




ORIGINAL ARTICLE

Nursing leadership in clinical practice, its efficacy and repercussion on nursing-sensitive outcomes: A cross-sectional multicentre protocol study

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Abstract

Aim: The aim of this study to describe a research protocol for evaluating the relationship between nursing leadership, organisational well-being and nurse and patient outcomes.

Background: The head nurses' leadership style influences the organisational context. When an organisation promotes nurses' well-being, they perform better performances and are more satisfied and engaged with their job. This reduces stress levels, burnout and absenteeism and improves physical and psychological health.

Methods: A multicentre study will be conducted. A self-report questionnaire will be administered to head nurses and nurses they coordinate. Study findings will include nurse-sensitive outcomes (e.g., pressure injuries, infections and mortality). Descriptive and correlational analyses will be conducted, and a structural equation model will be tested.

Results: Results might verify that a correctly judged leadership style of the head nurse will enhance the organisational context experienced by nurses and improve nursing sensitive outcomes.

Conclusion: This study will demonstrate the organisational role of middle managers and the direct repercussions on their staff and patients, understanding the relationship between organisational, process and outcomes variables.

Implications for Nursing Management: If the results confirmed the hypothesis, health care managers would cultivate and stimulate the head nurses' leadership style, thus increasing nurses' organisational well-being and achieving better patient outcomes.

No Patient or Public Contribution.

KEYWORDS

leadership, nurses, nursing care, nursing supervisor, work environment

1 | INTRODUCTION

Several studies have evaluated how leadership determines organisational dynamics (Dinh et al., 2014). Organisational well-being influences professionals' performance (Daly et al., 2014), so much so that it can change the quality of services significantly (Nutti et al., 2012). In the health care field, professionals involved in the care process can be guided and inspired by various leaders, for example, general health care managers, nursing managers, head nurses and even case managers of individual care teams. These leaders, depending on their background, education, preferences and experiences, can adopt different leadership styles.

The literature currently identifies two styles of leadership: ethical and authentic, and they have been discussed extensively from the technical and scientific standpoints (Avolio & Gardner, 2005; Dinh et al., 2014). These types of leadership play a fundamental role in the organisational context experienced and perceived by workers, and their influence on behaviour and performance has been demonstrated (Neubert et al., 2009; Zaghini et al., 2020). In health care organisations and the field of nursing, in particular, it has recently been highlighted that when the head nurse's leadership style promotes a positive organisational climate, it leads nurses to adopt "correct" behaviours (Makaroff et al., 2014). These behaviours are in line with those required by the organisation and are associated with various indicators of organisational well-being, such as the skills performed, nurses' intention to leave and job satisfaction (Numminen et al., 2015), as well as nursing-sensitive outcomes, expressed by the quality of care provided to patients and by care outcomes (Keselman, 2012).

2 | LITERATURE REVIEW

In this context, numerous theoretical models have been developed to explain professionals' psychological well-being/malaise about their work environment. An example is the Job Demand-Resources model (JD-R) by Bakker et al. (2008), which theorizes how the requests made by the organisation (job demands), such as workloads, staffing levels and organisational constraints, can be a source of work-related stress, creating situations in which workers experience strain (Schaufeli & Taris, 2014), a poorer state of health (Magnusson Hanson et al., 2018), risk of emotional exhaustion (Wong & Laschinger, 2015), burnout (Metlaine et al., 2017), psychosomatic disorders (Junne et al., 2018) and job dissatisfaction (McHugh et al., 2011; Senek et al., 2020). By contrast, when these stressors are controlled, managed and where possible reduced, workers are more motivated and perform better (Bakker & Demerouti, 2007; Xanthopoulou et al., 2007). So we can therefore hypothesize the following:

H1. head nurse's authentic and ethical leadership improves nurses' perception of the organisational context, improving nurse outcomes.

In health care organisations, recognizing stressful work contexts and intervening is one of the priority challenges (Khamisa et al., 2015). These situations can have repercussions for professionals, leading to absenteeism (Diestel et al., 2014), intention to leave the job (Nantsupawat et al., 2017), disengagement (Imperatori, 2017), reduced quality of life (Sili et al., 2022) and physical and mental health (Shamian et al., 2016) and reduced quality of patient care (Kieft et al., 2014). On the other hand, in an organisation where developing, promoting and maintaining organisational well-being is possible, health care professionals report job satisfaction (Lizano & Mor Barak, 2015), commitment (Prasetio et al., 2017; Werang & Agung, 2017) and engagement (Bakker & Albrecht, 2018; de Simone et al., 2018), implementing behaviours and performances in line with organisational objectives. In this way, quality of care is improved (Montgomery et al., 2015); for example, patient mortality is reduced (Aiken, 2003; Estabrooks et al., 2011; Tourangeau et al., 2007).

It is important for health care and nursing managers to understand these dynamics and relationships because they can proactively intervene on critical issues to improve organisational environments (Laschinger et al., 2012), increase workers' health (Fransson et al., 2015) and, indirectly, quality of patient care, as well as health care outcomes (Kane et al., 2007; Stone et al., 2007) such as mortality rates, re-admission rates, days of hospitalization and nosocomial infections (Aiken et al., 2011, 2014; Dutra & Guirardello, 2021; Griffiths et al., 2014). Assuming these relationships, we can formulate the following hypothesis:

H2. head nurse's authentic and ethical leadership improves nurses' perception of the organisational context, improving patient outcomes.

H3. head nurse's authentic and ethical leadership improves nurses' perception of the organisational context, improving outcomes for the organisation.

The World Health Organization has been addressing these problems since the 1950s (WHO, 1998), but despite this, particularly demanding and stressful workplaces have negative repercussions on workers' quality of life (van Bogaert et al., 2013). Literature has shown that some sectors, such as health care settings, are notoriously stressful (Khamisa et al., 2015; Ruotsalainen et al., 2015), affecting professionals' physical and psychological health (Shamian et al., 2016; Siegrist & Li, 2016; Theorell et al., 2015) and their quality of life (Sili et al., 2018). Performance is therefore impacted, in turn affecting the quality of patient care and safety (Farnese et al., 2019).

Disbelief that the organisational contexts in which nurses work have an impact on patient outcomes is, however, widespread. Systematic literature reviews support the claim that improved nursing settings are associated with better patient outcomes (Page, 2004), but definitive evidence is lacking (Kazanjian et al., 2005). This debate, which concerns both professionals and the academic world, is both animated and current because it could make new opportunities for intervention available to managers in the nursing professions, and to

health care organisations in general, to improve the quality of nursing care and patient outcomes.

This research project assumes that head nurse's leadership style influences the organisational context in which nurses work, impacting nurses, patient outcomes and organisational outcomes. Specifically, applying Donabedian's (1966) structure-process-outcome model, we know that structures influence processes and processes influence outcomes. In the health care setting, Donabedian's framework has been widely used in examining the relationships between structural characteristics including leadership style (MacPhee et al., 2010) and outcomes (Choi & Yun, 2019; MacPhee et al., 2010; Mc-Gillis Hall & Doran, 2007).

There are multiple leadership styles, but in this study, we refer to two styles that have proven to be important predictors of outcomes on professionals and patients: authentic leadership and ethical leadership. Avolio et al. (2004) developed a model that demonstrated how authentic leadership has repercussions on the staff's levels of commitment, job satisfaction and engagement and also on their intention to leave their job (Lee et al., 2019), their performance and their behaviour (Avolio et al., 2004). Similarly, ethical leadership has proven to be an important predictor of stress and burnout (McKenna & Jeske, 2021), as well as specific behaviours in nurses (Qiu et al., 2020; Zaghini et al., 2017) that affect patient satisfaction with the care received (Zaghini et al., 2020). In light of this, we can hypothesize the following:

H4. The organisational context may play a mediating/moderating role in the relationship between head nurse's leadership and nurse outcomes.

In addition, leadership style influences the organisational context experienced by nurses (Giordano-Mulligan & Eckardt, 2019); we can summarize the process using the Donabedian (1966) model. Organisational context can influence nurses' perception of the organisation, generating emotions (Friganović et al., 2019) that can have a mediating or moderating effect on the outcomes; for example, how errors are managed is a particular characteristic of health care organisational contexts directly related to the authentic style of leadership (Farnese et al., 2019). An error management that recognizes the informational value of errors (van Dyck et al., 2005) encourages learning from errors (Drach-Zahavy & Pud, 2010; Frese & Keith, 2015; Katz-Navon et al., 2009; van Dyck et al., 2005). When nurses work in an environment conducive to communication and error recovery, they are more likely to report mistaken actions and near misses, helping to improve care processes and preventing future mistakes (Covell & Ritchie, 2009; Patrician & Brosch, 2009), promoting organisational effectiveness and performance improvement (Frese & Keith, 2015; van Dyck et al., 2005).

Other important elements related to the nursing organisational context and determining performance, stress levels, burnout, job satisfaction, engagement and commitment are workloads (Rodrigues et al., 2017), organisational constraints (Pindek & Spector, 2016) and staffing levels (Needleman et al., 2020). Finally, given the social nature

of the nursing profession—which involves satisfying patients' needs through teamwork—interpersonal conflicts play an important role. Interpersonal conflicts can be managed directly by leaders in accordance with the leadership style they adopt (McKibben, 2017). They have a significant effect on nurses' performance and an indirect effect on the quality of care offered to patients (Kim et al., 2017). Considering the influence of organisational context on health care outcomes, we can hypothesize the following:

H5. The organisational context may play a mediating/moderating role in the relationship between head nurse's leadership and patient outcomes.

H6. The organisational context may play a mediating/moderating role in the relationship between head nurse's leadership and organisational outcomes.

Based on the hypothesis, we can conceptualize a theoretical model considering all these variables together. This model supposes that the leadership styles researched (representing the structure) might change nurses' perception of the organisational context in which they work (measured by the culture of error management, organisational constraints, workload, staffing levels and interpersonal strains—together representing the process). First, determining all nurse outcomes in terms of stress, burnout, commitment, engagement and job satisfaction; then, as a result, patient outcomes, such as falls, patient restraints, pressure ulcers, mortality, nosocomial infections, hospital readmissions and hospitalization days; and finally, organisational outcomes, including overtime, staff absenteeism and errors.

3 | METHODS

3.1 | Design

A cross-sectional multicentre study will be conducted in health care organisations.

3.2 | Aim

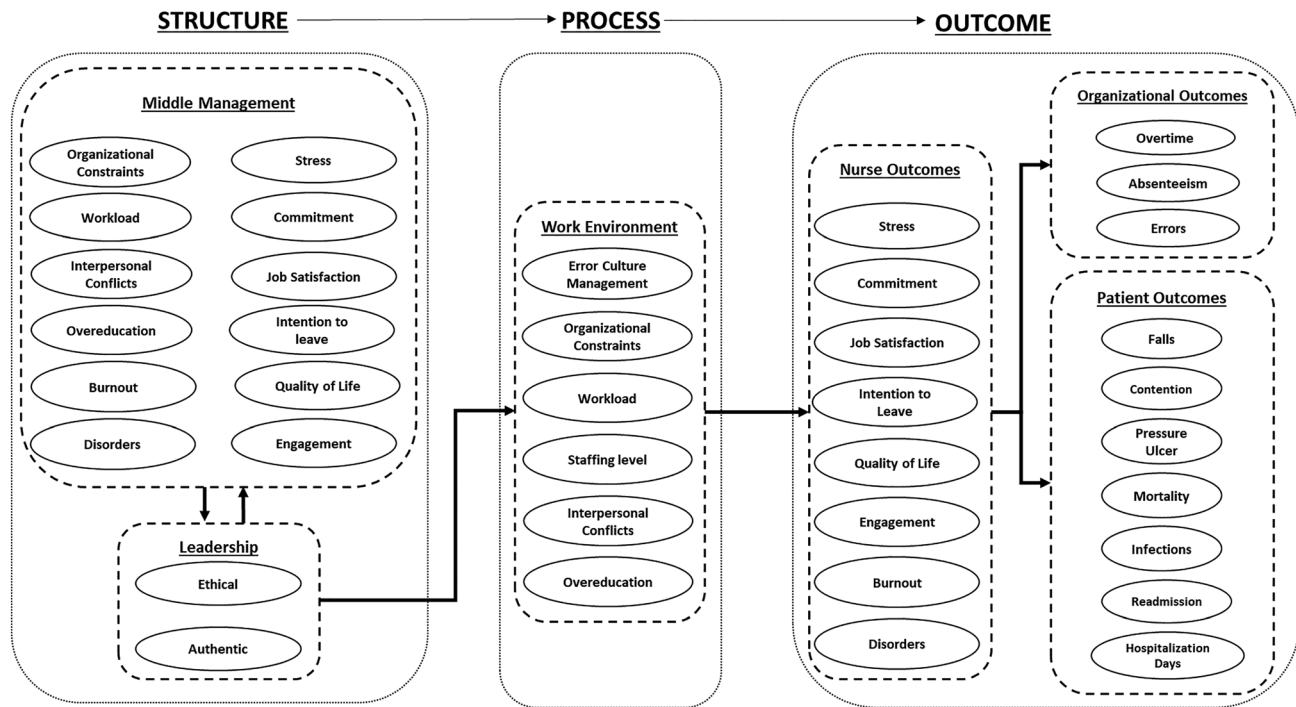
This study will aim to investigate the relationship between nursing leadership style, organisational well-being and outcomes related to nurses, patients and organisational performance (Figure 1). We want to verify the six hypotheses reported in the background.

3.3 | Participants

Participants will be nurses working directly with patients in medical and surgical units, on or off shift, full-time or part-time. Head nurses from the same unit will also be enrolled. Using statistical software, the required sample size has been estimated at 203 participants, with a

Conceptual Framework Based and Developed from:

Donabedian Structure-Process-Outcome (SPO) framework (1966); Wong, Cummings & Ducharme, 2013; Avolio, Gardner, Walumbwa, Luthans & May, 2004

**FIGURE 1** Research model

level of acceptable error at 3%, an estimated standard deviation of the scale at 1.096, and a Type I Error rate at 5% (Barlett et al., 2001).

3.4 | Data collection

Health care and nursing managers will invite to take part in the study, and, in case they will accept, they will communicate the total number of medical and surgical wards in their organisation. Through an electronic randomized sequence generated on an online website (www.randomization.com), wards will be identified for enrolling in this study.

A data collection tool will be created consisting of a web survey questionnaire and an organisational form. For data collection, electronic surveys have been chosen for disseminating the questionnaire and limiting missing responses (Mirzaei et al., 2022). Nurses and head nurses of the identified wards will receive the electronic questionnaires for filling in at one time. Moreover, an organisational ward outcome form will be only sent to the head nurses for collecting the daily prevalence of the nursing sensitive outcomes during an entire month.

3.5 | Instruments

The questionnaire administered to the nurses will collect data on the variables under study; the questionnaire and the ward form administered to the head nurses will collect data about ward characteristics and care outcomes.

Thus, there will be three data collection tools:

- a self-report questionnaire administered to nurses (NURSE QUESTIONNAIRE);
- a self-report questionnaire administered to head nurses (HEAD NURSE QUESTIONNAIRE);
- a ward outcome form, also to be filled in by head nurses (OUTCOMES FORM).

The NURSE QUESTIONNAIRE is a web survey composed of validated scales taken from the literature. Table 1 reports the instruments used for data collection, such as the Ethical Leadership Scale (Brown et al., 2005) and the Maslach Burnout Inventory General Survey (Schaufeli & Leiter, 1996). There are also specific sections relating to socio-demographic data (age, sex, marital and education status) and working characteristics (ward, years of service, etc.). This questionnaire collects data related to nurses' health outcomes and performance. Data will be analysed in aggregate mode, and the results will therefore be the average results reported by the ward's entire working group.

The HEAD NURSE QUESTIONNAIRE is a web survey composed of the same HEAD scales as those used for nurses (Table 1) plus a specific section relating to socio-demographic characteristics, ward staffing, work environment and organisational well-being.

The OUTCOMES FORM is a daily data collection form to be filled in by the head nurse for an entire month. This form collects patient health outcomes and the number of daily new outcomes

TABLE 1 Investigated variables and related questionnaire instrument used

Variable	Instrument	Author	Items	Dimension	α	Rating scale
Interpersonal conflicts	Interpersonal Conflict at Work Scale – ICAWS	Barbaranelli et al. (2013); Spector and Jex (1998)	4	Single	.74	5-point Likert scale (from 1 = never or not at all to 5 = very often/always)
Workload	Quantitative Workload Inventory- QWI	Barbaranelli et al. (2013); Spector and Jex (1998)	4	Single	.82	5-point Likert scale (from 1 = never or not at all to 5 = very often/always)
Organisational constraints	Organizational Constraints Scale – OCS	Barbaranelli et al. (2013); Spector and Jex (1998)	9	Single	.85	5-point Likert scale (from 1 = never or not at all to 5 = very often/always)
Ethical leadership	Ethical Leadership Scale – ELS	Brown et al. (2005)	10	Single	.92	5-point Likert scale (from 1 = totally disagree to 5 = totally agree)
Authentic leadership	Authentic Leadership Questionnaire – ALQ	Avolio et al. (2004)	16	4 (self-awareness, transparency, ethical/moral, balanced processing)	.87; .76; .81; .92	5-point Likert scale (from 0 = never to 4 = always)
Error management culture	Error Management Culture - EMC	van Dyck et al. (2005)	16	Single	.92	5-point Likert scale (from 1 = never to 5 = always)
Work related stress	Health and Safety Executive Indicator tool HSE – IT	Marcatto et al. (2011)	19	3 (demand, control, support)	.85; .80; .92	4-point Likert scale (from 1 = never to 4 often)
Burnout	Maslach Burnout Inventory General Survey – MBI-GS	Borgogni and Consiglio (2005); Maslach et al. (1996); Schaufeli and Leiter (1996)	10	2 (emotional exhaustion, cynicism)	.87; .86	7-point Likert scale (from 0 = never to 6 = always)
Interpersonal strain	Interpersonal Strain at Work – ISW	Borgogni et al. (2011)	5	Single	.89	7-point Likert scale (from 0 = never to 6 = always)
Job satisfaction	Nursing Organizational well-being Questionnaire – QISO	Sili et al. (2010)	9	Single	.90	4-point Likert scale (from 1 = never to 4 often)
Work engagement	Utrecht Work Engagement Scale – UWES	Balducci et al. (2010)	9	3 (vigour, dedication, absorption)	.86; .89; .76	7-point Likert scale (from 0 = never to 6 = always)
Affective commitment	Affective Commitment – AFC	Allen and Meyer (1990)	8	Single	.87	7-point Likert scale (from 1 = totally disagree to 7 = totally agree)
Nurse malaise	Nursing Organizational well-being Questionnaire – QISO	Sili et al. (2010)	8	Single	.84	4-point Likert scale (from 1 = never to 4 often)
Intention to leave job	Turnover Intention Scale – TIS	Bothma and Roodt (2013)	6	Single	.80	5-point Likert scale (from 1 = never to 5 = always)
Nursing care errors	Nurses Care Errors Scale – NCES	Farnese et al. (2019)	8	2 (slip/lapses, mistakes)	.88; .81	5-point Likert scale (from 1 = never to 5 = always)
Nursing quality of life	Nursing Quality of Life Scale – NQoLS	Sili et al. (2018, 2022)	14	2 (emotional QoL, social QoL)	.89; .81	4-point Likert scale (from 1 = not at all satisfied to 4 very satisfied)
Overeducation	Scale of Perceived Overqualification – SPOQ	Maynard et al. (2006)	9	Single	.89	7-point Likert scale (from 1 = totally disagree to 7 = totally agree)

that occur in the ward related to accidental falls, pressure injuries, nosocomial infections (those that occur 72 h after a patient's unit admission), number of patient restraints, number of deaths and any re-admission of patients (admissions within 30 days of discharge) (Aiken et al., 2001, 2012, 2017; Griffiths et al., 2008, 2014, 2019).

3.6 | Data analysis

Data will be analysed anonymously and reported in aggregate to preserve the privacy of each participant. The analysis will be conducted by stratifying according to ward type, care model and leadership style.

Descriptive statistics will be conducted to understand ward peculiarities through tabular and graphic representations. In addition, a description of both authentic and ethical leadership styles will be created.

Relative frequencies and percentages will be used to summarize qualitative characteristics; measures of central tendency (mean and median) with relative dispersion indices (SD and minimum and maximum) will be calculated to describe the quantitative information.

Univariate analyses will be carried out to evaluate possible associations between leadership style and outcomes (organisational quality and nurses' health). Parametric or non-parametric tests based on the normality or otherwise of the distribution of the collected quantitative variables, and chi-square and Fisher's exact test for quantitative variables, will be conducted. To verify the differences between more than two groups, the average scores expressed by the participants will be compared to the clinical setting. One-way analysis of variance (ANOVA) will be used with Tukey's post hoc or non-parametric tests to compare the median with the Kruskal Wallis test.

A correlation analysis will also be carried out by stratifying the collected quantitative variables according to leadership style and care model. Pearson and Spearman's correlation coefficient r will be used to evaluate the relationships between variables.

The formulated hypothesis will be tested using a structural equation model. The adequacy of the model will be evaluated considering the following fit indices to be good: chi squared (χ^2) (not significant), RMSEA (<0.06), CFI (>0.90), TLI (>0.90) and SRMR (<0.08) (Hu & Bentler, 1999; Muthén & Muthén, 2012).

Based on the results of the univariate and correlation analyses, multivariate regression models will be constructed for each outcome to understand which characteristics are most associated with/predictive for each outcome. Specifically, the predictive value of leadership and organisational context variables will be verified. Finally, the internal reproducibility of the nurse questionnaire will be estimated using Cronbach's Alpha.

The structural equation model (SEM) will be carried out with MPLus® Ver 7.1, while descriptive and inferential analyses will be carried out using the statistical package SPSS Ver 25®. The significance level was set at $p < .05$ for all analyses.

3.7 | Validity and reliability/rigour

In this study, we will use validated scales whose psychometric properties have been rigorously tested on nurses and head nurses to collect data. The validity and reliability of each instrument used are reported in Table 1. To ensure accuracy of the outcomes data collected, a manual containing definitions and characteristics of the variables will be provided (e.g., re-admission of patients within 30 days of discharge). A research team and experts will also evaluate the data obtained.

3.8 | Ethical considerations

The study will be conducted following the principles of the Declaration of Helsinki (World Medical Association, 2013) and has been approved by the Ethics Committee of the University Hospital of Rome Tor Vergata health care organisation, where the study was conceptualized (Prot. No. RS143.21). It has been registered in the Research Registry. All eligible nurses will be provided with information about the study proposed by a researcher and will be asked for their written informed consent before the web survey is sent to them. Potential participants will also be informed about data confidentiality and the option to withdraw their consent to participate in the study at any time.

4 | DISCUSSION

This study will investigate the relationship between nursing leadership, organisational well-being and nurse and patient outcomes. Using an innovative multidimensional methodology, self-reported data gathered from nurses and head nurses will be integrated with clinical and organisational nursing outcomes. Results will verify the relationship between these variables at institution and single ward levels, highlighting for the first time how head nurses' middle management leadership, which has been verified as being a determinant of the organisational context (Zaghini et al., 2019), impacts patient outcomes. We will be able to demonstrate whether organisational variables and dynamics directly affect hospitalized patients and are fundamental for the quality of care and patient safety.

Moreover, we will be able to demonstrate the relationship between middle management leadership and nurse outcomes in terms of commitment, engagement and burnout. This is very important for the scientific community and for health care managers because nurses who are more loyal to their organisation or more satisfied with their work are more productive (Prasetio et al., 2017) and perform better (Werang & Agung, 2017). This will provide significant added value for patients (Farnese et al., 2019; Stone et al., 2007) and organisations (Aiken et al., 1994).

Finally, the study will enable us to research and compare organisational well-being as described by head nurses and the nurses they coordinate; this relationship has never been studied before. Studying

and understanding this dynamic is very important. If nurses with a higher degree of organisational well-being improve their performance (Kim & Han, 2017), in the same way, we would expect a head nurse with a higher level of organisational well-being to adopt a correctly judged leadership style and, consequently, to improve the organisational context experienced by the nurses in their team.

4.1 | Limitations

This study has some limitations. First, the self-report nature of the scales employed will not guarantee accuracy of the results, even though objective data will also be collected. This limitation warrants a critical interpretation of the results. Second, the nature of some of the variables we will study, regarding what nurses think about their organisations and about their immediate manager, could produce an underestimation of the phenomenon, even though we ensure participant anonymity and use an aggregate analysis method. Finally, the cross-sectional design of the study will not allow us to observe changes in the variables over time, so future studies should consider employing a longitudinal study design.

5 | CONCLUSION

The results of our study will be important for the scientific community and for health care managers because it will provide new information on the middle manager. Moreover, it will enable important organisational dynamics that are crucial for quality of care and patient safety to be identified. Our multilevel analysis and approach will allow us to identify new fields for intervention such as head nurses' leadership style and to improve nursing-sensitive outcomes. Finally, the data will enable us to propose and develop specific interventions to improve the performance of health care organisations, interventions which everyone within the health care organisation can apply.

6 | IMPLICATIONS FOR NURSING MANAGEMENT

The study will verify the relationship between head nurse leadership style, nurses' organisational well-being and patients' outcomes. Understanding this organisational and clinical correlation, health care and nursing managers will intervene on the middle managers or head nurses, improving directly organisational wellbeing, quality of care and patients' safety. If the hypothesis will be confirmed by the results, health care manager will stimulate and cultivate the head nurse leadership style, thus increasing nurses' organisational well-being. Professionals acting better performances will improve nursing sensitive outcomes in terms of mortality, readmission rate, nosocomial infection and health care costs.

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CONFLICT OF INTEREST

No conflict of interest has been declared by the authors.

ETHICS STATEMENT

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AUTHOR CONTRIBUTIONS

Zaghini F., Fiorini J. and Mannocci A. contributed to the conceptualization, methodology and writing - original draft. Sili A. contributed to the conceptualization, methodology, writing - review & editing and supervision.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

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