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Job satisfaction in a sample of nurses: A multilevel focus on work team variability about the head nurse's transformational leadership

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Using a multilevel approach with a sample of 560 nurses, this study investigates the relationship between job satisfaction and a number of variables, particularly transformational leadership, found in the nursing literature. Job satisfaction is one of the most widely investigated outcomes in the nursing literature, and is very important because of its relations with other well-being, quality of service and managerial outcomes. The individual level antecedents investigated in this study are: organizational tenure, positive affectivity, independence at work, and transformational leadership. A multi-level focus is used since, as a further predictor of job satisfaction, we consider the variability in the perceptions of work group members (i.e., the disagreement among team members) on the transformational leadership style of their head nurses. We hypothesize that followers' inconsistent perceptions of their head nurse's leadership have a negative relation with job satisfaction. Results show that at the individual level, positive affectivity, independence at work and transformational leadership are positively related to job satisfaction, and the hypothesis that the variability of perceptions within the work group of the head nurse's transformational leadership has a negative relation with job satisfaction is confirmed. This study bears out the idea that the variability

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of leadership perceptions within work groups should be considered as an additional parameter, even more so when the team dimension is central for the profession in question.

Keywords: job satisfaction, transformational leadership, multilevel analysis, nursing context.

Introduction

This study analyzes the impact of a number of variables on job satisfaction in a sample of nurses and, in particular, the impact of the variability (a.k.a dispersion or disagreement, see Feinberg, Ostroff, and Burke, 2005; Korek, Felfe, and Zaepernick-Rothe, 2010; Wu, Tsui, and Kinicki, 2010) of the perceptions within the work group of the leader's (i.e. the head nurse's) leadership style. This is thus a multilevel study on the antecedents of job satisfaction in nursing whose purpose is two-fold: first, to explore a rarely studied construct linked to leadership which in this study can be considered multilevel by construction (because it considers nurses' work groups and the variability of their perceptions of leadership); second, to apply this approach to investigating an outcome—job satisfaction—that depends to a large extent on both individual and dispositional factors. Indeed, individuals' job satisfaction hinges on situational influences such as leadership (Brief, 1998) which are, at least in part, shared by the work group (Whitman, Van Rooy, and Viswesvaran, 2010).

Several studies in the hospital environment have demonstrated the link between job satisfaction and a variety of outcomes. These outcomes have included some linked to the organization, such as turnover intentions (Shader et al., 2001), some linked to workers' lives, such as burnout (Akman et al., 2016), and others linked to the service offered to people, such as quality of care and patients' satisfaction (Asif et al., 2019). Thus, though the outcome considered here has been frequently investigated, it is of fundamental importance both for individuals and for the organization in healthcare settings. Leadership is acknowledged to be equally important in nursing (Laschinger, 2010; Morton and Hyrkas, 2012): when constructive and relationship-focused, leadership has been shown to have positive influences on nurses' attitudes and behaviors and on patients' satisfaction (Laschinger, 2010).

In detail, this study investigates the relationship at the individual level between job satisfaction in nursing and four antecedents chosen from the classification presented by Liu, Aungsuroch, and Yunibhand (2016) in their theoretical review of job satisfaction in nurses (we chose this classification since it is known that the work sector influences the relationships between well-being outcomes and their antecedents, e.g., Giorgi et al., 2019, and we thus wanted to focus on the specific sample). This classification grouped antecedents into four categories: 1) demographic variables; 2) emotional variables; 3) work character variables, and 4) environment variables. For each of these categories, the study presented here tests one antecedent; organizational tenure among demographic variables, positive affectivity among emotional variables, independence at work among

work character variables, and transformational leadership among environmental variables. At the group level, the study tests the relationship that the variability within nurses' work groups about the leader's transformational leadership style has with each nurse's job satisfaction.

Leadership can be studied as a complex relationship which involves different kinds of bonds and can thus be observed from different perspectives (i.e., considering at least one dyadic linkage, one group linkage and one within-group linkage, see Yammarino and Dansereau, 2008). Given these different kinds of relationship, it is easy to understand how essential multilevel approaches can be for investigating leadership. Transformational leadership (Bass, 1985) is a style that addresses and influences both the individual (e.g., through individualized consideration) and the group (e.g., by sharing a vision through idealized influence). It is a style which is effective in involving followers in a collective commitment towards a group aim that goes beyond individual goals (House and Shamir, 1993). In line with these considerations, Liao and Chuang (2007) suggest dividing transformational leadership theory into the personal and group levels, and focusing on the impact that the aggregated perception of the group on the leader's transformational style can have on variables investigated at the individual level, after considering the impact of the individual perception of having a transformational leader. In addition, the aggregated perception of the group on leadership has its own variability, whose link with psychological well-being was noted long ago (Bliese and Halverson, 1998). The within-group variability on the head nurse's transformational leadership—the dimension analyzed in this study—is another aggregated construct (i.e., a construct at the group level) which was investigated in the literature (Feinberg, Ostroff, and Burke, 2005; Wu, Tsui, and Kinicki, 2010). This style's characteristics make the variability of followers' perceptions particularly relevant (Feinberg, Ostroff, and Burke, 2005). While the impact of the aggregated score on transformational leadership has been shown to increase job satisfaction at the individual level (Braun et al., 2013), the impact of variability within the work group on transformational leadership has been investigated in connection with other constructs such as, for example, organizational commitment (Korek, Felfe, and Zaepernick-Rothe, 2010). The latter study found a positive relation between consensus and affective commitment. Our study thus hypothesizes a negative relation between the variability of the within-group perceptions of transformational leadership and job satisfaction, while also considering the impact of transformational leadership at the individual level. This is the most innovative aspect addressed by this study: though it is true that the relationship between group consensus/variability on leadership and psychological well-being was emphasized more than twenty years ago (Bliese and Halverson, 1998), very few studies to date have analyzed this link by considering a leadership style. Thus, the study has interesting theoretical and practical implications, specifically linked to the topics of transformational leadership and job satisfaction, and how they intertwine in a sample in which the group and leadership dimensions are both recognized as particularly relevant (see for example Bontrager, Hart, and Mareno, 2016; Kim et al., 2016, on the importance of the work group, and Laschinger, 2010; Morton and Hyrkas, 2012, on the importance of leadership in nursing).

Job satisfaction in nursing

There are different definitions of job satisfaction (JS) in the scientific literature. It can be defined as an attitude, according to Locke (1976, p.1304): "a pleasurable or positive emotional state resulting from the appraisal of one's job". In this definition, we see all of the three components which build up an attitude, viz., the emotional, the cognitive and the behavioral components (Rosenberg and Hovland, 1960). JS is one of the most frequently studied dimensions in organizational research. It is part of several approaches that investigate well-being at work and was investigated in the first models on the topic developed in the literature.

Many studies centering on the nursing profession, including recent ones, have demonstrated the link between JS and outcomes of considerable interest. Some of these outcomes are linked to managerial and organizational interests, others to the staff's health, and yet others to the quality of the service provided. Among the organizational and managerial outcomes, we can mention retention (Cowin et al., 2008), turnover intentions (Cortese, 2013; van der Heijden, van Dam, and Hasselhorn, 2009) and job performance (Dinc, Kuzey, and Steta, 2018). From the point of view of workers' well-being, outcomes include burnout (Akman et al., 2016), quality of life (Cimete, Gencalp, and Keskin, 2003) and work stress (Cortese et al., 2013). Lastly, there is a demonstrated link between nurses' JS and patients' satisfaction with the service offered (Asif et al., 2019), which can in turn be considered an indicator of quality of service. This dense network of relationships between constructs highlighted in studies on nurses makes the value of studying JS and analyzing the variables that can support it clear.

The nursing profession has particular characteristics: nurses work shifts (Stimpfel, Sloane, and Aiken, 2012), are on duty during nights and holidays, and must deal with high job demands, especially in cognitive and emotional terms (Freimann and Merisalu, 2015). In addition, their job has "high relational content", in view of the dense network of professional relationships of which they are part: physicians, colleagues and patients all interact with nurses and have different expectations of them. Considering these peculiarities of the nursing profession, we chose the antecedents of JS to be tested in this study from the nursing literature. Specifically, we based our selection on the classification given in Liu and colleagues' (2016) concept analysis of JS in nursing, which groups the antecedents into four categories and lists the specific variables in each. A fairly original characteristic of this study is thus that the variables we chose to investigate are described in the nursing literature as antecedents of JS that can be particularly relevant for these workers (see Liu, Aungsuroch, and Yunibhand, 2016). As our intention was to select more customized antecedents, the variables were those listed in a review on nurses' JS rather than taken from the literature on JS in general and afterwards applied to a sample of nurses.

Specifically, the *demographic variables* are: education level, marital status, organizational tenure, job position and location. The *emotional variables* are related to the emotions that individuals feel while performing their work tasks, and include: work values, job involvement, organizational or professional commitment, behavioral disengagement, positive or negative affectivity, psychological distress, and job motivation.

The *work character variables* include: nurse staffing, routine, autonomy, workload, ethic stress, and organization structure. Lastly, the *environment variables*, defined as those characteristics that would allow nurses to work in a supportive environment, are: collaboration and good communication, professional development, supervisory or peer support, structural, psychological and social empowerment, and transformational leadership.
In this study, one variable for each of the four categories was chosen in order to investigate JS: *organizational tenure* was chosen from the demographic variables; *positive affectivity* from emotional variables; *independence at work* from work character variables; and *transformational leadership* from environmental variables. This section will provide a brief explanation of the first three dimensions, while transformational leadership will be described in greater detail later.
Organizational tenure. Defined as "the amount of time spent in a particular job" (Quińones, Ford, and Teachout, 1995, p. 893), organizational tenure is thus a temporal characteristic, which measures the length of one's working experience in the organization. The link between organizational tenure and JS has been addressed in the literature. For example, Oshagbemi (2000) found a significant positive relationship between organizational tenure and JS in a study on academics. This kind of relationship can be due to the fact that workers with more seniority in the same organization have, in a certain sense, confirmed their belonging (and their will to belong) to the working context, since they perceive the work to be in line with their needs (Clark, Oswald, and Warr, 1996) or able to offer promotion and growth opportunities (Kalleberg and Mastekaasa, 2001). Accordingly, it is hypothesized that:

H.1.a: Organizational tenure (seniority at the hospital) has a positive relation with job satisfaction.

Positive affectivity. This construct, whose complement is negative affectivity, "can be measured either as a state (i.e., transient fluctuations in mood) or as a trait (i.e., stable individual differences in general affective tone)" (Watson, Clark, and Carey, 1988, p. 347). The two affect dimensions can be described as the subjective components of a more general bio-behavioral system. Specifically, "positive affect is a component of the approach-oriented behavioral facilitation system, which directs organisms toward situations and experiences that potentially may yield pleasure and reward" (Watson, 2002, p.107). Individuals with high positive affectivity are frequently in a condition of pleasurable mood, characterized by, for example, cheerfulness, enthusiasm and energy. The link between positive affectivity and JS has long been known. Indeed, in 1993, Burke, Brief, and George wrote that: "self-reports of positive aspects of the work situation [...] and positive affective reactions may both be influenced by positive affectivity" (p. 410). Positive affectivity was found to be significant in two meta-analyses of JS antecedents (Connolly and Viswesvaran, 2000; Bruk-Lee et al., 2009). The link between state affectivity and JS has recently been confirmed (Brawley and Pury, 2016), and has also been demonstrated in nursing (Chiu and Kosinski Jr., 1999). In view of this literature, it is hypothesized that:

H.1.b: Positive affectivity has a positive relation with job satisfaction.

Independence at work. This variable, also called "job autonomy" in the literature, is considered an important antecedent of motivation and well-being at work in different models and theories on these topics (e.g., Job Characteristics Model by Hackman and Oldham, 1976; Demand-Control model by Karasek, 1979, 1998; Job Demands-Resources model by Demerouti et al., 2001). However, the literature also offers more critical views on the relationship between independence at work and well-being at work (Warr, 1987; Gatti, Bligh, and Cortese, 2019). Bakker, Demerouti, and Euwema (2005, p.172) defined independence at work as "on the one hand, independence from other workers while carrying out tasks, and on the other, decision latitude concerning one's work pace and phases". As regards the nursing literature, a meta-analysis on three antecedents of nurses' JS in 31 studies bears out the link between independence at work and the outcome variable (Zangaro and Soeken, 2007). More generally, nurses consider the possibility to independently demonstrate their own abilities and knowledge as a fundamental working factor that can foster high commitment and performance in healthcare (McLennan, 2005). It is thus hypothesized that:

H1.c: Independence at work has a positive relation with job satisfaction.

Transformational leadership at the individual level

Transformational leadership (TL) is one of the environmental dimensions considered by Liu and colleagues' (2016) classification. TL was first described by Burns (1978), who argued that a transformational leader is one who recognizes his/her followers' needs and is capable of transforming them into new leaders. Burns distinguishes between *transactional* leadership, a style aimed at rewarding followers for their work performance, and *transformational* leadership, aimed at motivating workers towards a common goal (Avolio and Bass, 2004). Transformational leaders "exhibit a sense of vision and purpose, [...] align others around the vision and empower others to take greater responsibility for achieving the vision, [...] facilitate and teach followers, [...] foster a culture of creative change and growth rather than one which maintains the status quo" (Bass and Avolio, 1993, p. 113). In the literature, several studies involving a number of different contexts and populations highlight the link between TL and such outcomes of well-being at work as employee commitment and turnover intentions (Avolio and Bass, 2004), burnout (Gill, Flaschner, and Shachar, 2006), emotional exhaustion (Green, Miller, and Aarons, 2013), job stress (Gill, Flaschner, and Shachar, 2006), and work engagement (Breevaart et al., 2014). In addition to these outcomes, it is important to emphasize the link between TL and JS, which was identified in the first studies on this leadership style. The relationship between the two variables is so close that JS is one of the outcomes investigated in the meta-analysis on TL by Judge and Piccolo (2004). The link between these variables continues to attract considerable interest, as witnessed by recent studies carried out in very different settings: guesthouse employees in Nigeria (Ohunakin et al., 2019); the

educational staff at an Indonesian university (Tentama, Rizky Kusuma, and Subardjo, 2020); a private transport and logistics organization in Indonesia (Eliyana, Ma'arif, and Muzakki, 2019).

In the literature on nurses' well-being at work, several studies show the positive association between TL and JS, as well as other outcomes such as organizational commitment (McGuire and Kennerly, 2006) and nurses' retention (Force, 2005). Furthermore, this leadership style is positively associated with nurses' self-efficacy (Weberg, 2010). In a study of more than 700 nurses from seven Canadian acute care hospitals, McCutcheon and collegues (2009) found important relationships between TL behaviors of nurse managers and nurses' JS. Based on these recent contributions in the literature, it is hypothesized that:

H1.d: Transformational leadership has a positive relation with job satisfaction.

Transformational leadership at the team-level

The work group continues to be a distinctive element of the nursing profession in spite of the changes that have taken place in recent years (e.g., the reduction in stable teams through turnover, attrition and the introduction of agency nurses), and has a fundamental influence on the quality of nurses' work and their well-being on the job (Bontrager, Hart, and Mareno, 2016; Kim et al., 2016). TL has a "double bond" with the team, and it operates at the team level as well as the individual level (e.g., Liao and Chuang, 2007; Yammarino and Dansereau, 2008; Cho and Dansereau, 2010; Kao, 2017). The link between leadership and the work group has been widely discussed. Leadership "invariably occurs within the context of a group" (Thomas, Martin, and Riggio, 2013, p. 7), it is "a process of social influence in which an individual enlists and mobilizes the help of others in attaining a collective goal" (Chemers, 2001, p. 376). TL, specifically, directs its actions primarily (but not only) to the work group of followers as a whole (Bass, 1985) and "should develop a collective mindset among employees" (Feinberg, Ostroff, and Burke, 2005, p. 473), motivating them to transcend individual interests for a shared purpose, vision and/or mission (House and Shamir, 1993).

TL theory has thus distinguished between the personal and group levels (see Liao and Chuang, 2007). These authors argue that TL at both levels may explain unique variance in individual outcomes (such as JS in our model), and they assert that their multilevel approach "is also consistent with the contextual model which examines the joint impact of an individual-level predictor and its aggregate in predicting individual-level outcomes" (Liao and Chuang, 2007, p. 1008).

A number of studies have investigated the impact of aggregated TL on group and individual level outcomes; the latter include organizational citizenship behaviors (Cho and Dansereau, 2010), change-oriented organizational citizenship behaviors (Kao, 2017) and JS itself (Braun et al., 2013). A recent study carried out in sixteen countries shows that

a strong TL climate (defined as the shared perceptions of employees concerning their supervisor's TL behavior) is associated with better perceived employees' health in eight of the investigated countries (Zwingmann et al., 2014).

Another group-level construct whose links with TL have been investigated is the variability or dispersion (Feinberg, Ostroff, and Burke, 2005) of perceptions within the work group about the leader's transformational style. Other authors have addressed differentiated leadership (Wu, Tsui, and Kinicki, 2010), i.e., varying levels of individual-focused leadership among a work group's members. This idea of agreement/variability—which for leadership originates from the literature on the quality of the relationship between leader and follower, viz., the leader-member exchange (Graen and Cashman, 1975; Graen and Uhl-Bien, 1995), which hypothesizes that followers may perceive their leaders differently depending on the quality of their exchanges with them—is also a good fit with the TL style. Feinberg and colleagues (2005) devoted a paper specifically to within-group agreement's role in TL, arguing that it is a particularly important topic of investigation "as an additional parameter with which to gauge a leader's transformational style" (p. 472). The authors emphasize that "a transformational leader should develop a collective mindset among employees, such that followers perceive the leader, the goals, and activities in a similar way. Therefore, a [...] core attribute of transformational leadership is developing agreement or consensus among the group of subordinates or followers. [...] this implies that in order to be perceived as a transformational leader or to have attributions of a transformational leadership style form, the leader should exhibit both an appropriate set of behaviors and promote consensus among his/her followers that he/she is exhibiting these behaviors" (p. 473). Transformational leaders' skill in fostering agreement among followers was discussed in the first papers on this leadership style, and in works that are now regarded as classics in this field (e.g., Conger and Kanungo, 1987; Gardner and Avolio, 1998; Conger, 1999). These ideas were tested in a study by Korek and colleagues (Korek, Felfe, and Zaepernick-Rothe, 2010), who investigated the relationship between variability of group perceptions about their leaders' TL and organizational commitment. Specifically, the study found that the internal consensus on TL among group members in a small sample of pharmacy employees had a positive relationship with affective commitment. Using a different approach, Andrews and collegues (2012) came to similar conclusions regarding the value of agreement about leadership perceptions in nursing. In this study, variability (and thus disagreement) between the leader's self-rating and supervisees' ratings of his/her leadership style was associated with nurses' diminished satisfaction with leadership. This outcome has been considered as a subfacet of JS both in the classic Job Descriptive Index (Smith, Kendall, and Hulin, 1969) and in works investigating leadership and JS among nurses (Anthony et al., 2005). Hence, even when certain TL characteristics are granted to the supervisor by part of the staff, variability in the perception among staff members (and in this case in particular among staff members and the leaders themselves) can influence satisfaction with leadership and consequently followers' JS. How the variability in followers' evaluations of their leaders impacts their JS in an investigation of supervisors' ethical leadership was explored by Bormann and collegues (2018), who demonstrated that ethical leadership variability can yield a negative effect on unit JS and on individual-level JS. These authors developed

this idea for ethical leadership considering that a very inconsistent leadership behavior enacted by the leader can foster dissatisfaction among followers, since high "variability indicates inconsistent leader signals to the unit with regard to value, trust, and respect" (Bormann et al., 2018, p. 686). When receiving these ambiguous signals, "followers may have a hard time figuring out and deciphering the leader's behaviour" (ibidem) and can also develop conflicting feelings within the group and uncertainty regarding goals and objectives (Feinberg, Ostroff, and Burke, 2005). Based on the foregoing considerations, it is hypothesized that:

H2: Variability within the work group in the perception of transformational leadership has a negative relation with job satisfaction.

Figure 1 shows the theoretical model and the hypotheses which will be tested.

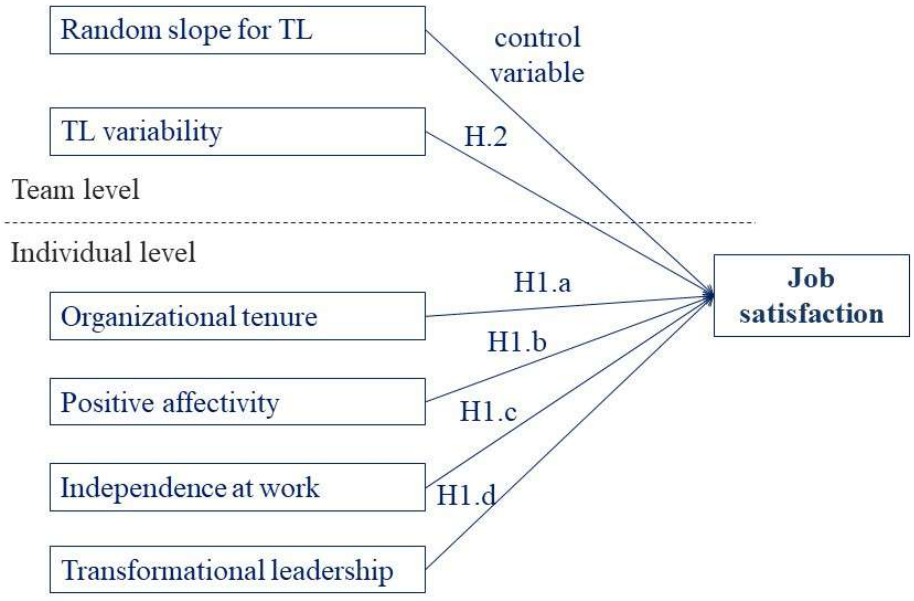

Figure 1: The theoretical model

Materials and Methods

Procedure and Partecipants

Data were collected by administering paper and pencil questionnaires which could be completed in about 30 minutes. The questionnaire, administered to both nurses and head nurses, was developed as part of a broader project on leadership entitled *"Sentirsi leader"* (i.e., *"Feeling like a Leader"*). This project investigated leadership (and specifically leader identity) as a dyadic and group relationship. Participation in the project was voluntary, and absolute confidentiality of data collected from all participants was guaranteed. Head nurses' data were combined with those of the nurses in their groups, and work groups were tracked. For that purpose, alphanumeric codes established by researchers were pasted on the questionnaires in order to match head nurses to their nurse group, and to match the nurses of each work group together, but all participants were informed (by invitation letters and information sheets attached to the questionnaire) that these matches were tracked. Before starting the data collection, the project was approved by the Bio-Ethics Committee of the University of Turin (Approval letter, Prot. No. 55631 of 01.02.2019). The inclusion criterion for completing the questionnaire was that the participants be nurses or head nurses working at the northwestern Italian hospitals involved in the project (for further details on the *"Feeling like a Leader"* project, see Gatti et al., in preparation).
For this study, the sample consisted of 560 nurses working in three different hospitals, of whom 83.8% were women and 16.2% men (the sample is thus slightly more unbalanced for gender than the 2016 national data, where women are 74.4% of the total sample of nurses employed in hospitals throughout the country, see FNOPI, 2018), divided into 55 work groups (at 55 services/departments). The average size of groups was 10.18 respondents (SD = 3.73, with a range from min. = 3 to max. = 26 people per group). As for the education level, 53.5% of respondents had a professional nursing school diploma, 40.9% a bachelor's degree, and 5.6% a master's degree. The sample average age was 42.66 years (SD 9.78, in line with national data where 66.2% of nurses are between 35 and 54 years old, FNOPI, 2018), with an average length of employment of 20.15 years (SD 10.52) and an organizational tenure of 16.57 years (SD 10.68). As regards the nurses' shifts, 20.4% of the sample did not work shifts, 15.8% worked on two shifts and 63.8% on three shifts. Table 1 summarizes the main characteristics of the sample.

Measures

The scales used in this study were as follows.
Job satisfaction (JS). The scale proposed in the COPSOQ II (Pejtersen et al., 2009) was used to measure JS. It consists of 4 items, to which 1 item developed by the researchers to tap satisfaction with working relationships was added. Items were measured on a 5-point Likert scale, from 1 ("very dissatisfied") to 5 ("very satisfied"). An example item investigates how satisfied the subject is with "...his/her job prospects". Cronbach's alpha in this sample was .87 and the percentage of explained variance in the exploratory

Table 1: Sample description (N = 560 nurses; 55 work groups)

		N	%
Gender	M	89	16.2
	F	462	83.8
Education	Nursing School Diploma	296	53.5
	Bachelor's Degree	226	40.9
	Master's Degree	31	5.6
Nurses' shifts	No	113	20.4
	Yes, two shifts	88	15.8
	Yes, three shifts	354	63.8
		M	SD
Age		42.66	9.78
Lenght of employment		20.15	10.52
Organizational tenure (in the hospital)		16.57	10.68

factor analysis was 58.77%.

Organizational tenure (OT). This variable was measured with the question: "How many years have you been working in this hospital?", which had an average score of 16.57 years (SD = 10.68) in this sample.

Positive affectivity (PA). Watson, Clark, and Tellegen's scale (1988) was used in the Italian validation by Terracciano, McCrae, and Costa Jr. (2003), which consists of 10 items. The items were measured on a Likert response scale ranging from 1 ("slightly or not at all") to 5 ("extremely"). As an example, one item asked how "enthusiastic" the nurse felt during the day (it was in fact a measure of state positive affectivity). Cronbach's alpha in this sample was .88, and the percentage of explained variance was 44.42%.

Independence at work (IaW). The 4-item scale proposed in QEEW2.0 (van Veldhoven et al., 2015) was used. The items were measured on a Likert response scale ranging from 1 ("never/almost never") to 4 ("always"). An example item is "Do you have freedom in carrying out your work activities?". Cronbach's alpha was .83, and the percentage of explained variance was 56.02%.

Transformational leadership (TL). The 7-item scale by Carless, Wearing, and Mann's scale (2000) was used. The items were measured on a Likert scale ranging from 1 ("strongly disagree") to 7 ("strongly agree"). An example item asked nurses to evaluate how much their head nurse "Communicates a clear and positive vision of the future". Cronbach's alpha was .97, and the percentage of explained variance was 81.92%.

Transformational leadership variability (TL_sd). TL variability was operationalized by

calculating the standard deviation from the group mean for each work team. High standard deviations indicate high variability.

Data analyses

Data analyses were performed using SPSS 25 and Mplus 8.0.
With SPSS 25, an exploratory factor analysis was tested on the investigated variables, and intra-class correlations between the variables were measured. In addition, the package was used for descriptive analyses detailing sample characteristics. Lastly, Cronbach's alpha was calculated to investigate the internal consistency among the items of each scale (Giorgetti and Massaro, 2007).
With Mplus 8.0, the hypothesized model was tested through a multilevel analysis (see Figure 1 for the model). The advisability of adopting a multilevel analysis was verified through a preliminary test: the *Intraclass Correlation Coefficient* (ICC1) was calculated by analyzing the null model with job satisfaction as the outcome variable. The ICC shows the percentage of variance of the individual dependent variable (i.e., job satisfaction in this study) which is explained by the divisions of the sample into groups (Shrout and Fleiss, 1979). The ICC for job satisfaction in this sample is .07. Though it is true that the ICC value is relatively low, Kiersch and Byrne (2015, p. 301) argue that: "there is no required range of ICC values for justifying multilevel modeling. Multilevel modeling is appropriate when the assumption of independence is violated in the data, as is the case whenever data are collected from individuals nested within groups. The justification for multilevel modeling is a function of the structure of the data and how data were collected, and not a function of the variance attributable to either level of analysis". In other words, the advisability of using this kind of analysis hinges on the data structure, as well as on theoretical considerations linked to the topic at hand: in this case, data from 560 nurses are nested into 55 groups, each led by one leader. Consequently, the data structure justifies multilevel analysis on its own.
The variability among team members in evaluating their leader as transformational – a variable that was measured at the team level (as a between variable) – was calculated using the standard deviation from the group mean. This procedure is recommended by Roberson, Sturman, and Simons (2007), who gauged the properties of different dispersion indices as predictor variables and argued that standard deviations yield the most robust operationalization of within-unit variation of focal variables. The standard deviation from the group mean has been used to calculate variability in the study by Korek and colleagues (2010) on the transformational leadership style and in the study by Bormann and colleagues (2018) on ethical leadership, to cite two examples.
As an additional control for the impact on job satisfaction of intra-group variability in the evaluation of transformational leadership, a random slope model was calculated (Finch and Bolin, 2017). In this model, the impact of the independent variable (i.e., transformational leadership in this study) on the outcome can vary among the groups (i.e., it can vary at the between level). In other words, the association between transformational leadership and job satisfaction will be divided into a fixed part, common for all respondents in the sample, and into a variable part linked to the team membership (since

the teams are led by different leaders). An additional parameter at the between level and linked to transformational leadership will thus be added to the model. This could work as an additional control for the relationship – which is expected to be negative and significant – between transformational leadership variability and JS.

Results

Aggregation Tests

To assess whether aggregation of transformational leadership style to the group-level was justified, the extent to which between-group variance was present in that leadership style was explored. One-way analysis of variance showed significant between-group variance for transformational leadership, $F[(54,494) = 5.95, p < .001, \eta^2 = .39]$.
Furthermore, the percentage of between-group variation, ICC(1), was .29 for transformational leadership, which is higher than what is generally found in applied settings (see Bliese, 2000). Within-group reliability of the mean, ICC(2), was .81, and interrater agreement, Rwg (James, Demaree, and Wolf, 1993), was .73, indicating acceptable reliability of the group means (Bliese, 2000; LeBreton and Senter, 2007).
Thus, between-group variance and within-group agreement justify aggregation of transformational leadership from the individual level to the group level.

Hypotheses Test

Descriptive statistics and correlations between the investigated variables are reported in Table 2. JS has a good positive correlation with positive affectivity (r .374, p <.001), independence at work (r .370, p <.001), and transformational leadership (r .430, p <.001). Correlation between satisfaction and organizational tenure within the hospital is not significant (r -.015, ns).

After testing the multilevel model with Mplus (specifying a two-level random model), results (Table 3) show that the relationships of the antecedents measured at the within level with JS are significant and positive (PA = 0.240, p <.001; IaW = 0.281, p <.001; TL = 0.161, p <.001), except for the relationship of organizational tenure (OT = -0.004, p = .182). Hypotheses 1.b, 1.c, and 1.d are therefore confirmed, whereas Hypothesis 1.a is not confirmed.
As regards variables at the between level (Table 4), the degree of variability in the perceptions of nurses regarding their head nurse's TL has a significant negative relationship with JS (TL_sd = -0.192, p <.05), even while considering the other variables in the model, including TL at the within level and the random slope on TL (0.006, p <.05). Hypothesis 2 is thus confirmed. Figure 2 summarizes the model results.

Table 2: Correlations between variables at within-level

Note. ** = correlation is significant at 0.01 level, * = correlation is significant at 0.05 level. The main diagonal shows Cronbach's alphas. JS = Job satisfaction; PA = Positive affectivity; IaW = Independence at work; TL = Transformational leadership; OT = Organizational tenure

	M(SD)	JS	PA	IAW	TL	OT
JS	3.34(0.77)	(.87)				
PA	3.60(0.69)	.374**	(.88)			
IaW	3.02(0.63)	.370**	.207**	(.83)		
TL	4.37(1.66)	.430**	.236**	.197**	(.97)	
OT	16.57(10.68)	-0.15	-0.18	0.56	0.91*	-

Table 3: Within-level antecedents

Within Level	γ	p
PA	0.240	<0.001
IaW	0.281	<0.001
TL	0.161	<0.001
OT	-0.004	0.182

Table 4: Between-level antecedents

Note. TL_sd = transformational leadership variability (i.e., disagreement in each group regarding the TL style of the head nurse); TL (random slope) = between-group variability in the impact of TL on JS.

Between Level	γ	p
TL_sd	-0.192	0.045
TL(random slope)	0.006	0.039
Residual variances	0.008	0.480

Discussion and implications

Three out of the four variables investigated in the study were confirmed as significant predictors of JS in nurses, as in the paper by Liu and colleagues (2016) and in previous works in the well-being at work literature: thus, positive affectivity, independence at work, and TL all have a positive relationship with JS. The only macro-category of

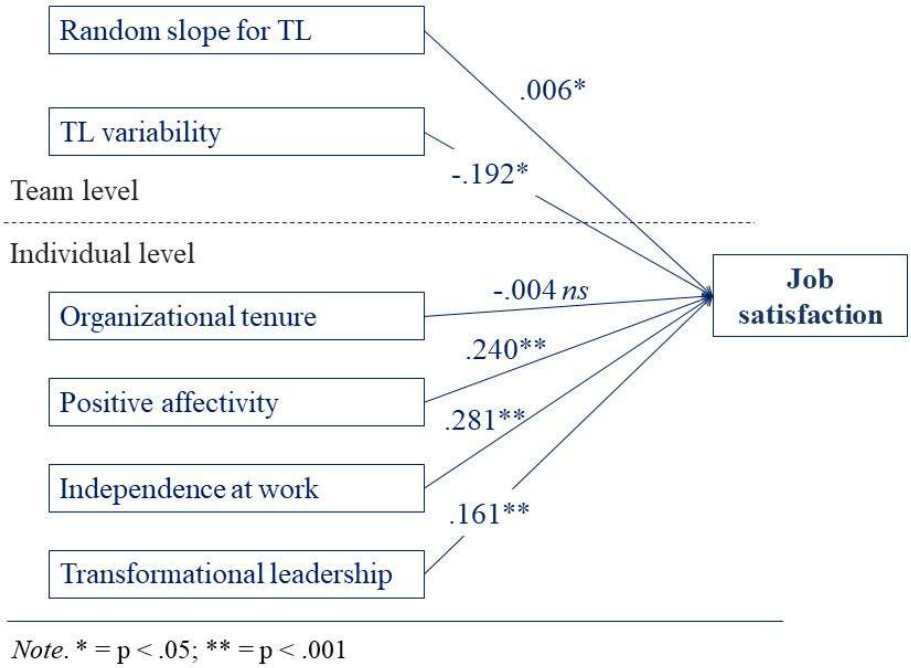

Figure 2: The model: findings.

variables mentioned in Liu and colleagues' JS review that is not confirmed in this study is that of demographic variables, since the relationship between organizational tenure and JS was not significant. However, it is also true that, the link between these two variables has been found to be positive in the nursing literature (as we hypothesized in this study) but very weak in several studies (e.g., Blegen, 1993; Chu et al., 2003). Our finding is thus not very far from those of previous studies of the same kind of workers. We can also add that the study by Oshagbemi (2000) mentioned in the theoretical section, which found a significant positive relationship between organizational tenure and job satisfaction, was on a sample of academics. The different nature of the two samples and the two professions could influence this relationship: organizational tenure could have a stronger link with academics' JS than with nurses' JS, since it is more closely related to the formers' career development. This is not the case for nurses, for whom working for a long time in the same hospital does not necessarily entail more opportunities for advancement, and thus may not significantly increase their job satisfaction. Hence, in summary, the study's findings confirm hypotheses 1.b, 1.c, and 1.d, while hypothesis 1.a. is not confirmed.

TL—which in this sample showed sufficient between-group variance and within-group

agreement to be treated as an aggregated score at the team level—proved to be particularly interesting in explaining JS while considering the multilevel structure of data. As the variability of the perceptions of having a transformational leader in the work group increased, the JS of the group's members decreased, even when the significant impacts of TL measured at the individual level, of the random slope considered at the between level (therefore, in this study, the between-group variability of the impact of TL on JS), and of the other significant predictors examined were considered. This confirms hypothesis 2, a finding that reflects previous studies that showed similar relationships between the perception of TL variability within the work group and affective commitment (Korek, Felfe, and Zaepernick-Rothe, 2010) or between ethical leadership variability and JS measured at the group level.

This study thus offers an interesting contribution, because even though the link between group consensus/variability on leadership and psychological well-being was recognized long ago (Bliese and Halverson, 1998), very few studies to date have investigated this link by analyzing a specific leadership style. Changing perspective, it could be concluded that consensus on TL can also be interpreted as a resource for nurses, as Korek and colleagues (2010) found it to be in other contexts. This consideration can be linked to the recent interest for multilevel investigations of demands and resources in the Job Demands-Resources model (Bakker and Demerouti, 2017). It also confirms Feinberg and colleagues' (2005) idea that, while investigating TL variability, we are dealing with an "additional parameter" which rounds out our understanding of leadership in groups and its potential influence.

This variability could be caused by different reasons, which will be interesting to investigate in future work. For example, variability can be perceived when the leader behaves differently with different followers (Feinberg, Ostroff, and Burke, 2005; Bormann et al., 2018) or when followers interpret leaders' behaviors in different ways because of their individual characteristics or because leaders devote little attention to ensuring that their behaviors, choices and attitudes towards their work are shared by the group (Feinberg, Ostroff, and Burke, 2005). To be an effective transformational leader, as mentioned earlier, the supervisor must foster consensus on leadership (Gardner and Avolio, 1998). When his/her behavior is perceived as variable, followers consider it to be inconsistent, specifically in relation to the core elements of the investigated leadership style (Bormann et al., 2018). If they are not compared and resolved, different interpretations within the group could make life difficult for the work group, increasing confusion on team goals and fueling internal conflict (Klein and House, 1995; Feinberg, Ostroff, and Burke, 2005), and could reduce nurses' JS, as shown in this study.

In conclusion, though a large percentage of variance in JS can be explained at the individual level, it is nevertheless a variable that can benefit from multilevel investigations. One's own JS hinges to a significant extent on dispositional reasons and antecedents but it is certainly not impenetrable to situational influences (Brief, 1998) which, at least in part, are shared by the work group (e.g., influences such as spaces, colleagues, work practices and, the leader, see Whitman, Van Rooy, and Viswesvaran, 2010), especially when the group has a strong identity linked to the characteristics of the profession in question (Bontrager, Hart, and Mareno, 2016; Kim et al., 2016). In nursing—where the

group has a central position—it seems necessary to investigate perceptions of the shared dimension of leadership at both the individual and the group level. This could promote a better understanding of the processes that leadership evokes (Feinberg, Ostroff, and Burke, 2005), as well as a better comprehension of the influences to which JS is subject (Whitman, Van Rooy, and Viswesvaran, 2010).

Practical implications

The study's findings suggest several practical implications stemming from the idea of supporting nurses' well-being at work, and specifically their JS. In addition to a variable such as positive affectivity which is closely connected to individual/dispositional characteristics, in fact, two work resources—independence at work and TL—have proved to be supportive of work well-being. The study demonstrates the importance and effectiveness of this leadership style for nurses (Weberg, 2010; Hayati, Charkhabi, and Naami, 2014) and the positive impact that a high perception of TL at the individual level has on nurses' JS. Furthermore, it shows that it is important for leaders to adopt this style uniformly and consistently and/or promote a homogeneous perception of their leadership style in their group through appropriate communicative and managerial choices.
All these considerations could be profitably transferred into leadership development or leadership training measures for the healthcare sector (Duygulu and Kublay, 2011; Curtis, Sheerin, and de Vries, 2011), as specific points of attention for the leader. In discussing TL, emphasis could be placed on building consensus about leadership itself (Gardner and Avolio, 1998), a distinctive and deep-rooted feature of this style and part of its very nature (Feinberg, Ostroff, and Burke, 2005). Accordingly, training measures could also adopt techniques such as role-playing and self-cases for exercising the skills needed to build consensus.
Lastly, from a different perspective, team support and team building measures (e.g., Amos, Hu, and Herrick, 2005; DiMeglio et al., 2005, both papers on measures which stress the value of open discussion in the group) could focus on how sharing and openly discussing leadership to achieve a common vision of leadership among team members can support the individual's well-being at work. The self-case technique could also prove useful for this purpose.

Limitations and future developments

This study has some limitations. First, it involves a cross-sectional design, which investigates the sample in one single time. Consequently, causality between the antecedents and JS "is presumed by the researchers" (Ghislieri et al., 2019, p. 1694) since the research design does not satisfy all the requirements (e.g., does not abide by the rule that a cause precedes the effect) for arguing that there are causal relationships among the investigated variables. Second, while the model analyzes individual and organizational

antecedents considered to be notably important for nurses' JS in the literature, it fails to investigate an equally relevant dimension which is attracting growing attention in the literature, viz., the relationship with patients. This dimension is more than a mere antecedent of nurses' JS, as it is a defining element of satisfaction, an integral part of nurses' JS (Steeves et al., 1990). Negative affectivity is another dimension that would have been important to include, since this variable is complementary to positive affectivity, but we could not do so, as negative affectivity was not included in our questionnaire. Lastly, a limitation—and an area of possible future development—is that the study tests the direct relationship between TL variability and JS, while it would have been interesting to measure the potential mediation of a dimension closely linked to the group, its dynamics and its internal climate, between these two variables.

Though the lack of consensus within the group regarding the head nurse's leadership style may work as an additional "demand" for the group — since it makes it necessary to interpret the leader's behaviors and try to make sense of them, and at the same time increases the group's conflict and confusion about its objectives (Feinberg, Ostroff, and Burke, 2005)—it is possible that a variable such as group cohesion could mediate the relationship between TL variability and JS. Another future development could compare the effect of variability on TL in nurse teams to the effect of variability on LMX in the same teams on their JS. This could be of considerable interest in view of the high impact that LMX has been shown to have on nurses' JS (e.g., Han and Jekel, 2011), also when investigated at the team level (e.g., Laschinger, Finegan, and Wilk, 2011; Portoghese et al., 2015). In addition, the fact that leaders develop different quality relationships with their employees is a fundamental tenet of LMX theory (Hooper and Martin, 2008) that has led researchers to investigate this variability in different ways and with insightful results (see for instance Hooper and Martin, 2008; Epitropaki et al., 2016). It could thus be of interest to make comparisons between the effects of variability – operationalized as we did in this study – using different leadership variables. A final development, linked specifically to variability in leadership perceptions, is to investigate the antecedents of variability. If we consider this dimension as fundamental in gaining a full understanding of how leadership styles work (Feinberg, Ostroff, and Burke, 2005), it is clear that investigating the variables that influence the perception of variability is very important. It is particularly so in those contexts and for those professions, such as nursing, where the group is a central dimension (Bontrager, Hart, and Mareno, 2016; Kim et al., 2016).

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References

Akman, O., Ozturk, C., Bektas, M., Ayar, D., and Armstrong, M. A. (2016). Job satisfaction and burnout among paediatric nurses. *Journal of Nursing Management*, 24(7):923–933.

Amos, M. A., Hu, J., and Herrick, C. A. (2005). The impact of team building on communication and job satisfaction of nursing staff. *Journal for Nurses in Professional Development*, 21(1):10-16.

Andrews, D. R., Richard, D. C. S., Robinson, P., Celano, P., and Hallaron, J. (2012). The influence of staff nurse perception of leadership style on satisfaction with leadership: A cross-sectional survey of pediatric nurses. *International Journal of Nursing Studies*, 49(9):1103–1111.

Anthony, M. K., Standing, T. S., Glick, J., Duffy, M., Paschall, F., Sauer, M. R., ... and Dumpe, M. L. (2005). Leadership and nurse retention: The pivotal role of nurse managers. *JONA: The Journal of Nursing Administration*, 35(3):146-155.

Asif, M., Jameel, A., Hussain, A., Hwang, J., and Sahito, N. (2019). Linking transformational leadership with nurse-assessed adverse patient outcomes and the quality of care: Assessing the role of job satisfaction and structural empowerment. *International Journal of Environmental Research and Public Health*, 16(13):2381.

Avolio, B. J., and Bass, B. M. (2004). *Multifactor leadership questionnaire. Manual and sampler set, 3rd ed.*. Mind Garden, Redwood City.

Bakker, A. B., and Demerouti, E. (2017). Job demands–resources theory: Taking stock and looking forward. *Journal of Occupational Health Psychology*, 22(3):273–285.

Bakker, A. B., Demerouti, E., and Euwema, M. C. (2005). Job resources buffer the impact of job demands on burnout. *Journal of Occupational Health Psychology*, 10(2):170–180.

Bass, B. M. (1985). *Leadership and performance beyond expectations*. Free Press, New York.

Bass, B. M., and Avolio, B. J. (1993). Transformational leadership and organizational culture. *Public Administration Quarterly*, 17:112-121.

Blegen, M. A. (1993). Nurses' job satisfaction: A meta-analysis of related variables. *Nursing Research*, 42(1):36-41.

Bliese, P. D. (2000). Within-group agreement, non-independence, and reliability: Implications for data aggregation and analysis. In *Multilevel theory, research, and methods in organizations: Foundations, extensions, and new directions*, pages 349–381. Jossey-Bass.

Bliese, P. D., and Halverson, R. R. (1998). Group consensus and psychological well-being: A large field study 1. *Journal of Applied Social Psychology*, 28(7):563–580.

Bontrager, S., Hart, P. L., and Mareno, N. (2016). The role of preceptorship and group cohesion on newly licensed registered nurses' satisfaction and intent to stay. *The Journal of Continuing Education in Nursing*, 47(3):132-139.

Bormann, K. C., Poethke, U., Cohrs, C., and Rowold, J. (2018). Doing bad through being selective in doing good: The role of within-unit variability in ethical leadership. *European Journal of Work and Organizational Psychology*, 27(6):683–699.

Braun, S., Peus, C., Weisweiler, S., and Frey, D. (2013). Transformational leadership, job satisfaction, and team performance: A multilevel mediation model of trust. *The Leadership Quarterly*, 24(1):270–283.

Brawley, A. M., and Pury, C. L. S. (2016). Work experiences on MTurk: Job satisfaction, turnover, and information sharing. *Computers in Human Behavior*, 54:531–546.

Breevaart, K., Bakker, A., Hetland, J., Demerouti, E., Olsen, O. K., and Espevik, R. (2014). Daily transactional and transformational leadership and daily employee engagement. *Journal of Occupational and Organizational Psychology*, 87(1):138–157.

Brief, A. P. (1998). *Foundations for organizational science. Attitudes in and around organizations*. Sage Publications Inc., Thousand Oaks.

Bruk-Lee, V., Khoury, H. A., Nixon, A. E., Goh, A., and Spector, P. E. (2009). Replicating and extending past personality/job satisfaction meta-analyses. *Human Performance*, 22(2):156–189.

Burke, M. J., Brief, A. P., and George, J. M. (1993). The role of negative affectivity in understanding relations between self-reports of stressors and strains: A comment on the applied psychology literature. *Journal of Applied Psychology*, 78(3):402–412.

Burns, J. M. (1978). *Leadership*. New York, NY: Harper and Row Publishers.

Carless, S. A., Wearing, A. J., and Mann, L. (2000). A short measure of transformational leadership. *Journal of Business and Psychology*, 14(3):389-405.

Chemers, M. M. (2001). Leadership effectiveness: An integrative review. In *Blackwell handbook of social psychology: Group processes*, pages 376–399. Blackwell.

Chiu, R. K., and Kosinski Jr., F. A. (1999). The role of affective dispositions in job satisfaction and work strain: Comparing collectivist and individualist societies. *International Journal of Psychology*, 34(1):19-28.

Cho, J., and Dansereau, F. (2010). Are transformational leaders fair? A multi-level study of transformational leadership, justice perceptions, and organizational citizenship behaviors. *The Leadership Quarterly*, 21(3):409–421.

Chu, C. I., Hsu, H. M., Price, J. L., and Lee, J. Y. (2003). Job satisfaction of hospital nurses: An empirical test of a causal model in Taiwan. *International Nursing Review*, 50(3):176–182.

Cimete, G., Gencalp, N. S., and Keskin, G. (2003). Quality of life and job satisfaction of nurses. *Journal of Nursing Care Quality*, 18(2):151–158.

Clark, A., Oswald, A., and Warr, P. (1996). Is job satisfaction U-shaped in age?. *Journal of Occupational and Organizational Psychology*, 69(1):57-81.

Conger, J. A. (1999). Charismatic and transformational leadership in organizations:

An insider's perspective on these developing streams of research. *The Leadership Quarterly*, 10(2):145–179.

Conger, J. A., and Kanungo, R. N. (1987). Toward a behavioral theory of charismatic leadership in organizational settings. *Academy of Management Review*, 12(4):637–647.

Connolly, J. J., and Viswesvaran, C. (2000). The role of affectivity in job satisfaction: A meta-analysis. *Personality and Individual Differences*, 29(2):265–281.

Cortese C.G. (2013). Predictors of intention to leave the nursing profession in two Italian hospitals. *Assistenza Infermieristica e Ricerca*, 32(1):20-27.

Cortese, C.G., Gerbaudo, L., Manconi, M.P., and Violante, B. (2013). L'identificazione dei fattori di rischio stress lavoro-correlato in un'Azienda Sanitaria Ospedaliera: Un approccio quali-quantitativo (The identification of work-related stress risk factors in an Hospital: A quali-quantitative approach). *La Medicina del Lavoro*, 104(2):141-157.

Cowin, L. S., Johnson, M., Craven, R. G., and Marsh, H. W. (2008). Causal modeling of self-concept, job satisfaction, and retention of nurses. *International Journal of Nursing Studies*, 45(10):1449–1459.

Curtis, E. A., Sheerin, F. K., and de Vries, J. (2011). Developing leadership in nursing: The impact of education and training. *British Journal of Nursing*, 20(6):344–352.

Demerouti, E., Bakker, A. B., Nachreiner, F., and Schaufeli, W. B. (2001). The job demands-resources model of burnout. *Journal of Applied Psychology*, 86(3), 499–512.

DiMeglio, K., Padula, C., Piatek, C., Korber, S., Barrett, A., Ducharme, M., ... and Corry, K. (2005). Group cohesion and nurse satisfaction: Examination of a team-building approach. *JONA: The Journal of Nursing Administration*, 35(3):110-120.

Dinc, M. S., Kuzey, C., and Steta, N. (2018). Nurses' job satisfaction as a mediator of the relationship between organizational commitment components and job performance. *Journal of Workplace Behavioral Health*, 33(2):75–95.

Duygulu, S., and Kublay, G. (2011). Transformational leadership training programme for charge nurses: Transformational leadership training programme. *Journal of Advanced Nursing*, 67(3):633–642.

Eliyana, A., Ma'arif, S., and Muzakki. (2019). Job satisfaction and organizational commitment effect in the transformational leadership towards employee performance. *European Research on Management and Business Economics*, 25(3):144–150.

Epitropaki, O., Kapoutsis, I., Ellen III, B. P., Ferris, G. R., Drivas, K., and Ntotsi, A. (2016). Navigating uneven terrain: The roles of political skill and LMX differentiation in prediction of work relationship quality and work outcomes. *Journal of Organizational Behavior*, 37(7):1078–1103.

Feinberg, B. J., Ostroff, C., and Burke, W. W. (2005). The role of within-group agreement in understanding transformational leadership. *Journal of Occupational and Organizational Psychology*, 78(3):471–488.

Finch, W. H., and Bolin, J. E. (2017). *Multilevel modeling using Mplus*. Chapman and Hall/CRC Press, Boca Raton.

FNOPI (2018). Infermieri: Quanti sono e come e dove lavorano. In *Proceedings of the*

First FNOPI Congress, Rome.

Force, M. V. (2005). The relationship between effective nurse managers and nursing retention. *JONA: The Journal of Nursing Administration*, 35(7):336-341.

Freimann, T., and Merisalu, E. (2015). Work-related psychosocial risk factors and mental health problems amongst nurses at a university hospital in Estonia: A cross-sectional study. *Scandinavian Journal of Public Health*, 43(5):447–452.

Gardner, W. L., and Avolio, B. J. (1998). The charismatic relationship: A dramaturgical perspective. *Academy of Management Review*, 23(1):32–58.

Gatti, P., Bligh, M. C., and Cortese, C. G. (2019). When a leader job resource can be ambivalent or even destructive: Independence at work as a double-edged sword. *PLOS ONE*, 14(5):e0217482.

Gatti, P., Clari, M., Garzaro, G., Dimonte, V., Lord, R.G., and Cortese, C.G (in preparation). "Feeling like a leader": A research protocol for investigating leader identity in nurses and head nurses with a multilevel design. *Journal of Advanced Nursing*.

Ghislieri, C., Cortese, C. G., Molino, M., and Gatti, P. (2019). The relationships of meaningful work and narcissistic leadership with nurses' job satisfaction. *Journal of Nursing Management*, 27(8):1691–1699.

Gill, A. S., Flaschner, A. B., and Shachar, M. (2006). Mitigating stress and burnout by implementing transformational-leadership. *International Journal of Contemporary Hospitality Management*, 18(6):469–481.

Giorgetti, M., and Massaro, D. (2007). *Ricerca e percorsi di analisi dati con SPSS*. Pearson Italia Spa, Milano.

Giorgi, G., Ariza Montes, A. , Rapisarda, V., Campagna, M., Garzaro, G., Arcangeli, G., and Mucci, N. (2019). Work-related stress in the banking sector: A study on an Italian aged population of over 2,000 workers. *La Medicina del lavoro*, 110(1):11–21.

Graen, G. B., and Uhl-Bien, M. (1995). Relationship-based approach to leadership: Development of leader-member exchange (LMX) theory of leadership over 25 years: Applying a multi-level multi-domain perspective. *The Leadership Quarterly*, 6(2):219–247.

Graen, G., and Cashman, J. F. (1975). A role-making model of leadership in formal organizations: A developmental approach. *Leadership frontiers*, 143:165.

Green, A. E., Miller, E. A., and Aarons, G. A. (2013). Transformational leadership moderates the relationship between emotional exhaustion and turnover intention among community mental health providers. *Community Mental Health Journal*, 49(4):373–379.

Hackman, J. R., and Oldham, G. R. (1976). Motivation through the design of work: Test of a theory. *Organizational Behavior and Human Performance*, 16(2):250–279.

Han, G., and Jekel, M. (2011). The mediating role of job satisfaction between leader-member exchange and turnover intentions. *Journal of nursing management*, 19(1):41–49.

Hayati, D., Charkhabi, M., and Naami, A. (2014). The relationship between transfor-

mational leadership and work engagement in governmental hospitals nurses: A survey study. *SpringerPlus*, 3(25):1-7.

Hooper, D. T., and Martin, R. (2008). Beyond personal leader–member exchange (LMX) quality: The effects of perceived LMX variability on employee reactions. *The Leadership Quarterly*, 19(1):20-30.

House, R. J., and Shamir, B. (1993). Toward the integration of transformational, charismatic, and visionary theories. In *Leadership theory and research: Perspectives and directions, 1997., Proceedings of the Sixth IEEE International Conference on*, pages 81–107. Academic Press.

James, L. R., Demaree, R. G., and Wolf, G. (1993). rwg: An assessment of within-group interrater agreement. *Journal of applied psychology*, 78(2):306.

Judge, T. A., and Piccolo, R. F. (2004). Transformational and transactional leadership: A meta-analytic test of their relative validity. *Journal of Applied Psychology*, 89(5):755-768.

Kalleberg, A. L., and Mastekaasa, A. (2001). Satisfied movers, committed stayers: The impact of job mobility on work attitudes in Norway. *Work and Occupations*, 28(2):183–209.

Kao, R.-H. (2017). The relationship between work characteristics and change-oriented organizational citizenship behavior: A multi-level study on transformational leadership and organizational climate in immigration workers. *Personnel Review*, 46(8):1890–1914.

Karasek, R. A. (1979). Job demands, job decision latitude, and mental strain: Implications for job redesign. *Administrative Science Quarterly*, 24(2):285–308.

Karasek, R. A. (1998). Demand/Control model: A social-emotional, and psychological approach to stress risk and active behavior development. In *Encyclopaedia of occupational health and safety*, pages 34.06-34.14. ILO.

Kiersch, C. E., and Byrne, Z. S. (2015). Is being authentic being fair? Multilevel examination of authentic leadership, justice, and employee outcomes. *Journal of Leadership and Organizational Studies*, 22(3):292–303.

Kim, S. C., Stichler, J. F., Ecoff, L., Brown, C. E., Gallo, A.-M., and Davidson, J. E. (2016). Predictors of evidence-based practice implementation, job satisfaction, and group cohesion among regional fellowship program participants. *Worldviews on Evidence-Based Nursing*, 13(5):340–348.

Klein, K. J., and House, R. J. (1995). On fire: Charismatic leadership and levels of analysis. *The Leadership Quarterly*, 6(2):183–198.

Korek, S., Felfe, J., and Zaepernick-Rothe, U. (2010). Transformational leadership and commitment: A multilevel analysis of group-level influences and mediating processes. *European Journal of Work and Organizational Psychology*, 19(3):364–387.

Laschinger, H. K. S. (2010). Positive working relationships matter for better nurse and patient outcomes. *Journal of Nursing Management*, 18(8):875–877.

Laschinger, H. K. S., Finegan, J., and Wilk, P. (2011). Situational and dispositional

influences on nurses' workplace well-being: The role of empowering unit leadership. *Nursing research*, 60(2):124–131.

LeBreton, J. M., and Senter, J. L. (2007). Answers to 20 questions about interrater reliability and interrater agreement. *Organizational Research Methods*, 11(4):815–852.

Liao, H., and Chuang, A. (2007). Transforming service employees and climate: A multilevel, multisource examination of transformational leadership in building long-term service relationships. *Journal of Applied Psychology*, 92(4):1006–1019.

Liu, Y., Aungsuroch, Y., and Yunibhand, J. (2016). Job satisfaction in nursing: A concept analysis study. *International Nursing Review*, 63(1):84–91.

Locke, E.A. (1976). The Nature and Causes of Job Satisfaction. In *Handbook of industrial and organizational psychology*, pages 1297-134. Holt, Reinhart and Winston.

McCutcheon, A.S., Doran, D., Evans, M., Hall, L.M., and Pringle, D. (2009). Effects of leadership and span of control on nurses' job satisfaction and patient satisfaction. *Nursing Leadership*, 22(3):48–67.

McGuire, E., and Kennerly, S. M. (2006). Nurse managers as transformational and transactional leaders. *Nursing economics*, 24(4):179.

McLennan, M. (2005). Nurses' views on work enabling factors. *JONA: The Journal of Nursing Administration*, 35(6):311-318.

Morton, J. L., and Hyrkas, K. (2012). Management and leadership at the bedside. *Journal of Nursing Management*, 20(5):579–581.

Ohunakin, F., Adeniji, A. A., Oludayo, O. A., Osibanjo, A. O., and Oduyoye, O. O. (2019). Employees' retention in Nigeria's hospitality industry: The role of transformational leadership style and job satisfaction. *Journal of Human Resources in Hospitality and Tourism*, 18(4):441–470.

Oshagbemi, T. (2000). Is length of service related to the level of job satisfaction?. *International Journal of Social Economics*, 27(3):213–226.

Pejtersen, J. H., Kristensen, T. S., Borg, V., and Bjorner, J. B. (2009). The second version of the Copenhagen Psychosocial Questionnaire. *Scandinavian Journal of Public Health*, 38(3-suppl):8–24.

Portoghese, I., Galletta, M., Battistelli, A., and Leiter, M. P. (2015). A multilevel investigation on nursing turnover intention: The cross-level role of leader–member exchange. *Journal of Nursing Management*, 23(6):754–764.

Quińones, M. A., Ford, J. K., and Teachout, M. S. (1995). The relationship between work experience and job performance: A conceptual and meta-analytic review. *Personnel psychology*, 48(4):887-910.

Roberson, Q. M., Sturman, M. C., and Simons, T. L. (2007). Does the measure of dispersion matter in multilevel research? A comparison of the relative performance of dispersion indexes. *Organizational Research Methods*, 10(4):564–588.

Rosenberg, M. J., and Hovland, C. I. (1960). Cognitive, affective, and behavioral components of attitudes. In *Attitude organization and change: An analysis of consistency among attitude components*, pages 1–14. Yale University Press.

Shader, K., Broome, M. E., Broome, C. D., West, M. E., and Nash, M. (2001). Factors influencing satisfaction and anticipated turnover for nurses in an academic medical center. *JONA: The Journal of Nursing Administration*, 31(4):210-216.

Shrout, P. E., and Fleiss, J. L. (1979). Intraclass correlations: Uses in assessing rater reliability. *Psychological Bulletin*, 86(2):420–428.

Smith, P. C., Kendall, L. M., and Hulin, C. L. (1969). *The measurement of satisfaction in work and retirement: A strategy for the study of attitudes.* Rand Mcnally, Chicago.

Steeves, R. H., Kahn, D. L., Benoliel, J. Q., and Ferrell, B. R. (1990). Nurses' interpretation of the suffering of their patients. *Western Journal of Nursing Research*, 12(6):715–731.

Stimpfel, A. W., Sloane, D. M., and Aiken, L. H. (2012). The longer the shifts for hospital nurses, the higher the levels of burnout and patient dissatisfaction. *Health Affairs*, 31(11):2501–2509.

Tentama, F., Rizky Kusuma, D., and Subardjo. (2020). Job satisfaction as a mediating variable in the effect of transformational leadership on performance. *Humanities and Social Sciences Reviews*, 7(6):1082-1089.

Terracciano A., McCrae R. R., and Costa P. T., Jr. (2003). Factorial and construct validity of the italian positive and negative affect schedule (PANAS). *European Journal of Psychological Assessment*, 19(2):131–141.

Thomas, G., Martin, R., and Riggio, R. (2013). Leading groups: Leadership as a group process. *Group Processes and Intergroup Relations*, 16:3–16.

van der Heijden B.I.J.M., van Dam K., and Hasselhorn H.M. (2009). Intention to leave nursing: The importance of interpersonal work context, work-home interference, and job satisfaction beyond the effect of occupational commitment. *Career Development International*, 14(7):616–635.

van Veldhoven, M. J. P. M., Prins, J., van der Laken, P. A., and Dijkstra, L. (2015). *QEEW2.0: 42 short scales for survey research on work, well-being and performance.* SKB, Amsterdam.

Warr, P. (1987). *Work, unemployment, and mental health.* Oxford University Press, Oxford.

Watson, D. (2002). Positive affectivity: The disposition to experience pleasurable emotional states. In *Handbook of positive psychology*, pages 106–119. Oxford University Press.

Watson, D., Clark, L. A., and Carey, G. (1988). Positive and negative affectivity and their relation to anxiety and depressive disorders. *Journal of Abnormal Psychology*, 97(3):346–353.

Watson, D., Clark, L. A., and Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: The PANAS scales. *Journal of Personality and Social Psychology*, 54(6):1063–1070.

Weberg, D. (2010). Transformational Transformational leadership and staff retention: An evidence review with implications for healthcare systems. *Nursing Administration*

Quarterly, 34(3):246-258.

Whitman, D. S., Van Rooy, D., and Viswesvaran, C. (2010). Transformational Satisfaction, citizenship behaviors, and performance in work units: A meta analysis of collective construct relations. *Personnel Psychology*, 63(1):41–81.

Wu, J. B., Tsui, A. S., and Kinicki, A. J. (2010). Transformational Consequences of differentiated leadership in groups. *Academy of Management Journal*, 53(1):90–106.

Yammarino, F. J., and Dansereau, F. (2008). Transformational Multi-level nature of and multi-level approaches to leadership. *The Leadership Quarterly*, 19(2):135–141.

Zangaro, G. A., and Soeken, K. L. (2007). Transformational A meta-analysis of studies of nurses' job satisfaction. *Research in Nursing and Health*, 30(4):445–458.

Zwingmann, I., Wegge, J., Wolf, S., Rudolf, M., Schmidt, M. and Richter, P. (2014). Transformational Is transformational leadership healthy for employees? A multilevel analysis in 16 nations. *German Journal of Human Resource Management*, 28(1–2):24–51.