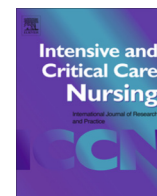




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Research Article

Understanding new nurses' learning experiences in intensive care

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ABSTRACT

Objectives: Recruitment and retention of nurses in intensive care units (ICU) has been challenging over the last few years. Rising demand is now exacerbated by the ongoing Covid-19 pandemic. Transition to ICU from other clinical areas is stressful resulting in significant nurse retention issues. This study therefore aimed to illuminate and explore new nurses' learning experiences in one large intensive care unit in the United Kingdom.

Methodology/Methods: Exploratory qualitative case study utilising two data collection methods: one to one interview with six new ICU nurses and focus groups with six senior/clinical education ICU nurses.

Setting: A large major trauma centre in London with over ninety ICU beds.

Findings: Findings indicate that ICU is a challenging learning environment for new nurses due to the large number of skills which must be developed in a short period of time. Forming supportive social relationships proved important in helping new ICU nurses learn and adapt to this complex clinical environment. The high-risk culture of ICU makes it harder to learn particularly for internationally educated nurses. Frequently changing shift patterns also impacts learning.

Conclusion: Senior ICU nurses should be aware of the issues affecting new nurses and where possible alleviate the stress of working in this challenging environment. They should also consider individual circumstances whilst maintaining high quality education. Social support should be facilitated where possible and new nurses need to be aware of the realities of ICU work.

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Implications for clinical practice

- Larger ICUs are a challenging place for new nurses to learn.
- ICU educators should support development of social relationships to aid learning.
- ICU educators should take individual learning needs into account while supporting new nurses.
- Nurses considering working in ICU should be aware of the intense and challenging nature of this area.

Introduction

Managing a global shortage of nurses has been identified as a key healthcare priority by the World Health Organisation (WHO, 2020). The WHO estimates that there is a deficit of up to 13 million nurses worldwide and ageing populations may further exacerbate this situation. Additionally, 17% of all nurses globally will be of retirement age in the next five years thus leaving further deficits within international healthcare systems (International Council of

Nurses ICN, 2020). The global covid-19 pandemic has magnified these existing problems in recruitment and retention of nurses. Many international nursing associations report evidence of mass traumatisation and predict further nursing shortages in the future (ICN, 2020).

Reducing numbers of registered nurses has implications for recruitment into intensive care nursing. As populations age, the numbers of patients admitted to intensive care units (ICUs) has risen (Health Education England, 2020; WHO, 2020), requiring expansion of ICU capacity. Many ICUs faced an escalating recruitment crisis with a large vacancy rate prior to the COVID-19 pandemic (Faculty of Intensive Care Medicine, 2018). The global

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Covid-19 pandemic exponentially increased capacity demand for ICU beds (WHO, 2020). This increased demand coupled with an already large vacancy rate presents many challenges for nurses who currently work in ICU and to those new to ICU settings. The ongoing pandemic has also illustrated that ICU nurses are uniquely skilled and have been called upon to share skills, knowledge and expertise with non-ICU health care professionals.

Background

The first few years of new graduate nurses' careers are among the most stressful and are the time when burnout and disillusionment are most likely to take place (Wakefield, 2018). In a study examining factors that influence retention in acute care areas carried out by Cummings (2011), up to 30% of new graduates were planning to resign within a year of starting in their speciality. This has significant implications for the nursing workforce.

A study by Kelly and Ahern (2008) examining the preparation of new graduates in an Australian university, highlighted that many new nurses felt unprepared and overwhelmed by the increase in responsibility and by their perceived lack of practical nursing skills. This illustrates a crisis in new nurse's confidence in their abilities. A new work environment may provoke anxiety in nurses who are new to working in ICUs. Therefore, it is reasonable to assume that new nurses in ICU may face similar issues to newly qualified nurses in other clinical areas.

Culture refers to a system of shared values and assumptions underpinned by shared beliefs (Guidet and Gonzalez-Roma, 2011). Using qualitative methods, Farnell and Dawson (2005) reported that new nurses choose to work in ICU as it is perceived a faster-paced and more knowledge laden culture in comparison with other specialities. This suggests that some nurses actively seek to work in ICU because of its perceived dynamism. This presents a challenge for novice nurses who are learning various advanced technical tasks associated specifically with intensive care as well as trying to understand how they can fit in with the specific culture.

In an ethnographic study, Scholtz et al. (2016) identified an aspect of ICU culture described as 'armour display' was perceived important. 'Armour display' was an important coping mechanism developed by experienced ICU nurses in response to the stressful and sometimes morally challenging ICU environment. As part of this concept of 'armor display', nurses learned to adopt various coping mechanisms such as black humour, planning of a 'great escape' to leave the nursing profession, and a neatness fascination. A further interesting finding was the importance of set routines. These routines helped ICU nurses to cope with emergency situations and were deemed by some to be part of a safety strategy. Few studies examining ICU culture specifically address large ICUs of more than fifty patient beds. Whilst these larger units aim to improve care and provide centralised services, the impact on orientation and education of new ICU nurse working within them has not been examined.

Socialisation is an important aspect of ICU culture (Ankers et al., 2017; Kelly and Ahern, 2008; Scholtz et al., 2016). Socialisation refers to how a new professional gradually absorbs the culture, behaviour and values required to perform in the professional role (Farnell and Dawson, 2005). Successful socialisation requires collegial support in helping new nurses to learn and settle into their new roles. Positive encounters with experienced colleagues increased new nurse satisfaction increase confidence and overcome perceived lack of skills (Ankers et al., 2017). Similarly, Kelly and Ahern (2008) found that some new nurses quickly became disillusioned if they felt collegial support was lacking or that experienced staff were reluctant to answer questions. In fact, the

phrase 'Eating their young' was commonly used to describe experienced staff attitudes towards new nurses and how they experienced encounters (Freeling et al., 2015). The use of this phrase refers to a negative attitude towards new nurses by more experienced colleagues. This highlights how a positive encounter has the power to shape a new nurses' experiences and view of nursing.

Ortiz (2016) identified relationship building as a major factor in new graduates becoming more confident and comfortable in the clinical environment as well as positive or constructive feedback being an important professional confidence booster. Ortiz (2016) also recorded that for many new nurses' confidence fluctuated greatly depending on the tasks which were undertaken and how well they were completed. New nurses confidence was also influenced by positive or negative feedback and by the number of mistakes a new nurse was deemed to make. DeGrande et al. (2018) further reinforced this view in a phenomenological study exploring the experiences of new nurses working in an intensive care unit. Participants reported that an important factor in socialization was the level of team support and the development of a connection with a senior ICU nurse who could act as a role model for the new nurse. However, this study was carried out in the United States where the largest unit participants were recruited from had a maximum of thirty-two beds. This is quite different from the large, centralised services provided in the UK where one intensive care unit could have up to ninety beds or more after pandemic expansion. This highlights the need to develop a greater understanding around the role of the environment in the socialization of new nurses in large critical care areas

Experienced critical care nurses contribute significantly to teaching and mentoring new nurses (Freeling and Parker, 2015) and are well placed to understand where improvements could be made. A small number of studies explore experienced nurses' views in the context of critical care. Baumberger-Henry (2012) conducted a small qualitative study exploring the views of registered nurses on new graduates working in critical care and emergency departments. It was found that registered nurses were disappointed in new nurse's lack of confidence, poor organizational skills and a lack of clinical skill. This illustrates that there are high expectations on new graduates, potential lack of empathy for junior colleagues and concerns about the capabilities of new graduates.

Nurses new to ICU often lack preparation and insight into the ICU world (Chestnutt and Everhart, 2007). ICU is a very challenging environment technically, intellectually and emotionally and many new nurses are ill prepared. There is known to be a high emotional burden placed on ICU nurses. Scholtz et al. (2016) identified that nurses often adopt the patients they are caring for and place high importance in doing the right thing by the patient. This can place the ICU nurse in direct conflict with other health care professionals and families. ICU nurses must navigate complex emotional relationships with patients, families and other health care professionals (Proulx and Bourcier, 2008). Whilst a large volume of research studying new nurses views is available (DeGrande et al., 2018; Farnell and Dawson, 2005; Halcomb et al., 2011; Quek et al., 2018), little is focused on large ICUs situated in the United Kingdom.

The aim of this study therefore was to explore some of these under-researched issues in ICU nurse education in the context of a large ICU.

The overall research aim was to explore new nurses learning experiences' from multiple perspectives in one intensive care unit.

Specific topics/questions were used to support the above overarching aim:

To explore previous learning experiences and transition to ICU

To consider challenging aspects of working in ICU as a new nurse.

What, if any, are the perceived barriers to learning in ICU?

What interventions, if any, would help new nurses learn and work effectively?

Methods

A qualitative case study methodology was chosen to address the above questions. [Simons \(2009\)](#) describes a case study as: 'an in-depth exploration from multiple perspectives of the complexity and uniqueness of a particular project, policy or institution in a real-life context'. This case study focuses on one large ICU and considers how the context may influence new nurses' learning experiences.

Setting

A large ICU in London with over ninety patient beds split over four separate units. This unit is one of four major trauma centres in London and employs over five hundred registered nurses. Data collection coincided with the start of the Covid-19 pandemic; therefore, the rapid expansion of ICU capacity had started. At the time of data collection, one of the four units was designated as a Covid-19 unit.

Recruitment and sampling

Using purposive sampling ([Simons, 2009](#)), the aim was to recruit new nurses who had worked in ICU for one year or less, and practice development nurses and mentors who mentored at least one new nurse. The proposed research was advertised via email and in staff coffee rooms. Those willing to participate were asked to contact the researcher for further information. Participants were then contacted via email to arrange interviews/focus groups. Data was collected from January 2020 to February 2020. Overall a total of twelve participants were recruited, six new nurse participants were recruited for face-to-face interviews and six experienced educators' participants were recruited to take part in a focus group.

Data collection

Two different methods of data collection were used. The use of different data collection methods is integral to a good quality case study examining multiple perspectives ([Simons, 2009](#)). The first method was in-person semi-structured interviews (See [supplement 1](#) with interview schedule). The semi-structured interview allows the researcher to use some direct questioning and have flexibility to explore areas not previously considered by the researcher or the new nurse ([Green and Thorgood, 2014](#)). The use of interviewing as a data collection method has limitations mainly related to the skill of the interviewer and the construction of questions ([Yin, 2003](#)). To try and address these issues a pilot interview was conducted and used to practice interviewing and to refine and adapt the interview question schedule.

The second method of data collection was focus groups. This were carried out with six senior/ clinical education nurses in ICU (see [supplement 1](#) for question schedule). Focus groups were chosen specifically for mentors and practice development nurses to examine their perspective on the learning experiences of new nurses. Focus groups allow participants to generate ideas with each other and the researcher to be in the role of a moderator rather than leader ([Breen, 2006](#)). Focus groups are social groups and therefore some participants may be reluctant to express particular viewpoints ([Cyr, 2016](#)). This limitation can be addressed by diligent moderation but nevertheless will remain a limitation to this

method of data collection. All the methods detailed above aimed to collect rich descriptive material which is characteristic of qualitative case study research ([Cresswell, 2009](#)).

Interviews and focus groups were audio recorded and subsequently transcribed. A reflexive diary was also kept by the researcher throughout data collection.

Data analysis

To analyse the data, a process of thematic analysis was used as described by [Cresswell \(2009\)](#). The author read all the data to consider themes, ideas and findings. Detailed analysis then began using a coding process ([Tesch, 1990](#); [Miles and Huberman, 1994](#)). Descriptions were generated using the assigned codes before finally interpreting and describing the meaning of the data. A reflexive diary was used alongside data analysis and considered during interpretation of the findings.

Transcribed data was then printed for line by line coding. Codes were identified throughout the transcripts using descriptive words. These were then further refined into patterns and themes as described by [Miles and Huberman \(1994\)](#). Focus group transcripts were analysed using the same methods. Subsequently codes and themes were applied across all data sources. For this reason, the data are presented as emerging themes from all data sources. [Table 1](#) illustrates how themes were generated from initial codes.

Member checking was utilised with two interview participants and one focus group participant to improve the quality of any data collected.

Ethical issues

Ethical approval was gained from the King's College London research ethics committee and the Health Regulation Authority (HRA). Ethical approval number is IRAS project number 263154 REMAS LRU-18/19-10584. Participants were provided with an information sheet; written informed consent was obtained. Data were anonymised to prevent identification of participants.

Findings

Participant demographics

Overall, twelve participants were recruited. Further demographics are shown in [Table 2](#).

Themes

1. Previous learning experiences and unique learning experiences in intensive care

New nurse participants identified that the formal training programmes mandated in ICU were more structured in comparison to other specialities they had worked in. All were pleased to have access to these courses and saw this as contributing to career progression and self-confidence as professionals.

New nurse three (NN3): *There was no structured learning in my previous area, you just went and worked in the ward and picked it up as you went along. Here (in ICU) everyone has to go through rigorous training'*

However, some participants voiced concerns about the orientation process including high pressure and 'transition shock'. Provision of many orientation documents and mandatory attendance at formal courses was perceived to dramatically increase the cognitive load. These perceptions were also expressed by focus group participants. FG participants also reported using the rigid structure of the orientation documents as way to manage teaching large

Table 1
Data analysis examples.

Data source	Code	Theme	Illustrative Quote
New nurse interview 3	1) Structured learning 2) Formal qualifications 3) Career progression 4) Learning on the job	Previous and unique learning experiences in ICU	<i>There was no structured learning in my previous area, you just went and worked in the ward and picked it up as you went along. Here (in ICU) everyone has to go through rigorous training'</i>
New nurse Interview 6	1) Structured learning 2) Formal qualifications	Previous and unique learning experiences in ICU	<i>'It's different in ICU, there is structured learning and a real emphasis on completing all the courses and booklets'</i>
Focus group PDN 12	1) Structured learning 4) Rigidity	Previous and unique learning experiences in ICU	<i>'That's the orientation policy (to take three weeks to complete orientation) and we shouldn't deviate from it as it needs to be the same for everyone as we have so many new starters'</i>
New nurse interview 6	1) Structured learning 5) Information overload	Previous and unique learning experiences in ICU	<i>I was completely overwhelmed at first, I wasn't sure if I could cope, it was physically and mentally exhausting, the new machines, all the things I couldn't do and didn't know'</i>
Focus group PDN 10	5) Information overload 1) structured learning	Previous and unique learning experiences in ICU	<i>They (new nurses) are constantly fed information, so they often forget things easily</i>
Focus group PDN 10	6) Developing relationships 7) Experience	Developing social relationships to aid learning	<i>'When I had been there for a few years it was easier to complete the later courses as I had already developed relationships with people'</i>
New nurse interview 5	8) personal relationship 9) Judgment 10) panic	Developing social relationships to aid learning	<i>'I started having panic attacks after that (relationship breakdown) and I realised that I couldn't carry on working in ICU, I also saw someone else have a breakdown during the shift and I didn't want that to happen to me'</i>
New nurse interview 3	11) support 12) good relationship 13) relationship building	Developing social relationships to aid learning	<i>'I was always told to ask the PDNs and they never made me feel stupid and I really did feel as though I could ask anything, they also introduced me to people at my level'</i>
New nurse interview 3	14) fear 15) blame 16) high risk	High risk culture	<i>'A senior nurse said to me that I should be scared of being a nurse in ICU due to all the mistakes you can make'</i>
New nurse interview 2	14) fear 15) blame 16) high risk 9) Judgment	High risk culture	<i>'people are scared to sign stuff off in case I make a mistake and then someone comes to find them'</i>
Focus group PDN 10	15) blame 16) high risk 17) incident response	High risk culture	<i>'we always add things to the orientation document when there is an error, for example we added the xxx information sheet as we had three critical incidents in a row. We had to be seen to react as a patient almost died'</i>
New nurse Interview 3	19) intimidation 20) lacking confidence 21) adjustment	Cultural Clashes and communication problems	<i>'It was a minimum six months adjustment, people are very assertive here in ICU, I think they have to be to do the job, but their confidence intimidated me especially at first'</i>
New nurse interview 5	20) Lacking confidence 21) adjustment 22) open culture/communication	Cultural Clashes and communication problems	<i>'They want you to speak up and ask questions, it's a much more open environment (than in my home country) and it's not so important what your level is your still expected to speak up if there is a problem'</i>
Focus group PDN 12	20) confidence 23) cultural difference 22) open culture/communication	Cultural Clashes and communication problems	<i>'Building a workshop around communication and escalation would certainly help some people especially the international nurses'</i>
New nurse interview 2	5) information overload 24) shift pattern 25) burnout	Shift patterns	<i>'I felt completely burned out after my nightshifts it was far too much alongside the orientation documents'</i>
New nurse interview 6	24) Shift pattern 25) burnout	Shift patterns	<i>'I changed shifts from days to nights frequently and it really made me struggle to cope'</i>

numbers of new nurses even though they were aware this approach may be detrimental to some new nurses learning experiences.

NN6: *'I was completely overwhelmed at first, I wasn't sure if I could cope, it was physically and mentally exhausting, the new machines, all the things I couldn't do and didn't know'*

Practice Development Nurse 10 (PDN 10): *'They (new nurses) are constantly fed information, so they often forget things easily'*
PDN 12: *'That's the orientation policy (to take three weeks to complete orientation) and we shouldn't deviate from it as it needs to be the same for everyone as we have so many new starters'*

2. The importance of developing social relationships to help aid learning and provide support

Participants expressed that interactions with existing staff and developing social relationships were a big part of learning and starting to feel comfortable in the new environment. Participants highlighted some of the barriers they experienced during the learning process and how important the clinical education team were in helping them to develop social relationships in a large unit with many nurses. One participant highlighted how personal relationship breakdown contributed to the decision to leave ICU.

Table 2
Participant demographics.

	Country of qualification	Professional background
Interview Group	4 qualified in UK, 1 qualified in Spain, 1 qualified in Philippines	All new ICU nurses (<1 yr. experience)
Focus Group	All qualified in UK	4 Practice Development Nurses (>8 years' experience), 2 mentors (>3years experience)

PDN 10: *'When I had been there for a few years it was easier to complete the later courses as I had already developed relationships with people'*

NN5: *'I started having panic attacks after that (relationship breakdown) and I realised that I couldn't carry on working in ICU, I also saw someone else have a breakdown during the shift and I didn't want that to happen to me'*

NN3: *'I was always told to ask the PDNs and they never made me feel stupid and I really did feel as though I could ask anything, they also introduced me to people at my level'*

3. High risk culture

Participants reported that they had been asked to add specific areas to orientation documents following adverse clinical incidents. For example, an incident with a speaking valve meant that a whole page on speaking valve use had been added to the orientation document for new nurses. Adding these immediately to orientation documents following a clinical incident led to a perception of ICU being high-risk culture. Unfortunately, it also led to a perception of blame being felt by new nurses. This may impede learning and contribute to high anxiety amongst new nurses. Participants noted the difficulty that ICU educators face in trying to ensure that new nurses are given opportunities and support to learn whilst balancing this with patient safety. Participants reported that being seen to react to an adverse clinical incident was important.

NN1: *'A senior nurse said to me that I should be scared of being a nurse in ICU due to all the mistakes you can make'*

NN2: *'people are scared to sign stuff of in case I make a mistake and then someone comes to find them'*

PDN10: *'we always add things to the orientation document when there is an error, for example we added the xxx information sheet as we had three critical incidents in a row. We had to be seen to react as a patient almost died'*

4. Cultural clashes and communication problems

Participants noted the assertive nature and confidence of ICU nurses in the UK. The contrast between ICU nurses in the UK and nursing culture in another country, was stark for those who had originally qualified abroad. Participants from different countries with different healthcare systems may therefore require a longer period of adjustment to account for this difference. Some participants also noted that confident individuals may find it easier to adjust to the unique culture of the ICU. New nurse five is an internationally educated nurse.

NN3: *'It was a minimum six months adjustment, people are very assertive here in ICU, I think they have to be to do the job, but their confidence intimidated me especially at first'*

NN5: *'They want you to speak up and ask questions, it's a much more open environment (than in my home country) and it's not so important what your level is your still expected to speak up if there is a problem'*

PDN12: *'Building a workshop around communication and escalation would certainly help some people especially the international nurses'*

5. Shift patterns

Participants noted across all interviews that shift patterns appeared to significantly impact on learning experiences. Working at night and changing shift patterns was perceived by participants to impede their learning. While this is the nature of ICU working this appeared to challenge nurse's abilities to engage with a formal training programme. Changing shift patterns frequently may have impeded learning and the new nurses were adversely affected by this. Clearly this is the nature of ICU work, but it is important to acknowledge that impact that this may have on learning

NN2: *'I felt completely burned out after my nightshifts it was far too much alongside the orientation documents'*

NN6: *'I changed shifts from days to nights frequently and it really made me struggle to cope'*

Discussion

This case study presents a unique perspective of new nurses learning experiences in one large ICU. This research shows that ICU is a challenging place to learn. Although this study was carried out in the UK, there are several factors such as social support and impact of shift work which will be applicable to international ICU settings.

The structure of learning in this specific ICU was rigid and new nurses felt overwhelmed with everything they were required to learn in a relatively short time. New nurses in this ICU experienced a type of transition shock, echoing findings reported by [Ankers et al. \(2017\)](#) and required varying periods of time to become comfortable. This impacted upon their individual learning experiences. ICU is a unique place to learn and places importance in learning quickly. This means that some new nurses became overwhelmed in the new technologically heavy environment. Not only do new nurses have to learn complex tasks but they also need time to develop the coping mechanisms displayed by more senior nurses.

There appeared to be little room for individual learning needs to be considered. This represents a barrier for new nurses learning in ICU. Whilst it's important to be guided by common education standards, such as those set out by the [Critical Care Networks National Nurse leads CC3N \(2015\)](#), it is equally important for experienced educators to have the flexibility to take an individualised approach to learning and development. For example, some internationally educated nurses noted a cultural clash which meant that it took longer for them to learn and feel comfortable in ICU. A more flexible approach may allow more time for new nurses including those who are internationally qualified, to develop the confidence and skills required of an ICU nurse.

Social relationships were an important factor in learning in ICU. Specific factors which may help new nurses to learn include supportive social relationships both inside the ICU and in the personal life of new nurses. This confirms previous findings that developing social relationships is key to enhancing learning ([Ortiz, 2016](#); [Kelly and Ahern, 2008](#); [Ankers et al., 2017](#)). As [DeGrande et al. \(2018\)](#) notes a good social connection with a role model was important for new nurses to feel comfortable in ICU. The clinical education team recognised this but often struggled to facilitate the development of social relationships. This was most likely due to large numbers of new nurses rather than smaller numbers described by [DeGrande et al. \(2018\)](#) and [Farnell and Dawson \(2005\)](#). This suggests that social connections may be more difficult to form in larger ICUs. Peer support systems, as noted by [Farnell and](#)

Dawson (2005), are probably more challenging to implement in larger ICUs. This has likely been complicated further by rapid expansion due to the COVID-19 pandemic.

Nevertheless, to improve new nurses learning experiences, clinical educators and mentors should aim to develop such systems to facilitate social support for new nurses in ICU. Within this particular ICU, the clinical education team had a key role to play in helping new nurses to learn as they had a good grasp of some of the issues facing new nurses in ICU. The education team was also a point of contact for new nurses in a unit with a large number of nurses.

A particularly concerning finding was the 'high risk culture' theme, where it was normal for new nurses to be frightened of some aspects of ICU work. New nurses felt that ICU work was high risk and they could potentially be blamed for errors. This undoubtedly adds to high anxiety in new nurses and is not conducive to a good learning environment. This is an area which requires further research and could be linked to the culture in this particular unit.

However, as Chestnutt and Everhart (2007) note, it is important that new nurses are prepared for the challenging environment of ICU. Developing new nurses' awareness of the high-risk nature of ICU work was a way in which senior nurses attempted to orientate new nurses to the challenges of ICU. The approach taken in this specific unit could perhaps be modified to create a less error focused approach to learning. This expands upon the findings of Baumberger-Henry (2012) and Ortiz (2016), showing that senior ICU nurses' approaches to teaching and mentoring impacted heavily upon new nurses' ability to learn.

Finally, it is important to consider the impact of shift work on learning. All the new nurses interviewed found this added to anxiety and made it difficult to learn well. Whilst the nature of working in ICU requires shift work, this is an important part of new nurses' experiences and this confirms the need for greater flexibility to take in to account shift patterns and the impact this will have on learning. Although previous research (Scholtz et al., 2016; Farnell and Dawson, 2005; DeGrande et al., 2018) notes the high emotional burden of ICU, the negative impact of shift work has not, to the authors knowledge, been previously documented.

Limitations

This work has several limitations. As a piece of qualitative research, the primary instrument for data collection and data analysis is the researcher. The author is an experienced critical care nurse educator and academic. Therefore, some data interpretation may be biased by this. This means that despite careful reflexivity and member checking throughout, the presented data may still be subject to some bias from the researchers' own interpretations.

The nature of the study being carried out in a single clinical area limits the generalizability. Not every aspect of this research will be applicable to every ICU and it will up to the reader to decide which parts may resonate and can be useful and which parts can be disregarded.

Conclusion

This study provides insight about key educational challenges, how these were experienced by new ICU nurses and considers how these challenges may be addressed. There is a need for a more flexible approach to learning in ICU as opposed to a 'one size fits all' approach used at present. This may require some cultural shifts to achieve this. Those working with new nurses such as clinical educators and mentors should seek to facilitate the development of supportive social relationships wherever possible. The large ICU presents a specific challenge due to the large numbers of staff and this makes a supportive education team ever more important

to new nurses' development. Some immediate areas for improvement include extending unrealistic deadlines where required and considering individual circumstances and background.

Ethical statement

Ethical approval was gained from the college ethics committee (REMAS) and from the Health Regulation authority (HRA) to conduct research within my clinical area. Please see appendix 3 for ethical approval details. Part of my responsibility as researcher is to acknowledge this risk and take steps to reduce its impact where possible. This was done by ensuring informed consent and maintaining confidentiality throughout the study as well as allowing participants to withdraw at any time before data is anonymised.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.iccn.2021.103094>.

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