



Original article

The role of job satisfaction, work engagement, self-efficacy and agentic capacities on nurses' turnover intention and patient satisfaction



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ABSTRACT

Background: Nurses' voluntary turnover is a worrying global phenomenon which affects service quality. Retaining nursing staff within a hospital is important to eliminate the negative influence of voluntary turnover on the quality of care and organisation costs.

Objectives: This research helps explain nurses' voluntary turnover by analysing the role of self-efficacy, agentic capacities, job satisfaction, and work engagement on hospital turnover intention, and to study the relationships between these variables and patient satisfaction.

Setting and participants: This study gathered data from 194 nurses and 181 patients from 22 inpatient wards at two hospitals in southern Italy.

Results: Correlation analysis revealed that job satisfaction, work engagement, self-efficacy and agentic capacities were positively interrelated and negatively correlated with turnover intention. Path analysis showed that self-efficacy, some agentic capacities (anticipation and self-regulation), job satisfaction, and work engagement had direct or indirect effects on nurses' turnover intention, and that job satisfaction exerted a stronger effect on turnover intention. Also, patient satisfaction was positively correlated with nurses' job satisfaction, work engagement, self-efficacy, self-regulation and anticipation and negatively correlated with nurses' turnover intention.

Conclusion: Results highlighted the importance of implementing actions (for example through feedforward methodology and the goal setting technique) to improve self-efficacy, self-regulation skill, work engagement and job satisfaction in order to reduce nurses' turnover intention and increase patient satisfaction with nursing care.

1. Introduction

In recent years, public hospitals have had to cope with numerous challenges including increasing competition and the exponential increase of demand in terms of quantity and quality (Counte & Meurer, 2001; Zweifel, 2016). The financial cutbacks in public funding and the increasing number of patients (Aiken, Clarke, & Sloane, 2002) have highlighted the urgency to improve the quality of service and, at the same time, to reduce the costs of healthcare. This entails an increase in workload and pressures for the operators that are over-exposed to psychosocial risks (Bernal et al., 2015), which scientific research must take into account.

Healthcare workers' well-being is an interesting topic given its influence on service quality in hospitals. Many studies have demonstrated the association between employee psychological well-being and job performance (Cropanzano & Wright, 1999; Wright, Cropanzano, & Bonett, 2007), including the health sector (Ferrara, Converso, & Viotti, 2013; Lundstrom, Pugliese, Bartley, Cox, & Guither, 2002). To achieve

the aim of continuous improvement of service quality, healthcare organisations must constantly monitor and promote the health and satisfaction of all the people who are involved in the care process (Al-Abri & Al-Balushi, 2014).

Nursing care is crucial for the realisation of healthcare outcomes (Cho, Ketefian, Barkauskas, & Smith, 2003). Indeed, nurses provide continuous assistance to hospitalised patients (Tourangeau et al., 2006) responding to their physical and emotional needs (Henderson, 2001). Specifically, nurses assist patients, helping them in daily activities to maintain or improve their health and lead them to achieve independence as soon as possible (Henderson, 2006). To reach these aims it is important that nurses establish a helping relationship with patients. An empathic attitude with patients aids in offering adequate treatment to address the real needs of those assisted and to make them feel more satisfied with the care process (Dal Santo, Pohl, Saiani, & Battistelli, 2014; McQueen, 2004).

Often nurses' work demands exceed their personal and job resources and this exposes them to psychosocial risks with negative consequences

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on their physical and psychological health (Bernal et al., 2015; Fillion et al., 2007). A possible effect of nurses' malaise is voluntary turnover that exacerbates the shortage of nursing staff (Flinkman, Isopahkala-Bouret, & Salanterä, 2013). International data indicates that the shortage of nurses is a worrying global phenomenon (Buchan & Aiken, 2008; Johnson, Butler, Harootunian, Wilson, & Linan, 2016). In the USA, researchers and government organisations have estimated that there will be a shortage of nurses anywhere from 300,000 to 1 million in 2020 (Juraschek, Zhang, Ranganathan, & Lin, 2012). Compared to the European average of 8.4, Italy ranks lower with 6.2 nurses per thousand residents in 2014 (OECD, 2016). Quantitative and qualitative demand for nurses will probably continue to increase because of the growing life expectancy and ageing workforce (Germini, Vellone, Venturini, & Alvaro, 2010; Juraschek et al., 2012; OECD, 2016). At the same time nursing turnover rates are alarming in many countries (Duffield, Roche, Homer, Buchan, & Dimitrelis, 2014; Hayes et al., 2006, 2012). One study, which involved seven European countries, showed that Italy, along with France and Germany, have nurses with higher levels of intention to leave their profession (Li, Galatsch, Siegrist, Müller, & Hasselhorn, 2011). An Italian study (Ambrosi et al., 2011) found that 34.4% of nurses planned to leave the hospital within one year after hiring and 43.8% of them had already sent a hospital transfer request. It seems clear that understanding the reasons why nurses want to carry out turnover behaviour is crucial to face the shortage of nurses.

The literature showed that the intention to leave is the main predictor of real turnover behaviour (Griffeth, Hom, & Gaertner, 2000; Takase, Yamashita, & Oba, 2008). According to Takase (2010), turnover intention is a complex process that arises from a negative psychological response to specific occupational or organisational conditions and this response evolves either into the decision to leave or unfolds into withdrawal behaviours that may entail voluntary abandonment of the current job or actions to achieve better job opportunities. Nursing turnover includes nurses moving to another ward within the same hospital or leaving the organisation or profession (Ambrosi, Galletta, Portoghese, Battistelli, & Saiani, 2013; Hayes et al., 2006, 2012). High voluntary turnover rates among nurses often lead to dysfunctions at an organisational level causing an increase in costs and the workload of nurses on duty (Hayes et al., 2006; Wagner, 2010). This situation has a negative impact on nurses' well-being and performance, as well as on the quality of patient care (Aiken et al., 2012).

Moreover empirical research has found a relationship between nurses' occupational health and the quality of care perceived by patients (Coomber & Barriball, 2007; Ferrara et al., 2013; Garman, Corrigan, & Morris, 2002; Janicijevic, Seke, Djokovic, & Filipovic, 2013; Leiter, Harvie, & Frizzell, 1998). This relationship has been extensively analysed in the international literature (Coomber & Barriball, 2007; Garman et al., 2002; Janicijevic et al., 2013; Leiter et al., 1998), but is still underexplored in the Italian context (Argentero, Dell'Olivo, & Ferretti, 2008; Ferrara et al., 2013). Considering the alarming turnover data in Italy (Ambrosi et al., 2011; Li et al., 2011; OECD, 2016), scientific research investigating which dimensions impact voluntary turnover is needed, in part to suggest useful interventions for healthcare organisations to prevent this phenomenon and retain nurses.

Based on social cognitive theory (Bandura, 1986) which views people as active agents in their own environment, this study investigated the role of specific dimensions, such as job satisfaction and other less studied constructs in relation to this topic such as self-efficacy, agentic capacities and work engagement, as potential antecedents of hospital turnover intention among nurses. The main contribution of the present research is to analyse both the relationships between possible determinants of hospital turnover intention among nurses, in order to expand the knowledge on this issue, and the relationship between nurses' job satisfaction, work engagement, self-efficacy, agentic capacities, turnover intention and patient satisfaction, which is increasingly used in many healthcare organisations as a quality

performance indicator (Al-Abri & Al-Balushi, 2014). The findings of this study can highlight dimensions to focus upon in order to improve organisational strategies useful to reduce volunteer turnover behaviours among nurses. The research offers interesting insights for healthcare organisations to act to retain their staff, consequently prevent turnover, and to insure good quality nursing care.

The paper is organised as follows. Firstly, it illustrates the theoretical framework of this study focusing on dimensions of job satisfaction, work engagement, self-efficacy and agentic capacities in relation to nurses' turnover intention and patient satisfaction. Secondly, it describes the research methodology and the data gathered in the study. Finally, we discuss the principle findings of this research within the previously outlined theoretical framework and their implications for theory and practice.

2. Specific predictors of nurses' turnover intention: the role of job satisfaction, work engagement, self-efficacy and agentic capacities

Several researchers have studied turnover intention as a main predictor of turnover behaviour (Griffeth et al., 2000), and specifically among nurses (Takase et al., 2008). Turnover intention has been identified as the principal predictor of turnover intention and job satisfaction (Zaghloul, Al-Hussaini, & Al-Bassam, 2008). Other variables analysed in relation to turnover intention are work engagement (De Simone & Planta, 2017; Laschinger, 2012; Shahpouri, Namdari, & Abedi, 2016; Simpson, 2009) and self-efficacy (De Simone & Planta, 2017; Han, Sohn, & Kim, 2009; Shahpouri et al., 2016).

Job satisfaction is the main determinant of voluntary turnover in nurses (De Gieter, Hofmans, & Pepermans, 2011; Viola & Filon, 2015; Zaghloul et al., 2008); recent research has found that as nurses' job satisfaction decreases, their turnover intention increases (Coomber & Barriball, 2007; De Gieter et al., 2011; Galletta, Portoghese, Penna, Battistelli, & Saiani, 2011; Hayes et al., 2012; Tsai & Wu, 2010). Moreover, job satisfaction is positively associated with greater self-efficacy (Bong, So, & You, 2009), work engagement (García-Sierra, Fernández-Castro, & Martínez-Zaragoza, 2016), occupational health (Gandhi, Sangeetha, Ahmed, & Chaturvedi, 2014; Khamisa, Oldenburg, Peltzer, & Ilic, 2015; Piko, 2006; Sveinsdóttir, Biering, & Ramel, 2006) and best job performance (Zaghloul et al., 2008) among nurses.

Work engagement and self-efficacy have been less studied in relation to nurses' turnover intention, although these dimensions have been shown to have a protective role with respect to withdrawal behaviours in many sectors (Avey, Luthans, & Jensen, 2009; Saks, 2006; Schaufeli & Bakker, 2004).

Work engagement, which has been described as a positive and satisfying psychological state of people in relation to their work that makes them feel fully involved (Schaufeli, Salanova, González-Romá, & Bakker, 2002), although not thoroughly studied so far, is another important dimension to analyse in relation to nurses' turnover intention. Work engagement is usually positively associated with mental and physical health, work performance (Bakker & Demerouti, 2016; Bakker, Schaufeli, Leiter, & Taris, 2008) and negatively to withdrawal behaviours, such as absenteeism and turnover (Agarwal, Datta, Blake-Beard, & Bhargava, 2012; Bakker & Demerouti, 2016; Timms et al., 2015). In nursing practice, work engagement has been shown to have an impact both on the nurses' personal outcomes, such as high job satisfaction, and their performance, in terms of work efficiency, quality of care, patient satisfaction, which increase as a result of a higher level of work engagement (Keyko, Cummings, Yonge, & Wong, 2016). According to the results of international studies conducted in other professional contexts (Agarwal et al., 2012; Timms et al., 2015), work engagement has a negative effect on nurses' turnover intention (Laschinger, 2012; Shahpouri et al., 2016; Simpson, 2009).

Self-efficacy, indicating the beliefs about one's personal ability to implement the necessary actions to achieve specific goals (Bandura, 1997), is positively associated with nursing job performance (Lee & Ko,

2010). Studies that have examined the relationship between self-efficacy and turnover intention among nurses found interesting results. Han et al. (2009) observed that a low level of self-efficacy predicts nurses' turnover intention. Shahpouri et al. (2016) showed that the negative association between self-efficacy, hope, resilience, optimism, and turnover intention are mediated by work engagement. Moreover, Lee, Lim, Jung, and Shin (2012) highlighted that nurses' turnover intention is influenced by self-efficacy, but to a lesser extent than other dimensions such as stress and working context. A similar result emerged from a recent study (Kim & Kang, 2013) which found that nurses' turnover intention decreases when self-efficacy increases but compared to others factors, self-efficacy has less predictive power. In this study we explored the role of self-efficacy in nurses' turnover intention, because this relationship is under-researched in the literature and self-efficacy is strongly related to withdrawal behaviours (Hayes et al., 2006) and is a good predictor of job performance (Stajkovic & Luthans, 1998).

We also studied the role of agentic capacities (Bandura, 1986, 1989, 1997), a new construct, closely related to self-efficacy (Miraglia, Borgogni, Gallo, Pecorari, & Ribeca, 2012), that has already been identified by previous studies as an organisational resource (Cenciotti, Bartolomeo, Bianchi, Borgogni, & Consiglio, 2015; Cenciotti, Borgogni, & Consiglio, 2016) but has not been investigated in relation to nurses' turnover intention. According to social cognitive theory, people act and interact in their environment exercising control over their own motivational and thinking processes and over their actions through different skills, named agentic capacities (Bandura, 1986, 1989, 1997). Agentic capacities that play a key role in organisational success are anticipation, self-regulation, self-reflection and vicarious learning (Cenciotti et al., 2015; Cenciotti et al., 2016): Anticipation is the ability to project oneself into the future, seizing opportunities and limitations of future scenarios; self-regulation describes the capability to manage one's own emotional and behavioural dynamics, and to direct effort towards the pursuit of objectives; self-reflection is the ability to learn from experience monitoring one's own behaviour; vicarious learning is the ability to learn through observation of successful behaviour. The results of a recent study have shown the promising role of agentic capacities in facilitating the implementation of successful behaviours in organisations (Cenciotti et al., 2015), finding that agentic capacities are associated with self-efficacy, which has an important role in perseverance in working activities (Luthans, Youssef, & Avolio, 2007). Cenciotti et al. (2015) also showed that agentic capacities are positively related to work engagement, which makes workers more willing to invest their energy in the working activities (Bakker et al., 2008). In other words, workers who are able to prefigure events, to regulate their emotions and behaviours, and to learn from experience within the work context, strongly believe in their ability to achieve work goals and develop a positive attitude towards the organisation and, consequently, they feel more involved (Cenciotti et al., 2016). Furthermore, agentic capacities were related to job crafting, namely the tendency to commit actions aimed at developing one's own working role within the organisational context (Cenciotti et al., 2015). Some agentic capacities were also associated with the evaluation of work performance by superiors (Cenciotti et al., 2015). These research results show the promising role of agentic capacities in voluntary turnover prevention among nurses. These capabilities have not yet been investigated in relation to nurses' turnover intention and need further study. The recognition of these skills can be useful in the assessment and development of people, particularly in crucial and strategic roles (Cenciotti et al., 2016).

Based on the discussed literature, we hypothesised that:

Hypothesis 1. Job satisfaction has a stronger negative relationship with turnover intention compared to the other analysed dimensions.

Hypothesis 2. Job satisfaction, work engagement, self-efficacy and agentic capacities are positively interrelated and negatively correlated with hospital turnover intention.

Hypothesis 3. Agentic capacities, self-efficacy and work engagement exert direct positive effects on job satisfaction and each of these variables exert direct and indirect negative effects on turnover intention.

3. Patient satisfaction: a quality performance indicator

People who use health services can be considered as both consumers and co-producers of the service because patients are not just passive users but have an active role in healthcare (Vincent & Coulter, 2002). There is a growing recognition of the relevance of embracing patient-centred care approaches in healthcare services by international organisations (International Alliance of Patients' Organizations, 2007; OECD, 2016; The Health Foundation, 2014; World Health Organization, 2000) since it represent an unavoidable requisite of high-quality healthcare systems (Greene, Tuzzio, & Cherkin, 2012). The current patient-centred perspective does not see patients as merely assistance receivers but as key players in the care process who can contribute to establish an appropriate diagnosis, decide on adequate treatment and evaluate the assistance of health practitioners for preventing damage to their own health (Vincent & Coulter, 2002). Specifically, realising patient-centred care means providing assistance by respecting patients' needs, values and preferences and involving them in clinical decision making (Institute of Medicine, 2001; Robinson, Callister, Berry, & Dearing, 2008).

A qualitative study found that the measurement of patients' experiences is one of the principle factors that facilitates patient-centred care at the organisational level (Luxford, Safran, & Delbanco, 2011) and, in turn, patient-centredness has a positive impact on patient satisfaction (Plewania, Bengel, & Körner, 2016). Patient satisfaction can be described as the reaction of healthcare users to different service aspects by comparing users' expectations of ideal care with their perception of quality of received care (Bostan, Acuner, & Yilmaz, 2007; Pascoe, 1983). Patient satisfaction measurement has been shown to be a useful performance indicator of healthcare providers (Cleary & Mcneil, 1988; Duggirala, Rajendran, & Anantharaman, 2008; Heidegger, Saal, & Nuebling, 2006; Jha, Orav, Zheng, & Epstein, 2008). For this reason, patient satisfaction can represent for healthcare organisations an important tool to guide management strategies and implementation of total quality service (Al-Abri & Al-Balushi, 2014; Greeneich, Long, & Miller, 1992). Considering the impact of nursing care on patient health (Ausili, 2013), not only should the quality of service be measured according to criteria on healthcare professionals, but also nursing care quality perceived by people who use and participate in the care process.

A review of international literature shows that there are few instruments able to assess patient satisfaction with the nursing care in a hospital: "Patient Satisfaction with Nursing Care Quality Questionnaire" (PSNCQQ) (Laschinger, Hall, Pedersen, & Almost, 2005), "Patient's Assessment of Quality Scale-Acute Care Version" (PAQS-ACV) (Lynn, McMillen, & Sidani, 2007) and "Newcastle Satisfaction with Nursing Scales" (NSNS) (Priest, McColl, Thomas, & Bond, 1995; Thomas, McColl, Priest, Bond, & Boys, 1996). In our study we use the Italian version of NSNS (Piredda et al., 2015).

A growing number of studies have found a significant relationship between nurses' well-being and quality of care perceived by patients (Argentero et al., 2008; Garman et al., 2002; Leiter et al., 1998; Papastavrou, Andreou, Tsangari, & Merkouris, 2014; Vahey, Aiken, Sloane, Clarke, & Vargas, 2004). In particular, many researchers highlighted the association between nurses' job satisfaction and patient satisfaction (Ferrara et al., 2013; Janicijevic et al., 2013; Mrayyan, 2006; Tzeng, Ketefian, & Redman, 2002). Also there is evidence that patient satisfaction is negatively affected by nurses' turnover intention (Leiter et al., 1998). As previously said, nurses' turnover intention is negatively associated with work engagement (Laschinger, 2012; Shahpouri et al., 2016; Simpson, 2009) and self-efficacy (Han et al., 2009; Kim & Kang,

2013; Lee et al., 2012). These factors, having a protective role with respect to nurses' turnover intention, could probably positively affect patient satisfaction. In fact, work engagement (García-Sierra et al., 2016) and self-efficacy (Bong et al., 2009) have a positive effect on job satisfaction, that has been shown to be positively associated with patient satisfaction (Ferrara et al., 2013; Janicijevic et al., 2013; Mrayyan, 2006; Tzeng et al., 2002). Moreover, nurses' work engagement has been shown to have a positive effect on patient satisfaction (Keyko et al., 2016). In addition, agentic capacities (Bandura, 1986, 1989, 1997), being intimately related to self-efficacy (Miraglia et al., 2012) and having shown a promising role in facilitating the implementation of successful behaviours in organisations (Cenciotti et al., 2015), could be other dimensions with a relevant impact on patient satisfaction. In turn, nurses' experience of success with patient care positively influences their well-being at work (Converso, Loera, Viotti, & Martini, 2015; Utriainen, Ala-Mursula, & Kyngäs, 2015). Therefore, nurses' well-being, linked to the quality of working life, and patients' perceptions of nursing care quality influence each other.

Based on these research results, we formulated the following hypothesis:

Hypothesis 4. Patient satisfaction is positively associated with nurses' job satisfaction, work engagement, self-efficacy and agentic capacities, and negatively associated with nurses' turnover intention.

4. Method

The present study was conducted in two public hospitals in southern Italy. Healthcare directors of the organisations were informed about the study and, after they agreed to participate, all nurses were informed about the study through specific meetings with researchers and management. We explained the procedures of the study and assured them that their responses would be confidential. Informed consent was obtained from all individual participants included in the study.

The research data was gathered from 22 wards of the involved hospitals: Internal medicine, cardiology, general surgery, ear, vascular surgery, gastroenterology, neurology, oncology, gynaecology, urology, geriatrics, orthopaedics, pulmonologist, neurosurgery, emergency surgery. In the research all nurses working in these 22 inpatient wards were involved as well as all patients aged 18 years or older, that had spent 2 or more nights in the ward and were able to understand and accepted to fill out the questionnaire independently, as indicated by the authors of the original version of NSNS (Thomas et al., 1996).

In conducting the present research, ethical guidelines were followed. All procedures performed were in accordance with the ethical standards of the institutional research committee, the Italian Association of Psychology (AIP), the American Psychology Association (APA), and with the 1964 Helsinki declaration and its later amendments. Our study received Research Ethics Committee approval. Participation in the study was voluntary and the information provided was anonymous and confidential. Written informed consent was obtained from all participants prior to participation in the study.

5. Nursing staff survey

The self-report questionnaire, accompanied by a presentation letter describing the research project, was delivered to the nursing staff coordinators, from each ward, who distributed it to their colleagues during working hours. Questionnaires, once completed, were placed in a sealed box that was prepared for each ward in order to respect privacy and anonymity. Of 389 nurses, 194 returned the questionnaire filled out correctly, with a 50% response rate. Nurses were distributed in different proportions by ward (cardiology: 13.4%, internal medicine: 11.3%, gynaecology: 8.8%, pulmonology: 8.2%, general surgery: 7.7%, gastroenterology: 7.7%, vascular surgery: 7.2%, ear: 6.7%, emergency surgery: 5.7%, neurology: 5.2%, oncology: 5.2%, urology: 4.6%,

geriatrics: 4.1%, orthopaedics: 2.1%, neurosurgery: 2.1%). Most of the nurses were women (F = 148, 76.3%; M = 46, 23.7%) and mean age was 43.5 years (SD = 9.8; min. = 23 years; max. = 65). Mean professional seniority was 16.5 years (SD = 9.6; min. ≤ 1 year; max. = 40) and organisational seniority was 12.5 years (SD = 9.7; min. ≤ 1 year; max. = 40). As for the qualification, 54.1% had an educational level regional diploma, 13.9% university diploma, 31.4% bachelor degree, 0.5% master degree. Only 24.7% of them had a higher-level qualification.

6. Nurse measures

The booklet completed by nurses contained a section for the collection of socio-demographic and job information (gender, age, level of education, professional and organisational seniority) and the following scales.

6.1. Job satisfaction

Job satisfaction was measured through the Italian version (De Simone et al., 2014) of brief overall job satisfaction measure II (Judge, Locke, Durham, & Kluger, 1998). The participants evaluated their perceptions of satisfaction concerning their current job with five items (e.g., "I really enjoy my work") on a response scale from 1 to 7 (from 1 = *completely disagree* to 7 = *completely agree*).

6.2. Work engagement

Work engagement was measured with the Italian version of Balducci, Fraccaroli, and Schaufeli's (2010) Utrecht Work Engagement Scale (Schaufeli et al., 2002). All 9 items (e.g., "When I get up in the morning, I feel like going to work") are scored on a 7-point scale from 1 to 7 (1 = *never*, 7 = *always*).

6.3. Self-efficacy

Self-efficacy was investigated with the nurses' self-efficacy scale (Consiglio, Borgogni, Vecchione, & Maslach, 2014) including 15 items (e.g., "I'm always able to effectively integrate myself with all my work colleagues"). The 7-point Likert type response scale ranged from 1 = *strongly disagree* to 7 = *strongly agree*.

6.4. Agentic capacities

Agentic capacities were measured with the Agent Test by Borgogni, Cenciotti, and Consiglio (2016) which includes four subscales: Self-regulation (e.g., "I can keep calm even in extremely stressful work situations"), anticipation (e.g., "I foreshadowed organizational situations where I may end up working"), vicarious learning (e.g., "It is a great help for me to observe some of my colleagues working in order to learn from them"), and self-reflection (e.g., "After a work success, I reflect on the actions I took that led me to it"). Each response was answered on a Likert scale (from 1 = *completely disagree* to 7 = *completely agree*).

6.5. Hospital turnover intention

Hospital turnover intention was measured by the Italian adaptation by Galletta et al. (2011) of Hom, Griffith, and Sellar's (1984) scale with the following item: "I am going to seek a job in another hospital next year".

7. Patient survey

The questionnaire, along with a brief presentation of the research project, was delivered by the nursing staff coordinators to patients the day before discharge, including only those of age, hospitalisation of two

nights or more and absence of psychophysical disorders to allow for the independent completion of the questionnaire. Once the patients completed the questionnaire and inserted it in the urn, the research team proceeded to collect them from each ward.

Of the 181 participants, 104 were women (57.5%) and 77 men (42.5%). The mean age of the participants was 57.2 years. With regard to the wards, patients were distributed as follows: internal medicine: 14.9%, gastroenterology: 11.6%, gynaecology: 11.6%, vascular surgery: 11%, cardiology: 8.8%, general surgery: 8.8%, ear: 8.3%, urology: 4.4%, neurology: 3.9%, orthopaedics: 3.3%, neurosurgery: 3.3%, oncology: 2.8%, pulmonology: 2.8%, emergency surgery: 2.8%, geriatrics: 1.7%. Regarding patients' educational level, 15.5% of them earned an elementary school certificate, 33.7% middle school certificate, 35.9% high school diploma, 11% bachelor degree and 3.3% postgraduate degree. One participant did not provide any information about educational level.

8. Patient measures

Patient satisfaction was measured using the Italian version (Piredda et al., 2015) of NSNS (Thomas et al., 1996). The patients responded to 17 items (e.g., "How willing nurses were to respond to your requests") on the response scale from 1 to 5 (1 = *not satisfied*, 5 = *completely satisfied*). Each individual score was then added and transformed to obtain an overall satisfaction score which can range from 1 to 100, where 100 represents the highest level of satisfaction with the nursing care received. Personal data of patients was also collected using the demographic information section of this instrument.

9. Data analysis

Descriptive analyses of participants' sociodemographic data were calculated using means and standard deviations. Cronbach's reliability alphas were utilised for all measures. To verify associations between job satisfaction, work engagement, self-efficacy, agentic capacities and turnover intention we used Pearson's correlation.

To test the association between nurses' job satisfaction, work engagement, self-efficacy, agentic capacities, turnover intention and patient satisfaction, we utilised Spearman's rank order correlation. Before carrying out the correlation analysis, we calculated the means for each ward for nurses' job satisfaction, work engagement, self-efficacy, agentic capacities, turnover intention and patient satisfaction. Also, we performed an ANOVA test to determine if there were significant differences between wards on the variables studied. These analyses were carried out using SPSS for Windows, version 22.

In order to verify the direct positive effects of agentic capacities, self-efficacy and work engagement on job satisfaction and direct and indirect negative effects of agentic capacities, self-efficacy, work engagement and job satisfaction on turnover intention, we conducted a Path Analysis. We used the following indices: Chi-square goodness (χ^2) of fit statistic, the Comparative Fit Index (CFI; Bentler, 1989, 1990), the Non-Normed Fit Index (NNFI; Bentler & Bonett, 1980; Tucker & Lewis, 1973) and the Root Mean Square Error of Approximation (RMSEA; Steiger, 1989). The CFI and NNFI are considered acceptable when they are > 0.90 and the RMSEA is equal to or smaller than 0.08 (Bentler, 1990; Steiger, 1990). Also, we considered acceptable the ratio of χ^2 with degrees of freedom when it is equal to or smaller than 3 (Schermele-Engel, Moosbrugger, & Müller, 2003). Path Analysis was performed using the Structural Equations Programme (EQS) version 6.3 (Bentler, 1995).

10. Results

We conducted a correlation analysis using Pearson's r coefficient to clarify the relationships among the variables for the nurses. As shown in Table 1, job satisfaction, work engagement, self-efficacy and agentic

capacities were positively related. These dimensions were inversely correlated with turnover intention. Job satisfaction had the highest correlation with turnover intention among other dimensions ($r = -0.38$). Not all agentic capacities correlated with turnover intention. We found a significant association only for self-regulation and self-reflection. However, the relationship between the analysed dimensions was more complex, as will be shown later.

In the wards, we found differences in turnover intention, job satisfaction, work engagement, self-efficacy, self-regulation and anticipation ($p < 0.05$). Especially, job satisfaction was the dimension with the most variability and with the biggest effect size with $\eta^2 = 0.16$. Also, patients' satisfaction was different among wards ($F_{(14,166)} = 3.91$; $p < 0.00$; $\eta^2 = 0.25$). These results suggested a relationship between the measured nurses' dimensions and patient satisfaction.

We tested different models in the Path Analysis, as shown in Table 2.

In the saturated model, we considered all the agentic capacities and turnover intention as exogenous variables and job satisfaction, work engagement, self-efficacy as endogenous variables. In the alternative model, we considered only job satisfaction as an endogenous variable. Actually, we tested other alternative models, but they had a bad fit index. The standardised solutions of the best model are reported in Fig. 1.

An overview of the direct and indirect influences revealed how the dynamics that lead nurses to develop turnover intention were complex and not immediately intuitive. In particular, agentic capacities, job satisfaction, work engagement and self-efficacy each had a different impact on turnover intention. In the model, 23% of the variance in turnover intention was explained by anticipation ($\beta = +0.24$), self-efficacy ($\beta = -0.25$), work engagement ($\beta = -0.25$) and, to a greater extent, by job satisfaction ($\beta = -0.26$). The signs of these relationship indicated that job satisfaction, work engagement and self-efficacy reduced turnover intention. Anticipation, the only positive value, turns out to be a facilitating factor in turnover intention. This model also explained that these variables had a very complex relationship with each other. The variable that had the greatest impact in the reduction of turnover intention was job satisfaction, which was greatly increased by work engagement and influenced very weakly by self-efficacy; these relationships explain - in our model - 52% of job satisfaction's variance. Work engagement and self-efficacy had a special connection with some agentic capacities. Work engagement, in this model, explained 45% of the variance in self-efficacy and self-regulation. Anticipation combined with self-regulation explained 38% of the variance in self-efficacy. The model in Fig. 1 shows how agentic capacities influence other variables.

Finally, we considered the correlation between patient satisfaction and the nurses' variables in the model in Fig. 1 for the different wards, as shown in Table 3.

The indices of Spearman's rho show the relationship between nurses' variables and patient satisfaction. In particular, job satisfaction ($\rho = 0.52$; $p < 0.05$), work engagement ($\rho = 0.61$; $p < 0.05$), self-efficacy ($\rho = 0.54$; $p < 0.05$), self-regulation ($\rho = 0.73$; $p < 0.01$) and anticipation ($\rho = 0.64$; $p < 0.05$) were positively and significantly correlated with patient satisfaction. In other words, when nursing staff are satisfied with their own work, engaged, convinced of their own work effectiveness and have achieved a high level of self-regulation and anticipation, then we find the most satisfied patients in that ward. Low levels of turnover intentions were associated with high levels of patient satisfaction ($\rho = -0.67$; $p < 0.01$). All these interesting associations could describe a virtuous circle between patient satisfaction and job satisfaction, work engagement, self-efficacy and agentic capacities of nurses: where there are good nurses, patients are pleased, and where there are cheerful patients, we have satisfied nurses.

11. Discussion

The purpose of this research was to study both the relationship

Table 1
Pearson's correlations between nurses' variables and descriptive statistics.

	α	M	SD	1.	2.	3.	4.	5.	6.	7.	8.
1. Job satisfaction	0.92	4.9	1.2	1							
2. Work engagement	0.89	4.85	0.9	0.71***	1						
3. Self-efficacy	0.90	5.05	0.9	0.45***	0.52***	1					
4. Self-regulation	0.91	5.07	0.8	0.56***	0.62***	0.58***	1				
5. Anticipation	0.89	4.86	0.9	0.37***	0.47***	0.53***	0.58***	1			
6. Vicarious learning	0.86	4.78	0.9	0.31***	0.31***	0.23***	0.44***	0.49***	1		
7. Self-reflection	0.92	5.43	0.8	0.33***	0.42***	0.43***	0.66***	0.60***	0.57***	1	
8. Turnover Intention	0.72	2.4	1.2	-0.38***	-0.34***	-0.30***	-0.26***	-0.06	-0.08**	-0.16*	1

Note.
* $p < 0.05$.
** $p < 0.01$.
*** $p < 0.001$.

Table 2
Fit indices of path models.

	χ^2	χ^2/df	p	NFI	NNFI	CFI	RMSEA
Saturated model	267	26.7	< 0.01	0.65	0.02	65	0.34
Alternative model	7.9	2.0	0.08	0.98	0.94	0.89	0.08
Best model	3.0	1.2	0.31	0.98	0.99	0.99	0.03

between job satisfaction, agentic capacities, self-efficacy and work engagement and the role played by these variables in hospital turnover intention among nurses. Furthermore, we analysed the relationship between nurses' job satisfaction, work engagement, self-efficacy, agentic capacities and patient satisfaction.

Overall the hypotheses of this study were partially confirmed. The first hypothesis, that considered job satisfaction as the variable with the greatest influence on hospital turnover intention, was confirmed. This result corroborates previous research which observed that job satisfaction is the main predictor of nurses' turnover intention (Coomber & Barriball, 2007; Galletta et al., 2011; Hayes et al., 2012). In particular, the probability that nurses leave the hospital decreases with the increase in job satisfaction. This means that the realisation of favourable working conditions aimed at stimulating a feeling of pleasure through the fulfilment of relevant individual values related to work (Locke, 1969) could reduce the probability of leaving the hospital among nurses. The improvement of job satisfaction, through appropriate interventions in healthcare organisations, not only would reduce nurses' withdrawal behaviour such as voluntary turnover (Hayes et al., 2006, 2012) but would make them more involved in their work (García-Sierra et al., 2016) and more efficient in patient's care (Zaghloul et al., 2008).

Table 3
Spearman's correlations between patient satisfaction and the nurses' variables in the wards.

	Patient satisfaction
1. Job satisfaction	0.52*
2. Work engagement	0.61*
3. Self-efficacy	0.54*
4. Self-regulation	0.73**
5. Anticipation	0.64*
8. Turnover intention	-0.67**

Note.
* $p < 0.05$.
** $p < 0.01$.

The second hypothesis, regarding the relationship between job satisfaction, agentic capacities, self-efficacy, work engagement and their association with turnover intention, was partially confirmed. In agreement with previous findings (Bakker et al., 2008; García-Sierra et al., 2016; Salanova, Lorente, Chambel, & Martínez, 2011; Zellars, Hochwarter, Perrewe, Miles, & Kiewitz, 2001), this study showed that job satisfaction, work engagement and self-efficacy were positively related, therefore when one of these variables increases, the others increase as well. This result is understandable since all these dimensions play an important role in nurses' occupational health and performance (Keyko et al., 2016; Lee & Ko, 2010; Zaghloul et al., 2008). Our findings revealed that agentic capacities were positively associated with job satisfaction, work engagement and self-efficacy, confirming the promising role of agentic capacities in relation to other relevant variables in an organisational context such as self-efficacy and work engagement, and generally, to organisational success (Cenciotti et al., 2015). The

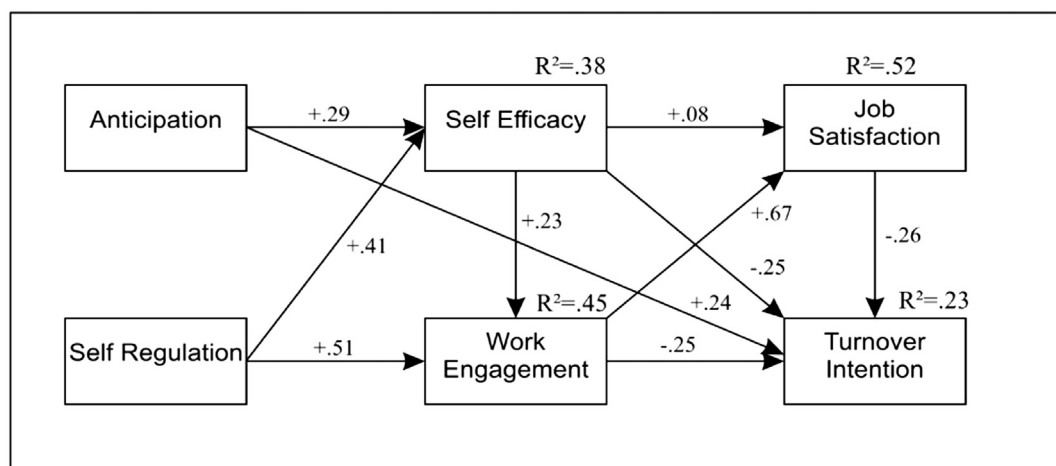


Fig. 1. Best model.

ability to prefigure future scenarios, to regulate one's own emotions and behaviours according to working goals, to learn from previous experiences and others' behaviour encourages people to test their skills in complex and challenging work activities and reinforces their relationship with the work context; these skills are also an added value for the organisation (Cenciotti et al., 2015; Cenciotti et al., 2016). Furthermore, in line with national and international studies (Coomber & Barriball, 2007; Galletta et al., 2011; Han et al., 2009; Lee et al., 2012; Shahpouri et al., 2016; Simpson, 2009), nurses with higher job satisfaction, work engagement and self-efficacy were those that had less intention of changing hospitals. It has been amply demonstrated that job satisfaction, work engagement and self-efficacy promote nurses' well-being at work (Keyko et al., 2016; Lee & Ko, 2010; Zaghoul et al., 2008) and, in this sense, they carry out a protective role with respect to turnover intention.

In contrast to what has been assumed, not all agentic capacities were negatively correlated with turnover intention. Only self-regulation and self-reflection were significantly and negatively associated with hospital turnover intention. The ability to manage one's own emotional states and behaviour and to learn from previous experiences, compared to other agentic capacities, may be significant personal resources for the nursing job that is based on the relationship with patients and on the ability to respond to their physical and emotional needs (Henderson, 2001). Nurses with high levels of self-regulation and self-reflection may strongly believe in their ability to achieve job goals and feel more involved (Cenciotti et al., 2015) and these capacities may play a protective role with respect to the intention to leave their working environment. However, it is necessary to consider that the path analysis results showed a more complex framework. In fact, we formulated a third hypothesis, tested with path analysis, to examine in depth the relationship between these variables.

The third hypothesis, which considered the direct positive effects of agentic capacities, self-efficacy and work engagement on job satisfaction and the direct and indirect negative effects of agentic capacities, self-efficacy, work engagement and job satisfaction on turnover intention was partially confirmed. Our model revealed a direct positive effect of self-efficacy and especially of work engagement on job satisfaction. These findings are congruent with previous studies in the nursing field which showed that self-efficacy (Bong et al., 2009) and work engagement (García-Sierra et al., 2016) are positively associated with job satisfaction. Nurses who believe that they can achieve goals with their own resources and are pleasantly dedicated to their work, probably thanks to these positive experiences, are generally more satisfied with their work than nurses who do not believe in their abilities and do not feel involved in working processes. Contrary to what we assumed, only some agentic capacities had a positive effect on job satisfaction. In particular, self-regulation and anticipation acted indirectly and positively on job satisfaction through the increase of self-efficacy. This can be explained by the fact that agentic capacities are essential for self-efficacy development, in accordance with social cognitive theory (Bandura, 1986). Whereas nursing work is characterised by huge emotional, physical and mental demands (Fillion et al., 2007; Violante, Benso, Gerbaudo, & Violante, 2009), it is plausible that the ability to regulate emotional and behavioural dynamics and the ability to anticipate possible future scenarios make nurses feel more effective and that the belief in their own ability positively impacts job satisfaction.

Moreover, our model revealed that job satisfaction, self-efficacy and work engagement had a direct negative effect on hospital turnover intention, confirming the existence of a negative relationship between these variables compared to turnover intention, as also indicated in the correlation analysis. Anticipation, on the contrary, had a direct positive effect on turnover intention and thus appears to have a role in facilitating the intention of changing hospitals. A plausible explanation is that the anticipation allows people to prefigure future scenarios, gathering opportunities and limits and consequently directs and adjusts future behaviour (Bandura, 1997; Cenciotti et al., 2016). It is therefore

likely that nurses who predict negative future scenarios for themselves in the hospital in which they work have a greater intention to implement turnover behaviour. Self-regulation showed an indirect negative relationship with turnover intention through improvement of work engagement. The ability to regulate one's own emotions and behaviours at work is likely to improve work engagement since it promotes commitment to the working goals (Cenciotti et al., 2016), a typical feature of engaged workers' behaviour (Bakker & Demerouti, 2016). In turn work engagement, a state of fulfilment and involvement associated with work (Schaufeli et al., 2002), reduces the possibility of turnover intention among nurses (Laschinger, 2012; Shahpouri et al., 2016; Simpson, 2009).

Finally, results of the present study partially confirmed the fourth hypothesis which supported the existence of a positive relationship between patient satisfaction and nurses' job satisfaction, work engagement, self-efficacy, agentic capacities and a negative association between patient satisfaction and nurses' turnover intention. In agreement with previous findings (Leiter et al., 1998), this study revealed that patient satisfaction was negatively associated with nurses' turnover intention. The intention to leave probably led them to engage less in their work (Laschinger, 2012; Shahpouri et al., 2016; Simpson, 2009) and this had a negative impact on the quality of patient care, as well as on patient satisfaction (Leiter et al., 1998). These results reinforce previous findings which demonstrated the importance of nurses' job satisfaction in relation to patient satisfaction (Ferrara et al., 2013; Janicijevic et al., 2013; Mrayyan, 2006; Tzeng et al., 2002), taking into consideration that job satisfaction is the main predictor of nurses' voluntary turnover (for example, De Gieter et al., 2011; Viola & Filon, 2015), a withdrawal behaviour that has negative effects on health services (Aiken et al., 2012). It has been widely shown that nurses' feeling of pleasure associated with work increases their occupational health (Gandhi et al., 2014; Khamisa et al., 2015; Piko, 2006; Sveinsdóttir et al., 2006) and this state of well-being promotes successful performance (Ferrara et al., 2013; Lundstrom et al., 2002) with consequent positive effects on patients' perceptions of nursing care quality (Argentero et al., 2008; Garman et al., 2002; Papastavrou et al., 2014; Vahey et al., 2004). In line with a recent study (Keyko et al., 2016) our results also indicated that work engagement positively correlates with patient satisfaction: nurses that feel fully involved in their work tend to have more efficient performances and this has a positive effect on patient satisfaction. In addition, nurses' self-efficacy was positively associated with patient satisfaction. This finding can be explained in light of the fact that a higher level of self-efficacy among nurses contributes to improve their job performance (Lee & Ko, 2010) and satisfaction (Bong et al., 2009), with a positive impact on patient satisfaction (Ferrara et al., 2013). Among the nurses' agentic capacities measured, only self-regulation and anticipation skills were positively related to patient satisfaction. This finding suggests that the ability to regulate emotional and behavioural dynamics and the ability to anticipate possible future scenarios probably allows nurses to respond efficiently to emotional, physical and mental patients' demands, which characterise nursing work (Fillion et al., 2007; Violante et al., 2009) and this positively affects patient satisfaction with nursing care.

12. Limitations and further directions

This study has some limitations which may be overcome with further research development. First, the small sample size and the voluntary participation of nurses and patients do not allow us to determine how the results can be generalised. This research project could be replicated expanding the sample and comparing nurses and patients in different public or private healthcare organisations.

A second limitation is attributable to the exclusive collection of subjective data, using self-report questionnaires, which should be supplemented with objective data, such as absenteeism and the actual turnover among nurses.

Thirdly, we used a cross-sectional research design that prevents discerning causal relationships. To better understand the association between analysed variables, a longitudinal study should be conducted. Moreover, future studies could include additional measures which adopt a multilevel approach. For example, perceptions of context, referring to the perceptions shared by members of the organisation about prototypical contextual social and task features, could be analysed (Borgogni, Dello Russo, & Latham, 2011; Di Tecco & Borgogni, 2011). In particular, it would be interesting to analyse perceptions of context specifically related to the healthcare setting, such as the perception of supervisor, top-management, collaboration in the wards and between wards, the team work, the cooperation of patients and families, the workload and time pressure (Borgogni, Petitta, Amaducci, & Mastroianni, 2007; Consiglio et al., 2014). The measurement of this construct distinguishes the effects at the ward level from effects at the personal level (Consiglio et al., 2014) and can guide the planning of differentiated interventions at the individual and ward level to prevent or reduce turnover intention. Future research also needs to evaluate the perception that nurses have of patients' support, measurable through the Italian version for patients of the Customer-initiated support scale (Converso et al., 2015), and the nurses' perception about the gratitude expressed by patients, assessable by the Perceived Gratitude Scale (Martini & Converso, 2014; Martini, Loera, & Converso, 2015). Recent studies, in fact, have demonstrated that a positive relationship with patients represents a job resource for nurses (Converso et al., 2015; Utraiainen et al., 2015).

13. Conclusion and practical implications

This study contributed to expanded knowledge of the factors associated with hospital turnover intention and confirmed the importance of monitoring nurses' job satisfaction, work engagement, self-efficacy, self-regulation, anticipation and turnover intention to improve patient satisfaction with nursing care. The presented results provide practical implications for healthcare services.

Job satisfaction is the most promising dimension on which healthcare organisations should act to reduce hospital turnover intention among nurses. Overall, our findings suggest developing self-efficacy, work engagement and agentic capacities to improve nurses' job satisfaction. Moreover, we recommend developing nurses' job satisfaction, work engagement, self-efficacy, self-regulation and anticipation skills to increase patient satisfaction. Following Bandura's guidelines (Bandura, 1997), healthcare managers may adopt different strategies to develop self-efficacy among nurses: mastery experiences; vicarious experiences; observation of behavioural models of success; social persuasion; reduction of one's stress reactions, alteration of negative emotional proclivities and misinterpretations of physical states. For example, nurses can practice their ability to handle certain situations with the nursing staff coordinator's supervision. Nursing staff coordinators, after a coaching session, can strengthen the beliefs of collaborators about their effectiveness in achieving work objectives, through the use of accurate and timely feedback, according to the principles of goal setting theory (Latham, Borgogni, & Petitta, 2008; Locke & Latham, 1990). Nurses can learn by observing expert colleagues who act as mentors (Nelsey & Brownie, 2012; Smith, McAllister, & Crawford, 2001). Additional learning opportunities can be created through the organisation of meetings where nurses can discuss strategies to successfully manage complex situations. Emotions and behaviour management can be improved through training courses and other psychosocial interventions that take into account the specific needs of nursing staff.

In particular, our model indicated that anticipation and self-regulation are the unique significant skills that should be acted on directly to increase nurses' self-efficacy level. Nurses' anticipation and self-regulation capacities also were found to be positively and significantly associated with patient satisfaction. Cenciotti et al. (2016) suggest

enhancing anticipation capacity both through the goal setting technique based on the assignment of clear and challenging goals (Locke & Latham, 1990) and through the realisation of a planning and evaluation system of the work objectives. Self-regulation ability, instead, can be improved by interventions aiming at the promotion of positive emotions and successful behaviours, helping workers to understand and manage their emotional and behavioural dynamics, strengthening their motivation and directing their efforts towards work goals (Cenciotti et al., 2016). For example, an effective strategy in organisational practice is feed forward methodology (Kluger & Nir, 2010).

Healthcare leadership, to increase nurses' work engagement, could act on self-efficacy development, with the above methods, and adopt policies to improve communication on matters related to the organisation through regular formal and informal meetings, involving nurses in decision making and creating learning opportunities both on the job, through interaction between colleagues, and through training courses.

Taking into account that patient satisfaction positively correlated with nurses' job satisfaction, work engagement, self-efficacy, self-regulation and anticipation skills, and negatively linked with nurses' turnover intention, the abovementioned intervention strategies not only can promote the nurses' well-being at work but also increase patient satisfaction with nursing care, producing a virtuous circle in which everyone benefits. In addition to these actions, health managers should periodically carry out patient satisfaction surveys for monitoring nursing quality of care and including the patients' feedback into the hospital service improvement plan.

In sum, health management should consider job satisfaction, work engagement, self-efficacy and self-regulation skills as factors that can represent a competitive advantage in retaining nurses within the hospital. The same factors, with the addition of nurses' anticipation capacity, in virtue of their positive effects on patient satisfaction, can contribute to entice people to come back to that hospital when needed. In fact, as our research demonstrated, when nurses are more satisfied, engaged and have a higher level of self-efficacy, self-regulation and anticipation capacities, patients perceive a better care experience, confirming previous results that showed a positive effect of nurses' well-being at work on quality of care perceived by patients (Argentero et al., 2008; Garman et al., 2002; Leiter et al., 1998; Papastavrou et al., 2014; Vahey et al., 2004). Patients' experience of high quality care, in turn, positively affects nurses' well-being at work (Utraiainen et al., 2015) and this can give rise to a positive well-being spiral.

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