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Nursing innovation: The joint effects of championship behaviors, project types, and initiation levels

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ABSTRACT

Background: Frontline nurse champions are key innovation-implementation agents. Despite the growing interest in nurse champions' innovation, whether project novelty is a product of championship behavior (e.g., expressing confidence in the innovation's success and network building), the project's contextual characteristics (project type and initiation level), or their joint effects, remains unsolved.

Purpose: To develop and test an interactionist model of project novelty in nursing.

Methods: A cross-sectional design with a multisource approach to data collection.

Findings: Results demonstrated a direct effect of project type, a two-way interaction effect of level of initiation and project type, a two-way interaction effect of championship and project type, and a three-way interaction effect of project type, initiation level, and championship on project's novelty.

Discussion: Bottom-up service and administrative projects require champions' championship behaviors to foster novelty, whereas for bottom-up quality-improvement projects, such behaviors can harm project novelty. For human-resource projects and for top-down projects, championship behaviors do not matter.

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Introduction

Health care organizations worldwide strive to deliver safe, high-quality, patient-centered care while fostering a proficient nursing staff and maintaining fiscal accountability. To achieve these aims, these organizations promote innovation at various organizational levels and in various domains (Drach-Zahavy, Somech, Granot, & Spitzer, 2004; Kaya, Turan, & Aydın, 2015; Länsisalmi, Kivimäki, Aalto, & Ruoranen, 2006; Weng, Huang, Chen, & Chang, 2015). It is increasingly recognized that nurse champions, namely excellent front-line practitioners, come from within the organization and are passionate about improving quality of care, and serving as key agents in implementing innovation via self-developed or management-developed projects (Byers, 2017; McSherry & Douglas, 2011; White, 2011). Nurse champions are the driving force behind the implementation of a wide range of project change initiatives in health care settings. They are considered front-line clinicians (Soo, Berta, & Baker, 2009). Nurses

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were recently acknowledged as engaging in innovation in practice, defined as "the encouragement of professionals to utilize their acquired knowledge and skills to creatively generate and develop new ways of working, drawing on technologies, systems, theories and associated partners/stakeholders to further enhance and evaluate practice" (McSherry & Douglas, 2011, p. 165). This study focuses on innovation performed and led by nurse champions.

Despite this growing interest in innovation in nursing, several gaps remain in the literature. First, research on nursing projects have been mostly descriptive and anecdotal, and only scant research has empirically explored innovation projects in the nursing field—their antecedents and consequences (Essén & Lindblad, 2013). This might be partially due to methodological challenges in comparing the success of projects across different project types and diverse nursing settings. In other words, what is defined as a project's success, and how it is valued, fluctuates from one context to another. Second, despite a strong theoretical base, empirical research is disjointed. Studies on health care innovation have been extensively influenced by Rogers's (2003) diffusion of innovations theory (Fitzgerald, Ferlie, Wood, & Hawkins, 2002; Greenhalgh, Robert, Macfarlane, Bate, & Kyriakidou, 2004). Rogers's theory—a well-studied umbrella theory for innovation research—assumes that innovation is assembled of multilevel factors including the characteristics of the innovation itself, the communication channels, time, and the social system. Yet, most empirical research so far has focused on isolated factors and tested their main effects on innovation success. For example, West and Anderson (1992) explored how differences in project characteristics, such as project types and/or level of project initiation (whether initiated by top management, i.e., top-down, or originated by frontline staff, i.e., bottom-up), affect its success in health originations. Other studies focused on the champions and their championship behaviors, as a relatively stable individual characteristic (Howell, Shea, & Higgins, 2005; Walter, Parboteeah, Riesenhuber, & Hoegl, 2011). An interesting issue that remains relatively unsolved is the extent to which innovation is solely a function of the individual who leads it, or is a function of the characteristics of the project, or of their joint effects. In other words, is the leader's (i.e., champion's) championship behavior always necessary, or might it benefit or precisely harm certain projects' success, depending on their contextual characteristics?

To narrow these gaps in the literature, this study embraced an interactionist perspective (Judge & Zapata, 2015). Specifically, we chose the situational strength model (Judge & Zapata, 2015; Meyer, Dalal, & Hermida, 2010; Mischel, 1977) as the theoretical background for the study, thereby helping to illustrate that champions' championship behaviors (Howell et al., 2005) is not necessarily warranted to prompt projects' novelty. Rather, novelty is critically contingent upon the project characteristics, such as the level of the project initiation (bottom-up vs. top-down) and the project type (i.e., focused on improving quality of care, administrative aspects, service delivered, or human resources). In our study, project novelty was defined as the level of radicalness and innovativeness of the project, as well as in terms of the expected magnitude of its consequences to the ward (West & Anderson, 1996). It was assessed by domain-relevant experts' consensual agreement, thereby overcoming the challenge of comparing different projects types (Drach-Zahavy & Somech, 2011; West & Anderson, 1996).

Theoretical Background and Hypotheses Development

Championship Behaviors

Championship refers to a relatively stable personal characteristic of the champion, as expressed by the champion's behaviors, such as enthusiasm about and confidence in the success of an innovation; network building by getting the right people involved; and persisting under adversity (Howell et al., 2005). This concept was introduced to the literature by Howell et al. (2005) to capture the champion's behaviors as a continuous variable, rather than the dichotomous conceptualization of the champion as existing or absent that was prevalent in the literature before. Most previous research on innovation, in general, in health care particularly, embraced a rather "heroic" view of champions, assuming that championship behaviors are typically advantageous to project success (Greenhalgh et al., 2004; Howell & Shea, 2006; Howell et al., 2005; Hughes, Rigtering, Covin, Bouncken, & Kraus, 2018). This assumption might be partly due to more progress being made in classifying and delineating personal, rather than situational, factors (Judge & Zapata, 2015). There is, however, preliminary empirical evidence suggesting that not all behaviors exhibited by champions always benefit the project's success, thereby indicating the potentially disruptive role of high championship (Fischer, Hamilton, McLaughlin, & Zmud, 1986; Markham, Green, & Basu, 1991; Pinto & Patanakul, 2015). For example, Howell and Higgins, 1990a,b showed that champions can sometimes violate explicit management directives and organizational rules. Walter et al. (2011) found that some behaviors of persisting under adversity and taking responsibility are desirable up to a certain level but that beyond such critical levels, those behaviors may become detrimental to the project.

In sum, it seems that the central dilemma of how much championing is too much, remains unresolved (Walter et al., 2011). Here is where the interactionist perspective may help. Thus, in this study, we develop and test an empirical model (Figure 1) that focuses on two situational characteristics of a project, initiation level and project type, and a personal characteristic of the champions' championship behaviors. The model

suggests, based on the interactionist perspective, that their joint effects will significantly relate to the project's novelty.

Championship and Initiation Level

An important characteristic of the project, particularly within health care organizations, is whether the project was initiated by the organization's management (top-down) or by frontline workers (bottom-up). Specifically, top-down initiation tends to reflect top management's strategic intentions for the organization's specified priorities. Management conceives, plans, and directs the implementation of the project, and employees are responsible for embedding it. Bottom-up initiation, in comparison, tends to arise in the areas of operational practices and processes—the domain of frontline employees, and therefore usually involving locally tailored solutions (Kim, Sting, & Loch, 2014; Ogunlayi & Britton, 2017). Either way, the projects are led by champions.

Research on top-down and bottom-up projects in health care has proliferated in recent decades (e.g., Ferlie, Fitzgerald, Wood, & Hawkins, 2005; Pettigrew, 1992; West & Anderson, 1996), but empirical findings on the link between the level of initiation and project novelty are mixed (Pendharkar et al., 2015). Whereas, bottom-up innovations promote local ownership and improve employee engagement, and a top-down approach allows organizations to align innovations and resources with their vision and strategic direction (Lipsky, 2010; Ogunlayi & Britton, 2017; Pendharkar et al., 2015).

The research model outlined in Figure 1 suggests, based on the situational strength model (Meyer et al., 2010; Mischel, 1977), that the initiation level may interact with the champion's championship behaviors with respect to a project's novelty. According to this model, strong situations are those that provide employees strong cues in the form of clear rules, procedures, structures, and guidance for expected behavior. Weak situations are environments in which such expectations are less clear, and the context is ambiguously structured (Judge & Zapata, 2015; Meyer et al., 2010; Mischel, 1977). Accordingly, we argue that top-down projects may represent a strong situation because such projects are typically implemented hierarchically; management integrates employees' efforts by setting clear goals, and goal attainment is closely monitored, followed by clear feedback, and training if necessary (Ploeg et al., 2010; Shifaza, Evans, Bradley, & Ullrich, 2013). These efforts typically send strong signals to the lead champions about which strategic goals are most important to management and which behaviors are expected (Lipsky, 2010; Ogunlayi & Britton, 2017; Pendharkar et al., 2015). In comparison, bottom-up projects may be considered weaker situations, because they typically rely less on hierarchical control and guidance, provide more autonomy in deciding how the project is implemented, and allow the leading champions more flexibility in choosing practical issues and solutions that might not follow standard procedures (Gibson & Birkinshaw, 2004; White, 2011).

A central tenet of the situation strength model is when a strong situation provides very clear guidelines for what constitutes valued work behaviors, it likely creates relatively uniform behaviors above and beyond individual personality differences. Weak situations, on the other hand, provide few cues about expected behaviors, and thus allow more behavioral expressions that are in line with one's basic personal tendencies (Cooper & Withey, 2009; Judge & Zapata, 2015; Mischel, 1977). In this vein, there is some preliminary empirical evidence demonstrating that bottom-up

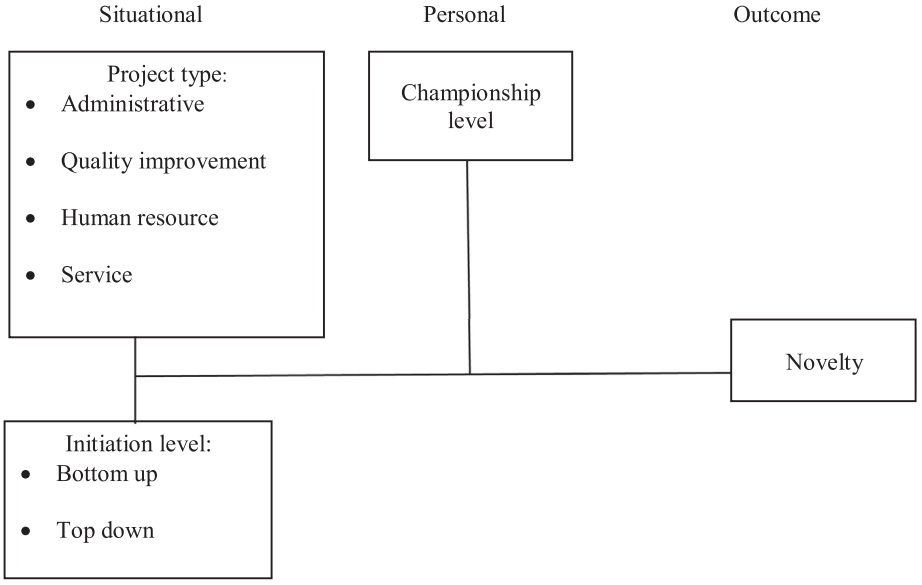

Figure 1– Factors Influencing the Novelty of an Innovative Project.

projects rely more on personal resources and the interpersonal influence ability of the champions (Warrick, 2009). Accordingly, we hypothesize as follows:

Hypothesis 1. The relationship between champions' championship behaviors and project novelty will be stronger (more positive) in bottom-up projects than in top-down projects.

Championship and Innovation Types

Project types are typically defined in terms of the output or the result of the project, namely as the main product or service that the project aims to improve (Baregheh, Rowley, & Sambrook, 2009). Yet, typologies of project types vary across scholars and disciplines (Rowley, Baregheh, & Sambrook, 2011). Here, we rely on the typology developed for project types in hospital settings by West and Anderson (1992). Accordingly, we define four types of projects that best describe common innovation projects implemented at the unit level (Luz, Shadmi, Admi, Peterfreund, & Drach-Zahavy, 2019). *Human resource management* describes projects as an aim to develop the staff and the competencies and proficiencies within the unit. *Services* include all projects deliberately designed to directly improve or extend the services delivered to patients. *Quality improvement* pertains to projects designed to improve the quality of care within the nursing units. *Administration* includes projects related to bureaucratic aspects or those that indirectly support the core work activity (Crossan & Apaydin, 2010).

Project type has not attracted much research attention in the study of health care innovation (MacPhee & Suryaprakash, 2012; Padfield, 2013). One exception is West and Anderson (1992), who found that the most novel projects in health care organizations were those related to service improvement, followed by human resources, administration, and quality improvement. However, project type may interact with the champion's championship behaviors in relating to project novelty, as suggested by the research model outlined in Figure 1. Based on the situational strength model (Meyer et al., 2010; Mischel, 1977), projects aimed at improving administration and quality of care might be considered strong situations, as they are well structured by the top hierarchy of the organization and leave little room for personal job discretion of the champion. Quality-improvement projects are typically structured organizational projects, which are occasionally even mandated by the Ministry of Health as part of accreditation processes via structured procedures and control (Chandrasekaran, Senot, & Boyer, 2012; Nembhard, Alexander, Hoff, & Ramanujam, 2009). Similarly, administrative projects are typically indirectly related to the basic work activity of the champion in the unit and represent supportive aspects such as the redesign of organizational structure, roles, or processes (Crossan & Apaydin, 2010). In comparison, service and human resource development projects might be considered weak situations, as they typically allow champions to search for novel solutions to unit-specific problems. Thus, in line with the situational strength basic tenet that weak situations enable more variety in interpersonal differences than strong situations, we hypothesize as follows:

Hypothesis 2. The relationship between champions' championship behaviors and project novelty will be stronger (more positive) in service and human resource projects than in quality improvement and administrative projects.

As for the joint effects of championship, initiation level, and project type (the three-way interaction), the model suggests that because, as mentioned, top-down initiation is considered a strong situation, and bottom-up initiation a weak situation, the joint effects of championship and project type will be evident only in bottom-up situations. The strong situation characterizing top-down-initiated projects provides central coordination of efforts, clear accountabilities, timely reporting of performance, and resources required to deliver the necessary change on a large scale (Meyer et al., 2010; Mischel, 1977). Under these circumstances, no significant differences in the joint effects of championship and project type are suggested. In comparison, bottom-up-initiated projects might be considered weak situations, as they are typically less directive, encouraging, and empowering people to achieve change locally (Ogunlayi & Britton, 2017). These effects might be amplified by the weak situation that is signaled by projects aimed at improving service and human resources in the units, and together enhance the impact of the champion's personality. Therefore, we suggest that the joint effects of champions' championship and project type will be related to project novelty in bottom-up but not in top-down projects:

Hypothesis 3. The three-way interaction of initiation level, project type, and champions' championship behaviors will be significant such that:

(a) Under top-down initiation, novelty level will not be significantly affected by champions' championship behaviors level and project type.
(b) Under bottom-up initiation, the championship–novelty relationship will be stronger for service and human resource projects than for administrative and quality-improvement projects.

Aim

The aim of this study was to develop and test an interactionist model of project innovation in nursing, suggesting that the joint effects of project characteristics, namely project type (administrative, human resources, quality improvement, and service), initiation level (top-down or bottom-up), and the champion's personal characteristics (championship behaviors) will interact in their relationship to the novelty of the project.

Method

Study Design

This study employed a cross-sectional design and a multisource (domain experts, frontline nurses, and champions) approach to data collection.

The hospital's ethical review board (1777-14-SMC; BNZ-0082-14; RMB-0448-14) and the University of Haifa's ethics committee (41/602) approved the study. Participants were asked to sign informed consent forms, and their anonymity was ensured (each subject received a de-identified code).

Sample

This study analyzes data from the "Nurse Champions and Innovation Success" study, which investigated nurse champions' innovation projects (Luz et al., 2019). The sample included 94 projects implemented in various nursing units from three medium–large tertiary medical centers during the period 2015 to 2016. In each unit, a champion was identified based on Howell and Higgins's (1990b) four-stage procedure for identifying champions. This procedure is based on a consensual identification of the champion by influential stakeholders, such as the head nurse, the deputy head nurse, and a staff nurse (Eyal & Yosef-Hassidim, 2012; Luz et al., 2019). Finally, the champion was asked to verify his or her role as a champion and to identify the project s/he led in the unit. Of the 128 units that were invited to participate, 34 units dropped due to lack of champions or projects (participation rate: 73%). Around 40% of the units (40.4%) were internal medicine units, 26.6% were surgical units or operating theatres, 22.3% were pediatric units, and 10.6% were other units (e.g., delivery room, psychiatry). Participating units did not significantly differ from nonparticipating units in type, size, or the type of hospital to which they belonged.

Measures

All questionnaires are standard scales validated previously in hospital samples (e.g., Drach-Zahavy & Somech, 2011; Ferlie et al., 2005).

Dependent Variables

Novelty Ratings. To assess *novelty ratings* of the projects, we followed West and Anderson's (1996) approach. In line with Amabile (1983), four domain-relevant expert raters (e.g., nurses responsible for general projects implementation in hospitals) were asked to rate each project on a 1 to 5 scale in each of three dimensions: (1) *magnitude,* or how great the consequence of this change would be (1 = *of no consequence at all in comparison with other changes* to 5 = *of very great consequence in comparison with other changes*); (2) *radicalness,* or the extent to which a change in the status quo would likely result (1 = *not at all radical* to 5 = *extremely radical*); and (3) *innovativeness,* or how new in general the change was (1 = *not at all innovative* and 5 = *extremely innovative*). The novelty scale was then constructed as the average score of the three dimensions.

Independent Variables

Type of Project. This variable captured whether the project was oriented toward the improvement of (a) quality, (b) human resources, (c) service, or (d) administrative aspects. We classified type of projects as defined earlier according to West and Anderson's (1992) categories. Two of their other categories (*cost cutting* and *white paper*) did not emerge in this study, possibly because they involve projects that typically do not involve unit-level champions. The authors separately classified all projects by type. To ensure the classification validity, the three authors separately content-analyzed projects. In cases of disagreement, discussions were held until consensus was reached.

Initiation Level. This dichotomous variable captured whether the project was a top-down project, initiated at the hospital's managerial level, or a bottom-up project, initiated by the project's champion him- or herself.

Championship. Whether the project was top-down or bottom-up, it was led by a champion from the unit. This champion completed the championship behaviors 14-item questionnaire developed by Howell et al. (2005). Sample items "Shows optimism about the success of the innovation," "Gets problems into the hands of those who can solve them," and "Knocks down barriers to the innovation." Champions were asked to rank the items on a 5-point frequency scale ranging from 0 (*not at all*) to 4 (*frequently, if not always*). Cronbach's alpha for this study was 0.898.

Analyses

All data were screened for missing values and to ensure that statistical assumptions were met; no violations were evident. To test the moderations, analyses followed Baron and Kenny's (1986) recommendations. In drawing the interaction plots, we followed the recommendations of Dawson (2014), with values of ±1 standard deviation serving as low and high values of the independent variable respectively.

Results

Sample Characteristics

Table 1 presents the characteristics of the projects and the champions, and Appendix A broadly describes the projects, as well as their unit type, project type, and initiation level. About half the projects were initiated from the bottom up, and quality improvement was the most common project type (36 cases, 38%). Examples were oversight and management of a care plan for complex patient transfer in an internal medicine unit (#317 in Appendix A) and pain-management audit and quality-improvement interventions in a surgical unit. The second most common project type was service (23

Table 1 – Sample Characteristics

Characteristic	N	%
Unit		
General medicine	38	40.4
Surgical medicine	25	26.6
Pediatric	21	22.3
Other (e.g., delivery room, psychiatry)	10	10.6
Champions		
Age (mean, SD)	39.5 (8.37)	
Gender (female)	76	81
Professional seniority		
<15 years	53	56.4
>15 years	41	43.6
Championship (mean, SD)	3.43 (0.43)	
Project		
Project type		
Administrative	21	22.3
Quality improvement	36	38.3
Human resource	14	14.9
Service	23	24.5
Level of initiation		
Bottom-up	49	52.1
Top-down	45	47.9

cases, 25%). Examples were new treatment modality for pain management in cancer patients and person-centered caesarean section. The third most common type was administrative (21 cases, 22%). Examples were organizing the psychiatric unit's internal procedures protocols and improvements in electronic computerized records in the obstetrics unit. The least common were projects in human resources (14 cases, 15%). Examples were standardization of orientation plan for new pediatric nurses and staff training on patient presurgical assessment and preparation. Most of the projects (40%) were implemented in general medicine units, followed by surgical units (27%) and pediatric units (22%). Most champions were women (81%), their average age was 39.5 years (SD = 8.37), and 56.4% had less than 15 years of professional seniority.

Table 2 presents the means and standard deviations of projects' novelty by project type, intiation level and championship level. Table 3 shows the results of the regression analysis for predicting novelty. In Step 1, we examined the main effects of project type, innovation initiation level, and champions' championship behaviors on novelty. This model explained 25.6% of the variance in novelty ($F(5, 94) = 6.04$, $p < .0001$). Only project type had a significant main effect on novelty ($\beta = -0.72$, $p < .0001$). Service-type projects were the most novel ($M = 3.60$), followed by human resource ($M = 3.48$), quality improvement ($M = 3.25$), and administrative project types (2.85). Least Significant Difference (LSD) post-hoc analyses showed that quality improvement, human resource ($p = .001$), and service ($p = .0001$) projects were more novel than administrative projects ($p = .006$), and that service projects were more novel than projects that focused on quality improvement ($p = .012$). Project initiation level and championship level had no main effect on novelty.

In Step 2, we examined the effects of the two-way interactions on novelty. This model explained 37.9% of the variance ($F(12, 94) = 4.12$, $p < .0001$), demonstrating a significant increase of 12.3% in the explained variance due to the two-way interactions. The results demonstrated a significant two-way interaction effect of level of initiation and project type on novelty

Table 2 – Novelty by Project Type, Initiation Level, and Championship Level

Championship	Project Type and Initiation Level							
	Administrative		Quality Improvement		Human Resources		Service	
	Bottom Up	Top Down	Bottom Up	Top Down	Bottom Up	Top Down	Bottom Up	Top Down
Low	2.43 (0.73)	2.94 (0.50)	3.78 (0.49)	3.15 (0.51)	3.72 (0.86)	3.37 (0.54)	3.49 (0.61)	3.36 (0.46)
High	3.08 (0.13)	3.06 (0.54)	3.41 (0.46)	3.10 (0.31)	3.43 (0.49)	3.72	3.92 (0.47)	3.22

Table 3 – Results of Regression Analysis for Predicting Novelty

	Model 1		Model 2		Model 3	
	b	SE	b	SE	b	SE
Project type	−0.72***	0.16	−0.19	1.16	−2.54	1.84
Initiation level	0.15	0.12	0.25	0.92	−2.77	1.75
Championship	0.15	0.13	0.35	0.31	−0.32	0.45
Initiation level × Championship			0.01	0.27	0.92	0.52
Project type × Initiation level			−0.59*	0.32	0.81	2.34
Project type × Championship			−0.61*	0.34	0.22	0.49
Project type × Initiation level × Championship					−1.68*	0.69
F(df)	$F(5) = 6.044$***		$F(12) = 4.123$***		$F(15) = 4.204$***	
R square	0.256		0.379		0.447	
ΔR square	0.256***		0.123*		0.068	

* $p < .05$.
*** $p < .001$.

($\beta = -0.59$, $p < 0.05$), and a significant two-way interaction of championship and project type on novelty ($\beta = -0.61$, $p < .05$). Post-hoc analyses revealed that initiation level was positively related to project novelty for quality-improvement projects but ($t = 2.78$; $p = .009$) not for the other three project types, and that championship was positively related to project novelty for administrative projects only ($r = 0.47$, $p = .031$). Figure 2 plots the two-way interaction on novelty.

In Step 3, we examined the effects of the three-way interaction on novelty. The model explained 44.7% of the variance ($F(15, 94) = 4.20$, $p < .0001$), demonstrating a significant increase of 6.8% due to the three-way interaction. The effect of the three-way interaction of project type, initiation level, and championship on novelty was significant ($\beta = -1.68$ $p = .02$; ($F(3, 94) = 3.87$, $p < .05$).

Figure 3 plots the three-way interaction on novelty. As demonstrated in the figure, for top-down projects, the joint effects of project type and champion's championship did not have a significant interaction effect on novelty. For bottom-up projects, we found a significant positive relationship between champion's championship and novelty for administrative and service projects, a negative relationship between championship and novelty for quality-improvement projects, and no relationship between championship and novelty for human resource projects.

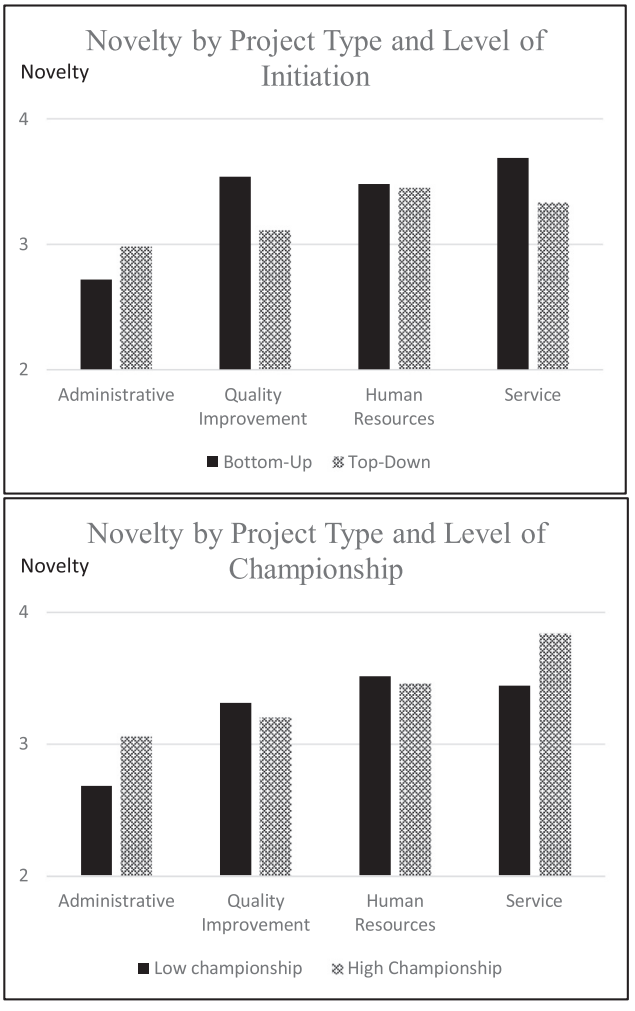

Figure 2 – Two-way interaction analysis: novelty by project type and innovation initiation and by project type and championship level.

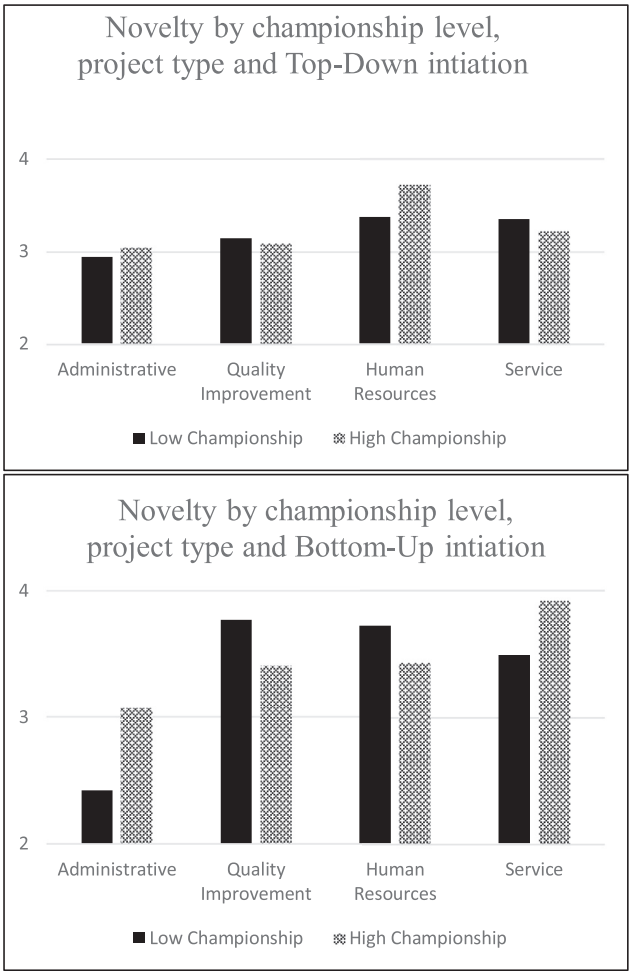

Figure 3 – Three-way interaction analysis: novelty by championship level, project type, and innovation initiation.

Discussion

This study sheds light on the phenomenon of *innovation in the practice* of frontline nurse champions in hospitals. Embracing the interactionist perspective of situational strength (Judge & Zapata, 2015; Mischel, 1973) allowed us to identify the circumstances under which champions' championship is beneficial, neutral, or precisely harmful to a project's novelty (Grol, Bosch, Hulscher, Eccles, & Wensing, 2007). Accordingly, the study's findings carry several important insights.

First, four different project types, led by frontline nurse champions across units and hospitals, emerged. The most common type of project was quality improvement. This finding might reflect current trends in

health care organizations globally to improve quality of care and patient-centered care (Chandrasekaran et al., 2012; Nembhard et al., 2009). Less common were projects that focused on service, administrative, and human resource aspects. West and Anderson (1992) found that the most common type of health care projects was service-related, followed by human resources, administrative, white papers, income generation, and quality control. The differences between the frequencies of types of projects reported here and West and Anderson's study are probably related to the difference between projects originated by hospital management teams, which were the focus of their study, and project led by frontline nurse champions in hospital units, our focus here. Champions at the unit level are perhaps less involved in income-generating innovations and white papers or in governmental legalization. In addition, the acceleration in the frequency of quality-improvement projects may reflect the trend toward performance of organization-wide accreditation processes characterizing hospitals around the globe (Chandrasekaran et al., 2012; Nembhard et al., 2009).

Second, the findings of the current study demonstrated that about half the projects were initiated from the bottom up, by frontline nurse champions working at the unit level, rather than from the top down, by hospital management. In comparison, about three decades ago, only 25% of projects were initiated by frontline clinicians (West & Anderson, 1992). This finding might represent a current trend in nursing toward a less controlled and more empowering culture that enables project initiation by frontline nurses. Furthermore, there is consensus that champions serve as means of implementing top-down innovations (e.g., Dopson, FitzGerald, Ferlie, Gabbay, & Locock, 2010; Hendy & Barlow, 2012); our findings add to these by demonstrating that champions serve as means also for leading bottom-up projects.

Third, regarding a project's novelty, the current findings demonstrated that service project types are more novel than human resource, quality improvement, and administrative projects. These findings are consistent with West and Anderson's (1992) who found that service projects were more novel than projects in human resources, pure administration, quality control, and income generation. The difference in the novelty of service projects compared with other project types might be related to the notion that service-type projects are perceived as having direct impact on the well-being of staff and patients than other project types (West & Anderson, 1992) and therefore are rated higher on novelty. According to Sharma, Chandrasekaran, Boyer, and McDermott (2016), nurses are considered to be experts in engaging with patients and families and hence to be the chief architects of improving service-type projects with higher novelty rates.

Fourth, perhaps the most novel finding of our study was that the champion's personal championship did not necessarily matter for the project's novelty. Rather, in support of Hypothesis 1, we found that initiation level and personal championship individually do not necessarily matter for a project's novelty but that their effects should be considered jointly. As suggested in Hypothesis 1, in top-down projects championship levels had no effect on novelty. This finding might be related to the notion that top-down innovations could be classified as strong situations; hence, the nominated champion does not participate in generating the project idea and has less influence over its novelty. Furthermore, according to Perry-Smith and Mannucci (2017), highly novel ideas have a high risk of rejection. This suggests that top-down projects will probably be less novel.

Nevertheless, in bottom-up situations, championship mattered. First, in partial support of Hypotheses 2 and 3, we found that, as expected, championship behaviors did not affect the novelty of quality-improvement projects and was negatively related to the novelty of bottom-up quality-improvement projects. This finding might be related to the notion that quality-improvement projects are first and foremost dictated and controlled by national policy makers (Senot, Chandrasekaran, & Ward, 2016) and are usually tightly constrained and straightforward, and thus could be classified as strong situations, spurring low variance in behaviors across champions' behaviors (Judge, & Zapata, 2015). Concomitantly, this finding also illustrates the boundaries of champions' championship behaviors, suggesting that in strong situations, where staff understands which behaviors will be admired and rewarded by management, uncertainties arise about the related barriers. Strong situations can, therefore, be planned and controlled only to a very limited extent and thus may require many failures before a design is found. Thus, championship behaviors might be redundant and harmful (Walter et al., 2011). Apparently, implementing quality-improvement projects requires not just persuasion and conviction but also staff monitoring. Thus, in these cases the championship behavior of promoting innovation with passion and persistence is desirable up to some level. Beyond a certain critical level, however, passion and persistence championing behaviors may become ineffective and even disruptive (Walter et al., 2011).

In contrast to Hypothesis 2, champions' championship behaviors were positively related to project novelty for administrative projects only. This finding suggests that administrative projects in our sample did not necessarily evidence a strong situation for the champions, as suggested by West and Anderson (1992). Some support for this explanation might be gained from the findings of the three-way interaction effect, suggesting that championship behaviors were related to novelty only for administrative projects that were initiated from the bottom up. Reviewing the interviews with champions of administrative projects further showed that although these projects were

controlled, and signaled clear expectations to staff, some appeared to be associated with the possibility of meeting unit-level tailored needs and, therefore, could only be planned and controlled to a very limited extent. For example, top-down projects to improve electronic medical records (#214, #215 in Appendix A) allowed unit champions to add relevant unit assessment tools to the records.

Third, in partial support of Hypotheses 2 and 3, we found that championship behaviors were positively related to project novelty only for bottom-up projects. Apparently, these circumstances require a leader who is well familiar with the threats and challenges that medical staff face when caring for patients. Such projects represent weak situations that allow variety in champions' behaviors and depend on personality types (Judge & Zapata, 2015).

Finally, although not directly embedded within the situational strength model (Meyer et al., 2010; Mischel, 1973), our results also showed that the joint effects of initiation level and project type were related to project novelty. Specifically, bottom-up quality-improvement projects exhibited higher novelty than top-down quality-improvement projects. Yet, we found no significant difference in the novelty of top-down compared with bottom-up initiation for the other project types (service, administration, and human resources development). This finding might be because quality-improvement projects that are initiated in a bottom-up manner probably encompass tailored solutions for unit practices in areas that the unit wishes to promote and are thus perceived as more novel (Kim et al., 2014; Ogunlayi & Britton, 2017). Quality-improvement projects focus on technical standards of care and adherence to strict guidelines and involve eliminating variation from processes. Quality-improvement projects, whether initiated from the top down or the bottom up, involve mechanisms of audit and feedback and have a clinical impact (Chandrasekaran et al., 2012). Service and administration projects, by contrast, whether initiated from the top down or the bottom up, are not followed by audit and feedback mechanisms and have no implications for clinical outcomes. Human resources represent an exception, because they can serve as a means to educate and train staff for the different project types and, therefore, suffer from low novelty estimation. Human resources developments are the most neglected project type, particularly for top-down projects.

Limitations and Recommendations for Future Research

This study has several limitations. First, it was cross-sectional; therefore, conclusions about the causality of the associations found could not be established. Second, although the dependent variable of experts' evaluation of novelty was chosen based on its ability to assess projects across types, future studies should use more-tailored measures of outcomes collected from relevant informants (e.g., patient satisfaction for service-type innovations). Third, championship levels were assessed with a self-reported scale, which might have led to overestimating or underestimating effects. Future studies should assess champions' behaviors via combinations of self-reported and peer-reported scales. Fourth, this study employed a relatively small sample. Nevertheless, it encompassed several types of hospitals and a wide range of units. Fifth, the study assessed study variables ignoring unit-level characteristics of the unit leadership (such as head nurse and the head of the unit) and climate. Future research should assess unit-level-relevant measurements. Finally, the study employed a snapshot method for data collection, representing real-time projects that frontline nurse champions led. Future research should employ longitudinal designs to follow project type through the innovation journey.

Conclusions

Health care organizations are complex, dynamic, and constantly changing; hence, striving for innovation is crucial. The findings of the present study are pioneering in underscoring the importance of frontline nurse champions for shaping innovations. By exploring project novelty across main effects of the champions' championship behaviors and project characteristics, we found that whereas bottom-up service and administrative projects require championship behaviors to foster project novelty, in bottom-up quality-improvement projects such behaviors can harm project novelty. In addition, for human resources projects, or for top-down projects (regardless of project type), championship behaviors do not matter.

These findings offer some important clues for nursing managers and policymakers aiming to promote innovation through frontline nursing champions. As evident from the present findings, there is no single superior way to prompt frontline champions' project novelty and no one-size-fits-all solution. To best fit top-down projects to champions' personality characteristics, the projects should be classified by project type, while nominating the champion in a tailored manner. Future studies should assess what kind of champion personality is required for championing strong situations.

Health care organizations seeking to prompt novel projects should provide nurses with a climate that encourages the emergence of bottom-up project initiation. Specifically, service and administrative project should be introduced by nominating a local champion who is high in championship ability and familiar with the local challenges of the unit. This

champion should be granted job discretion to tailor the project to the unit's specific strengths and threats.

Other projects, such as those related to quality improvement, could be introduced to the unit level in a top-down controlled manner, cascading goal-attainment requirements throughout the hospital's hierarchy to frontline staff. However, achieving higher novelty in those projects requires unit flexibility in choosing quality-improvement tailored measures.

Finally, health care organizations should endorse investment in the human capital of the largest sector—nurses—through human resource projects focused on training and education, support groups, and so forth. Future studies should assess what kind of human resource projects exists in health care organizations and what kind of initiation level and champions' personality is required for best championing human resource projects (Table 2).

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Appendix A. Description of Innovation Projects by Type of Unit, Type of Project, and Level of Initiation

Type of Project N (%)	Ward Type N (%)	Initiation Level N (%)	Projects	ID code
Administrative 21 (22.3%)	Internal medicine 7 (33.3%)	BU 5 (71.4%)	Implementing ISBAR tool for improving shift handoff process	339
			Medical waste recycling	237
			Handouts of test preparation information for staff	221
			Infection control by monitoring environment and equipment hygiene	105
			Improving accessibility to medications and emergency equipment	219
		TD 2 (28.6%)	EHR audit and feedback	313
			Environmental safety oversight	239
	Surgical care and OR 5 (23.8%)	BU 3 (60%)	Medication information handouts for staff	204
			Improving the shift handoff process	225
			Development of a new computerized EHR	324
		TD 2 (40%)	Checklist for medical device count	307
			EHR audit and staff feedback	230
	Pediatrics 4 (19%)	BU 2 (50%)	Organizing medication and medical device environmental safety oversight	207
			Preparation of background information about newborn diseases	109
		TD 2 (50%)	Organization of infant food preparation facility	333
			Accurate patient identification audit in long-term hospice unit	343

(continued)

– (*Continued*)

Type of Project *N* (%)	Ward Type *N* (%)	Initiation Level *N* (%)	Projects	ID code
	Other 5 (23.8%)	BU 1 (20%)	Organize unit's internal procedures protocols	341
		TD 4 (80%)	Implementation of a new EHR	118
			Improvement of EHR	215
			Improvement of EHR	214
			Update of unit internal procedures' protocols	342
Quality improvement 36 (38.3%)	Internal medicine 17 (47.2%)	BU 3 (17.6%)	Management of safety work procedure during in dialysis	320
			Urine catheter associated infection prevention	117
			Identification and management of communication gaps between nurses and physicians for preventing wrong medical orders	303
		TD 14 (82.4%)	Implementing pressure wound care management and producers	218
			Specialist consultant and oversight of wound assessment and care	310
			Oversight and management of reports of non-administered medication	336
			Oversight and management of unit preparation for accreditation	316
			Standardization of management of complex patient's care	311
			Oversight and management of care plan for complex patients transfer	317
			Specialist consultant and oversight of pain assessment and management	220
			Oversight of patient's falls and prevention plan	319
			Oversight and management of unit preparation for accreditation	315
			Implementing learning process for improvement of stroke treatment	236
			Implementing learning process for improvement, oversight, and management of central line care	120
			Oversight and management of unit champion's annual care plan and assessment tools	229
			Oversight, management unit consultant of pain care management	222
			Infection prevention management	217
	Surgical care and OR 8 (22.2%)	BU 2 (25%)	Creating and implementing vaginal bleeding assessment tool	216
			Pressure ulcer audits and management of prevention plan	306
		TD 6 (75%)	Oversight and assimilation management of the unit internal operating procedure	113
			Implementation of pain management and assessment tool	106
			Pain-management audit and quality-improvement interventions	201
			Oversight and management of unit accreditation preparation	302
			Implementing work procedure for diabetes patients treated with insulin according to individual insulin protocol	202
			Hand sanitation audit and quality improvement	301

(*continued*)

– (*Continued*)

Type of Project *N* (%)	Ward Type *N* (%)	Initiation Level *N* (%)	Projects	ID code
	Pediatrics 8 (22.2%)	BU 4 (50%)	Pain-management audit and implementation	208
			Improving patient identification in long-term rehabilitation unit	325
			Creating care standard for treating children with trauma injury	211
			Creating care standard and protocol for pediatric postsurgery care	335
		TD 4 (50%)	Care plan assimilation, for infection control with audits and feedback	212
			Update and assimilation of protocol of care for central and peripheral lines	209
			Medication preparation procedure audit and feedback, staff, and patient medication information handouts	238
			Oversight and management of unit accreditation preparation	327
	Others 3 (8.3%)	BU 2 (66.6%)	Infection control management	108
			Implementing care plan for pain assessment and evaluation	213
		TD 1(0.33%)	Preparation of ECT unit: creating treatment and working protocols	227
Human resources 14 (14.9%)	Internal medicine 6 (42.9%)	BU 3 (50%)	Staff support groups	233
			Development of strategic plan and oversight for prompting staff professionalism	318
			Standardization of orientation plan for new nurses	228
		TD 3 (50%)	Orientation handouts for new nurses	232
			Promoting a unit safety culture	119
			Continued education for staff	346
	Surgical care and OR 4 (28.6%)	TD 1 (25%)	Staff training for robotic surgery	226
		BU 3 (75%)	Promoting staff flu vaccination	231
			Staff training for surgical drains removal by nurses	205
			Staff training on patient presurgical assessment and preparation*	305
	Pediatrics 4 (28.6%)	BU 4 (100%)	Orientation for new nurses	326
			Staff training technology implementation	329
			Simulation training for care procedure	330
			Development and assimilation of unit newsletter	110
Service 23 (24.5%)	Internal medicine 8 (34.8%)	BU 6 (75%)	Implementing palliative care management service	235
			Palliative care management consultant for patients and families	224
			Multidisciplinary staff consolation on patients' psychosocial needs	234
			Patient-centered hospice care	340
			Patient invasive and noninvasive preparation information handouts	107
			Screening and identification of patient high risk for DVT	116
		TD 2 (25%)	Support for families of dying patient	337
			Rehabilitation case management and coordinator	338
	Surgical care and OR 8 (34.8%)	BU 5 (62.5)	Presurgery care unit	203
			Patient education handouts on different orology conditions	114
			Post bariatric surgery support groups for patients	111

(*continued*)

– (Continued)

Type of Project N (%)	Ward Type N (%)	Initiation Level N (%)	Projects	ID code
			Family support group	304
			Instructional video for families	308
		TD 3 (37.5)	Patient presurgical education preparation	206
			Breast cancer care manager and coordinator	112
			Lactation education handouts	321
	Pediatrics 5 (21.7%)	TD 1 (20%)	Lactation promotion in night shifts	334
		BU 4 (80%)	Assessment of nausea and vomiting in cancer patients	331
			Establishment of presurgery clinic	210
			Family medication education	328
			Assessment tool for domestic violence	332
	Others 2 (8.7%)	BU 2 (100%)	New treatment modality for pain management in cancer patients	322
			Person-centered caesarean section	323

BU, bottom up; DVT, deep vein thrombosis; ECT, electroconvulsive therapy; EHR, electronic health record; OR, operating room; TD, top down.
*Others: Psychiatry, Maternity, Emergency Unit.

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