MESTRADO EM GESTÃO DO POTENCIAL HUMANO

Patterns of professional availability among nurses in the Portuguese National Health Service: an administrative data-based analysis within the framework of the Sustainable Development Goals

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Dissertação apresentada ao Instituto Superior de Gestão como requisito parcial para a obtenção do grau de Mestre em Gestão do Potencial Humano

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Lisboa

2026

O artigo foi submetido para publicação na revista Journal of Health Organization Management [Scopus Q2 – Business, Management and Accounting] e aguarda resposta.

Esta dissertação está organizada e formatada de acordo com a 7ª edição das Normas APA (American Psychological Association; https://apastyle.apa.org/).

Agradecimentos

Iniciar este percurso académico numa fase mais madura da vida, quando já contava mais de cinquenta anos, representou um desafio significativo e, simultaneamente, uma oportunidade de crescimento pessoal e profissional.

A concretização deste trabalho tornou-se possível graças ao apoio, à confiança e ao incentivo de várias pessoas que, de diferentes formas, estiveram presentes ao longo deste caminho. A todas elas deixo o meu sincero reconhecimento e gratidão.

À Professora Doutora Rosa Rodrigues expresso o meu sincero agradecimento pela orientação, disponibilidade e rigor científico ao longo deste trabalho. A sua dedicação, conhecimento e incentivo foram fundamentais para o desenvolvimento desta investigação e para o meu crescimento académico. Este trabalho não teria sido possível sem o seu apoio.

Por fim, e de forma muito especial, dedico este trabalho aos meus filhos, que são a minha maior fonte de inspiração e motivação.

Resumo

Este estudo analisa os padrões de disponibilidade profissional dos enfermeiros do Serviço Nacional de Saúde (SNS) português, com base em dados administrativos referentes ao ano de 2024, com incidência nas tipologias de ausência classificadas na categoria "Outras". Adotou-se uma abordagem quantitativa, de natureza descritivo-analítica, assente em dados administrativos oficiais, que procurou identificar os padrões de associação entre as tipologias de ausência e a respetiva duração, bem como caracterizar os perfis de indisponibilidade profissional. Os resultados evidenciam que o absentismo se estrutura predominantemente em função da duração e da tipologia da ausência, o que permitiu identificar três perfis distintos de indisponibilidade profissional: (i) ausências curtas e ocasionais associadas a ajustamentos funcionais da organização do trabalho; (ii) ausências de curta duração relacionadas com participação cívica e atividades de serviço à comunidade; e (iii) ausências prolongadas associadas a processos de desenvolvimento pessoal e flexibilidade temporal. O estudo aborda um domínio ainda pouco explorado na literatura sobre a organização e gestão em saúde. Em termos práticos é relevante para o planeamento estratégico dos recursos humanos (RH) em saúde, ao sublinhar a necessidade de abordagens diferenciadas na gestão do absentismo. Do ponto de vista social, o absentismo é interpretado como um indicador indireto de disponibilidade profissional, com implicações para os Objetivos de Desenvolvimento Sustentável (ODS) relacionados com o trabalho digno, a saúde e o bem-estar, bem como com a redução das desigualdades.

Palavras-chave: disponibilidade profissional, absentismo laboral, enfermeiros do Serviço Nacional de Saúde, gestão de organizações de saúde, dados administrativos, sustentabilidade organizacional.

Abstract

This study analyses patterns of professional availability among nurses working in the Portuguese National Health Service (NHS), based on administrative data for the year 2024, with incidence on absence typologies classified under the category "Other". A quantitative, descriptive-analytical approach was adopted, drawing on official administrative data to identify patterns of association between absence typologies and their duration, as well as to characterise profiles of professional unavailability. The findings show that absenteeism is predominantly structured according to both the duration and the typology of absence, which allowed the identification of three distinct profiles of professional unavailability: (i) short, occasional absences associated with functional adjustments in work organisation; (ii) short-term absences related to civic participation and community service activities; and (iii) prolonged absences associated with processes of personal development and temporal flexibility. The study addresses a domain that remains underexplored in the literature on health organisation and management. From a practical perspective, the findings are relevant for strategic human resource planning in healthcare, as they highlight the need for differentiated approaches to absenteeism management. From a social perspective, absenteeism is interpreted as an indirect indicator of professional availability, with implications for the Sustainable Development Goals (SDG) related to decent work, health and well-being, and the reduction of inequalities.

Keywords: professional availability, work absenteeism, National Health Service nurses, health organisation management, administrative data, organisational sustainability.

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List of acronyms and abbreviations

M	-	Mean
ACSS	-	Administração Central do Sistema de Saúde [Central Administration of the Health System]
FTE	-	Full-Time Equivalents
GDPR	-	General Data Protection Regulation
Max	-	Maximum
MCA	-	Multiple Correspondence Analysis
Min	-	Minimum
NHS	-	National Health Service
p	-	p-value
SD	-	Standard deviation
SDG	-	Sustainable Development Goals

Introduction

Work absenteeism represents a central challenge in the contemporary management of health systems, with direct implications for organisational efficiency (Sukhee et al., 2023). High levels of absenteeism undermine the quality of care delivery and place additional pressure on the sustainability of public health services (Organisation for Economic Co-operation and Development & European Commission, 2024).

In a context marked by persistent human resource shortages and an ageing workforce, professional availability has become a critical factor in the functioning of health systems (Silva et al., 2021). The sustained growth in demand for healthcare services further intensifies this challenge, increasing organisational vulnerability associated with staff absences (OECD & EC, 2024). Within the Portuguese National Health Service (NHS), absenteeism among nursing professionals warrants particular attention due to the structural role of this professional group in the direct provision of care (International Council of Nurses, 2025). The high frequency of absence days, often associated with health-related issues, work overload or occupational exhaustion, has significant repercussions for service organisation and human resource planning (Dall'Ora et al., 2022). These absences also generate additional pressures on the financial sustainability of the healthcare system (Nwanosike et al., 2025).

Despite the relevance of this phenomenon, research on absenteeism in healthcare has predominantly relied on self-reported data. This methodological approach constrains the understanding of absenteeism as an expression of structural organisational dynamics (Klootwijk et al., 2025). The use of official administrative data offers a robust alternative, as it is grounded in objective and institutionally validated information (Ravinskaya et al., 2024).

In the public healthcare sector, absenteeism materialises through different absence typologies established within the legal and labour framework. These typologies differ in terms of their nature, duration and organisational impact (Law n.º 35/2014). A differentiated analysis of absence typologies is therefore essential to capture professional unavailability beyond aggregated absenteeism rates (Backes et al., 2025). At the same time, the growing centrality of sustainability in health systems reinforces the need to frame absenteeism within a broader organisational perspective that integrates efficiency, working conditions and institutional social responsibility (Szabo et al., 2020). From this standpoint, absenteeism may be interpreted as an indirect indicator of health system responsiveness (World Health Organization & International Labour Organization, 2022).

The present study aims to analyse patterns of absenteeism among nurses working in the Portuguese NHS during the year 2024, using official administrative data. The analysis focuses specifically on absence typologies classified under the administrative category "Other", a domain that remains underexplored in the literature on health organisation and management (PLANAPP, 2025a). Accordingly, the study seeks to address the following research question: What patterns of absenteeism can be identified among NHS nurses, considering both the typology and the duration of absences?

1. Literature review

1.1. Absenteeism as an organisational phenomenon in health systems

Work absenteeism has been widely examined in the literature as a relevant indicator of organisational functioning and assumes particular importance in labour-intensive sectors such as health systems (Eurofound, 2021). Traditionally defined as the unplanned absence of a worker from scheduled working time, absenteeism extends beyond a purely administrative perspective, as it reflects the interaction between individual, organisational and institutional factors (Backes et al., 2025).

Even in contexts of technological modernisation, healthcare services remain highly dependent on human labour, which makes staff absences a critical factor for operational efficiency and service continuity (Eurofound, 2021). This structural dependence also contributes to the impact of absenteeism on the quality of care delivered to service users (Virtanen et al., 2018).

Despite the extensive scientific output on absenteeism, a substantial part of the literature continues to prioritise aggregated approaches, focusing on overall absenteeism rates or broad categories of absence (Eurofound, 2021). Such approaches tend to attenuate the functional heterogeneity inherent to the phenomenon and limit the identification of differentiated patterns that are particularly relevant for human resource management (Backes et al., 2025). The predominance of studies based on aggregated data reduces the ability to interpret absenteeism as an expression of organisational dynamics specific to healthcare settings (Burdorf, 2019). Analyses that explicitly consider the duration of absences allow for a more nuanced understanding of the phenomenon and its labour-related implications. In this regard, the identification of absence typologies contributes to interpreting absenteeism as the outcome of an adjustment process between service demands and available professional resources (PLANAPP, 2025).

1.2. Absenteeism in nursing and in the National Health Service

Nursing represents one of the largest and most strategic professional groups within the Portuguese NHS and plays a central role in direct care provision and service continuity. In Portugal, this group accounts for a substantial share of the healthcare workforce, which amplifies the organisational impact of absences (PLANAPP, 2025a).

Nurses face high levels of physical, emotional and organisational demands. When combined with shift work, frequent exposure to operational pressure and the need to respond continuously to clinically demanding contexts, these conditions render nursing work particularly strenuous (Nagarajan et al., 2024). Such working conditions have been associated with increased risks of occupational strain and with differentiated patterns of absenteeism over time (Virtanen et al., 2018). The intensification of working hours and persistent human resource shortages further reinforce this association, particularly in high-pressure operational contexts (Nagarajan et al., 2024).

According to Silva and Merino (2017), absenteeism in nursing results from a set of multicausal factors, including working conditions, work organisation and individual and psychosocial characteristics. Within this framework, a study conducted by the Centro de Planeamento e de Avaliação de Políticas Públicas (PLANAPP, 2025b) indicated that younger professionals and those in more advanced stages of their careers tend to present higher levels of absence, although associated with distinct absence typologies. Among younger professionals, absences are more frequently linked to family responsibilities and work–life balance demands (OECD, 2016). Among older workers, absences are more often related to health problems and cumulative functional limitations acquired throughout the professional trajectory (WHO & ILO, 2022). These differences reinforce the need to analyse the diversity of absences and their specific organisational meaning (Backes et al., 2025). Approaches focused exclusively on aggregated indicators tend to conceal patterns that are relevant for strategic human resource management in the healthcare sector (Eurofound, 2021).

1.3. Absenteeism, absence typologies and organisational sustainability

In the public healthcare sector, absenteeism is framed within a diverse set of absence typologies, with distinct legal and administrative foundations, as defined in the General Law on Public Employment (Law No. 35/2014) and, where applicable, in the Labour Code (Law No. 7/2009). These absence modalities differ in nature, duration, predictability and organisational impact (Eurofound, 2021). This diversity justifies the need for differentiated

analyses that move beyond aggregated absenteeism data (Duchemin & Hocine, 2020). When absenteeism is treated as a homogeneous phenomenon, it tends to obscure distinct organisational dynamics (Eurofound, 2021), thereby limiting its analytical usefulness for strategic management and human resource planning in healthcare (Sakr et al., 2025).

Distinguishing between different absence modalities allows for a more precise understanding of how organisations absorb and accommodate professional unavailability (Sakr et al., 2025). These effects vary according to service demands and existing institutional mechanisms (Backes et al., 2025). In this context, the articulation between absence typology and duration assumes particular organisational relevance (OECD, 2024). Short-term absences tend to be managed through internal functional adjustments and informal work reorganisation solutions (Burdorf, 2019). Prolonged absences, by contrast, require structured responses such a formal replacements, task redistribution or schedule reorganisation. These responses have direct implications for the operational capacity of healthcare units and for the balance between available resources (OECD, 2024).

Within this framework, it is important to distinguish between professional availability and effective productive capacity. Professional availability refers to contractual or administratively registered working time, whereas productive capacity corresponds to the proportion of that time that translates into effective work performance, adjusted for absences, functional limitations and work organisation (OECD, 2016). This distinction is frequently operationalised through Full-Time Equivalents (FTE), which allow workforce capacity to be adjusted to its actual responsiveness (Buchan et al., 2015; WHO, 2020). Evidence that not all forms of absence have equivalent impacts on effective productive capacity supports the need for a detailed analysis of administrative absence categories and their organisational predictability (OECD, 2024).

Among administrative absence categories, the designation “Other” aggregates a particularly heterogeneous set of situations that remains underexplored. Despite their functional diversity, these absences may have a significant impact on healthcare service management (PLANAPP, 2025a). Their lower predictability introduces specific forms of professional unavailability, with consequences for planning and continuity of care provision (Eurofound, 2021). Analysing absenteeism through absence typologies and duration allows this phenomenon to be framed within adopted management options and existing institutional mechanisms (Backes et al., 2025). These choices directly condition professional availability and the responsiveness capacity of public healthcare services (OECD, 2024). In this context,

the promotion of balanced and sustainable working conditions constitutes a central element of public health system governance (WHO & ILO, 2022). In public healthcare systems, administrative presence does not necessarily translate into effective service delivery capacity (OECD, 2023).

The distinction between formal professional availability and effective productive capacity has been widely adopted in health workforce planning (WHO & ILO, 2022). Professional availability corresponds to contractual or administratively registered working time, regardless of its conversion into effective care delivery (European Observatory on Health Systems and Policies, 2021). Productive capacity, in turn, reflects the share of that time that is translated into actual care provision and is conditioned by absences, functional limitations, work organisation and care workload. From this perspective, the analysis of absenteeism becomes relevant not only as a measure of administrative presence, but also as a structural determinant of productive capacity and organisational sustainability in healthcare services (OECD, 2024).

2. Methodology

2.1. Study design

The study adopts a quantitative, cross-sectional and descriptive-analytical approach based on the analysis of official administrative data on absenteeism among NHS nurses. This methodological option is justified by the need to characterise patterns of professional unavailability using objective, systematic and institutionally validated information, avoiding the constraints associated with self-report-based methodologies.

The cross-sectional nature of the study results from the focus on a single temporal period corresponding to the twelve months of 2024. Although this design does not allow for causal inference, it is appropriate for identifying distribution patterns, statistical associations and absenteeism profiles across different absence typologies and professional characteristics.

The descriptive-analytical nature of the study allows for a systematic description of absence typologies and recorded absenteeism days, as well as for the analysis of associations between these typologies. The use of administrative data constitutes a central element of the methodological design. These data derive from records generated within the human resource management information systems of the NHS and are collected continuously and automatically by services. They represent factual information that does not depend on professionals' perceptions or willingness to respond to data collection instruments. This substantially reduces the likelihood of biases associated with memory, social desirability or subjective interpretation

of absence situations. This feature is particularly relevant in absenteeism research, as the phenomenon requires rigorous accounting of presence days, absence days and corresponding typologies.

Overall, the study was operationalised through a methodological approach focused on identifying patterns and associations, enabling a structured reading of nurses' absenteeism as an indicator of professional availability and organisational sustainability within the NHS.

2.2. Data source and institutional framework

The data were provided by the Administração Central do Sistema de Saúde [Central Administration of the Health System], I.P. (ACSS), the public body responsible for human resource planning, monitoring and strategic management within the NHS. This institution plays a central role in the production, consolidation and validation of administrative information on healthcare professionals and ensures the reliability and comparability of data used to support public health policy decision-making.

The dataset covers the period from 1 January to 31 December 2024 and includes all absence records of NHS nurses within that timeframe. Restricting the analysis to a complete calendar year ensures analytical consistency and avoids distortions associated with incomplete periods or partial seasonal variation. The information includes absence typologies and the number of days associated with each record, as well as professional characteristics such as sex, age and region of practice.

It should be noted that the data were provided in aggregated form, ensuring the direct and indirect anonymity and confidentiality of professionals. The data were made available exclusively for scientific research purposes and comply with the General Data Protection Regulation (GDPR).

This institutional framework enhances the empirical robustness of the study, as the analysis is grounded in real administrative data systematically recorded and validated by a public body with legal competence in health human resource management.

2.3. Study population

The study population comprises NHS nurses who, during 2024, presented absence records classified under the administrative category "Other", according to the typology adopted by the entity responsible for producing and managing administrative health information. This category aggregates a diverse set of absence situations that, because they do not fall directly

within the main typologies previously analysed and reported by ACSS, remain less explored from an analytical and interpretative standpoint.

Focusing exclusively on this category is justified by the need to deepen knowledge about forms of professional unavailability that, although less visible in institutional reports, may hold significant relevance for human resource management in the NHS. By concentrating on this specific subpopulation, the study seeks to clarify absenteeism patterns that have not been systematically addressed in previous research.

All nurses with an active employment relationship with the NHS who recorded at least one day of absence classified under the "Other" category during 2024 and for whom valid information on the variables under analysis was available were considered eligible. Professionals without any record in this category and other professional groups within the NHS were excluded, as the focus of the study is exclusively on nursing.

2.4. Data processing and preparation procedures

Variables were defined in accordance with the analytical objectives and the nature of the administrative data provided by ACSS. Absenteeism constitutes the central study variable and was calculated based on the number of absence days recorded per nurse. Sociodemographic variables, such as sex, age and region of practice, were included to characterise the study population. These variables were not treated as causal predictors, but rather as contextual and relational elements.

In an initial stage, a preliminary data integrity check was conducted to identify incomplete, inconsistent or duplicate records. Cases lacking valid information on the study's central variables, particularly absence typologies and associated number of days, were excluded. This filtering ensured coherence between the study population and research objectives, preventing the inclusion of non-relevant cases. When necessary, categories with residual frequencies were aggregated to avoid analytical distortions and ensure the stability of statistical solutions.

Sociodemographic and territorial variables were also examined for internal coherence and subjected to appropriate coding procedures. The age variable was retained in its continuous form and additionally categorised into age groups for exploratory analysis and result interpretation purposes.

2.5. Statistical analysis strategy

Statistical analyses were conducted using IBM SPSS Statistics (version 29) and followed a sequential strategy consistent with the descriptive-analytical and exploratory nature of the study.

In a first phase, descriptive statistics were used to characterise the study population and describe the distribution of absence typologies and absenteeism days. Subsequently, Multiple Correspondence Analysis (MCA) was performed to identify patterns of association between different absence typologies and absence duration. As a complementary analysis, mean absence intensity was compared across typologies in order to assess whether statistically significant differences existed in the magnitude of professional unavailability associated with each absence type. A significance level of 5% ($p < 0.05$) was adopted for all analyses.

2.6. Ethical considerations

The data were provided by ACSS and were used exclusively for the purposes of this research. All ethical principles applicable to research in the social and health sciences were respected. Given the administrative nature of the data, the study did not involve any direct contact with participants or the collection of individual informed consent. All procedures ensured that analysis and dissemination of results occurred in aggregated form and did not allow for the identification of individuals or specific institutions.

3. Results

3.1. Participants characteristics

The study included 31.404 NHS nurses who, during the year 2024, recorded at least one absence classified under the administrative category “Other”.

The sample was characterised by a predominance of female professionals, along with a relatively balanced age distribution across the three age groups considered. From a regional perspective, the highest proportion of participants was employed in the Northern region and in Lisbon and Tagus Valley. Detailed sociodemographic and territorial characteristics of the participants are presented in Table 1.

Table 1

Sociodemographic and territorial characterization of the participants

Variables	N = 31.404 (%)
Gender	
Male	8235 (26.2%)
Female	23.169 (73.8%)
Age group	
≤ 41 years	10.204 (32.5%)
42–49 years	10.527 (33.5%)
≥ 50 years	10.673 (34.0%)
Health region of practice	
Lisbon and Tagus Valley	8.625 (27.5%)
North	11.495 (36.6%)
Alentejo	1.333 (4.2%)
Algarve	2.759 (8.8%)
Centre	7.192 (22.9%)

Note. Age: Min = 22, Max = 66, M = 46.03, SD = 8.79.
Source: Author's own elaboration.

3.2. Characterisation of absences classified under the "Other" category

When analysing the absence typologies included in the administrative category "Other", it was observed that some display a residual expression within the overall set of analysed records. The presence of categories with very low frequencies may affect the stability of the solutions obtained through MCA, as such categories tend to emerge as isolated points or as excessively distant positions in the factorial space, which hinders the interpretation of the identified patterns.

In this context, absence typologies with limited representativeness were aggregated into a category labelled "Residual typologies". This aggregation served an exclusively analytical purpose and did not imply any devaluation of the absence situations considered. Its application allowed for the preservation of the full set of available information while strengthening statistical robustness and enhancing the clarity of result interpretation. Govaert (2009) notes that, when applying MCA techniques, it is advisable to avoid categories with very low frequencies, with the common practice being to include only those exceeding a 1% frequency threshold. Greenacre (2013) further argues that low-frequency categories may generate biased interpretations if not adequately controlled.

Table 2 presents the conceptual alignment of the different absence typologies with the Sustainable Development Goals (SDG), based on the nature of the situations analysed and on

the literature addressing labour and organisational sustainability (Docherty et al., 2009; Pfeffer, 2010).

Table 2

Alignment of absence typologies with the Sustainable Development Goals

Absence typology	SDG	Rationale
Parental responsibilities	SDG 5	Promotion of gender equality and work–family balance
Working time arrangements	SDG 8	Organisation of working time and occupational health
Personal development	SDG 8	Continuous training and skills development
Civic participation	SDG 16	Civic engagement and inclusive institutions
Involvement in professional organisations	SDG 8	Professional representation and participatory governance
Community services	SDG 10	Social cohesion and community well-being
Residual typologies	–	Specific administrative classification

Source: Author's own elaboration.

3.3. Absenteeism profiles among National Health Service nurses: patterns of association between absence typologies and absence duration

Absenteeism intensity was operationalised based on the duration of absence episodes. Accordingly, three categories were defined: (i) punctual absences (1 day); (ii) short-term absences (between 2 and 7 days); and (iii) prolonged absences (more than 7 days). This classification follows the recommendations of Hensing (2004) and Johns (2010), who frequently use the one-week threshold to distinguish short-term from long-term absences.

Regarding absence typologies, those with limited empirical expression were aggregated into a residual category that included family care and work-related accidents or occupational illness. This procedure aimed to enhance the stability of the factorial solution and to facilitate the interpretation of absenteeism profiles. It should also be noted that some of the typologies aggregated into the residual category correspond to situations that, within the administrative system, are already classified under specific categories outside the "Other" designation. This helps to explain their low empirical frequency and their peripheral position within the factorial space.

Table 3 presents a summary of the MCA results, including eigenvalues, inertia associated with each dimension and the percentage of explained variance. A two-dimensional factorial solution was considered adequate and accounted for an average of 65.3% of the total variance.

Dimension 1 exhibited the greatest explanatory capacity (74.1%), while Dimension 2 provided a complementary contribution (56.6%), allowing for a joint interpretation of the factorial space.

Table 3

Summary of the Multiple Correspondence Analysis

Dimension	Eigenvalue	Inertia	% of variance explained
1	1.482	0.741	74.1
2	1.132	0.566	56.6

Source: Author's own elaboration.

The analysis of discrimination measures indicates that both absence duration and absence typology make high and comparable contributions to the construction of the two dimensions. Sociodemographic variables were introduced as supplementary and are positioned close to the origin of the factorial space. As they do not contribute to the discrimination of absenteeism profiles, they were excluded from the interpretation in order to avoid introducing noise and hindering profile identification. This result suggests that the structure of absenteeism profiles is predominantly explained by the nature of the absence itself, rather than by sociodemographic or territorial characteristics.

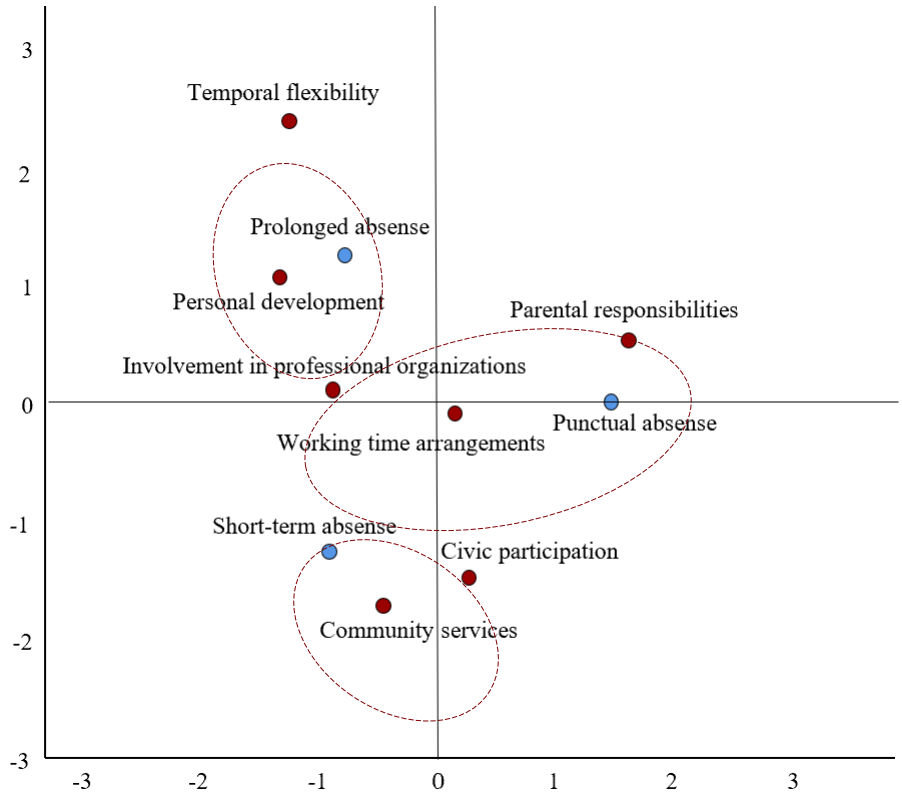
Dimension 1 can be interpreted as an axis of absence intensity and organisational impact. At the negative pole, it is associated with punctual absences, corresponding to situations with lower organisational impact. At the positive pole, it captures prolonged absences, which are associated with longer duration and a greater potential cumulative effect on service organisation.

Dimension 2 reflects the underlying motivation of absence. At the upper pole, it distinguishes typologies associated with personal development and temporal flexibility, whereas at the lower pole it encompasses typologies related to civic participation and community services, which occupy a more peripheral position within the factorial space.

Overall, the MCA results indicate that absenteeism is structured primarily around absence duration and absence typology (Figure 1).

Figure 1

Factorial map of absence typologies and absence duration



Note. Categories referring to absence duration and absence typologies are directly identified in the figure. The political typology is not graphically represented due to its peripheral position in the factorial space, without compromising the interpretation of the overall structure of the solution.
Source: Author's own elaboration.

The joint projection of absence duration and absence typology categories within the factorial space allowed the identification of three distinct absenteeism profiles, primarily structured according to the intensity and the nature of absence. These profiles emerge from the relative positioning of categories along the factorial axes and reflect differentiated patterns of professional unavailability among NHS nurses (Table 4).

The first profile is characterised by the association between punctual absences (1 day) and absence typologies of a predominantly functional nature, particularly working time arrangements, involvement in professional organisations, and parental responsibilities. The proximity of these categories to the centre of the factorial space suggests short-duration episodes with limited implications for service management, generally associated with punctual adjustments in work organisation. This profile reflects low-intensity forms of absenteeism, related to specific needs for balancing work demands with professional or institutional

commitments, without indications of prolonged detachment from the work context. It should be noted that the proximity to the origin confers limited discriminatory capacity to this profile, which justifies a cautious interpretation of the observed associations.

The second profile corresponds to short-term absences (between 2 and 7 days) and is positioned in the lower quadrant of the factorial space, at a distance from the origin and associated with civic participation and community services typologies. This configuration reveals a pattern that is distinct from both punctual absenteeism and prolonged absences and reflects an intermediate form of professional unavailability. This profile indicates the occurrence of episodes of moderate intensity associated with social and community involvement, which imply a temporary withdrawal from work activities.

The third profile is distinguished by the association between prolonged absences (more than 7 days) and typologies related to personal development and temporal flexibility. These categories are located further away from the origin of the factorial space and reflect greater intensity and duration of professional unavailability. This profile represents a high-intensity absenteeism pattern, associated with processes of individual reorganisation, investment in skills and/or adjustments to working time, with potential cumulative effects on service and team management.

Table 4

Absenteeism profiles identified through Multiple Correspondence Analysis

Profile	Type of absence	Associated typologies	Positioning	Interpretation
Profile 1	Punctual (1 day)	▪ Working time arrangements ▪ Involvement in professional organisations ▪ Parental responsibilities	▪ Very close to the origin of the factorial space	▪ Low discriminatory capacity ▪ Weak, functional and organisational associations ▪ Punctual adjustment profile
Profile 2	Short-term (2–7 days)	▪ Civic participation ▪ Community services	▪ Lower quadrant ▪ Distant from the origin	▪ Intermediate organisational impact ▪ Link to social and community involvement ▪ Moderate intensity
Profile 3	Prolonged (more than 7 days)	▪ Personal development ▪ Temporal flexibility	▪ Upper-left quadrant	▪ High intensity ▪ High organisational impact ▪ Individual reorganisation processes

Source: Author's own elaboration.

These findings provide a solid empirical basis for an interpretation of absenteeism that goes beyond the individual level and allows it to be framed within broader objectives of organisational sustainability. The identified absenteeism profiles may be interpreted in light of the SDG, particularly with regard to the promotion of decent work, professional well-being and institutional sustainability in the public healthcare sector.

Prolonged absences associated with personal development and temporal flexibility may reflect individual strategies aimed at preserving physical and psychological well-being, with particular relevance to SDG 3 (Good health and well-being) in the context of the NHS. Punctual and short-term absences associated with functional adjustments in professional activity, such as working time arrangements and involvement in professional organisations, suggest the existence of informal mechanisms for reconciling work demands with personal life. This pattern is aligned with SDG 8 (Decent work and economic growth), which emphasises the promotion of sustainable working conditions.

In addition, the absence of relevant associations between the identified absenteeism patterns and sociodemographic variables reinforces the central role of organisational and institutional factors in the management of professional availability. This perspective is consistent with SDG 16 (Peace, justice and strong institutions), which highlights the importance of public policies grounded in empirical evidence within the public healthcare sector.

Overall, the analysis of absenteeism patterns among NHS nurses contributes to reflection on, and implementation of, public policies aligned with the SDG, by underscoring the importance of work organisation in the sustainability of health systems.

Table 5

Contribution of absence typologies to total absence days

Typology	Number of absence days	Percentage of total
Parental responsibilities	7.372	23.9%
Personal development	1.830	5.9%
Working time arrangements	6.961	22.6%
Temporal flexibility	448	1.5%
Community services	599	1.9%
Involvement in professional organisations	8.885	28.8%
Civic participation	4.740	15.4%

Note. N = 31.404. The total number of absence days corresponds to the cumulative sum of days reported for each typology.
Source: Author's own elaboration.

The analysis of the contribution of absence typologies to the total number of absence days shows that involvement in professional organisations accounts for the largest proportion of the overall volume of absence days (28.8%), followed by parental responsibilities (23.9%) and working time arrangements (22.6%). Taken together, these three typologies concentrate 75.3% of the total number of recorded absence days, highlighting their structural weight within the phenomenon under analysis. The remaining typologies display substantially lower contributions, particularly temporal flexibility (1.5%) and community services (1.9%).

3.4. Comparison of mean absence duration across typologies

To examine differences in absence duration across typologies, the Kruskal–Wallis non-parametric test was applied due to the asymmetry of the dependent variable's distribution. The results of this test empirically reinforce the profiles identified through the MCA, by revealing statistically significant differences in absence duration across typologies ($H_{(6)} = 6712.81$, $p < 0.001$).

An examination of mean ranks indicates that absences associated with temporal flexibility and personal development are characterised by longer durations, whereas absences related to parental responsibilities are associated with shorter durations. Table 6 presents the statistically significant differences in absence duration across typologies. The analysis is based on mean rank positions, allowing for a comparison of the relative ordering of typologies with respect to the duration of absence episodes.

Overall, the relative ordering of typologies confirms that absences associated with personal development and temporal flexibility present significantly longer durations, while absences related to functional work adjustments tend to be concentrated in shorter periods.

Table 6

Duration of absence days by typology

Typology	N	Mean (SD)	Mean rank
Parental responsibilities	7.372	2.46 (5.26)	9898.3
Personal development	1.830	12.16 (17.73)	22012.0
Working time arrangements	6.951	5.91 (14.01)	14864.2
Temporal flexibility	448	13.6 (23.9)	22139.9
Community services	599	3.9 (5.0)	16270.9
Involvement in professional organisations	8.885	11.7 (24.7)	19637.9
Civic participation	4.740	3.64 (9.6%)	13616.6

Note. N = 31.404; SD = Standard deviation

Differences between typologies were analysed using the Kruskal–Wallis non-parametric test ($H(6) = 6712.81$, $p < 0.001$). The mean rank corresponds to the average rank of the groups in the test. Means and standard deviations are reported for descriptive purposes only.

Given the exploratory nature of the analysis and the large sample size, additional effect size measures were not reported.

3.5. Synthesis of the main findings

The analysis of absenteeism among NHS nurses allowed the identification of consistent patterns regarding the duration and typology of absences, highlighting the central role of organisational characteristics of work in structuring this phenomenon.

The initial descriptive characterisation revealed an asymmetric distribution of absence episode duration, as well as relevant heterogeneity across typologies, which justified the use of complementary analytical approaches. In this context, the MCA identified a clear bidimensional structure in which absence duration and associated typology emerged as the main explanatory axes, while sociodemographic variables assumed a residual and non-discriminatory role.

Based on the factorial map, three distinct absenteeism profiles were identified. The first profile corresponds to punctual absences, associated with typologies of a functional nature, characterised by short-duration episodes and limited effects on service organisation. The second profile groups short-term absences associated with civic participation and community services, configuring an intermediate pattern that is distinct from the remaining profiles. The third profile refers to prolonged absences associated with typologies such as personal development and temporal flexibility, which display greater intensity and cumulative impact on service organisation.

The results of the Kruskal–Wallis test empirically reinforced the profiles identified through the MCA by revealing statistically significant differences in absence duration across typologies. The relative ordering of groups confirmed that typologies associated with personal development and temporal flexibility present significantly longer durations, whereas typologies related to functional work adjustments tend to be concentrated in shorter periods.

Overall, these findings indicate that absenteeism among NHS nurses is predominantly organised according to the duration and the nature of absence typologies. This study constitutes a relevant contribution to the reflection on and implementation of public policies aligned with the SDG, particularly with regard to the promotion of decent work, professional well-being and

the sustainability of health systems. It further reinforces the importance of work organisation and institutional frameworks in understanding absenteeism within the public healthcare sector.

4. Discussion

The results indicate that professional unavailability among NHS nurses is predominantly structured according to the duration and nature of absence situations. European institutional analyses complement this perspective and underline that distinguishing between absence typologies allows for a more accurate understanding of the impact of absenteeism on organisational efficiency and human resource planning in healthcare (Eurofound, 2021). Nagarajan et al. (2024) further emphasise that the duration of absence periods constitutes a central criterion for distinguishing between absences associated with functional adjustments in work organisation and those related to processes of strain or occupational illness. Studies by Backes et al. (2025) highlight that aggregating absence situations of different natures compromises the interpretative capacity of absenteeism, as it obscures underlying organisational mechanisms related to work organisation and working time management. Similarly, Sakr et al. (2025) demonstrate that differentiated analytical approaches are essential for understanding these dynamics as an organisational phenomenon in highly complex care contexts.

The identification of distinct profiles of professional unavailability represents a relevant contribution of this study, as it demonstrates that absenteeism does not manifest homogeneously among NHS nurses. These profiles correspond to administrative configurations of absence episodes defined by relative duration, dominant typology and position within the factorial space, and should not be interpreted as individual trajectories or psychological categories. These profiles result from the MCA, in which some categories are positioned close to the origin of the factorial map, indicating a reduced contribution to structural differentiation between absence configurations. It is important to note that proximity to the origin reflects limited discriminatory power, and therefore the interpretation of these groupings should be understood as descriptive and exploratory, as they do not allow for inferences regarding individual or psychological mechanisms. Studies by Carvalho and Lopes (2022) show that short-term absences tend to be associated with work–life balance needs and temporal adjustments related to shift work. In contrast, prolonged absences have been linked to cumulative processes of strain, burnout and deterioration of professionals' physical and mental health (Nagarajan et al., 2024). In addition, Backes et al. (2025) suggest that the coexistence of short-, medium- and long-duration absence profiles reflects different individual and

organisational strategies for adapting to work demands in particularly demanding organisational contexts.

Eurofound studies (2021) have shown that high levels of absenteeism may function as signals of structural dysfunctions in work organisation, limitations in human resource planning and weaknesses in internal support policies for professionals, which are reflected in institutional performance. In this regard, the EOHSP report (2021) underlines that absenteeism management should be integrated into broader organisational sustainability strategies that articulate efficiency, working conditions and institutional social responsibility. More recent approaches deepen this perspective and emphasise the distinction between administrative presence and effective organisational responsiveness in healthcare systems (OECD, 2024). The results of the present study converge with this view and demonstrate that certain absence typologies, even when legally framed, significantly affect service operational capacity, particularly in contexts of human resource shortages (PLANAPP, 2025b).

Framing absenteeism within the SDG allows the analysis to move beyond a strictly operational perspective and to integrate dimensions related to health, decent work and the reduction of inequalities (United Nations, 2015). Joint reports by the WHO and the ILO (2022) have highlighted that safe working conditions constitute a central pillar of health system resilience. More recent studies reinforce that workforce sustainability depends on organisations' capacity to manage professional availability in a balanced manner in the face of increasing demand for healthcare services (OECD, 2024). Sakr et al. (2025) confirm that when human resource policies are aligned with these principles, they contribute to reducing the risks of prolonged unavailability and to promoting the sustainability of public health systems.

4.1. Theoretical contributions

This study reinforces the conceptualisation of absenteeism as an organisational expression rather than merely an individual behaviour. By demonstrating that absenteeism is structured according to the duration and typology of absences, it contributes to overcoming aggregated approaches that tend to homogenise situations of different natures, thereby limiting explanatory capacity. This perspective allows for a more nuanced understanding of absenteeism as an indirect indicator of professional availability and effective productive capacity in healthcare organisations.

In addition, the study highlights the analytical value of absence typologies for examining organisational absenteeism. The identification of distinct profiles of professional unavailability reinforces the need to consider the functional heterogeneity of absences and their different

organisational meanings, thereby expanding the theoretical framing of absenteeism within the field of healthcare human resources management.

The use of official administrative data, combined with exploratory multivariate techniques, constitutes a methodological contribution with relevant theoretical implications, as it demonstrates the potential of these approaches to capture organisational patterns that would be difficult to identify through self-report instruments. This contribution draws attention to the epistemological relevance of administrative data in health management research, particularly in public contexts characterised by high organisational complexity

4.2. Practical contributions

From a practical perspective, the findings suggest that absenteeism management in nursing should adopt a differentiated approach that is sensitive to the duration and typology of absences, rather than relying on uniform strategies based exclusively on overall rates. This approach enables the segmentation of interventions and workforce planning instruments according to different forms of professional unavailability. The identification of distinct profiles allows for more informed and effective adjustments to workforce allocation and planning measures, with direct implications for service continuity and operational efficiency.

Interpreting absenteeism as an indirect indicator of professional availability and adjusted productive capacity can support decisions related to work organisation, scheduling management, the use of formal replacements and the anticipation of future staffing needs, thereby reducing risks associated with team overload and institutional performance deterioration.

By demonstrating that different forms of absence reflect distinct organisational needs and constraints, the study provides practical reference points for the design of public policies and differentiated management practices that reconcile organisational efficiency, professional well-being and social responsibility within the public healthcare sector.

4.3. Limitations and future research

Although the use of administrative data represents an advantage in terms of objectivity and population coverage, this approach does not capture subjective dimensions associated with absences, such as individual motivations, perceptions of organisational justice or experiences of professional strain. Future research integrating mixed methods that combine administrative data with qualitative approaches or professional surveys may enrich understanding of the identified absenteeism patterns.

In addition, the study is based on data from a single calendar year, which limits the analysis of temporal dynamics and potential medium- and long-term effects associated with absence typologies. Future research may benefit from the use of longer time series to examine the stability of professional unavailability profiles and their evolution across different organisational contexts and healthcare system conditions.

Although the focus on NHS nurses is justified by the centrality of this professional group in care delivery, the findings cannot be generalised to other healthcare professions or institutional contexts. Future studies should explore the application of this analytical approach to other health professions and develop comparative analyses across sectors or countries, thereby contributing to a broader understanding of absenteeism as an organisational phenomenon in healthcare systems.

Conclusion

This study contributes to a deeper understanding of absenteeism in nursing as an organisational phenomenon within the context of the NHS, by highlighting the analytical relevance of absence duration and typology for interpreting patterns of professional unavailability. By using official administrative data and an exploratory approach centred on the identification of administrative absence profiles, the study goes beyond conclusions derived from aggregated absenteeism categories and reinforces its usefulness as an indirect indicator of organisational responsiveness. These contributions are particularly relevant in a context marked by increasing pressures on public healthcare systems, as they demonstrate that different absence modalities reflect distinct needs, constraints and organisational choices, with direct implications for operational efficiency, organisational sustainability and strategic human resource management.

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