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EDITORIAL

Patient-nurse ratio matching and complexity of care: A challenge for healthcare organisations*



Adecuación de la ratio paciente-enfermera y complejidad de los cuidados: un reto para las organizaciones sanitarias

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The current COVID-19 pandemic has shed further light on the needs and complexity of care faced by today's healthcare organisations, globally and in the Spanish context. Care complexity has been included in the analysis of institutional outcomes as an indicator that has interrelated and interdependent elements. At the hospital level, the key components of care complexity are the healthcare organisation itself, nurses, and the care dependency of patients.¹

In relation to the first two components of complexity, organisational factors influence healthcare quality, particularly in relation to the work climate and job satisfaction of healthcare professionals.² Moreover, ensuring the provision of objective quality care based on outcomes that are sensitive to nursing practice, i.e., that can be assessed with a set of specific, defined indicators, remains a major challenge today.³

In relation to the third component, the care dependency of the population, we are facing an ageing society, with

increased life expectancy that will lead to the progression of both acute and chronic diseases. This situation will result in an increase in the number of the most care-dependent people admitted to hospitals in the near future.⁴

In this context, the scientific evidence shows that work overload in nurses leads to an increase in in-hospital adverse events and mortality. A key indicator, therefore, is the patient-to-nurse ratio per hospital, known in the English language literature as Nursing Staffing Level (NSL), defined as the number of nurses working per shift or more than 24 h divided by the number of beds occupied by a patient during the same period. However, although many studies have used this system to assess ratios in hospital settings because it is easy and inexpensive, it has certain limitations; for example, it does not consider status and level of dependency in patient care.⁵

To date, determining the optimal patient-nurse ratio in hospitals remains a challenge for the scientific community.⁶ Among others, the paper by Dr Aiken is of note. It examines nurse staffing levels in hospitals and their relationship with adverse events such as mortality. In her research she notes that for every patient added to the workload of a nurse in a surgical unit, the likelihood of patient survival is reduced by 5% during their hospital stay.⁷ Furthermore, lack of vigilance can lead to adverse events (AE) and a deterioration in the condition of patients, which could be avoided, thus reducing

DOI of original article:

<https://doi.org/10.1016/j.enfcli.2021.10.005>

* Please cite this article as: Fernández García E. Adecuación de la ratio paciente-enfermera y complejidad de los cuidados: un reto para las organizaciones sanitarias. *Enferm Clín.* 2021;31:390–395.

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risk, and maximising clinical safety. Adequate staffing levels, therefore, have a positive impact on the healthcare system, and are related to a reduction in morbidity and mortality, and costs.⁸

Some of the AEs that occur in the hospital setting are directly related to complications during hospital stay, increasing the length of stay and even leading to death. According to the 'Spanish National Study on Adverse Events linked to Hospitalisation', the overall incidence of adverse events was estimated at 11.6% and mortality because of these events at 4.4%.⁹

In-hospital mortality is commonly used as an indicator to assess the quality of hospital care as it can be easily calculated from the data recorded in the databases of the different hospitals. In fact, when there is a high mortality rate in a centre, it is considered a marker that reflects poor care. Therefore, in hospitals where around 50% of deaths occur in one area, an increase in deaths of around 10% could be due to a lack of effective and safe care.¹⁰

Therefore, it is essential that we address care complexity by analysing all its components to identify the variables that influence and thus improve healthcare. The profile of the patient admitted to conventional medical wards in regional hospitals, is an average of 76-years old or more and educated to primary level.¹¹ This situation is worrying when it is predicted that by the year 2050 Spain will have one of the most ageing populations in the world, with an increase from 16% to 34% over 65 years of age.²

In terms of nurse to patient ratio, a recent study carried out in Spain showed an average of 11 patients per nurse during a shift.¹¹ This figure is similar to that obtained in the RN4CAST study, which found that the average ratio in European hospitals was 8.3 patients per nurse, and Spain was the country with the highest ratio.^{7,12} This figure increased during the night shift, reaching up to 32 patients. There are data to indicate that it is during night shifts when patient care is at greater risk because some cognitive capacities and strength-based performance abilities are impaired.¹² This situation implies an increased risk of adverse events and decreased quality of patient care. After this study, a bill on nurse ratios to ensure patient safety in healthcare centres and other settings was passed in Spain, which states that a maximum of 6 patients should be assigned per nurse and exceptionally 8, and that this distribution should consider the conditions of the patient, unit, and shift.¹³

These figures could be correct, because when a nurse is in charge of more than 9 patients during their shift in conventional units, the likelihood of a patient dying during admission increases by 19%; the profile of the patient who dies is over 73 years of age with a hospital stay of more than 15 days.¹¹ Dependency on nursing care and NSL are also associated with in-hospital mortality.¹⁴

Although the patient should be at the core of the healthcare system, another study showed that only variables linked to hospital organisation and management were associated with the distribution of patients, without considering any patient-specific variables.¹⁵ Therefore, we consider it essential to adjust the proportion of nurses to the real needs of patients, such as severity and levels of dependency, to provide quality and safety in patient care in the context of hospital management resource planning models. In other words, adjusting staffing levels not only based on the

number of beds, but also on the condition of the people occupying them, factoring in other indicators such as the practice environment.

To conclude, when making decisions about human resources in our healthcare system, the distribution of patients should be based on their care dependency at various levels and not on other variables that do not really demonstrate the workload involved in delivering quality and safe care. Therefore, it is essential to reorganise health policies, placing the patient at the core and meeting their needs for comprehensive care with a care-centred approach.

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