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## Review Article

# Virtues, Work Satisfactions and Psychological Well-Being among Nurses in Turkish Hospitals

## Abstract

This exploratory study examined the relationship between virtues and indicators of work satisfaction and engagement, perceptions of hospital functioning and quality of nursing care, and psychological well-being of nursing staff. Working in Turkish hospitals. A virtue is any psychological process that enables a person to benefit himself or herself and others. Two virtues were considered: optimism and proactive behaviors. This emphasis was consistent with emerging trends in both psychology and organizational studies, termed positive psychology or positive organizational scholarship respectively, to focus on strengths and excellence rather than weakness and pathology. Data were collected from 224 staff nurses in Ankara Turkey using anonymously completed questionnaires, a 37% response rate. Hierarchical regression analyses, controlling for both personal demographic and work situation characteristics, indicated that virtues accounted for significant increments in explained variance on most outcome measures. Optimism emerged as a particularly consistent predictor of these. Explanations for the association of virtues with favorable outcomes are offered along with potentially practical implications. Future research should employ longitudinal designs to experimentally examine the influence of virtues on work outcomes and well-being over time and the effects of initiatives to increase levels of virtuous behavior and attitudes.

## Introduction

People rate health care as one of their important priorities and it is likely to become even more important as populations age. Nurses occupy a central role in the delivery of health care, though countries may have different health care systems and methods of payment options. Unfortunately, research conducted in various countries has indicated that levels of nurse dissatisfaction, burnout and intent to leave the profession are high [1]. Younger individuals are also less interested in careers in nursing. Some countries are now reporting a shortage of nurses, often compounded by the fact that richer nations are luring nurses away from poorer ones. The health care system has also undergone significant change over the past decade stemming from the greater use of new technologies, off-shoring some services to developing countries, advances in medical knowledge, an aging population, more informed and critical users of the health care system, and efforts by governments to further control health care expenditures. Nursing appears to be a crisis.

It is not surprising then, given the central role nurses play in the delivery of health care, that considerable research has been undertaken to understand the work experiences of nurses, particularly as they relate to nurse satisfaction and well-being and patient care. Much of this work has studied "what is wrong" with hospitals and health care more generally and with nursing more specifically. It has concentrated on issues of workload, lack of resources, overtime work, and increases in abuse experienced in the work place by nursing staff as these affect burnout, depression, psychosomatic symptoms, absenteeism and intent to leave the profession [2-5]. The bulk of nursing research has used a stressor-strain framework and has contributed a great deal to our understanding of the experiences of nurses in their workplaces. These are all important subjects but they tell only part of the story.

An emphasis on these negative experiences and outcomes is consistent with several decades of work in the field of psychology with its emphasis on pathology and illness [6], and the past forty years in the fields of organizational behavior and management with their emphasis on dissatisfaction, withdrawal behaviors and alienation in the workplace [7]. Recent developments in these fields, however, have fostered a different emphasis; an emphasis on human flourishing and individual strengths represented by the beginnings of positive psychology [8-10] and "what is right" in organizations represented by positive organizational scholarship [11] and positive organizational behavior [12]. Most of this work has been carried out in North America. Positive organizational scholarship (POS) focuses on positive outcomes such as resilience, meaning, engagement, thriving and excellence -- the best of work conditions.

## Virtues in the workplace

The present exploratory study examines stable individual difference factors termed "virtues" and the work experiences, satisfactions, and well-being of nursing staff. Virtues have been discussed by philosophers for centuries [13]. A virtue is defined by McCullough and Snyder (2000) [14], as "any psychological process that enables a person to think and act so as to benefit both him or herself and society". A virtue is "a discrete organized system of thought, reason, emotion, motivation and action" [14]. To them, character is a higher order concept that encompasses the possession of several virtues. Virtues are making a resurgence as a topic of study in both psychology and POS. Virtues benefit individuals, other people, and society as a whole. The neglect of virtues also has had potentially important consequences. These include separating individuals from the wider social and external context of their actions, making it hard

to identify traits that contribute to our understanding of human flourishing, and making it difficult to suggest virtue-based solutions to various problems.

This study included two virtues: optimism and proactive or transcendent behavior.

## Optimism

Peterson (2000) [15], reviews research on optimism, an individual difference variable, showing it to be related to good mood, perseverance, achievement and physical health. Optimism is an attitude or belief that one's future will be positive and satisfying. Scheier and Carver (1992) [16], view optimism as a personal disposition associated with the expectation that good things will be common in the future. Optimism has cognitive, emotional and motivational components.

Optimism has been found to be related to good morale, effective problem solving, success in various endeavors (academic, athletic, military, occupational political) and to longevity [15-19].

## Proactive behavior

Almost all experts on the workplace agree that employees should be more proactive on the job and that proactive behavior increases job performance. Crant (2000) [20], considered antecedents and consequences of proactive behavior in organizations. Bateman and Crant (1993) [21], have undertaken research on the proactive personality. Proactive people identify opportunities and act on them, take initiative, and persevere until goals are reached or change is brought about. Crant (2000) [20], reviewed research findings showing that proactive real estate agents were more productive ([22], managers and professionals were more successful in their careers on a number of dimensions[23], individuals were more likely to display leadership [20], employees were more likely to see their work roles in broader terms and undertake more performance-related initiatives [24], students were more likely to intend to start their own businesses [25], individuals were more likely to improve sales in small companies [26] and at a team-level, proactivity was positively correlated with productivity levels, customer service, job satisfaction, organizational commitment, and team commitment [27].

The present study examines the relationship of virtues, positive personality characteristics, and nurse work experiences, satisfactions, and psychological well-being. It provides a preliminary examination of the general hypothesis that virtues would be associated with more favorable work and well-being outcomes. A study of virtues in nursing seemed appropriate given the its mission of helping and caring.. It also extends the study of virtues to Turkey, a large secular Muslim country to examine the generalizability of previous North American results. This research on the influence of virtues and virtuous behavior is consistent with the emerging writing and practices on the creation of positive organizations [28-30] and the creation of psychologically healthy workplaces [31,32].

## Method

### Procedure

This study was carried out in research hospitals in Ankara Turkey, research sites being randomly selected from the 15 research hospitals

in that city. Ethical approval for the research was first obtained from our respective universities and ermission was then obtained from the participating hospitals. The Health Ministry sent a cover letter to the Chief Physicians of these hospitals requesting their cooperation. Six hundred questionnaires were administered to staff nurses in the hospitals. Measures originally in English were translated into Turkish using the back translation method. Data were collected in March 2009. Two hundred and nineteen nurses completed the surveys, a 36% response rate.

## Respondents

Table 1 presents the personal demographic and work situation characteristics of the sample (n=224). There was considerable diversity on each item. The sample ages ranged from under 25 to over 46, with 128 (59%) being between 26 and 35. Most were married (77%), had children (70%), worked full-time (79%), wanted to work full-time (99%), were female (88%), worked between 41-45 hours

Table 1: Demographic Characteristics of Sample.					
Age	N	%	Sex	N	%
25 or less	18	8.4	Female	180	87.8
26 – 30	76	35.3	Male	25	12.2
31 – 35	52	24.4			
36 – 45	44	21.5	Marital Status		
41 – 45	17	8.3	Married	168	77.4
46 or older	8	3.9	Single	49	22.6
Parental Status			Number of Children		
Children	151	70.3	1	70	46.4
Childless	64	29.7	2	76	50.3
			3 or more	5	3.3
Education			Work status		
High School	75	34.6	Full-time	160	79.4
Vocational School	50	23.0	Part-time	54	20.6
Bachelor's degree	70	32.2			
Master's degree	2	0.9	Supervisory Duties	69	31.8
Faculty	20	9.2	Yes	148	68.2
			No		
Hours worked			Preferred Work status		
40 or less	39	19.8	Full-time	197	99.5
41 – 45	84	42.6	Part-time	1	0.5
46 – 50	38	18.3			
51 – 55	9	4.6			
56 or more	27	13.7			
Changed Units Past Year			Hospital Tenure		
Yes	53	26.0	5 years or less	118	57.6
No	151	74.0	6 – 10 years	49	23.9
			11 – 15 years	14	6.8
			16 – 20 years	15	7.3
			21 years or more	9	4.4
Nursing Tenure					
5 years or less	119	59.1			
6 – 10 years	41	20.4			
11 – 15 years	14	7.0			
16 – 20 years	18	9.0			
21 years or more	9	4.5			

per week (69%), had high school or vocational school education (35%), did not have supervisory responsibilities (56%), had not changed units in the past year (74%), had five years or less of nursing tenure (59%), five years or less of nursing tenure (58%), and worked in a variety of nursing units.

## Measures

### Personal and work situation characteristics

These were measured by single items (e.g., age, sex, level of education, unit tenure, and hospital tenure).

### Virtues

Optimism was measured by an eight-item scale ( $\alpha=.84$ ) developed by Scheier and Carver (1985, 1987) [18,19]. One item was, "In uncertain times, I usually expect the best." Respondents indicated their agreement with each item on a five-point Likert scale.

Proactive behavior was measured by a seventeen-item scale ( $\alpha=.79$ ) developed by Bateman and Crant (1993) [21]. Respondents indicated their agreement with each item on a seven-point Likert scale (1=strongly disagree, 4=neither agree nor disagree, 7=strongly agree). An item was "I am good at turning problems into opportunities."

### Work outcomes

Three work outcomes were included.

Job satisfaction was measured by a five-item scale ( $\alpha=.79$ ) developed by Quinn and Shepard (1974) [33]. One item was, "All in all, how satisfied would you say you are with your job?" Respondents indicated their responses on a four-point Likert scale (1=Very satisfied, 4=Not at all satisfied).

### Absenteeism

Nurses indicated first how many days they had been absent from work during the past month, and then how many of these days of absenteeism were due to sickness.

Intent to quit ( $\alpha=.76$ ) was measured by two items used previously by Burke (1991) [34]. An item was, "Are you currently looking for a different job in a different organization?"

### Work engagement

Three dimensions of work engagement were assessed using scales developed by Schaufeli et al. (2002) and Schaufeli and Bakker (2004) [35,36]. Respondents indicated their agreement with each item on a five-point Likert scale (1=Strongly disagree, 3=Neither agree nor disagree, 5=Strongly agree).

Vigor was measured by six items ( $\alpha=.82$ ). One item was "At my work, I feel bursting with energy."

Dedication was measured by five items ( $\alpha=.79$ ). An item was "I am proud of the work that I do."

Absorption was assessed by six items ( $\alpha=.85$ ). One item was "I am immersed in my work."

### Burnout

Three dimensions of burnout were measured by the Maslach Burnout Inventory [37]. Respondents indicated how often they experienced each item on a seven-point scale (0=never, 3=a few times a month, 6=every day).

Exhaustion was measured by a five-item scale ( $\alpha=.86$ ). A sample item was "I feel burned out from my work."

Cynicism was assessed by a five-item scale ( $\alpha=.58$ ). One item was "I have become more cynical about whether my work contributes anything."

Efficacy was measured by six items ( $\alpha=.77$ ). An item was "I have accomplished many worthwhile things in this job."

### Psychological Well-being

Five aspects of psychological well-being were included.

Positive Affect was measured by a ten-item scale ( $\alpha=.91$ ) developed by Watson, Clark and Tellegen (1988) [38]. Respondents indicated how often they experienced these items during the past week (e.g., excited, proud, excited) on a five-point Likert scale (1=not at all, 5=extreme).

Negative affect was also measured by a ten-item scale ( $\alpha=.86$ ) developed by Watson, Clark and Tellegen (1988) [38]. Respondents indicated how often they experienced these (e.g., irritable, nervous, distressed) on the same frequency scale.

Psychosomatic symptoms was measured by nineteen items ( $\alpha=.91$ ) developed by Quinn and Shepard (1974) [33]. Respondents indicated how often they had experienced each physical condition (e.g., headaches, having trouble getting to sleep) during the past year. Responses were made on a seven-point Likert scale (1=never, 4=often).

Medication use was measured by a five-item scale ( $\alpha=.75$ ) developed by Quinn and Shepard (1974) [33]. Respondents indicated how often they took listed medications (e.g., pain medication, sleeping pills) on a five point scale (1=never, 5=a lot).

Life satisfaction was assessed by a five-point scale ( $\alpha=.90$ ) developed by Quinn and Shepard (1974) [33]. Respondents indicated their agreement with each item (e.g., In most ways my life is close to ideal) on a seven-point Likert agreement scale (1=Strongly agree, 4=neither agree nor disagree, 7=Strongly disagree).

### Perceptions of hospital functioning and health care

Five measures were included here, three assessing perceptions of hospital functioning, one assessing perceptions of patient care quality, and one measuring their satisfaction being a nurse.

**Health and Safety Climate:** Nurses indicated their agreement with eight items assessing health and safety ( $\alpha=.74$ ) developed by Zohar and Luria (2005) [39]. An item was, "I feel free to report safety problems where I work."

**Workplace Errors and Accidents:** Nurses indicated how frequently they observed six hospital incidents ( $\alpha=.64$ ) on a four-

point scale (1=never, 4=frequently). Incidents included, “Patient received wrong medication or dose,” “patient falls with injuries”).

## Hospital support

Hospital support was assessed by eight items ( $\alpha=.95$ ) developed by Eisenberger, Huntington, Hutchison and Sowa (1986) [40]. An item was, “This hospital is willing to help me when I need a special favor.” Respondents indicated their agreement with each item on a seven-point Likert scale (1= strongly agree, 4= neither agree nor disagree, 7= strongly disagree).

## Patient care

Nurses indicated on a single item their views on the quality of patient care provided (“In general, how would you describe the quality of nursing care delivered to patients on your unit?” (1=excellent, 4=poor)).

## Nurse satisfaction

Nurses indicated their satisfaction being a nurse on a single item, “Independent of your present job, how satisfied are you with being a nurse?” (1=very dissatisfied, 4=very satisfied).

## Results

### Correlation of virtues

The correlation between the two virtues was positive and significantly different from zero, optimism and proactive behavior ( $r=.41$ ,  $n=216$ ,  $p<.001$ ), but only modestly correlated. Thus, the two virtues represented relatively independent strengths in this sample of nurses.

### Hierarchical regression analysis

Hierarchical regression analyses were undertaken in which various work outcomes, indicators of psychological well-being and perceptions of hospital functioning were regressed on three blocks of predictors entered in a specified order. The first block of predictors ( $n=4$ ) consisted of personal demographics (e.g., age, marital status, level of education); the second block ( $n=4$ ) consisted of work situation characteristics (e.g., job has supervisory duties, hospital tenure, work status, full-time versus part-time); the third block of predictors ( $n=2$ ) consisted of the virtues (e.g., optimism, proactive behavior). When a block of predictors accounted for a significant amount or increment in explained variance ( $p<.05$ ), individual variables within these blocks having significant and independent relationships with the criterion variable ( $p<.05$ ) were identified. These variables are indicated in the tables that follow along with their respective  $\beta$ s.

**Predictors of virtues:** The two virtues, optimism and proactive behavior, were separately regressed on two blocks of predictors (personal demographics and work situation characteristics). No block of predictors accounted for a significant amount or increment in explained variance on either of these virtues.

**Predictors of Virtues:** The two virtues were separately regressed on two blocks of predictors (personal demographics and work situation characteristics); no block of predictors accounted for a significant amount or increment in explained variance on either of the virtues. .

## Virtues and work outcomes

Table 2 presents the results of hierarchical regression analyses in which nine work outcomes were regressed separately on the three blocks of predictors: personal demographics, work situation characteristics, and virtues. The following comments are offered in summary. Virtues accounted for a significant increment in explained variance on seven of the 8 work outcomes. Nurses scoring higher on optimism indicated lower intentions to quit, higher levels of vigor and dedication and lower levels of exhaustion and cynicism ( $Bs=-.26, .18, .16, -.22$  and  $-.25$ , respectively). Nurses scoring higher on proactive behavior had higher intentions to quit, higher levels of vigor, dedication and absorption, and higher levels of efficacy ( $Bs=.21, .28, .37, .30$  and  $.31$ , respectively).

## Virtues and psychological well-being

Table 3 shows the results of hierarchical regression analyses involving five indicators of psychological well-being: positive and negative affect, physical fitness, psychosomatic symptoms, and medication use and life satisfaction. The following comments are offered in summary. Virtues accounted for a significant increment in explained variance in only one analysis: psychosomatic symptoms. Nurses scoring higher on optimism indicated fewer psychosomatic symptoms ( $B=-.24$ ).

## Virtues and perceptions of hospital functioning and patient care

Table 4 presents the results of hierarchical regression analyses in which five indicators of perceived hospital functioning and nurse satisfaction were regressed on the three blocks of predictors. Virtues accounted for a significant increment in explained variance on two of the indicators of hospital functioning (hospital support, health and safety climate) but neither optimism nor proactive behavior had significant and independent relationships with these indicators.

It is possible to draw some tentative conclusions across all the analyses that were undertaken. First, personal demographics almost never accounted for a significant amount of explained variance in any of the analyses (Tables 2 through 4). Second, work situation characteristics accounted for a significant increment in explained variance in about half the hierarchical regressions; more significant relationships were observed with indicators of work outcomes than with the other types of outcomes. Third, virtues accounted for a significant increment in explained variance in about two thirds of the analyses, with optimism having significant and independent relationships with various criterion variables in many of these analyses.

## Discussion

This exploratory study provided preliminary support for the general hypothesis underlying the research. That is, nurses reporting higher levels of virtues would be more satisfied and engaged at work, would indicate higher levels of psychological well-being, and perceive higher levels of hospital functioning and performance. These results were supportive of previous theorizing [11,41-43] and consistent with empirical findings [44-46]. Thus virtues seem to be associated



**Table 2:** Virtues and Work Outcomes.

<b>Work Outcomes</b>				
<b>Job Satisfaction (N=160)</b>	<b>R</b>	<b>R<sup>2</sup></b>	<b>ΔR<sup>2</sup></b>	<b>P</b>
Personal demographics	0.18	0.03	0.03	NS
Work situation	0.31	0.1	0.07	0.05
Supervisory duties(.20)				
Virtues	0.36	0.22	0.03	0.05
Days Absent (N=161)				
Personal demographics	0.09	0.01	0.01	NS
Work situation	0.13	0.02	0.01	NS
Virtues	0.15	0.02	0	NS
Intent to Quit (N=160)				
Personal demographics	0.34	0.12	0.12	0.001
Work situation	0.41	0.16	0.04	0.001
Work status (.24)				
Virtues	0.47	0.22	0.06	0.001
Optimism (-.26)				
Proactive (.21)				
Engagement				
Vigor (N=163)				
Personal demographics	0.25	0.06	0.06	0.05
Work situation	0.4	0.16	0.1	0.001
Changed units (-.23)				
Supervisory duties (.16)				
Virtues	0.56	0.31	0.15	0.001
Proactive behaviors (.37)				
Optimism (.19)				
Dedication (N=161)				
Personal demographics	0.13	0.02	0.02	NS
Work situation	0.35	0.12	0.1	0.05
Changed units (.24)				
Work status (.19)				
Virtues	0.56	0.32	0.2	0.001
Proactive behavior (.37)				
Optimism (.16)				
Absorption (N=161)				
Personal demographics	0.15	0.01	0.02	NS
Work situation	0.36	0.13	0.11	0.01
Changed units (-.22)				
Hospital tenure (-.39)				
Virtues	0.5	0.25	0.12	0.001
Proactive behavior				
Burnout				
Exhaustion (N=161)				
Personal demographics	0.23	0.05	0.05	NS
Work situation	0.31	0.1	0.05	0.05
Virtues	0.4	0.16	0.06	0.01
Optimism (-.23)				
Cynicism (N=162)a				
Personal demographics	0.14	0.02	0.02	NS
Work situation	0.28	0.08	0.06	NS
Virtues	0.35	0.12	0.04	0.05
Optimism (-.25)				
Efficacy (N=162)				
Personal demographics	0.14	0.02	0.02	NS
Work situation	0.29	0.09	0.07	0.05
Virtues	0.49	0.24	0.15	0.001
Proactive behaviors (.31)				

**Table 3:** Virtues and Psychological Well-Being.

<b>Psychological Well-Being</b>				
<b>Negative Affect (N=159)</b>	<b>R</b>	<b>R<sup>2</sup></b>	<b>ΔR<sup>2</sup></b>	<b>P</b>
Personal demographics	0.15	0.02	0.02	NS
Work situation	0.25	0.06	0.04	NS
Virtues	0.36	0.13	0.07	0.05
Optimism (-.21)				
Positive Affect (N=160)				
Personal demographics	0.12	0.02	0.02	NS
Work situation	0.24	0.06	0.04	NS
Virtues	0.48	0.23	0.17	0.001
Proactive behavior (.32)				
Optimism (.20)				
Psychosomatic Symptoms (N=163)				
Personal demographics	0.21	0.04	0.04	NS
Work situation	0.26	0.07	0.03	NS
Virtues	0.34	0.11	0.04	0.05
Optimism (-.24)				
Medication Use (N=160)	0.06	0	0	NS
Personal demographics	0.20	0.04	0.04	NS
Work situation	0.26	0.07	0.03	NS
Virtues				
Physical fitness (N=159)				
Personal demographics	0.18	0.03	0.03	NS
Work situation	0.24	0.06	0.03	NS
Virtues	0.25	0.06	0	NS
Life Satisfaction (N=161)				
Personal demographics	0.15	0.02	0.02	NS
Work situation	0.22	0.05	0.03	NS
Virtues	0.34	0.12	0.07	0.01
Optimism (.28)				

**Table 4:** Virtues and Hospital Functioning

<b>Health and Safety</b>				
<b>Climate (N=160)</b>	<b>R</b>	<b>R<sup>2</sup></b>	<b>ΔR<sup>2</sup></b>	<b>P</b>
Personal demographics	0.12	0.02	0.02	NS
Work situation	0.26	0.07	0.05	NS
Virtues	0.34	0.11	0.04	0.05
Hospital Support (N=161)				
Personal demographics	0.27	0.07	0.07	0.05
Age (-.38)				
Work situation	0.33	0.11	0.04	0.05
Hospital tenure (.32)				
Virtues	0.36	0.13	0.02	0.05
Hospital Errors and Accidents (N=158)				
Personal demographics	0.13	0.02	0.02	NS
Work situation	0.17	0.03	0.01	NS
Virtues	0.27	0.07	0.04	NS
Quality of Patient Care (N= 160)				
Personal demographics	0.22	0.05	0.05	NS
Work situation	0.24	0.06	0.01	NS
Virtues	0.25	0.06	0	NS

with greater satisfaction, better individual health, and perceptions of goodness in the workplace.

### Why are virtues associated with positive outcomes?

Four different explanations for the association of virtues with higher levels of individual and organizational well-being have been proposed. First, virtues, as reported above, were associated with positive emotions. In addition, virtues tend to be associated with other virtues, increasing the experiencing of positive emotions even more [47]. Individuals experiencing positive emotions are more likely to be proactive, to engage in organizational citizenship behaviors, be outgoing, and think and act in more creative ways. Fredrickson (2001; 2003b) [48,49] developed her “broaden and build” theory of positive emotions, which, at its core, suggests that positive emotions foster an upward spiral of individual functioning [50].

Second, virtues are associated with higher levels of individual psychological and physical health. Healthy individuals are likely to being heightened focus, vigor and persistence, which in turn contribute to higher levels of individual and organizational functioning [51-53].

Third, virtues are associated with increases in both personal and job or organizational resources over time. This would be predicted by Fredrickson’s “broaden and build” theory; the rich keep getting richer. Particular virtues are likely to increase over time, and the consequences of these virtues (e.g., proactive behavior, creativity, vigor) are also likely to increase over time resulting in more personal resources. In addition, virtues would also be associated with more job and organizational resources over time as well (e.g., more variety, more feedback and learning). Virtues can make it easier for individuals to bounce back after setbacks in their personal or work lives [54,55]. Fourth, virtues have also been found to influence colleagues in the workplace; virtues can be transferred to others. To the extent to which this occurs, the unit or organization becomes stronger and more effective. Positive emotions can be transferred to colleagues and customers [56,57].

### Developing virtues in the workplace

There have been some efforts to develop individual virtues that appear to have been successful. Emmons and McCullough (2003) [58], in studies of university students, developed gratitude by having them “count their blessings,” or to write down up to five things in their lives over the past week that they were grateful or thankful for. Bakker (2008) describes his work with individuals and organizations to increase engagement using both interviews and survey data. Seligman (1998) [59], lays out his program for increasing optimism. Brown and Ryan (2001) [60], show how their efforts to develop mindfulness among cancer patients resulted in both increased mindfulness over time and declines in mood disturbances and stress. Eisenberger (1992) [61], suggests how learned industriousness can be increased. Snyder (1994; 1995) [62,63], illustrates ways in which hope can be heightened. Finally, Luthans and his colleagues [14,45,46,64], describe a micro-intervention in some detail that they have used to increase levels of Psychological Capital (hope, optimism, resilience). These efforts provide a solid basis for further efforts to increase virtues.

### Limitations of the research

Some limitations of the research should be noted to put the findings into a broader context. First, the sample of nurses in this exploratory study was small (n=224) and was relatively young, inexperienced and had low levels of nursing education compared to North American and European samples. Second, it was not possible to determine the representativeness of those nurses that participated. Third, all data were collected using self-report questionnaires raising the possibility of response set tendencies. Fourth, data were collected at one point in time making it difficult to determine causality. Fifth, a few of the measures had levels of internal consistency reliability below the generally accepted standard of 170. Sixth, all respondents worked in research hospitals. It is not clear the extent to which our results would generalize to other samples of nurses working in other hospitals.

### Future research directions

Future research needs to involve a larger and representative sample of nurses drawn from several different hospitals. In addition, to the virtues examined here, the inclusion of other virtues such as hope, self-esteem, gratitude and would add to our understating of the relationship of various virtues with individual and organizational flourishing [65,66]. In addition, future research should incorporate longitudinal designs to permit examination of causal directions and reciprocal relationships. Incorporating measures of virtue at individual, unit and hospital levels would illuminate the link between various levels of analysis. Finally, efforts to increase the levels of virtues at individual and unit levels appear to be a promising and necessary endeavor as well.

### Footnotes

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