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Impact of the Physical Environment on Employee Satisfaction in Private Hospitals

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Abstract: The exponential growth of the global population and rising life expectancy have placed increasing pressure on healthcare systems to deliver efficient, high-quality, and cost-effective services. In India, private hospitals play a crucial role in meeting these demands. However, they are increasingly challenged by high employee attrition rates, often linked to dissatisfaction with the physical work environment. Improving staff satisfaction has therefore become essential for enhancing organizational performance and retaining skilled personnel. This study aims to assess the impact of the physical environment on employee satisfaction in private Indian hospitals. A mixed-methods research approach was adopted. The qualitative phase involved a review of secondary data to conceptualize the research framework and identify key variables related to architectural, interior, and ambient design features. The quantitative phase involved survey-based data collection from employees across various private hospitals. For analysis, both descriptive and inferential statistics were used to explore relationships between variables. The results reveal statistically significant relationships between physical-environment features—specifically architectural layout, interior design elements, and ambient conditions—and employees' attitudes. These attitudes were found to significantly influence overall workplace satisfaction. Furthermore, this study confirmed a strong link between the physical environment and employee satisfaction. These findings offer actionable insights for hospital administrators to improve the design of workspaces. Enhancing physical environments can elevate employee satisfaction, reduce attrition, and ultimately contribute to improved hospital performance. By empirically establishing the link between physical-environment features and staff satisfaction, this study provides a foundation for evidence-based design strategies in healthcare settings.

Keywords: hospitals; workspace environment; physical environment; employee satisfaction

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1. Introduction

The last few years have witnessed an exponential rise in the global human population, demanding more efficient healthcare facilities for early and efficient diagnostic decisions. On the other hand, increasing life expectancy has broadened the horizon for the healthcare industry to improve the quality of services while maintaining cost effectiveness. To achieve this goal, healthcare organizations require optimal human resources with role-oriented commitment and productivity [1]. India, a nation with almost 1.4 billion people, has

been demanding more efficient, cost-effective, and scalable healthcare facilities to meet its rapidly growing needs. In the Indian healthcare sector, private hospitals are major employers, providing jobs to millions and contributing significantly to the economy [2]. With increasing competition and demand for more effective healthcare services, private hospitals have made significant efforts, especially in terms of innovative technologies [3], infrastructures [4], and operational efficiency [5]. However, the center of success in these organizations is often rooted in employee satisfaction and productivity. Like other activity-based organizations, the performance of hospitals relies primarily on their employees and productivity [1]. Studies indicate a significant relationship between employee satisfaction and productivity [1]. Emerging studies suggest that the physical environment can significantly influence employee satisfaction [6–11]. The physical environment, social atmosphere, and overall comfort have direct influences on employee satisfaction, which drives them to remain committed to their responsibilities. It improves the overall productivity of the organization [12]. Like other activity-based organizations (ABOs), this aspect is equally relevant in hospitals. However, the level of satisfaction and its impact on employees' commitment and performance in the healthcare sector can differ from those of other ABOs [13–16].

Different factors can impact employee satisfaction, such as the social environment, physical environment, and work conditions [13]. However, the severity of these factors can vary from one industry to another [17]. Like other ABOs, employees at hospitals are often influenced by activities, facilities, work culture, and constraints [1]. Hospitals are adopting various competitive and situation-specific measures to improve employee satisfaction, with notable efforts to enhance infrastructure and interior design. However, the actual physical environment and facilities often vary across hospitals. Owing to this disparity in workplace physical environments, the level of employee satisfaction at private hospitals can vary. The sense of satisfaction, commitment, and corresponding productivity can vary across private hospitals [18,19]. In contrast, hospitals require retaining skilled, capable, and productive employees to retain economic endeavors, ensuring that the physical and/or social workplace environment is at the highest level [1]. In the past, numerous efforts have been made to study the relationship between the workspace environment and employee satisfaction and organizational performance; however, few studies have quantified the same relationship for the healthcare industry, especially hospitals. Unlike traditional offices or ABOs, the demanding work conditions in hospitals make it more challenging for employees. Therefore, quantifying the relationship between the work environment and employee satisfaction in hospitals can be vital for management to improve key factors impacting employee satisfaction and comfort, which can ultimately improve organizational performance.

This study quantifies the impact of the physical working environment on employee satisfaction in private hospitals in India. To achieve this goal, a mixed-research paradigm encompassing both qualitative and quantitative methods is considered. The physical-environment features include architectural design features (ADFs), interior design features (IDFs), and ambient features (AFs). The attitudinal components include the affective (AFF), behavior (BEH), and cognitive (COG) components. The depth quantification reveals that spatial design, furniture and furnishings, lighting, temperature, noise, and air quality are strongly associated with employee satisfaction. The inferences obtained can be used by hospitals to improve the physical environment, which can ultimately impact employee satisfaction to achieve good retention and organizational performance.

Recent discussions on employee satisfaction in healthcare settings have highlighted the influence of the physical work environment. Theoretical frameworks, such as Herzberg's Two-Factor Theory, provide a foundational understanding, distinguishing between hygiene factors (e.g., work conditions) and motivators (e.g., recognition), suggesting that an inade-

quate physical environment may contribute to dissatisfaction. Similarly, the Job Demands-Resources (JD-R) Model posits that physical and organizational resources—including environmental features—can reduce job demands and improve employee well-being. These theories support the premise that the physical environment plays a critical role in shaping employee satisfaction in hospitals. The overall research intends to assess whether the physical (workspace) environment can impact employee satisfaction in private hospitals in India.

2. Literature Review

This section primarily discusses the key literature related to environmental psychology and the physical environment, with a focus on its impact on employee satisfaction.

2.1. Physical Environment and Its Impact on Staff Satisfaction

The physical environment has been widely recognized as a multidimensional construct encompassing both tangible and intangible elements that shape the experience of employees in their workplace. In the context of healthcare settings, where staff operate under high-pressure conditions, the role of the physical environment becomes particularly crucial. Prior studies affirm that well-designed environments positively influence satisfaction [20–22]. Activity-based office (ABO) frameworks, often applied in healthcare design, emphasize the need for supportive and flexible environments that accommodate diverse work functions. These frameworks underline the importance of spatial layout, ergonomic furniture, visual aesthetics, and ambient qualities, such as lighting, temperature, and noise control [23,24].

Evidence-based design (EBD) emphasizes the use of credible research to inform healthcare facility planning with the goal of enhancing safety, reducing stress, and supporting staff efficiency. Key environmental features, such as access to daylight, ergonomic design, noise reduction, effective ventilation, and decentralized workstations, have been linked to staff outcomes [20]. Activity-based office (ABO) frameworks, increasingly adopted in healthcare, also stress the importance of flexible and supportive environments tailored to diverse work functions, highlighting factors such as spatial layout, ergonomic furniture, and ambient conditions like lighting, temperature, and noise control. Additionally, access to hospital gardens has been shown to offer restorative benefits for staff, providing emotional relief and a sense of control in demanding clinical environments [25,26]. These findings collectively highlight the vital role of the physical environment in promoting staff satisfaction and sustaining effective healthcare delivery.

The physical environment in the healthcare sector refers to the tangible, built elements of a healthcare facility that directly or indirectly influence users. The physical environment comprises architectural elements, interior design, and ambient features [27,28]. The architectural design features represent relatively permanent aspects of the environment; interior design features refer to more adaptable or less-permanent elements; and ambient features encompass environmental conditions and sensory stimuli. The features of the physical environment were categorized according to the three dimensions identified in a previous study [6].

The architectural features include restorative elements and spatial layouts [6]. The restorative elements in healthcare settings are intended to create environments that support staff relaxation, alleviate stress, and enhance overall well-being. The key restorative features identified are break spaces [8,29], windows with views [30,31], balconies [8], and access to outdoor areas [32]. In particular, windows that provide views of nature have been shown to significantly improve staff satisfaction [9,11,30]. Spatial layout refers to the organization and arrangement of various spaces within a healthcare facility. An effective layout not only

facilitates efficient workflow to essential areas but also minimizes unnecessary movement. These factors collectively contribute to improved staff satisfaction [30,33,34].

Interior design features in healthcare environments encompass elements such as indoor plants, ergonomic considerations, and color. The presence of indoor plants has been shown to significantly influence staff satisfaction by promoting relaxation and reducing stress. The positive impact of biophilic in healthcare settings is well established, particularly for staff working under high-stress conditions and for long shifts. Among various design strategies, the inclusion of interior plants has emerged as a simple yet powerful intervention to support staff well-being and satisfaction. Empirical studies have shown that natural elements, including plants, contribute to emotional recovery, reduce burnout, and enhance perceived workplace quality [8,35]. Nature-connected features, such as indoor greenery, daylight access, and views to nature, have been linked with lower levels of emotional exhaustion and depersonalization among nurses—two key indicators of burnout [35]. The findings further reveal that staff perceived spaces enriched with indoor plants and nature-related artwork to be more restorative, positively influencing their mood and job satisfaction [29]. As observed by [31], contact with nature even in indirect forms, like plants and imagery, suggests low-cost, high-impact strategies to reduce stress and promote employee well-being in hospital environments. Ergonomics plays a crucial role in creating supportive work environments, where the selection of comfortable and adjustable furniture enhances posture, reduces physical strain, and contributes to overall staff well-being [33]. The use of visually appealing and calming colors fosters a soothing atmosphere, further enhancing the psychological comfort and satisfaction of healthcare staff [33,34].

Ambient features in healthcare environments are categorized into four key components: noise, thermal comfort, lighting, and air quality [7]. The auditory environment plays a vital role in shaping staff experiences, with the integration of nature sounds or calming music shown to positively influence staff satisfaction [8]. Maintaining optimal thermal conditions is equally important, as discomfort from excessive heat or cold can negatively impact satisfaction; conversely, a comfortable temperature enhances staff satisfaction [30,36]. Adequate exposure to natural daylight has been linked to improved mood, increased energy levels, and enhanced overall well-being, all of which contribute to greater staff satisfaction [30,37]. Furthermore, good air quality is essential for ensuring a healthy and pleasant working atmosphere, which significantly affects both satisfaction and staff performance [38,39]. These dimensions form the foundation of the current study, which aims to examine how healthcare staff perceive and respond to the physical environment across these domains.

2.2. Employees' Attitudes Toward the Physical Work Environment

Recently, the integration of environmental psychology and healthcare design has emerged as an important area of the research, drawing the attention of both the researchers and practitioners [40]. In environmental psychology, a systematic observation and assessment of environmental stimuli and their reactions form the foundation of inquiry. Numerous psychology disciplines have long-emphasized how surroundings shape our responses, culminating in the ABC framework [41], which integrates three interdependent dimensions: affect, or expressions of liking and disliking; behavior, or stated intentions to act in given situations; and cognition, or perceptions, concepts, and beliefs about the object of interest. This triadic model mirrors Plato's soul functions of feeling, thinking, and acting, and has been explicitly applied to environmental interactions: as individuals engage with the physical environment, they exhibit affective, behavioral, and cognitive responses—"feelings, thoughts, and actions"—that together shape their overall experience [42].

Employees' attitudes toward the physical work environment are shaped by their perceptions of how space, design, and ambient conditions support or hinder their daily tasks and well-being. Studies in healthcare settings highlight that access to daylight [43,44], low noise levels [45], and thoughtfully arranged workstations not only reduce stress and fatigue but also foster positive affect and organizational attachment among staff. Collectively, these findings suggest that employees' attitudes toward their physical surroundings are a critical precursor to both their subjective well-being.

3. Problem Statement

Despite the growing evidence that the physical work environment significantly influences employee satisfaction, there remains a limited understanding of how specific environmental factors affect healthcare professionals, particularly within the context of private hospitals in India. Private hospitals, unlike public institutions, have undergone rapid infrastructure transitions to meet patient expectations and market demands, often without systematically evaluating their impact on staff well-being. Employees in these settings face high-stress, emotionally demanding tasks that require supportive, well-designed physical environments to maintain satisfaction, reduce burnout, and enhance performance. However, most existing studies focus on general office settings or patient-centered outcomes, with limited empirical research exploring how architectural, interior, and ambient features influence healthcare staff satisfaction in private hospitals. This knowledge gap necessitates a focused investigation to assess how the design and quality of physical environments contribute to employee satisfaction, with the goal of informing EBD strategies that support healthcare staff and improve overall institutional effectiveness.

4. Research Methodology

This study employed a mixed-methods research design to investigate the impact of the physical environment on employee satisfaction in private hospitals. The methodology combines both qualitative and quantitative approaches to gain comprehensive insights into the research problem. The qualitative phase involved a review of the literature and critical analysis to understand the existing knowledge, identify the research gaps, and define the key variables relevant to the physical environment and employee satisfaction from our earlier study [6]. This phase also contributed to the formulation of the research hypotheses and the development of the questionnaire for the quantitative survey. Following the qualitative exploration, the quantitative phase involved the collection of primary data through a structured questionnaire administered to employees in private hospitals. A total of 450 responses were collected from staff working in 16 private hospitals across cities in Karnataka. To ensure an adequate sample size, the Cochran formula was used, which suggested a minimum of 384 responses for a large population. The sample size of 450 thus provided robust data for statistical analysis.

The qualitative research revealed that the physical-environment constructs ADF, IDF, and AF can impact employee attitudes. The structured questionnaire consisted of close-ended items measured on a five-point Likert scale and was designed to assess employee perceptions regarding various physical-environment parameters. These included ADF, IDF, and AF. The attitudinal components AFF, BEF, and COG were assessed for their influence on employee satisfaction (SAT). In addition to perceptions, the survey also collected demographic information, such as age, gender, marital status, job role, educational qualifications, years of experience, and time spent in the building.

The collected data were analyzed using IBM SPSS 29, which applies both descriptive and inferential statistical techniques. Correlation analysis was conducted to examine the relationships among the defined variables. Hypotheses were tested to determine

whether and how various physical-environment features influence employee satisfaction. The findings from this analysis are discussed in the subsequent sections, with practical implications for improving physical environments in hospital settings to increase staff satisfaction and retention.

The qualitative assessment identified specific components of the physical environment that significantly influence employee attitudes and satisfaction in private hospitals. For ADF, key aspects such as spatial layout, personal space, and window view were found to impact how employees perceive and interact with their work environment. In terms of IDF, factors such as seating arrangements, furniture, color, and indoor plants emerged as influential in shaping comfort and satisfaction. With respect to AF, the elements of temperature, noise, air quality, and lighting were highlighted as having a direct effect on employee well-being and workplace experience. Based on the literature review, the research hypotheses are defined. The physical-environment parameters (i.e., ADF, IDF, and AF) are hypothesized to affect both employees' attitudes (H_A) and their satisfaction (H_C). Moreover, different sociodemographic variables, such as age, gender, marital status, working hours, and experience, are hypothesized to have direct effects on employee satisfaction at private hospitals (Figures 1 and 2).

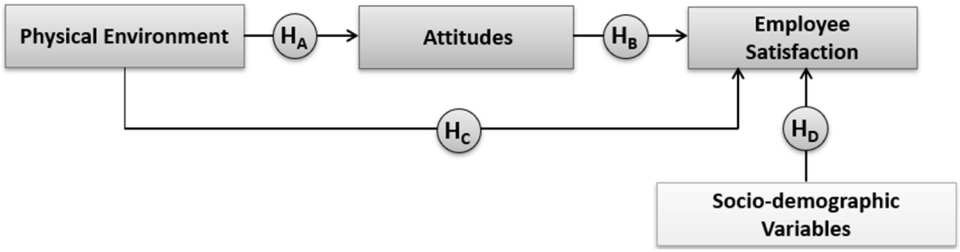

Figure 1. Research hypothesis.

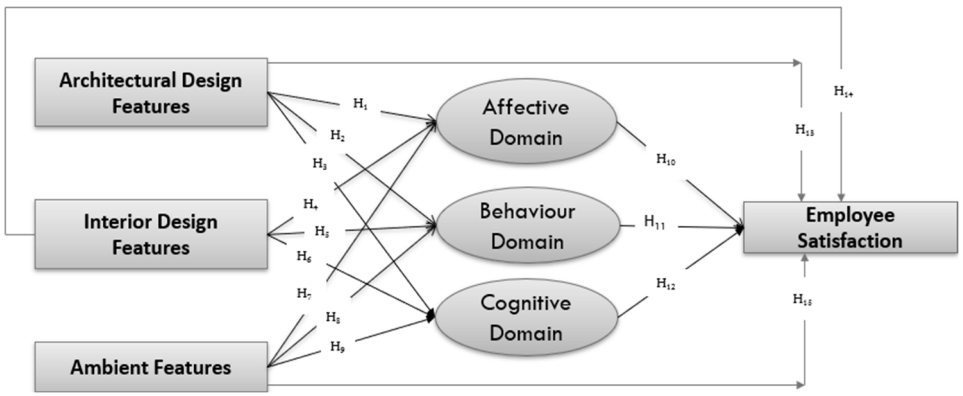

Figure 2. Research hypotheses.

Primary Data Collection

To collect primary data, a structured research questionnaire was developed. For the physical-environment constructs, validated items were adapted from the literature. In contrast, the items related to employee attitudes were framed based on expert opinions to ensure contextual relevance and content validity. A total of 66 close-ended questions were included in the questionnaire, comprising 17 items on physical-environment features, 18 items on attitudes toward the physical environment, 24 items on employee satisfaction, and 7 items on demographic information. The respondents rated each item using a five-point Likert scale, with scores ranging from 1 (Extremely Dissatisfied) to 5 (Extremely Satisfied). The collected responses were subsequently analyzed using appropriate statistical methods. To assess the statistical inferences and outcomes, different statistical tools were

used. For statistical characterization, mean, frequency, standard deviation, and Pearson correlation tests were performed on the collected responses. A discussion of the statistical characterization is presented in the subsequent section.

5. Data Analysis

This section presents the analysis of the collected data and the corresponding inferences. The statistical analysis was conducted in three stages: demographic assessment, descriptive statistics, and hypothesis testing.

5.1. Demographic Assessment

Demographic factors, such as gender, age, work experience, marital status, job role, and the duration of time spent within hospital premises, can significantly shape employees' perceptions, expectations, and overall satisfaction with the physical environment. These variables also influence the representativeness and generalizability of the research findings. Therefore, a detailed demographic analysis was conducted prior to the main descriptive and inferential analyses.

Among the total 450 respondents, 160 (35.6%) were female, whereas 290 (64.4%) were male. Although female staff, particularly nurses, play a crucial role in hospital services and care delivery, the majority of respondents were male. Notably, previous research has suggested that gender may influence preferences and expectations related to both social and physical workplace environments [46,47]. Thus, the distribution of respondents in this study supports the reliability and generalizability of the collected data.

The age distribution of the 450 respondents revealed that 13.6% (n = 61) were in the 18–25-years age group, whereas 14.7% (n = 66) fell within the 25–30-years range. Additionally, 14.2% (n = 64) were 30–35 years of age. A significant proportion (approximately 57.6%, n = 259) were aged 35 years and above. The predominance of respondents in the older age group suggests a higher level of professional and personal experience. Among the respondents, 299 (66.4%) were married, whereas the remaining 33.6% were unmarried.

The collected data reveal that a total of 169 respondents, accounting for 37.6%, were nontechnical staff involved in maintenance and upkeeping tasks. On the other hand, 19.1% of the respondents, 86 in number, were administrative staff, mainly involved in office work, managerial tasks, etc. On the other hand, 24.4% of the respondents, 110 in number, were nursing professionals who were proactively involved in treatment practices, patient monitoring, and allied services. In addition, 18.9% of the respondents were medical professionals. In this manner, the responses obtained from such diversity ensured cumulative responses and expectations. The quantification of perceived satisfaction from these different employee types provides broader details concerning the physical environment and its significance. It can help hospital management improve the corresponding physical environment, which can ultimately improve employee satisfaction across the hierarchy.

Considering the educational background of the respondents, almost 13.3% of the respondents were undergraduates and were involved mainly in maintenance, infrastructure upkeeping, and patient handling. On the other hand, a larger fraction, accounting for 47.6% of the respondents, was graduates. A total of 136 respondents (30.2%) were postgraduates and played the role of clinical staff. A total of 40 respondents, accounting for 8.9% of the sample size, were diploma holders who were involved in medical tests, nursing, and laboratory tasks. Almost 8.4% of the respondents had less than one year of experience, whereas 49 respondents had 1–3 years of experience (10.9%). On the other hand, a total of 148 respondents, accounting for 32.9%, had 3–5 years of experience. The collected responses revealed that 24.2% of the respondents (109 out of 450) had 5–10 years of experience, whereas the remaining 23.6% of the respondents had more than 10 years of experience.

5.2. Descriptive Analysis

This section presents descriptive statistics for the responses related to physical-environment features—ADF, IDF, and AF—as well as employee attitudes—AFF, COG, and BEH components and overall satisfaction (SAT). The data were collected using a structured, close-ended questionnaire with responses recorded on a 5-point Likert scale. The mean and standard deviation for each variable are reported and discussed below.

As shown in Table 1, 85.6% of the private hospital employees stated that they prefer a well-organized spatial design and layout (M = 4.28, SD = 0.84), which provides them with flexibility to perform better. Similarly, approximately 93.2% of the hospital employees emphasized the need for adequate circulation space, highlighting its role in maintaining organizational flow and fostering a sense of openness within the workplace (M = 4.66, SD = 0.49). (M = 4.66, SD = 0.49). This factor is believed to have a direct effect on aeration and ventilation prospects while ensuring sufficient spatial deployment to accommodate proper movement, even during increased patient handling over emergency periods. Similarly, the employees also stated that they prefer to work in a workspace in which the spatial layout enables them to work without any distraction or disturbances (M = 4.44%, SD = 0.56). Interestingly, a total of 88.8% of the employees expected to have sufficient flexible spaces for ease of movement. Almost 89.6% of the employees expected to have personal space at the workplace (M = 4.48, SD = 0.71) that consequently could preserve privacy and support them in relaxing (M = 4.54, SD = 0.58).

Table 1. Architectural design features (ADFs).

Items	Questionnaire Items on IDF Constructs	Mean	SD
ADF1	Spatial layout	4.2867	0.8468
ADF2		4.6644	0.4911
ADF3		4.4489	0.5649
ADF4	Personal space	4.5400	0.5852
ADF5		4.4800	0.7162
ADF6	Window view	3.7133	1.2013

The responses also revealed that almost 90.8% of the respondents expected to have a dedicated space for relaxation (M = 4.54, SD = 0.58). However, such expectations were very specific in conjunction with the type of role and active involvement in hospital duties. For example, the cross-examination of the response revealed that the doctors expected their dedicated space for relaxation and ergonomically designed furniture, which could help reduce fatigue. Interestingly, only 74.2% of the respondents stated that they expected to have access to a window view at the workplace (M = 3.71, SD = 1.20). However, 74% of the respondents expressed a preference for access to windows, potentially reflecting their need to alleviate fatigue during extended working hours under varying functional demands. Overall, the responses to the ADF factors indicate that most respondents value an optimally planned spatial layout, designated relaxation areas, and adequate personal space within the hospital environment.

With respect to the IDF constructs shown in Table 2, the responses inferred that almost 91.8% of the respondents expected to have adequately comfortable seating arrangements at the hospital (M = 4.59, SD = 0.49). In the same manner, almost 83.2% of the respondents stated that the furniture and furnishings must be suitable enough to be adjusted per their own requirements (m = 4.16, SD = 0.64). Almost 65% of the respondents stated that they expected pleasant colors for their interiors (M = 3.25, SD = 0.71). However, the finding that 65% of the respondents preferred pleasant color schemes suggests that hospital management should consider aligning interior design choices with employee preferences

to enhance the overall work environment. Almost 80% of the respondents stated that they like to have interior plants at work that can eventually provide soothing ambience and natural feelings under different working conditions (M = 4.00, SD = 0.54).

Table 2. Interior design features (IDFs).

Items	Questionnaire Items on IDF Constructs	Mean	SD
IDF1	Searing arrangement	4.5978	0.4908
IDF2	Furniture	4.1667	0.6479
IDF3	Color	3.2511	0.7166
IDF4	Interior plants	4.0022	0.5483

As indicated in Table 3, 95% of the respondents stated that they expected to have comfortable temperatures in the work area (M = 4.75, SD = 0.49). The analysis indicated that employees expressed notable concern regarding ambient temperature, particularly in relation to varying seasonal conditions (winter and summer) and daily crowd levels. The relatively low standard deviation suggests a strong agreement among respondents regarding the need for an improved internal temperature setup in the hospital. Additionally, almost 93.2% of the respondents agreed that they preferred to work in a noise-free environment (M = 4.66, SD = 0.54). This study revealed that almost 94% of the employees preferred to have the desired health- and hygiene-specific air quality in the workplace (M = 4.70, SD = 0.52). A similar fraction of the employees stated that they preferred to have a good amount of daylight in the workspace (M = 4.70, SD = 0.51). Additionally, 92.8% of the respondents agreed that there must be sufficient artificial lights in the workspace (M = 4.64, SD = 0.52).

Table 3. Ambient features (AFs).

Items	Questionnaire Items on AF Constructs	Mean	SD
AF1	Temperature	4.7533	0.4941
AF2	Noise	4.6600	0.5401
AF3	Air quality	4.7044	0.5206
AF4	Light	4.7089	0.5145
AF5		4.6400	0.5290
AF6		3.9778	0.9576
AF7	Personal control over heating or cooling	3.5022	0.9972

Although work conditions and the physical and psychological states of employees may vary during working hours, there is a general expectation for personalized control over artificial lighting within hospital premises (M = 3.97, SD = 0.95). While 79.4% of the employees supported this expectation, the relatively high standard deviation suggests notable variation in opinions. Further analysis revealed that the demand for individualized lighting control was role dependent. For example, nurses often need to adjust lighting on the basis of patient needs, whereas laboratory staff and technicians typically work under fixed ambient lighting conditions, limiting their need for personal control.

While assessing attitudinal constructs (Table 4), particularly affective components, this study revealed that almost 90% of the respondents expected that the internal structure of the workspace should have optimally crafted spatial deployment, which could inculcate the sense of spaciousness (M = 4.50, SD = 0.60). Similarly, a total of 87% of the employees stated that visual access to nature from the workspace could improve overall mental and psychological well-being (M = 4.35, SD = 0.51). Like the ADF and IDF constructs, the

affective components reflecting employee attitudes toward the environment indicated a preference for well-designed or ergonomically appropriate furniture that could enhance workplace comfort (M = 4.45, SD = 0.53). Overall, the responses indicated that employees in private hospitals expect ergonomically designed furniture to support both their physical comfort and their psychological well-being. Almost 75.2% of the respondents stated that an inappropriate color often impacts their mood in the workplace (M = 3.76, SD = 0.82). A total of 72% of the respondents stated that indoor plants promote a sense of relaxation in the workplace (M = 3.60, SD = 0.96). However, a higher standard deviation (SD = 0.96) indicates a disparity in opinion. This study also inferred that lighting quality and sufficiency impact the overall mood of the respondents (M = 4.11, SD = 0.59). This statement was backed up by almost 82% of the employees. The collected responses also revealed that almost 91.8% of the respondents agreed that excessive noise in the workplace disturbed them and were often stressed (M = 4.59, SD = 0.52). Additionally, 93.6% of the respondents agreed that the comfortable temperature significantly impacts their comfort (M = 4.68, SD = 0.50).

Table 4. Attitude constructs.

Items	Sample Questions for Affective (AFF), Behavior (BEH), and Cognition (COG) Components	Mean	SD
AFF1	A well-designed space imparts a sense of spaciousness.	4.5022	0.6015
AFF2	--	4.3533	0.5100
AFF3	--	4.4533	0.5329
AFF4	--	3.7600	0.8256
AFF5	--	3.6044	0.9620
AFF6	--	4.1156	0.5931
AFF7	--	4.5911	0.5228
AFF8	--	4.6867	0.5056
BEH1	A spacious layout helps me to personalize my workspace.	3.9022	0.9123
BEH2	--	3.1533	0.9948
BEH3	--	3.9600	0.8970
BEH4	--	3.7022	0.9989
BEH5	--	4.0511	0.7548
BEH6	--	4.1000	0.5223
BEH7	--	4.6267	0.5649
BEH8	--	4.2533	0.7537
BEH1	--	3.9022	0.9123
COG1	I believe well-designed spatial layout is conducive to do my work efficiently.	4.5556	0.5762
COG2	--	3.9000	0.6951
COG3	--	4.2111	0.8475
COG4	--	3.9000	0.9723
COG5	--	4.0022	0.9016
COG6	--	4.5000	0.7932
COG7	--	4.8556	0.3763
COG8	--	4.8022	0.5284
COG1	--	4.5556	0.5762
COG2	--	3.9000	0.6951

On the basis of the hypothesis that physical-environment parameters influence employee attitudes, this study examined respondents' perceptions concerning behavioral components. Almost 78% of the employees agreed that a spacious layout enables them to personalize their workspace, contributing to greater comfort (M = 3.90, SD = 0.91).

However, only 63% reported having the ability to adjust window openings to enhance external views. These findings reflect the nature of hospital environments, where employees often prioritize task-related functions over environmental personalization—unlike in conventional office settings. This is further supported by the relatively low mean (M = 3.15) and higher standard deviation (SD = 0.99), indicating a variability in responses regarding window-view preferences. Moreover, 79.2% of the respondents indicated that adjustable, ergonomic furniture contributed significantly to their comfort (M = 3.96, SD = 0.89). The personalization of workspace colors was supported by 74% of the respondents, who agreed that it helped create a more pleasant atmosphere (M = 3.70, SD = 0.99). In terms of the biophilic elements, 80% favored the inclusion of indoor plants to enhance psychological and emotional well-being (M = 4.05, SD = 0.75). Additionally, 82% of the employees agreed that having control over lighting conditions supported their ability to work comfortably (M = 4.10, SD = 0.52).

The responses further indicated that the provision of dedicated quiet workspaces effectively reduced unwanted noise (M = 4.62, SD = 0.54). Additionally, the ability to regulate the indoor temperature was viewed as essential for maintaining a comfortable and productive work environment (M = 4.25, SD = 0.75).

With respect to the cognitive dimension of employee attitudes, the findings suggest that 91% of the respondents believe that a well-designed spatial layout is supportive of work efficiency (M = 4.55, SD = 0.57). Additionally, 78% indicated that visual access to natural elements contributes to a more positive work environment (M = 3.90, SD = 0.69). Approximately 84.2% agreed that ergonomically designed furniture contributes to comfort, which may assist in sustaining productivity (M = 4.21, SD = 0.84). Similarly, 78% of the participants stated that inappropriate color schemes could affect attention thereby affecting satisfaction (M = 3.90, SD = 0.97). Approximately 80% of the respondents indicated that indoor plants in the workspace are helpful for managing stress (M = 4.00, SD = 0.90). Approximately 90% reported that lighting design influences their perceptions towards overall satisfaction (M = 4.50, SD = 0.79). A large portion of the respondents (97%) emphasized the importance of maintaining a quiet environment to support concentration (M = 4.85, SD = 0.37). Additionally, maintaining a comfortable indoor temperature was considered important for creating a conducive work setting (M = 4.80, SD = 0.52).

The quantification of workplace satisfaction among the employees (Table 5) revealed that almost 82.6% of the respondents were satisfied with the workplace layout that facilitates interactions with their colleagues (M = 4.13, SD = 0.79). Similarly, a total of 85% of the respondents agreed that they were satisfied with workplace privacy (M = 4.25, SD = 0.67). On the other hand, almost 82.4% of the respondents agreed that they were satisfied with the workplace layout, which enabled them to work without distraction or any unexpected interruptions during work hours (M = 4.12, SD = 0.75). This helps them improve their quality of service and error-free services to patients. The statistical outcomes also infer that almost 83% of the respondents agree that they are satisfied with the amount of my allocated workspace (M = 4.15, SD = 0.64). Additionally, a total of 84.4% of the respondents agreed that they were satisfied with their connections to nature or the ability to connect and feel nature at the workplace (M = 4.22, SD = 0.65). Almost 85.2% of the respondents agreed that they were satisfied with the seating arrangement in the workplace (M = 4.26, SD = 0.65). The collected responses also indicated that almost 82.6% of the respondents agreed that they were satisfied with the ability to adjust furniture to meet their workplace needs (M = 4.13, SD = 0.72). Additionally, almost 80% of the respondents were satisfied with the colors used in their workplace (M = 4.02, SD = 0.83). This study revealed that almost 78% of the respondents were satisfied with interior plants in the workplace (M = 3.90, SD = 0.91). The responses also indicated that almost 80.2% of the employees were satisfied with the

overall temperature condition at the hospital. The dissatisfaction of 20% of employees must be considered by private hospitals to make working more comfortable and productive. Interestingly, the collected responses revealed that almost 57% of the employees were satisfied only with the indoor temperature during the winter (M = 2.88, SD = 1.66). In contrast, 57.4% of the employees were satisfied with the internal temperature (building or hospital) during the summer (M = 2.89, SD = 0.86). However, higher standard deviation values signify differences in opinion among the respondents. This study revealed that almost 60% of the employees were satisfied with sound or noise resilience and privacy (M = 3.01, SD = 0.99). However, a higher standard deviation signifies a difference in opinion. Notably, the statistical results also reveal that almost 69.4% of the respondents were satisfied with the air quality. This clearly indicates that hospitals must focus on ventilation and aeration aspects to preserve the health and hygiene concerns of employees (9 M = 3.47, SD = 1.02). The statistical outputs inferred that almost 86% of the respondents agreed that they were satisfied with the daylight condition at the workplace (m = 4.30, SD = 0.67). On the other hand, almost 86% of the employees agreed that they were satisfied with the artificial lights at the workplace (M = 4.30, SD = 0.57). A total of 65% of the respondents agreed that they were satisfied with the level of personal control of artificial lighting in the work area (M = 3.25, SD = 0.99). Similarly, a total of 60% of the employees stated that they were satisfied with the level of personal control over the heating or cooling equipment at the workplace or dedicated area (M = 3.00, SD = 0.99). However, a higher standard deviation indicates a difference in opinion.

Table 5. Satisfaction components.

Items	Sample Questions for Satisfaction (SAT)	Mean	SD
SAT1	I am satisfied with the workplace layout that facilitates interaction with colleagues.	4.1356	0.7963
SAT2	--	4.2511	0.6783
SAT3	--	4.1200	0.7543
SAT4	--	4.1578	0.6432
SAT5	--	4.2200	0.6593
SAT6	--	4.2644	0.6531
SAT7	--	4.1378	0.7272
SAT8	--	4.0244	0.8372
SAT9	--	3.9000	0.9108
SAT10	--	4.0178	0.8519
SAT11	--	2.8889	0.8666
SAT12	--	3.7111	1.1192
SAT13	--	3.0178	0.9920
SAT14	--	3.4778	1.0259
SAT15	--	4.3022	0.6755
SAT16	--	4.3000	0.5751
SAT17	--	3.2511	0.9973
SAT18	--	3.0089	0.9966

5.3. Hypothesis Assessment

As discussed in the previous section, this study hypothesizes that the physical environment influences employees' attitudes, which in turn affect their overall satisfaction (Figure 1). To evaluate these relationships, bivariate correlation analyses were conducted between the relevant independent and dependent variables (Figure 2). To examine the influence of the physical environment on employee attitudes, ADF, IDF, and AF were

considered independent variables, whereas the attitudinal dimensions were treated as dependent variables. To assess the direct relationship between the physical environment and employee satisfaction, physical-environment parameters (ADF, IDF, and AF) were used as independent variables, with SAT as the dependent variable. Additionally, to test whether employees' attitudes influence their satisfaction, the attitude constructs (AFF, BEH, and COG) were considered independent variables, and satisfaction (SAT) was the dependent variable. Pearson correlation coefficients were computed, and significance was evaluated at the 0.05 level. A p value less than or equal to 0.05 was considered statistically significant, indicating support for the alternative hypothesis. The correlation coefficients and associated p values are presented in the following tables.

Table 6 presents the results of the Pearson correlation analysis between ADF and the components of employee attitudes. The analysis indicates that the p value for the relationship between ADF and the affective component is 0.06, which exceeds the significance threshold of 0.05. Although not statistically significant, this finding suggests a potential significant association that may warrant further investigation.

Table 6. Correlations between architecture design features (ADFs) and employees' attitude constructs.

Items	*p* Value		
	AFF	**BEH**	**COG**
ADF1	0.071	0.032	0.012
ADF2	0.103	0.096	0.133 **
ADF3	0.080	0.075	0.126 **
ADF4	0.119 *	0.092	0.092
ADF5	0.047	0.61	0.068
ADF6	0.042	0.087	0.084

Note: * $p < 0.05$; ** $p < 0.01$.

The correlation between ADF and the behavioral component yields a coefficient of 0.1653, which is statistically significant, indicating a meaningful relationship between architectural features and employees' behavioral attitudes. Similarly, the p value for the relationship between ADF and the cognitive component is also 0.06, which is slightly above the 0.05 threshold. While not significant, this again suggests a possible association.

In summary, the findings point to a noteworthy relationship between ADF and employees' attitudinal dimensions, particularly behavioral responses. On the basis of these results, the null hypothesis can be rejected in favor of the alternative hypothesis that architectural design features are related to employee attitudes.

H1: *There is a relationship between ADF and the affective domain.*

H2: *There is a relationship between ADF and behavior domains.*

H3: *There is a relationship between ADF and the cognitive domain.*

Table 7 presents the Pearson correlation results between IDF and the employee attitude constructs. The correlation analysis revealed that the p value for the relationship between IDF and AFF was 0.0545, whereas the p values for IDF and BEH and IDF and COG were 0.06 and 0.057, respectively. Although the p-values exceed the 0.05 threshold, indicating a lack of statistical significance, the results suggest weak positive associations between IDF and the corresponding attitudinal components. The findings imply that interior

design features, such as personalized or manually adjustable furniture, may not have a significant effect on employees' affective or cognitive responses. However, a relatively stronger relationship is observed between IDF and the behavioral component, indicating that interior elements might influence how employees act or respond within their work environment. Nonetheless, the results suggest that user-specific furniture design and adjustment do not significantly shape affective or cognitive decision-making processes. The results reject the null hypothesis and accept the following:

Table 7. Correlations between interior design features (IDFs) and employee attitude constructs.

Items	*p* Value		
	AFF	**BEH**	**COG**
IDF 1	0.058	0.077	0.052
IDF 2	0.033	0.122 **	0.045
IDF 3	0.062	0.055	0.093 *
IDF 4	0.065	0.172 **	0.075

Note: * $p < 0.05$; ** $p < 0.01$.

H4: *There is a relationship between IDF and the affective domain.*

H5: *There is a relationship between the IDF and behavior domains.*

H6: *There is a relationship between IDF and the cognitive domain.*

Table 8 presents the Pearson correlation results between ambient features (AFs) and employee attitude components, including affective (AFF), behavioral (BEH), and cognitive (COG) domains. The p value for the correlation between AF and AFF was found to be 0.051, which is marginally above the conventional significance threshold ($p = 0.05$). While this suggests a potential relationship, the association cannot be deemed strong or conclusive. Nonetheless, on the basis of the defined criteria, the null hypothesis is rejected, supporting the hypothesis that ambient features are related to the affective component of employee attitudes.

Table 8. Correlations between ambient features (AFs) and employees' attitudes.

Items	*p* Value		
	AFF	**BEH**	**COG**
AF1	0.106 *	0.114 *	0.041
AF2	0.049	0.068	0.174 **
AF3	0.068	0.137	0.134 **
AF4	0.042	0.095	0.049
AF5	0.154 **	0.049	0.042
AF6	0.059	0.002	0.022
AF7	0.037	0.030	0.033

Note: * $p < 0.05$; ** $p < 0.01$.

Similarly, the p value for the correlation between AF and BEH was 0.06, indicating a weak positive association that slightly exceeded the significance threshold. Although not statistically significant, the results provide partial support for a relationship between ambient features and the behavioral responses of employees. In contrast, the p value between

AF and COG was less than 0.05, indicating a statistically significant result. However, this contradicts the hypothesized direction of the relationship. As a result, the null hypothesis is accepted, suggesting that ambient features do not exhibit a clear or consistent association with the cognitive components of employee attitudes. These findings collectively highlight the nuanced influence of ambient environmental features on different attitudinal domains. The results confirm the following hypotheses:

H7: *There is a relationship between AF and the affective domain.*

H8: *There is a relationship between AF and behavior domains.*

H9: *There is no relationship between AF and the cognitive domain.*

To assess whether employee attitudes are related to employee satisfaction, correlation coefficients were obtained between AFF, BEH, and COG, and SAT. Notably, AFF, BEH, and COG are considered the independent variables, whereas SAT is considered the dependent variable.

As shown in Table 9, the Pearson correlation coefficient between the affective component and satisfaction was 0.64, which is significantly above the threshold for statistical significance ($p = 0.05$). This finding indicates a significant relationship between affective attitudes and employee satisfaction. The two-tailed significance value further supports this association, confirming the hypothesis that affective components are significantly associated with satisfaction. Similarly, the correlation coefficient between the behavioral component and employee satisfaction was 0.35, exceeding the level of significance. The analysis revealed a statistically significant positive correlation between behavioral attitudes and employee satisfaction in the hospital setting. The cognitive component exhibited a statistically significant correlation coefficient of 0.34 with employee satisfaction, which exceeds the significance threshold. This suggests a positive, although moderate, relationship between cognitive attitudes and employee satisfaction among hospital employees.

On the basis of these results, the following hypotheses regarding the relationship between attitudinal components and employee satisfaction are supported.

H10: *There is a relationship between the affective domain and employee satisfaction.*

H11: *There is a relationship between the behavior domain and employee satisfaction.*

H12: *There is a relationship between the cognitive domain and employee satisfaction.*

The Pearson correlation coefficient between ADF and employee satisfaction was found to be 0.134, which exceeds the threshold for statistical significance ($p = 0.05$). This result supports the rejection of the null hypothesis and confirms the existence of a statistically significant relationship between architectural design features and employee satisfaction. Similarly, the correlation between interior design features (IDFs) and satisfaction was measured at 0.26, which is also above the significance level. This outcome indicates a positive association between interior design features and employee satisfaction. These findings are further validated by the two-tailed significance values presented in Table 10. The average Pearson correlation coefficient between ambient features (AFs) and employee satisfaction (SAT) was 0.37, which is above the defined level of significance ($p = 0.05$), thereby supporting the rejection of the null hypothesis. This confirms the statistically significant relationship between ambient features and employee satisfaction. These statistical results support the following hypotheses:

Table 9. Correlations between attitudes and satisfaction.

Items	Satisfaction (SAT)	
	***p* Value**	**ρSig (2—Tailed)**
AFF1	0.640	0.941
AFF2	0.439 **	0.925
AFF3	0.429 **	0.999
AFF4	0.247 **	0.568
AFF5	0.631 **	0.931
AFF6	0.148 **	0.899
BEH1	0.315	0.906
BEH2	0.834	0.974
BEH3	0.186	0.840
BEH4	0.136	0.955
BEH5	0.329	0.939
BEH6	0.374	0.902
BEH7	0.129	0.981
BEH8	0.606	0.869
COG1	0.403	1.000
COG2	0.671	0.845
COG3	0.304	0.965
COG4	0.200	0.966
COG5	0.584	0.965
COG6	0.364	0.819
COG7	0.055	0.974
COG8	0.158	0.914

Note: ** $p < 0.01$.

H13: *There is a relationship between ADF and employee satisfaction.*

H14: *There is a relationship between IDF and employee satisfaction.*

H15: *There is a relationship between AF and employee satisfaction.*

The Pearson correlation results among the key parameters, namely, the physical environment, mediating attitudinal components, and employee satisfaction, are illustrated in Figure 3. On the basis of these findings, it can be inferred that optimizing the physical environment in hospital settings has the potential to positively influence employee attitudes, which in turn influences overall satisfaction with the work environment. Such improvements may contribute to satisfaction, which results in reduced staff attrition, increased productivity, and better organizational performance.

Table 10. Correlations between the physical environment and employee satisfaction.

Items	Satisfaction (SAT)	
	***p* Value**	**ρSig (2—Tailed)**
ADF1	0.052	0.935
ADF2	0.117	0.777 *
ADF3	0.136 **	0.891
ADF4	0.160 **	0.688
ADF5	0.065	0.945
ADF6	0.274 **	0.839
IDF1	0.189 **	0.927
IDF2	0.600	0.880
IDF3	0.121 *	0.848
IDF4	0.139 **	0.983
AF1	0.640	0.925
AF2	0.102 *	0.904
AF3	0.740	0.887
AF4	0.110 *	0.972
AF5	0.830	0.960
AF6	0.139 **	1.000
AF7	0.039	0.874

Note: * $p < 0.05$; ** $p < 0.01$.

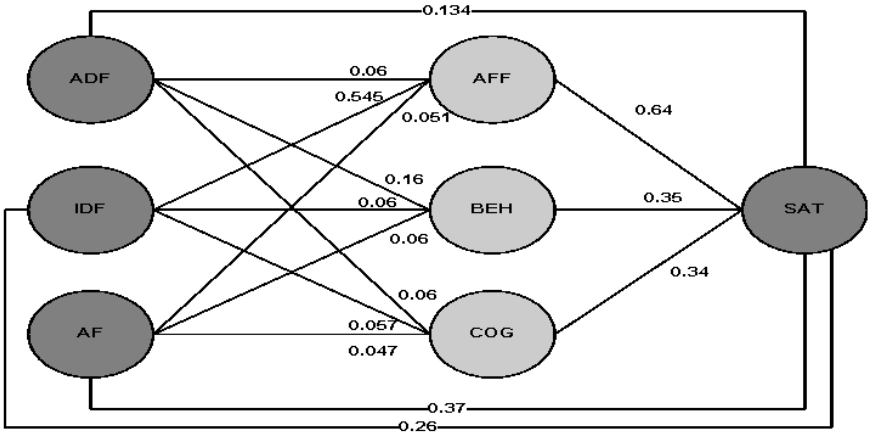

Figure 3. Pearson correlations among the different variables.

6. Conclusions

This study explored the influence of the physical environment on employee attitudes and satisfaction in private hospital settings in India. Given the high-pressure nature of healthcare workplaces, this research focused on whether environmental components, specifically architectural design features (ADFs), interior design features (IDFs), and ambient features (AFs), shape employees' attitudinal responses and contribute to satisfaction.

A mixed-methods approach was employed. The qualitative findings informed the development of the constructs and survey instruments, followed by quantitative data collection from hospital employees. The instruments showed acceptable reliability (average Cronbach's alpha = 0.72). The results emphasize the significance of the physical environment in shaping affective, behavioral, and cognitive attitudes—each influencing satisfaction and well-being.

The key findings include ADF, which was positively perceived by 87% of the respondents, particularly with respect to spatial layout and access to nature. Nearly 90% emphasized the role of spatial planning in enhancing a sense of spaciousness (M = 4.50, SD = 0.60), and 87% valued visual access to nature (M = 4.35, SD = 0.51). IDFs, such as

ergonomic furniture and color schemes, are critical to comfort and mood. Approximately 75.2% reported negative effects of inappropriate color (M = 3.76, SD = 0.82), whereas 72% reported that indoor plants relaxed (M = 3.60, SD = 0.96). Ambient features, lighting quality, and thermal comfort were also influential. Lighting sufficiency was rated important (M = 4.11, SD = 0.59), and 79.4% supported personalized control over lighting (M = 3.97, SD = 0.95), although the responses varied by job role.

Attitudinal responses revealed that affective attitudes were significantly shaped by design features, with 88.4% linking lighting, color, and layout to well-being. Cognitive responses were impacted by access to nature, comfort, and ambient control (86% agreement). Behavioral attitudes showed relatively lower concern for personalized environmental control, suggesting that functionality in patient care was prioritized over individual preferences. This study also identified a gap between general satisfaction (80.2%) and the desire for improved environmental conditions, indicating opportunities for design interventions. While all three attitudinal domains were significantly correlated to satisfaction, ambient features did not show a significant relationship with cognitive attitudes, highlighting the nuanced impact of environmental variables.

This study contributes to the literature by categorizing the physical environment into three key dimensions—architectural, interior, and ambient—and by reaffirming that staff satisfaction is central to healthcare staff satisfaction. It also emphasizes the role of staff demographics in interpreting environmental effects.

This study highlights the importance of a well-designed physical environment in hospitals for enhancing staff satisfaction. Beyond the commonly cited biophilic elements, such as plants and window views, the architecture of the hospital itself plays a crucial role in creating a restorative and supportive environment. Biophilic design, when holistically integrated into architectural features, can significantly reduce stress and improve workplace satisfaction. For instance, incorporating nature-inspired patterns, such as fractals, into the built environment, as suggested by the researchers, like Richard Taylor and Michael Mehaffy, has been shown to promote relaxation and emotional comfort [48,49]. These patterns can be reflected in materials, textures, curved forms, and organic motifs applied to the walls, floors, and ceilings [50]. Such architectural gestures enhance the sensory quality of space and contribute to a more human-centered environment. complementing

Real-world examples, including hospital projects in Finland, have demonstrated how thoughtful architectural interventions using biophilic principles can positively influence the overall atmosphere for staff and patients alike [51]. Adding to these architectural strategies, ergonomic considerations are vital in hospitals. Ergonomically furniture and adjustable workstations can be used to reduce physical strain and improve staff comfort, especially in administrative and patient care zones. Improved lighting, including adequate natural light and options for personalized control, was found to significantly influence satisfaction and should be incorporated to enhance alertness and mood. Noise reduction in sensitive areas, through the use of soundproof materials and quieter systems, can foster a more supportive work atmosphere. Access to natural elements, such as indoor plants and views of green spaces, was linked to reduced stress and greater emotional well-being, suggesting that biophilic design should be integrated. Finally, an optimized spatial layout—ensuring clear zoning, circulation, and dedicated rest areas—can alleviate stress and improve satisfaction. These findings have practical implications for healthcare designers and administrators. By identifying critical design elements, this study supports the development of strategies to improve staff well-being, satisfaction, and ultimately, the quality of care delivered. Future research should explore biophilic elements, spatial connectivity, and flexible spaces through longitudinal studies and simulation modeling. Additionally, ergonomic furniture, color schemes, and materials could be evaluated via experimental and observational methods,

while ambient factors, such as lighting, noise, and thermal comfort, may be assessed through cross-sectional studies across varying climatic contexts.

This study contributes to the theoretical understanding of workplace satisfaction by grounding the relationship between the physical environment and employee attitudes within established frameworks, such as Herzberg's Two-Factor Theory and the Job Demands-Resources (JD-R) Model. By empirically validating the influence of architectural, interior, and ambient features on employee satisfaction, this study extends these theories to the context of healthcare settings. It reinforces the notion that physical workspace conditions act as key resources that can affect employee satisfaction.

This study has several limitations. The data were collected over a short period, which limits the ability to capture long-term perceptions of the staff on the workplace environment. Although responses were obtained from both clinical and non-clinical staff, subgroup differences were not extensively analyzed, which may provide a limited understanding of role-specific experiences within the healthcare environment. Furthermore, this study is based on a specific and limited dataset, focusing solely on private hospitals within a particular region of India. As such, the generalizability of the findings to other healthcare settings, such as public hospitals or culturally diverse contexts, may be constrained. However, this narrow focus is still valuable, as private healthcare facilities represent a rapidly expanding segment of the Indian healthcare system and increasingly influence service delivery models. Despite these limitations, this study provides contributions into how the physical environment affects staff satisfaction in high-pressure clinical settings. Future research should consider a longitudinal approach, detailed subgroup analyses, and a broader sample of hospital types and geographic locations to validate and extend the applicability of the findings across diverse healthcare environments.

A comprehensive EBD approach to healthcare design can significantly enhance staff satisfaction, strengthening both workforce sustainability and patient care outcomes.

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Institutional Review Board Statement: This study was conducted in complete adherence to the ethical research guidelines and is based on a field-level survey. It qualifies for exemption from formal ethical approval as per the circular of our institute bearing the number ECR/146/Inst/KA/2013/RR-19 and DHR registration number EC/NEW/INST/2019/374, as it involves no health, psychological, or social risks to the participants, and no identifiable personal information was collected. The institutional guidelines set for the Manipal Institute of Technology, Manipal Academy of Higher Education (MAHE) by the Institutional Ethics Committee (IEC) of Kasturba Medical College and Kasturba Hospital under Manipal Academy of Higher Education states that studies that do not include any invasive involvement of human participants are exempt from obtaining ethical clearance. Therefore, in accordance with the ethical guidelines set for the research performed in the researchers' institution by IEC Manipal, ethical approval was not required for this study.

Informed Consent Statement: Prior to participating in the survey, each participant provided their informed consent. Participants were informed of this study's objectives, voluntary participation, and that they could stop at any time without incurring any costs. After being fully informed about how their responses would be used and stored, the participants granted their consent for the surveys to be administered. Anonymity and confidentiality were maintained throughout this study. No personally identifiable information that could compromise the privacy of participants was collected or disseminated.

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