# How does shift work on placement affect healthcare students' lives?

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## Abstract

As a healthcare student, it is essential to undertake clinical practice placements in the relevant field. Practice placements enable students to become competent healthcare professionals, increasing clinical confidence and ensuring that statutory, regulated requirements are met. As part of a healthcare professional education, it can be expected that an individual will have to undergo a variety of working hours, including social and anti-social hours, and shift work. Moreover, as a qualified professional, there is an increasing demand to undertake a combination of both day and night shifts within the same week. Research evidence indicates that such shift patterns can lead to shift work disorder (SWD); exacerbated by the demands of the profession, SWD is associated with poor decision making and health implications. Current research focuses on healthcare professionals in general, with little attention given to healthcare students. Therefore, it fails to recognise the detrimental effects that shift work can have, not only on a student's physiological and mental state, but also on their personal and academic life. The aim of this paper is to determine students' perceptions of the impact of shift working on their physical health, personal life and academic studies.

Initially a pilot study was developed to explore how data quality could be improved and trustworthiness and credibility maximised. An explorative, qualitative approach was used by means of semi-structured interviews. Prompts were used to enhance a participant's exploration and to develop rich data.

Thematic analysis of the data identified four overarching themes: professional challenges, resilience, workplace challenges and negative effects of shift work. Participants identified periods of vulnerability and isolation alongside excessive tiredness and stress on family life. Participants also recognised differing eating habits and ill health following shift work. Furthermore, it was highlighted within the data that some participants developed coping strategies and built resilience to the stressors of combining academia and practical placements. Time constraints led to limited participant availability, restricting the amount of data offered and the number of healthcare disciplines represented.

This study identified the physical and mental health implications for future healthcare professionals at an early stage in their career, warranting necessary further research. Healthcare educators should utilise the findings to develop firm support systems to direct students during both clinical placements and theory work. Furthermore, clinical practice administrators need to develop policies to promote a positive training environment where students feel well supported.

## Acknowledgements

## Introduction

Traditionally, healthcare education within the United Kingdom (UK) was an apprentice-based experience, whereby trainees were paid, with periods of time allocated for training. During the 20th century, healthcare education moved from work-based training to university, degree-level programmes (RCN, 2012). Therefore, the theoretical element of professional education became paramount, prompting the development of multiple challenges for healthcare students. Students are expected to manage working shifts, academic work and personal life throughout their training, with many being mature students who are managing a family, with personal circumstances, such as childcare, potentially exacerbating stressors associated with healthcare professional education programmes (McIntosh, Gidman, & McLaughlin, 2013).

Introducing this method of education meant that healthcare students had supernumerary status and were not enlisted as members of the workforce, reducing their status, with research suggesting a confusion between roles and division between qualified and unqualified staff (NMC, 2008; Allan & Smith, 2009; Shepherd, 2014). It could be suggested that this confusion would lead to a lack of support from clinical mentors, leading to negative practice experiences (McIntosh et al., 2013).

Various governing bodies, such as the Nursing and Midwifery Council (NMC), currently regulate healthcare education in the UK. The NMC, specifically, require nurses and midwives to split their education 50/50, combining practice placements that involve both day and night shifts, and theoretical and academic work (NMC, 2015). The aim of this study is to explore the effects of shift work on healthcare students while on placement.

## Study objectives

> To determine students' perceptions of the impact of shift working on their physical health, personal life and academic studies.
> To identify common themes in how shift working impacts on students' physical health, personal life and academic studies.
> To critically analyse identified themes and existing literature available on the effects of shift working on healthcare students, while on placement.
> To propose possible changes to further practice or research, based on study findings.

## Literature review

Current research exploration was performed using keywords such as 'shift work', 'effects of shift work', 'physical, mental, emotional' and 'benefits of shift work' to review relevant background literature. There was a significant amount of evidence highlighting the increasing prevalence of shift work disorder (SWD) associated with shift work, specifically with night shifts and shifts that are separated by fewer than 11 hours (Flo et al., 2012). SWD symptoms can consist of excessive sleepiness at a time when it is essential to be awake, insomnia when sleep is required, lethargy, lack of concentration, and depression (Roth, 2012). A health professional experiencing such symptoms could be in danger of making mistakes and, therefore, of putting the health of service users at risk (Gaba & Howard, 2002; Leversidge, 2013).

Circadian rhythms are biological functions that can be altered due to external influences, such as shift working. Evidence suggests that if these rhythms are altered, the individual is at higher risk of developing life-changing conditions, including cardiovascular disease, hypertension, malignancy, gastro-intestinal disorders, obesity and metabolic disorders (Vogel, Braungardt, Meyer, & Schneider, 2012). Vyas et al. (2012) further support this by identifying the association

between shift work and vascular events, such as myocardial infarction and ischaemic stroke. Ford (2015) identifies increased stress-related alcohol consumption among shift workers. Arguably, the increase of alcohol consumption could further exacerbate such conditions (Neall, Atherton, & Kyle, 2016). Therefore, shift work alone cannot be assumed to be the independent variable in morbidity associated with SWD.

Waage et al. (2014) discovered a reduction in the prevalence of SWD over a period of several years. Nurses with a reduction in symptoms had reported implementing coping strategies to manage anti-social working hours. This emphasises the need for further exploration and research to identify techniques for shift workers to reduce the impact of negative health effects (RCN, 2015).

Alongside shift working, students are expected to participate and meet assessment criteria throughout their academic career (NMC, 2015). This, combined with family life and financial hardships associated with undergraduate studies, has the potential to further increase the risk of developing early symptoms associated with SWD (Bennett, 2003; Nicholl & Timmins, 2005). It substantiates the need to explore these indices with a view to identifying how shift work can affect physical health, personal life and academic studies, and what techniques can potentially be adopted early to reduce work-associated morbidity.

**Ethics**

In order to ensure an ethically sound project, protect participants and adhere to a framework, as set out by the Ethical Social Research Council (ESRC, 2015), ethical approval was verified by the University Ethics Committee of a northern UK university. Participation was voluntary and confidential.

It was important to acknowledge that the themes of this research had potential emotional implications for participants. In order to address this, information was made available to participants in case they felt they needed any further support, which included signposting participants to both local and institutional services.

**Method**
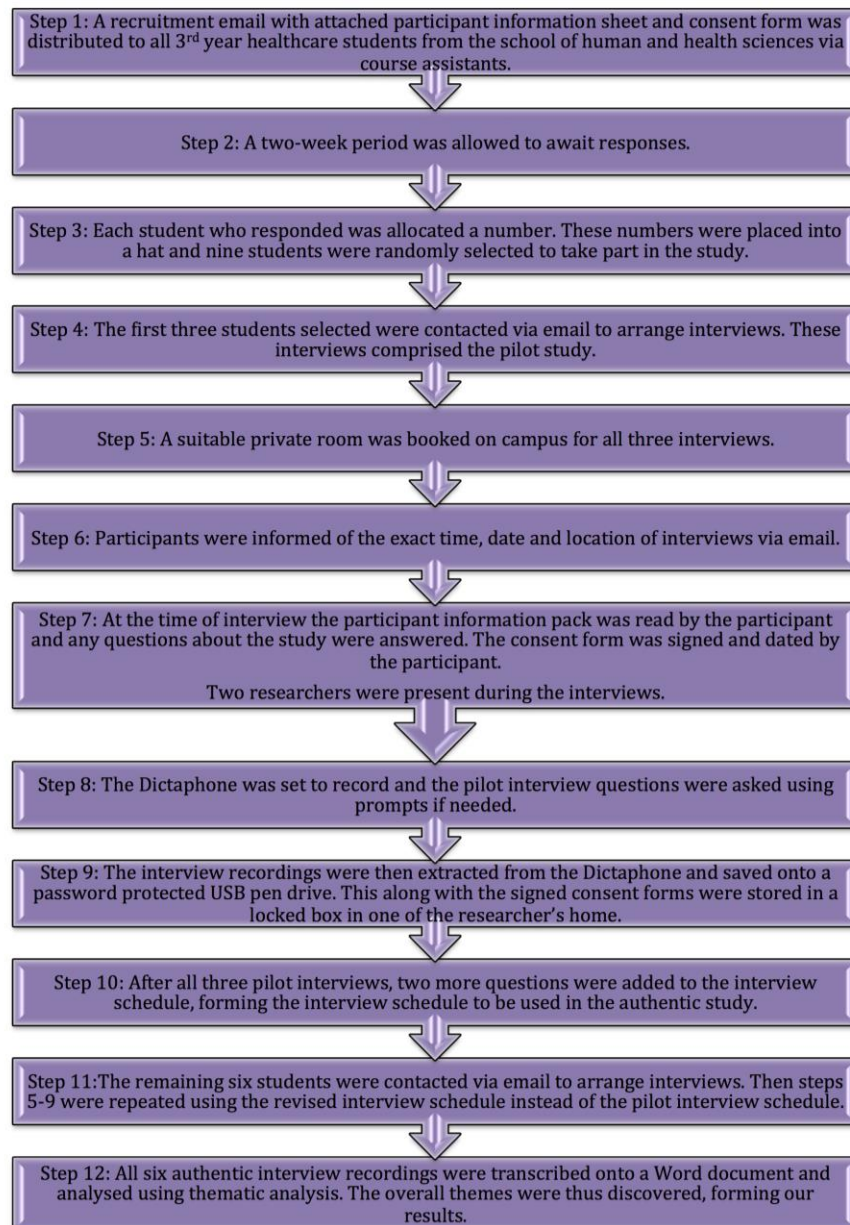
*Justification of approach*
A qualitative approach was identified as the most appropriate form of research for this study. Qualitative data has a framework of primacy and, therefore, is not predefined prior to data collection (Maltby, 2010). By using a qualitative study, researchers were able to explore the behaviour, experiences and feelings of participants (Holloway & Wheeler, 2010). The idea of a qualitative study is to extract the way that members of a population interpret their experiences, giving the researcher an insight into a 'social reality' (Holloway & Wheeler, 2013).
An evident gap in the research forms a sound rationale for undertaking student-specific research. A qualitative method is identified as the optimum form of research to be performed when little research exists (Sandelowski, 2000) and when phenomena from the participants' perspective are required to achieve rich data, which could potentially produce new theoretical ideas (Holloway & Wheeler, 2013). Furthermore, there were no variables to manipulate or predictions to be made. Conducting one-to-one interviews also promotes a holistic, person-centred approach, which, in turn, reflects the compassion and values of healthcare professionals (Qu & Dumay, 2011; van Dulmen et al., 2015). Moreover, this approach encourages a trusting relationship to form between the researcher and the participant, allowing freedom of conversation that has the potential for a rich, in-depth understanding of experiences, and further ensuring credibility (Cope, 2014).

*Study design*

Semi-structured interviews were devised and conducted, with prompts used to enhance participants' exploration (Priest & Roberts, 2010). A step-by-step guide to ensure repeatability is demonstrated in Figure 1.
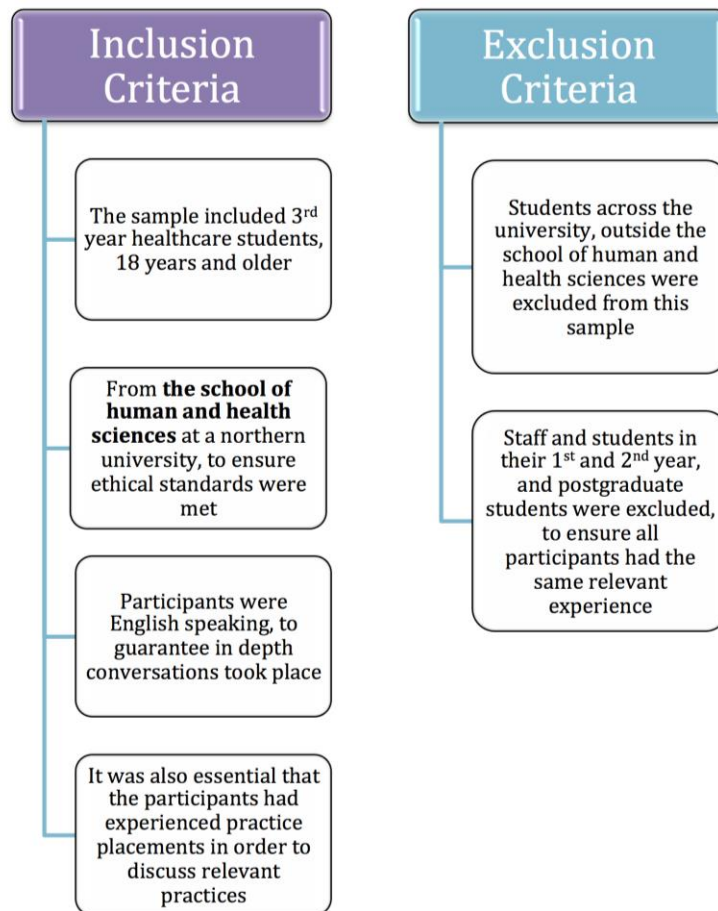
Figure 1.

Step 1: A recruitment email with attached participant information sheet and consent form was distributed to all 3rd year healthcare students from the school of human and health sciences via course assistants.

Step 2: A two-week period was allowed to await responses.

Step 3: Each student who responded was allocated a number. These numbers were placed into a hat and nine students were randomly selected to take part in the study.

Step 4: The first three students selected were contacted via email to arrange interviews. These interviews comprised the pilot study.

Step 5: A suitable private room was booked on campus for all three interviews.

Step 6: Participants were informed of the exact time, date and location of interviews via email.

Step 7: At the time of interview the participant information pack was read by the participant and any questions about the study were answered. The consent form was signed and dated by the participant.
Two researchers were present during the interviews.

Step 8: The Dictaphone was set to record and the pilot interview questions were asked using prompts if needed.

Step 9: The interview recordings were then extracted from the Dictaphone and saved onto a password protected USB pen drive. This along with the signed consent forms were stored in a locked box in one of the researcher's home.

Step 10: After all three pilot interviews, two more questions were added to the interview schedule, forming the interview schedule to be used in the authentic study.

Step 11: The remaining six students were contacted via email to arrange interviews. Then steps 5-9 were repeated using the revised interview schedule instead of the pilot interview schedule.

Step 12: All six authentic interview recordings were transcribed onto a Word document and analysed using thematic analysis. The overall themes were thus discovered, forming our results.

*Sampling*
A generic email was produced and distributed via university staff to third-year healthcare students. Owing to the aim of the project it was essential to recruit a convenience sample of participants from a relevant field of expertise (Priest & Roberts, 2010; Holloway & Wheeler, 2013). Both inclusion and exclusion criteria are demonstrated in Figure 2.

Figure 2.

| Inclusion Criteria | Exclusion Criteria |
|---|---|
| The sample included 3rd year healthcare students, 18 years and older | Students across the university, outside the school of human and health sciences were excluded from this sample |
| From **the school of human and health sciences** at a northern university, to ensure ethical standards were met | Staff and students in their 1st and 2nd year, and postgraduate students were excluded, to ensure all participants had the same relevant experience |
| Participants were English speaking, to guarantee in depth conversations took place | |
| It was also essential that the participants had experienced practice placements in order to discuss relevant practices | |

*Pilot study*
A pilot study was conducted to maximise trustworthiness and credibility. This provided an opportunity not only to improve any questions, but also to consider any changes to the methodology (Fitzpatrick & Wallace, 2011; Cope, 2014).
The pilot study highlighted the need for further questions to enhance the richness of the data collected. Therefore, the interview questions were discussed among the group of researchers, and two more questions were added.

The official semi-structured, one-to-one interviews took place in a safe and secure room on the university campus in order to provide confidentiality and promote security for the participants (Galletta, 2013).

*Data collection*
Dialogue from all interviews was captured on a Dictaphone in order to obtain vital data. Adhering to the Data Protection Act 1998, confidentiality and anonymity were addressed using candidate coding, a password-protected USB pen drive and the University's K drive. Any hard copies and the USB pen drive were encrypted and will be kept by a named researcher, in a secured, locked box, for 5 years from the point of collection, after which all data will be destroyed. All documentation and data will be accessible only to the research team. As stated in the participation letter, participants were at liberty to withdraw from the study at any time until 11 December 2015, at which point analysis of the data had begun, making the removal of data problematic (Kour, 2011).

*Data analysis*
Thematic analysis was used to ensure credibility and to perform analysis of the data. The transcript was subsequently developed into a coded system, creating a narrative of various participants' differing experiences (Lacey & Luff, 2009) This data was then further categorised to form themes (Figure 3) that gave an overall insight into the effects that shift work has on healthcare students while on placement.

## Results

The results of this project both substantiated and questioned the initial thoughts generated from the literature review.

Following transcription of the data, thematic analysis was performed to identify and analyse patterns (Braun & Clarke, 2006). Key themes, including sub-categories, were identified and are presented in Figure 3.

Four overarching themes were identified: resilience, negative effects of shift work, workplace challenges and professional challenges. The first theme correlated to resilient responses to the effects of shift work, while the other three related to negative challenges faced by students.

Tiredness, accompanied by slow recovery time and poor nutrition, proved to have negative physical effects on the body. Furthermore, participants expressed a sense of isolation, with impacts on their personal relationships. Together, these feelings developed into the theme of 'negative effects of shift work'. Resilience was recognised as a key theme due to the identification of time management, organisational skills and coping strategies. Conflict with

Figure 3

colleagues, poor shift patterns and academic-related stress contributed towards an overarching theme exploring 'professional challenges'.

**Discussion**

Throughout the discussion, direct quotations are used to support findings. Participant numbers, page numbers and line numbers are identified, and these can be verified within the transcripts.

This study appears to be a foundation for exploring students' experience of shift work and one unique to the study population. The findings indicate salience of the negative effects that working shifts can have so early in a healthcare career, and warrant further investigation.

*Resilience*
It could be suggested that resilience is a learned skill, further facilitated by self-awareness and understanding of the role of a healthcare professional, in order to protect the self from external stressors (Hunter & Warren, 2014). This could be further supported by the ambition to succeed and achieve as a student (Blocker, 2012). Participants appeared to develop coping strategies, enabling them to manage their different anti-social shift patterns.

> By third year, because you know what kind environment it is and the kind of hours you work, you're kind of prepared [to make food], whereas in first year you're not really sure what to do, you go in blind. (P6)

Participant 6 describes the development of expectations from Year 1 to Year 3, suggesting that coping strategies and expectations can be managed and developed (Evans & Kelly, 2004).

Further to this, time management and organisation skills appear to enable the development of realistic expectations.

> We do family things, we can still manage that, but we have to organise it. That's how we deal with it. (P4)

> …it's not affected my personal life because I knew what I was coming into when I applied. I've just adjusted stuff I think. (P4)

There is a suggestion that although Participant 4 has manageable expectations, family life appears to require time management and organisation in order to be enjoyed. Although healthcare professionals manifest these mechanisms, such situations could potentially lead to the termination of their chosen career, should they become vulnerable and unable to continue to develop these resilient processes (Waage et al., 2014).

> No I don't feel like I've got enough time to do my work but I just always make sure that I do it. (P4).

Resilience appears to be established through experience and time. It is imperative to negotiate the future health and wellbeing of student healthcare professionals and understand how likely fatigue and exhaustion throughout their career will lead to 'burnout' (Leiter & Maslach, 2009). By understanding the signs, a healthcare professional can implement measures, such as striving for self-efficacy and maintaining a healthy work–life balance. Leiter and Maslach (2009) further recommend the use of reward schemes to acknowledge the level of effort that goes into the role. However, the criticism of this medium

would be the level of reward and inequalities that may be created between colleagues, suggesting that the ideal would be to have equality throughout (Leiter & Maslach, 2009). Therefore, although it is beneficial to develop such resilient skills in order to achieve and succeed in a chosen role, it is also of great importance for student healthcare professionals to develop the early understanding of self-obligation to facilitate a healthy work–life ratio (Hunter & Warren, 2014).

*Negative effects of shift work*
There was a combination of recurring codes: fatigue, tiredness and exhaustion. All of these, as previously suggested, have the potential to create catastrophic effects, particularly on circadian rhythms (Yuan et al., 2011). Not only can these factors influence a 'burnout', they also have the potential to increase the prevalence of SWD (Waage et al., 2014), with the potential for further exacerbation of health implications, including cardiovascular disease, depression and digestive disorders (Flo et al., 2012).

> I was getting poorly quite easily. (P1)

> I find I'm really tired after them so it takes me like a day to recover. (P2)

> I get a lot of headaches, which I think is due to the tiredness. (P3)

Participant 1 explains the detrimental effects that shift work has on their health. Previous evidence supports the seriousness of disturbing circadian rhythms (Vogel et al., 2012; Vyas et al., 2012). Considering the seriousness of these health implications, it would be beneficial to consider adopting preventative methods, as explored, for implementing resilient techniques.

There was further emphasis on the lack of social life and relationships, combined with feelings of isolation, due to shift length, anti-social hours and prolonged recovery periods. This suggests that basic physiological human needs are failing to be met (Maslow, 1943).

> I would say it's difficult to… [PAUSE] maintain relationships when you've got such a large chunk of the day that you're out at work. (P2)

> I live alone so don't see anybody at the end of the day or the beginning of the day and I find I'm really tired after them so it takes me like a day to recover. (P2)

> You don't get to see your family as much as you'd like. (P3)

> I think that it has a huge impact on my personal life and that it makes me feel [PAUSE] isolated often quite depressed … lonely, tired. (P2)

Autonomy is an integral part of many healthcare professional roles (NMC, 2015). Therefore, individuals may experience a sense of loneliness and isolation while working on a shift. This may have the potential to contribute to the sense of social isolation when working several shifts together (Government of Canada, 2010). Combined with asynchrony of social activities and relationships with family, these factors may present feelings of depression and job dissatisfaction (Teclaw & Osatuke, 2015). In summary, these factors combined may prevent the individual from having long-term career opportunities, leading to excessive staff turnover, may increase individuals' chances of developing depression and anxiety, and, more imminently, may end their education prematurely (Buja et al., 2013).


*Working challenges*

Alarmingly, this overarching theme highlights the lack of nutrition and hydration due to shortages of breaks.

> You only get two breaks and you've got three meals contained within that time, it's not physically possible to eat three meals in two breaks. (P2)

> If breaks are organised well and you do at least manage to get two 20-minute breaks that makes a big difference 'cos there are a lot where you don't get your breaks obviously. (P2)

> …not always being able to drink and eat as well as you'd like… (P3)

> I felt tired more to be fair because if you don't have a proper meal you don't feel yourself. (P5)

Participant 2 explains the difficulty of ensuring regular nourishment, which is further exacerbated by lack of team management. As a student healthcare professional, it is stipulated that an individual has supernumerary status within the healthcare team (NMC, 2008; Shepherd, 2014). It is therefore essential that managers and other team members, including mentors, ensure that there is effective delegation of breaks to ensure that students are given their break allowance (Walsh, 2010). Lack of nutrition and hydration leads to slow or poor performance, which could hinder the quality of care given (Walsh, 2013).

Participants indicated challenging colleague relationships and the prospect of workplace bullying. The data presented seem to suggest potential intimidation by mentors or senior colleagues, with emphasis on how positive working relationships can change the dynamics of the learning environment.

> Yeah the people you work with makes a huge difference so if somebody's [PAUSE] if you get on with the people you work with I think that makes it an awful lot easier. (P2)

> …how receptive they are to students whether they're likely to allow you to participate. (P2)

> …what kind of a relationship you have with your mentor so if that's positive, everything else is likely to be more positive too for me. (P2)

> If you got on with staff your shift goes quicker, you find it easier for yourself, whereas if you've got someone that doesn't like you, don't want to work with you, you feel [PAUSE] it gets you down, actually it makes you feel like you're not gonna learn anything, you're not gonna progress further, you're not gonna be able to do as much while you're actually on placement. (P5).

Participant 5 explores how a negative attitude from staff can affect the mentality of participants. Negative working relationships have the potential to affect not only an individual's personal life but also the quality of care provided to clients in clinical areas (Ovayolu, Ovayolu, & Karadag, 2014). Promoting professionalism and a culture of safety are essential assets to the role (Franklin & Chadwick, 2013). A conflict of interest and poor working relationships can destroy these fundamental necessities to promoting person-centred care (Maslach, 2003).

*Professional challenges*

This final theme extracted from the data focused on the impact of working combined with academia. There were indications that shift work placements placed added stress on

individuals. Several participants experienced difficulties organising their academic commitments and implementing efficient time management. This resulted in delays in meeting deadlines, creating anxiety.

> I felt like a lot more pressurised, didn't have enough time to meet deadlines, you've got more stressed, you felt like you didn't have enough time. (P5)

> I think it's a struggle getting your academic work done, while you're on placements you're just tired and it's just trying to fit it all in. (P4)

> I'm so tired… there's no way I can do any academic work when I come home from a shift like that. (P2)

It is important to understand the impact stress can have, not only on the mental and emotional state of a person, but also on the physical state, including circadian rhythms, which are already proven to be affected by shift work (Admi, Tzischinsky, Epstein, Herer, & Lavie, 2008; Flo et al., 2012; Yuan et al., 2012; Boivin & Boudreau, 2014). There is also evidence of the ricocheting impact of fatigue on concentration levels.

> Trying to fit it all in and you can't focus as much… (P4)

Participant 4 describes a lack of concentration when trying to manage both work and studies. However, the healthcare regulatory bodies stipulate the terms under which a healthcare professional becomes qualified; therefore, being able to cultivate seamless organisation and time management abilities is integral to developing the prerequisite skills (RCN, 2007; NMC, 2015). Hunter and Warren (2014) discuss the need for access to 'collegial support' for newly qualified members of staff, with stipulation that this element of the role is of high importance. Reflection can be vital for gaining perspective of self-attributes and skills, and provides the necessary avenue to explore areas for improvement (Ralston, 2005; Taylor, 2006; Yip, 2007; Clarke, 2014). Therefore, combining these elements provides foundation for development of the self to become not only more resilient, but also a self-reflecting practitioner who embraces change in order to provide the utmost quality care (Taylor, 2006).

## Strengths

Given the short timescale of this study, researchers collaborated well, in order to work efficiently. Data heavily supports previously explored research findings (Hek & Moule, 2006; Bowers, House, & Owens, 2011). Participants involved in the study had experience of a wide range of shift work, giving an in-depth insight into the associations with differing shift patterns.

## Limitations

Limitations of the study need to be acknowledged when analysing findings (Priest & Roberts, 2010). The limitations of this study included time constraints, meaning a low number of participants. Therefore, data is limited. Only one researcher, who did not take part in the main research, conducted the pilot study. Therefore, the inexperience of the researchers conducting interviews must be considered, as this could have an impact on the credibility of the study (Hicks, 2009; Cope, 2014). Although the sample included a variety of healthcare disciplines, not all disciplines were represented, which could potentially reduce transferability (Bowers et al., 2011).

## Recommendations

It would be sensible to consider the limitations of the study and consider repeating the research with an increased number of participants, ensuring that each healthcare discipline is represented in order to improve transferability. Further research to explore these insights could potentially improve pre-registration courses and equip healthcare educators with the necessary tools to support students and enable them to develop necessary skills to succeed in their chosen career.

**Conclusion**

The aim of this study was to explore the effects of shift work on healthcare students while on placement. Shift work within the healthcare industry is inescapable, and it is likely that healthcare students will experience shift work throughout their training. Some healthcare students evidently develop resilience in order to optimise their role, and implement coping strategies to enhance their learning. However, for some healthcare students there are times of financial hardships and emotional, physical and mental fatigue, alongside feelings of isolation. The findings of this study are consistent with prior studies and evidence that support the correlation between shift work and poor health. Collectively, these findings suggest that healthcare students are at increased risk of adverse physical and mental health outcomes. The healthcare profession is demanding and physically exhausting. This study suggests that there is need for further exploration of the prevention of adverse health outcomes for the health professionals of the future.

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