ORIGINAL PAPER

A STUDY OF CHARACTER STRENGTHS, WORK ENGAGEMENT AND SUBJECTIVE WELL-BEING IN CHINESE REGISTERED NURSES

Xiaotong Ding[1]*, Houming Kan[2]*, Xueqin Chu[3], Chenyu Sun[4], Feiyan Ruan[5,6]

[1] Nanjing Medical University, Nanjing, China
School of Nursing

[2] Xuzhou Medical University, Xuzhou, China
Jiangsu Provincial Key Laboratory of Anesthesiology

[3] Anhui Medical University, Anqing, China
The Anqing Affiliated Hospital, Operating room

[4] AMITA Health Saint Joseph Hospital Chicago, Chicago, USA

[5] The First Affiliated Hospital of Anhui Medical University, Hefei, China
Department of Breast Surgery

[6] Anhui Medical University, Hefei, China
School of Nursing

Abstract

Background: Nurses displayed low levels of subjective well-being and high turnover intention. How to enhance the subjective well-being and decrease the turnover rate of nurses is of great importance. However, little is known about whether work engagement mediates between character strengths and subjective well-being. The study aims to explore character strengths, work engagement and subjective well-being in nurses, and to determine whether work engagement plays a mediating role between the relationship. **Material and Methods:** From December 2017 to December 2018, 450 Chinese registered nurses completed the character strengths scale, work engagement scale, and subjective well-being scale. The relationship between study variables was tested by Pearson correlation. The mediating effect of work engagement was tested by the bootstrap method. **Results:** The results indicated the following: (1) the 4 elements of character strengths and work engagement were significantly and positively correlated with subjective well-being; (2) character strengths could significantly predict both work engagement and subjective well-being; (3) work engagement played a mediating role in this relationship. **Conclusions:** Character strengths affect subjective well-being in Chinese registered nurses, and work engagement plays a mediating variable among the relations. Therefore, nurses are encouraged to foster their character strengths and improve their level of work engagement for their subjective well-being. Following the results, the study recommends that nursing managers be aware of the importance of using character strengths in nursing work, taking actions to excavate nurses' character strengths and encouraging nurses to use character strengths in clinical work to promote engagement and well-being. In the meantime, interventions to improve the level of subjective well-being based on nurses' character strengths should be considered. Med Pr. 2022;73(4):295–304

Key words: nurse, work engagement, subjective well-being, cross-sectional study, character strengths, mediating effect

* Authors contributed equally.

INTRODUCTION

Nowadays, some studies have pointed out that organizations pay more and more attention to the health and well-being of employees [1]. Evidence showed that compared with dissatisfied colleagues, happier employees were more efficient and could better cope with the high requirements of the working environment [2]. Nurses play an essential role in health promotion and education as medical professionals. In China, the general public thinks nurses lack professional skills, inducing an increasing number of nurses to quit their jobs, and producing a severe shortage of nurses, resulting in even more stress and burnout, negatively affecting their well-being and health [3].

Nurses' subjective well-being significantly affects the quality of nursing work and nurses' job satisfaction [4]. Subjective well-being is an essential index of the quality of one's personal and social life. It is also a necessary marker of an individual's mental health,

including the disappearance of a passive emotional state and satisfaction with one's whole life [5]. Research has shown that higher subjective well-being is associated with health, longer life, solid social relationships, better job performances, and creative thinking [6]. However, several studies have shown that registered nurses have a low level of subjective well-being [7,8]. Consequently, exploring the factors that influence nurses' subjective well-being is essential to improve their positive feelings for work and reduce their negative emotions. Evidence indicated that an effective way to promote well-being was to focus on an individual's character strengths, and mining employees' strengths may be an ignored strategy to improve subjective well-being [2].

Character strengths are positive qualities expressed through individual thoughts, feelings, and behaviors, positively valued personality characteristics, and have attracted increasing attention in positive psychology [9]. Some scholars believe that character strengths are personal resources, and the importance of their application in work is evident [10]. Meyers and Woerkom [11] pointed out that individuals can use their strengths, regarded as pleasant. It will trigger positive emotions such as happiness, pride, and gratitude. In turn, these emotions will bring subjective well-being and satisfaction. Moreover, character strengths are positively related to subjective well-being in previous studies. They can promote individual physical, mental health, well-being and help individuals cope with stressful situations, making them less likely to experience stress [5,12].

The values in action (VIA) classification of Peterson and Seligman [13] had described character strengths, including perseverance, bravery, creativity, curiosity, open-mindedness, love of learning, perspective, teamwork, fairness, leadership, forgiveness, humility, prudence, self-control, purpose, humor, optimism, gratitude, appreciation of beauty and excellence, social intelligence, kindness, love, enthusiasm, and integrity. There is no consensus on the factor structure of character strengths. To show the character strengths more clearly and systematically, according to self-others and sensibility-rationality dimensions, Frederickson divided 24 character strengths clustered into 4 elements: sensibility-self focus, sensibility-others focus, rationality-self focus, and rationality-others focus [14]. In the study, the authors chose Frederickson's method to measure character strengths aiming to help nurses easily take actions from some specific aspects to cultivate their character strengths, and help nursing managers identify more effective intervention strategies, carry out efficient intervention for this type of character strengths cluster, and provide the basis for intervention strategies with practical economic benefits in the future. To date, most studies focused on teenagers and students, and few studies have examined character strengths in nurses. In this context, the study aimed to explore the psychological mechanisms between character strengths and subjective well-being in nurses. The demand-resource theory indicated that character strengths as individual resources could stimulate people's work motivation and indirectly promote work engagement and job performance [2].

Work engagement is active and vigorous, reflecting more vital workability and professional identity, and incorporating dedication (loving work and feeling a high sense of honor), vigor (high vitality and resilience when working), and absorption (dedicated to work and reluctant to put work aside) [15]. Work engagement has been considered a meaningful way to integrate organizational performance and employee health and achieve a "win-win" between organizational effectiveness and employee well-being [16]. Costantini et al. [2] intervened with 70 sales consultants and 12 regional managers based on personal strengths. The results showed that taking advantage of individuals' character strengths could improve their work engagement and organizational self-esteem [2]. As previously argued, individuals' character strengths can predict their work engagement, but less is known about the relationships between 2 variables in nurses. According to the demand-resource theory, individuals experience energy exhaustion and motivation stimulation. Work resources stimulate individuals' active working status, make them more engaged in work, generate more positive emotions and satisfaction, and thus a higher level of subjective well-being [2].

Moreover, relevant research has confirmed that work engagement was positively correlated with subjective well-being [17]. The higher the degree of work engagement, the better work performance, and the more individuals can enjoy the happiness brought by work engagement. Indeed, some studies indicated that work engagement positively contributed to occupational well-being. Other studies showed that work engagement, which expresses employees' state, including happy emotions, satisfaction, and high activation, could completely predict subjective well-being [16].

As previously argued, subjective well-being, character strengths, and work engagement were related. However, the mechanism between the 3 variables is not precise for nurses. For this reason, it is necessary to explore how nurses' character strengths affect their subjective well-being, and disentangle the role of work engagement between character strengths and subjective well-being in nurses. This study hypothesized that:

H1: there are a positive correlation among 4 elements of character strengths, work engagement, and subjective well-being;

H2: work engagement is the mediator between 4 elements of character strengths and subjective well-being.

MATERIAL AND METHODS

Objectives
The study aimed to explore how nurses' character strengths affect their subjective well-being and the role of work engagement between character strengths and subjective well-being in nurses.

Study design
The study used convenience sampling to collect data on the National Nurse Learning Platform from December 2017 to December 2018. The platform includes >30 000 registered nurses.

Participants and data collection
The sample included 450 nurses aged 22–54 years. The data collection included usable questionnaires from 415 nurses, and the effective response rate was 92.2%. Inclusion criteria were nurses that: (1) hold a nursing professional qualification certificate, (2) have been a nurse for >1 year, and (3) voluntarily participated in the study.

The study completed all questionnaires anonymously. The study informed all the observed nurses of the purposes, risks, and analysis methods before filling out the questionnaires, and their participation was voluntary. The questionnaire explained the purpose, including understanding the situation of subjective well-being and the influence of character strengths on work engagement and subjective well-being, to provide a new perspective for nursing managers. Investigators verified all the questionnaires for any vacancies or omissions. If there were any omissions or emptiness in the questionnaire, would be deleted.

The study collected the data by general information, the character strengths scale, work engagement scale, and subjective well-being scale. The available information was included in this survey: gender, age, professional titles, work department, marital status, education, positional rank, hospital level, etc.

The study used the character strengths scale to evaluate an individual's character strengths [13]. The Chinese version has been proven reliable and valid [18]. The scale is self-reported and contains 48 items, including perseverance, bravery, creativity, curiosity, etc. A 5-point Likert scale assessed all items from 1 (very different from me) to 5 (very similar to me). According to Frederickson's self-others and sensibility-rationality dimensions, the 24 character strengths were divided into 4 elements: sensibility-self focus, sensibility-others focus, rationality-self focus, and rationality-others focus [14]. The component of sensibility-self focus includes curiosity, optimism, and enthusiasm. The element of sensibility-others focus on kindness, love, social intelligence, teamwork, leadership, forgiveness, appreciation of beauty and excellence, gratitude, humor, and purpose. The element of rationality-self focus includes bravery, perseverance, self-control, creativity, love of learning, open-mindedness, and perspective. The element of rationality-others focus has integrity, fairness, humility, and prudence. In this study, Cronbach's α was 0.843.

The work engagement scale was developed by Schaufeli et al. [19], translated and revised into a Chinese version by Zhang and Gan [20]. The instrument aimed to evaluate the work engagement. The scale consists of 15 items, and all the items were scored based on a 7-point Likert scale from 0 (never happened) to 6 (it happens every day). The scale's total score ranged 0–90, and the higher the score, the higher the level of work engagement. It consists of 3 dimensions, including dedication, vigor, and absorption, e.g., at work, "I feel like I'm bursting with energy." The scale has been proved to have good reliability and validity in nurses. In this study, Cronbach's α was 0.949. The vigor, dedication, and absorption of Cronbach's α were 0.895, 0.844, and 0.825, respectively.

The subjective well-being scale aimed to measure the degree of well-being that individuals currently experience, including the overall emotional index scale and life satisfaction questionnaire [21]. The entire affective index scale consists of 8 items, and the life satisfaction questionnaire consists of 1 item, e.g., "How satisfied are you with your life in general." It has been found reliable and valid [22]. The scale scored all items based on a 7-point Likert, and the higher the score, the higher

the level of subjective well-being. In the present study, Cronbach's α was 0.890, and the entire affective index scale's Cronbach's α was 0.881.

Statistics
The data were analyzed by SPSS v. 24.0 for Windows (SPSS Inc., Chicago, USA). The data was not normally distributed, so the variables were reported as median (interquartile range). This study used the Kruskal-Wallis test to analyze the distributions of well-being in categorical demographic characteristics. The relationship between well-being, work engagement, and the Spearman correlation tested character strengths. The study used model 4 of Hayes's PROCESS macro and bootstrap method to examine the mediating role of work engagement in the relationship between 4 elements of character strength and well-being [23]. At first, the study defined 4 elements of character strengths as the independent variable (X) in turn, using subjective well-being as the dependent variable (Y). Then, it examined whether the indirect influence of the 4 elements of character strengths on subjective well-being (a × b) was significant; if the 95% confidence interval (CI) doesn't include 0, it indicates a mediation path; otherwise, the mediation path is non-existent. Lastly, the study examined whether the direct influence of X on Y (c′) was statistically significant; if the 95% confidence interval does not include 0, it indicates a complete mediation; if not, it means there is a partial mediation [15].

Ethical aspects
The Ethics Committee of Anhui Medical University authorized the study (No. 201701-1). All the observed subjects were strictly voluntary.

RESULTS

Characteristics of the participants
In all, the study collected 415 valid questionnaires. Table 1 shows subjective well-being scores of different sociodemographic characteristics. Most of the nurses (97.1%) were female, and 69.6% were married; half were <30 years old, almost 30.6% nurses were working in the medicine department, and 93.5% of nurses had a monthly income >RMB 3000. More than half of nurses had undergraduate or above, 77.8% had temporary employment status, and 87.5% worked in a tertiary hospital. From Table 1, there was a significant difference in subjective well-being between

males and females, and women's subjective well-being score was higher. Moreover, there was a significant difference in subjective well-being scores among different working years, mainly working <5 years and >21 years.

Correlations between study variables
The study found that the 4 elements of character strengths and the work engagement score positively correlated with subjective well-being (r = 0.256–0.522, each p < 0.01). In addition, the 4 elements of character strengths were positively related to work engagement (r = 0.206–0.427, each p < 0.01). Table 2 shows the correlations.

Testing for the mediator
Mediation analyses were used to test work engagement as a mediator role in the relationship between character strengths and subjective well-being. The authors considered character strengths (including sensibility-self focus, sensibility-others focus, rationality-self focus, and rationality-others focus) as the predictor variable, work engagement as a mediator role, years as a nurse, gender as covariance variables, and subjective well-being as the outcome variable. The research findings suggest that both the 95% CI in the indirect effect and the direct effect did not include 0, which means that work engagement played a partial mediating role between the 4 elements of character strengths and subjective well-being (Table 3). This study constructed the mediating models from these results in Figure 1.

DISCUSSION
With the rise of positive psychology, nurses' subjective well-being has drawn increasing attention in nursing and psychology. Nurses' subjective well-being was critical to improving the quality of nursing service and job satisfaction [24]. The study aimed to explore the correlation between character strengths, work engagement, and subjective well-being in nurses. The results indicated positive relationships among 4 elements of character strengths, work engagement, and subjective well-being. Work engagement plays a mediator role between the 4 elements of character strengths and subjective well-being. These results confirmed the research hypothesis.

The study showed that the subjective well-being of registered nurses in China was only moderate, which

Table 1. Subjective well-being scores of different sociodemographic characteristics among Chinese registered nurses between 2017 and 2018

Variable	Participants (N = 415) [n (%)]	Subjective well-being score			
		Me (IQR)	χ^2	p	Z
Age			5.332	0.070	
≤30 years	233 (56.1)	9.65 (8.40–11.25)			
31–40 years	140 (33.7)	9.50 (8.40–11.79)			
≥41 years	42 (10.1)	10.93 (8.40–12.23)			
Gender				0.032	−2.141
male	12 (2.9)	8.24 (7.66–10.75)			
female	403 (97.1)	9.78 (8.40–11.85)			
Work department			4.506	0.720	
medicine	127 (30.6)	9.53 (8.34–11.66)			
surgery	77 (18.6)	9.50 (8.40–11.48)			
pediatrics	38 (9.2)	10.05 (8.40–12.35)			
emergency	9 (2.2)	10.13 (8.65–10.50)			
obstetrics and gynecology	15 (3.6)	10.00 (8.03–10.44)			
intensive care unit	37 (8.9)	9.15 (8.40–10.75)			
operation room	50 (12.0)	9.30 (8.40–11.98)			
others	62 (14.9)	10.69 (8.40–12.48)			
Education				0.368	−0.900
junior college or under	129 (31.1)	9.88 (8.40–11.98)			
undergraduate or above	286 (68.9)	9.75 (8.40–11.48)			
Marital status			0.033	0.983	
single	124 (29.9)	9.70 (8.40–11.66)			
married	289 (69.6)	9.78 (8.40–11.73)			
divorced	2 (0.5)	9.39 (8.53–10.25)			
Monthly income			5.160	0.076	
≤RMB 3000 (≤USD 437)	27 (6.5)	11.85 (8.70–12.96)			
RMB 3001–5000 (USD 437.4–728)	191 (46.0)	9.40 (8.40–11.00)			
>RMB 5000 (>USD 728)	197 (47.5)	10.13 (8.40–11.73)			
Positional rank			4.417	0.220	
nurse	119 (28.7)	9.88 (8.40–12.03)			
nurse practitioner	180 (43.4)	9.28 (8.40–11.19)			
nurse-in-charge	106 (25.5)	10.19 (8.40–11.85)			
associate professor of nursing or above	10 (2.4)	11.11 (8.40–11.60)			
Capability grade			0.768	0.943	
1	96 (23.1)	10.06 (8.40–12.10)			
2	117 (28.2)	9.65 (8.40–10.88)			
3	122 (29.4)	9.65 (8.40–12.23)			
4	67 (16.1)	9.88 (8.40–11.66)			
5	13 (3.1)	8.40 (8.40–11.23)			

Table 1. Subjective well-being scores of different sociodemographic characteristics among Chinese registered nurses between 2017 to 2018 – cont.

Variable	Participants (N = 415) [n (%)]	Subjective well-being score			
		Me (IQR)	χ^2	p	Z
Employment status				0.967	−0.042
permanent	92 (22.2)	10.00 (8.40–11.54)			
temporary	323 (77.8)	9.65 (8.40–11.79)			
Hospital level			2.207	0.332	
primary	3 (7.2)	9.38 (8.76–10.24)			
secondary	49 (11.8)	10.50 (8.40–12.48)			
tertiary	363 (87.5)	9.65 (8.40–11.48)			
Nurse seniority			8.608	0.035	
≤5 years	174 (41.9)	10.00 (8.40–11.85)			
6–10 years	112 (27.0)	8.96 (8.36–10.93)			
11–20 years	79 (19.0)	9.78 (8.40–11.48)			
≥21 years	50 (12.0)	10.69 (8.40–12.23)			
Night shift work distribution			2.408	0.492	
0 days/month	46 (11.1)	10.50 (8.40–12.23)			
1–4 days/month	191 (46.0)	10.00 (8.40–12.03)			
5–9 days/month	156 (37.6)	9.44 (8.40–10.80)			
≥10 days/month	22 (5.3)	9.64 (8.15–11.48)			
Having children				0.593	−0.534
no	257 (61.9)	9.88 (8.40–11.85)			
yes	158 (38.1)	9.63 (8.40–11.38)			

The exchange rate date was August 31, 2020.

Table 2. Correlation analysis of subjective well-being with character strength and work engagement among Chinese registered nurses between 2017 and 2018

Variable	Correlation						Me (IQR)
	sensibility-self focus	sensibility-others focus	rationality-self focus	rationality-others focus	work engagement	subjective well-being	
Sensibility-self focus	1	–	–	–	–	–	6.67 (6.0–7.33)
Sensibility-others focus	0.666*	1	–	–	–	–	6.60 (6.10–7.10)
Rationality-self focus	0.604*	0.615*	1	–	–	–	6.43 (6.0–6.86)
Rationality-others focus	0.379*	0.367*	0.402*	1	–	–	7.00 (6.50–7.50)
Work engagement	0.427*	0.425*	0.386*	0.206*	1	–	30 (16.0–50.0)
Subjective well-being	0.451*	0.522*	0.416*	0.256*	0.364*	1	9.75 (8.40–11.73)

* It showed that the correlation between variables was statistically significant (p < 0.01).

is consistent with previous studies [22]. Female nurses' subjective well-being was better than that of male nurses, and this may be related to the deviation caused by only 12 male nurses in the sample. On the other hand, in China, a perception among the general public that men should take more responsibility than women could also influence male nurses' subjective well-being. The result also shows that nurses with seniority ≥21 years have higher subjective well-being. It may be related to senior nurses having sufficient

Table 3. Mediating model and the mediation effect of work engagement between character strengths and subjective well-being among Chinese registered nurses between 2017 and 2018

Variable	Effect	SE	t	p	95% CI
Sensibility-self focus effect of X on Y					
indirect (a × b)	0.2382	0.0589	–	–	0.1263–0.3576
direct (c′)	0.8547	0.1121	7.6261	0.0000	0.6344–1.0750
total	1.0930	0.1025	10.6639	0.0000	0.8915–1.2944
Rationality-self focus effect of X on Y					
indirect (a × b)	0.3609	0.0822	–	–	0.2098–0.5326
direct (c′)	1.0978	0.1616	6.7937	0.0000	0.7802–1.4155
total	1.4587	0.1522	9.5841	0.0000	1.1595–1.7579
Rationality-others focus					
indirect (a × b)	0.1940	0.0554	–	–	0.0991–0.3176
direct (c′)	0.4721	0.1256	3.7599	0.0002	0.2253–0.7189
total	0.6660	0.1317	5.0589	0.0000	0.4072–0.9248
Sensibility-others focus					
indirect (a × b)	0.2540	0.0736	–	–	0.1222–0.4095
direct (c′)	1.4235	0.1401	10.1579	0.0000	1.1481–1.6990
total	1.6776	0.1282	13.0808	0.0000	1.4255–1.9297

work experience, a good sense of control over their work, a higher salary, and a higher sense of professional value.

Correlation analysis demonstrated that subjective well-being was positively related to character strengths and work engagement, consistent with several previous studies [5,17,25]. Results were also compatible with the job demands-resources model. According to the job demands-resources model, character strengths as personal resources in the working environment may positively impact job retention and work engagement [26]. Relevant data indicated that work engagement affects subjective well-being [27]. The study demonstrated that nursing managers should consider the significance of character strengths and excavate nurses' potential superiority characters, stimulating their work engagement and further improving subjective well-being.

The research revealed that work engagement partially mediated the relationship between character strengths and subjective well-being. It noted that character strengths affect subjective well-being, directly and indirectly, affect it through work engagement. Character strengths are potential personal resources for improving subjective well-being [3]. There are
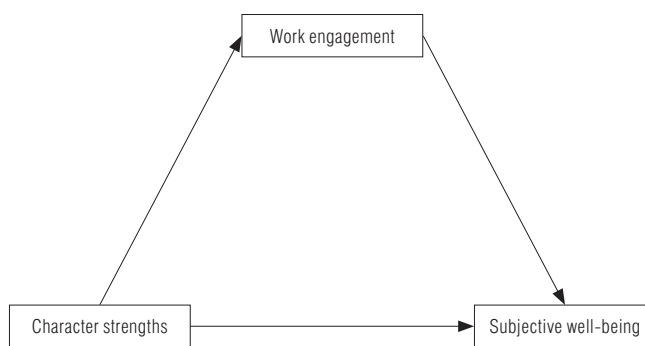

Figure 1. Work engagement as a mediator in the relationship between character strengths and subjective well-being

4 elements of character strengths. The result proved that nurses' sensibility-self focus, sensibility-others focus, rationality-self focus, and rationality-others focus could promote work engagement and stimulate subjective well-being. Previous studies confirmed that character strengths such as "teamwork" and "enthusiasm" were the main predictors of job-related performance, job satisfaction, and well-being in the workplace [28,29]. Evidence shows that character strengths, a good and valued personality trait, could effectively enhance work engagement [30] and predict job

performance [31]. As a result, it is paramount to excavate the potential benefits of character strengths among nurses. In addition, the study confirmed that work engagement plays a critical mediator role between character strengths and subjective well-being. Hence, enhancing nurses' awareness of character strengths and encouraging managers to incorporate character strengths into training courses is an effective strategy to improve nurses' work engagement and subjective well-being. Given that, these results were consistent with the job demands-resources model and further support it.

Compared with other occupational workers, nurses experience excessive workload and experience higher burnout [30]. Consequently, improving the subjective well-being of nurses and reducing the turnover rate of nurses need constant attention by nursing managers. The results suggest that nursing managers should pay close attention to the importance of character strengths and promote nurses' character strengths in clinical work by increasing strengths-related individual-job fit. Nursing managers should provide strengths-based interventions to promote nurses' work engagement and subjective well-being, which is a promising strategy for the stability of the nursing team. For instance, nurses with sensibility-self focus display higher curiosity, optimism, and enthusiasm should be motivated to explore new nursing research areas and solve the difficulties in nursing practice, which can trigger work engagement and well-being. Additionally, changing the working environment and conditions stimulate nurses to cultivate and use their character strengths or set up material or spiritual rewards, such as "the most beautiful soul award" and "the best innovative nurses," to improve nurses' cognition and behavior [29].

Several limitations are worth noting. First of all, the research obtained the data by the convenient sampling of the National Nurse Learning Platform, which could affect the extrapolation of the results. Secondly, the questionnaires employed nurses' self-report, which may bias the results. Moreover, the study was a cross-sectional survey and can't prove the causal relationship between variables. Future studies could carry out longitudinal designs to clarify the causal relationship between variables. In addition, there may be other mediating variables between character strengths and subjective well-being that scholars can explore in the future. Given these limitations, future studies should carry out multi-center and more extensive sample research to further verify the relationships between character strengths, work engagement, and subjective well-being.

CONCLUSIONS

The study verified nurses' subjective well-being was positively related to work engagement, and character strengths and work engagement played a mediator role in this relationship. Accordingly, strengths-based intervention is a promising strategy to boost nurses' work engagement and improve subjective well-being in the future.

REFERENCES

1. Tonkin K, Malinen S, Nswall K, Kuntz JC. Building employee resilience through wellbeing in organizations. Hum Resour Dev Q. 2018;29(1):107–124. https://doi.org/10.1002/hrdq.21306.

2. Costantini A, Ceschi A, Viragos A, Paola FD, Sartori R. The role of a new strength-based intervention on organisation-based self-esteem and work engagement: A three-wave intervention study. J Workplace Learn. 2019;31:194–206. https://doi.org/10.1108/JWL-07-2018-0091.

3. Hausler M, Strecker C, Huber A, Brenner M, Höge T, Höfer S. Associations between the Application of Signature Character Strengths, Health and Well-being of Health Professionals. Front Psychol. 2017;8:1–11. https://doi.org/10.3389/fpsyg.2017.01307.

4. Song Y, Xiong H, Zhang C. Influence of social comparison on subjective well-being of nurses. Chin Occup Med. 2018;45(5):591–594,600. https://doi.org/10.11763/j.issn.2095-2619.2018.05.012. Chinese.

5. Hausler M, Strecker C, Huber A, Brenner M, Höge T, Höfer S. Distinguishing Relational Aspects of Character Strengths with Subjective and Psychological Well-being. Front Psychol. 2017;8:1159. https://doi.org/10.3389/fpsyg.2017.01159.

6. Diener E, Oishi S, Tay L. Advances in subjective well-being research. Nat Hum Behav. 2018;2(4):253–260. https://doi.org/10.1038/s41562-018-0307-6.

7. Atanes ACM, Andreoni S, Hirayama MS, Montero-Marin J, Barros VV, Ronzani TM, et al. Mindfulness, perceived stress, and subjective well-being: a correlational study

in primary care health professionals. BMC Complem Altern M. 2015;15(1):303. https://doi.org/10.1186/s12906-015-0823-0.

8. Oates J. What keeps nurses happy? Implications for workforce well-being strategies. Nurs Manag (Harrow). 2018; 25(1):34–41. https://doi.org/10.7748/nm.2018.e1643.

9. Kim HR, Kim SM, Hong JS, Han DH, Yoo SK, Min KJ, et al. Character strengths as protective factors against depression and suicidality among male and female employees. BMC Public Health. 2018;18(1):1084. https://doi.org/10.1186/s12889-018-5997-1.

10. Huber A, Strecker C, Hausler M, Kachel TA, Hfer S. Possession and Applicability of Signature Character Strengths: What Is Essential for Well-Being, Work Engagement, and Burnout? Appl Res Qual Life. 2019;15(2):415–436. https://doi.org/10.1007/s11482-018-9699-8.

11. Meyers MC, Woerkom MV. Effects of a Strengths Intervention on General and Work-Related Well-Being: The Mediating Role of Positive Affect. J Happiness Stud. 2016;18(3):1–19. https://doi.org/10.1007/s10902-016-9745-x.

12. Martinez-Marti ML, Ruch W. Character strengths and well-being across the life span: data from a representative sample of German-speaking adults living in Switzerland. Front Psychol. 2014;5:1253. https://doi.org/10.3389/fpsyg.2014.01253.

13. Peterson C, Seligman ME. Character strengths and virtues: A handbook and classification. New York: Oxford University Press; 2004.

14. Carr A, Ding D. Positive Psychology: The Science of Happiness and Human Advantage. Beijing: China Light Industry Press; 2013.

15. Wang YX, Yang YJ, Wang Y, Su D, Li SW, Zhang T, et al. The mediating role of inclusive leadership: Work engagement and innovative behaviour among Chinese head nurses. J Nurs Manag. 2019;27(4):688–696. https://doi.org/10.1111/jonm.12754.

16. Chang F, Wang Y. Relation of virtues to work engagement and subjective well-being in employees. Chin Mental Health J. 2017;31(11):890–895. https://doi.org/10.3969/j.issn.1000-6729.2017.11.011. Chinese.

17. Zhang Y, Chen M. Character Strengths, Strengths Use, Future Self-Continuity and Subjective Well-Being Among Chinese University Students. Front Psychol. 2018;9:1040. https://doi.org/10.3389/fpsyg.2018.01040.

18. Wang YX, Li HP, Ding XT, Xiao T, Jiang XX. The relationship of character strengths, perceived social support to empathy of nursing undergraduates in a university of Hefei. Modern Prevent Med. 2018;45(12):81–84. https://doi.org/CNKI:SUN:XDYF.0.2018-12-020. Chinese.

19. Schaufeli WB, Salanova M, Vicente González-romá, Bakker AB. The Measurement of Engagement and Burnout: A Two Sample Confirmatory Factor Analytic Approach. J Happiness Stud. 2002;3(1):71–92.

20. Zhang YW, Gan YQ. The Chinese Version of Utrecht Work Engagement Scale: An Examination of Reliability and Validity. Chin J Clin Psychol. 2005;13(3):268–270. http://doi.org/10.16128/j.cnki.1005-3611.2005.03.005. Chinese.

21. Campbell A. Subjective Measures of Well-Being. Am Psychol. 1976;31(2):117–124. https://doi.org/10.1037/0003-066X.31.2.117.

22. Ma L, Li HP, Hu Y. Subjective well-being and its influencing factors among nurses. Chin J Public Health. 2014; 30(2):215–217. https://doi.org/10.11847/zgggws2014-30-02-27. Chinese.

23. Zhao X, Shi C. The Relationship Between Regulatory Emotional Self-Efficacy and Core Self-Evaluation of College Students: The Mediation Effects of Suicidal Attitude. Front Psychol. 2018;9:59. https://doi.org/10.3389/fpsyg.2018.00598.

24. Pahlevan SS, Ahadzadeh AS, Sharif NH. Mediating role of psychological well-being in the relationship between organizational support and nurses' outcomes: A cross-sectional study. J Adv Nurs. 2018;74(4):887–99. https://doi.org/10.1111/jan.13501.

25. Wang Y, Liang C, University JM. Relationship among character strength, life stress events and emotional well-being in nursing staffs. Chin Occup Med. 2017;44(5):610–614. https://doi.org/10.11763/j.issn.2095-2619.2017.05.017. Chinese.

26. Bakker AB, Demerouti E. The Job Demands-Resources model: state of the art. J Managerial Psychol. 2007;22(3): 309–328. https://doi.org/10.1108/02683940710733115.

27. Caesens G, Stinglhamber F, Luypaert G. The impact of work engagement and workaholism on well-being. Career Dev Int. 2014;19(7):813–35. https://doi.org/10.1108/cdi-09-2013-0114.

28. Nielsen K, Nielsen MB, Ogbonnaya C, Kansala M, Saari E, Isaksson K. Workplace resources to improve both employee well-being and performance: A systematic review and meta-analysis. Work Stress. 2017; 31(11):1–20. https://doi.org/10.1080/02678373.2017.1304463.

29. Liu ML, Tian X, Deng XD. Character advantage and its influence results. Advances in Psychological Science. 2018; 26(12):2180–2191. https://doi.org/10.3724/SP.J.1042.2018.02180. Chinese.

30. Kato Y, Chiba R, Shimazu A. Work Engagement and the Validity of Job Demands-Resources Model Among Nurses in Japan: A Literature Review. Workplace Health

Saf. 2021;69(7):323–342. https://doi.org/10.1177/21650799211002471.

31. Harzer C, Ruch W. The Role of Character Strengths for Task Performance, Job Dedication, Interpersonal Facilita-tion, and Organizational Support. Human Performance. 2014;27(3):183–205. https://doi.org/10.1080/08959285.2014.913592.