Centralized vs. Decentralized Nursing Stations: Effects on Nurses' Functional Use of Space and Work Environment

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Abstract

Objective: Evidence-based findings of the effects of nursing station design on nurses’ work environment and work behavior are essential to improve conditions and increase retention among these fundamental members of the healthcare delivery team. The purpose of this exploratory study was to investigate how nursing station design (i.e., centralized and decentralized nursing station layouts) affected nurses’ use of space, patient visibility, noise levels, and perceptions of the work environment.

Background: Advances in information technology have enabled nurses to move away from traditional centralized paper-charting stations to smaller decentralized work stations and charting substations located closer to, or inside of, patient rooms. Improved understanding of the trade-offs presented by centralized and decentralized nursing station design has the potential to provide useful information for future nursing station layouts. This information will be critical for understanding the nurse environment “fit.”

Methods: The study used an exploratory design with both qualitative and quantitative methods. Qualitative data regarding the effects of nursing station design on nurses’ health and work environment were gathered by means of focus group interviews. Quantitative data-gathering techniques included place- and person-centered space use observations, patient visibility assessments, sound level measurements, and an online questionnaire regarding perceptions of the work environment.

Results: Nurses on all units were observed most frequently performing telephone, computer, and administrative duties. Time spent using telephones, computers, and performing other administrative duties was significantly higher in the centralized nursing stations. Consultations with medical staff and social interactions were significantly less frequent in decentralized nursing stations. There were no indications that either centralized or decentralized nursing station
designs resulted in superior visibility. Sound levels measured in all nursing stations exceeded recommended levels during all shifts. No significant differences were identified in nurses’ perceptions of work control-demand-support in centralized and decentralized nursing station designs.

**Conclusions:** The “hybrid” nursing design model in which decentralized nursing stations are coupled with centralized meeting rooms for consultation between staff members may strike a balance between the increase in computer duties and the ongoing need for communication and consultation that addresses the conflicting demands of technology and direct patient care.