-CoV-2.

AS.MX4: *If you start with mild symptoms, you can go to the medical service within the unit. A medical history is made, and the test is taken [...] they sent you home, and you only could return to work if the test were negative.*

Discussion

Many countries had to implement strategies to increase the availability of personnel to support tasks related to COVID-19 care during the pandemic. Notably, high-income and lower-middle-income countries are among these nations, which is essential because those countries that best managed to contain the pandemic had bet-

ter organized and articulated health systems between the components of their structure and functions^{22,23}.

Several nations in the region also enabled nursing students to be placed in areas of care for COVID-19 patients in first-level care units and hospitals. Some works derived from these experiences confirm our results in different dimensions. The first one is the substandard work conditions of the nursing staff during that period. Estrada-Iguíniz et al. (2022) affirmed that working hours were lengthy, exhausting, and stressful in Mexico²⁴. Saltos-Llerena (2022) also reported working hours that exceeded the contractual times in Latin American countries²⁵. Moreover, Gonzales (2020) mentioned lack of payment and non-contractual employment relationships for nurses²⁶ in Peru.

Besides precarious working conditions, the literature reports the scarcity or non-existence of protective equipment and the lack of resources for COVID-19 care. In Brazil, Subirón-Valera (2022) pointed out that the behavior of nursing students entering clinical practices is generally one of trust and safety, but that higher psychological distress and fear levels were observed²⁷ during COVID-19. Ramaccioti (2022) also reported temporary hiring, the lack of protective equipment, and scarcity of resources²⁸ in Argentina.

This set of documents shows a reality in Latin America characterized by the structural shortage of nurses and the set of measures that governments took to face the emergency. Unlike Latin America, in England²⁹, a nation having a unified health system, the search for new personnel included undergraduate students who were granted provisional authorization to carry out tasks for which they were incorporated. However, their duties did not include being in charge of care but serving as support staff.

The experiences indicated by the sample of students allow us to understand that incorporating nursing interns primarily benefited the government and health institutions. Benefits for the population and health staff stood in the background. The fast-track authorization implemented for the release from the social service, namely, the cancellation of the commitment of the students to fulfill their institutional internship period as part of their university educational process, paved the way for their recruitment to participate directly in the care of COVID-19 patients in general and highly specialized hospitals in the country. This was decided without the opinion

of a representative organization of nurses since those existing in Mexico do not fulfill this function. This fact is important because the recruitment was performed based on the job offers and the individual decision of students to be included, without minimum standards of competencies for COVID-19 care, which is the responsibility of nursing organizations in other countries³⁰.

We should also underscore that the informants reported relevant differences between the institutions they were hired for. In general, in all the institutions, recruitment was substandard, with no broad guarantees of labor rights. Thus, those a public institution hired did so as temporary staff with specific periods ranging from one to three months. Salaries were competitive in the Mexican context and also enjoyed extra benefits during the recruitment period. However, while students expected to continue working in the institutions, this turned out unlikely since they did not have a degree or a practice license when the pandemic reduced its effect in 2022. Moreover, the mixed institution recently disappeared since it was only created for COVID-19 care, leaving the contracted personnel in an undefined labor status situation.

One of the aspects included in the study is the poor labor conditions with which the informants were hired. Nursing job insecurity in Mexico is a structural event and has increased severely in the last decade. A significant deterioration in labor conditions has been observed in terms of labor ties that are increasingly flexible, with a lack of labor benefits defined by international and national labor agreements, fragmented job positions, and the difficulty of building a salary income that can satisfy basic needs⁹. The event initially focused more on the private demand of the labor market and currently has comparable dimensions in the public sector.

The event exposed by the study shows that nurses were recruited predominantly under substandard conditions, which contributes to the secular conditions indicated in the former paragraph. We can understand that, in particular situations, markets modify their regulatory parameters to incorporate individuals who still need to meet all the requirements to increase the volume of available workers. These changes are usually temporary but may have medium- and long-term implications. Most countries were forced to implement strategies to increase the number of available workers during the COVID-19 epidemic, depending on the financial capacities and worker availability³⁰ of each country. The short-

age of health personnel is a chronic situation in low- and middle-income countries, and the WHO insistently raises the need for a definitive response to this problem. The COVID-19 pandemic showed that these countries do not have adequate health personnel levels, and the strategies used to respond to the temporary increase in demand may impact the working conditions in which health workers will be recruited in the future³¹.

One more element of analysis is that, on the one hand, the population was not yet vaccinated, and the cases that required hospitalization exceeded the system's capacities during the pandemic in 2020. On the other hand, these cases were mostly of older people with associated risk factors (e.g., diabetes and hypertension)³². Accepting the contracts for caring for COVID-19 patients in hospitals is based on these two elements' role in the students' perceived risk. From his perspective, the probability of developing severe symptoms from the infection was very low due to their youth. However, their concern was focused on infecting their relatives at home.

The reported experience opens important avenues for future discussion on how a country like Mexico must face emergencies such as COVID-19. International organizations' estimated shortage of nurses in Mexico shows that this situation is still an ongoing challenge. We should understand that these figures reflect the crude availability of nurses, which should be considered in light of large contingents of graduate nurses (30%)³³ in Mexico not working in the health field or unemployed. This excluded labor force could be integrated by developing a policy for updating knowledge and opening job positions to address shortages. The issue is that positions in public institutions (the primary employer of nurses in Mexico) have not expanded in recent years but have deteriorated. Incorporating undergraduate students into the first line of care was a risky decision that should be avoided on a future occasion if the available alternatives are adequately considered.

The present study has all the limitations of a qualitative study. The sample is negligible and hardly accounts for the experiences of students who participated in health institutions in the care of the COVID-19 pandemic. It does not represent a broad institutional experience, although the sample was stratified by institution type. On the other hand, the interviews were conducted virtually due to the conditions of the pandemic in the country's hospitals at the time of the interviews (June-August 2020), which poses challeng-

es to the reliable and in-depth collection of the information requested.

Finally, the study provides elements to understand the experience of nursing students who were released from their social service to be hired by the institutions where they performed their internship to join the care of COVID-19 patients fully. The conditions in which this was done could have been better because the release mechanism was irregular since it deprived the students of completing their social service year. The hiring

and employment conditions varied significantly between institutions. Although the salaries paid could be considered competitive for the salary levels of Mexican nurses, risk exposure was costly due to the lack of skill, equipment, and resources for the care of such high-risk patients³⁴. The students who participated in this study can be considered students from a generation marked by a traumatic but enriching experience, particularly for those fortunate enough that survived the experience.

Collaborations

P Aristizabal generated the original research idea. A Martínez-Abascal, JC Macías-Romero and P Aristizabal carried out data collection and analysis. P Aristizabal, G Nigenda, A Martínez-Abascal and JC Macías-Romero wrote the manuscript and made critical contributions to the drafts of the document. All authors approved the final manuscript.

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