

High hiring rate of nurses in Catalonia and the rest of Spain hides precarious employment from 2010 to 2019: A quantitative study

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Abstract

Aim: This study aims to describe the hiring of nurses in Catalonia and the rest of Spain over 10 years.

Background: Precarious employment (PE) has negative consequences for nurses' quality of life and work performance.

Methods: Quantitative study using a retrospective, longitudinal, descriptive design. We analysed publicly available employment data from Catalonia and the rest of Spain.

Results: Nurses are among the health professionals with the lowest proportion of open-term (permanent) contracts, 25% during the first 4 years of employment. During the study period, each nurse hired had an average of 3.44 contracts per year. The proportion of nurses with a fixed-term (non-permanent) contract shrank from 25.3% in 2006 to 20.5% in 2012 and grew rapidly to 38.7% in 2018. We estimate that 14,800 nurses signed fixed-term contracts in 2018 without ever having registered as unemployed in nursing.

Conclusion: High rates of fixed-term hiring and the high number of contracts per nurse are evidence of a high level of PE for nurses in Catalonia.

Implications for Nursing Management: When policymakers and workforce planners design recruitment and retention programmes for nurses, they should consider improving working conditions by extending more open-term contracts to combat PE and, indirectly, the shortage of nurses.

KEYWORDS

contracts, nurses, precarious employment, Spain

Paola Galbany-Estragués and Pere Millán-Martínez should be considered joint first author.

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1 | INTRODUCTION

Precarious employment (PE) is multidimensional, and researchers across the disciplines have tried to define it from the point of view of economic, labour and social systems (Kreshpaj et al., 2020). New technologies, globalization and economic recessions have changed the nature of labour agreements (Padrosa et al., 2021). There is no single definition of PE, which is associated with terms such as flexible, temporary, casual, atypical, non-standard, contingent, underemployment and poor (Benach et al., 2014). Kreshpaj et al. (2020) classify PE into three dimensions: insecure employment, income inadequacy and lack of rights and protection. In this sense, PE describes a situation of unfavourable 'quality of employment', encompassing employment conditions (e.g., working hours, organisation and pay) and the formal and informal relations between workers and employers (Julià et al., 2017). At the same time, PE has enabled economic growth (Kreshpaj et al., 2020), and flexible contracts may enhance some people's work-life balance.

PE is more prevalent in young people, women, immigrants, people of lower social class and less training and those who perform manual work (Baines & Kgaphola, 2019; Julià et al., 2017). PE affects the health of individuals, families and the community (Benach et al., 2014; Julià et al., 2017). Precarious workers are at risk of stigmatization and social isolation (Julià et al., 2017). PE affects all professions but is especially prominent in those dedicated to care, such as nurses, who represent 59% of health professionals worldwide (Baines & Kgaphola, 2019; World Health Organization, 2020). In Turkey, PE has increased nurses' conflicts at home, as they are unable to meet their families' expectations (Santas, 2020). In Brazil, nurses' working conditions have worsened, leading them to experience physical and psychological deterioration and compromising the societal value of nursing (Dias et al., 2019). In Mexico, the liberalization of the market following the North American Free Trade Agreement has led the Mexican health system to adopt private sector models that have worsened PE for nurses (Nigenda et al., 2020). In Poland, PE leads to a shortage of nursing students, because the profession is unattractive to young people (Marc et al., 2019).

The characteristics of the working environment and the qualifications of nursing staff affect the well-being and satisfaction of patients (RN4CAST, 2017). In the last 10 years, European nurses have improved the quality of care. They are now better trained, more competent and more empowered, allowing them to make complex decisions and provide comprehensive care (Cabrera & Zabalegui, 2021). However, power, class and gender relations lead nursing to be a precarious profession with little social recognition (Dias et al., 2019; World Health Organization, 2020).

In Spain, the economic crisis that began in 2008 led to the implementation of austerity policies that affected the health sector and, in turn, the health of the population (Sánchez-Recio et al., 2020; Spijker, 2020). The crisis also affected health professionals and especially nurses, as the most vulnerable part of the health workforce. In 2013 alone, Spain lost 5200 active nurses (Galbany-Estragués & Nelson, 2016). The European Court of Justice has noted that Spanish legislation conflicts with the rule of law in the European Union, as it

allows fixed-term contracts to systematically meet structural needs (EUR-Lex, 2016). Nurses throughout Spain have opposed the austerity measures implemented by the Spanish government, as they perceive that their workloads have increased and their working conditions and the quality of health services have deteriorated (Gea-Sánchez et al., 2021). In Catalonia in particular, nurses have also noted the deterioration of their working conditions, among which are the loss of economic remuneration, rotation to different departments, an increase in patient complexity and increased demand for health services, as well as an increase in the number of patients per nurse (Granero-Lázaro et al., 2017). The deterioration of working conditions is accentuated when nurses work in nursing homes (Fité-Serra et al., 2019) where labour agreements are even less favourable.

While researchers have analysed the characteristics of PE and how it affects nurses and other workers, to our knowledge, no research has quantified the relationship between PE and hiring rates in any country. This study describes the hiring of nurses in Catalonia and the rest of Spain from 2010 to 2019 and its link to PE. Because PE is a problem in many countries, our findings have implications for health policy beyond Catalonia and Spain.

2 | METHODS

2.1 | Design

We analysed the hiring rate to give us a greater understanding of PE. To do so, we conducted a quantitative study with a retrospective, longitudinal, descriptive design (Grove & Gray, 2019) using open-access data from 2010 to 2019. We analysed the data published by the Ministry of Universities of the Government of Spain (Ministry of Universities of Spain, 2021), the Observatory of Occupations of the State Public Employment Service (SEPE)¹ (Ministry of Labour and Social Economy of Spain, 2021), the Central Balance Sheet Data Office of Catalonia (CatSalut, 2021) and the National Institute of Statistics (INE, 2021).

2.2 | Samples and settings

The study population is the generalist nurses from Catalonia and the rest of Spain (excluding Catalonia) represented in the data summarized by the SEPE. We use the SEPE's terms 'unemployed nurses' (those without work and registered as seeking employment in nursing the last day of the period under consideration) and 'non-specialized nurses'. We use the Central Balance term 'full-time equivalent employees' (CatSalut, 2021), defined as the hours worked by part-time personnel divided by the average annual hours worked in full-time jobs (Organisation for Economic Co-operation and Development [OECD], 2001). From the INE, we use the term 'nurses licensed to practice' (*enfermeras colegiadas*) (INE, 2021), which is defined by Spanish law as nurses who are certified members of a regional professional nursing association.

2.3 | Data collection

From the SEPE, we obtained the monthly series of employment statistics between 2010 and 2019 (covering the period from the beginning of the series to the beginning of the COVID-19 pandemic), from the Central Balance Sheet (Catsalut, 2021), the annual series of statistics of the ratio of workers according to type of contract from 2008 to 2017 (which comprise all publicly available data), and from the INE, the annual series of active licensed nurses from 2010 to 2019 (INE, 2021). We chose this period to coincide with the SEPE data. From the Ministry of Universities, we used indicators of participation in the social security system among university graduates in 2014, which is the most recent publicly available employment data about new graduates.

2.4 | Ethical considerations

Because we used public data, no ethical approval was required. We have a commitment to use the data ethically and transparently, in accordance with the approach of Catalonia's Office for Open Data (Vidal-Juanola, 2021).

2.5 | Data analysis

We performed a descriptive analysis of the different time series and used the data visualization packages `brinton` and `ggplot2` of the R statistical computing environment (Millán-Martínez & Oller, 2021).

3 | RESULTS

We first examined the indicators of participation in the social security system of university graduates published by the Ministry of Universities of Spain (2021). In Figure 1, coloured lines represent trends in the percentage of 2014 health graduates having an open-term (permanent) or fixed-term (non-permanent) contract over the 4 years

following their graduation, by profession. Grey lines show overall trends across all university graduates in Spain.

This figure shows that, in the case of graduates in medicine, the percentage of workers with open-term contracts is zero between the second and fourth years. This is explained by the fact that graduates in medicine continue their studies to prepare for specialist exams and then as residents. Between 30% and 40% of graduates in occupational therapy, human nutrition and dietetics and physiotherapy have an open-term contract the first year after graduating, which increases to approximately 50% by the fourth year. Graduates in pharmacy have the highest proportion of open-term contracts: above 50% in the first year after graduation and 65% by the third year. Employed nursing graduates, on the other hand, have among the lowest proportions of open-term contracts in the first year (just over 25%), and this figure does not improve during the following 3 years.

The SEPE publishes monthly and yearly statistics for job seekers, unemployed people and the number of contracts issued in each occupation, including nursing (non-specialist nurse, specialist nurse and nurse-midwife). These data are the source for Figures 2–5.

Figure 2 shows trends in the number of unemployed nurses in Catalonia and the rest of Spain. The two series have different orders of magnitude, which is logical considering the difference in population size: Catalonia's population grew from 7,462,044 inhabitants in 2010 to 7,722,203 inhabitants in 2020, while Spain's population grew from 46,486,621 inhabitants to 47,332,614 inhabitants. In Catalonia, the number of unemployed nurses grew exponentially between 2010 and 2012, when it reached its maximum of 1500. Beginning in 2012, the number gradually decreased until 2018, when it returned to the 2010 value of around 500 unemployed nurses. In the rest of Spain, the curve is bell shaped, with a rapid increase in unemployment between 2010 and 2013 and a slower recovery between 2013 and 2020. In the rest of Spain, the number of unemployed nurses also presents high seasonality with marked valleys during August and September and less pronounced ones in December, coinciding with holiday periods. We also observe that as unemployment increases, so does the amplitude of the wave derived from seasonality.

Figure 3 shows that, despite the difference in population between Catalonia and the rest of Spain, the monthly count of nursing

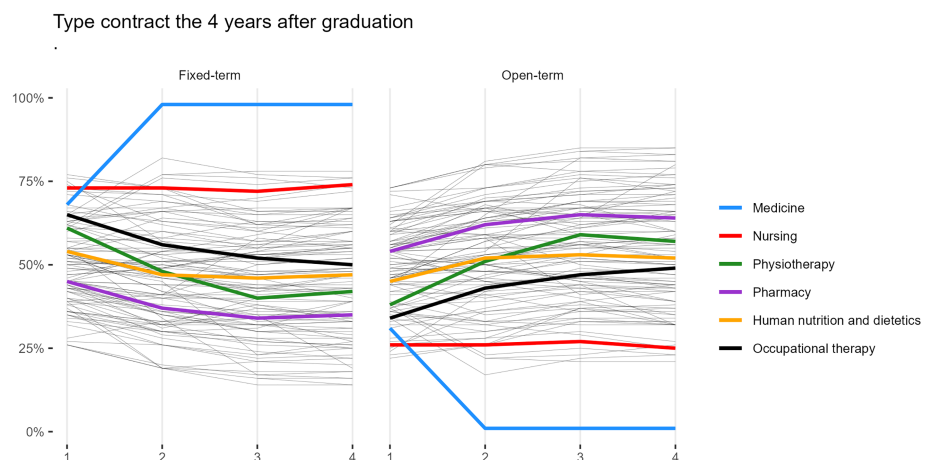


FIGURE 1 Percentage of open-term or fixed-term contracts of health graduates over the 4 years following graduation. Source: Ministry of Universities of the Government of Spain

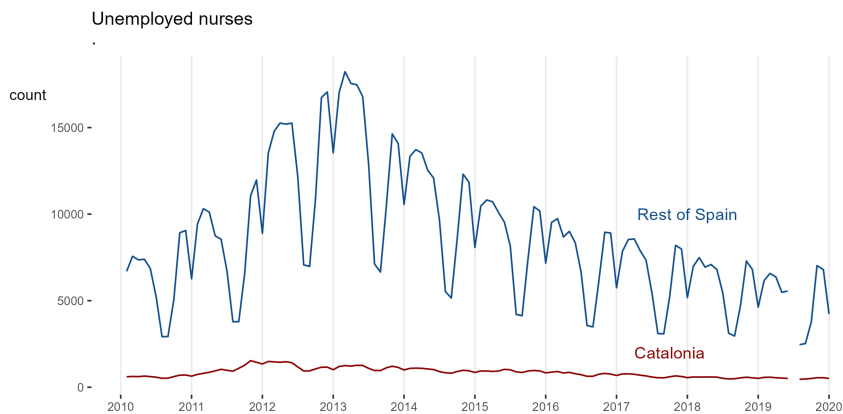


FIGURE 2 Monthly number of unemployed nurses in Catalonia and the rest of Spain. Source: Observatory of Occupations of the State Public Employment Service (SEPE) of the Ministry of Labour and Social Economy of Spain

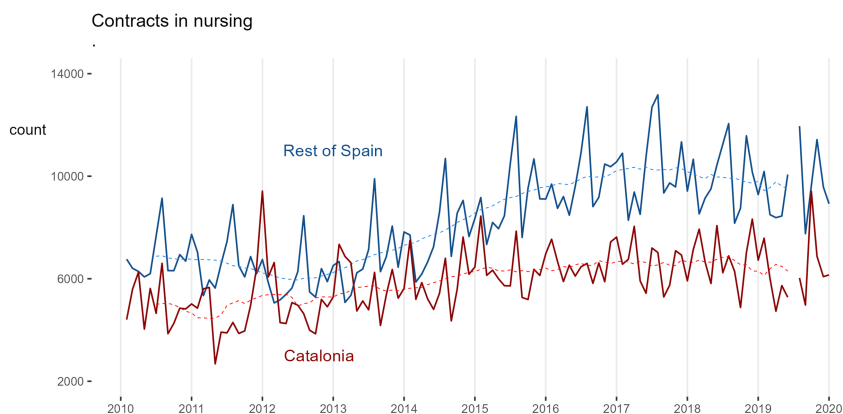


FIGURE 3 Monthly number of contracts held by nurses in Catalonia and the rest of Spain. Source: Observatory of Occupations of the State Public Employment Service (SEPE) of the Ministry of Labour and Social Economy of Spain

contracts is very similar. The two trend lines share a cycle, although in Catalonia, we find the minimum in 2011, and in the rest of Spain, this minimum is delayed until 2013. Between 2012 and 2017, the growth of both lines corresponds to the decrease in unemployment in nursing in Spain in this period. As of 2017, however, the number of contracts both in Catalonia and in the rest of Spain trends downwards, while unemployment continues to fall. We also observe that the number of contracts in the rest of Spain presents seasonal cycles that peak in June.

Given that the data represented in Figure 2 contrast with those in Figure 3 and in order to explore the different behaviour of the two territories analysed, we offer Figure 4, which represents the evolution of the monthly ratio of contracts held by nurses with respect to the monthly number of unemployed nurses in Catalonia and the rest of Spain. We observe that the ratio of both territories falls suddenly between 2010 and 2012 and, from this moment on, grows steadily until 2019. The two ratios differ in the regularity of the intra-annual cycles and in the order of magnitude of the average annual value, with both being much more stable in the rest of Spain. The order of magnitude of the average value in the case of Catalonia is from four contracts per month per unemployed nurse in 2011 to around 12 in 2019, meaning that in 2019, there was a monthly ratio of 12 contracts per unemployed nurse. (This does not mean that on average each nurse in Catalonia had 12 different contracts, because not all contracts go to nurses who are registered as unemployed.) In the rest of

Spain, the average number of contracts per nurse ranges between one and four, with large peaks in July and smaller peaks in December.

Because there were 12 times more contracts in a month than unemployed nurses in the same month, we can deduce that contracts especially benefited nurses who were not registered as unemployed. Figure 5 shows the monthly number of nursing contracts and the monthly number of nurses who have benefited from these contracts in Spain. We observe that these two statistics are positively correlated ($r = .89$) and that the two trend lines share a cycle. The evolution of the number of contracts and nurses hired peaks in July, and as the number of contracts increases, the separation between the two trends also increases, with the average value of the ratio of contracts per nurse hired between 1.6 and 1.8, and the extremes of this ratio around 1.4 and 2.2 (see Figure S1). Notably, between 2010 and 2020, each nurse hired each month, had on average, between 1.6 and 1.7 contracts in that month, indicating PE. If we look at the aggregated data by year, we can see that, for example, in 2019 in Spain, 195,214 contracts were issued to a total of 56,684 nurses; that is, each nurse hired had on average 3.44 contracts that year.

The disaggregated number of single nurses hired for Catalonia is not available, which prevents us from including this data in Figure 5. However, we know that in Catalonia in 2019, a total of 76,851 contracts were issued, and we estimate that they benefited a total of 22,315 nurses. We obtain this number by applying the Spanish ratio of 3.44 contracts per nurse and considering that contracts in

FIGURE 4 Monthly ratio of contracts held by nurses and the monthly number of unemployed nurses in Catalonia and the rest of Spain. *Source:* Observatory of Occupations of the State Public Employment Service (SEPE) of the Ministry of Labour and Social Economy of Spain

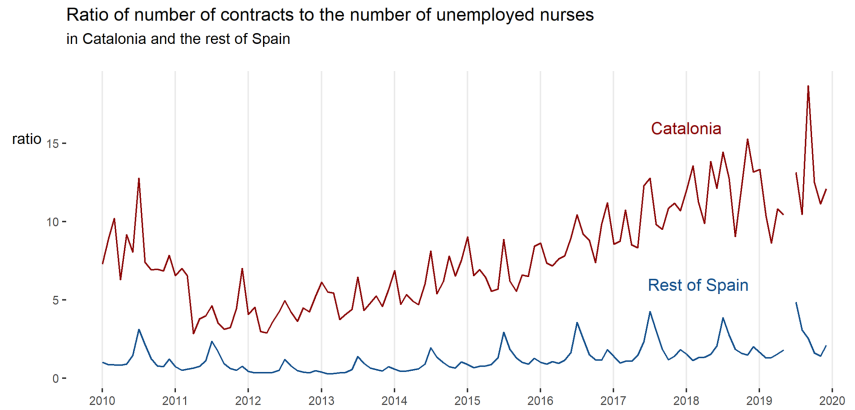
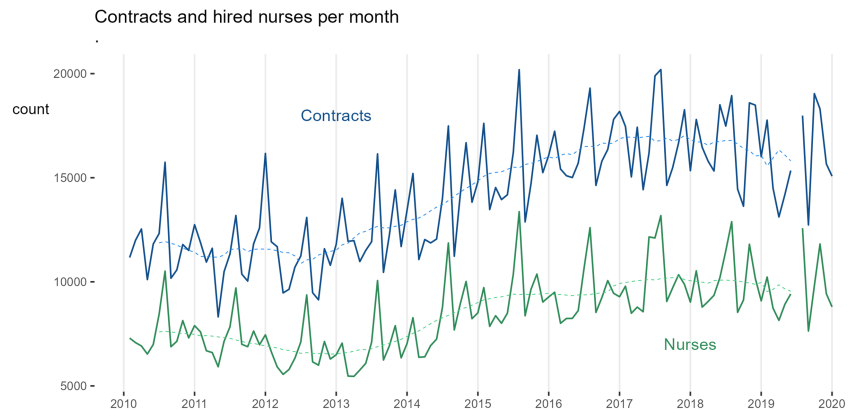


FIGURE 5 Monthly number of contracts held by nurses and the monthly number of nurses hired in Spain. *Source:* Observatory of Occupations of the State Public Employment Service (SEPE) of the Ministry of Labour and Social Economy of Spain



Catalonia represent almost 40% of contracts in Spain overall, while Catalonia has only 17% of the population of non-retired licensed nurses (47,714 registered in Catalonia in 2019 compared with 267,861 registered in Spain).

Finally, the only data relating to the proportion of nurses with open-term contracts with respect to the total number of employed nurses that is not protected by the Catalan Data Protection Authority is that published annually in the Central Balance Sheet (CatSalut, 2021). Figure 6 shows the proportion of graduates with a 3- or 4-year university health degree (mainly nurses) with an open-term contract or fixed-term contract (interim, casual or substitution), by year. Interim contracts are, in theory, used to cover a vacant permanent position until an open-term contract can be signed; in practice, they can last for years because the administration often fails to fill vacancies. Casual contracts are used to cover sporadic needs, such as peaks in workload. Substitution contracts are used to cover short-term absences due to circumstances such as illness and maternity leave. The proportion of those with a fixed-term contract decreased from 25.3% in 2006 to 20.5% in 2012 and then increased dramatically to 38.7% in 2018. If we extrapolate the result of this sample to the group of active licensed nurses in Catalonia in 2018 (46,793), we can approximate the number of nurses with fixed-term contracts at 18,108 nurses in 2018.

Another consideration is that the sum of the monthly count of unemployed nurses in Catalonia in 2018 is 6597 (which correspond to

fewer single nurses, given that a nurse can be registered as unemployed for more than 1 month over a given year). If we take the number of nurses without an open-term contract (approximately 18,108) and subtract the sum of the monthly count of unemployed nurses (approximately 6,597), it follows that there are at least 11,511 nurses without an open-term contract who have not been registered as unemployed in nursing (this means that they are not unemployed, that they have not registered as job seekers and/or that they have registered as job seekers but not in nursing). We therefore deduce that the number of people who worked regularly as nurses by stringing together fixed-term contracts without registering as unemployed in nursing was between 11,511 and 18,108 in 2018. Taking the midpoint between these two values, we estimate 14,809 nurses (31%) fit this description, out of a total of 46,793 registered active nurses.

4 | DISCUSSION

Among health graduates, nurses are the workers with among the lowest proportion of open-term (permanent) contracts in the first 4 years after their graduation. There are many more unemployed nurses in the rest of Spain than in Catalonia, but the number of contracts is similar (SEPE, Ministry of Labour and Social Economy of Spain, 2021). Therefore, there is a great difference between the ratio of contracts per unemployed nurse. While in Catalonia, the ratio is between four

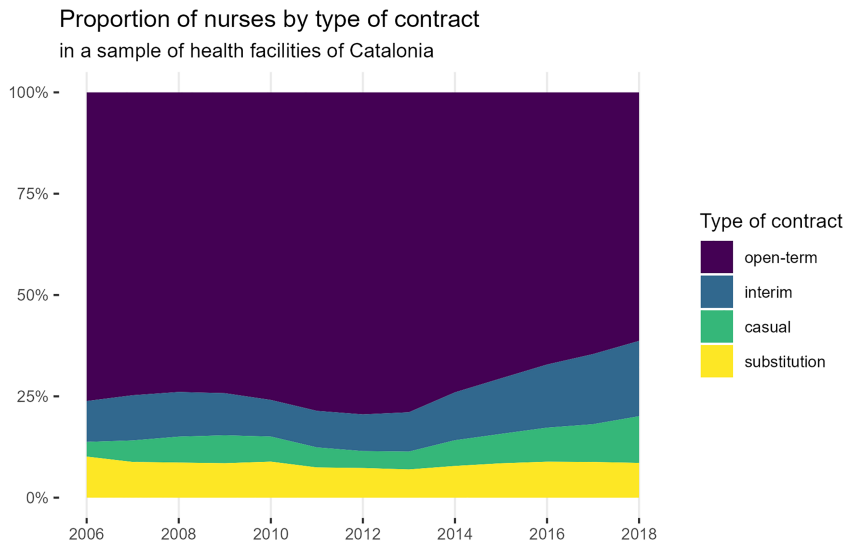


FIGURE 6 Proportion of graduates with a three- or four-year university health degree (mainly nurses) with open-term or fixed-term (interim, casual, or substitution) contracts in a sample of between 100 and 109 (depending on the year) Catalan health facilities. *Source:* Central Balance Sheet Data Office of Catalonia

and 12 contracts per unemployed nurse, in the rest of Spain, the ratio is between one and four. This high ratio of contract per unemployed nurse indicates that the Catalan health system much more frequently requires nurses to string together multiple fixed-term (non-permanent) contracts each year, causing high rates of PE.

The number of nursing contracts per year would appear to be a favourable indicator, but in fact, it indicates PE and a lack of adherence to European Union law. According to European Union law, fixed-term contracts cannot systematically meet ongoing structural needs (EUR-Lex, 2016). These contracts have been used especially in Catalonia, a region in which, for example, in 2019, a number of contracts between 10 and 15 times greater than the number of unemployed people in nursing were issued every month. Despite the difficulties in collecting data about the type of contracts that health professionals hold (because they are protected by the Catalan public administration), we estimate that in 2018, approximately 14,800 nurses strung together several fixed-term contracts without registering as unemployed in nursing, as shown in Section 3.

Nurses ensure the safety and quality of care (Aiken et al., 2017). In Spain, citizens living in regions with a higher nurse-patient ratio are more satisfied with their health system (Ministry of Health, 2019). The region of Spain with the highest ratio of nurses per population is Navarra (8.6 nurses per thousand inhabitants), while Catalonia has a ratio of 6.2 nurses per thousand inhabitants. If Catalonia wanted to place itself on par with Navarra, it would have to incorporate 17,325 nurses into its health system, about 35% more than the nurses it currently has. If Catalonia wanted to approach the median of the European Union, which is around 9.5 nurses per thousand inhabitants, the figure would be even higher: 24,197 nurses would need to be hired (50% more). In making such comparisons, we must take into account that different European countries have different health models. However, taking Spanish data as a reference point, it is evident that Catalonia needs to hire and retain more nurses by offering them open-term contracts instead of a string of fixed-term ones.

PE is one of the factors that leads Spanish nurses to emigrate or leave the profession in search of better living conditions (Galbany-Estragués et al., 2019; Galbany-Estragués & Nelson, 2016; Rodríguez-Arrastia et al., 2021). These data coincide with nurses' perceptions of poor working conditions, including fixed-term contracts (Fité-Serra et al., 2019; Granero-Lázaro et al., 2017). Junior nurses with fixed-term contracts show high levels of emotional fatigue, depersonalization and lack of personal fulfilment, which leads them to suffer psychological problems such as stress and anxiety (Acea-López et al., 2021). PE is so recurrent in the nursing profession that even new Spanish graduates consider the possibility of emigrating due to lack of work and job insecurity (Gea-Caballero et al., 2019).

We must emphasize that the period of analysis is prior to the COVID-19 pandemic. Nursing understaffing in Catalonia and the rest of Spain made it particularly difficult to meet care needs during this health emergency. The 2020 hiring figures show fewer contracts than the prior year, given emergency hiring programmes designed to create staffing stability during the COVID-19 crisis. The number of nursing contracts in Catalonia shrank 21% between 2019 and 2020 (in contrast to 14% in the rest of Spain, SEPE). This dramatic decrease in the number of contracts during the greatest health crisis in a century points to Spain's and especially Catalonia's tendency to overuse fixed-term contracts. Catalonia's health system, and likely many others around the world, now faces the opportunity to address PE by permanently incorporating the nurses hired to face the COVID-19 crisis. Health policies should be updated, and the working conditions of nurses improved to avoid compromising the response of health systems (see Lasater et al., 2021). The World Health Organization has committed to a global strategy on human resources for health, Workforce 2030, which calls for the defence of personal, labour and professional rights of all health personnel (World Health Organization, 2020). If these actions are not taken, the shortage of nurses is likely to continue in many countries, and their citizens are likely destined for decreased quality of life and increased mortality, morbidity and dissatisfaction (Aiken et al., 2017; RN4CAST, 2017).

5 | LIMITATIONS

To analyse the seasonality of nursing hiring, we requested statistical data from Statistics from Hospitalisation Health Facilities (EESRI) from the Agency for Health Quality and Assessment of Catalonia (AQUAS). We were denied access to the data because it is protected by the Catalan Data Protection Authority, and this research was not sponsored by a university belonging to the Catalan Association of Public Universities (ACUP). To overcome this limitation, we analysed open data sources that made it possible to assess PE in nursing in Catalonia and, more specifically, to reveal Catalonia's heavy reliance on fixed-term contracts in nursing.

6 | CONCLUSIONS

The high hiring rate of nurses in Catalonia conceals a problem of PE. In 2018, between a minimum of 11,511 nurses and a maximum of 18,108 held fixed-term (non-permanent) contracts without appearing in unemployment statistics. Their failure to enrol in the unemployment registry likely reflects the fact that they become accustomed to the pattern of consecutive short fixed-term contracts. These data indicates the ongoing structural need for nurses in the Catalan health system. PE influences the decision of Catalan nurses and Spanish nurses more broadly to emigrate and to leave the profession, which accentuates the shortage of nurses. This shortage endangers the ability of the health system to provide high-quality care to citizens. Our analysis points to the importance of examining statistical data closely; seemingly positive data for the hiring of nurses can in fact hide dismal levels of PE. The finding that 'good' hiring numbers can hide PE may be helpful to quantitative health researchers in other countries.

7 | IMPLICATIONS FOR NURSING MANAGEMENT

When policymakers and workforce planners, nationally and internationally, design recruitment and retention programmes for nurses, they should consider addressing PE by extending more open-term (permanent) contracts to combat shortages and attract new generations of nurses.

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CONFLICT OF INTEREST

We have no conflict of interest.

AUTHOR CONTRIBUTIONS

PGE, PMM, JCCB, MSC and ARA made substantial contributions to the conception and design, acquisition of the data and analysis and

interpretation of the data. PGE, PMM, JCCB and ARA have been involved in drafting the manuscript, and PGE, PMM, JCCB, MSC and ARA revised it critically for important intellectual content. PGE, PMM, JCCB, MSC and ARA have given final approval of the version to be published. Each author should have participated sufficiently in the work to take public responsibility for appropriate portions of the content. PGE, PMM, JCCB, MSC and ARA agreed to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

ETHICAL APPROVAL

No ethical approval was required because we used public databases.

DATA AVAILABILITY STATEMENT

Authors do not wish to share the data.

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ENDNOTE

¹Standard abbreviation in Spain.

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