



KEY POINT SUMMARY

OBJECTIVES

This research looks to assess how different aspects within the physical environment of ACCs impact patient outcomes, and identifies physical design features that promote favorable patient outcomes and reduce negative ones within ambulatory care environments.

Exploring the Impact of the Physical Environment on Patient Outcomes in Ambulatory Care Settings

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Key Concepts/Context

Recent trends in healthcare have seen a shift in treating episodic care within acute care environments to ambulatory care centers (ACCs). These facilities distribute care based upon prevention and wellness to combat chronic disease and provide care management. Ambulatory care environments consist of a broad platform of care settings and deliver many types of care to a wide range of populations. Due to these and other complexities, research linking the impact of the physical design of ACCs on patient health outcomes has yet to be documented.

Methods

A review was conducted of existing literature focusing on the physical environment within various types of ACCs and its influence on outcomes within these various settings. Initial criteria for this research were English-language and peer-reviewed journal articles that had been published on or after 1980 that made reference to some aspect of the physical environment within the ambulatory care setting. A key word search was used to obtain the first round of articles from The Center for Health Design (CHD) databases and other common scientific databases. The initial key words were as follows: ambulatory care, outpatient, clinic, community health centers, design, staff outcomes, patient outcomes, pain, anxiety, satisfaction, distress, waiting areas, medical home model, and Health Insurance Portability and Accountability Act (HIPAA). Following the initial collection of articles, articles were identified for inclusion in the study by reading each individual study's title, abstract, and/or the article. Based upon findings from the initial review, new key words were then added to the search to obtain a more comprehensive review. These new key words were as follows: music and anxiety in waiting rooms, visual distraction, communication, lean, access to parking, energy savings, navigate, family, efficiency,



standardization, process improvement, and staff interaction. Additionally, the literature review was expanded to include reports, non-peer-reviewed articles, and studies that linked patient outcomes with physical design in the ACC environment.

Findings

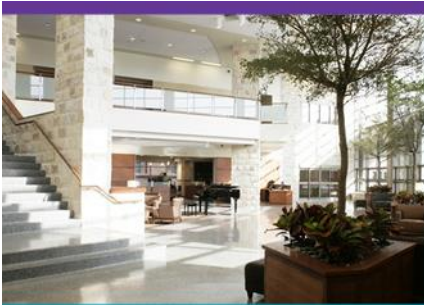
This research suggests that patient outcomes are influenced by three factors: the type of the clinic, the physical attributes of the clinic, and the experiential aspects of the patient's clinic experience. Based upon findings from the literature, the patient experience was categorized into five phases: (1) access, (2) waiting/registration, (3) examination, (4) procedures, and (5) discharge/exit. A review of the literature reported that positive patient outcomes may be increased by improving access and wayfinding through geographic proximity, clear signage and physical boundaries, exam room and workspace layout, and user-friendly technology. Enhancing the waiting experience, privacy, and patient/provider communication can be achieved through waiting areas that provide a calming experience and are appropriately separated by age, increased visual and auditory privacy, physical placement of furniture and technology within the exam room, and increased cleanliness. The research also suggests that negative patient outcomes can be decreased through environments that reduce anxiety and risk of patient infection. Reported design strategies for reducing anxiety within ACCs included wayfinding strategies to reduce confusion, adequate parking, physical attractiveness, reduced noise, and a variety of positive distractions that range from outdoor views of nature to virtual reality. Reduced risk of infection can be accomplished through the use of hard toys that can easily be wiped down within waiting areas.

Limitations

Due to the minimal amount of empirical evidence surrounding ACCs, the ability to do an in-depth, analytic review of the literature was compromised in favor a broader, more exploratory assessment of the literature to get a better understanding of the research available. Most of the literature found was based upon older provider-centric models of distributing care. This left many questions regarding the impact that a more patient-centered care model may have on patient outcomes. Culturally-sensitive research was also unavailable to assess the full impact of the physical environment on patient outcomes within ACCs.

Design Implications

From this research 14 physical design implications were generated and correlated to the five phases of the patient's clinic experience. The recommendations are as follows: parking adequacy, good wayfinding cues, clear signage, the use of color and texture for wayfinding, logical cluster of rooms, waiting areas with clear boundaries outside of circulation paths, physical attractiveness due to warm colors and easy-to-



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maintain materials, separate waiting areas with age-appropriate positive distractions, noise reduction strategies, flexible exam room design that enhances patient/provider relationships, appropriate educational and reading material, visual and auditory privacy, and the implementation of audio and visual distractions.