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How to cite:

Baillie, Lesley and Thomas, Nicola (2019). Changing from 12hr to 8hr day shifts: A qualitative exploration of effects on organising nursing care and staffing. *Journal of Clinical Nursing*, 28(1-2) pp. 148–158.

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Version: Accepted Manuscript

Link(s) to article on publisher's website:
<http://dx.doi.org/doi:10.1111/jocn.14674>

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Changing from 12 hour to 8 hour day shifts: a qualitative exploration of effects on organising nursing care and staffing

Abstract

Aims and objectives: To investigate 1) How nursing care is organised on wards where nursing staff work different lengths of day shifts, and 2) How length of day shift affects the staffing of wards.

Background: Twelve hour shifts have become increasingly common worldwide but there are concerns about impact on care quality and safety. Eight hour shifts, and how day shift length affects how nurses organise their work, and staffing, have been little studied.

Design: Case study

Methods: The setting was two older people's wards in an acute hospital in England. Nursing staff on one ward continued to work 12 hour day shifts; staff on the other ward worked 8 hour late and early day shifts, with an afternoon overlap, for 6 months. Qualitative interviews were conducted with 22 nursing staff. Semi-structured observations were conducted from 12-15.00 (5 X 3 hour episodes on each ward). Data analysis was conducted using the Framework approach.

Results: Theme 1: Organising nursing care and staff activities, (sub-themes: Care delivery across a 12 hour shift; Care delivery on early and late 8 hour shifts; Staff communication and documentation; Staff breaks; Teaching, supervision and staff development); Theme 2: Staffing wards with different length of day shift (sub-themes:: Adequacy of staffing and use of temporary staff; Recruitment and retention of staff after introducing 8 hour shifts).

Conclusion: Nursing staff organised care on 8 hour shifts similarly to 12 hour shifts but then felt dissatisfied with their care delivery and handovers. Nursing staff on both wards approached care in a task-focused way. There were concerns that adopting an 8 hour shift pattern negatively affected recruitment and retention.

Relevance to clinical practice: Changing from 12h to 8h day shifts may affect nursing staff satisfaction with their care delivery and handovers, and have a negative effect on staffing wards.

Keywords: 8 hour shift, 12 hour shift, day shift, communication, handover, hospital ward, nursing care, recruitment, retention, staffing

Impact Statement: What does this paper contribute to the wider global clinical community?

- Nursing staff changing from 12 hour to 8 hour day shifts may find it difficult to adjust the way they organise care
- Nursing staff who are used to working 12 hour shifts may find 8 hour shifts unsatisfying, in relation to their care delivery and handovers
- There may be impacts on nursing staff recruitment and retention when an 8 hour shift pattern is imposed

1. Introduction

Nursing staff shift patterns have attracted increasing attention in recent years, especially in Europe and North America. There have been particular concerns about how longer shifts of 12 hour (12h) affect the quality and safety of patient care, with nursing staff fatigue and well-being often identified as an influencing factor. However, there has been less attention generally to 8 hour (8h) shifts, and to how different day shift length affects the way that nursing staff organise care and the staffing of hospital wards. This paper addresses this gap by presenting qualitative findings about organising care and nursing staff cover, from a study where, for 6 months, nursing staff on one medical ward worked 8h day shifts, while on another similar ward, they continued working 12h shifts.

2. Background

Internationally, 12h day shifts have become increasingly common amongst nursing staff particularly in the United States of America (US) (Stimpfel and Aiken, 2013) and some,

European countries, such as Ireland and Poland (Griffiths et al., 2014). In other European countries, 8h shifts remain the norm, while in England, 32% of nurses reported working day shifts of 12h or more (Griffiths et al., 2014). However, UK employment surveys reveal that numbers of nurses working 12h shifts are increasing (Ball et al., 2015). The results of large-scale surveys have prompted concerns that 12h shifts adversely affect quality and safety of care (Stimpfel et al., 2012; Stimpfel and Aiken, 2013; Griffiths et al., 2014). Furthermore, a review of studies of shift work found insufficient evidence that 12hr shifts are safe (Dall'Ora et al., 2016). Concerns about how 12h shifts impact on patient care could lead to consideration of a return to 8h day shifts. It is therefore important to understand the implications of changing an established shift pattern, including effects on organising nursing work and staffing.

A comprehensive scoping review of the literature on 12h shifts included 85 primary research studies and 10 review papers that related to nursing (Harris et al. 2015). No similar review of 8h shifts was identified in the literature, which is probably because 12h shifts, or other shift patterns that replaced 8h shifts, have been the main focus of previous research studies. There was inconclusive evidence about the impact of 12h shift patterns, however, most studies were small and the quality of research was generally weak (Harris et al. 2015). The review's overall conclusion was that there is a lack of evidence to support either implementing or withdrawing 12h shifts in nursing (Harris et al. 2015). Most studies focused on the risks, experience and staff work/life balance; fewer addressed the impact on patient outcomes, experience of care, or work productivity. Harris et al. (2015) suggested that more research is needed about the impact of 12h nursing shifts on patient safety and experience of care, and on the long term impact on staff and work organisation.

Harris et al.'s (2015) review identified that the impact of 12h shifts on the organisation of work, which is the topic most relevant to this paper, was a theme in 24 papers; these were accessed and are next reviewed. Several papers reported on different aspects of the same

study and so, overall, they represented 20 studies, all conducted in the US, Canada, Australia or the UK, between 1975 and 2009. The dated nature of some studies could affect their applicability to current healthcare, as acuity and complexity has increased during recent decades. There were eight studies reporting trials of 12h shifts and these ranged from 3 months to 12 months; in several trials, the 12h shifts were optional, which could impact on staff views. Harris et al.'s (2015) review identified no studies that had investigated wards where staff worked 12h shifts and had trialled 8h shifts, as in the current study. Other studies were evaluations following a permanent move to 12h shifts, sometimes including pre questionnaires as well as post, and several included pre and post implementation unit data. Most studies used questionnaires but a few included focus groups or documentary analysis too. There was only one study that used observation. Nine studies were conducted in intensive care or critical care; the others were based across a range of specialities, but only a small number were focused on wards for older people or medical wards, as in the current study.

In one of the few studies that focused on medical wards, and compared 8h and 12h shifts, Gillespie and Curzio (1996) identified no significant differences from an organisational perspective and 8h shifts increased opportunities for direct patient care. Several studies on critical care units indicated that 12h shifts positively affect planning and organization of care (McGettrick and O'Neill, 2006; Richardson et al., 2007), with staff planning care across the whole 12h shift (Wooten, 2000; Richardson et al., 2007). In contrast, Reid et al. (1993) found that 12h shifts were associated with less direct patient care on hospital wards; they suggested nurses were taking more unofficial breaks as a way of pacing themselves. As regards documentation of care, Gillespie and Curzio (1996) found that some aspects were more complete on wards working 12h shifts.

Some studies have indicated that nurses working 12h shifts receive less in-service education and continuing professional development than those working an 8h shift pattern (Harris et

al., 2015). Traditional 8h day shifts had an overlap in the afternoon, which potentially provided an opportunity for educational and development activities, that may be lost with 12h shifts (Harris et al., 2016). A study in Northern Ireland found that student nurse learning was negatively affected by 12h shift patterns as students worked less with trained staff and had less educational opportunities (Reid et al., 1991; Reid et al., 1994). However, a Canadian study indicated that 12h shifts offered student nurses a fuller educational experience (Rosen and Fegan 2009). The impact of shift length on staffing has been little examined in general ward settings but some studies in critical care found that 12h shifts had a positive impact (Mills and Arnold, 1983; McGettrick and O'Neill, 2006). In Mills and Arnold's (1983) study, staff were highly involved in developing the new shift pattern, which could have increased staff positivity towards the shift pattern and working in the unit.

In summary, 12h shifts have increasingly attracted research interest but 8h shifts have received less attention. There were no recent studies identified that considered how length of day shift affects how nurses organise care nor effects on staffing wards. This paper aims to add to the evidence base by addressing the following research questions:

- How is nursing care organised on hospital wards where nursing staff work different length of day shifts?
- How does day shift length affect staffing of hospital wards?

3. Method

3.1 Study setting

The study took place on an acute hospital in south east England, where full-time registered nurses (RNs) and nursing assistants (NAs), referred to as 'nursing staff', worked 12h shifts, on three days or nights each week. The study was conducted on two 28-bedded older people's medical wards that worked 12h day shifts. From July-December 2013, on one ward (pseudonym 'Ward T') nursing staff worked two overlapping 8h day shifts (07.00-15.00 and 12.00 to 20.00) instead of 12h day shifts; the night shifts continued as before. This pilot

necessitated the employment of an additional 6.47 full-time equivalent staff members thus incurring additional financial cost to the hospital. The other ward (pseudonym 'Ward S') continued to work 12h day shifts as before. The pilot was conducted because the hospital's senior staff were interested in how a return to 8h shifts might affect nursing activities and patient care. They also questioned whether an afternoon overlap of two 8h day shifts, as historically worked by UK nurses, would add value, for patient care and staff education and development. Any Ward T staff who did not wish to work 8h shifts, moved to other wards, or worked in the hospital's temporary staffing department (referred to as the 'bank'). The hospital also often used external agencies to provide staff to cover shifts on the wards. This paper focuses on findings from interview and observational data that concerned how care was organised during the different length of day shifts and any effects of shift length on staffing the wards.

3.2 Study design

The design was a case study, which is appropriate for investigating a contemporary phenomenon in depth, within a real world context, and addressing 'how' research questions (Yin, 2014), as identified for the current study. Ward S, where nursing staff continued to work 12h day shifts, and Ward T, where nursing staff piloted 8h day shifts, were the cases used to explore the effects of different day shift length. In this paper, findings are reported from two themes resulting from qualitative analysis of nursing staff interviews, and from observation of nursing activities during the afternoons on the two wards. These data were collected concurrently from both wards during the second half of Ward T's pilot (October-December 2013). The overall study also included observation of interactions during the evenings and analysis of patient discharge survey data. These results, along with other data from the qualitative interviews, have been previously published, and reported on effects of day shift length on patient care (Baillie and Thomas, 2017). Rigour was addressed throughout this study in line with Meyrick's (2006) two key principles of transparency and systematicity.

Hence, the following sections provide a clear and detailed account of how the data collection and analysis methods were conducted. The ‘Consolidated criteria for reporting qualitative studies’ (COREQ) have been applied.

3.3 Nursing staff interviews

Information about the study was distributed to all permanent nursing staff on Wards S and T. Increasingly purposive sampling was used to recruit RNs of different grading bands and to ensure inclusion of staff who had worked both 8h and 12h day shifts. The interviews were conducted using a topic guide, which was developed from the literature (see Table 1). Total participants were: 12 staff on Ward T (9 RNs; 3 NAs), and 10 staff on Ward S (8 RNs; 2 NAs). The interviews were audio-recorded with consent; one participant declined to be recorded and so notes were written instead.

Table 1 Interview topic guide

Ward T	Ward S
<ul style="list-style-type: none">• General experiences of 8h shifts• Effect of the 8h shift pattern on patient care• Effect of the 8h shift pattern on staff• Any other effects of the 8h shifts• Any other comments	<ul style="list-style-type: none">• General experiences of 12h shifts• Effect of the 12h shift pattern on patient care• Effect of the 12h shift pattern on staff• Any other effects of the 12h shifts• Any other comments

3.4 Observation

As a key difference between the 8h day shift pattern and the 12h day shift pattern was the afternoon overlap of the two 8h shifts, the researchers conducted observation from 12.00-15.00 on five days, on both wards, providing five ‘snapshots’ of nursing staff activities. Initial categories of nursing activities were identified in liaison with the hospital staff, as an aid to recording the activities, using a semi-structured observation schedule (see Box 1). The schedule was piloted on one afternoon by both researchers to review its comprehensiveness, and to agree a consistent approach (see Box 1). In each 30 minute

slot, the researchers listed the activity category numbers observed, and wrote fieldnotes about these activities and contextual factors.

Box 1: Semi-structured observation schedule: observation of nursing staff activities from 12-15.00

Categories of nursing activity

1. Clinical care with patients (note type of care activities)
2. Communication with patients
3. Communication with families
4. Patient documentation
5. Staff handover
6. Staff communication (not handover): 6a) With ward nurses 6b) With other nurses/healthcare professionals 6c) With non-clinical staff 6d) Telephone
7. Staff education/development: 8a) online on the ward, 8b) face-to-face on the ward, 8c) other
8. Student supervision and assessment
9. Discharge/transfer activities
10. Other (specify)

Nursing activities (number 1-10)	Notes about activities
12.00-12.30	
12.30-13.00	
13.00-13.30	
13.30-14.00	
14.00-14.30	
14.30-15.00	

The observations were conducted on varied days of the week and included a weekend observation on each ward. For context, the observers noted the staffing (number, RN:NA ratio, number of agency/bank staff, number working 8h or 12h shifts) during each observation period. During each observation period, the researchers moved around different areas of the ward so that they gained as comprehensive a picture of the care activities as possible. The observations were recorded manually and then written up electronically later on the same day. The inclusion criteria for nursing staff observed were that they were on the ward during the observation episode and gave consent.

3.5 Data analysis

The interview audio data were professionally transcribed and then analysed using Ritchie and Spencer's (1994) five stage Framework approach) (see Table 2). One researcher conducted Stages 1-4 with Stage 5 conducted by both researchers, to agree on themes. Quantitative data about ward staffing during the observation periods were calculated manually, noting frequencies. The activities observed on each ward were grouped into initial categories, which were clustered into three main categories: clinical activities, communication, and management. These categories and observation fieldnotes were then reviewed in the context of the Stage 5 themes from the interview data analysis. Final themes and sub-themes about organising care and staffing the wards were then identified.

Table 2 Framework approach (Ritchie and Spencer 1994), applied during interview data analysis

Stage 1	Transcripts were read for familiarity and initial themes identified
Stage 2	Thematic framework was developed from the topic guide and initial themes, identified at Stage 1
Stage 3	Application of the framework to each transcript through line by line data coding
Stage 4	Charts developed to display the data
Stage 5	Critical review of the charts, clustering of codes into categories and then themes

3.7 Ethical considerations

The study was carried out in line with the Declaration of Helsinki. Approval for the study was given by a university research ethics committee. The hospital's Clinical Audit and Effectiveness department also reviewed the study, which was registered as a service evaluation. The researchers had honorary hospital contracts and, for privacy and infection control reasons, only observed in bays and corridors, and not behind curtains, in bathrooms or siderooms. The researchers introduced themselves to patients in bays, explaining that they were observing nursing staff. The permanent nursing staff on the two wards signed

consent forms prior to observation on the ward commencing and consent was rechecked verbally with staff on duty during observation. The researchers explained the study to temporary staff (agency/bank) present on the ward during observation, gave them information sheets and obtained consent. Nursing staff completed written consent forms before each interview. All staff approached were willing to be observed but some declined to be interviewed. The data were anonymised and kept securely on password protected, encrypted computers.

4. Findings

This paper presents the following two themes: Organising nursing care and staff activities; Staffing wards with different length of day shift. The interview and observational data contribute to both themes. Interview data extracts are identified as either S or T, according to ward, and a number (order in which interviews were conducted). Observation episodes are identified as 'Ob', with the ward (S or T) and number (order in which episodes were conducted).

4.1 Organising nursing care and staff activities

Staff were usually allocated in a team of RNs and NAs to two specific 6 bedded bays and nearby siderooms. On both wards, within the bays, they approached care in a mainly task focused way and there was a strong focus on 'getting the work done' with care activities referred to as 'jobs' during interviews. RNs particularly focused on medication administration (which was lengthy and complex due to the multiple co-morbidities of the older people) as well as liaising and organising care. Meanwhile, the NAs carried out fundamental care, such as personal care, and routine vital signs measurement. For some activities, RNs and NAs were observed to work together, for example, repositioning patients, and all staff were involved in mealtimes.

Table 3 summarises the nursing activities observed during the afternoons on each ward, categorised under three main headings (Clinical activities, Communication, Management) with sub-categories. Of the clinical activities, all were observed on both wards with a few exceptions: specimen collection and wound dressings were observed occasionally on each ward. On Ward T, intravenous cannula insertion and venepuncture was observed on one occasion. Communication was observed with a range of people (patients, relatives and staff) on both wards across the afternoons. Of the activities categorised as management activities, handover activities were observed on four afternoons on Ward S, but all afternoons on Ward T. Discharge-related activities were observed on two afternoons on Ward T but four afternoons on Ward S. Supervision or teaching activities (including student supervision) were observed on three afternoons on each ward.

Table 3 Summary of nursing activities during afternoons on Ward S (12h shift ward) and Ward T (8h shift ward)	
Clinical activities	Personal care Comfort (Repositioning, bed-making) Observations Medication Eating and drinking Specimen collection Wound dressing IV cannula insertion and venepuncture (NB one occasion only)
Communication	With patients With relatives With other nursing staff With other healthcare professionals With non-clinical staff Telephone
Management	Nurse handover Organising care Discharge-related Documentation Supervision/teaching

The following sub-themes are reported: Care delivery across a 12h shift; Care delivery on early and late 8h shifts; Documentation and communication; Staff breaks; Teaching, supervision and staff development

4.1.1 Care delivery across a 12h shift

Staff on Ward S, and those on Ward T who had previously worked 12h shifts, explained how they took a whole day approach to planning and organising care across the shift, taking into account all the activities they needed to do for their group of patients during that timeframe.

For example, a Ward T staff member who had previously worked 12h shifts recalled:

I used to organise my work from the morning until the end of the shift to end up with the night staff, so I would be just organising everything (T10)

Similarly, an Ward S staff member also emphasised that planning was the key:

If you have a long day you have enough time to reflect on that and know everything is in order. When I talk to other people they have said that 12 hours can be difficult but if you have proper planning it will work. (S5)

Some Ward S staff described in more detail how they prioritised and planned the activities they needed to complete across the 12h shift:

Because, I've got the whole day, I can actually plan for the whole day. Like, I'm sort of, say, going to do my breakfasts, I'm going to do my washes, also, we do the lunches and then, after the lunches, when the patients are sleeping, we can actually tidy up the place. [In the evening] Supper time and then, after supper, you get your patients ready for settling into bed. (S2)

Some Ward S staff discussed how busy the last part of the 12h shift was, at a point when staff were getting tired and feeling under pressure to complete their work:

It's probably the most stressful point of the shift, the last two hours. You're so aware of having two hours to finish everything that you have to do. (S1)

4.1.2 Care delivery on early and late 8h shifts

Ward T staff who had previously worked 12h shifts discussed the differences about organising care on an 8h shift, adjusting to the different way of working and to their roles on each shift. They discussed that working in the morning was the same as on a 12h shift, and

was seen as 'normal'. Coming on duty on a late shift, however, was different as the 'work' was already in progress and they had to 'catch up':

You just have to get into the flow of things when everyone else is in the flow already.

A lot is happening and you kind of feel for the first half hour or so that you are just trying to catch up and find out what's been happening. (T1)

However, one staff member described the late shift work in a more relaxed way:

We help our colleagues until lunch time, make everybody comfortable and ready for lunch, and then after lunch we're getting handover in the bays. (T2)

Some Ward T staff felt that, on an early shift, they had not completed all their work, which led to them rushing care to finish everything:

I want to leave everything pretty much done for the late staff, so the morning jobs make me rush a bit more in the beginning so I can leave with my job done. [...] I don't like to leave my morning jobs to my colleagues because I don't think it's fair. (T10)

While staff realised that they could hand over uncompleted care to their late shift colleagues, they expressed guilt and concern that the care handed over would not be carried out:

Personally, from somebody that's done long days previously, I find myself going home feeling that I've not done my job. And you're passing over to somebody but are you sure that everything's been passed over properly? Even though, yes, you document it. (T7)

These views implied that some staff had not adjusted to organising care differently with 8hr shifts. Other Ward T staff appreciated that having more staff arrive for the late shift was helpful and they could work together:

In the morning you do your washes, you do your morning medication, and then you know that at 12 you're going to get help. (T5)

Several staff commented that extra staff to support lunchtimes was beneficial. Both wards had implemented nurse-led mealtimes and staff were observed to prioritise assisting with meals; there was certainly an abundance of staff on Ward T to assist at lunchtime, for

example: '10 staff assisting with lunch: serving meals, encouraging, helping patients' (ObT1 fieldnotes).

Some Ward T staff expressed that they were not sure of their roles in the afternoon – what the early shift staff did and what the late shift staff did:

The thing is that the tasks are not defined, the care can be good if afternoon staff know exactly what to do and early staff know exactly what to do. (T4)

Without clear roles and with a lot of staff on duty, some Ward T staff perceived that there was time wasted during the afternoon overlap of staff:

From lunch time on you hang around a bit and it feels a bit overstaffed to me. [...]

They [early shift] are winding down. [...] There are so many people around, you don't know what to do with each other. (T12)

Others identified that perhaps staff needed to use the afternoons better while one staff member expressed that how time was used depended on the staff on duty: '*It depends on the staff, some people are hardworking, you know, like in every place*' (T5).

4.1.3 Staff communication and documentation

On Ward T, working two 8h shifts resulted in an additional formal handover between the early and late shift. Ward T staff (T3, T9) stated that they aimed to do a brief 'RAG' board [priorities shown with a red, amber, green rating] patient handover before lunch, with an overview of all patients, alerting staff to ill patients or those who needed extra observation, followed by more detailed bedside handovers in the bays where staff were working, after lunch. On all afternoons observed on Ward T, there were some handover activities prior to lunch. However, some Ward T staff expressed that not having a full ward handover until after lunch led to late shift staff feeling they did not know the patients they were caring for.

Some Ward T staff expressed a lack of confidence about information being passed on between shifts and were concerned that the additional handover during the 24 hour period had a negative effect:

You've handing over to too many people [...] it's a bit like Chinese Whispers because whatever you hand over, it doesn't always get handed over [to the next shift]. (T9)

Staff also worried that little things, important to patients, might get missed during the handover between shifts, especially as they may not be documented. *'I mean the main things are written down but it's the little things (T5)*. However, one staff member referred to the benefit of the additional handover as *'things can happen during the course of the day so you're keeping updated with the changes' (T3)*. Notably, nursing staff handover activity was also observed on Ward S, on four of the five afternoons. A few Ward T staff raised that there was a risk that multidisciplinary team (MDT) information from the morning would not be relayed to late shift staff and it was also raised that the late shift staff worked less with the MDT:

You're less time with the doctors and the OTs and the physios, so if you do have questions or need help you have less time to kind of organise with them. (T5)

Frequent documentation activities were observed on both wards during afternoons. Some staff reported documenting across the day: *'As I go along I do my notes' (S5)*. Several Ward T staff too recalled how they used to write notes when working 12h shifts, for example:

If I was a long day I think it's easy because I have all day, can do a few notes on this, go around, look at this, again sit, one by one [...] everything that's happened you document. (T8)

Some staff on both wards acknowledged that staff sometimes stayed behind after shifts to complete documentation, meaning that they were late off duty, and the shift was extended. A Ward T staff member (T9) explained there was on-going staff education about documenting at the point of care so that staff would be more likely to go off duty on time.

4.1.4 Staff breaks

Most staff reported that they got a break during the 12h shift, although some Ward S staff admitted that breaks were very short as the ward was so busy and short-staffed. Fieldnotes from one very busy afternoon on Ward S stated that:

Staff busy all the time. 3 NAs went for breaks – no qualified staff were seen to take breaks though Band 6 did discuss organising breaks with them but one of the Band 5 staff nurses said she was too busy. (ObS3 fieldnotes).

Some Ward T staff expressed that staff could take breaks in the afternoon without feeling *'pressured or any guilt because there's someone there to take over from me'* (T11).

However, one staff member considered that the 8h shift felt more pressurised and that, despite the shift overlap, there was less time to take a break (T8). One Ward T staff member asserted that there needed to be routine organisation of breaks as: *'If you give somebody a time [for a break], then they work up to that time'* (T7).

4.1.5 Teaching, supervision and staff development

On both wards, staff described being released for study days but some reported cancelled study days due to staff shortages. The staff had various online training programmes to complete but found it difficult to find time to access computers on shift (S9, T8). On just one occasion (Ob3T) a staff member was observed completing online training. A few Ward T staff identified the possibility of organising formal teaching sessions in the overlap (T3, T9) but this had not yet happened. Teaching/supervision activities were observed on three afternoons on both wards. Student nurses were always observed to be working with a staff nurse and a Ward S staff member described planning learning opportunities with students, such as medicine rounds (S3).

Staff discussed that learning during a 12h shift could be on-going:

If I've got questions about a certain thing I would query that and say, 'Why is this?'

'Why are we doing this and that?' I would get the response that I need. (S2)

One Ward T staff member discussed that senior staff carried out informal teaching on the ward:

They go around and they do try teaching little snippets here, not a complete study session for an hour or half an hour. It's on the ward. (T9)

On one afternoon on Ward T, there were several examples of informal guidance from a senior staff nurse to junior staff and a student, about clinical care and documentation (Ob2T); this was a Saturday, when the ward felt quieter.

4.2 Staffing wards with different length of day shift

Both observational and interview data on Ward S and Ward T indicated that there was always one RN in charge, described as 'charge-capable', leading a team of RNs and NAs. There were more staff on T ward between 12-15.00, though not many more as staffing numbers were often made up with bank or agency staff who worked 12h shifts. The numbers ranged from 9-13 (Ward T) and 8-10 (Ward S). These figures sometimes included 1-2 'specials', usually bank or agency staff, who provided one-to-one care for people at risk (e.g. of falls). There were a number of concerns about staffing, which are presented in two sub-themes: Adequacy of staffing and use of temporary staff; Recruitment and retention of staff since the introduction of 8h shifts.

4.2.1 Adequacy of staffing and use of temporary staff

One Ward T staff member expressed that staffing and skill-mix was adequate (T3) but other Ward T staff discussed staff shortages, both NAs and RNs. However, Ward S staff also discussed issues with staffing levels and effects on care delivery, for example, one RN

talked of lack of NA support and also revealed that nursing activities were divided between the RNs and NAs:

For my last three shifts I've not had staff, I've been on my own so I've done everything, the meds, notes, washing, I've been NA and a nurse (S6)

Staff on both wards pointed out that 12h shifts necessitated only one 'charge-capable' nurse to cover the day while 8h day shifts required two 'charge-capable' nurses. A few Ward T staff referred to the financial impact for the Trust due to the extra staff needed to cover the 8h day shifts. It was also raised that a staff member off sick for one 12h shift might then have two scheduled days off duty, giving time for recovery, while, with several 8h shifts scheduled consecutively, the person could be off sick for several days (T8). Some staff referred to the large usage of bank and agency staff on Ward T '*Because there are not enough staff*' (T4). However, the researchers observed that Ward S also employed a high proportion of temporary staff.

4.2.2 Recruitment and retention of staff on Ward T since the introduction of 8 hour shifts

On Ward T there were many comments about the number of 'good' staff who had left the ward due to not being able to work the new shift pattern, for example:

It was literally ... whoosh. They went very quickly, there were eight or nine of them just went. They all transferred to other wards because of that reason. (T12)

On two afternoons observed on Ward T, a staff nurse, who was previously permanent to the ward, was working 12h shifts there as a bank nurse. Staff on duty commented to the researcher what a good nurse she was and what a loss to the ward.

A few staff expressed that the 8h shifts were not good for staff morale and several mentioned that either they, or other staff, were considering leaving if they continued beyond the pilot, for example:

There are a few people here who don't like it and if it continues on this ward I think they will ask to be moved to another ward. [...] they would prefer to do 12h shifts.

(T12)

T9 mentioned that there had been seven new RNs on Ward T who were saying '*don't know whether I can keep going with these short shifts*' so there was concern that they would not be retained. New NAs recruited had apparently left promptly when they realised that the ward did 8h day shifts and several staff had reduced their hours since the pilot started (T9) so they worked less days.

5. Discussion

The current study offers an original contribution to the discourse about nursing staff shift length, both nationally and internationally. Previous studies have focused on the introduction and impact of 12h shifts but no studies were identified that investigated a change from 12h to 8h day shifts. In addition, few studies have included observation, which offered further insights into the nature of nursing work on wards with different day shift length. However this study has some limitations: it was a small study, involving only two wards at one hospital and the study commenced after introduction of the 8h shifts, thus preventing opportunities for pre-shift interviews and observation.

Previous studies have indicated concerns about nurses working 12h shifts and whether shorter shifts would benefit patient care (Stimpfel and Aiken, 2013; Griffiths et al., 2014). However, the current study's findings highlighted that changing an established shift pattern is complex and takes time. In Gillespie and Curzio's (1996) study, the new 12h shift pattern had been established for 12 months at the time of data collection while in the current study, data were collected 3-6 months after implementation. Staff on the ward piloting 8h shifts, some of whom had worked 12h shifts for years, did not choose to the shift length change;

this lack of choice could have affected their attitudes towards the 8h shifts. In a study of changing to 12h shifts, Reid et al. (1993) identified that staff's negative attitudes were undoubtedly affected by their lack of choice about the new shift pattern. Previously, researchers have found that involving staff in planning and implementing changes to shifts can have a positive effect (Campola et al, 1998); in some studies, staff had expressed a desire to change to 12h shifts (Freer & Murphy-Black, 1995; Gillespie and Curzio, 1996). These studies are all somewhat dated but nevertheless, staff attitude and involvement in shift pattern changes are likely to be an important influence when implementing new shifts.

Staff working 12h day shifts described having the whole day to deliver the care for their patients, though some staff considered the last part of the shift to be pressurised. Similarly, though in cardiology, Wootten (2000) found that nursing staff paced their work during 12h shifts rather than 'rushing' through all care in the morning. Several other studies on critical care units have indicated that 12h shifts positively affect planning and organisation of care (McGettrick and O'Neill, 2006; Richardson et al., 2007; Dwyer et al. 2007). On the ward piloting 8h shifts, staff described approaching the early shift in the way they did the 12h shift. They then felt dissatisfied that they did not achieve what they did on a 12h shift, which was compounded by their concerns about handing over the remaining 'work' to staff on late shifts. There were no previous studies identified where staff expressed such feelings associated with the early 8h shift. Previous studies have found conflicting evidence about how shift length affects job satisfaction, with some finding nursing staff were satisfied with their work on 12h shifts (Stone et al. 2005; Thomson et al. 2017) while a European survey identified that nurses who worked shifts over 8h were more dissatisfied with their jobs (Dall'Ora et al. 2015). In the current study, difficulties in adjusting to delivering care on 8h shifts may be associated with the model of care; the interviews revealed a strong focus on completing tasks. Duffield et al. (2010) identified four models of care (primary nursing, team nursing, task-oriented and patient allocation), reporting that decisions about organising care were generally pragmatic, changing according to skillmix and staff experience. Within both

wards, organisation of care was team nursing, with a small team of RNs and NAs, allocated to a set of bays and siderooms, but within each bay, there was a task-oriented approach.

The brief RAG priorities 'board' handover used at the start of the late shift on the 8h shift ward, does not appear in the literature about modes of handover, which refer to handovers being at the nurses' station, in offices, at the bedside, written or audio-recorded (Hardey et al. 2000; Riesenbergr et al. 2010; Sarvestani et al., 2015). However, despite this brief 'board' handover, on a late 8h shift, some staff reported discomfort about starting part way through the day, as they felt they were catching up with their patients, having missed the morning with them. They also expressed concerns that having an additional, third handover during the 24 hour period led to information being lost in transition, and they feared that 'little things' that were important to patients might get missed, as they might not be documented. These concerns indicated a hierarchy about what is important enough to be documented, and subsequently known, by the nurse on the next shift. In a similar way, in a study of handovers in older people's wards, Hardey et al. (2000) found that nurses wrote their own notes, which were not formally documented, but combined personal and professional knowledge that informed patient care delivery in a dynamic way during the shift. In studies of changes to 12h shifts in critical care areas, there were some positive views about having just two handovers, rather than three, which were felt to affect continuity and take up more time (Mills and Arnold, 1983; Freer & Murphy-Black, 1995; Richardson et al., 2007). In a recent study, unqualified staff on varied wards and community, considered that two handovers within 24h, rather than three, released more time for patient care and reduced risks of miscommunication (Thomson et al. 2017). However, Gage (2013) found most wards and units included mini handovers (up to 3) during 12h shifts, which challenges the view that wards with 12h shifts only have two handovers. Similarly, in the current study, handover activity was observed on most afternoons on the 12h shift ward, as well as the 8h shift ward.

On neither study ward did there appear to be a routine for nurses having breaks, the key reason being busyness and staff shortages. In critical care, McGettrick and O'Neill (2006) found that some critical care staff felt that there needed to be changed attitudes for regular breaks to be instigated but also pointed out that nurses found it difficult to relax and take breaks. The study wards, though a different care setting, were also high paced and staff similarly found it difficult to take breaks.

Harris et al. (2015) identified that nurses working 12h shifts tended to receive less in-service education and continuing professional development than those working 8h shifts, where the morning and evening shifts overlapped, providing time for educational activities and team meetings (Harris et al. 2015). However, the current study offered no evidence from interviews or observation that introducing 8h shifts in themselves increased educational or development for nurses. It may be that potential opportunities were missed, but the nursing staff were observed to be continually busy with clinical activities during the afternoons. Dwyer et al (2007) reported that nurses on ITU expressed dissatisfaction about reduced access to in-service staff development; in the current study, nurses on both wards reported some cancellation of booked study days.

In the current study, staff from both wards discussed that there were shortages of staff and both wards regularly employed bank and agency staff to ensure appropriate staff: patient ratios. However, in a recent study, unqualified staff expressed that increasing staff numbers through employing casual 'bank' staff was not a good solution to staff shortages, as their skills were considered inferior, thus increasing workload of permanent staff (Thomson et al. 2017). In the current study, particular concerns were voiced about the recruitment and retention of staff on the 8h shift ward. Staff in the current study considered that it was easier to cover the wards with long days; to cover 8h day shifts more staff were needed, including two staff capable of taking charge, rather than just one. Staff on the 8h shift ward also referred to 'good' staff leaving when 8h shifts were introduced, indicating an effect on

retention. Previous studies have focused on the effects on staffing after 12h shifts were introduced rather than when 8h shifts were implemented, as in the current study. Some studies from critical care found positive effects on recruitment and retention after introducing 12h shifts (Mills and Arnold, 1983, Campola et al., 1998; Dwyer et al. 2007). Conversely, Stimpfel et al. (2012) found that nurses working shifts of ten hours or longer were more likely than nurses working shorter shifts to express intent to leave the job. However, studies that focused on why nurses leave and factors influencing retention have identified a range of possible factors, other than shift patterns, indicating the complexity of nurse retention (MacKusick and Minick, 2010; Lartey et al. 2014; Darin et al. 2015).

Further research into how shift length affects organisation of nursing care, and staffing of wards, would be beneficial, with observations conducted across the whole day, and patients interviewed as well as staff. Future research could also investigate whether there are ways to make a change from 12h to 8h shifts more acceptable to nursing staff and with positive impacts on organisation of nursing care.

Conclusion

Concerns about 12h shifts and their impact on patient care have been increasingly reported in the international literature, the implication being that shorter shifts would be preferable. However, this study's findings revealed that changing from 12h to 8h shifts can be difficult, with nursing staff struggling to adjust. They continued to organise care as they had done on 12h shifts, using a predominantly task-focused approach with an emphasis on 'getting the work done'. They felt unclear about how to organise nursing care during two overlapping shifts and felt dissatisfied with the additional handover activity. From a staffing perspective, increased staff numbers were needed to cover an 8h day shift pattern but imposing 8h day shifts shift pattern appeared to negatively affect recruitment and retention.

Relevance to clinical practice: Changing from 12h to 8h day shifts may affect nursing staff satisfaction with their care delivery and handovers, and have a negative effect on staffing wards.

Funding source

The study was funded by the hospital where the study took place. The senior hospital staff contributed to preliminary discussions about the study design and enabled access to staff.

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