KEY POINT SUMMARY

OBJECTIVES

The literature review synthesized current literature to identify relationships between environmental design elements and mental health outcomes in healthcare providers.

## The role of healthcare facility design on the mental health of healthcare professionals: A literature review

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Key Concepts/Context

Research demonstrates that burnout is prevalent in healthcare workers and has been associated with negative consequences for patients, staff, and organizations. To date, initiatives to mitigate burnout and support staff well-being do not fully utilize the built environment. This review examines current literature on healthcare facility design and healthcare worker wellbeing.

Methods

Researchers with architecture backgrounds were trained on inclusion and exclusion criteria before the literature search to foster consistency in article evaluation. The search to identify articles first included a combination of terms representing the three categories of design, mental health outcomes related to burnout, and healthcare providers. A second search using only terms for design and mental health outcomes yielded additional results. The following databases were used for both searches: Medline, PsycINFO, PubMed, and Web of Science. Articles that were included in the final literature review were published between the years 1990-2020 were primary studies, had a focus on the work environment of healthcare staff, and addressed mental health. Articles were excluded from the review if they were not in English, not focused on healthcare providers, not related to design, or did not address design and outcome relationships. Researchers used the established criteria to scrutinize titles, abstracts, and full texts of the 90,024 articles resulting from the searches and identified 27 articles for the final analysis. The authors organized their synthesis according to the following four design factors: a) overall facility and perception; b) design of specific spaces; c) design of intangible elements; and d) design of interior space and ergonomics.
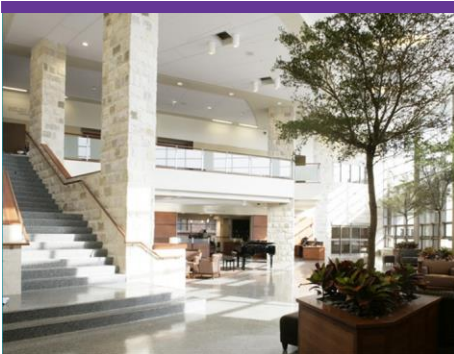
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Findings

Higher satisfaction and well-being and lower stress and burnout were evident when staff perceived higher facility pleasantness (connection to neighborhood, nature, and city), aesthetics, comfort, and overall impression. Additionally, staff satisfaction was enhanced when staff could interact privately with patients and colleagues. Greater job satisfaction was associated with staff perceptions of personal and patient safety. Several studies demonstrated mixed findings between open-bay units compared to private or single-family rooms and staff health outcomes. Staff areas that demonstrated adequate workstations, meeting spaces, supply locations, storage, and parking were associated with lower job stress and higher job satisfaction levels. In general, differences in staff stress and satisfaction in centralized vs. decentralized nursing units were not significant, but one study noted that less experienced nurses had lower job satisfaction scores after moving to a decentralized unit. Similarly, workspace environments that fostered both interaction and individual work were associated with higher staff well-being. Researchers reported on studies related to staff breakrooms and note those that are updated, feature restorative design factors, provide access to the outdoors, and support personal privacy had positive effects on staff wellbeing. Across several studies, intangible design elements (in patient care areas, staff work areas, and staff break spaces) found to benefit staff health, fatigue, emotional exhaustion, depersonalization, and a sense of calm include natural light, exterior views, views of nature, and noise mitigation (acoustical walls and ceiling panels). While evidence of relationships between odor, ventilation, temperature, and staff outcomes was scant, high noise levels negatively impacted staff stress and satisfaction across multiple studies. Visibility was determined to be important to staff satisfaction and fatigue albeit in only two studies. Evidence linking interior design finishes with staff outcomes was minimal, but ergonomic elements were noted to be important to fatigue mitigation and stress.

Limitations

This study has several limitations, including the possibility that some articles were not captured in the searches as conducted. Another limitation is that studies included in the review were categorized by design factors and not specific patient populations and may not be generalizable across settings. Finally, this review primarily focused on staff outcomes, and further research to understand the triad of patients, staff, and design elements is warranted.

Design Implications

This review identified evidence that the following design elements can serve to mitigate clinician burnout and support staff mental health: pleasant aesthetics; options for privacy between caregivers and patients and colleagues; safety; intentionally designed workspaces; noise mitigation; collaboration spaces, and

restorative features (including natural light and outdoor/nature views) in patient care areas; work areas and break rooms.