










Psychological capital, grit and organizational justice as positive strengths and resources among registered nurses: A path analysis

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Abstract

Aim: To examine registered nurses' individual strengths (psychological capital and grit) and an organizational resource (organizational justice) as well as associated work-related outcomes. In a time of a global nursing shortage, there is an urgent need to identify strengths and resources that can have a positive impact on the health, well-being and retention of registered nurses.

Design: A cross-sectional survey.

Methods: A nationwide convenience sample of 514 registered nurses responded to a survey. Data were collected using a self-reported questionnaire between March and May 2018. Data were analysed using descriptive statistics and multivariate path analysis.

Results: Participants rated their psychological capital and grit moderately high. Grit and organizational justice were found to have significant direct effects on psychological capital. Furthermore, psychological capital had positive direct effects on engagement and the perception of well-conducted everyday nursing as well as negative direct effects on burnout, the stress of conscience and the intent to leave the profession.

Conclusion: The results suggest that nurse leaders and managers could consider improving registered nurses' well-being with two complementary approaches. It might be useful to reinforce positive, individual strengths, such as psychological capital, and at the same time create more favourable nursing work environments, for example by strengthening organizational justice.

Implications for the Profession: Psychological capital and grit are emerging concepts in nursing workforce research. Identifying registered nurses' positive strengths and resources is important for inventing interventions that enhance nurses' engagement and well-being as well as reduce turnover intentions.

Impact: Nurse leaders and managers play crucial roles in managing and developing registered nurses' individual strengths and organizational resources. This has gained

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even more importance now as the COVID-19 pandemic could have a long-term negative impact on nurses' well-being.

Reporting Method: The study is reported following STROBE guidelines.

Patient or Public Contribution: No patient or public contribution.

KEYWORDS

grit, nursing, organizational justice, PsyCap, psychological capital, registered nurse, survey research

1 | INTRODUCTION

There is already plenty of research available concerning negative phenomena among the nursing workforce, for example burnout (Shah et al., 2021), job dissatisfaction (French et al., 2022) and intentions to leave the job (Burmeister et al., 2019) and the profession (Lavoie-Tremblay et al., 2022). To get a more versatile understanding on this topic, there is also a need to study the positive aspects of working life and variables that could improve registered nurses' (hereinafter referred to as RNs) health and well-being as well as reduce their turnover intention. Measures for the improvement of health and well-being have been recommended to ensure the adequacy of health and care workforce (World Health Organization, 2022).

In this present study, we were interested in studying the nursing workforce from the perspective of positive psychology, where the focus is on investigating human strengths, virtues and well-being (van Zyl et al., 2023). We decided to examine RNs' positive individual strengths, that is their psychological capital (hereinafter PsyCap) and grit, and an organizational resource, namely organizational justice, as well as associated work-related outcomes. In a time of a global nursing shortage (Buchan et al., 2022), it is essential to better understand the variables associated with RNs' engagement, reduced burnout levels and a lower intention to leave. This can enable us to find new strategies and interventions to improve the attractiveness, recruitment and retention of the nursing workforce.

2 | BACKGROUND

PsyCap is an emerging concept, which has been associated with employees' better performance and well-being and has originated from the field of positive psychology (Luthans & Youssef-Morgan, 2017). PsyCap is described to be a higher-order construct most often considered to consist of four individual strengths that are defined as positive, measurable and theory-based: (1) hope, (2) efficacy, (3) resilience and (4) optimism. These strengths are described to be state-like, which enables managing and developing PsyCap (Luthans et al., 2007). Both online and face-to-face PsyCap interventions have been found to raise the level of employees' PsyCap (Carter & Youssef-Morgan, 2022). In recent studies, PsyCap has been associated positively with RNs' work engagement (Jin et al., 2022), compassion satisfaction (Yildirim et al., 2021), psychological flourishing

(Chevalier et al., 2021), creative tendency (Li et al., 2019) and better sleep quality (Du et al., 2023). A negative correlation has been found between PsyCap and RNs' job burnout (Tang et al., 2023), stress (Yao et al., 2022) and turnover intention (Xiao et al., 2022).

The concept of grit was originally introduced by Duckworth et al. (2007) and has attracted growing interest, especially among researchers in education (Credé, 2018). Grit and PsyCap can both be classified as a proxy for an individual's positive strengths. Grit has been described as a construct consisting of two dimensions, that is perseverance and passion (Duckworth et al., 2007). Grit has been defined to be trait-like (Duckworth et al., 2007), which means it captures a longer-lasting personal characteristic of an individual. Grit has been found to correlate positively with nurses' job performance, satisfaction and organizational commitment (Cho & Kim, 2022), with experiences of the meaning of life (Yang & Wu, 2021) and intention to care for children with emerging infectious diseases such as COVID-19 (Chu et al., 2021). A correlation between the overall grit of individuals and their subjective well-being has been reported (Hou et al., 2022).

For this study, we chose organizational justice as an organizational resource because, in previous studies, it has been associated with RNs experiences of health and well-being and many other positive work-related outcomes (Lönnqvist et al., 2022). Organizational justice describes whether employees feel they have been treated justly and fairly (Cropanzano et al., 2001). Organizational justice has had a positive impact on nurses' PsyCap (Ren et al., 2021). In this study, in line with the aforementioned literature, we were interested in whether grit, as a trait-like individual strength, and organizational justice, as an organizational resource, might have a direct effect on RNs' PsyCap. Therefore, we established the first hypothesis as follows:

Hypothesis 1. Grit and organizational justice both have significant direct effects on PsyCap.

We selected five work-related outcomes for this study, which previous research has shown to be significant for the nursing workforce: (1) engagement, (2) well-conducted everyday nursing, (3) burnout, (4) the stress of conscience and (5) the intention to leave the profession. We hypothesized that positive individual strengths and an organizational resource would have an increasing effect on the positive work-related outcomes and a reducing effect on the negative outcomes.

Engagement is a desired work-related outcome that has been defined as 'a positive, fulfilling, work-related state of mind that is characterized by vigor, dedication, and absorption' (Schaufeli et al., 2002, p. 74). Engagement has been associated with many positive personal and performance-related outcomes in professional nursing practice (Keyko et al., 2016) and has been reported to correlate with nurses' perception of the overall quality of services and their job satisfaction (Slåtten et al., 2022). Well-conducted everyday nursing is also RNs' work-related positive outcome and has been identified as an important variable associated with the well-being of RNs in Finland. According to a theoretical model describing hospital nurses' well-being at work, the concept of well-conducted everyday nursing consists of three components: (1) work is well-organized, (2) work feels meaningful, and (3) work can be carried out in a patient-centred way (Utraiainen et al., 2015).

Burnout and stress of conscience are negative work-related outcomes, which can reduce RNs' well-being. Nurses have reported a high prevalence of burnout symptoms in previous studies (Woo et al., 2020). RNs' burnout, and especially their emotional exhaustion, has been related to adverse organizational and patient outcomes (Jun et al., 2021). Moreover, some of RNs have reported experiencing high levels of stress of conscience in their work (Åhlin et al., 2022). The stress of conscience can be caused by stressful and ethically difficult situations (Glasberg et al., 2006), and it has been associated with RNs' emotional exhaustion and depersonalization (Åhlin et al., 2013) as well as experiences of work intensification (Heikkilä et al., 2022).

The fact that some RNs are considering leaving their profession may indicate that they experience burden and their well-being is reduced. In a recent study conducted in Belgium after two years of the pandemic, of RNs ($n=2321$) working in an intensive care unit, approximately one in four (24%) reported an intention to leave the nursing profession (Bruyneel et al., 2023). RNs have reported turnover intentions in many countries (Xu et al., 2023), although a larger proportion of RNs actually leave for another nursing job and fewer leave their profession altogether (Kovner, 2022). Those RNs leaving the profession, however, contribute to exacerbating the nursing shortage (Mazurenko et al., 2015).

Based on the earlier research, we were interested in whether PsyCap might have a direct effect on work-related outcomes that are relevant to the nursing workforce. We also wanted to study whether grit and organizational justice might have an indirect effect on these outcomes via PsyCap. Therefore, we formulated the following hypothesis:

Hypothesis 2. PsyCap has significant positive direct effects on engagement and well-conducted everyday nursing as well as negative direct effects on burnout, the stress of conscience and intent to leave the profession.

Hypothesis 3. Grit and organizational justice have significant indirect effects on all examined outcomes via PsyCap.

In this present study, we wanted to turn our focus on RNs' strengths and resources instead of the much-studied negative phenomena associated with RNs' work. Based on existing research and literature, we created a hypothetical theoretical model (Figure 1).

3 | THE STUDY

3.1 | Aim and objective

The aim of the present study was twofold:

1. to investigate the level of PsyCap and grit as well as perceptions of organizational justice among RNs, and
2. to test the hypothesized theoretical model (Figure 1).

We also explored sociodemographic and individual characteristics (age, work experience, work ability and health) in relation to PsyCap, grit and organizational justice.

4 | METHODS

4.1 | Design

This study followed a cross-sectional design.

4.2 | Sample

Convenience sampling was used to collect national data. The inclusion criteria for participants were (1) RNs (2) living in Finland, and (3) able to answer the questionnaire in Finnish. RNs from all kinds of work settings were invited to participate, as this was a national survey.

4.3 | Instruments

Data were collected through a self-reporting questionnaire, including demographic questions and instruments to measure PsyCap, grit and organizational justice as well as work-related outcomes. The following subsections present each instrument in detail.

4.3.1 | Demographics questions

The demographic questions included the year of birth, gender, year of graduation in nursing, highest degree completed, length of work experience as a RN, current employment status, work sector and work unit.

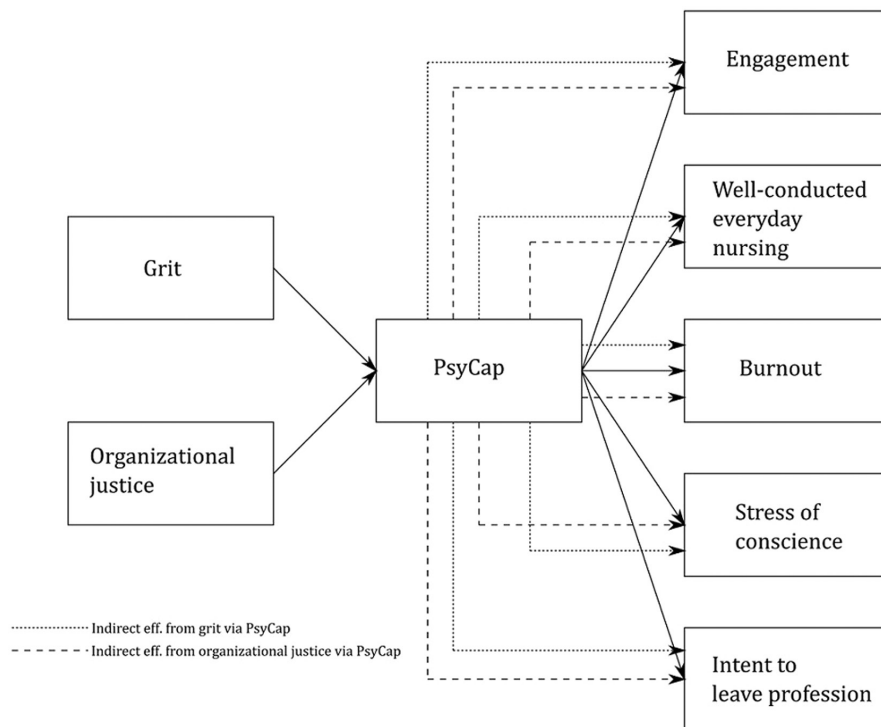


FIGURE 1 Hypothesized model proposed based on the literature.

4.3.2 | The Work Ability Score (WAS) and a single-item measure of general health

The single-item Work Ability Score (WAS) was used to measure respondents' self-assessment of their current work ability compared with the lifetime best (range 0–10). WAS has been found to be a reasonable alternative to the Work Ability Index (7 items; Jääskeläinen et al., 2016). A single-item measure of general health from the 20-Item Short Form Health Survey (Stewart et al., 1988) was used to assess respondents' self-reported health, using a five-point Likert scale from 1 (poor) to 5 (excellent).

4.3.3 | The Psychological Capital Questionnaire (PCQ-24)

PsyCap was assessed using the PCQ-24, a questionnaire developed to measure self-assessed level of hope, efficacy, resilience and optimism (Luthans et al., 2007). Validity and reliability of the PCQ-24 were confirmed in a psychometrically focused review (Dawkins et al., 2013). Moreover, the PCQ-24 is a frequently used instrument for assessing RNs' perceptions of PsyCap (Yuan et al., 2023). Each of the questionnaire's four dimensions includes six items on a six-point Likert scale, ranging from 1 (strongly disagree) to 6 (strongly agree). Cronbach's alpha (α) was good (0.92) for PCQ-24 in the current study.

4.3.4 | The Short Grit Scale (Grit-S)

Grit was measured using the Grit-S (8 items), a self-reporting instrument measuring two domains: (1) consistency of interest, (2)

perseverance of effort, both containing four items. The validity and reliability of the instrument have been documented (Duckworth & Quinn, 2009). In a subsequent validation study, researchers found that the Grit-S is unidimensional and therefore reporting a total score is recommended (Gonzalez et al., 2020). The items were rated using a five-point Likert scale, ranging from 1 (not at all like me) to 5 (very much like me). The Cronbach's α of this scale ranged from 0.73 to 0.83 across four samples in Duckworth and Quinn's (2009) validation study and was 0.63 in the present study.

4.3.5 | The Short Measure of Organizational Justice

The Organizational Justice Scale (Colquitt, 2001) has been used in many studies investigating RNs' perceptions of organizational justice (Lönnqvist et al., 2022). In the present study, organizational justice was measured using the Finnish version of the Short Measure of Organizational Justice (8 items) (Elovainio et al., 2010), developed originally by Colquitt (2001). Satisfactory psychometric properties were found when testing the Short Measure of Organizational Justice with samples of physicians and RNs in Finland (Elovainio et al., 2010). The instrument includes five-point Likert scale items, ranging from 1 (totally disagree) to 5 (totally agree). In the present study, Cronbach's α was 0.86.

4.3.6 | The Scale of Work Engagement and Burnout (SWEBO)

Work engagement and burnout were measured using the SWEBO instrument that was originally developed in Sweden. The psychometric

properties have been tested and confirmed with samples consisting of Swedish nurses and teachers (Hultell & Gustavsson, 2010). The burnout subscale consists of three dimensions: exhaustion, disengagement and inattentiveness. The work engagement subscale also consists of three dimensions: vigour, dedication and absorption. The items were rated using a four-point Likert scale, ranging from 1 (not at all) to 4 (all of the time). In our sample, the Cronbach's α was 0.88 for the engagement scale and 0.91 for the burnout scale.

4.3.7 | Well-conducted everyday nursing

Well-conducted everyday nursing was measured with five items from the Nurses' Well-Being at Work scale developed in Finland. This instrument is based on a theoretical model describing 12 constructs that are important for RNs' well-being at work. The psychometric properties of the instrument have been tested, showing good content and construct validity among Finnish hospital RNs (Päätaalo & Kyngäs, 2016). The five subscale items are used to measure whether RNs feel that they can perform their work well, rated on a four-point Likert scale from 1 (to a very small extent) to 4 (to a very great extent). The Cronbach's α coefficient of this subscale was 0.81 in Päätaalo and Kyngäs' (2016) study and 0.88 in the present study.

4.3.8 | The stress of conscience

The stress of conscience was measured with six items. The items measure RNs' experiences of whether they can perform nursing work as well as deemed necessary. The items have been developed and validated in the Longitudinal Analysis of Nursing Education/Entry in work life (LANE) study conducted in Sweden (Rudman et al., 2010). The items are inspired by the studies performed by Glasberg et al. (2006) and Åhlin et al. (2013). The items were rated on a four-point Likert scale from 1 (applies completely) to 4 (does not apply at all). In this study, the Cronbach's α was 0.80.

4.3.9 | Intention to leave the profession

Intention to leave the profession was assessed using three items to measure professional turnover intent (e.g. 'I will leave the nursing profession as soon as possible.') (Rudman et al., 2014; Sjöberg & Sverke, 2000). The items were rated on a five-point Likert scale from 1 (strongly disagree) to 5 (strongly agree). In our sample, the Cronbach's α was 0.87.

4.4 | The translations of the instruments

The instruments and the questionnaire used were in Finnish, as most of the population of Finland are native Finnish speakers. The PCQ-24 was translated from English into Finnish using the back

translation method and revised by two official language revisers (Mind Garden, Translation Agreement TA-635). Grit-S had been translated from English into Finnish in an earlier international study (Disabato et al., 2016). The SWEBO instrument and items measuring the stress of conscience and the intention to leave the nursing profession were translated from Swedish into Finnish using the back translation method and revised by two official language revisers. Before data collection, a pilot study ($n=8$) was conducted to confirm the understandability and clarity of the content of the questionnaire. The items appeared to be easily understandable, and no changes were made based on the pilot study.

4.5 | Data collection

Two methods of data collection were selected: 1. a paper-and-pencil questionnaire 2. an online questionnaire. The paper-and-pencil questionnaire and return envelope with postage paid in advance were distributed to 500 RNs participating in the national Finnish Nursing Congress held in March 2018. An online survey link and information about the study were sent to a total of 3204 Finnish-speaking RNs in May 2018 by email. An anonymous survey was conducted via the Webropol 2.0 cloud-based query tool. The sample was selected from the Union of Health and Social Care Professionals in Finland (Tehy) member register based on even-numbered sampling. The response time was 2 weeks. One reminder was sent out to increase the response rate. The total number of RNs approached with a paper-and-pencil questionnaire, and an online questionnaire was 3704. Of them, 514 responded to the survey, making the response rate 14%. The response rate was higher with the paper-and-pencil questionnaire ($n=97$, 19%) than with the online questionnaire ($n=417$, 13%).

4.6 | Sample size and power

No prospective statistical power analysis was carried out prior to data collection. Therefore, confidence intervals were calculated in connection with the data analysis.

4.7 | Statistical analysis

All statistical analyses were performed using R software version 4.0.2 (R Core Team, 2017). Demographic variables and sum scales were reported using frequencies, percentages, mean values and standard deviations. Spearman's correlations were used to assess relationships between variables. A p -value of <0.05 was considered statistically significant. To test the internal consistency, Cronbach's alpha coefficient was calculated. Multivariate path analysis was performed, modelling the relationships between the variables. Full information maximum likelihood estimation with robust standard errors and scaled test statistics were used to create a path model. The

model's parameters and fit indexes were estimated. For the precision of parameter estimates, 95% confidence intervals were calculated.

Path analyses were conducted using the lavaan package (version 0.6–9) of R. The following fit statistics were used to assess the fit between the covariance structure of the data and the hypothesized model:

- Model chi-square (χ^2) with its degrees of freedom and *p*-value: a nonsignificant *p*-value indicates a good model fit.
- Comparative Fit Index (CFI) ≥ 0.90 .
- Tucker Lewis Index (TLI) ≥ 0.95 .
- Standardized Root Mean Square Residual (SRMR) < 0.08 .
- Root Mean Square Error of Approximation (RMSEA) < 0.08 .

4.8 | Ethical considerations

This study complied with good scientific practice (All European Academies, 2017). Research ethics committee approval for the study was granted by the Ethics Committee of the University of Turku (Statement 24/2017, 3 May 2017). The Finnish Nurses Association gave permission to distribute paper questionnaires to the participants in the national Finnish Nursing Congress. They gave permission to send the electronic questionnaire to a sample extracted from its member register. The study was conducted anonymously, and participation was voluntary. Filling out and returning the questionnaire implied consent to participate. Permissions to use and translate the instruments were obtained from the copyright holders.

5 | RESULTS

5.1 | Participants

In total, 514 RNs participated in the study. The RNs varied in age from 23 to 66 years, with a mean age of 45.8 years. 93% were female and had worked in the nursing profession on average for 16.2 years (range 0–41). The participant characteristics are presented in Table 1.

In the four-domain PsyCap (mean 4.52, SD=0.62, scale 1–6), the self-efficacy (mean 4.70, SD=0.78) and resiliency (mean 4.70, SD=0.67) had the highest mean scores, and the lowest mean scores were reported for hope (mean 4.46, SD=0.86) and optimism (mean 4.21, SD=0.76). RNs reported moderately high levels of grit (mean 3.82, SD=0.44, scale 1–5). The mean score for organizational justice was lower, 3.03 (SD=0.83, scale 1–5; Table 2).

PsyCap correlated significantly (< 0.001) and positively with work ability ($r=0.44$) and self-perceived health ($r=0.32$). A significant, but low to moderate in magnitude, correlation was found among PsyCap and grit ($r=0.29$, $p < 0.001$). Significant, yet moderate, positive correlation was found between PsyCap and organizational justice ($r=0.41$, $p < 0.001$). Statistically significant correlations (< 0.001) were found between the PsyCap and all examined work-related outcomes (Table 3).

TABLE 1 Demographic characteristics of the registered nurses.

Variable	Frequency	Percentage (%)
Gender		
Female	470	93
Male	30	6
Prefer not to answer	3	1
Age (years)		
30 and below	53	10
31–40	107	21
41 and above	346	68
Work experience		
5 and below	104	20
6–14	123	24
15 and above	284	56
Job position		
Registered nurse	416	82
Deputy nurse manager	14	3
Nurse manager, unit manager	28	5
Other	52	10
Highest educational degree		
Registered nurse	461	91
Master of Health Care (University of Applied Sciences)	27	5
Bachelor of Health Sciences, Master of Health Sciences (University degree)	17	4
Practice environment		
Hospital ward, sheltered housing unit with 24-h assistance	176	34
Outpatient care unit, outpatient clinic	130	25
The emergency service, emergency ward	33	6
Home care, home nursing service, hospital at home	25	5
Operating room, recovery room, day surgery unit	35	7
Intensive care, intermediate care unit	23	5
Other	88	17
Employment status		
Permanent	428	84
Fixed term	67	13
At home temporarily (e.g. on family leave)	5	1
Job seeker	2	1
Other	5	1

5.2 | Test of the hypothesized model

The original model was not acceptable. Examination of the hypothesized model indicated that adjustments could be made to improve

TABLE 2 Descriptive statistics for study variables.

Variable	Score range	Mean	SD
Psychological capital	1-6	4.52	0.62
Grit	1-5	3.82	0.44
Organizational justice	1-5	3.03	0.83
Engagement	1-4	2.71	0.45
Well-conducted everyday nursing	1-4	2.76	0.60
Burnout	1-4	1.89	0.57
Stress of conscience	1-4	2.6	0.63
Intent to leave the profession	1-5	3.84	1.2
General health	1-5	3.21	0.88
Current work ability	0-10	7.99	1.67

the match between the data and the model. Therefore, a decision was made to include additional direct associations from grit to engagement and from organizational justice to all work-related outcomes in the revised path model (Figure 2). The fit indices of this revised path model were $\chi^2=6.494$, $df=4$, $p=0.165$, $CFI=0.998$, $TLI=0.987$, $SRMR=0.020$, $RMSEA=0.039$, which indicated an adequate fit.

5.3 | Testing of the hypothesis

Direct, indirect and total effects (the sum of the direct and indirect effects; <0.05) of the path model are presented in Table 4. There was partial support for Hypothesis 1. As hypothesized, grit ($\beta=0.212$, $p<0.001$) and organizational justice ($\beta=0.414$, $p<0.001$) both had significant positive direct effects on PsyCap. However, the path analysis also revealed a significant direct effect from grit to engagement ($\beta=0.120$, $p<0.001$). Moreover, organizational justice had positive significant ($p<0.001$) direct effects on all work-related outcomes.

As proposed in Hypothesis 2, PsyCap had positive significant ($p<0.001$) direct effects on engagement ($\beta=0.551$) and well-conducted everyday nursing ($\beta=0.470$) as well as negative significant direct effects on burnout ($\beta=-0.507$), the stress of conscience ($\beta=-0.437$) and intent to leave profession ($\beta=-0.321$). Hypothesis 3 was also supported. Grit and organizational justice had significant ($p<0.001$) positive indirect effects on all work-related outcomes, via PsyCap.

6 | DISCUSSION

In this study, we wanted to turn our focus on RNs' strengths and resources. As a result, our study utilizes the approach of the discipline of positive psychology. Our findings contribute to the existing research evidence by suggesting that PsyCap, grit and organizational

justice could be relevant and positive concepts when investigating nursing workforce. Our research findings might be beneficial for both RNs and patients. The mental health of RNs has been associated with better patient safety outcomes (Melnyk et al., 2018). Moreover, a more favourable working environment for nursing has been related to better outcomes in hospital patients (Brom et al., 2021).

In our study, of RNs' individual strengths, PsyCap correlated with all investigated positive work-related outcomes. Both PsyCap and grit can be considered personal strengths defined as: 'the characteristics of a person that allow them to perform well or at their personal best' (Wood et al., 2011, p. 15). Other strengths have also been identified in previous research. The Finnish language contains a concept akin to grit called 'sisu', which has been described as 'the ability of individuals to push through unbearable challenges' (Lahti, 2019, p. 62). Unlike the concept of PsyCap, 'sisu' and grit have also been associated with negative consequences. If a person has a lot of 'sisu' and never gives up, for example in working life, she or he might become exhausted (Lahti, 2019). Moreover, individuals with higher levels of grit may spend too much time and effort on solving a difficult problem, even if it made more sense to move on (Lucas et al., 2015). This point of view should also be considered in future studies investigating RNs' individual strengths.

In the present study, we found that RNs self-assessed their PsyCap and grit scores to be moderately high in Finland. The mean score of PsyCap was 4.52 on a six-point scale and the mean score of grit was 3.82 on a five-point scale, respectively. According to the meta-analysis conducted by Yuan et al. (2023), the pooled mean score of the PsyCap was slightly lower (4.21, $n=29$ studies) than in this present study. Moreover, nurses had reported lower PsyCap scores in Asia than in the United States, Australia or African countries. There were no studies from Europe included in this meta-analysis. When considering grit, paediatric nurses have reported average scores of 3.10 in Korea (12-item Grit Scale; Chu et al., 2021) and graduate nursing students' mean was 3.9 in the United States (eight-item Grit-S; Burke et al., 2022). It might be possible that the moderately high RNs scores of PsyCap and grit among the Finnish RNs covered by this study could be at least partly explained by the fact that our highly individualistic culture and education may contain aspects that reinforce personal strengths. Moreover, nurse leaders and managers might also have an influence on how RNs perceive their individual strengths in different countries. Future research should investigate how RNs' individual strengths change during their careers and how these strengths can be supported in various nursing work environments and cultures.

The path analysis results showed that the data supported the revised hypothesized theoretical model. Our findings suggest that those RNs reporting a higher level of grit or fair treatment in their organization also have a higher perception of their PsyCap. Moreover, RNs with higher PsyCap scores also reported higher engagement and well-conducted everyday nursing and lower levels of burnout, lower stress of conscience and less intent to leave the profession. Our results confirm the previous research findings that RNs' use of strengths has been negatively correlated with their turnover intent

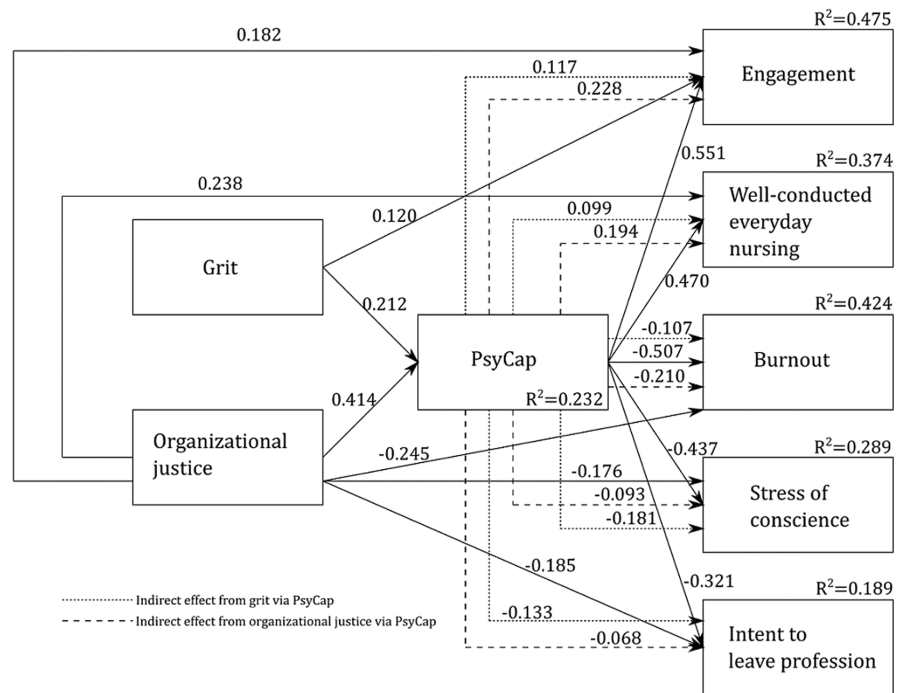
TABLE 3 Spearman correlations between study variables.

	1	2	3	4	5	6	7	8	9	10	11	12
1. PsyCap	-											
2. Grit	0.29***	-										
3. Organizational justice	0.41***	0.07	-									
4. Engagement	0.64***	0.26***	0.38***	-								
5. Well-conducted everyday nursing	0.59***	0.18***	0.40***	0.54***	-							
6. Burnout	-0.59***	-0.20***	-0.43***	-0.64***	-0.55***	-						
7. Stress of conscience	-0.51***	-0.16***	-0.31***	-0.41***	-0.65***	-0.55***	-					
8. Intent to leave the profession	-0.41***	-0.19***	-0.33***	-0.4***	-0.40***	0.54***	0.39***	-				
9. Age	0.22***	0.05	0.09*	0.08	0.09*	-0.19***	-0.10*	-0.25***	-			
10. Work experience	0.20***	0.06	0.10*	0.05	0.08	-0.13**	-0.11*	-0.19***	0.76***	-		
11. Current work ability	0.44***	0.18***	0.30***	0.43***	0.37***	-0.48***	-0.31***	-0.27***	-0.12**	-0.10*	-	
12. General health	0.32*	0.16***	0.22***	0.31***	0.22***	-0.33***	-0.22***	-0.19***	-0.16***	-0.13***	0.66***	-

Abbreviation: PsyCap, psychological capital.

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

FIGURE 2 Association between studied variables in the path model. Coefficient of determination (R^2) was used to evaluate the variance explained by each variable in the model. Example grit and organizational justice explained 23% ($R^2=0.232$) variance in PsyCap.



(Chu et al., 2022). In addition, the use of personal strengths has also been associated positively with individuals' well-being (Wood et al., 2011) and with employees' well-being, performance and job satisfaction (Miglianico et al., 2020). Finding one's calling in nursing, which could also be considered an individual strength, has been associated with RNs' job satisfaction (Kallio et al., 2022). Moreover, both individual (career management self-efficacy) and organizational resources (high-involvement work practices) have been associated with older nursing professionals' organizational commitment (Salminen et al., 2021).

In our study, PsyCap correlated positively with RNs' self-perceived work ability and health, but not with work experience or age. Also in earlier studies, there is mixed evidence on the relationship between PsyCap and sociodemographic variables (Avey, 2014; Wu & Nguyen, 2019). Moreover, in the present study, grit did not correlate with any of the measured sociodemographic variables. Accordingly, in an earlier meta-analysis, the relationship between grit and demographic variables has been very weak, except for age (Credé et al., 2017). One explanation for these findings might be that the perceptions of individual strengths may be more influenced by how people have experienced coping with difficult challenges in their lives and workplaces, rather than what their age is or how many years of work experience they have.

There is a substantial shortage of RNs (Buchan et al., 2022) as it has been estimated that 30.6 million more nurses and midwives would be needed globally in order to achieve high levels of universal health coverage (GBD 2019 Human Resources for Health Collaborators, 2022). Without a sufficient nursing workforce, it is not possible to offer high-quality and accessible healthcare services worldwide (World Health Organization, 2020). In order to successfully meet the challenges regarding the nursing workforce, it has been recommended to implement bundles of interventions, rather

than single ones (Buchan et al., 2022). Research evidence concerning systematically developed organizational interventions, such as Magnet hospitals, has shown that exemplary nursing work environments and transformational leadership are crucial for the organization to attract and retain RNs (Rodríguez-García et al., 2020) as well as improve patient outcomes (Drenkard, 2022). Our research findings add to the previous literature demonstrating that while interventions are developed for individual RNs, investments should also target improving nursing work environments.

6.1 | Strength and limitations

Our study has some strengths. We used path analysis to investigate hypothesized relationships among several variables. Moreover, we investigated both individual strengths and the organizational resource in association with RNs' work-related outcomes. The purpose of this was to achieve a more comprehensive understanding concerning the variety of variables connected to RNs' higher engagement, lower burnout levels and reduced professional turnover intention.

Nevertheless, our study also had limitations that should be addressed. We used a convenience sample, and the response rate was low. We sent out fairly high numbers of web-based questionnaire invitations because online surveys have a lower response rate than traditional surveys (Sammot et al., 2021). The low response rate in our study might be explained by the fact that the questionnaire was long, and RNs may have received many requests to answer various surveys both from their own organizations and other research institutions. The cross-sectional study design results in an inability to prove causality between the examined variables. Bias might occur in any part of the research process (Florczak, 2022).

TABLE 4 Standardized direct effects.

Path	Estimate	Completely standard solution/estimate	95% CI lower	95% CI upper
Direct effects				
PsyCap				
Grit	0.287	0.212	0.129	0.295
Organizational justice	0.292	0.414	0.339	0.489
Engagement				
PsyCap	0.420	0.551	0.480	0.621
Organizational justice	0.098	0.182	0.105	0.259
Grit	0.125	0.120	0.056	0.184
Well-conducted everyday nursing				
PsyCap	0.482	0.470	0.392	0.548
Organizational justice	0.173	0.238	0.155	0.321
Burnout				
PsyCap	-0.485	-0.507	-0.580	-0.433
Organizational justice	-0.165	-0.245	-0.324	-0.165
Stress of conscience				
PsyCap	-0.467	-0.437	-0.521	-0.354
Organizational justice	-0.132	-0.176	-0.265	-0.086
Intent to leave the profession				
PsyCap	-0.647	-0.321	-0.415	-0.228
Organizational justice	-0.263	-0.185	-0.281	-0.090
Indirect effects				
Grit → PsyCap → Engagement	0.121	0.117	0.069	0.165
Grit → PsyCap → Well-conducted everyday nursing	0.139	0.099	0.057	0.142
Grit → PsyCap → Burnout	-0.139	-0.107	-0.153	-0.062
Grit → PsyCap → Stress of conscience	-0.134	-0.093	-0.134	-0.052
Grit → PsyCap → Intent to leave the profession	-0.186	-0.068	-0.102	-0.035
Organizational justice → PsyCap → Engagement	0.123	0.228	0.177	0.279
Organizational justice → PsyCap → Well-conducted everyday nursing	0.141	0.194	0.146	0.242
Organizational justice → PsyCap → Burnout	-0.142	-0.210	-0.259	-0.161
Organizational justice → PsyCap → Stress of conscience	-0.136	-0.181	-0.229	-0.132
Organizational justice → PsyCap → Intent to leave the profession	-0.189	-0.133	-0.179	-0.087
Total effects				
Grit → Engagement	0.245	0.237	0.161	0.312
Organizational justice → Engagement	0.221	0.410	0.335	0.484
Organizational justice → Well-conducted everyday nursing	0.314	0.433	0.358	0.507
Organizational justice → Burnout	-0.307	-0.454	-0.527	-0.382
Organizational justice → Stress of conscience	-0.269	-0.357	-0.438	-0.275
Organizational justice → Intent to leave the profession	-0.452	-0.318	-0.403	-0.234

Note: All paths in this table were statistically significant ($p < 0.001$).

Abbreviations: CI, confidence interval; PsyCap, psychological capital.

In our study, all data were collected with questionnaires, which may be prone to self-reporting biases. The instruments we used had been used and validated in earlier studies, and their reliability was assessed in the present study. We did not, however, assess the validity of the instruments in this present study. Future research should test the psychometric properties and cross-cultural

validity of the Finnish versions of the PCQ-24, the Grit-S and the SWEBO instrument. Finally, the data of our study were collected before the COVID-19 pandemic. The global pandemic has had a variety of negative effects on the nursing workforce, such as an increased workload and a high risk for burnout (Buchan et al., 2022). If this study had been carried out during the pandemic, the RNs

might have reported more severe burnout, for instance. On the contrary, some of the RNs might have reported higher PsyCap and grit scores during the pandemic than before. In previous studies, some RNs have described that working during the COVID-19 pandemic has fostered their professional and personal development (Specht et al., 2021) and their psychological growth (Deliktas Demirci et al., 2021).

7 | CONCLUSION

Nurse leaders and managers play a key role in improving RNs' well-being, health, and retention. This study suggests that at the same time as effective strategies are implemented to develop RNs' practice environments and organizational resources, investments might also be directed to strengthening RNs' positive, individual strengths. Especially PsyCap was associated with many positive, work-related outcomes in this present study. Therefore, RNs could benefit from evidence-based interventions developed to increase their PsyCap.

AUTHOR CONTRIBUTIONS

Mervi Flinkman, Ann Rudman and Helena Leino-Kilpi conceptualized and designed the study. Mervi Flinkman carried out the data collection. Miko Pasanen and Mervi Flinkman accomplished the data analysis and interpretation. Mervi Flinkman drafted the manuscript. Ann Rudman and Helena Leino-Kilpi critically reviewed the manuscript. All authors read, revised and approved the final manuscript for submission.

All authors have agreed on the final version and meet at least one of the following criteria [recommended by the ICMJE (<http://www.icmje.org/recommendations/>)]:

- substantial contributions to conception and design, acquisition of data or analysis and interpretation of data;
- drafting the article or revising it critically for important intellectual content.

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CONFLICT OF INTEREST STATEMENT

The authors declared no conflicts of interest.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author upon reasonable request.

SUBMISSIONS WITH STATISTICS

There is a statistician on the author team: Miko Pasanen, Statistician.

RESEARCH ETHICS COMMITTEE APPROVAL

Research ethics committee approval for the study was granted by the Ethics Committee of the University of Turku (Statement 24/2017, 3 May 2017).

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