(RESEARCH ARTICLE)

Nurses' resilience in the face of coronavirus (Covid-19): An regional view

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Abstract

This cross-sectional study aims to examine factors related to nurse resilience during the Covid-19 pandemic. Data was collected in early 2020 around January - June from 39,605 South Sulawesi nurses spread across 24 districts which we grouped into 4 main areas (Bugis, Makassar, Mandar, Toraja). The questionnaire included the Connor-Davidson Resilience Scale (CDRS10), demographics and 20 questions about the practice environment, workplace safety regarding infection control, Covid-19-related experiences and organizational support. The fear of being infected, the desire to leave nursing, and having undergone a positive Covid-19 test are inversely proportional to resilience ($p < 0.05$). Regression analysis showed that rural nurses) had much greater resilience than urban nurses examined ($p < 0.001$). Organizational support, which involves nurses in policy development, and practice was found to be an important resilience factor in our study, which is in line with other findings. Further research is recommended to determine the optimal practice environment to support nurse resilience.

Keywords: CD-RISC; Covid-19; Nurses; Pandemics; Resilience

1 Introduction

Cases of the Covid-19 pandemic globally have spread throughout the country in this hemisphere, since the establishment of the Covid-19 Pandemic by the World Health Organization (WHO) on March 11, 2020. The aforementioned considerations caused the Indonesian Government through the Ministry of Health to establish a Covid-19 public health emergency status on March 31, 2020, which was followed by the Determination of the Status of Non-Natural Disasters by the Task Force Team for the Acceleration of Covid-19 Handling of the National Disaster Management Agency as a National Disaster on April 13, 2020 [1, 2]

This pandemic condition makes health workers, especially nurses, as the frontline of health services, are in a condition that is very vulnerable to exposure and experiences quite complex health problems. Therefore they have a high risk of being infected with the virus, inadequate protection, long working hours, physical and mental fatigue, discrimination, family isolation further adding to the vulnerability of physical and psychic health problems. A study that explained that nurses who work in hospital Covid-19 treatment rooms experience high levels of depression, anxiety and stress when compared to nurses who work in non-Covid-19 treatment rooms [3, 4].

Health workers, especially nursing personnel, are one of the targets / targets of community service activities because these resources are the frontline of Covid-19 Health services that provide the most health services both in basic health facilities and advanced health facilities. However, it is very unfortunate that efforts to provide health services, especially to nursing workers exposed to Covid-19, have not been optimally implemented, this can be seen with the increasing number of nursing workers exposed to Covid-19 to date. The findings of Lorente et al., (2021) that there was a fear of infection, lack of support, overwork, and inadequate preparation were associated with psychological distress among 421 nurses at the height of the Covid-19 epidemic in Spain from April to May 2020, but that pressure was mediated by

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coping and resilience focused on emotions [5]. Similarly, a survey of 180 nurses at the height of the early epidemic in Wuhan found higher resilience and positive influences were associated with less fatigue, negative influences, and emotional fatigue [6].

Resilience is a process and a trait. The American Psychological Association (2018) defines Resilience as a process that allows individuals to adapt to difficulties and maintain expectations. The resilience measure evaluates an individual's ability to seek and utilize social support and supportive networks, the individual's capacity to improve self-perception and acceptance of circumstances, and the ability to grow after stressful events [7]. Wei et al. (2019) state that nurse resilience helps them survive and thrive in the midst of difficulties at work [8].

This study reported findings on nurse resilience during the Covid-19 pandemic from a survey of 24 Regencies/Cities in South Sulawesi (Selayar, Bulukumba, Sinjai, Bantaeng, Jeneponto, Takalar, Gowa, Makassar, Maros, Pangkep, Barru, Soppeng, Wajo, Bone, Pare Pare, Pinrang, Sidenreng Rappang, Enrekang, Tana Toraja, Toraja Utara, Palopo, Luwu, Luwu Utara, and Luwu Timur) which we grouped into 4 main areas (Bugis, Makassar, Mandar, Toraja) period January – June 2021. The survey discussed nurses' work experience and professional quality of life during the Covid-19 pandemic, whether or not they were caring for patients with Covid-19. In particular, our objectives are as follows: (1) to describe the nurse's level of resilience; and (2) to identify factors related to resilience. This data on resilience comes from a larger study examining the professional quality of life of nurses during the pandemic [9].

We use ecological frameworks to examine how resilience is associated with selected intrapersonal, interpersonal, organizational, community, and policy variables. Socio-ecological model (SEM; McLeroy et al., 1988), who consider the interaction of intrapersonal, interpersonal, organizational, community, and public public policy factors and processes on individual behavior, show how diverse factors can influence nurses' professional and personal responses to pandemic-related stressors. With a potentially far-reaching impact on a variety of factors at each of these five levels, the COVID-19 pandemic has challenged the resilience of all concerned. Thus, SEM can also suggest targets for developing interventions to support and improve resilience [10].

2 Material and methods

2.1 Materials

Resilience was measured using Connor-Davidson Resilience Scale 10 (CD-RISC 10) (Davidson, 2018). It consists of 10 items using a 5-point Likert scale (0 = not true at all, 1 = rarely true, 2 = several times true, 3 = often true, 4 = true most of the time). The total score is calculated by summing all the items, resulting in a total score with a possible range of 0 - 40. A higher score means greater Resilience. Scores can be categorized as low (0-10), intermediate (11-30), and high (31-40). Alpha Cronbach was 0.89 in the study.

The type of organization is categorized as a Hospital, Community Health Center (including elementary health facilities), or others, which includes educators, school nurses, advanced practices, and mental health nurses. The level of education is categorized as basic education (Diploma 3 in nursing), Ners, or Specialist Nursing. A history of Covid-19 tests is categorized as a negative result, a positive result, or never tested.

Organizational support to prevent the spread of Covid-19 was measured using three 4-point Likert scales (1 = strongly disagree with 4 = strongly agree). The items ask if the workplace is equipped with adequate supplies/facilities, implement the best infection control guidelines, and discuss prevention on a regular basis. The total score is calculated by summing all the items, and a higher score means satisfaction with the organization's support for Covid-19 management (possible scores: 3 to 12). Cronbach's alpha is 0.89.

Three 10 points visual facial scale [11], measuring whether respondents had "considered leaving nursing due to workload, stress, and fear", "fear of being infected with Covid-19 at work" or "bringing Covid-19 home from work to family" [12]. Possible scores are 0 to 10; a higher score means a greater fear of infection (for oneself or family, respectively) or a greater intention to leave nursing.

2.2 Methods

Descriptive survey with a cross-sectional approach with questionnaire instruments distributed using google form applications for data collection. There are 24 districts and cities, which are then grouped 4 main areas (Bugis, Makassar, Toraja and Mandar) as sampling sites selected based on comfort, which reflects the residence of the members of the research team. An online invitation for willingness to participate is sent through the whatsapp group of the head of the

nursing professional organization. Participants were recruited through several places, independent practice of nurses, primary clinics, health centers, hospitals and others.

Since the purpose of our study was a cross-sectional study, we included all responses in the analysis, regardless of whether respondents are currently working in the targeted District for data collection.This research has received approval from the Health Research Ethics Commission of the Makassar Health Polytechnic.

3   Results

A total of 39.605 responses were received. The largest number of respondents (17.624) were from the Bugis., followed by Makassar (16.000), Toraja (3.168), and Mandar (2.376). The mean age of respondents was 36.8 (±10.5) years and 82% were female. Mean years of practice was 13.3 (±11.4) and 35.4% had a specialty.

Most respondents were working in public health (23.5%). Responses from those working hospital accounted for 12.5% of the sample. Only 8.1% of responses were from independent practic nursing (including nursing education). The highest education level held by most respondents was a Nursing Diploma (63.5%), followed by a Ners Generalis (34.4%) and Ners Speacialist (2.1%). Almost two-thirds of the (60.3%) responses came from bedside staff. Almost half (68.5%) of respondents reported experience caring for patients with Covid-19.

Most a quarter (81.9%) indicated that they has been provided adequate PPE or masks at their workplace. A third (31.7%) were involved in policy development for preparing Covid-19 and more than half (61.3%) had had training about caring for Covid-19 patients and protecting themselves. Almost half (44.5%) of respondents were asked to work with more acutely ill patients than their usual practice, and 71.5% were offered accommodation support from their institution. Although Less than half the sample (22.4%) had not been tested for Covid-19, 12.4% reported having had a positive test and 85.2% reported having had a negative test. Table 1 shows the distribution of sample characteristics.

Table 1 Sample characteristics (N = 39.605)

Variable	n	% or M ±SD
Age	36.832	37.0(±10.5)
Gender		
Female	32.257	82%
Male	7.128	18%
Years Practice	38.556	10.1(±9.4)
Certified in a specialty		
Yes	14.020	35.4%
No	25.585	64.6%
Country of practice		
Bugis	17.624	44.5%
Makassar	16.000	40.4%
Toraja	3.168	8.0%
Mandar	2.376	6.0%
Others	436	1.1%
Types of organization		
Publich Health	23.541	60.1%
Hospital	12.456	31.8%
Education		

Nursing Diploma	25.030	63.5%
Ners Generalis	13.559	34.4%
Ners Specialists	828	2.1%
Position		
Care Giver	28.236	73.5%
Case Manager	4.264	11.1%
Other positions	5.916	15.4%
Cared for Covid-19 patients		
Yes	26.858	68.5%
No	12.352	31.5%
Provided PPE or mask from workplace		
Yes	32.112	81.9%
No	7.097	18.1%
Involved with developing policies/procedures to prepare for Covid-19		
Yes	12.374	31.7%
No	26.662	68.3%
Had taken a training/course on caring for Covid-19 patients and protecting oneself		
Yes	24.144	61.3%
No	15.242	38.7%
Was asked to work at higher acuity levels to care for patients beyond the usual practice		
Yes	17.429	44.5%
No	21.738	55.5%
Offered accommodation from institution		
Yes	27.911	71.5%
No	11.125	28.5%
Covid-19 test		
Received negative test result	25.737	85.2%
Received positive test result	4.895	12.4%
Was not tested	8.842	22.4%
Fear of contracting Covid-19	39430	4.5(±2.4)
Fear of spreading Covid-19 to family	39430	5.5(±3.4)
Intention to leave their job	39.386	3.2(±3.7)
Had organizational support to prevent spread of Covid-19	38291	7.4(±2.1)

3.1.1. Factors associated with resilience

Mean resilience for the total sample was 27,5 (±4.0) which is an intermediate level (Connor & Davidson, 2003; Davidson, 2018). Table 2 shows subgroup differences in mean resilience for each categorical variable in the regression analysis. These descriptive statistics indicate that the greatest mean differences occurred for country of practice, where mean resilience was greater for the United States compared to other counties. For other variables in the regression analysis, mean fear of contracting and mean fear of infecting family members with Covid-19 was 4.5(±2.4) and 5.5(±3.4), respectively (possible score 0 to 10). In addition, mean intention to leave nursing was 3.2(±3.7), and mean organizational support to prevent spread of Covid-19 was 7.4(±2.1); possible score 3 to 12).

Table 3 summarizes the results of the multiple regression model, with the predictors accounting for 44% of the variation in resilience ($p < 0.001$). Lower resilience was reported by nurses who expressed greater fear of contracting Covid-19 ($B = 0.7$, $p < 0.001$) and greater intention to leave nursing ($B = 0.4$, $p = 0.001$), as well as those who reported receiving a positive rather than negative Covid-19 test result ($B = 1.8$, $p = 0.02$). In contrast, increased resilience was reported by nurses who expressed greater fear of infecting family members ($B = 0.5$, $p = 0.03$), organizational support ($B = 0.5$, $p = 0.001$), and involvement in policy development ($B = 1.4$, $p = 0.002$). In addition, country of practice was also a significant predictor of resilience, as nurses practicing in the Makassar ($B = 4.1$, $p < 0.001$), Toraja ($B = 8.7$, $p < 0.0012$), and the Mandar ($B = 3.2$, $p < 0.001$) reported diminished resilience compared with nurses in the Bugis.

We note that although the statistically significant regression coefficients reported in Table 3 are often considered to represent small to moderate effects, the between-country differences in resilience were in some cases fairly large, consistent with the pattern of simple mean differences reported in Table 2. Specifically, compared to the Bugis, the regression estimated resilience scores for nurses practicing in the Mandar, the Makassar, and Toraja were lower by approximately three points – or one-half standard deviation – to almost nine points – or in excess of one standard deviation, with the latter difference often regarded as quite large.

Neither age, gender, years of practice, specialty certification, work setting, educational level, position, Covid-19 patient care experience, having adequate Covid -19 training, being asked to work at higher acuity levels, or being offered accommodation contributed significantly to the variance accounted for by the regression model.

Table 2 Resilience means by subgroups (N = 38.685)

Variable	n	M (±SD)
Cared for Covid-19 patients		
Yes	15.352	26.8 (±5.7)
No	23.027	25.9 (±6.2)
Provided PPE or mask from workplace		
Yes	29.518	26.2 (±5.8)
No	8.817	26.9 (±6.1)
Involved with developing policies/procedures to prepare for Covid-19		
Yes	12.197	27.1 (±5.7)
No	25.919	24.8 (±6.3)
Had taken a training/course on caring for Covid-19 patients and protecting oneself		
Yes	25.003	26.6 (±5.6)
No	13.463	23.6 (±5.7)
Was asked to work at higher acuity levels to care for patients beyond the usual practice		
Yes	16.064	23.6 (±5.6)
No	22.183	26.9 (±5.6)
Offered accommodation from institution		

Yes	9.074	25.0 (±5.7)
No	28.735	25.7 (±5.8)
Covid-19 test		
Received negative test result	17.349	24.9 (±5.8)
Received positive test result		24.3 (±6.0)
Was not tested	2.313	25.5 (±5.4)
Gender	18.891	
Female	31.578	24.1 (±5.8)
Male	6.932	25.8 (±5.8)
Certified in a specialty		
Yes	14.313	27.9 (±5.1)
No	24.372	24.3 (±6.0)
Country of practice		
Bugis	17.215	29.2 (±4.1)
Makassar	15.629	23.2 (±5.2)
Toraja	3.095	19.0 (±5.1)
Mandar	2.321	22.9 (±3.1)
Others	426	26.0 (±2.9)
Types of organization		
Publich Health	22.986	23.2 (±3.1)
Hospital	12.163	21.9 (±4.2)
Independent Nursing Practice	3.098	25.6 (±3.1)
Education		
Nursing Diploma	24.565	21.1 (±4.9)
Ners general	13.308	23.4 (±3.5)
Ners Specialists	812	26.5 (±3.0)
Position		
Care giver	27.500	23.0 (±3.8)
Case Manager	4.153	29.8 (±4.4)
Other positions	5.762	26.1 (±4.0)
Overall	38.685	27,5(±4.0)

Table 3 Resilience as a function of nurse characteristics

Predictor	B[a]	SE	β[b]
Fear of contracting Covid-19	-0.7***	0.1	-0.4
Fear of spreading Covid-19 to family	0.5*	0.1	0.3
Intention to leave their job	-0.4**	0.2	-0.1

Had organizational support to prevent spread of Covid-19	0.5**	0.2	0.1
Cared for Covid-19 patients	0.6	0.5	0.1
Provided PPE or mask from workplace Involved with developing policies/procedures to prepare for Covid-19	1.4**	0.4	0.2
Had taken a training/course on caring for COVID-19 patients and protecting oneself	-0.2	0.4	<0.2
Was asked to work at higher acuity levels to care for patients beyond the usual practice	0.5	0.4	0.1
Offered accommodation from institution Covid-19 test	-0.7	0.3	0.2
Positive versus negative result	-1.8	0.8	-0.2
Was not tested versus negative result	-0.2	0.3	-0.1
Age	0.2	<0.2	0.1
Female vs male	0.1	0.4	<0.1
Years of practice	-0.1	<0.1	-0.0
Certified in a specialty	0.2	0.3	<0.1
Country of practic			
Makassar vs Bugis	-4.1***	0.6	-0.6
Toraja vs Bugis	-8.7***	0.7	-1.2
Mandar vs Bugis	-3.2***	0.6	-0.5
Other countries vs Bugis	-1.1	1.2	-0.2
Types of organization Out-patient or non-acute vs In-patient	-0.4	0.4	-0.1
Advanced nursing vs inpatient Education	1.3	0.5	0.1
Ners General vs Nursing Diploma	-0.9	0.4	-0.1
Ners Specialists vs Nursing Diploma	-2.0	0.5	-0.1
Position			
Case Manager vs Care Giver	-0.3	0.6	-0.1
Other positions vs Care Giver	-0.4	0.4	-0.1

Note: N = 38.685 *p < 0.05. **p < 0.01. ***p < 0.001. aB is an unstandardized regression coefficient. B; β is a standardized regression coefficient. For the dummy-coded predictors, β = B/sdy. For the numeric predictors, β = (B*sdx)/sdy.

4 Discussion

Nurse resilience is an important component of their emotional work in overcoming patients' illnesses and deaths. Without resilience, a nurse can experience fatigue [13]. We found that nurses who tested positive for Covid-19 reported lower resilience (about two points lower, or 0.3 SD) than those who tested negative. This may be because testing positives regardless of safety precautions will threaten their sense of resilience. Knowing that a person can become ill through practicing one's profession can result in feelings of vulnerability, which may be the antithesis of feeling resilient. Indeed, we found that the stronger the desire to resign from the profession, the lower the resilience.

The experience of the pandemic is inherent and local in nature, varying between regions as well as across communities and institutions. Although the average resilience score for all regions is at the middle level [14], Bugis nurses have a much higher resilience score especially compared to respondents from Toraja (about nine points, or 1.2 larger elementary schools) and also those from Makassar (four points, or 0.6 greater elementary schools) and Mandar (3.2 points, or 0.5 larger elementary schools).

At the time of this study, Bugis nurses faced a high number of covid-19 patients and the highest mortality rate in South Sulawesi [15], but they received a lot of public support and appreciation, which can increase resilience and satisfaction. The professional ethics of astheir and the aforementioned duty to care are recognized, and their skills are hailed as irreplaceable; they became "heroes" in the public eye [16].

SEM offers a framework for considering variables potentially relevant to nurse resilience in the context of Covid-19 [17]. The findings here emphasize the importance of organizational-level variables, particularly organizational support to prevent the spread of the virus and involve nurses as respondents to the Covid-19 pandemic. The finding that the opportunity to contribute to management policy is a significant predictor of resilience in regression reflects the findings of other authors who demonstrate the importance of nurses having confidence in pandemic management. In addition, significant predictors at the interpersonal/family level (fear of bringing covid home to the family) and at the individual level (fear of contracting Covid-19 at work and desire to resign from nursing) directly reflect work in health care and specifically relate to organizational systems for managing infection control.

Previous research corroborates our findings that resilience is closely related to organizational factors, even if expressed individually. A 2014 integrative review of resilience in nurses found work stressors and individual psychological characteristics, such as self-efficacy or a sense of hope, influenced nurses' resilience levels [18]. A workplace with constantly changing demands and organizational goals that do not match the values of nurses causes nurses to experience psychological distress.

The only variable at the interpersonal level that predicts resilience is also indirectly associated with work in a health care environment: fear of bringing the infection home to the family. Paradoxically, higher levels of fear predict higher resilience. These somewhat puzzling findings may suggest that a nurse who is afraid to take the virus home will be extra vigilant and thus feel more resilient despite the risk of spreading the disease. A potential factor that can contribute to having higher resilience despite fear of bringing home the infection is that nurses with families may have more support and therefore, have higher resilience. A potential factor that can contribute to having higher resilience despite fear of bringing home the infection is that nurses with families may have more support and therefore, have higher resilience. However, both this interpretation and the findings should be further investigated to determine its persistence with other infectious diseases exposed to nurses. Previous resilience research, however, found that intrapersonal factors significantly predict resilience. Nurses with more educational experience, less work experience negative emotions [19]. In Bugis Hospital nurses (n = 17.215), resilience was significantly associated with low fatigue (expressed by depersonalization, and emotional exhaustion). Higher levels of resilience are associated with expectations and reduced stress and a high sense of personal accomplishment [20]. Xu et al. (2020) report that higher education and professional levels increase resilience. Our findings could be the result of a cross-sectional data analysis, rather than exploring the strength of resilience predictors in a single area.

5   Conclusion

This study provides an overview of nurse resilience during the pandemic in four main regional groups in South Sulawesi Province. More research is geared towards looking at what and how types of education, practice locations, and years of experience are associated with nurse resilience and whether these factors are lowering concerns about pandemic nursing in different management contexts.

Our findings support literature showing that organization and leadership levels are critical to nurses' resilience as well as the quality of care they provide. We recommend qualitative research to delve deeper into life experiences in providing nursing care during the pandemic and the role resilience plays in nurses' responses to caring for their patients.

Compliance with ethical standards

Conflict of interest statement

There is no conflict of interest in this study and publication.

Statement of ethical approval

Every researcher involved in this research has obtained an ethical permit from the Health Research Ethics Commission of the Makassar Health Polytechnic.

Statement of informed consent

This study was determined by the Poltekkess of the Ministry of Health Makassar at the main research institution. Each cooperating researcher obtains the necessary ethical permit from the Health Research Ethics Commission of the Ministry of Health, Makassar.

References

[1] Brooks SK, Webster RK, Smith LE, et al. The psychological impact of quarantine and how to reduce it: rapid review of the evidence. Lancet (London, England) 2020; 395: 912–920.

[2] Krishnan A, Hamilton JP, Alqahtani SA, et al. COVID-19: An overview and a clinical update. World journal of clinical cases 2021; 9: 8.

[3] Francisco R, Pedro M, Delvecchio E, et al. Psychological Symptoms and Behavioral Changes in Children and Adolescents During the Early Phase of COVID-19 Quarantine in Three European Countries . Frontiers in Psychiatry 2020; 11: 1329.

[4] Orgilés M, Morales A, Delvecchio E, et al. Coping Behaviors and Psychological Disturbances in Youth Affected by the COVID-19 Health Crisis . Frontiers in Psychology 2021; 12: 845.

[5] Lorente L, Vera M, Peiró T. Nurses stressors and psychological distress during the COVID-19 pandemic: The mediating role of coping and resilience. J Adv Nurs 2021; 77: 1335–1344.

[6] Zhang X, Jiang X, Ni P, et al. Association between resilience and burnout of front-line nurses at the peak of the COVID-19 pandemic: Positive and negative affect as mediators in Wuhan. Int J Ment Health Nurs 2021; 30: 939–954.

[7] Waruwu P. Kompetensi Perseptor pada Program Pendidikan Profesi Ners di Rumah Sakit Universitas Sumatera Utara. repositori.usu.ac.id, 2020.

[8] Wei H, Roberts P, Strickler J, et al. Nurse leaders' strategies to foster nurse resilience. J Nurs Manag 2019; 27: 681–687.

[9] Reifsnider E. SYMPOSIUM: Coronavirus (COVID-19): How Can Nurses Prepare for Patient Care and Protect Their Own Health? In: Sigma's 32nd International Nursing Research VIRTUAL Congress (Wednesday, 21 July-Friday, 23 July). Sigma, 2021.

[10] McLeroy KR, Bibeau D, Steckler A, et al. An ecological perspective on health promotion programs. Health Educ Q 1988; 15: 351–377.

[11] Cao X, Yumul R, Elvir Lazo OL, et al. A novel visual facial anxiety scale for assessing preoperative anxiety. PLoS One 2017; 12: e0171233.

[12] Kim JS, Choi JS. Factors influencing emergency nurses' burnout during an outbreak of Middle East Respiratory Syndrome Coronavirus in Korea. Asian Nurs Res (Korean Soc Nurs Sci) 2016; 10: 295–299.

[13] Brown T. COVID-19 is probably going to end my career. The New York Times 2021; 25: 2021.

[14] Connor KM, Davidson JRT. Development of a new resilience scale: The Connor-Davidson resilience scale (CD-RISC). Depress Anxiety 2003; 18: 76–82.

[15] Beaubien J. Americans Are Dying in the Pandemic at Rates Far Higher Than in Other Countries.

[16] Mohammed S, Peter E, Killackey T, et al. The "nurse as hero" discourse in the COVID-19 pandemic: A poststructural discourse analysis. Int J Nurs Stud 2021; 117: 103887.

[17] Duncan DL. What the COVID-19 pandemic tells us about the need to develop resilience in the nursing workforce. Nurs Manage; 27.

[18]   Hart PL, Brannan JD, De Chesnay M. Resilience in nurses: An integrative review. J Nurs Manag 2014; 22: 720–734.

[19]   Xu J, Baldonedo-Mosteiro M, Franco-Correia S, et al. Spanish oncology nurses: Assessment and relationship between resilience and emotional labour status. Eur J Cancer Care (Engl) 2020; 29: e13256.

[20]   Rushton CH, Batcheller J, Schroeder K, et al. Burnout and resilience among nurses practicing in high-intensity settings. American Journal of Critical Care 2015; 24: 412–420.