WIJ Issue 6: The workforce issue

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Critical care nursing has come under intense scrutiny during the COVID-19 pandemic, particularly in relation to retention of such as highly skilled workforce and the prolonged training required to work in this technical and challenging environment. Although COVID-19 has brought this into sharp focus, the issue of retention of critical care nurses is long-standing, with a wealth of international research focused on this [1]. In this special issue we have brought together recent research focused on nursing workload, resilience, stress reduction and patient outcomes. The papers included in this issue utilise a variety of research, quality improvement and review methods to examine the nursing workforce from a variety of perspectives, with representation from many countries including Iran, Malaysia and the UK.

In a compelling guest editorial, Prof Pattison discusses the current nurse staffing deficit and the implications this has for both patient safety and staff wellbeing [2]. Through examination of the task-based response to the workload pressures posed by COVID-19, the established notions of what it means to be a critical care nurse are discussed and challenged in reference to current models of staffing and traditional focus on staff ratios. This guest editorial concludes with a call for us all to advocate for critical care nursing as a speciality in order to ensure a robust workforce for the future.

In the first research paper of this special issue, Moghadam et al. [3] used the Nursing Activities Score (NAS) [4] to examine how patient and nurse characteristics influence nursing workload in Iran. By conducting a cross-sectional survey of shifts throughout the day at five hospitals they investigated which patient and nurse characteristics were associated with higher NAS. Characteristics significantly associated with increased nursing workload included type of nursing shift, with morning shifts scored most highly. Patient characteristics included medical diagnosis and ICU length of stay. The authors

conclude that the results of this study may be used by ICU managers when planning workforce to ensure high quality care provision.

Examining the impact of workload on staff retention, in the next research paper in this issue, Ying et al. [5] examine the links between environment, resilience and intention to leave through a survey of critical care nurses. This study was conducted at a single ICU in Malaysia and included 229 nurses. The authors used two validated tools: the Practice Environment Scale of the Nursing Work Index (PES-NWI) [6], and the Connor-Davidson Resilience Scale (CD-RISC) [7], and a further survey of future job plans. They found 76.4% of those surveyed perceived their working environment to be favourable but 20% of nurses reported an intention to leave critical care nursing. The authors found that lower nursing environment scores, indicating a poorer perception of environment, was a strong predictor of intention to leave. The authors recommend managers consider staff allocation and equality of workload to improve the perception of the work environment and thus minimise intention to leave among critical care nurses.

Critical care is acknowledged to be a stressful environment for staff [8]. The next research paper in this special issue reports a UK-based quality improvement project evaluating a mindfulness-based stress reduction intervention proposed as a strategy to improve the experience of the critical care nursing workforce [9]. This intervention included delivery of an eight-week Mindfulness Based Stress Reduction training programme by a trained teacher consisting of a two-hour face-to-face sessions following by six weeks of online training. Outcomes included quality of life, perceived stress, mindfulness awareness and sickness rates. Three validated questionnaires were used to assess these outcomes at three timepoints – pre-course, immediately post-course and at 4 months, with 25 critical care nurses included in the intervention. This quality improvement project found statistically significant improvements in life satisfaction and mindful awareness, and a reduction in stress levels. No changes were found in sickness levels, although this may be due to the small sample size. The

author concludes that this mindfulness intervention was feasible and acceptable to critical care nurses and the findings of this project have implications for managers wishing to improve staff wellbeing.

Continuing the focus on workforce, in the next paper in this special issue Cutler et al. [10] report their workforce survey of NHS critical care nurses undertaken in 2017. The aim of this was to assess the current status of the UK critical care workforce and compare this against national standards, and earlier survey data. This work was led by the Critical Care National Network Nurse Leads (CC3N) Forum and included all adult critical care units in the UK, although this paper reports data from England and Northern Ireland only. The previous 2015 survey was redesigned through stakeholder consensus for use in this study. The survey received a good response from 240/270 units (88%). Responses were compared against the 2015 survey and national standards (GPICS 2015 [10] and the national critical care competency framework [11]). The authors found stability in vacancy and sickness rates but an increase in reliance on overseas recruitment compared with 2015. Specialist critical care training levels were found to be variable between units (between 0 and 100%), with overall levels below the recommended GPICS level of 50% at 48.8%. Nurse to patient ratios were reported as 100% compliant with GPICS recommendations. This finding has relevance for the ongoing debate on nurse to patient ratios, following the changes made to staffing during the COVID-19 pandemic [12]. The authors suggest that managers may compare their local data against this national survey of critical care nursing in the UK to inform development of their own teams.

The next paper in this issue focuses on the impact of critical care nurse staffing levels on nurse wellbeing and workforce. Bae et al. [13] conducted a systematic review including eight studies from six countries. All included studies surveyed nurses to collect data on local nurse staffing metrics and nurse-focused outcomes. These outcomes varied between studies but included job satisfaction, intention to leave, stress and burnout, and all were self-reported. The results of this review are limited by the variability in reported outcomes and quality of the studies included, with all assessed as either weak or moderate in quality assessment. However, there was a consistent relationship between nurse

staffing and burnout in the included studies. The authors suggest future longitudinal studies are needed to examine the effect of nursing staffing on wellbeing but current evidence suggests careful monitoring of nurse workload is required to support staff wellbeing.

Continuing the focus on the impact of workload on nurse wellbeing, the impact of the change in ICU staffing ratio during the COVID-19 pandemic is examined through an online survey of Swedish nurses [14]. The survey was distributed through social media for a week during May 2020 and a total of 282 nurses responded of whom 54% specialised in critical care. Only half of respondents reported sufficient support from senior ICU staff and a third of non-ICU nurses reported feeling confident with in their practice on ICU. Free text responses from 179 participants were qualitatively analysed and three themes were identified which described the change in focus from individualised patient care to task-based nursing. The authors identified that this change in practice led to moral stress amongst nurses due to concerns about patient safety and quality of care. However, respondents described transitioning from the initial chaos towards adjustment to the challenges through team work and peer support. This study emphasises the impact of the COVID-19 pandemic on the nursing workforce and authors conclude that further work should be undertaken to investigate the long-term impact of this on staff. Given the previously identified links between workload and adverse nursing outcomes such as burnout and intention to leave, it is likely that this may have a lasting impact on critical care nursing.

The next paper by Minton & Batten [15], examines nurses' experiences of caring for adult patients during a prolonged critical illness. This longitudinal, qualitative, multi-case study explored six cases from four New Zealand ICUs. Findings from 24 nurses who were involved in caring for the patients at various points in their journey were included. They found that nurses' experiences of caring for critically ill patients was framed by a critical illness trajectory that was unpredictable, problematic, and prolonged. Nurses experienced distress at times because of uncertainty about a positive patient outcome related to multiple complications, and the suffering they witnessed. Nurses were often frustrated and challenged to be able to meet the patient's needs because of their multiple tasks.

The physical and psychological impact of the COVID-19 pandemic on nurses in undeniable, and the next paper by Penacoba et al [16] used a cross- sectional survey to explore the roles of self-efficacy and resilience on stress and both physical and mental quality-of-life components in intensive care nurses during the COVID-19 pandemic. They used three validated instruments to explore this in 308 nurses in Spain. They found an association showing that the greater the nurse's perception of self-efficacy, the lower their perception of stress and greater resilience, while higher resilience was associated with greater physical and mental health. They concluded that self-efficacy, the belief in one's abilities to achieve their intended aims [17], played a fundamental role in the relationship between nurses' stress and their physical and mental health. The question remaining is can we teach someone self-efficacy or is this intrinsic in an individual. Regardless, knowledge of this can direct psychological support and resources to individuals more at risk.

The next study, conducted by the same group Penacoba et al [18] explored the prevalence of symptoms associated with generalized anxiety disorder (GAD), the relationship between GAD symptoms and ICU nurses', doctors and nursing assistants' resilience skills, to determine which of the resilience skills were associated with a GAD during the COVID-19 pandemic. This cross-sectional survey of 448 ICU healthcare professionals in Spain, again utilised validated instruments and found high resilience levels in these staff, but with more than half of them having symptoms consistent with a diagnosis of GAD. These GAD symptoms were more prevalent among women, nursing assistants, interns, staff who worked on rotation and staff who had cared for more than 20 COVID patients. They noted a significant negative correlations between the profession's resilience skills and GAD symptoms. They concluded that many ICU professionals showed symptoms consistent with GAD, however, resilience was a protective factor.

The next paper by Prendon et al [19], takes a different turn and explores which nurses (and service model) is best placed to deliver renal replacement therapy (RRT) in a paediatric intensive care unit (PICU) and Neonatal Intensive care Unit (NICU): PICU/NICU nurses or specialist dialysis nurses, in

Italy. It further sought to explore the training of PICU nurses on the management of RRT. A cross sectional survey was used with 15 Units (12 PICU and 3 NICU) responding from 12 hospitals. The mean nurse:patient ratio in these units was 1:3. They found in most PICUs (72.7%) RRT was delivered by critical care nurses, while in 27.3% of PICUs paediatric dialysis nurses undertook RRT in collaboration with critical care nurses. It is well established that RRT must be managed by skilled and trained nurses to avoid adverse events [20], but the model of how this is best undertaken remains uncertain. In countries with a 1:1 RN to patient ratio in intensive care, it seems reasonable to expect ICU nurses to undertake this role in addition to patient care, however in countries with lower RN:patient ratios the best delivery model may need to vary according to patient dependency, nurse workload, nurse experience and education.

The following paper by Duran et al [21] examines the relationship between self-esteem and psychological distress in critical care nurses in Turkey. 121 ICU nurses participated in this survey in 2017 (pre-COVID) with a response rate of 90%. After using the Symptom Check List to determine the emotional status and the self-esteem scale to determine the self-esteem status, participants were divided into two groups according to the self-esteem scale median score. They found that the general severity index and poor symptom level ratios associated with mental well-being were high in these critical care nurses. However, nurses with higher self-esteem had fewer psychological problems than those with lower self-esteem. Their recommendations were that nurses with low self-esteem should undergo assertiveness, resilience, and interpersonal communication skills training. This is an interesting conclusion, but routine pre or intra employment psychological screening is not routine in nurses (or indeed in healthcare) and the identification of those with low self-esteem would be challenging to implement in practice.

The next paper by Salimi & Tarbiat [22] explores the predictors and priorities of nurses' caring behaviours in adult and paediatric intensive care units in Iran, with a view to improving the quality of care and patient outcomes. This cross-sectional survey undertaken in 2018 used 2 validated

instruments, the Persian version of Caring Assessment Report Evaluation Q-Care; Determinants of Nurse Caring Behaviours; and a demographic data form. 470 nurses (91% response rate) from eight hospitals in Iran participated. They found 13 items were recognized as predictors of caring behaviours. The top three predictors were: interest in the nursing profession, moral obligation, and job experience respectively. The top three perceived nurse caring behaviours were: accessible, monitors/follow-through and explains/facilitates. Although they explored many factors, what would have been useful to examine would be potential differences between Paediatric ICU and adult ICU nurses' perceptions of caring behaviours in this mixed sample, as perceptions of caring for a child may be different for that of an adult and this is an unrecognised limitation of this study.

The final paper in this issue is a critical commentary by Galazzi et al [23] who discuss and shared their experiences of using of video calls at the end of life, during the COVID-19 pandemic. They argue that even though these video calls have been valuable, they are not without their problems for both staff and families. They also highlight the uneven distribution in access to technology, and that even in 2021, not everyone is able to access and utilise this modality, with families (aged over 65 years of in Italy), only 34% had a broadband connection. This is something we must consider when using this modality to ensure equity amount our diverse population.

In conclusion, this large final issue of 2021 includes a large collection of papers relating to the critical care workforce, in terms of staffing, job satisfaction, nursing workload, stress and coping, the experiences and psychological impact of COVID-19, nursing roles and caring behaviours and the physical effects affecting ICU nurses. The COVID-19 pandemic of the last 18 months has taken its toll on the critical care nursing workforce globally, but by and large we are a highly committed and resilient group of individuals, who have demonstrated their skills, and the value that skilled nursing care makes to a critically ill population. One positive aspect to emerge from the pandemic is the spotlight placed on critical care nursing, which much of society previously had little knowledge or understanding of. In a strange twist of fate applications for nursing (and medicine) in the UK in 2021

have increased by 32% [24] and some of these will be our colleagues of the future, whom we need to encourage, nurture and support.

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