

The impact of shiftwork on eating patterns and self-care strategies utilised by experience and inexperienced nurses.

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Abstract.

For nurses, shiftwork is a necessity, required to provide twenty-four hour continuous care for patients. Research posits that fatigue amongst shiftworking nurses is associated with inadequate and poorly timed sleep and also strongly influenced by the timing, quality and quantity of food consumed. The aim of this investigation was to examine differences and similarities in the food choices and eating patterns of nurses exposed to different lengths of time in shiftwork, as a means of understanding how nurses can adapt their eating patterns to better manage fatigue and sleep loss. Qualitative methodology was utilised to study and capture in-depth information about nurses' daily working lives. A case study approach allowed for the investigation of nurses with limited and extensive experience of shiftwork. Increased food craving, caffeine consumption and snacking behaviours during night shifts were described by both groups of nurses, as was the inability to drink enough fluids at work. Meal skipping at work, associated with high workload, was detailed more by experienced nurses. Experienced nurses described shopping and preparing home cooked meals in advance to manage food intake and associated fatigue, contrasting with patterns from inexperienced nurses. Experienced nurses recounted drinking alcohol as a way to rest and recover from shiftwork, unlike their less inexperienced colleagues. These findings indicate organisational and work place issues such as shiftwork and rostering influence the food choices and eating patterns of shiftworking nurses. Experienced nurses, however, draw on a greater range of strategies around diet and eating patterns to minimise these impacts.

Keywords: shiftwork, nursing, food choices, dietary behaviours.

INTRODUCTION

Shiftwork for nurses is an integral part of their working lives. It is neither realistic nor viable to eliminate these work practices for hospital based nurses, as twenty four hour scheduling is a requirement to provide uninterrupted patient care. Shiftwork can have numerous impacts on the health and well-being of workers, with adverse effects on both acute and chronic health outcomes (Matheson, O'Brien, & Reid, 2014). Negative health complaints include increased risks of sleep disturbance and fatigue, cardiovascular disease and body weight gain and obesity (Atkinson, Fullick, Grindey, & Maclaren, 2008). These well documented deleterious effects on the health and well-being of shiftworkers are mediated primarily through the disruption of the normal sleep wake cycle and associated fatigue (Kecklund & Axelsson, 2016). There are established links between fatigue and diet, where fatigue influences nurses to depart from healthy food choices (Persson & Mårtensson, 2006), with suggestions that poor diet can contribute to fatigue (Lowden et al., 2010). Fatigue also impedes shiftworkers' abilities to exercise regularly and, as exercise and physical activity have been found to improve sleep outcomes (Atkinson et al., 2008), these two reciprocal factors contribute to shiftworkers' overall fatigue, suboptimal sleep outcomes and tiredness.

Nurses, in particular, report dietary changes after commencing shiftwork (Geliebter, Gluck, Tanowitz, Aronoff, & Zammit, 2000), with those developing work-related fatigue also presenting with a range of life style related issues. These include increased obesity (Zhao, Bogossian, & Turner, 2012), poor dietary habits (Persson et al., 2006), increased alcohol use (Schluter, Turner, & Benefer, 2012) and decreased levels of exercise and physical activity (Atkinson et al., 2008). Shiftworking nurses have been found to have an increased intake of sweet foods (Persson et al., 2006) including other unhealthy dietary choices, with fast and fatty foods consumed more on night shifts (Faugier, Lancaster, Pickles, & Dobson, 2001).

High attrition rates have been recorded in nursing, with shiftwork described as a contributor, and is notably prevalent in newly graduated nurses (S. H. West, Ahern, Byrnes, & Kwanten, 2007). This does not necessarily mean nurses who survive and choose shiftwork are not adversely affected by the well documented impacts of working on such schedules. Rather, nurses are expected to manage and cope across all aspects of their lives, to recover from the tiredness and fatigue of shifts, and to maintain health and well-being to achieve the best outcomes for themselves, patients and employers. Work related fatigue can be mitigated by internal recovery through breaks at work and external recovery occurring outside of work hours including physical and relaxation activities and sleep (Demerouti, Bakker, Geurts, & Taris, 2009).

Recovery strategies utilized by nurses include self-care, which can include self-initiated physical, emotional and spiritual activities (Yoder, 2010). Self-care can assist with rest and recuperation from the fatigue and stresses of shiftwork (S. West, Mappedzahama, Ahern, & Rudge, 2012). Shiftwork has been described as a potential barrier to nurses' self-care (Ross, Bevans, Brooks, Gibbons, & Wallen, 2017) with shift rostering contributing to nurses unhealthy eating patterns and an apparent inability to maintain a healthy diet and exercise (Persson et al., 2006). Nurses, however, who prioritise their own self-care have reduced work stress levels and improved camaraderie with other nurses (Grafton & Coyne, 2012). The best outcomes for the development of adaptive strategies are self-developed and are unique to each worker. Ineffective behaviours to manage the stress of shiftwork for nurses can include increased alcohol (Schluter et al., 2012) and caffeine consumption with comfort eating

accompanied by high calorific snacking perceived as an emotional coping strategy (Nahm et al., 2012).

The aim of this study was to explore links between shiftwork and food, drinking and dietary habits and behaviours for experienced and newly graduated nurses. As working in shifts can be part of nurses' working lives, the management of fatigue and tiredness are key elements in the discovery of improved ways of managing and adapting to shiftwork. Nurses who remain in the health care sector are likely to adopt more effective strategies to assist with these challenges than new graduates and those who have left the profession. Therefore, identifying real life approaches to mitigating the temporal changes to the home and professional lives of shiftworking nurses may provide important new information for enhanced longevity of nurses and improved health and well-being. Results found here can support opportunities to teach and train inexperienced nurses and aid in their protection against some of the effects of an often adverse work environment.

MATERIALS AND METHODS

This study utilised a constructivist framework as it was considered the best research design to explore individuals' experience in the context of their own particular work environment. This interpretative and open ended approach has been found to elucidate rich descriptions of participants' experiences (Petty, Thomson, & Stew, 2012). In this case, a detailed recording of experienced and inexperienced shiftworking nurses' perspectives of their day to day working lives. A case study approach was adopted as this type of methodology can be applied to 'why' and 'how' questions, real life situations and where the researcher has minimal control over proceedings (Yin, 2011).

Participants.

Nurses in this study were aged between 20 and 67 years. Experienced nurses (n=12) were sampled using snowball sampling. This was considered a suitable sampling strategy as it was implemented in a purposeful way, rather than for convenience (Yin, 2011). These nurses, who had worked longer than three years in shiftwork, were recruited through the research teams' professional and personal contacts. Experienced nurses had worked from 3 to 47 years as nurses working in shifts, with an average shiftworking life of 20 years. Inexperienced nurses (n=9) were defined as having recently graduated from nursing colleges and universities and had worked for less than one year in shiftwork. Inexperienced nurses were recruited in the last semester of their nursing studies and followed up within three to six months after beginning work in shifts. Inexperienced nurses had worked from 3 to 6 months on shiftwork with an average time of 5 months. Purposive sampling was utilised for this second group as this strategy was able to best answer the research focus of this study (Yin, 2011). Purposive and snowball sampling, both non-probability methods, were chosen based on access to available participants, effectiveness in answering the research questions posed and the ability to meet practical and time frame considerations for this study.

Data Collection.

Data collection occurred in 2015 through semi-structured individual interviews as this qualitative approach can elucidate in-depth information from participants based on their own specific experiences and contexts (Petty et al., 2012). A research protocol consisting of open-ended questions was developed, covering the scope of this research, to capture the personal views of the interviewees. These included 'After shiftwork what are some of the ways you are able to wind down, rest and sleep?'; 'What are some of the activities you participate in to

ensure you own health and well-being?'; 'Do you believe your eating habits have changed since working in shifts?' and 'Describe your eating patterns when working on shifts?'.

Ethics.

This study had ethics approval from Griffith University in accordance with appropriate ethics procedures and policies (EHR/07/14/HREC) to ensure participant's confidentiality, informed consent and right to withdraw from the study.

Data Analysis.

Thematic analysis was utilised as it is able to provide explanations of social processes and interactions discovered through the analysis of the collected data (Petty et al., 2012). Following verbatim transcription of interviews, codes and themes were identified from the raw text using first and second round coding procedures as prescribed by Saldaña (Saldaña, 2009).

Validity, reliability and rigour.

A parallel perspective, as described by Lincoln and Guba (1985), was utilised for this study to test for quality and rigour using measures of transferability, credibility, dependability and confirmability (Lincoln & Guba, 1985). These included the construction of an audit trail, a self-reflexive stance taken, purposive sampling and thick descriptions of participants' experiences. Rigour was increased further through an inter-coder reliability process where ten per cent of the interviews were re-coded by an independent researcher. This procedure for confirmability tested for the reproducibility of emergent codes and gave a high degree of agreement; ninety percent.

RESULTS

Comparison of critical variables between the two groups of nurses showed differences in the age, length of time worked in shifts, and types of ward experience. Experienced nurses had an average age of 43 years. Half of this group worked in cardiac care units at a private hospital and the other half in public hospitals in emergency departments. Inexperienced nurses had an average age of 33 years. Most nurses in this group worked in ward settings in public hospitals, with two working in aged care. Similar amounts of three shift rotating rosters were described by both groups of nurses. All of the participants in this study identified as female.

A summary of the results are found in Table 1. The challenges of fatigue and shiftwork presented two main themes or barriers to healthy eating in experienced and inexperienced nurses with differences and similarities elucidated between the two groups. These are i) snacking behaviours and craving of foods and ii) high work demands. A number of mechanisms utilised by nurses to develop adaptive behaviours towards fatigue and associated food choices and eating patterns were captured.

i) Snacking Behaviours and Craving Foods.

The first theme generated from the data analysis was snacking with high sugar foods and drinks at work in an attempt to prevent fatigue or as distraction from fatigue.

Eating on shifts.

Almost all nurses from both groups described increased snacking and food craving whilst at work, predominantly on night shifts. Experienced nurses spoke of their diet and snacking behaviours whilst at work.

“On night shifts, I will eat all during the day, and all during the night, and so I’m actually eating a huge amount more calories than I usually would and my weight is just all over the place.”

“[on night shifts] I drink cans of coke and eat lots of chocolate and stuff because my preparation is terrible and I rely on those sweet foods to keep awake and help with the fatigue”.

Most experienced and inexperienced nurses believed their diets had changed since starting shiftwork. Nurses described their new diets as not as healthy, with changes to eating patterns and timing of food. An experienced nurse gave an example of her changed diet.

“I am eating more at times; like on night shift. Usually people do bring junk food [in to share] which is not good. So if it is there then I will kind of pick at it all night. But I do find that I eat a bit differently just because you are up at different times”.

Caffeine consumption on night shifts.

Increased consumption of coffee and tea by both groups of nurses was mostly associated with night shifts. Reasons included providing an energy boost and assistance with tiredness and fatigue on night shifts. An inexperienced nurse described drinking more coffee on night shifts.

“So often if I am really tired I will get a caffeinated drink like a coffee because it does give that bit of extra kick if you are feeling really low”.

Self-care to prevent fatigue.

Both experienced and inexperienced nurses described specific activities and behaviours to ensure recovery from the tiredness and fatigue of shifts, making sleep a priority. An experienced nurse spoke of her experience.

“Sleep when you can and don’t feel guilty about it. If you feel like you need an afternoon nap then have an afternoon nap”.

Preparations in advance for shiftwork were described by both groups of nurses as a way to prevent and ease fatigue when working night shifts, with increased self-care activities reported more by experienced nurses. An experienced nurse told of self-care activities.

“I try and keep healthy by eating healthy. Very healthy at the moment but I try and eat healthy. I try and exercise at least once a day for about 30 minutes and that is when I am not working really. When I am working I don’t get really have time for that. But when I am off I do that. I have got hobbies as well as to keep my mind sound”.

Inexperienced nurses described fewer self-care undertakings when compared with experienced nurses. An inexperienced nurse spoke of how she was unable to participate in self-care activities to assist her with fatigue during time away from shiftwork.

“So I could do something. I’ve moved for work, so it’s just taken a while to get some money behind me, to do be able to do some activities”.

Alcohol consumption was listed by some experienced nurses as a way to relax and recover from shifts and was not detailed by any inexperienced nurses. An experienced nurse gave an example.

“If I have had a particularly shitty shift, and it has been particularly bad, I will come home and have a glass of wine. Like if we’ve had a death or multi-trauma or something like that”.

Overwhelmingly, all of the nurses described the best options to adapt to shiftwork were those which they developed themselves; and was best described as ‘what worked for them’. An experienced nurse detailed her own adaptive approaches to shiftwork.

“I think you just adapt to it and what is easiest for you. I didn’t read anything that said do ‘this’ or ‘that’. It is just that the things that I do work best for me. It is just that after doing it for so many years and I have tried and tested different ways. So I do all these things, because they work for me”.

ii) High Work Demands.

Interactions with sleep were also evident in the second emergent theme: high work demands defined as time pressures and heavy workloads. Two main sub-themes revealed were meal skipping and being unable to consume adequate fluids; both linked to poor health and fatigue.

Skipping meals.

Experienced nurses spoke of skipping meals at work more than inexperienced nurses, predominantly due to increased workload denying them the opportunity to eat and have a break from work. An experienced nurse relayed some effects of high work demand.

“You don’t get a break and so by the time you finish at 9:30, you know, you haven’t had anything to eat or drink. Your kidneys are screaming because you haven’t peed, and you’re, just at that stage. You’re just too tired to even think about it. You just come home and go to sleep. So I might not have eaten for sort of 14, 15 hours”.

Almost all of the nurses, from both groups, believed that skipping meals was detrimental to their health and well-being, and reported experiencing a range of symptoms included feeling unwell and lethargic, reduced concentration levels, and increased hunger leading to snacking and craving of certain foods. An inexperienced nurse gave an example.

“It’s not good, because it slows your metabolism down when you skip meals and then you get hungry. Sometimes, if you haven’t eaten, you just want to eat larger amounts than probably what you should. You’re just at starving point”.

An inexperienced nurse spoke of being cautioned by a more experienced nurse about finding time to take a meal break.

“I was alright at the time as I had to work and I was getting my work done but then one of the other nurses that had been there for a while said ‘look, go take 5 minutes otherwise you will crash around hand over. You will be exhausted so at least sit down for 5 minutes and have a cup of tea or something”

Experienced nurses spoke of being unable to take their scheduled work and meal breaks due to high work demands more commonly than inexperienced nurses. Reasons included being ‘in charge’, senior nurse or shift co-ordinator. An experienced nurse described her situation:

“There have been times, I guess, when you are that busy when you don’t go for a break. Especially when I used to be ‘in charge’, you know, you just couldn’t leave”.

Inexperienced nurses, who spoke of mostly being able to have breaks, suggested that this capacity was due to senior nurses ensuring breaks were taken and by assisting with the development of time management skills for clinical and work practices. An inexperienced nurse gave an example.

“Actually, they have been really helpful since I started. The team leaders will just come and see how I am going or if I need help with time management. The team leader gave me a few pointers on how to, during night shift, how to kind of bundle tasks together so I am not running around so much. So that was really helpful”.

Fluid intake at work.

All nurses from both groups described often being unable to drink enough water and keep up their fluid intake at work. An experienced nurse spoke of how she feels when she is unable to drink enough at work.

“You are kind of on the edge because you know...you are so thirsty. You just want some fluids in your mouth. You get a little frustrated and annoyed and, you have to be able to help someone else so it will affect you.”

Nurses from both groups coped with high work demands in relation to being able to drink enough water and fluids at work by having to access water or keep bottled water with them at all times. An inexperienced nurse detailed ways she was able to stay hydrated.

“I always have my water bottle with me; I always have it around. Put it outside patient’s door or somewhere. My trick is actually stopping and drinking from the tap...but sometimes you are too busy to stop and drink”.

DISCUSSION

This qualitative study examined relationships between diet and food choices and fatigue in shiftworking nurses. Results showed complex and often reciprocal relationships between fatigue and food, whereby nurses reported feeling too tired to participate in self-care activities such as exercise to prevent fatigue. Nurses from both groups, however, also acknowledged drawing on eating behaviours in an attempt to prevent fatigue which often contributed to fatigue long term. These included increased caffeine consumption and snacking on sugary foods. Behavioural influences on fatigue were compounded by organisational constraints such as shiftwork rostering, high work demands and missed scheduled breaks at work. Findings from this study show that more experienced than inexperienced nurses skipped meals, based on their workloads and perceived ability to take breaks. Both groups of nurses described concerns about their ability to stay hydrated whilst at work and commented frequently on contributing factors for fatigue, sleep outcomes and tiredness. Experienced nurses recounted drinking alcohol as a way to rest and recover from shiftwork, with no inexperienced nurses speaking of this behaviour.

Increased snacking behaviours, cravings for foods and changes to diet since commencing shiftwork was observed equally by both groups of nurses and typically associated with night shifts. Reasons provided for these altered eating behaviours on night shifts included to provide a sugar hit when fatigued and for comfort at times of stress. This latter description of eating for comfort can be termed an emotional eating behaviour, where food is eaten in response to a negative emotion such as stress and anxiety (Buss, 2012). These types of eating habits have been referred to as ineffective coping mechanisms for nurses in response to shifts (Kravits, McAllister-Black, Grant, & Kirk, 2010). This study’s findings of altered diet and food choices when working on shifts replicates current research where nurses described, in response to fatigue and tiredness, a departure from their normal healthy diet (Persson et al., 2006). Disruption to dietary choices and eating patterns have also been linked to obesity in shiftworking nurses (Zhao et al., 2012). These outcomes of temporal changes to diet and abnormal eating patterns during shifts extends recent nursing research (Yoshizaki et al., 2016) by suggesting a time frame of three to six months eliciting negative impacts on dietary choices and habits in shiftworking nurses.

Similarly, nurses from both groups reported increased caffeine consumption, mostly in the form of coffee and tea drinks on night shifts. Explanations given by nurses in this study for increased caffeine consumption were to provide an energy boost and to stay awake when fatigued on night shifts. Caffeine acts as stimulant and increases both mental and physical performance (Lieberman, 2001). Caffeine consumption, however, can also impact negatively on consumers by contributing to gastric upsets and illnesses (Lowden et al., 2010) and on sleep quality and ease of sleeping (Smith 2002). Nurses in this study did not state whether sugar was added to tea and coffee, and therefore, the effects sugar may have on their dietary choices cannot be considered. This finding of increased caffeine consumption on nightshifts in both experienced and inexperienced nurses reproduces existing research where nurses working on nightshifts described increased coffee drinking (Persson et al., 2006). Replication of this finding is critical as research surrounding shiftwork, nurses and diet often fails to

investigate the amount and types of drinks and fluids consumed and the impact these may have on the health and well-being of shiftworking nurses.

Both groups of nurses recognised the requirement to identify for themselves how best to manage fatigue from shiftwork. This ‘what works for me’ tactic replicates findings from existing research, which suggests nurses who recognised their own specific needs were better able to develop effective coping behaviours or strategies such as self-care activities (S. West et al., 2012). The types of self-care activities utilised by nurses in this study, included maintaining a healthy diet and preparing and cooking healthy meals whilst on shifts. These behaviours were described more by experienced nurses than inexperienced nurses. Nurses’ self-care is described as critical for improved health and well-being and resiliency (Ross et al., 2017). Symptoms of shiftwork, such as fatigue, have been linked to reductions in nurses’ motivation to participate in self-care activities (Bryer, Cherkis, & Raman, 2013). Therefore, increased self-care initiatives are suggested as a mechanism for inexperienced nurses to mitigate some of the stresses of shiftwork. This information could form part of the education of student nurses by nursing universities and colleges to assist new nurses’ transitions into professional nursing, particularly as graduates have cited shiftwork and fatigue as contributing factors for their intention to leave the profession (S. H. West et al., 2007).

Being able to relax, rest and sleep after shiftwork is important to allow nurse’s recovery following shifts. Adequate recovery is considered essential to assist with managing fatigue levels found in shiftworking nurses (Blasche, Bauböck, & Haluza, 2017). Nurses from both groups in this study described this as an important component of their shiftworking lives by making rest and sleep a primary consideration for them. Research describes negative outcomes between recovery and fatigue with incomplete recovery from shifts associated with fatigue (Sluiter, De Croon, Meijman, & Frings-Dresen, 2003). This need for recovery from shifts, found in both groups of nurses, is crucial to allow for long term positive health and well-being as fatigue is proposed as a pathway between working hours and often described symptoms of shiftwork .

Experienced nurses spoke of drinking alcohol as a way to ‘wind down’ and relax after shifts. Alcohol is often drunk as an aid to assist with sleep, fatigue and can have a sedative effect (Colrain, Nicholas & Baker, 2014). Long term and high level consumption of alcohol can however lead to sleep impairment, effect the REM sleep cycle, act as a diuretic and increase tiredness the day after drinking (Colrain et al, 2014). Drinking alcohol has been described as an ineffective coping strategy for shiftwork (Matheson et al., 2014). Research around alcohol consumption suggests an increased incidence of daily drinking as people age (Schluter et al., 2012). The average age of experienced nurses was greater than inexperienced nurses, none of whom described drinking alcohol, and suggests age may be a factor contributing to this finding. This reported pattern of alcohol consumption parallels other research where shiftworking nurses were reported to have increased rates of alcohol consumption (Schluter et al., 2012). These outcomes indicate some of the complexities surrounding alcohol intake and shiftwork where increased alcohol consumption has been linked to high rates of heart disease and certain types of cancer (World Health Organisation, 2007), with these health complaints also associated with circadian misalignment in shiftworking nurses (Matheson et al., 2014).

Skipping meals at work was reported more by experienced nurses who were typically employed in more senior and ‘in charge’ roles or shift co-ordinators and described being less able to take meal breaks than inexperienced nurses. Skipping meals has been described as having detrimental impacts on appetite and hunger, causing changes to food choices, leading

to snacking and craving behaviours and linked to increased weight (Nahm et al., 2012). Emerging laboratory based research, however, has found fasting at night can lead to improved performance and vigilance (Grant et al., 2017a), and reduce impaired glucose metabolism (Grant et al 2017b). Thus, some level of restricted calorie intake may confer a selective advantage. These findings replicate other nursing research, suggesting skipping meals can have a negative impact on health and well-being, and similarly, was related to nurses having no time or being too busy to take meal breaks (Nahm et al., 2012). Therefore, it is recommended that nursing managers, rostering clerks and hospitals take into account high work demands and shift staff allocations to ensure all nurses are able to take their required meal breaks and have opportunities to eat, drink and rest. This is particularly critical as appropriate breaks at work have been described as a countermeasure to workplace fatigue (Folkard & Tucker, 2003).

Both groups of nurses described how they were unable to drink adequate amounts of water and other fluids during shiftwork, and expressed concerns that this could lead to dehydration. Importantly, nurses from both groups spoke of increased caffeine consumption in the form of tea and coffee drinks, mostly associated with nightshifts. Caffeine has a diuretic effect (Seal et al., 2017) and therefore, could also influence nurses' hydration levels. Dehydration has been linked to a range of adverse outcomes, including reduced performance and cognitive ability (Kolasa, Lackey, & Grandjean, 2009), altered mood and increased incidence of headaches (Armstrong et al., 2012). Reduced intake of water is also linked with constipation, a common complaint of shiftworkers (Popkin, D'Anci, & Rosenberg, 2010). Staying hydrated at work is an important workplace consideration for workers and as fatigue is a symptom of dehydration (Puddester, 2014), being able to drink enough whilst at work may assist nurses with fatigue and tiredness levels.

Nurses described high workloads and demands during shifts as instrumental to their skipping meals and their inability to drink enough. Experienced nurses were more likely to be in a senior or leadership role and described having less opportunities to have a break for food or water. Inexperienced nurses detailed nursing and ward managers as assisting with their development of effective time management skills enabling them to take adequate breaks at work. Ways that nurses were able to cope with the high work demands in relation to drinking water included being able to bring or have water with them at all times. Although participants had access to water or drink at work, all detailed feeling dehydrated. Nurses' high work demands and work environment are barriers to hydration; this is considered a significant occupational issue for nurses in this study.

LIMITATIONS.

Limitations identified through this enquiry include the utilisation of non-random sampling strategies of snowball and purposive selection with the associated risks of sampling bias. These sampling strategies, however, are considered more rigorous options than availability or convenience sampling and were considered appropriate for the aims of this study. Self-reported data suggests responses may be potentially influenced by factors such as personality (Hebert, Clemow, Pbert, Ockene, & Ockene, 1995). Nonetheless, similar outcome have been found in non-self report and self-report measures linking health and well-being and working hours (Sparks, Cooper, Fried, & Shirom, 1997). Finally, the critical variables of the participants included some variations in contextual aspects of their work environments. Inexperienced nurses typically worked in general hospital wards whilst experienced nurses mostly worked in acute care areas. There may be differences in workloads and demands associated with diverse nursing roles in different ward contexts. Increases in patient acuity

hospital-wide suggest that this is less likely to impact data than in previous decades. However future research could specifically consider the types of wards in which nurses are employed when comparing shiftwork exposure times. Sampling a larger number of participants from a wider range of ward settings is proposed to improve the quality of research findings, although information saturation was reached in this study.

CONCLUSION.

Research demonstrates shiftwork has numerous impacts on the health and well-being of nurses primarily associated with inadequate and poorly timed sleep. Findings from this study indicate organisational issues such as shiftwork rostering, missed scheduled work breaks and high work demands influenced the food patterns of all nurses and may have impacted negatively on fatigue as well as food intake, selection and relative hydration. Experienced nurses drew on a greater range of strategies around food choices and dietary habits to minimise the impact nutritional status may have on their health and well-being, and may enhance their longevity in this demanding profession. Comparing two groups of nurses, based on their exposure to shiftwork, provides important insights about influences on dietary habits as key determinants of health and well-being. Identifying barriers and solutions to fatigue related food choice problems is beneficial for individual nurses, their employers and the patients for whom they provide care.

CONFLICT OF INTEREST.

No conflict of interest has been declared by the authors.

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