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Adversity quotient and professional quality of life among nurses in two public hospitals in southern Vietnam: A cross-sectional study

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ABSTRACT

Objectives: *To assess and identify factors associated with adversity quotient and professional quality of life among nurses in two public hospitals in Southern Vietnam.* ***Methods:*** *A cross-sectional study was conducted with 376 nurses. Data were collected using the Vietnamese versions of the adversity personal quotient and professional quality of life scales. Statistical analyses included Chi-square tests and Spearman's correlation, with significance at $p < 0.05$.* ***Result:*** *The mean adversity quotient score was 3.11 (± 0.77) out of 5, with subdimension scores for control, ownership, reach, and endurance at 3.08 (± 0.87), 3.10 (± 0.85), 3.06 (± 0.97), and 3.21 (± 0.93) out of 5, respectively. Nurses' professional quality of life scores averaged 3.69 (± 0.71) out of 5 for compassion satisfaction, 2.65 (± 0.55) out of 5 for burnout, and 2.84 (± 0.69) out of 5 for secondary traumatic stress. Age and years of working experience positively correlated with adversity quotient (rho = 0.409, 0.329, $p < 0.001$) and compassion satisfaction (rho = 0.276, 0.234, $p < 0.001$). Marital status was significantly associated with adversity quotient ($\chi2 = 37.4$, $p < 0.001$) and compassion satisfaction ($\chi2 = 26.3$, $p < 0.001$). Additionally, the adversity quotient positively correlated with compassion satisfaction (rho = 0.419, $p < 0.001$). Conversely, age, years of working experience, and adversity quotient were negatively correlated with burnout (rho = -0.386, -0.34, -0.276, $p < 0.001$) and secondary traumatic stress (rho = -0.327, -0.286, -0.188, $p < 0.001$). Burnout was linked to sex ($\chi2 = 8.73$, $p = 0.033$) and marital status ($\chi2 = 26.7$, $p < 0.001$), while secondary traumatic stress was associated with marital status ($\chi2 = 13.9$, $p = 0.008$).* ***Conclusion:*** *Nurses demonstrated moderate levels of adversity quotient and professional quality of life. The results revealed significant associations between adversity quotient and age, marital status, and years of experience. Additionally, age, sex, marital status, experience, and adversity quotient were linked to at least one professional quality of life component, highlighting the need for targeted interventions to enhance and improve these metrics.*

Keywords*: Nursing, adversity quotient, professional quality of life*

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INTRODUCTION

Nursing is a demanding profession, with nurses making up about 50-60% of hospital staff and providing continuous, compassionate care to patients [1]. Despite their crucial role, nurses face numerous challenges, such as high job demands and professional burnout [2,3]. A 2023 survey found that only 15% of hospital-employed nurses intended to stay in their current roles, with many considering a shift in workplace[4]. The World Health Organization also forecasts a global shortage of 18 million healthcare workers by 2030, with the greatest impact on low-income countries[5]. In Vietnam, statistics from the Ministry of Health indicate that between 2021 and 2030, the country will need an additional 304,200 nurses. Meanwhile, the alarming rate of nurse resignations underscores the urgent need to explore factors such as resilience and professional quality of life [6, 7].

The Adversity Quotient (AQ®), introduced by Stoltz (1997), measures an individual's ability to overcome adversity, its four core dimensions are control, ownership, reach, and endurance. Understanding how an individual responds to challenges could help predict their mental resilience, endurance, persistence, mindset, and adaptability to environmental changes. Nursing is a profession marked by constant challenges and stressors, requiring nurses to exhibit resilience and adaptability in the face of adversity [8, 9], particularly in the face of challenges like the COVID-19 pandemic [10]. AQ® includes key competencies such as adaptability, problem-solving, and emotional intelligence, which help nurses manage stress and improve their performance [11, 12]. Factors like age, sex, and years of experience can influence AQ®. Older employees with more experience tend to have higher AQ® due to better resilience and coping abilities, females scored higher than males in the ownership dimension[10,13]. However, other studies indicate that AQ® remains stable across age and sex[14,15]. Nevertheless, years of experience significantly correlate with AQ®, with more experienced nurses demonstrating better resilience and control over adversity [14].

In addition to AQ®, Professional Quality of Life (ProQOL) provides a broader understanding of nurses' well-being, measuring Compassion Satisfaction (CS), Burnout (BO), and Secondary Traumatic Stress (STS) [16]. ProQOL is shaped by factors such as age, sex, marital status, years of experience, and work environment[2, 17]. Older nurses and females tend to report higher CS and lower BO and STS [18, 19, 20], while married nurses experience higher CS and lower BO [19, 20]. Nurses with more years of experience report higher CS and lower BO, owing to better coping mechanisms and enhanced job satisfaction [19, 20]. Furthermore, higher AQ® is associated with lower stress, BO, and dissatisfaction, thus improving ProQOL [21].

The nursing profession in Vietnam shares many similarities with nursing in other developing countries but faces heightened workload pressures due to additional non-clinical responsibilities alongside increasing demands for nursing care. However, limited research exists on AQ® and ProQOL among nurses in Vietnam. Recent studies indicated that nurses' ProQOL remains at a moderate level [22, 23]. Therefore, this study aims to assess and identify factors influencing AQ® and ProQOL among nurses, particularly regarding their resilience and job satisfaction. By understanding these factors, nurse managers can develop targeted interventions to enhance nurses'

adaptability and coping mechanisms in response to stressors within healthcare environments.

METHODS

Participants: Nurses with at least 12 months of work experience in two selected public hospitals in southern Vietnam from August to September 2024.

Inclusion Criteria: Nurses who were directly participated in patient care, with a minimum of one year of professional experience.

Exclusion Criteria: Nurses who were unavailable during the data collection phase were excluded from the study (e.g., due to bereavement, illness, education, maternity)

Study Design: A cross-sectional analytical study.

Sample size and sampling technique: A sample of 376 nurses were working in two selected public hospitals in southern Vietnam by G*Power for 0.9 power to detect an effect size of 0.5 at 0.05 level of significance. Stratified random sampling was used to select nurses according to clinical ward proportions, with simple random sampling within each ward. The sampling process consists of two steps:

1. Obtain the nurse list: Contact the hospital's head nurse to request a list of eligible nurses working in clinical wards.

2. Random selection: Use software to randomly select qualified nurses from each ward's list, following their sequential order, until the target sample size is reached.

Data collection and instrument: The data collection process involves utilizing a self-administered structured survey questionnaire. Participants were asked to complete the questionnaires, which required approximately 20 minutes, and return them directly to the data collector.

Data for the study will be gathered by using a three-part questionnaire.

Part I: The demographic profiles will be used to establish the characteristics of the nursing respondents including age, sex, marital status, clinical ward and years of working experiencs.

Part II: The study used the Vietnamese-adapted Adversity Response Profile (ARP®) Quick Take 1.0 to assess nurses' AQ® a self-rating questionnaire that evaluates coping responses to challenges [9, 12]. The ARP® consists of 20 hypothetical scenarios rated on a 5-point Likert scale across four dimensions: control (items 1,7,13,15,17), ownership (items 2,6,11,16,18), reach (items 3,5,9,12,20), and endurance (items 4,8,10,14,19). Each dimension is scored individually, resulting in a total score that can range from 5 to 20. Mean scores are interpreted as follows: 4.21 – 5.00 is Very High; 3.41 – 4.20 is High; 2.61 – 3.40 is Moderate; 1.81 – 2.60 is Low; 1.00 – 1.80 is Very Low. A pilot test conducted on 30 nurses demonstrated strong reliability, with a Cronbach's alpha of 0.95.

Part III: The Professional Quality of Life scale comprises 30 items, and measures three aspects: compassion satisfaction (items 3, 6, 12, 16, 18, 20, 22, 24, 27, 30), burnout (items 1, 4, 8, 10, 15, 17, 19, 21, 26, 29), and secondary traumatic stress (items 2, 5, 7, 9, 11, 13, 14, 23, 25, 28) [16]. Respondents rated how often they experienced each item in the past 30 days on a 5-point scale from "Never" to "Very Often. Burnout scores for five items were reversed per instructions. Each aspect is scored individually, resulting in a total score that can ranging from 10 to 50. Mean scores are interpreted as follows:

4.21 – 5.00 is Very Often; 3.41 – 4.20 is Often; 2.61 – 3.40 is Sometimes; 1.81 – 2.60 is Rarely; 1.00 – 1.80 is Never. In this study, the researcher utilized a Vietnamese-adapted scale validated by Tran et al with internal consistency reliability calculated at baseline and after two weeks was high for compassion satisfaction (Cronbach's alpha = 0.91 and 0.90), burnout (alpha = 0.86 and 0.88), and secondary traumatic stress (alpha = 0.86 and 0.85) [23].

Data analysis: Data were entered and analyzed using Jamovi software 2.5.3 version. Descriptive statistics were used to summarize the data, with frequencies and percentages reported for qualitative variables, and meas and standard deviatios (Mean ± SD) for quantitative variables. The chi-square test and Spearman's correlation coefficient were used to examine the relationships between demographic profiled AQ® and ProQOL among nurses.

Ethical considerations: This study adhered to the ethical principles outlined in the Declaration of Helsinki and was approved by the Ethical Review Board at Trinity University of Asia before data gathering (Decision No. 2024-2nd CNU-Nguyen-v2, August 09, 2024).

Written informed consent was obtained by explaining the research purpose, risks, and voluntary nature of participation, allowing withdrawal without any repercussions. Confidentiality was maintained through anonymous data handling, and code numbers replaced names to secure participants' identities, especially for sensitive questions. No physical or psychological harm was imposed, as self-report questionnaires posed minimal risk. Fair and unbiased treatment was ensured by selecting participants through random sampling. Cultural sensitivity was respected, upholding participants' customs throughout.

RESULTS

Demographic profile and occupational characteristics

Table 1. Demographic profile among nurses (n = 376)

Variables		Frequency (n)	Percentage (%)
Age (Mean ± SD: 35.3 ± 8.19)	≤ 30	114	30.3
	31 – 45	219	58.3
	> 45	43	11.4
Sex	Female	309	82.2
	Male	67	17.8
Marrital status	Married	266	72.1
	Others (single, divorse, etc.)	103	27.9

Variables		Frequency (n)	Percentage (%)
Clinical wards	Emergency	41	10.9
	General Surgery	96	25.5
	Internal Medicine	180	47.9
	Intensive Care Unit	59	17.7
Years of working experience (Mean ± SD: 11.5 ± 7.9)	≤ 10	199	52.9
	> 10	177	47.1
Total		**376**	**100**

Table 1 presents the demographic profile of the 376 nurses who participated in the study at two public hospitals in southern Vietnam. The age distribution shows that the majority of nurses were between 31 and 45 years old (58.3%). Additionally, 82.2% of the participants were female, and 72.1% were married. Most nurses worked in internal medicine (47.9%), and 47.1% had more than 10 years of work experience.

The adversity quotient and professional quality of life among the nurse respondents

Table 2. The adversity quotient, the professional quality of life among nurses

Variables	Mean	SD	Verbal Interpretation
The adversity quotient			
Control	3.08	0.87	Moderate
Ownership	3.10	0.85	Moderate
Reach	3.06	0.97	Moderate
Endurance	3.21	0.93	Moderate
AQ® Score Total	**3.11**	**0.77**	Moderate
The professional quality of life			
Compassion Satisfaction	3.69	0.71	Often
Burnout	2.65	0.55	Sometimes
Secondary Traumatic Stress	2.84	0.69	Sometimes

The study, conducted among 376 nurses from two selected hospitals in southern Vietnam, revealed that nurses demonstrated a moderate level of AQ®, with an average score of 3.11 ± 0.77 out of 5. The four dimensions of AQ®, including Control, Ownership, Reach, and Endurance, also showed moderate levels, with mean scores of 3.08 ± 0.87, 3.10 ± 0.85, 3.06 ± 0.97, and 3.21 ± 0.93 out of 5, respectively. Additionally, the findings indicated that nurses' professional quality of life was characterized by Compassion Satisfaction at the "often" level, with a mean score of 3.69±0.71 out of 5. In contrast, Burnout and Secondary Traumatic Stress were reported at the "sometimes" level, with mean scores of 2.65 ± 0.55 and 2.84 ± 0.69 out of 5, respectively.

Factors associated with adversity quotient and professional quality of life among the nurse respondents: The chi-square test and correlation analysis results showed that age, marital status, and years of working experience were significantly associated with AQ® ($p < 0.05$). In contrast, sex and clinical ward were not associated with AQ® ($p > 0.05$). Moreover, age, sex, marital status, years of working experience, and AQ® were each significantly linked to at least one component of nurses' ProQOL ($p < 0.05$). However, no significant relationship was found between the clinical ward and any component of ProQOL ($p > 0.05$).

Table 3. Chi-square test and Correlational Analysis on the significant relationship between the self-assessed adversity quotient, professional quality of life and demographic profiles of the nurse respondents

Variables		AQ®	Compassion Satisfaction	Burnout	Secondary Traumatic Stress
Age	Spearman's rho	0.409	0.276	-0.386	-0.327
	p-value	**< 0.001**	**< 0.001**	**< 0.001**	**< 0.001**
Sex	χ^2 test	8.36	5.46	8.73	8.3
	p-value	0.079	0.141	**0.033**	0.081
Marital status	χ^2 test	37.4	26.3	26.7	13.9
	p-value	**< 0.001**	**< 0.001**	**< 0.001**	**0.008**
Clinical ward	χ^2 test	13.0	12.4	9.02	6.06
	p-value	0.368	0.19	0.425	0.913
Years of working experience	Spearman's rho	0.329	0.234	-0.34	-0.286
	p-value	**< 0.001**	**< 0.001**	**< 0.001**	**< 0.001**
AQ®	Spearman's rho	-	0.419	-0.276	-0.188
	p-value	-	**< 0.001**	**< 0.001**	**< 0.001**

Legend: | Spearman's rho |: 0-0.19: Negligible or very weak; 0.2-0.39: Weak; 0.4-0.69: Moderate; 0.7-0.89: Strong; 0.9-1.0: Very strong

There was a positive correlation between age (rho = 0.409, p < 0.001) and years of working experience (rho = 0.329, p < 0.001) with nurses' AQ®. Marital status was significantly related to AQ® (χ^2 = 37.4, p < 0.001). A positive correlation was also found between age (rho = 0.276, p < 0.001), years of working experience (rho = 0.234, p < 0.001), and AQ® (rho = 0.419, p < 0.001) with nurses' CS. Marital status was significantly related to CS (χ^2 = 26.3, p < 0.001). Conversely, age (rho = -0.386, p < 0.001), years of working experience (rho = -0.34, p < 0.001), and AQ® (rho = -0.276, p < 0.001) were negatively correlated with BO. Sex (χ^2 = 8.73, p = 0.033) and marital status (χ^2 = 26.7, p < 0.001) were both significantly associated with BO. Similarly, age (rho = -0.327, p < 0.001), years of working experience (rho = -0.286, p < 0.001), and AQ® (rho = -0.188, p < 0.001) were negatively correlated with STS. Marital status was also significantly related to STS (χ^2 = 13.9, p = 0.008).

DISCUSSION

The adversity quotient and professional quality of life among the nurse respondents

***The adversity quotient among the nurse respondents*:** Nurses demonstrated a moderate overall AQ® with a total mean score of 3.11 (SD = 0.77). This reflects their ability to cope with challenges while highlighting areas for improvement. Key dimensions of AQ® as control (Mean = 3.08), ownership (Mean = 3.1), reach (Mean = 3.06), and endurance (Mean = 3.21) showed consistent moderate levels, suggesting resilience but also susceptibility to stress and external limitations. Cariño's study supports the findings of this research, showing that the results for control, ownership, endurance, and reach, were standardized to a 5-point scale with corresponding scores of 3.47, 3.45, 2.41, and 3.04, meaning it was average[10]. Stoltz (1997) emphasized that these traits influence outcomes in high-pressure environments, and moderate scores indicate a need for targeted interventions to boost problem-solving, accountability, and stress management [9]. The nurses' moderate AQ® level suggests that their responses and coping mechanisms in difficult situations are not entirely positive, which may impact their career retention decisions and overall retention rates. This finding aligns with AMN Healthcare (2023), which reported that only 15% of nurses expressed a desire to continue in their current roles, while 36% planned to seek employment elsewhere [4]. Similarly, statistics from the Vietnamese Ministry of Health (2022) indicated that from January 01, 2021, to June 30, 2022, 2,874 nurses resigned nationwide [7]. It could be observed that the demand for nursing in Vietnam continued to rise while nursing resignations were at an alarming level. This suggested that the moderate AQ® scores may reflect challenges such as job dissatisfaction and workplace stress, potentially influencing career intentions and retention rates among nurses. The research underscored that enhancing nurses' autonomy, governance involvement, and recovery strategies can improve their adaptability, job satisfaction, and patient care quality [3, 24, 25]. Implementing resilience training and robust organizational support systems is essential for sustaining high performance and mitigating BO risks [8, 21].

The professional quality of life among the nurse respondents: The study found a mean CS score of 3.69 (SD = 0.71), indicating that nurses generally experienced joy and fulfillment in their caregiving roles.

This aligns with research highlighting the importance of CS for job satisfaction and emotional well-being [26]. As a demanding profession requiring empathy and resilience, nursing benefits greatly from CS, which fosters purpose, optimism, and improved ProQOL [2, 16]. Moreover, CS acted as a buffer against work-related stress, strengthening nurses' resilience and psychological well-being [2].

The nurses had a mean BO score of 2.65 (SD = 0.55), indicating occasional symptoms of BO, consistent with previous studies [20, 23, 26]. While manageable, this score highlighted challenges that affected their quality of life. Factors like workload, emotional demands, and job stressors likely contributed to these symptoms [2, 20, 23]. In general, the nursing profession in Vietnam shared many of the same traits as that of nursing in other developing nations, while having a higher level of work overload because of having to take on many tasks outside of professional work, while the demand for nursing care was increasing rapidly. The healthcare system in Vietnam, especially in public hospitals, faces high patient-to-nurse ratios, limited resources, and long working hours, exacerbating burnout. The shortage of nursing staff, particularly in frontline hospitals, further heightened the risk of BO [6]. To address this, targeted interventions, including improved staffing, mental health support, and resilience training, are essential for mitigating burnout in Vietnam's healthcare system.

The nurses had a mean score of 2.84 (SD = 0.69) for STS, indicating occasional emotional strain from patient trauma. While this score suggested a capacity to cope with the emotional challenges of caring for trauma victims, it also highlighted a significant risk for emotional stress. These findings were consistent with previous studies [20, 23, 26]. Addressing STS and implementing effective coping strategies is crucial to protect nurses' mental health. Research has shown that unaddressed STS can lead to BO and reduced job satisfaction [23, 26].

Factors associated with the adversity quotient of the nurse respondents

The analysis demonstrated that age, marital status, and years of work experience were significantly associated with nurses' AQ®, whereas sex and clinical ward assignment showed no association.

A moderate positive correlation was found between age and AQ® (Spearman's rho = 0.409), suggesting that older nurses demonstrated greater resilience, aligning with Cariño (2023) who emphasized that experience builds coping mechanisms. However, this contrasts with Aguilar (2023) and Kumari & Sehgal (2022), who found no age-related AQ® changes [14, 15]. Marital status also significantly impacted AQ® ($p < 0.001$), with married nurses benefiting from familial support, enhancing resilience [8]. Lastly, years of experience were positively correlated with AQ® ($p < 0.001$), supporting studies by Han et al. (2022) and Saxena & Rathore (2024), indicating that experience strengthens coping skills, emotional regulation, and problem-solving abilities, essential components of AQ® [8, 21].

The findings underscored the importance of organizing experience-sharing sessions between nurses with more years of life and professional experience, married nurses, and their younger counterparts. These sessions provided less experienced nurses with essential skills and knowledge to enhance their AQ®, helping them overcome challenges and maintain commitment to their profession.

Factors associated with the professional quality of life of the nurse respondents

The findings indicated that age, sex, marital status, and years of working experience significantly influenced nurses' ProQOL, particularly in terms of CS, BO, and STS. In contrast, the clinical ward had no association with these variables.

Compassion Satisfaction: A weak positive correlation was found between age and nurses' CS (rho = 0.276, $p < 0.001$), indicating older nurses experienced slightly higher CS. This aligns with Alreshidi (2023), Kwak et al. (2020), and Wang et al. (2020), suggesting that experienced nurses derive greater satisfaction from patient care [18, 19, 20]. Tran et al. (2023) further highlighted that each additional year of age increased CS by 0.17 points [23]. Marital status was also significantly associated with CS ($\chi 2 = 26.3$, $p < 0.001$), with married nurses reporting higher CS, likely due to family support [8]. Years of working experience showed a weak positive relationship with CS (rho = 0.234, $p < 0.001$), reinforcing the idea that long-term experience fosters professional fulfillment and resilience [19, 20]. Lastly, AQ® was positively correlated with CS (rho = 0.419, $p < 0.001$), supporting Saxena & Rathore (2024), who found that higher AQ® was linked to better coping, well-being, and work effectiveness, leading to increased job satisfaction [21].

Burnout: A weak negative correlation was found between age and BO (rho = -0.386, $p < 0.001$), indicating that older nurses experienced lower BO. This aligns with Alreshidi (2023), Kwak et al. (2020), and Wang et al. (2020) [18, 19, 20], suggesting that older nurses develop better coping strategies over time [8, 23]. A significant association between sex and BO ($\chi^2 = 8.73$, $p = 0.033$) showed that male nurses were more prone to BO, possibly due to societal pressures and less effective stress management [27]. Marital status was also significantld associated with BO ($\chi^2 = 26.7$, $p < 0.001$), with married nurses reporting lower BO, supported by Wang et al. (2020) and Han et al. (2022), who found that family support reduces stress and BO [8, 20]. A weak negative correlation between years of working experience and BO (rho = -0.34, $p < 0.001$) indicated that more experienced nurses experienced lower BO, aligning with Alreshidi (2023), as they develop better coping mechanisms over time [18]. Lastly, a weak negative correlation between AQ® and BO (rho = -0.276, $p < 0.001$) showed that higher AQ® helped reduce BO, consistent with Saxena & Rathore (2024), who found that individuals with higher AQ® experience less stress and BO [21].

Secondary Traumatic Stress: A weak negative correlation was found between age and nurses' STS (rho = -0.327, $p < 0.001$), indicating that older nurses reported lower STS, likely due to greater emotional resilience and experience [8, 18]. Younger nurses, with less experience, may struggle more with patient trauma [23]. To address this, healthcare organizations should implement peer support networks to mentor younger staff. A significant relationship between marital status and STS was found ($\chi^2 = 13.9$, $p < 0.008$), with married nurses reporting lower STS, supported by Tran (2023) and Han et al. (2022), indicating that personal support systems help mitigate work-related stress [8, 23]. A weak negative correlation was also observed between years of working experience and STS (rho = -0.286, $p < 0.001$), with more experienced nurses showing greater emotional resilience, aligning with

Kwak et al. (2020) [19]. A very weak negative correlation was found between AQ® and STS (rho = -0.188, $p < 0.001$), suggesting AQ® had limited impact on STS levels. Saxena & Rathore (2024) found that high AQ® correlates with better health behaviors and emotional intelligence, improving responses to workplace adversities [21].

These results underscored the importance of personal and demographic factors in shaping the ProQOL among nurses. The development of targeted support programs focusing on younger, less experienced, and single nurses may improve overall job satisfaction and reduce BO and STS in the nursing workforce. Future interventions aimed at improving nurses' ProQOL should focus on enhancing their resilience and AQ®, particularly by cultivating endurance and control in challenging work environments.

Limitations: While this study offers valuable insights, it has limitations. It lacked focus groups and in-depth interviews to explore factors related to AQ® and ProQOL among nurses. Hospital selection was based on accessibility, with limited emphasis on high-stress departments. Future research should use larger, more diverse samples, adopt longitudinal designs, and prioritize high-pressure settings like emergency, intensive care tICU, and oncology. Qualitative methods could further deepen the understanding of contributing factors.

CONCLUSION

Nurses demonstrated moderate levels of AQ® and ProQOL. The results revealed significant associations between AQ® and age, marital status, and years of working experience. Additionally, age, sex, marital status, years of working experience, and AQ® were linked to at least one ProQOL component. These findings underscore the need for targeted intervention programs aimed at enhancing nurses' AQ® to improve their overall ProQOL.

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Declaration of Interest: The authors declare no conflict of interest.

REFERENCES

1. World Health Organization. State of the world's nursing 2020: investing in education, jobs and leadership. https://www.who.int/publications/i/item/9789240003279. 2020.

2. Sansó, N., Galiana, L., Oliver, A., Tomás-Salvá, M. & Vidal-Blanco, G. Predicting Professional Quality of Life and Life Satisfaction in Spanish Nurses: A Cross-Sectional Study. International Journal of Environmental Research and Public Health 17, 4366. 2020. doi: 10.3390/ijerph17124366.

3. Shdaifat, E., Al-Shdayfat, N. & Al-Ansari, N. Professional Quality of Life, Work-Related Stress, and Job Satisfaction among Nurses in Saudi Arabia: A Structural Equation Modelling Approach. J Environ Public Health 2023, 2063212. 2023. doi: 10.1155/2023/2063212.

4. AMN Healthcare. Survey of Registered Nurses. https://www.amnhealthcare.com/amn-insights/nursing/surveys/2023/ (2023).

5. Boniol, M. et al. Gender equity in the health workforce: analysis of 104 countries. 2019.

6. Ministry of Health [Ministry of Health]. Summary of medical facility network planning for the period 2021-2030, vision to 2050 [Summary of medical facility network planning for the period 2021-2030, vision to 2050]. Document for consultation with Ministries and Sectors [Document for consultation with Ministries and Sectors]. 2022.

7. Ministry of Health Portal [Electronic information portal of the Ministry of Health]. In 18 months, 9,680 healthcare workers resigned or left their jobs: The Ministry of Health identified four main reasons [In 18 months, 9,680 medical staff resigned or quit their jobs: The Ministry of Health pointed out 4 main reasons]. https://moh.gov.vn/tin-tong-hop/-/asset_publisher/k206Q9qkZOqn/content/18-thang-co-9-680-nhan-vien-y-te-xin-thoi-viec-bo-viec-bo-y-te-chi-ra-4-nguyen-nhan-chinh. 2022.

8. Han, P. et al. Experience in the development of nurses' personal resilience: A meta-synthesis. Nurs Open 10, 2780–2792. 2023. doi: 10.1002/nop2.1556.

9. Stoltz, P. G. Adversity Quotient: Turning Obstacles into Opportunities. (John Wiley & Sons, 1997).

10. Cariño, E. L. F. Adversity quotient® and work performance of nurses at al quwayiyah general hospital. 2023.

11. De Padua, J. M. B., Goc-ong, S. C., Marga, K. R. G. & Plasabas, R. D. S. The relationship between adversity quotient® and job performance: a study on it programmers of an it company. 2021.

12. Hung, N. T., Tuan, N. V., Tien, L. T. T., Thanh, D. Q. & Thai, N. H. Relationship between Students' Adversity Quotient and their English Performance at a University in Viet Nam. IJSSERS 03, 2023. DOI:10.55677/ijssers/V03I7Y2023-37

13. Wang, X., Liu, M., Tee, S. & Dai, H. Analysis of adversity quotient of nursing students in Macao: A cross-section and correlation study. Int J Nurs Sci 8, 204–209. 2021. https://doi.org/10.1016/j.ijnss.2021.02.003

14. Aguilar, J. P. Influence of school administrators' leadership style and adversity quotient on school performance: the case of the public higher education institutions in north Cotabato. 2023.

15. Kumari, K. & Sehgal, D. J. K. The relationship of demographic profile and adversity quotient of police personnel in Chandigarh. 20, 2022.

16. Stamm, B. H. The Concise ProQOL Manual. 2010.

17. Mirutse, A., Mengistu, Z. & Bizuwork, K. Prevalence of compassion fatigue, burnout, compassion satisfaction, and associated factors among nurses working in cancer treatment centers in Ethiopia, 2020. BMC Nursing 22, 373. 2023. doi: 10.1186/s12912-023-01383-w.

18. Alreshidi, S. M. Compassion fatigue prevalence and risk factors among Saudi psychiatric nurses: A cross-sectional study. Medicine 102, e35975. 2023. doi: 10.1097/MD.0000000000035975.

19. Kwak, Y., Han, Y., Song, J. & Kim, J. Impact of emotional labour and workplace violence on professional quality of life among clinical nurses. International Journal of Nursing Practice 26, e12792. 2020. doi: 10.1111/ijn.12792.

20. Wang, J. et al. Factors associated with compassion satisfaction, burnout, and secondary traumatic stress among Chinese nurses in tertiary hospitals: A cross-sectional study. International Journal of Nursing Studies 102, 103472. 2020. doi: 10.1016/j.ijnurstu.2019.103472.

21. Saxena, S. & Rathore, B. Adversity Quotient as Determining Factor of Mental Health and Professional Quality of Life Among Healthcare Professionals: A Systematic Review. Annals of Neurosciences 09727531241231055. 2024. doi:10.1177/09727531241231055.

22. Phạm T. B. K., Nguyen V. T., To T. L. A., Duong T. T. T. & Nguyen V. P. Professional quality of life and associated factors among healthcare workers at the no.1 Can Tho field hospital in 2021 [Quality of professional life and related factors in medical human resources working at Can Tho field hospital No. 1 in 2021]. ctump 266–272 (2023) doi:10.58490/ctump.2023i61.592.

23. Tran, A. N. P., To, Q. G., Huynh, V.-A. N., Le, K. M. & To, K. G. Professional quality of life and its associated factors among Vietnamese doctors and nurses. BMC Health Services Research 23, 924 2023. doi: 10.1186/s12913-023-09908-4.

24. Prasher, A. A study on adversity quotient of employees in the IT company. Department of business administration school of management studies Sathyabama institute of science and technology. 2021.

25. Zhang, M. et al. The mediating role of job satisfaction between psychological capital and work engagement among Chinese nurses during COVID-19 outbreak: A comparative study between nurse specialists and general nurses. Front Psychiatry 13, 990216. 2023. DOI:10.3389/fpsyt.2022.990216

26. Bahari, G., Asiri, K., Nouh, N. & Alqahtani, N. Professional Quality of Life Among Nurses: Compassion Satisfaction, Burnout, and Secondary Traumatic Stress: A Multisite Study. SAGE Open Nurs 8, 23779608221112329. 2022. doi: 10.1177/23779608221112329

27. Zhang, L. et al. Gender differences in the experience of burnout and its correlates among Chinese psychiatric nurses during the COVID-19 pandemic: A large-sample nationwide survey. Int J Ment Health Nurs 10.1111/inm.13052. 2022. doi:10.1111/inm.13052.