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Research Report

"Scheduling Is Everything": A Qualitative Descriptive Study of Job and Schedule Satisfaction of Staff Nurses and Nurse Managers

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Abstract

Background: Shift work and scheduling are major contributors to occupational stress for nurses, leading to job dissatisfaction and risk of turnover. Nurse scheduling processes are complex, as they are dynamically linked to nurse staffing and patient demand.

Objective: This study sought to describe barriers and facilitators influencing job and scheduling satisfaction among staff nurses and nurse managers.

Methods: We used a qualitative descriptive design. The sampling frame included staff nurses and nurse managers employed at an urban academic medical center. Participants (N = 16) completed individual semi-structured Zoom interviews from August 2023 to February 2024, which were audio recorded and transcribed. Data were analyzed using content analysis.

Results: The overarching theme identified was "Scheduling is everything," reflecting the importance of scheduling for nurses' satisfaction in and outside of work. Both staff nurses and managers identified tensions between scheduling for patient care needs (e.g., adequate staffing) and scheduling to optimize staff needs (e.g., health, sleep). They also identified staffing shortfalls as a contributor to these scheduling tensions. Staff nurses reported that scheduling challenges compromised their health and well-being, caused work-family conflict, and influenced turnover intentions. Facilitators of scheduling satisfaction included scheduling flexibility, autonomy, and equity. Participants also provided pragmatic ideas for improving scheduling processes.

Conclusions: Our study explored perspectives on job and scheduling satisfaction through the lens of both staff and managers. Scheduling challenges contribute to nurses' job dissatisfaction and turnover intentions. By increasing scheduling flexibility, equity, and integrating nurse-led innovations into the scheduling process, healthcare organizations can potentially increase nurse retention.

Keywords

nursing, health occupations, workplace, personal satisfaction

Introduction

Registered nurses (heretofore "nurses") have long faced difficulties with 24/7 scheduling and staffing, as highlighted in numerous studies.[1-3] Over 20 years ago, the National Institute for Occupational Safety and Health (NIOSH) recognized the challenges posed by increased workloads and extended work hours. This trend has impacted nurses significantly, with longer shifts (often 12-hour shifts instead of 8-hour shifts) and more acute patient needs.[4-7] Consequently, healthcare is a leading occupational sector, especially nurses, that experience high levels of job stress due to factors like shift work and demanding schedules. This leads to decreased job satisfaction and increased likelihood of leaving the profession.[6] The COVID-19 pandemic further exacerbated these issues, negatively affecting nurses' sleep, health, and overall well-being.[8-11]

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Scheduling Practices and Policies

In the US, the predominant shift length is 12 hours in acute care settings.[12] Full-time staff nurses typically work three 12-hour shifts per week, with some nurses hired into roles with schedules that include rotating shifts.[13] Nursing management is responsible for scheduling staff nurses with staffing targets estimated by patient demand.[14] Staff preferences are often at least part of the scheduling decision-making process; however, this is not always the case.[15,16]

In practice, nurse scheduling is managed in several ways. First, some follow systems of pen-and-paper scheduling or use homemade spreadsheets for scheduling requests. This may be done for several weeks or months at a time.[16] Second, scheduling practices and policies may follow explicit hierarchies (i.e., experienced staff choose which holidays they work; less experienced or newer staff work more night shifts). However, some hierarchies may be implicit, such as preferential scheduling based on friendships or other personal reasons, which may lack transparency to staff. Some units have volunteer-based staff nurses or staffing committees who assist in developing schedules or soliciting requests for vacation, holiday, or personal time off. However, the nurse manager has the fiduciary duty associated with adhering to the staffing budget and typically holds the final authority on schedules. Managing scheduling, including switches, call outs, and overtime in this way is often an ineffective use of a nurse manager's clinical experience and time, resulting in staff dissatisfaction.[5,16,17]

Nurse Scheduling and Job Satisfaction

Nurses have cited poor schedules and increased workloads as reasons for job dissatisfaction.[1,18] Scheduling practices may impact overall job satisfaction in multiple ways. First, nursing has historically had little scheduling flexibility. Flexible scheduling provides opportunities for better work-life interface, and reduced work-family conflict is an important factor in attracting and retaining nurses, especially as a primarily female occupation.[19-21] Nurses with social and family obligations outside of work have cited flexible scheduling, particularly in part-time roles, as influencing their decision to continue with direct-care nursing positions.[22] Second, nurse scheduling practices are dynamically linked to nurse-to-patient staffing ratios and the ability of workplaces to ensure appropriate match between patient needs, available nurses, and nurse competencies.[1,23] The mismatch between staff competency and patient acuity is a source of stress and contributor to dissatisfaction. For example, among surveyed critical care nurses in 2021, only about 1 in 4 nurses (24%) perceived an appropriate match between patient needs and available nursing skill more than 75% of the time at work.[23]

Nurse Job Satisfaction and Outcomes for Patients and Nurses

A deep body of research has identified job satisfaction as a predictor of retention among nurses.[24,25] Retention of staff nurses in acute care settings is critical to ensure adequate nurse-to-patient ratios and to provide high-quality patient care.[26] Lack of staffing has a cascading effect on patients and nursing staff.[26-28] Poorer staffing is associated with poor quality and patient safety outcomes, including increased risk of mortality.[27,29,30] Further, turnover impacts morale and stress for the remaining nursing staff, which can reduce health, well-being, and productivity.[31] Nurses are on average less healthy than the general population in the US in terms of weight, sleep, and stress.[32] Surveys of nurses have identified health challenges such as high levels of stress including workplace violence, lack of adequate breaks, and lack of appropriate nutrition and exercise as contributing to poor overall nurse health.[32] Finally, scheduling practices that include overtime, multiple consecutive shifts, and/or quick returns (ie., $<$11 hours off between consecutive shifts) hamper nurses' ability to care for their own health and sleep needs.[33]

Purpose

Although nurse job satisfaction, scheduling satisfaction, and associated outcomes have been well documented,[3,24,34,35] gaps remain in understanding the dynamic interface of overall job satisfaction as influenced by scheduling satisfaction in a post-COVID-19 pandemic environment. Furthermore, researchers have not captured perspectives on what prevents or supports satisfaction in scheduling from direct care nurses and the nurse managers who are responsible for the scheduling process.[36] Previous research on nurses' job satisfaction is abundant and mostly quantitative but very few studies have *a priori* combined concurrent data collection from nurses and managers from the same institution to understand the phenomena of interest through a qualitative methodology. The aim of this research was to describe barriers and facilitators of job and scheduling satisfaction among staff nurses and nurse managers.

Conceptual Framework

This study is guided by Harvard's Center for Work, Health and Wellbeing's conceptual model for integrated approaches to protecting and promoting worker health, which was updated by Sorensen et al. to reflect the future of research on work, safety, health, and well-being.[37] This framework identifies pathways through which working conditions may influence health and safety processes, behaviors, and outcomes. As shown in our adapted conceptual model in Figure 1, organizational policies, programs, and practices, such as scheduling

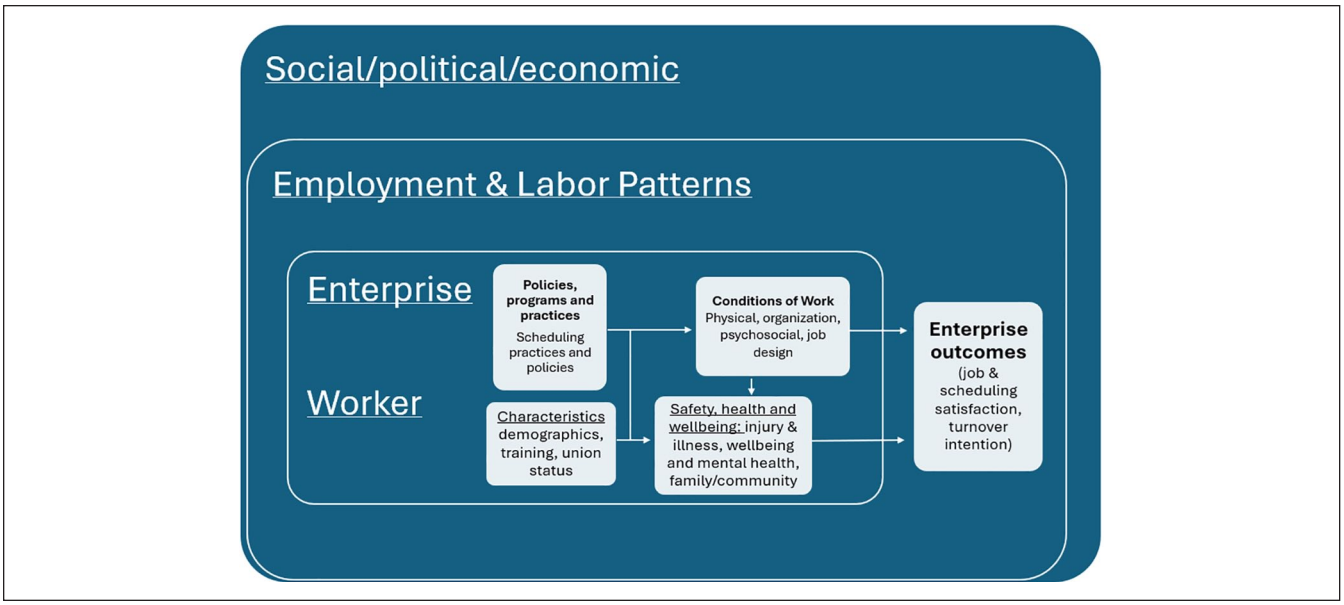

Figure 1. Adapted conceptual framework.

practices, are situated in this conceptual model as potential points for intervention that influence working conditions and worker safety and well-being outcomes. Through this intervention point, enterprise outcomes can be improved. For our study, we focused on enterprise-level organizational outcomes of job satisfaction, scheduling satisfaction, and turnover intention. Using this conceptual model helped to inform the structure of the interview guide (see Supplemental content for interview guide) and overall understanding of key domains associated with scheduling satisfaction.

Methods

Study Design

This study used a qualitative descriptive design. In qualitative descriptive studies, common to healthcare research,[38] the researchers seek to describe experiences using everyday terms and typically use semi-structured interviews or focus groups followed by content analysis.

Sampling, Sample, and Recruitment

Our sampling frame included staff nurses and nurse managers employed at a large, urban academic medical center. After approval by the Institutional Review Board (IRB), participants were recruited using multiple approaches including targeted emails, infographics, and snowballing. We employed maximum variation sampling to recruit across unit type, shift, work experience, and sociodemographic characteristics.

Screening and Enrollment

Potential participants were directed to a REDCap link where they were screened for eligibility and completed informed consent. Next, participants completed a sociodemographic and work characteristics survey and then self-scheduled their interview using the Calendly electronic scheduling software (Calendly, Atlanta, GA). Reminder emails were sent prior to interviews, and re-scheduling was completed using Calendly. Participants completed interviews between August 2023 and February 2024 with the PI or research assistants who were nurses with experience in qualitative research. None of the participants were known to the interviewers. Before starting the interview, the purpose of the study and brief introduction to the interviewer were presented to the participants. We used audio-only recorded interviews on Zoom (Zoom Video Communications, San Jose, CA). No repeat interviews were conducted. Participants were entered into a raffle for one of ten $50 e-gift cards.

Measures

Sociodemographic data included age, education, partnership status, and dependent/caregiving status. Work characteristics included questions regarding primary job, second job status, work setting, years of experience as a nurse, work hours per week, primary work schedule, shift length, and average unit staffing. We have used these questions in previous studies, and they are based on the National Sample Survey of Registered Nurses (NSSRN) by the United States Health Resources and Services Administration (HRSA).[21]

Two similar but distinct semi-structured interview guides were used for the staff nurses and nurse managers, undergirded by the conceptual model.[37] The interview guide was also informed by prior work on nurses across care settings describing their work experiences and nurse outcomes.[8,39] The interview guides consisted of open-ended questions and probes to elicit thick, rich data. Example questions included, "Tell me about some of the benefits of your current scheduling process?" and "How does your schedule impact your health and quality of life?" Interviews lasted 35–50 min, and we reached data saturation after 16 interviews. Data saturation is identified as the stage at which additional data from participant interviews does not yield new insights related to the research questions.[40]

Data Analysis

All audio-recorded interviews were downloaded from Zoom and transcribed. All transcripts were checked for accuracy and coded using ATLAS.*ti* (ATLAS.ti GmbH, Berlin, Germany), a software package for the qualitative analysis of textual data, by the PI (PhD prepared nurse) and research assistants (nursing PhD candidates). Data were analyzed using conventional content analysis,[41] a flexible approach that seeks to describe the phenomena of interest allowing researchers to be immersed in the data.[41] Data management and analysis entailed the following: first, processing the data, including careful review of transcripts, second, analyzing data to identify the experiences of staff nurses and nurse managers across scheduling practices; and finally, identifying themes to understand connections across work scheduling factors that impact overall job and scheduling satisfaction. The preliminary analysis of the data included review of transcripts yielding clusters of data that were labeled into brief headings. Then codes were categorized based on lineages and relationships. Lastly, themes within and across coding categories were identified. At each point in the data analysis, team meetings were held to discuss the codes, categories, and themes. During the discussions, any disagreements that occurred were resolved by consensus of the team.

Qualitative rigor followed Lincoln and Guba's criteria (credibility, transferability, dependability, and confirmability) as a guide.[42] Credibility was achieved by comprehensiveness in data collection and analysis. Using analyst triangulation, multiple team members (PI, Co-I, research assistants), with different perspectives and clinical backgrounds, participated in data analysis. Transferability was achieved by describing the research context and using direct quotes to illustrate the results. Dependability was attained by including an audit trail in coding notes/memos and meeting notes. Finally, confirmability was completed by sharing findings with an outside expert in both occupational health nursing and qualitative methods to reduce risk of researcher bias.

Results

Our sample reflects sociodemographic and work characteristics that are relatively similar to the most recent results of the NSSRN collected in 2022-2023.[43] Our sample is slightly younger with an average age of 40 (SD N = 15) compared to the national average of 47.9 years in the NSSRN. More nurses in our sample were educated at the bachelor's level (69%) compared to the NSSRN (45%), however, younger nurses increasingly obtain a bachelor's upon initial licensure. Over half of participants, primarily staff nurses, worked 12-hour shifts (56%) and the majority worked day shift (81%). Nearly all participants worked in a full-time position (93%). Almost two-thirds of our sample were staff nurses (63%) and just over one-third (37%) were nurse managers, reflecting the natural distribution of staff nurses to nurse managers. Participants worked in varied settings including intensive care, operating room and post-anesthesia care, pediatrics, labor and delivery, and general medical/surgical. Full characteristics are found in Table 1.

Overarching Theme

The overarching theme of this study was "Scheduling is everything," reflecting the importance of scheduling for the participants' job satisfaction and personal satisfaction. Participants described the interconnectedness between their schedule and their physical and mental health, overall job satisfaction, and career intention. One participant described, "The schedule is number one. It really dictates your quality of life, your well-being, what you're able to give to work, your attitude when you show up, your attitude when you leave. . .schedule is everything." Participants described building their lives around their work schedule, which determined their ability to see their family and friends, to travel, and ultimately to enjoy their jobs. Another staff nurse described her belief that, ". . .if people are able to have a schedule that works for them, that that makes everyone happy, and keeps everyone enjoying their job." Aligned with the conceptual model, barriers and facilitators of scheduling satisfaction emerged in participant interviews in worker, enterprise, and employment and labor domains. Subthemes related to barriers and facilitators of scheduling satisfaction are detailed in the following sections.

Barriers to Scheduling and Job Satisfaction

Tensions in Meeting Scheduling Demands Horizontally and Vertically. Reflecting on the challenges of scheduling, most staff nurses and many nurse managers identified the tension between scheduling for unit needs (i.e., patient demand) and scheduling to optimize staff needs (i.e., the quality of life, health, and job satisfaction of nurses). Staff nurses generally perceived the scheduler as prioritizing daily staffing demand

Table 1. Participant Characteristics (N = 16).

Variables	M ± SD or n (%)
Sociodemographics	
Age	40 ± 15
Marital status	
Never married/single	7 (44)
Married/domestic partnership	5 (31)
Divorced/widowed/separated	3 (19)
Prefer not to answer	1 (6)
Highest nursing degree	
Bachelor's degree	11 (69)
Master's degree	5 (31)
Children	
No children/no children at home	10 (63)
Children at home	4 (25)
Prefer not to answer	2 (12)
Work Characteristics	
Job Title	
Staff nurse	10 (63)
Nurse manager	6 (37)
Shift length	
8 hours	6 (37)
12 hours	9 (56)
Flexible schedule	1 (6)
Other	0
Schedule	
Days	13 (81)
Nights	3 (19)
Other	0
Status	
Full-time	14 (93)
Part-time	1 (7)

Note. Percentages may not equal 100 due to rounding or missing/incomplete data.

based on patient census over individual staff nurse scheduling. When looking at a staffing grid, the manager can see that staff are scheduled for each shift in vertical columns that fulfill the patient demand, while looking horizontally, the manager can see which shifts each nurse is scheduled for in a scheduling period. One staff nurse described this as the tension between horizontal and vertical scheduling; "It seems like there's an emphasis on looking at the schedule vertically to make sure the unit is covered. But they're not necessarily looking horizontally to see how that can impact the nurse." For example, many nurses indicated a strong preference for either working consecutive shifts or nonconsecutive shifts. Several staff nurses perceived this was not considered during the scheduling process, because the focus on adequate staffing overshadowed staff needs and preferences.

From the nurse managers' view, several noted that numerous staff vacancies made scheduling vertically more complex. One manager noted,

> I think that one thing that ties in with scheduling is the number of positions that are available, or if you have vacancies. It's a balance. When there's a lot of vacancies, I have to wait a long period of time before I can hire someone.

The nurse manager also reflected on the weight that experience plays in the hiring process, that staff nurses may not fully appreciate. "Then you also have to factor in the amount of time it takes to orient a nurse, and are they a new grad or do they have experience?" Additional exemplar quotes are found in Table 2 by each of the subthemes.

Health and Well-being. Prioritizing the scheduling needs of the unit led nurses to report that their schedules negatively impact their health, home life, and even the quality of nursing care they provided. One nurse spoke of the toll it took to work three consecutive night shifts, saying,

> I have literally a migraine for an entire day after that three shifts in a row, just to gain my regular biological clock and come back to the normal routine. . .We have a lot of people on our floor that don't mind it because they go home, they sleep, take a shower, and they come back in the morning. It's not bad for some people. For me, I have a lot of things to do at home and it just doesn't work for me.

Like this nurse, several participants indicated a preference for working consecutive or non-consecutive shifts, and when this preference was not accommodated, it negatively impacted the nurses' health. Unmet needs and preferences of nurses around the schedule may lead to health problems, poor quality of life, and job dissatisfaction.

Other nurses reported issues with being able to access health services due to their work schedules. One nurse who worked full-time described difficulty getting days off to attend medical appointments when she needed them.

> I wasn't able to see a [doctor] for like four months from when I wanted to. I couldn't work it with my schedule, with the availability that was out there, for four months, which was really bad. . .I basically begged my manager to leave early at like 3 PM on a day where I was scheduled till 6 PM, because I couldn't deal with it anymore.

This nurse identified staffing constraints as a major barrier to scheduling flexibility that allows nurses to take days off when necessary, which then resulted in nurses using sick time as a work around more frequently, saying "I think it's that lack of flexibility that creates all kinds of problems, with lots of people calling out sick, which is a very frequent occurrence where I work." Nurses reported that insufficient staffing led to management being less able to be flexible about schedule changes, which would then lead to unit cultures in which call-outs were common. These cultures would then lead to negative work

Table 2. Barriers to Schedule and Job Satisfaction – Tensions in Horizontally and Vertically in Meeting Scheduling Demands.

Subthemes	Quotes
Health and Well-being	I was not very good on nights. I felt fine during the shifts, but my work life balance is not very good. I would sleep, I think, 14 plus hours after 3 12 hour shifts in a row. So I was very dazed a lot of the time on night shift. – Staff Nurse
	I do find it nice to be off on the weekends, and to consistently have weekends off. I guess that would be a positive, but I'm so tired by the time it comes to the weekend that I'm mostly not doing anything, which also isn't great for my physical and mental health, so it's kind of a double-edged sword. I know that the job that I'm doing is tiring, and I'm still continuing to do it. So, I feel somewhat trapped in that sense. I guess kind of knowing that there isn't a perfect schedule out there, like a place or a unit that has ideally what I'm looking for. – Staff Nurse
	The thing that frustrates me is there are a lot of nurses who actually want three [shifts] in a row, and sometimes they don't get it. So, it's not like they're desperate to give me three in row. It's not like they're extremely short staffed and they want me for three in a row, it's that I don't think they care enough to accommodate my request. So, it's not like I'm asking for off day. It's not like I'm asking for a vacation. I'm just saying, can you spread my days apart? So, instead of coming 3 days in a row, I can do like every other day. So, I struggle with that a lot. It's like, by the third day I am like sick end of the third day. You know, I'm exhausted. My body hurts. I have a headache. I haven't slept enough. It's just not good. – Staff Nurse
Work-Life Interface	It really creates a struggle with like my planning, with like work life balance because I have to miss out on other important events, you know, in my personal life. It's also kind of frustrating that we all only work 3 days. It's not like we work 5 days a week. So, you would expect that to be a little more flexible. – Staff Nurse
	Me personally, with kids, and so much things to do at home, I cannot do 3 in a row like 3 in a row for me means that I can't see my kids for 3 days. I also I mean, we work 7 to 7. So, by the time I get home it's 9 PM. And I have to meal prep for tomorrow for my kids, school lunch, breakfast, dinner for tomorrow. So, I'm gonna stay up until like midnight to cook for tomorrow. And I have to get up at 5 am. To go to be at work for 7 Am, the next day and my kids would be sleeping. So I go to work, I don't see them the second day. Then I come back on the second night, and I do the same thing. I stay late, I cook, I clean, I prepare for tomorrow, and the third day I have to get up at 5 am again and go to work. So, this is, it's not good for my mental health. I am exhausted physically and mentally, by the third shift. I don't see my family for 3 days, and I'm always staying up late, waking up early for 3 days in a row, and I always ask them not to give me three in a row, because it just doesn't work for me, and I half the time I end up getting three in a row. – Staff Nurse
	It's really frustrating. Because, well, I don't have kids but a lot of nurses that I work with do and so it's really hard for them to find childcare. If you have a doctor's appointment or something and then maybe if you work on a day that you're requested off for your appointment, it's like impossible to get another appointment for like weeks out. And then it's gonna be the same thing because, you know, we're like hoping we have that day off and then you don't and it was like a really awful cycle. So, a lot of people are calling out because they can't find another nurse to like switch shifts them or whatever or it's too short notice. – Staff Nurse
Linkages Between Scheduling and Staffing on Turnover Intention	I dont know if it would be a matter of hiring more people, but I feel like giving people the ability to take a single day off when they need it, and not having them know the night before, would be really helpful. And I think that would greatly reduce the number of sick calls that we have. – Staff Nurse
	I think just more staff. Like I get stuck at work, I'll get in at 6:30 in the morning and there's days I don't leave until 8 PM because I'll be charge with 3 patients. I'll have to give full report to the next charge nurse. Then I'll have to give hand-off to the 3 nurses that are getting my other 3 patients, and it's just a lot of responsibility. I'm not saying that I can't handle it, but it's a lot just for anyone to be there from 6:30 in the morning to 8 PM. And then I don't live in the city, so my commute is about an hour. So, I don't get home until like 9 o'clock at night. – Staff Nurse
	It can definitely be the reason I want to go somewhere else that will accommodate my work days. Because it's really important for me for someone who has like family kids, it's important. – Staff Nurse
	Yeah, ever since I've worked here, I think maybe only a couple of months we have been adequately staffed. People are just like, why am I going to stay here and literally work to the bone when I could go outpatient? Of course, it is a little bit of a pay cut, but just to have a better lifestyle and not be so physically and mentally drained. – Staff Nurse
	I think in my next venture, whenever wherever that may be, I think I will be asking how the schedule works, getting the policy in writing, and now that I know about changes. Do you implement changes mid-year? Do you release some at the start of the year? The fiscal year? The calendar year? Because, knowing those things upfront, I think, if I were deciding between two hospitals, that would make or break my decision. – Staff Nurse

experiences for nurses who had to work understaffed, jeopardizing the quality of patient care provided.

Linkages between Scheduling and Staffing on Turnover Intention and Work-life Interface. Participants identified schedules as an incredibly influential factor in deciding whether to stay, leave, or change jobs, both within and outside of their current organization. One staff nurse reported considering leaving a job she loved due to dissatisfaction with the schedule: "That is the only reason I would leave this job. Because I really like the people that I work with. I feel like it is a pretty good place to work, with the exception of the scheduling." Another nurse reported that schedule dissatisfaction was driving nurses in their unit away from bedside nursing altogether:

> I feel like I would always hear them say, "I just need one more reason to leave the bedside." Now, people have this reason. They're like, why am I gonna put myself through this constantly missing out on social activities?

This participant further describes the challenges for staff nurses with young children in balancing work schedule and family obligations:

> And for people that have kids, one of the girls on my unit, for example, the other day [her child] said, "How come Daddy only comes to my games? How come you miss out on my soccer and baseball games on the weekend?" That's hard to hear.

While nurses generally accepted the innate challenges of shift work (ie, the need for nurses to work on weekends and holidays), they also felt that management (or the scheduler) could do a better job incorporating staff nurses' scheduling preferences so that they are able to achieve a better work-life balance.

Facilitators of Scheduling and Job Satisfaction

Across the interviews, participants identified common facilitators of scheduling satisfaction, which were endorsed by nurse managers' perceptions. Subthemes included scheduling flexibility, scheduling autonomy, and scheduling equity. Additionally, participants demonstrated creativity and innovation by offering many ideas for improving scheduling processes both on their units and at the enterprise level. Exemplar quotes are found in Table 3.

Scheduling Flexibility. Both staff nurses and nurse managers identified scheduling flexibility as a facilitator of scheduling satisfaction. One nurse manager noted that mutual flexibility between nurses and managers regarding the schedule tended to lead to better outcomes. She said of her unit,

> I find that if a nurse is aware that they need a specific date off like 2 or 3 months down the line, they've been pretty good about giving me the heads up. . . Then I can talk with the other staff if it appears that for whatever reason other people want that day off, [I can say] "Hey, so someone needs this day off. Are we able to have any flexibility?" So, I attempt to get the nurses to work with me and I work with them and not against each other, as a team effort to get to balance the schedule.

Mutual flexibility, open communication, and cooperation between nurse and manager help facilitate a schedule that works for both the unit and the individual nurses' preferences. Another nurse manager also noted that adequate staffing and additional staffing resources allows for scheduling flexibility that prevents short staffing:

> We're lucky to have these resources, like the clinical resource team. Or we have a staffing huddle each day, and it goes over the staffing for each unit and the number of callouts, and [we're told about] any floors that have nurses that are available to float. So, that has been helpful.

Nurses also noted that despite the challenges of 12-hour shifts, many enjoyed the flexibility of working three shifts per week. One nurse who had moved from 12-hour shifts to 8-hour shifts noted,

> I thought I didn't want to work 12-hour shifts anymore. I thought I didn't wanna work weekends or overnights. . .but I didn't realize until I actually had to do it that I didn't quite like it as much as I thought I would. Or, the benefits of not working weekends and nights is not as great when you still have to work five days a week.

This participant reflects a key insight for inpatient units; there is an opportunity to retain staff by striving toward scheduling flexibility and maximizing the benefits of a nontraditional workweek (ie, three- to four-day work week).

Scheduling Autonomy and Control. Particularly for staff nurses working in settings where they work three or four 12-hour shifts per week, the ability to control their schedule (ie, which shifts they are assigned to in a scheduling period) was critical for their work-life interface and scheduling satisfaction. Nurses who had more control over which shifts they worked expressed greater satisfaction with the scheduling process, while conversely, nurses who were regularly moved from their requested shifts expressed frustration. The ability to self-schedule was generally viewed positively. One staff nurse said of self-scheduling,

> The positives are knowing that at least 85% of the days that I indicate I'm available to work, I usually am assigned to those days. . .it's good to know that it works out and to be able to kind of plan your life outside of that, too.

Nurses expressed acceptance that to meet the scheduling needs of the unit, their finalized schedule might be slightly different than the one they requested, but they did want to

Table 3. Facilitators of Scheduling Satisfaction.

Subthemes	Quote
Scheduling Flexibility	[Working 12-hour shifts] was a lot more flexible. We were required to work a certain number of weekend shifts, but outside of that, you could essentially figure out a way to work the days of the week that you wanted to for most, if not all, of the weeks in a month – Staff Nurse
	And I think it's that lack of flexibility that creates all kinds of problems, with lots of people calling out sick, which is a very frequent occurrence where I work. . .And I know a lot of people leave because they ask for four 10-hour shifts. And that's not been an option. – Staff Nurse
Scheduling Autonomy/ Control	There's a lot of give and take like you know, nurses will agree to- maybe work a bit of a weird schedule in order to help another nurse be able to do something that they want to do, and then the next month the other nurse, you know, say, "Hey, do you mind working this day, I really don't wanna have to switch this person" and they're usually like, "Yeah, I'm happy to do that." You know, I'm like Next month, I'll make sure this happens. So, I mean, it's a lot of work for me. But, like that gives me satisfaction knowing that people are being able to do what they want to do. And hopefully stay, right? mean, that again, that's my goal is I want people to be able to continue working there so that I can work with a more experienced staff. – Nurse Manager
	Like when people get stressed when they're feel like they're not in control. So, when you feel under control of my schedule, I can't work this day, and I make a constant effort to be on top of it and fix things. – Staff Nurse
Transparency and equity matter in the scheduling process	I guess, self-scheduling, if you get what you want and that you could kind of, it's electronics. So, you could see everybody scheduling a request and kind of shuffle things around in case you know that there's so many people working on, why shift and not the other. There is a chance that you may be moved around. So, I think the visibility and the openness is a good thing. – Staff Nurse
	Things are kind of hidden from us in a way that they don't need to be. And even like. . .on Friday someone showed this to me, that in the charge office there's a handwritten notebook that anyone could find in the office and see on a specific date which people called out. And I just feel like. . .I don't know what the purpose of that book is, 'cause obviously it wasn't my manager who showed it to me, but it almost feels. . .like it's a punishment. . .Like you call out sick, the next day, instead of giving 2 lunch breaks, you're gonna give 3, and you're gonna be put in the room that goes the longest, and you're gonna be put with the [person] that's the most difficult. It's really punitive. – Staff Nurse
	My previous inpatient role was a little bit easier. It was similar in that you would request in September for the following year, but you could see everyone else's choices. You could see, like how many people requested it. I feel like that just made it easier to know, how else can I finalize my entire year or things to work. Whereas now it's like, we submit our form. What will happen is, they'll come back to us and say, like, "Okay you can't have this, this, or this. So what do you want instead?" You'll ask, and then they'll go back and look. Come back to you again and say, "Well actually, you can't have that one either". So, I feel like the lack of transparency is what makes it more difficult now. – Staff Nurse
Nurses as Innovators	I try to support them as best I can, you know, for job satisfaction, and if I can do it, I certainly do that. If the 10-hour shifts are successful, my plan will be to have them do self-scheduling. My plan will be to have them do self-scheduling, perhaps have a nurse designated to be in charge of, say, the PACU or the recovery room. You know, everyone can do the self-scheduling. I will appoint one nurse to maybe be the balancer of the schedule. At the end of a period of time, everyone could plot out their days and then I'll give a final look at the schedule, make sure it all looks okay. – Nurse Manager
	(On having a remote work day) You know, depending on your leadership responsibilities, with the different meetings and things you need to be responsible for varying from week to week, or they can for the leadership. I can see that more happening here, where you could have a set day off, because it would have set days for all the different types of councils and leadership meetings you can be on. So, I can see that, but across the nursing profession itself, I think it's something that can actually work, but I can see the challenges. You would also need that support. Like, I don't have an assistant nurse manager. You definitely will need a charge nurse, you would definitely need it, if you had a bigger unit, an assistant manager where you guys wouldn't' be off at the same time and things of that nature. – Nurse Manager
	It would be great if you could just like take some sabbatical time once or twice in your career. That would be awesome. It'd be great if you could do one of the remote nursing jobs for like a couple of weeks every now and then. You know, just like kind of switch out of your unit for a little bit and be able to work from home the way, you know, the whole hospital got to do for a long time. – Staff Nurse

have some level of control over their schedule. One staff nurse reported, "I know someone that works at another hospital. And they're like, 'We kind of just get told when we're working'. And I'm like, I would never accept that. I need to have some control over when I'm working."

Some nurses reported that a critical part of the scheduling process was the ability to indicate which days they were not available to work, referring to these as "X days" or "XR days." Nurses spoke very positively about this scheduling strategy, which allowed them more control over having particular days off. One nurse said of the process on her unit,

> About 90% of the time we would get all of our X-days approved, so we don't work those days. That was actually really nice, because that gives you at least two days off that you actually wanna take off. So, you kind of have control over those.

Nurses described several ways they were able to communicate scheduling preferences on their units and these processes were considered beneficial to both nurses and the unit in achieving a schedule that worked for them.

Transparency and Equity Matter in the Scheduling Process. Both staff nurses and managers identified that transparency in the scheduling process facilitated scheduling satisfaction. When nurses were able to see the schedule and how the process worked (e.g., how many nurses were needed each day, which days other staff had requested, how many requested shifts had been changed), they were more satisfied with the process and more willing to work together to achieve a mutually beneficial schedule. One nurse manager said of the staff nurses on her unit, "They have access to [the schedule]. They're able to pick the days they want, are able to have a discussion with their coworkers before it comes to me." Another nurse manager reported that on her unit, the staff nurses handling the schedule were transparent with their colleagues about how many shifts they had been moved from their requested schedule:

> We have a policy that [the schedulers] follow based on the number of, say, weekends that a nurse is required to work, or for holidays. And for the most part, they ask the nurses, "Is it okay if you switch? We really need someone on this day". . .And they indicate in red that was changed so we know how many times the nurse's schedule was changed from their original request. Typically, it's about 2 moves at most they try to make.

Transparency in the scheduling process allows nurses and managers to work together to achieve a more equitable schedule, in which most nurses work close to their preferred schedule. One nurse manager said of her role in the process, "Everyone has access and everyone should see [the schedule]. . .I want them to kind of work that out themselves, but I will see if the schedule is not balanced." Both nurses and nurse managers expressed that transparency in the scheduling process usually led to better cooperation between nurses in achieving a schedule that was satisfactory for everyone.

Trust in the Staff: Nurses Can Innovate the Scheduling Process. Staff nurses and managers reported innovative ideas for improving the scheduling process to increase job satisfaction and work-life interface. Proposed solutions thematically suggested increased staff nurse engagement and pragmatic solutions. One staff nurse suggested having a staff nurse look over the proposed schedule before the manager finalized it to catch any potential issues:

> I think having one [staff nurse] just being able to look at the schedule and say, "You know, this person's schedule doesn't look like it's the best situation. Can we reach out to that person just to confirm that that's something that would work for them?" You can't necessarily make everyone happy every single month, but at least making it so then someone doesn't feel like they're slighted for the month and that they have a terrible schedule for the next four weeks.

Another staff nurse pointed out that putting trust in nurses to work out innovative and flexible solutions to scheduling challenges could be very helpful.

> Things happen, like you will have to go to the doctor at some point. You may need to take care of something at 6:30 AM. On a certain day, you just make it up with the nurse. Be like, "Is it okay if I come in at like 8 or 9 AM, and then you could come in at 9 PM?" So, you're both getting your 12 hours in. We're still covering each other as long as someone's taking responsibility for the patient 24-hours a day.

On one unit, staff nurses and nurse managers were piloting a schedule in which nurses work four 10-hour shifts, rather than five 8-hour shifts per week, to increase nurse retention. The manager of that unit reported,

> Everyone was anxious to try it. I had all of the RNs on board, so I think it's a big satisfaction with the staff versus working five days a week. So, you know, we are really trying to see what we can do to make this work for everyone.

Proposed nurse-led innovations may allow for better schedule satisfaction amongst nurses, and also require support from the organization, including adequate staffing, flexible policies, and technology that facilitates schedule equity.

Discussion

The results of this study illuminate how scheduling and scheduling processes underpin satisfaction at the level of the individual worker (staff nurse, the nurse manager), and the enterprise (unit and organization-wide), following the conceptual model guiding this study. Allowing for creativity and innovation at the worker and unit level allows nurses to work

together to develop a schedule that is equitable and adaptable to unit-specific scheduling practices. The design of this study, which sampled both managers and bedside staff nurses, was key in identifying our findings that emphasized the uniqueness of each unit and respective scheduling needs. These findings showed that over-enforcement of enterprise level or organization-wide scheduling policies may prevent perceived equity of scheduling practices among staff nurses. While some enterprise-level policies are important (i.e., vacation time, hours worked per week, overtime) many policies regarding scheduling policies (i.e., request-off days), prevent nimble scheduling practices that increase staff satisfaction. In other words, units seem to be able to function deftly in terms of scheduling, while organizational level policies may be less so. When unit managers are able to focus on their micro-level scheduling decisions, there may be a trickle-up effect in which staff are increasingly satisfied, with the organization benefiting by retaining staff. Our findings generally aligned in interviews with both managers and staff nurses, although there was some divergence between nurse managers and staff nurses particularly related to issues of hiring and staffing. Nurse managers confronted the challenge of balancing the needs of staff nurses with the needs of the enterprise, while staff nurses expressed a strong priority for meeting staffing needs even when they acknowledged the demands of the organization.

Our findings align with the *Nurse Staffing Think Tank*: Priority Topics and Recommendations—a multi-organization initiative across American Association of Critical-Care Nurses (AACN), American Nurses Association (ANA), American Organization for Nursing Leadership (AONL), Healthcare Financial Management Association (HFMA), and the Institute for Healthcare Improvement (IHI)—that underscored the need for work schedule flexibility and healthy work environments,[44] which can contribute to burnout among healthcare professionals. A 2021 report by the Tri-Council for Nursing, an alliance between the AACN, the ANA, the AONL, the National Council of State Boards of Nursing, and the National League for Nursing, suggests that to create highly effective care teams, healthcare organizations need to adopt more flexible staffing models. This includes moving away from rigid shift hours, and re-thinking how staff can be cross-trained to fill staffing gaps.[45]

An area of improvement that emerged from the data was expanding the scope of staff preferences considered in the scheduling process. For example, allowing nurses to express preferences regarding consistently working consecutive days versus non-consecutive days, particularly for staff nurses who work 12-hour shifts, may increase staff satisfaction, staff well-being and sleep, and staff retention. Additionally, allowing nurses to request planned time off so that they can schedule medical appointments and other self-care activities is an opportunity for organizations to support nurses' well-being. Themes from a recent scoping review of nurses' experiences and preferences around shift patterns echoed our findings, specifically around nurses' reluctance to accept or adapt to a shift pattern when it was mandatorily imposed versus their preferred schedule.[46]

Results of this study highlighted in both manager and staff nurse groups suggest promise in the use of technology-mediated solutions for several areas of schedule dissatisfaction. Indeed, many of the barriers to scheduling satisfaction might have relatively simple technological solutions. For example, computer-assisted scheduling programs might allow for staff preferences such as consecutive versus non-consecutive shifts to be considered while reducing some of the load on managers and scheduling staff who often complete this task by hand. Expanding the use of artificial intelligence (AI) or machine learning algorithms embedded into scheduling practices may also be useful to organizations. To date, much of the literature regarding use of AI in scheduling has been focused on *patient* scheduling, however, there is potential to leverage similar technology for staff scheduling as well.[47,48] For example, a small study in New Zealand radiology staff showed that generative AI scheduling resulted in some benefits to staff including work-life balance and autonomy.[46]

Finally, staffing and retention cannot be overlooked as a key implication of this study. Both staff nurses and managers reflected on the importance of staffing to ensure palatable and satisfactory scheduling practices. Without an adequate number of staff, achieving an equitable and balanced schedule that allows nurses the flexibility they desire is quite challenging. The cycle of nurse scheduling dissatisfaction leading to nursing turnover leading to greater dissatisfaction is a loud and poignant finding of this study among both staff nurses and managers.

In summary, our study highlights how scheduling practices significantly impact nurse satisfaction at all levels within a healthcare organization. Key findings are threefold. First, flexibility is crucial. Rigid, enterprise-wide scheduling policies can hinder satisfaction. Units need autonomy to create schedules that meet their unique needs and allow for staff preferences (like consecutive shifts, preferred days off). Second, technology can be a potential source of support. Automated scheduling systems and generative AI could assist in creating schedules that account for staff preferences and reduce the burden on managers. Finally, staffing levels are critical. Inadequate staffing makes it nearly impossible to create satisfactory schedules, contributing to a cycle of dissatisfaction and turnover.

Limitations

Limitations of this study are recognized. This study was based upon in-depth interviews with nurses and managers working at a single institution, with a study design not based on achieving generalizability. While many of the findings may be site-specific, some of the findings may inform points of reflection for other institutions as well. In terms of positionality, the researchers' backgrounds were

primarily as bedside staff nurses, not managers. This limitation was addressed through in-depth discussion and reflection throughout the study along with one researcher (Co-I) with significant management expertise. Finally, selection bias may have played a role in the recruitment of participants, who were either highly satisfied or dissatisfied with their schedule.

Conclusion

The findings from this qualitative study show that within our sample, dissatisfaction with their schedule and scheduling process negatively impacts nurses' health and well-being and pushes them to consider leaving their organization or position. Future research may evaluate hypotheses generated by this study (eg, creating a more flexible, transparent, and equitable scheduling process could improve organizational nurse retention). It is critical to maintain adequate staffing levels to facilitate scheduling that meets the dual needs of the unit and the staff.

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Ethical Considerations

This study was reviewed and approved by NYU Langone Health Institutional Review Board #i22-01583. All participants received written informed consent prior to study enrollment.

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Supplemental Material

Supplemental material for this article is available online.

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