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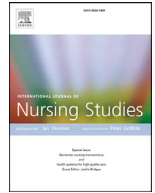
The relationship between nurse managers' leadership style and patients' perception of the quality of the care provided by nurses: Cross sectional survey

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ABSTRACT

Background: In healthcare systems, human resources play a strategic role that has a significant impact on the whole caring process. When the wellbeing of professionals is low their performance decreases, counterproductive work behaviours may became more likely, and as a result the quality of care is compromised. Studies have shown that leadership style is particularly relevant in relation to the quality of work environments in healthcare organizations.

Objective: The main purpose of this study is to test a model that investigates the relationships between nurse managers' leadership style and patients' perception of the quality of the care provided by the nurses, through the mediation of the quality of the working environment (in terms of burnout, interpersonal strain and counterproductive work behaviour).

Design: A multi-centre cross-sectional study was conducted.

Setting: The study was conducted in five hospitals located two in the north, two in the centre and one in the south of Italy.

Participants: Participants were 479 registered nurses (working as staff nurses, while head nurses and nurse managers were excluded) and 829 patients aged 18 years or older, able to read and write Italian and hospitalized for at least 3 days. Severely ill or mentally disabled patients who were not able to fill in the questionnaire were excluded.

Methods: The data were collected through two different questionnaires, one for the nurses and one for the patients. A multilevel analysis was conducted to examine the hypothesized model.

Results: Results confirmed the hypothesis that, when nurses were satisfied with leadership, they felt less burned-out and strained in interpersonal relationships, they engaged less in misbehaviour, and, in turn, patients were more satisfied with the quality of the care provided by the nurses.

Conclusions: The results of this study showed that the characteristics of the organizational context, the leadership, and the behaviours of nurses, influenced patients' perceptions of nurses' care. Therefore, managers of healthcare services should take these results into account seriously in order to improve the quality of care provided to patients.

What is already known about the topic?

- The leadership style influences the quality of work environment and can impact on nurses' behaviours
- Nurses who operate in demanding environments can respond to them with a chronic stress condition called burnout

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- When nurses live in a condition of organizational malaise, their performance decreases

What this paper adds

- The more satisfied nurses are with supervisors and management the less they experience burnout
- When nurses are less satisfied with leadership, interpersonal strain increases, and counterproductive work behaviours also increase, reducing patient satisfaction with the nursing care received
- When nurses have a poor perception of leadership, their cynicism increases, and the quality of care perceived by patients decreases

1. Introduction

To tackle rapid changes in social care and healthcare, and the growing needs of an aging population, healthcare systems need to find new ways to improve the quality of the care provided (World Health Organization, 2016). In this context, human resources play a strategic role, because they are responsible for the final result of care processes (Dubois et al., 2017), and consequently for the quality of the care provided (Donahue et al., 2008).

When healthcare employees, in particular nurses, work in stressful organizations their performance quality decreases (Abualrub and Al-Zaru, 2008; Sili et al., 2010), counterproductive work behaviours increase (Fida et al., 2014) and the quality of care is negatively affected (Shen et al., 2018).

In line with Karasek's (1979) classical job demands model as well as the more recent job demand-resource model of burnout (Demerouti et al., 2001), employees who work in demanding environments, that is those that require sustained physical and/or psychological effort such as high work pressure or emotionally challenging interactions with clients or customers, are more at risk of developing chronic stress and burnout in terms of psychophysical exhaustion, lack of interest in their work and a feeling of inadequacy (Bakker and Heuven, 2006; Consiglio, 2014; Demerouti et al., 2001; Maslach et al., 2001). Burnout is an important problem for modern organizations as its prevalence is continuously growing. It is a syndrome characterized by emotional exhaustion, depersonalization, and reduced personal accomplishment (Maslach et al., 1996). Emotional exhaustion makes the subject feel emotionally overloaded, without the strength to start over, and that they can no longer give anything to others, so they escape involvement. Depersonalization is the tendency to perform tasks mechanically, with standardized and stereotypical procedures. Reduced personal accomplishment refers to individuals feeling that they are inadequate at work, that they are failures, and becoming depressed. Workers suffering burnout present anxiety, depression, apathy, weakness and insomnia, but also deviant behaviours such as aggressiveness (Cañadas-De la Fuente et al., 2015).

In particular, healthcare workers could be at risk of 'interpersonal strain', that is, stress due to the relationship with a patient, but also with colleagues, line managers or fellow-workers (Borgogni et al., 2005). Interpersonal strain could have negative consequences on nurses' health and well-being (Brotheridge and Grandey, 2002; Tschan et al., 2005; Zapf and Holz, 2006), but could also cause them to modify their behaviours and performances in ways that have a direct impact on patient safety and the quality of the care provided (Zaghini et al., 2017a). A lack of attention to these phenomena on the part of the organization could have repercussions on nursing sensitive outcomes and therefore on care quality (Stalpers et al., 2015). It is therefore essential for healthcare managers to monitor working conditions, because a "healthy" organization is more effective and productive (Burke, 2016).

In response to a stressful work environment, in addition to developing burnout and interpersonal strain, workers can perform counterproductive behaviours (Spector and Fox, 2005). Starting from the frustration-aggression stress model (Lazarus, 1993), which theorizes how workers can show behaviours that are an adverse response to the negative emotions experienced at work, the stressful-emotional model of counterproductive work behaviour (Spector and Fox, 2005) illustrates how stressful work situations and certain characteristics of an organization could lead workers to feel negative emotions, which increase the likelihood of counterproductive responses. Thus, counterproductive work behaviours are considered as responses to a perceived organizational stress, aimed at reducing the frustration arising from it (Penney and Spector, 2005; Spector and Fox, 2005). They may include theft, sabotage, aggression, and physical or verbal abuse. Workers who display counterproductive work behaviour are aware that they are violating commonly shared ethical and moral principles and rules (Spector and Fox, 2005), so that their aim is to harm the organization and even the people within it, including colleagues, supervisors, subordinates, and clients (Fox et al., 2001; Spector and Fox, 2005). Unfortunately, counterproductive work behaviours are also a reality in the nursing profession (Fida et al., 2015), negatively influencing nursing sensitive outcomes and quality of nursing care (Zaghini et al., 2016). Given this, it is pivotal for nurse managers to empower their staff and assess the appropriateness of care by including indicators of nursing sensitive outcomes - which are conditions, behaviours or measurable perceptions of the patient or family (Butler et al., 2011; Doran, 2003; Kane et al., 2007; Kuokkanen et al., 2007; Palese et al., 2008) - as an integral part of health management (Dubois et al., 2017).

Nursing is important for quality and safety in hospital care (Aiken et al., 2012) and is one of the most important predictors of the patients' overall satisfaction with care (Kutney-Lee et al., 2009; Laschinger et al., 2005). In particular, nurses' caring behaviours influence patients' experience of the care received and are significantly associated with the quality of nursing care as perceived by patients (Edvardsson et al., 2017). Therefore patients' perception of nurses' caring can be considered an appropriate indicator of nursing care quality (Piredda et al., 2015, 2017).

Moreover, to identify the optimal standards of appropriateness of care, it is important to define the relationship between nursing care provided to patients and the possible determinants of work environments, such as interpersonal strain and burnout (Barbaranelli et al., 2013; Demerouti et al., 2001; Nantsupawat et al., 2016), skills mix (Aiken et al., 2017) and the nurse managers' leadership style (Wong et al., 2013).

In particular, several studies have shown that leadership style influences the quality of work environments (Cummings et al., 2010; Pearson et al., 2007) and can affect employees' behaviour (Brown et al., 2005; Ho et al., 2015), including in the nursing context (Fallatah and Laschinger, 2016; Lin et al., 2015; Zaghini et al., 2017b). Furthermore, certain leadership styles (e.g. transformational, ethical and authentic), have been demonstrated as particularly important for creating a supportive work environment for nurses (Laschinger and Leiter, 2006; Laschinger et al., 2012), through which they are able to provide quality care (Cummings et al., 2010; Laschinger et al., 2012; Stouten et al., 2010) and improve patients' outcomes (Boamah et al., 2018).

Many studies have been conducted on work environments, but few have paid attention to their relationship to care outcomes as directly expressed by healthcare users. Indeed, information on the quality of care provided to patients has been collected through self-report questionnaires filled in by healthcare workers, not by patients. Moreover, no research has ever studied, at one and the same time, the relationship existing between the characteristics of the organizational context, the leadership
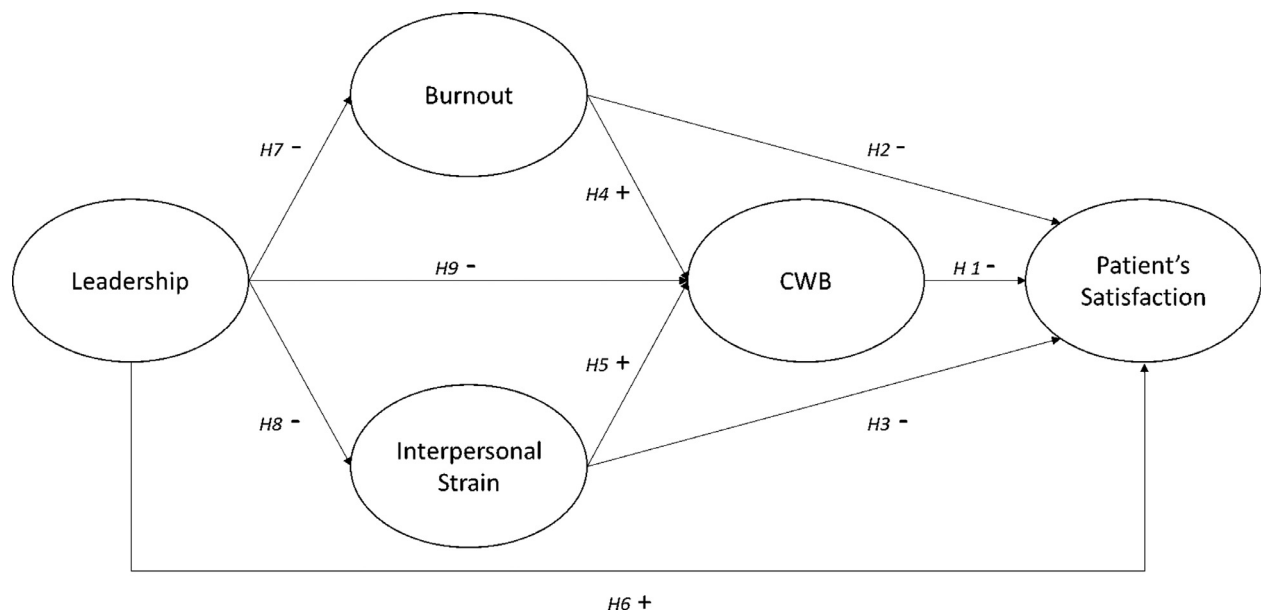
Fig. 1. Hypothesized model.

style of nurse managers, and the quality of care reported by patients.

Drawing on the above theories we developed a comprehensive model to explain the relationships between quality of care as perceived by patients and several organizational features (Fig. 1). In particular, it aimed to explain how the quality of care perceived by patients could be influenced by nurses' counterproductive work behaviours, a phenomenon never studied before.

In particular, we aimed to verify the following hypotheses: a) care as perceived by patients could be negatively influenced by healthcare workers' counterproductive work behaviours (H1); b) care as perceived by patients could be negatively, directly (H2, H3), and indirectly (H4, H5) influenced by counterproductive work behaviours, burnout and interpersonal strain of nurses (Jennings, 2008); c) given the relationship between leadership and health environments (Pearson et al., 2007) care as perceived by patients can be negatively and directly influenced by dysfunctional leadership (H6) (Namasivayam et al., 2014), and indirectly influenced by its effects on burnout (H7), on interpersonal strain (H8), and on counterproductive work behaviours (H9). In particular, we expected that the quality of leadership had a role to play with regard to patient satisfaction with nurses' care, by reducing nurses' burnout and counterproductive work behaviours.

Therefore, the main purpose of this study was to test the above model explaining the relationships between quality of care as perceived by patients and several organizational features, using a multilevel model to examine all the relationships simultaneously.

2. Methods

2.1. Design and setting

A multi-centre cross-sectional study was conducted in 42 adult medical and surgical wards of five hospitals located two in the north, two in the centre and one in the south of Italy. The hospitals involved met the requirements of geographical representation and were also representative of different healthcare organizations as they included a university hospital, two large hospitals in big cities, and two rural hospitals.

2.2. Sample

Participants were registered nurses (RNs) working as staff nurses. Head nurses and nurse managers were excluded. Patients admitted in the wards were recruited by researchers if they met the following criteria: aged 18 years or older, able to read and write Italian and hospitalized for at least 3 days. Severely ill or mentally disabled patients who were not able to fill in the questionnaire were excluded.

2.3. Variables and measurement

The data were collected by using two different questionnaires, one for patients and one for nurses, all of them validated and already available in the Italian language.

Patient's perception of the quality of nursing care received during hospitalization was measured through *The Caring Behaviours Scale* (Piredda et al., 2017). This scale is used as an indicator of nursing care quality, and not as a measure of patient's healthcare outcomes. Patients indicated how often RNs performed each caring behaviour described in 14 statements (e.g. "The nurses performed care activities with carefulness", "The nurses treated me as a person and never as a number or a pathology", "The nurses constantly checked whether I needed anything"), on a 4-point Likert scale (range: never/1 to quite often/4). A high score indicated more caring behaviours from nurses. *The Caring Behaviours Scale* included patients' demographic data and one item evaluating the overall nursing care received, rated on a 4-point Likert scale (range: poor/1 to very good/4). The scale's Cronbach's alpha reliability and factor score determinacy were 0.92 and 0.97, respectively.

The nurses' questionnaire included four different scales that are described as follows.

Nurses' satisfaction with the supervisor and management was measured by using the satisfaction with management dimension (6 items; e.g. "trust in professional and management attitude and competence of their nurse coordinator") of the *Nursing Organizational Health Questionnaire* (Sili et al., 2010). RNs rated their levels of agreement with each of the items on a 4-point Likert-type scale (range: 1/never to 4/often). The scale's Cronbach's alpha

coefficient and the factor score determinacy were 0.85 and 0.95 respectively.

Burnout was measured through the *Maslach Burnout Inventory - General Survey* (MBI-GS - Borgogni et al., 2005; Loera et al., 2014; Maslach et al., 1996), using the dimensions of emotional exhaustion (8 items, e.g. "I feel emotionally drained from my work") and depersonalization (5 items, e.g. "I've become more callous toward people since I took this job"). RNs reported the frequencies of their job-related feelings on a 7-point scale ranging from 0/never to 6/every day. The Cronbach's alpha coefficient and the factor score determinacy were 0.88 and 0.95 for emotional exhaustion, 0.88 and 0.96 for depersonalization respectively.

Interpersonal Strain was measured through the 6-item *Interpersonal Strain at Work Scale* (Consiglio, 2014), aimed at measuring mental and emotional distancing from other people at work. RNs rated their feelings (e.g. "at work I find myself insensitive to other people's problems") on a 7-point scale (range: 0/never to 6/every day). The Cronbach's alpha coefficient and the factor score determinacy were 0.91 and 0.97 respectively.

Counterproductive work behaviours were measured by seven items (e.g. "Someone was careless when updating the patient's medical records") of the *Nursing Counterproductive Work Behaviour Scale* (Sili, Fida, Zaghini, Tramontano, and Paciello, 2014). Using a 5-point scale (range: never/1 to always/5), RNs reported their counterproductive work behaviours towards other people, patients and organization. The Cronbach's alpha coefficient and the factor score determinacy were 0.64 and 0.92, respectively.

2.4. Data collection and management

Between March and July 2016 five research assistants (one for each site) administered the paper and pencil questionnaires. They informed (verbally and through a letter) eligible nurse and patient participants about the objectives of the study, and the anonymous and voluntary nature of data collection and analysis. The nurses were asked to complete the questionnaire within seven days and to return it in a sealed box placed in each ward. Eligible patients received the questionnaires from the research assistants who allowed them about 4 h for filling in. After that time the questionnaires were collected by the research assistants. In each ward the survey was conducted in 2 successive moments 15 days apart. The second time round, patients who had already filled in the questionnaire the first time were excluded.

3. Data analysis

Preliminary to the examination of the hypothesized model, a confirmatory factor analysis was conducted. Specifically, in order to examine the common method variance that could potentially affect the analysis (Podsakoff et al., 2003) we compared the measurement model of the RN data (five latent variables) with the model combining all the variables (one latent variable).

Given the non-normality of the counterproductive work behaviours items, robust weighted least squares (WLSMV) was used as a method for the estimation of parameters. To assess the model fit, Comparative Fit Index (CFI), the Root Mean Square Error of Approximation (RMSEA) and the Standardized Root Mean Square Residual (SRMR) or Weighted root-mean-square residual (WRMR) were used. The chi-square difference test was then used to compare the two measurement models.

While the hypothesized-measurement model fit the data reasonably (χ^2(df = 289) = 689.66, CFI = 0.85, RMSEA = 0.054 (CI = 0.049–0.059), SRMR = 0.067), the one-factor model did not converge, showing the distinctiveness of the variables measured in this research. Results of the confirmatory factor analysis

on the patient satisfaction scale also showed a reasonable fit (χ^2(df = 77) = 522.77, CFI = 0.90, RMSEA = 0.084 (CI = 0.077–0.091), SRMR = 0.050).

Intra-class correlations coefficients (ICCs) (Bliese, 2000) were computed on the patients' data to examine whether the aggregation of the patient satisfaction dimension at ward level was justified. ICCs1 on the patient satisfaction items ranged from 0.17 to 0.27 and ICCs2 ranged from 0.76 to 0.86, confirming the appropriateness of aggregating this variable at ward level (Bliese, 2000).

To examine the hypothesized model testing the protective role of the quality of leadership on patient satisfaction through a reduction of burnout and counterproductive work behaviours, a multilevel model was tested. All the analyses were conducted with SPSS 21.0 (IBM Corp. Armonk, NY, USA) and Mplus 8.0 (Muthén and Muthén, 2012) software.

4. Ethical approval

The study was approved by the ethics committee of one of the hospitals involved (protocol number IFO 970/17; 07/09/2017) and by the boards of executives of all five hospitals. The study was conducted in accordance with the principles of the Declaration of Helsinki developed in Brazil by the World Medical Association (2013). Nurses' and patients' participation was voluntary. Consent was assumed by the return of the questionnaires. All data were collected anonymously.
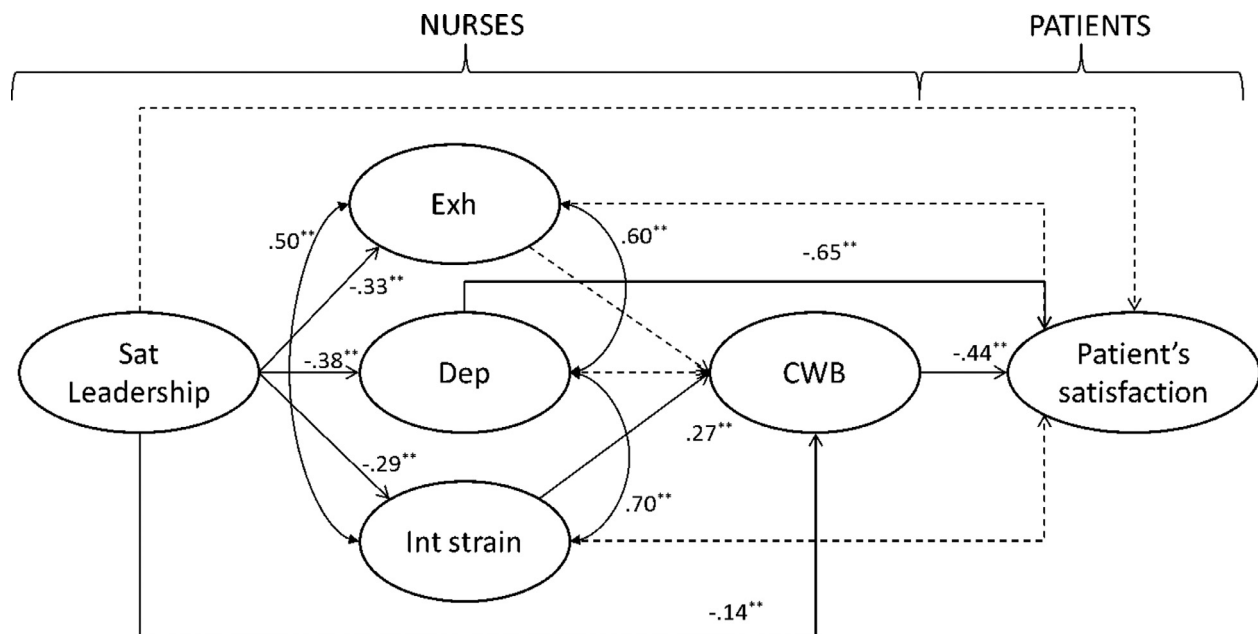
5. Results

5.1. Participants

The sample of RNs who participated in the study consisted of 479, with a response rate of 63.9%. Table 1 summarizes nurse demographic characteristics. Participants had a mean age of 41 years, were mostly female (74.5%), married (61.8%) and held a nursing

Table 1
Demographic characteristics of RNs ($N == 479$).

	F (%)	Range	M (SD)
Age		22–67	41.1 (8.6)
Job tenure		1–42	16.7 (8.9)
Job tenure in the current organization		1–41	12.8 (8.7)
Working hours per day		4–12	7 (0.8)
Gender			
Male	120 (25.1)		
Female	357 (74.5)		
Missing	2 (0.4)		
Marital Status			
Single	127 (26.5)		
Divorced	46 (9.6)		
Married	296 (61.8)		
Widowed	4 (0.8)		
Missing	6 (1.3)		
Professional education			
Nursing Diploma	217 (45.3)		
Bachelor	256 (53.4)		
Missing	6 (1.3)		
Clinical Setting			
Internal medicine	252 (52.6)		
General surgery	209 (43.6)		
Oncology	8 (1.7)		
Intensive care	6 (1.3)		
Missing	4 (0.8)		
Previous work experience			
Public sector	111 (23.2)		
Private sector	166 (34.7)		
Both private and public sectors	99 (20.7)		
None	86 (18.0)		
Missing	17 (3.5)		

Legend: **=p<0,001
Sat= Satisfaction; Exh= Exhaustion; Dep= Depersonalization; Int strain= Interpersonal Strain; CWB= Counterproductive Work Behavior

Fig. 2. Results of multilevel Structural Equation Model.

diploma (45.3%). They had worked for their organization for an average of 13 years, 7 h per day.

The patient participants numbered 829 (response rate 63.8%), most of them were males (448, 54%) and with a mean age of 64.6 years (SD = 17.25).

5.2. Multilevel analysis

The results of the multilevel analysis, summarized in Fig. 2, confirmed the hypothesis (χ^2 (df = 10) = 13.095, CFI = 1.00, RMSEA = 0.026; SRMR = 0.014). Specifically, within levels, the results showed that the more satisfied nurses were with supervisors and management, the less they felt burnout. Neither emotional exhaustion nor depersonalization were linked to counterproductive work behaviours, but interpersonal strain and dissatisfaction were linked to them. Moreover, between levels, both counterproductive work behaviours and depersonalization were linked to patients' satisfaction with nursing, meaning that the more RNs engaged in unethical behaviours and the more detached they felt from their job, the less satisfied patients were with nurses' caring.

In particular, within levels, satisfaction with leadership negatively influenced the emotional exhaustion of nurses ($\beta = -0.33$; $p = < 0.001$), indicating that when nursing satisfaction with leadership increased, nurses were less exposed to emotional burnout. The perception of leadership also impacted also on nurses' cynicism ($\beta = -0.38$; $p = <0.001$), which in turn negatively affected patient perception of nursing care ($\beta = -0.65$; $p = <0.001$). In other words, when nurses had a poor perception of leadership, their cynicism increased, and the quality of care perceived by patients decreased. Moreover, satisfaction with leadership was negatively associated with interpersonal strain ($\beta = -0.29$; $p = <0.001$), and interpersonal strain was associated with performing counterproductive work behaviours ($\beta = 0.27$; $p = <0.001$). The results of the indirect effects showed that the relationship between nurses' satisfaction with leadership and counterproductive work behaviour was mediated by interpersonal strain ($\beta = 0.08$; $p = <0.01$).

Between levels, counterproductive work behaviours were negatively associated with patients' satisfaction with nursing care ($\beta = -44$; $p = <0.001$). This relationship means that when nurses were less satisfied with leadership, interpersonal strain increased, and counterproductive work behaviours also increased, reducing patient satisfaction with the nursing care received. Finally, between levels, a direct negative relationship was found between nurses' satisfaction with the leadership and counterproductive work behaviours ($\beta = -0.14$; $p = <0.001$) which, as we have already noted, negatively affected patient satisfaction.

6. Discussion

The aim of this study was to investigate the relationship between nurses' satisfaction with their leaders, emotional exhaustion, depersonalization, interpersonal strain and counterproductive work behaviours, and patients' satisfaction with the care received.

Patient satisfaction with perceived care was influenced by nurses' behaviours and depersonalization, which in turn were linked to organizational context variables, including the quality of leadership. The result of this study, unique in the Italian nursing context, proves an indirect predictive value of the leadership style of management and the outcomes of healthcare organizations, already reported in different studies on authentic leadership (Cummings et al., 2018; Johnson, 2015). When satisfaction with leadership decreases, a double effect is produced on nurses: they feel strong discomfort, in terms of emotional exhaustion, depersonalization and interpersonal strain, and they perform more counterproductive work behaviours. The leadership style can influence workers' behaviour (Alilyyani et al., 2018; Ho et al., 2015), including counterproductive work behaviours (González et al., 2015). First, because it generates negative emotions in nurses (Grojean et al., 2004) that can motivate them to perform deviant behaviours such as counterproductive work behaviour (Spector and Fox, 2005); and secondly, because a spirit of imitation of an unethical leader (Neubert et al., 2009) leads nurses to perform coun-

terproductive work behaviours (Zaghini et al., 2017b). This effect of leadership on counterproductive work behaviour decreases the quality of care. Nursing performance influences patients' outcomes (Chahal and Mehta, 2010), and consequently the quality of the care perceived (Kieft et al., 2014).

Moreover, performance and behaviours by nurses can affect perceived care. Counterproductive work behaviours performed by nurses have proven to be a negative predictor of caring. Counterproductive work behaviours, despite their being clearly directed against the organization (Marcus et al., 2016; Robinson and Bennet, 1995), also manifest themselves through deviant behaviours acted towards the users, who in the healthcare services are the patients. Aggressive or violent behaviours, as well as a cold and detached approach to patients during care, are perceived by patients as a sign of poor quality of care. Among healthcare workers, nurses are those who spend most time with patients, and in order to meet their needs and help them achieve the greatest possible degree of self-efficacy, they can establish lasting and fruitful relationships (Johansson et al., 2002). A detached, cynical or aggressive attitude on the part of nurses certainly does not benefit their relationship with patients or their compliance with care processes, hindering the entire care process and considerably reducing the quality of the care received.

The results of our study also identify a significant predictive value of depersonalization in relation to caring as perceived by patients. Nurses who report a sense of detachment in their work are those with lower quality performance (Bakker and Heuven, 2006), and this is perceived by patients as an indicator of poor quality of care. Previous studies have demonstrated that depersonalization, emotional exhaustion (Ansari et al., 2013; Kwak, 2006; Zaghini et al., 2017b) and interpersonal strain (Eriksson and Broidy, 2017) are predictors of deviant nurse behaviours (Zaghini et al., 2017a). Results from this study add that when nurses reported depersonalization, the quality of caring perceived by patients was significantly reduced, not only by counterproductive work behaviours, but also by a direct effect of depersonalization.

Unfortunately, counterproductive work behaviours are found to be a reality in the nursing context (Zaghini et al., 2016), and there are determinants in the characteristics of the organization such as interpersonal strain (Zaghini et al., 2017b) and the quality of the leadership by the manager (Zaghini et al., 2017a), which predict their occurrence. Our study shows that when nurses suffered, particularly because of negative interpersonal relationships with colleagues, line managers or patients, their performance decreased in terms of quality, and deviant behaviours were carried out, reducing the quality of perceived care. This is in line with previous literature showing that conflicts with head nurses or managers (Policastro and Payne, 2013), the perception of injustice within organizations (Ahmed et al., 2013; Ceylan and Sulu, 2011), poor leadership styles (Alilyyani et al., 2018; Egues and Leinung, 2013) and lack of social support (Longo and Sherman, 2007) are antecedent to counterproductive work behaviours (Zaghini et al., 2016).

7. Strengths and limitations

This study presents several important strengths. This is the first study to focus on investigating how organizational variables can influence the quality of care perceived by patients; moreover, it was conducted with a sample of nurses and patients in different hospitals distributed throughout the national territory; finally, the analyses carried out using a structural equation model (SEM) offer an accurate and reliable approach to checking the results.

The study has some limitations. First of all, there is the problem of the "social undesirability" of counterproductive work behaviour. This phenomenon, which refers to the deviant nature of counterproductive work behaviour, making it difficult to report and attribute to oneself, may have led to an underestimation of the phenomenon. In addition, in organizations, a strict zero tolerance policy on the deviant behaviours of healthcare professionals may have led participants not to report this phenomenon. Secondly, the cross-sectional design did not permit an evaluation of the possible development of the variables investigated, which by their nature could determine what is known as an "organizational culture" in which behaviours and relationships become stable and consolidated enough to make both counterproductive work behaviours and interpersonal strain the norm. Finally, since all the scales are used in the questionnaire with the same polarity, we could not rule out a "response set" bias, a problem that in future research could be solved by introducing scales with inverse variability.

8. Conclusion

This is the first study to investigate whether the characteristics of the organization, the quality of leadership by managers, and the behaviours of nurses, influenced patients' perceptions of nurses' care. The quality of leadership of ward managers was found to influence nurses' behaviours. Therefore, managers of healthcare services who want to provide quality care to patients should take these results into account seriously and introduce surveillance and training programs for nurse managers, helping them to acquire appropriate leadership competences, as well as reducing organizational problems such as absenteeism (Hassan et al., 2014) and intention to leave (Ha and Choi, 2002), and preventing errors (Bobbio et al., 2007).

In addition, it is important to create organizational climates that focus on the problems and needs of nurses in order to prevent emotional exhaustion and depersonalization and promote relaxed relationships with both managers and colleagues. In this way, staff performance could improve, indirectly but significantly increasing the quality of the care provided. Therefore, investing and working on managers' leadership quality could add a significant value that would reflect on the quality of care and on the safety of patients.

Conflict of interest

No conflict of interests has been declared by the authors.

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Supplementary materials

Supplementary material associated with this article can be found, in the online version, at doi:10.1016/j.ijnurstu.2019.103446.

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