Fatigue in hospital nurses — ‘Supernurse’ culture is a barrier to addressing problems: A qualitative interview study

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ABSTRACT

Background: Fatigue in hospital nurses is associated with decreased nurse satisfaction, increased turnover and negative patient outcomes. Addressing fatigue in nurses has been identified as a priority by many organizations worldwide in an effort to promote both a culture of patient safety and a healthy nursing workforce.

Objectives: The overall aim of this study was to explore barriers and facilitators within the hospital nurse work system to nurse coping and fatigue. The purpose of this paper is to describe emergent themes that offer new insight describing the relationships among nurse perceptions of fatigue, nursing professional culture, and implications for the nursing workforce.

Design: A qualitative exploratory study was used to explore nurse identified sources, barriers to addressing, and consequences of fatigue. Participants and setting: Twenty-two nurses working in intensive care and medical-surgical units within a large academic medical center in the United States participated in the interviews.

Method: Interviews with the participants followed a semi-structured interview guide that included questions eliciting participants' views on nurse fatigue levels, consequences of fatigue, and barriers to addressing fatigue. The interview transcripts were analyzed using directed content analysis guided by the Systems Engineering Initiative for Patient Safety (SEIPS) model. Additional themes that did not directly align with the SEIPS model were also identified.

Results: All nurses in the current study experienced fatigue; yet they had varying perspectives on the importance of addressing fatigue in relation to other health systems challenges. A new construct related to nursing professional culture was identified and defined as “Supernurse”. Identified subthemes of Supernurse include: extraordinary powers used for good; cloak of invulnerability; no sidekick; Kryptonite, and an alterego. These values, beliefs, and behaviors define the specific aspects of nursing professional culture that can act as barriers to fatigue risk management programs and achieving safety culture in hospital organizations. Nurse fatigue and attributes of nurse professional culture also have implications for nurse satisfaction and retention.

Conclusions: Findings from this study further support the role of nursing professional culture as an important barrier to effectively addressing fatigue in nursing work systems. Future work is needed to identify and evaluate innovative culture change models and strategies to target these barriers.

What is already known about this topic?
• Fatigue in nursing is associated with negative patient outcomes as well as decreased satisfaction and increased turnover in nurses.
• There is a growing emphasis on addressing nurse fatigue in order to achieve a culture of safety in hospital organizations.

Nursing culture is a barrier to implementing fatigue countermeasures and management programs.

What this paper adds
• Nurses report experiencing fatigue, yet have varying perspectives on how important addressing fatigue is in relation to other health systems challenges.
• A new multidimensional construct characterizing the specific aspects of nursing professional culture that act as barriers to addressing fatigue is identified and defined as “Supernurse”.

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Fatigue negatively impacts nurse satisfaction, and may act as a mediator between practice conditions and negative nursing workforce outcomes.

1. Introduction

Worldwide, the important role of the nurse in patient outcomes is well established (Aiken et al., 2002a, 2002b; Needleman et al., 2002; Tzeng et al., 2002). Nurse staffing levels, nurse education, and perceptions of work all influence the quality of care that nurses are able to provide to their patients. Addressing patient outcomes and creating a culture of safety is therefore the priority of many international organizations (IOM, 2006; Organization, 2015). A culture of safety is defined by several key characteristics including: an established, timely and anonymous reporting culture; a just culture regarding disciplinary action; diversity in employees; and a learning culture surrounding incidents (Gander et al., 2011).

Improving patient care quality through nursing care and creating a culture of safety is made more difficult due to a nursing workforce shortage internationally (Buchan and Aiken, 2008). The shortage is attributed to not only a deficit in qualified nurses, but also the deficit in nurses willing to work in the present practice conditions (Buchan and Aiken, 2008). Addressing nurse workforce issues through better nursing work system design may be a critical mechanism for improving both nurse and patient outcomes.

One modifiable factor in the nursing work system, which affects patient and nursing outcomes, is fatigue. Fatigue arises in workers in response to excessive demands from work tasks, environment, and organization, and can interfere with workers’ physical and cognitive abilities and performance (Barker Steege and Nussbaum, 2012; Rogers, 2008). As defined, fatigue is a consequence of suboptimal system design. High demands, such as those related to long work hours, circadian disruption, increasingly complex and high acuity patients, and insufficient staffing ratios, are associated with nurse fatigue (Smith-Miller et al., 2014; Steege et al., 2015).

Previous studies have shown high prevalence of fatigue among hospital nurses (Barker and Nussbaum, 2011b; Smith-Miller et al., 2014). Nurses who are fatigued may have decreased reaction time, attention to detail, and problem-solving ability, which contributes to increased risk for errors and injury (Barker and Nussbaum, 2011a; Rogers, 2008). Given this definition, prevalence, and associated consequences, it is important to address fatigue. Nursing organizations around the world have released position statements and guidelines to address nurse fatigue and promote a safety culture through a joint responsibility shared between the healthcare organization and individual nurses (American Nurses Association, 2014; Registered Nurses’ Association of Ontario, 2011).

Implementing organizational strategies and policies to reduce fatigue and promote healthy workplace practices is the most important step in addressing nurse fatigue and reducing associated consequences (Smith-Miller et al., 2014). These strategies and policies, such as scheduled duty free breaks, strategic napping, educating employees on fatigue prevention, and implementing scheduling guidelines have been recommended in literature (Smith-Miller et al., 2014) and included in interventions to address fatigue (Scott et al., 2010a; Smith-Miller et al., 2016). However, many organizations have reported challenges in implementing these strategies in nursing work systems and promoting a safety culture (Lothschuetz Montgomery and Geiger-Brown, 2010; Smith-Miller et al., 2014). Specifically, nurses’ resistance and emotional difficulty in engaging in duty-free breaks or taking a strategic nap have acted as barriers to fatigue countermeasures (Dean et al., 2006; Patterson et al., 2011; Scott et al., 2010b).

Elements of individual nurses’ professional identity and motivation as well as the organizational culture within hospitals have also been identified as potential barriers to addressing nurse fatigue (Steege and Dykstra, 2016).

In order to combat these barriers to fatigue risk management, Gander et al. (2011) recommend an understanding of culture surrounding fatigue in the work environment. Extending beyond the professional identity of a nurse or the organizational culture of a hospital, professional cultures have been identified for different health care professions, including nursing, and include distinct values, beliefs, customs, and behaviors (Hall, 2005). Socialization to the nursing professional culture begins during training, and individual alignment with these professional values is linked to job satisfaction, career development and retention (Hall, 2005; Yarbrough et al., 2016). Nurses find meaning when they are able to practice and care for their patients in a way that aligns with their own professional identity and the values of the nursing professional culture (Baumann et al., 2001). Nursing professional culture may also affect the design and implementation of programs to address fatigue in nursing work systems. For example, Lothschuetz Montgomery and Geiger-Brown (2010) point to the lack of awareness that nurses show concerning their own fatigue and its negative effects as a potential barrier to effective implementation of fatigue management programs.

Given the definition of occupational fatigue as arising in response to excessive demands from work tasks, environment, and organization, as well as the challenges noted in the literature related to implementing and sustaining effective fatigue management programs in nursing, there is a need to better understand the factors contributing to or preventing nurse fatigue, and to identify barriers and facilitators to nurse coping in hospital work systems. The overall aim of the Characterizing Fatigue and Coping Strategies in Hospital Nurses Study was to explore barriers and facilitators within the hospital work system to nurse coping and fatigue. The Systems Engineering Initiative for Patient Safety (SEIPS) model (Carayon et al., 2006b) was selected as the theoretical framework to account for the complexity of the work system and its relationship to nurse, patient, and organizational outcomes. The SEIPS model has been widely used to characterize the design of healthcare work systems and investigate the influence of the work system on processes, and employee and patient outcomes (Carayon et al., 2014; Holden et al., 2013). The model has also been used to identify barriers and facilitators to performance in nursing work systems (Gurses and Carayon, 2009; Gurses et al., 2009). SEIPS integrates a work system model and balance theory to define five components of the work system structure: person (in this case the nurse), tools and technology, tasks, environment, and organization (Carayon et al., 2006b; Carayon and Smith, 2000).

Using the SEIPS model as a framework, data analysis using directed content analysis (Hsieh and Shannon, 2005) identified multiple themes describing sources of fatigue and barriers and facilitators to coping within each of the components of the work system structure. For example, patient room layout is a theme aligned with the physical environment component of the SEIPS work system structure that nurses identify as contributing to their fatigue, whereas break room layout was identified as a theme related to the physical environment component that can act as a barrier or facilitator to coping with fatigue. All of these themes are presented elsewhere (Steege and Dykstra, 2016). However, during data analysis for the Characterizing Fatigue and Coping Strategies in Hospital Nurses Study, several themes emerged that did not directly map onto the SEIPS model, but added important new insight into our understanding of the relationships between nursing professional culture and fatigue.

In spite of a growing recognition of the role of culture in addressing fatigue and managing associated risks to patient and nurse outcomes, the authors have been unable to identify any studies that specifically characterize the relationship between
nursing professional culture, fatigue and the consequences of fatigue related to the nursing workforce. Existing studies have pointed to nurse culture broadly as a potential barrier to addressing fatigue (Smith-Miller et al., 2014). However, an understanding of the underlying concepts within nursing professional culture that specifically impact fatigue and the effectiveness of fatigue risk management systems is lacking. Therefore, the purpose of this paper is to describe the emergent themes from the Characterizing Fatigue and Coping Strategies in Hospital Nurses Study that did not fit with the SEIPS model and offer important additional insight into the relationship between fatigue and nursing professional culture. By better understanding nurse perceptions of the importance of fatigue and its relationship to professional culture and the nursing workforce, we can guide future work to develop and implement effective fatigue monitoring and risk management programs.

2. Methods

2.1. Design

A qualitative descriptive design with semi-structured interviews was selected for the Characterizing Fatigue and Coping Strategies in Hospital Nurses Study to gain a rich understanding of nurses’ perceptions of the relationships between the design of the hospital work system, nurse fatigue levels, and coping.

2.2. Participant selection and recruitment

Registered nurses (RNs) were recruited from a large academic medical center in the Midwestern United States. Prior work has demonstrated differences in fatigue levels based on RNs’ years of experience (Barker and Nussbaum, 2011b). Moreover, nurses with more work experience may have a unique perspective on coping with fatigue given their “survival” in the system compared to nurses with more limited experience. Therefore, RNs were recruited who had either less than two years of experience or greater than five years of experience in practice. These experience levels were selected based on Benner’s Novice to Expert framework that recommends nurses are “competent” after two to three years of practice and become “experts” when they have a grasp of what is needed in a given situation based on intuition and experience (Benner, 1982). Additionally, participants were recruited from adult medical-surgical and intensive care units (ICUs) to allow for potential transferability to similar units across the United States in large academic medical centers.

Participants were recruited through a presentation at the hospital’s Nursing Research Council, flyers posted on the selected units, and an email listserv of new graduate nurses and of nurses on the target units. A total of 22 RNs were interviewed for this study in line with quality recommendations for qualitative content analysis studies (Elo et al., 2014; Graneheim and Lundman, 2004).

2.3. Ethical considerations

Prior to the start of the study, ethical approval was obtained from a local Institutional Review Board. All participants gave oral consent to participate and have their interview audio recorded.

2.4. Data collection

A semi-structured interview guide was created by the two authors based on prior research on fatigue in nursing and the SEIPS model of the work system. The guide included questions about personal experiences with fatigue, sources of fatigue, barriers and facilitators to fatigue and coping within the nursing work system, and nurse-identified consequences and potential solutions to fatigue. Each interview lasted 30–66 min. The second author conducted all interviews during the Fall of 2014 in a private interview room within the authors’ School of Nursing building. Interviews were audio recorded and transcribed word-for-word by a HIPAA-certified transcriptionist. Transcription and data analysis took place in the Spring of 2015.

2.5. Interpretation of data

Interview transcripts were analyzed for themes using directed content analysis as described by Hsieh and Shannon (2005). The authors utilized the SEIPS model to direct the coding of the transcripts (Carayon et al., 2006a). The two authors, a human factors engineer and a nurse, served as coders for the initial analysis and completed analysis on the cloud-based coding application Dedoose (SocioCultural Research Consultants, 2014). The two began by reading three transcripts for themes, and then developed an initial coding structure and book based on themes found in the transcripts and the components defined in the SEIPS Model. The authors then each independently coded all twenty-two interviews while meeting weekly to ensure that all coding matched throughout the entirety of each transcript. After this initial analysis was completed, the second author went back through the coded excerpts and identified subthemes in the initial coding. The subthemes were presented back to the first author and discussed at multiple presentations to nursing and researcher audiences, including a broad population of nurses from the hospital where data were collected, to ensure validity of themes. Findings from the analysis that were directly aligned with the SEIPS model, specifically the barriers and facilitators to fatigue and coping associated with each component of the work system structure, were presented in a prior publication (Steege and Dykstra, 2016).

This paper explores the emerging themes that the two authors identified during coding that did not directly align with the SEIPS model, and which provide additional insight and a distinct contribution to the literature on the relationships between nursing professional culture and fatigue. For example, nurse perceptions of the importance of addressing fatigue are influenced by elements of the person component of the SEIPS work system, such as motivation, needs, and knowledge, and by elements of the organization component, such as organizational culture, teamwork and staffing resources. Therefore, themes related to nurses’ views on the importance of addressing fatigue span multiple components of the SEIPS model and are included in this paper. Further, the SEIPS model does not explicitly address the concept of the person as a professional. However, interactions between the SEIPS model and the professional model have been identified in previous studies as critical to understanding a “culture of blame” or “culture of safety” in healthcare organizations (Carayon et al., 2006b). These relationships are contained within the emergent themes discussed in this paper.

3. Findings

Participants in the study were primarily female (86%), with a mean (SD) age of 30.5 (8.5) years. The sample included participants from all shift schedules including: primarily day shift (32%), primarily night shift (45%), and rotating schedules (23%). Participants reported being scheduled for a mean (SD) of 34.9 (4.6) hours per week and work typical shift lengths of 8 and 12 h. A summary of participant demographic characteristics is included in Table 1.

The findings highlighted in this section are first descriptions of nurse perceptions of the importance of addressing fatigue. Next, an
overarching theme, defined by the authors as “Supernurse”, and several related subthemes characterizing the relationships between nursing professional culture and fatigue are presented. Lastly, the relationship of fatigue and aspects of nursing professional culture to nurse satisfaction and sustainability in their current position are described.

3.1. Importance of addressing fatigue

All 22 nurses interviewed for this study admitted to experiencing fatigue. However, participants varied in their perception of the importance of addressing fatigue in relation to other health systems challenges. Specifically, in response to the question: “Where do you think that fatigue ranks in terms of work challenges that need to be addressed in nursing?”, example participant responses included:

**Participant #6:** I would say it sits pretty high, just because of the effect it has on everything else. When you’re fatigued you don’t function necessarily at the same level as you do when you’re not fatigued.

**Participant #14:** I don’t know, middle probably, I really feel like it is part of the job.

Although all nurses identified consequences of nurse fatigue, nurses who perceived fatigue as being more important also described their personal experiences with consequences of fatigue to patient and nurse outcomes in their justification of importance. Specifically, participants provided examples of patient safety consequences (e.g., medication errors or failure to respond to changes in patient status); personal consequences (e.g., poorer health and difficulty maintaining relationships); workforce consequences (e.g., turnover and difficulty transitioning to nursing practice); and public health consequences (e.g., falling asleep while driving home) of fatigue.

Nurses also frequently identified fatigue as dependent on other health system challenges, which makes it difficult to prioritize what to address. They commented on the interrelated nature of fatigue with other work system elements, such as staffing, scheduling, and staff burnout. Because of its interrelatedness, participants questioned the ability to address fatigue without also addressing some of the other issues that they considered “part of nursing.”

3.2. Supernurse

During analysis, themes were identified that span the individual and organizational components of the nursing work system and are influenced by nursing professional culture across healthcare work environments.

Supernurse characterizes a set of values, beliefs, customs, and behaviors that exist within nursing professional culture and can be considered as analogous to values, attributes, and behaviors defining a superhero. A superhero is defined in the Merriam-Webster dictionary as “a fictional hero having extraordinary or superhuman powers; also: an exceptionally skillful or successful person” (“Superhero. Definition of Superhero by Merriam-Webster, 2016b”). Superheroes frequently display a number of common values, attributes, or behaviors including: extraordinary powers or abilities; a strong moral code and belief in self-sacrifice for the benefit of society; a sense of responsibility and guilt that motivates their role; a costume that projects their identity and can serve as a protective armor; an alter-ego that allows them to maintain anonymity; a weakness (e.g. Superman’s Kryptonite) that makes them vulnerable to enemies and impacts their powers; and a tendency to act alone and apply their individual powers without help from a sidekick (“Superhero, 2016a”). Analogous to the common values, attributes or behaviors that characterize a superhero, Supernurse is comprised multiple subthemes including: extraordinary powers used for good; cloak of invulnerability; no sidekick; Kryptonite, and an alter-ego. The following sections will describe each of these subthemes in additional detail.

**Extraordinary powers used for good.** Similar to the sense of responsibility and guilt that motivates superheroes to use their extraordinary powers and risk their own safety for the good of society, nurses in this study described feeling a complete responsibility to care for their assigned patients and support their colleagues. Participants described a sense of duty to take care of patients, even at their own potential expense. In the following quote, Participant #5 describes her unique knowledge of a particular patient and therefore her obligation to be the one caring for that patient at all times regardless of her own fatigue.

**Participant #5 – I’m a primary nurse to that patient and I knew them so well and I wanted to be there for them but at the same time if someone were to ask me do you need a break, and they did and I remember one time being like I do but I just feel so obligated to take**
care of them because I know them so well and I said no, that I didn’t need a break from taking care of them because I was tired but I would have felt guilty if I would have said yes. And I’m sure that it could have affected how I gave her care or how I give other people care too.

The unique knowledge that this nurse possesses about her patient is a self-perceived extraordinary power that differentiates this nurse from others who may be able to step in and help. Further, she describes a sense of guilt if she does not use this knowledge to help the patient even when she herself may need a break. It is important to note that Participant #5 comments at the end of the quote that continuing to care for a patient even as she needed a break may have affected the quality of her care. There is an apparent contradiction in the desire to remain with the patient in order to provide the best possible care and recognition that tiredness or fatigue arising from a lack of breaks may negatively influence the care of that patient. However, nursing professional culture and the value placed on using extraordinary powers for good seem to override the perceived potential risks of fatigue to the patient or the nurse.

Nurses also expressed guilt if they did not come to the aid of their unit or their colleagues when called upon. Multiple participants described their personal obligation to sacrifice themselves and work overtime or an extra shift, likely increasing their own fatigue level, if the unit was short-staffed.

Participant #4 – I know that I don’t have to stay but I feel bad leaving our unit in a situation where we’re short staffed and the quality of care that’s going to be delivered to patients is not going to be as good as it normally would

In these instances, participants viewed their role as critical to the unit’s success and were therefore motivated to apply their perceived extraordinary ability take on more work for the good of the unit.

Cloak of Invulnerability. It is a custom for the Supernurse to wear a Cloak of Invulnerability costume. This costume serves to portray an image of strength, invulnerability, and alignment with Supernurse values within nursing professional culture to colleagues and patients. For example, the following two quotes illustrate how a sense of pride in working long hours and not resting or sleeping is communicated to colleagues.

Participant #3 – There are nurses, especially younger nurses, “oh I stayed up all day and did this and now I’m working” and it’s like okay . . . how long can you do that . . . they think they can stay awake 24/7. They kind of pride themselves on, “I don’t need as much sleep as you do.”

Participant #18 – I feel like nurses joke about fatigue but I almost feel like there’s a competition about it, like who’s the least fatigued, who can handle the most but not be actively fatigued. The nurses that I work with we joke about it’s almost like a competition of who got the least sleep but still can function OK.

Wearing the Supernurse costume, though, may contribute to increased levels of fatigue in nurses or mitigate a nurse’s ability to effectively cope with their own fatigue. For example, Participant #14 describes a perceived need to get everything done in order to avoid judgment by colleagues as a source of her fatigue.

Participant #14 – Part of the emotional fatigue is you don’t want to leave stuff for your coworkers, you want them to think you’re doing a good job. You don’t want them to be like, “uh I got to follow (name) again” cause she never got her work done. You want to be part of the team and be somebody that other people respect and want to work with.

Although participants describe the importance of appearing to be invulnerable to fatigue, they acknowledge that they do experience consequences of fatigue. Participants identified development of illnesses (e.g. back pain or urinary tract infections); presenteeism or working when unable to fully perform (e.g. staying for an extra shift when they knew they were fatigued, impacting how they give care); and taking unsafe risks in one’s personal life (e.g. falling asleep while driving home from work) as consequences of fatigue. The Supernurse costume is solely an illusion of strength and invulnerability; it does not actually offer any protection against fatigue risks. Moreover, participants identified these consequences as a part of the job and therefore not something they necessarily needed to protect against.

No sidekick. As nurses in this study described feelings of complete responsibility for care of their patients, an obligation to their unit or team, and the importance of an appearance of strength, they also commented on a resistance in themselves or amongst their peers to asking for help. This is illustrated in the earlier quote from Participant #5; even as she recognized that she was tired and wanted a break, she still refused offers of help. Perceptions of extraordinary powers and a moral obligation to use them for good are coupled with a view that either others do not possess the same powers, or others should not have to sacrifice themselves. This is further described by Participant #22 below.

Participant #22 – A lot of times nurses even if you offer them a break they don’t want to go to a break and it’s the weirdest thing you’re like well I can hold your pager you know, and they’re really resistant, sometimes they really refuse to go even if you’re offering to help them or do you know, x, y and z for them, they’re like no, I can’t leave, I couldn’t possibly.

Along with a resistance to help, nurses in this study described the importance of learning to deal with fatigue on your own. Participants #1 and #18 in their quotes below describe a sort of “matter of fact” view that fatigue happens, but that each individual nurse has to find a way to accept it and keep going.

Participant #1 – I think it’s an expected thing and you know it’s going to happen to you and you just deal with it. No whining, no pain, no gain kind of thing. I think nurses just know it’s gonna happen and you’re pretty much just buck up and do it. I think most of us it’s just part of the job, and you just do it.

Participant #18 – I don’t feel like we talk about it [fatigue] in a constructive way. I feel like we might acknowledge that it exists but I feel like especially the older nurses sometimes they’re really compassionate specially when I was alternating shifts they were like yeah, this really sucks, I’m so sorry I know you’ve got to be exhausted, but now that I’m just straight night shift when I talk to the night shift nurses about it they’re like this is your life now you’ve got to figure it out to make it work for you.

Although there is some acknowledgement and expectation that fatigue is a shared experience among nurses, each nurse is left to find their personal way of dealing with fatigue on their own.

Kryptonite. Along with acting alone to deal with fatigue, a sub-theme emerged describing nurses’ perceptions of fatigue as a sign of weakness. Similar to Kryptonite, a fictional material known to drain Superman of his strength, nurses in this study described acknowledging fatigue as a source of weakness for nurses.

Participant #2 – I think it’s something that nobody likes to talk about. Because nobody wants to be told that they can only do 8’s because it works better for their home life and in the ICU sometimes you need the full 12 hours to be able to get all of your stuff done otherwise you feel like you’re leaving all these odds and ends undone that you really can’t pass on to somebody so you’re going to stay there late anyway.

Participant #4 – The nurses that I’ve interacted with don’t like to talk about it (fatigue) because then it’s perceived as us complaining and we don’t want to be complainers it’s hard too because...
sometimes you get those patients that you work a 12 hour shift and then they ask you when you come back in the morning, didn’t you just leave? I feel like sometimes that has patients questioning whether or not you are in a position to be able to practice your job well and when patients say those types of things to me that can actually be really hurtful.

Participant #19 – I think it gets swept under the rug a lot. I know for a fact that everyone on my floor can tell when someone is not having an on day, when they’re feeling fatigued, but I think that other nurses can see that and come to their aid, there are other times when others will see that and then just bash them behind their back for it.

These quotes illustrate a stigma associated with acknowledging fatigue in nursing professional culture. In other words, “nobody likes to talk about it”. As Participant #2 notes, this stigma may arise out of concerns amongst nurses that organizational efforts to address fatigue may impact their autonomy, particularly with regard to scheduling. In contrast, the quote from Participant #4 describes suppressing any discussion of fatigue out of a desire to be perceived as strong and professional. However, in the second half of this statement, she comments that although nurses avoid discussing fatigue, patients sometimes comment on nurses’ long work hours, and this forced acknowledgment of the potential for fatigue is painful because it threatens the superhero image that the nurse has worked so hard to portray. Participant #19 offers additional insight and notes that nurses can also detect fatigue in their colleagues; however, the response is not always supportive.

Alter-ego. Superheroes often have a secret identity or alter-ego that allows them to protect themselves from enemies or those in society that do not understand or appreciate their extraordinary powers. The Supernurse alter-ego represents generational differences in perceptions of fatigue. Participants in the study with varying levels of fatigue described differences in acceptance of fatigue as “just a part of the job”. More experienced nurses expressed recognition that the younger generation may have different views of fatigue and may not accept it as a way of life or a part of their professional value, customs, and behaviors. In this sense, nurses from the younger generation may not identify as Supernurse and may instead embrace a regular human alter-ego. This may help to protect newer nurses from some of the risks of fatigue.

Participant #1 – I think the younger generation is not going to put up with this whereas us older people this is just what nursing was all about and I think you younger guys are going to take it a little more seriously and not accept it as a way of life. I think someone needs to do something about it but us older people are probably not going to be the ones to do it because we’ve just accepted that this is the way it is. And I don’t think you guys need to accept it that way.

At the same time, some of the less experienced nurses commented that older nurses frequently reinforce the message that fatigue is a part of nursing professional culture and something you just need to accept and learn to live with. As discussed above, these less experienced nurses prioritize work-life balance and personal wellness, which is often in opposition to the Supernurse values, beliefs, and behaviors held by more experienced nurses. Multiple less experienced nurses in the study mentioned this dichotomy as affecting their future career plans.

3.3. Fatigue and the nursing workforce: satisfaction and sustainability

Overall, nurses noted a negative relationship between their fatigue level and their satisfaction with their position. Satisfaction is a nurse outcome in the SEIPS model that has implications for organizational outcomes related to nurse turnover and ultimately to shortages in the nursing work force. Nurses in this study self-reported less satisfaction at times when they would describe their fatigue level as higher.

Participant #8 – I think it (fatigue) does decrease your satisfaction. Yesterday I felt very emotionally exhausted, I felt bad but I avoided going like, I would go in the rooms but I was very short in my answers and I think that affects my job satisfaction. I feel bad because I’m not in there interacting and maybe being supportive and keeping their minds off the situation but I just can’t, sometimes you just can’t do it.

This quote describes an overall negative relationship between fatigue and satisfaction. However, it also illustrates that fatigue can have indirect impacts on satisfaction by changing nurses’ behaviors. Specifically, this participant describes an example of how increased fatigue changed how they engaged with their patient, which in turn affected job satisfaction. This highlights the role strife that nurses experience when they are fatigued and therefore unable to perform their role in the manner that they expect of themselves or that they feel society expects.

Participants also pointed to fatigue as a factor prohibiting sustainability in their current role. Participant 15 identifies fatigue as an important reason why she will likely leave her job in the next five years. She also questions how other more experienced nurses can sustain their position given the current job demands.

Participant #15 – I always think wow this nurse has been on the floor for 20 some years, I don’t know how she does it. I think my biggest factor would be fatigue. Just the demand of the job. I’ve only been working there for like a year and a half but I don’t see myself working as a floor nurse much more then probably 5 years.

The other less experienced nurses in this study confirmed this sentiment. They commented that they would not likely stay in their bedside nursing positions and planned to return to school or seek out less demanding positions that would accommodate their views of optimal work life balance. New nurses’ perceptions of how fatigue negatively affects their sustainability in their current position highlight the importance of addressing fatigue as a nursing workforce issue.

4. Discussion

Findings from this study clarify how nurses’ perceptions of the importance of addressing fatigue, along with values and behaviors inherent in nursing professional culture, may act as important barriers to effectively managing fatigue and achieving a safety culture in nursing work systems. Specifically, the emergent Supernurse theme described by the authors, and encompassing five subthemes, provides important insight into how nursing professional culture may contribute to nurse fatigue and inhibit implementation and sustainability of fatigue management policies and programs. Participants in the current study also described how their experiences with fatigue can negatively affect their practice and result in decreased satisfaction and likelihood of sustaining their current position.

All nurses in this study report that they experience fatigue, but their views on the importance of addressing fatigue varied. Multiple participants stated that fatigue is “a part of nursing” implying a general acceptance of the phenomenon. This is in line with the values of the Supernurse professional culture identified in this study, but runs contrary to the fundamental attributes of a safety culture that require acknowledgment of fatigue and consistent reporting of associated risks and hazards (Gander et al., 2011). Some nurses in the current study did identify addressing fatigue as important. These nurses were also more likely to comment on their personal experiences with
consequences of fatigue to patient safety, their own health and well-being, and to the nursing workforce as opposed to more general examples of potential consequences. Communicating to nurses the negative effects of fatigue on patient care and safety through training and other programs is critical to disrupting many nurses’ inaccurate perceptions that fatigue does not impact their practice (Smith-Miller et al., 2016). Multiple nurses in this study admitted that if the dangers of fatigue had been taught in nursing school that they did not remember the content and would have failed to recognize the importance at that time. Fatigue education may require novel approaches such as simulation or active learning strategies in order to counteract the prevailing culture and help nurses to recognize their own vulnerability to fatigue.

In describing their experiences with fatigue, participants revealed a number of characteristics of nursing professional culture, which may help to explain challenges that organizations have experienced thus far in successfully addressing fatigue. Participants described feelings of complete responsibility for caring for their patients and supporting their unit, as well as feelings of guilt if they took a break or did not sacrifice themselves for the good of the patient. These sentiments have been echoed in other recent studies that describe nurses’ resistance to taking a break or placing their patient in someone else’s care (Smith-Miller et al., 2016). Nurses’ perceptions of their own extraordinary abilities as motivation for their complete ownership of care for their patients may arise out of their professional identity as a nurse and feelings of self-confidence in one’s role, commitment and courage (Ohlen and Segesten, 1998).

Nurses are caregivers; in this role identity, they put others first and as a result frequently do not devote sufficient energy or attention to self-care (Cranick et al., 2015). This may place them or their patients at risk if they are unable to conceptualize the possible consequences of ineffective coping and working while fatigued (Ross, 2008; Smith-Miller et al., 2016). Results from prior research indicate that workers who are sleep deprived or fatigued are less able to recognize their own impairment (Lothschuetz Montgomery and Geiger-Brown, 2010; Ross, 2008). A negatively reinforcing loop can therefore arise, whereby a nurse who perceives him or herself as having extraordinary powers and is motivated to self-sacrifice for the good of their patient or unit may begin to experience fatigue. As their fatigue level increases, rather than recognizing that they may be placing their patient (or themselves) at risk, they may actually perceive themselves as less vulnerable to fatigue and they are therefore even less likely to engage in coping, self-care, or restorative behaviors. Interventions, such as rest break or napping policies, may not be effective at addressing fatigue if we fail to disrupt this loop and account for the Supernurse values of nursing professional culture.

Lack of recognition of one’s own fatigue is furthered by pride that nurses in this study described in being able to work without breaks, pick up extended hours or extra shifts, and “handle” their fatigue. These Supernurse values and behaviors of self-sacrifice, resistance to help, and appearing invulnerable may be reinforced by peer culture as well as management culture in a particular organization. Lothschuetz Montgomery and Geiger-Brown describe a peer culture in hospitals that rewards overtime or taking on extra shifts and/or fails to acknowledge fatigue or allow for staying home when fatigued (Lothschuetz Montgomery and Geiger-Brown, 2010). This aligns with participant comments in the current study that describe feelings of not wanting to let their unit down and the stigma of acknowledging fatigue or appearing weak or less capable as a nurse. The cloak of invulnerability that a Supernurse wears and the associated desire to project an image of strength also aligns with prior work describing a tyranny of tidiness and tyranny of busyness in nursing practice (Manias and Street, 2000). In their work describing nurse handoffs, Manias and Street (2000) identified and described these themes as driven by nurses’ concerns about judgment from colleagues about the state of their patient and the completeness of their work. Comments from nurses in that study revealed that they were motivated to get their patient tidy so as to appear that they have it all together and not to leave extra work for the next shift. These nurses were motivated by both guilt at leaving extra work for a colleague and fear of being judged as less capable.

Similarly, management culture has been documented as potential source of fatigue as well as a factor contributing to aspects of nursing culture that act as a barrier to addressing fatigue (Steege and Dykstra, 2016; Steege et al., 2015). By praising personnel for working overtime or picking up an extra shift, nursing managers or other leaders on the unit reinforce Supernurse values and attributes within nursing professional culture (Smith-Miller et al., 2014). Through better understanding and explicit acknowledgment of the specific Supernurse values, customs, and behaviors of nursing professional culture, leaders may be able to adjust their messaging and achieve a more optimal safety culture.

Attributes of the nursing professional culture identified in the Supernurse theme in the current study span healthcare organizations and the culture of a specific unit. Nurses in this study who had worked at other organizations or floated to other units described similar culture regarding fatigue in those settings. Therefore, Supernurse appears to be a part of a broader socialization into the nursing profession. Socialization into the nursing professional culture begins in nursing educational programs and extends into practice environments; it is defined as the “process of internalizing and developing a professional identity through the acquisition of knowledge, skills, attitudes, beliefs, values, norms and ethical standards in order to fill a professional role” (Dinmohammadi et al., 2013, p. 27). The alter-ego subtheme of the Supernurse described by participants in the current study reveals that newer nurses may be resistant to some aspects of Supernurse, which may be a source of tension in their socialization into the profession. Participants described younger or newer nurses as being less inclined to accept fatigue as “part of the job”, and a potential misalignment with the dominant nursing professional culture. Differences in professional culture across generations may be indicative of an slow evolution of professional culture; however, such change in culture has been described as a “vortex” and may contribute to increased tension between different generations of nurses who are working side by side in the same work system (Rocco et al., 2014).

In spite of newer nurses’ desire to embrace the alter-ego of nursing professional culture, they are entering a work system where acknowledging fatigue may be a sign of weakness and they may be exposed to incivility or lack of support from colleagues if they do not quickly learn to adapt. One of the participants noted that when peers recognize fatigue in a colleague, they may “bash” him or her behind their back. Inconsistent views on the importance of fatigue, its role in nursing, and how nurses should respond to fatigue may contribute to incivility. A less experienced study participant vividly described a coworker yelling at her across the unit and questioning her competence when she was fatigued. This participant, and others who described witnessing or being the victims of incivility, discussed how these experiences made them feel isolated and scared to ask for help, which is in direct contradiction with safety culture. The dominant Supernurse culture may result in new nurses continuing to stigmatize fatigue and take action to minimize perceptions of their own weakness or vulnerability. Other studies have identified the importance of “Leopard spots” in professional nursing culture. Nurses are perceived as being set in who they are and how they practice, and are resistant to change (Rocco et al., 2014). This also may affect
the socialization of new nurses particularly as they transition into practice and work with more senior nurses. Younger generations may be faced with a choice of acculturation into the dominant Supernurse culture or leaving the organization or the profession. This contributes to a survivor effect in which nurses who continue practicing in hospital settings have adapted to the often detrimental Supernurse values and behaviors that contribute to fatigue and inhibit fatigue risk management programs, while those who realize their own fatigue and work to address it leave the hospital setting.

Nurse perceptions of fatigue as a weakness in the current study may also offer insight into why nurses have resisted organizational efforts to address fatigue in previous studies. Several participants commented that one of the reasons nurses avoid talking about or acknowledging fatigue is a fear of losing their autonomy or being required to adhere to policies or guidelines that were developed without nursing feedback. For example, in spite of the growing body of evidence indicating that long and sequentially scheduled shifts contribute to increased fatigue and decreased quality of care and nurse well-being, multiple nurses in this study reported that they were upset when the hospital instituted policies regarding the number of shifts a nurse could work in a pay period or when individual managers required nurses to take breaks without taking their payers. Decreased decision latitude and distrust in management have also been identified as predictors of chronic fatigue in nurses (Rahman et al., 2016). Nurses who lack autonomy and/or do not have trust in management may have increased levels of fatigue and these same nurses may be the ones most likely to resist new organizational policies or interventions to reduce fatigue.

Autonomy and independent thinking are consequences of the professional identity of the nurse and may in part explain some of nurses’ resistance to organizational strategies to change nursing practice and behaviors (Ohlen and Segesten, 1998). The stigma associated with discussing fatigue that emerged in the current study may arise out of threats to the nurses’ autonomy and indirectly his or her professional identity. Stigmatizing fatigue is in direct conflict with a timely reporting culture that is the foundation of a culture of safety in workplaces. A recent study by Smith-Miller et al. (Smith-Miller et al., 2016) described the use of participatory action research methods to successfully engage nurses in the design and implementation of a workplace fatigue reduction plan and increase nurse acceptance of the program. Just cultures have also been effective in supporting safety in healthcare systems and may be a useful model for addressing fatigue in hospital work environments. A just culture facilitates trust, transparency, and learning by supporting reporting of errors, near misses, and other factors related to safety without fear of blame or repercussions (Barnsteiner and Disch, 2012).

Nurses in the current study identified negative relationships between fatigue and their satisfaction in their current position and likelihood of leaving their position in the next several years. The impact of fatigue on nurses’ satisfaction is not surprising given that many of the most frequent and important sources of fatigue, including physical and psychological work demands, autonomy, supervisor support, social support, long work hours, required on-call or overtime work, lack of breaks, are all significantly associated with increased job dissatisfaction (Han et al., 2015). Moreover, all of these fatigue sources except overtime and lack of breaks are also significantly associated with intent to leave the position (Han et al., 2015). Fatigue may act as a mediator between excessive demands or poor practice conditions and nursing workforce outcomes. In this sense, fatigue is a useful indicator of opportunities to improve the design of nursing work systems to support practice and retain nursing staff.

In this study, participants identified fatigue as both directly contributing to decreased satisfaction and indirectly contributing to nurses’ views on sustainability in their current position by affecting nurses’ behavior in a way that does not align with the professional identity and role of a nurse. This results in a sense of strife and is in conflict with both the professional role of a nurse as a caregiver, and aspects of Supernurse professional culture that place value on nurses’ extraordinary powers used for good. Further, prior research has identified negative effects of conflict between a nurse’s personal professional values and the values perceived amongst colleagues in an organization on retention (Yarbrough et al., 2016). Specifically, differences in expectations about what it means to be a nurse have been identified between generations and these conflicting values and expectations may contribute to younger nurses leaving the job more quickly (Yarbrough et al., 2016). The alter-ego subtheme of Supernurse professional culture also reflects some of these generational differences in values and ideas related to fatigue as a “part of the job” in nursing.

It is important to acknowledge the limitations of this study. Interviews were conducted within a single hospital; organizational policies or aspects of organizational culture that are unique to this organization may not reflect experiences in other nursing work environments. However, many of the themes reported and identified in the current work align with prior literature describing fatigue risk management. The subthemes of Supernurse may offer insight into characterizing how nurse professional culture acts as a barrier to effective fatigue monitoring and risk management. Future work is needed to identify and evaluate innovative culture change models and strategies spanning nursing education, healthcare organizations, and professional bodies that target these Supernurse barriers and develop mechanisms for facilitating a culture of safety related to nurse fatigue and associated consequences. Finally, in describing the relationship of nursing professional culture to fatigue, and particularly the emergent theme of Supernurse as a barrier to addressing fatigue, we risk inadvertently blaming nurses for their fatigue. Nurses are not responsible for the fatigue they experience. Occupational fatigue develops when nurses are exposed to excessive demands that exceed capacity, and should be addressed using safety controls defined in occupational safety literature including: eliminating sources of fatigue, reducing exposure to sources of fatigue, mitigating the effects of fatigue on outcomes, and employing educational and coping strategies (Steege and Pinekenstein, 2016; Williamson and Fristwell, 2013). Although, findings from this work do not intend to purport that nurses may cause fatigue, nursing professional culture may act as a moderator to nurse fatigue and has been identified in literature as an important barrier to effectively addressing fatigue in healthcare organizations. At the same time, Supernurse values, beliefs, customs and behaviors may also contribute positively to the professional identity and role of a nurse as a caregiver. Future work is needed to further clarify the themes identified in this study to design new measures of nursing professional culture.

Conflict of interest

No conflicts of interest.

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Ethical approval

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