



Impact of Exposure to Exterior View on the Stress Level of Nurses of Inpatient Units in the Hospital of Bangladesh

Syeda Saikha Sudah^{a*}

M. Arch Student, Department of Architecture, Bangladesh University of Engineering and Technology (BUET), Dhaka, Bangladesh
email:saikha029@gmail.com

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ABSTRACT

In recent years, healthcare design has been concerned to design the physical environment of the hospital with the mandatory functional requirements. It is considered that the physical environment of a hospital significantly affects patients, doctors, nurses and healthcare staff. Exposure to the nature view or exterior view of the outdoor space is a salient factor of the physical environment that has a restorative effect on hospital users. Nurses are an inevitable part of healthcare. Because of their mode of operation, often they work under pressure which occurs stress in them. Stress has a significant role to play as an obstruction in the workplace. The poor physical environment of the hospital causes additional stress on nurses which may result in serious occurrences for themselves and patients' outcomes. This research tries to find out the effect of exposure to exterior view on nurses as a coping strategy for workplace stress. Here, the factor of exposure to the exterior view is considered a key element of the physical environment of the hospital. A statistical analysis has been done to understand the effect of the exterior view on 50 nurses from three different hospitals located in the urban context of Dhaka. The result indicates that the exterior view has a significant effect and the view content (the nature view or urban view) is important to reduce stress in nurses in Bangladeshi hospitals.

1. Introduction

Nursing is a highly stressful job because of the complexity of the different types of tasks and duties. Stress in nurses occurs frequently for various reasons including the physical environment of the workplace. Though, the perception of stress is highly individualistic and depends on multiple variables. Studies show that stress may have negative effects on physiological, psychological, cognitive, behavioral, and social outcomes (Gatchel, Baum, & Krantz 1989; Ulrich 1991; Kiecolt-Glaser et al. 1987, 1995). High levels of stress could cause serious concern in nurses which may result in negative effect on patient outcomes. In healthcare, a stressful work environment may hamper nurses' responsibility; create conflict; communication and relationships with peers, supervisors and patients; irregular work schedule etc. (Leppanen & Olkinouora, 1987). Moreover, poor quality of the physical environment and interior design may generate additional stress for nurses in the healthcare environment. In a stressful work environment, nurses may feel anxious, confused, sad, or helpless. It may elevate their blood pressure, cause accelerated heart rate, and suppresses their immune

system.

Research shows that the natural environment can control stress in humans (Grahn, P. and Stigsdotter, U.A., 2003). Being in nature, or a glimpse of nature or outdoor scenes may help to reduce anxiety, and workload and increase pleasant feelings in nurses (Spouse, J., 2008). A comparative study between natural and urban environments shows that exposure to nature accelerates the recovery from stress in nurses (Ulrich et al., 1991). However, there is a gap in research to understand the effect of exposure to the exterior view in reducing nurses' stress levels in the context of Bangladesh. Therefore, the aim of the study is to investigate the effects of exterior view on the stress level of nurses who are directly involved in the process of patient recovery.

More specifically the objectives are-

- to understand the effect of nurses' work patterns on stress level
- to understand the effect of the physical environment of the workplace on nurse's stress level
- to understand the impact of exterior view on nurse's stress level

* Corresponding author: Syeda Saikha Sudah, M. Arch Department of Architecture, Bangladesh University of Engineering and Technology (BUET)

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2. Literature Review

The word stress defines as anxiety, pressure or torment, strain etc. The most described definition of the word stress is that “stress occurs when the demand on people exceed their capacity to meet them” (Wynne, R., Clarkin, N. & McNieve, A., 1993). The feeling of stress is a commonly encountered expression in human beings. In another word, stress is a feeling of time pressure, which creates psychological phenomena, resulting in physical reactions. (Sonia J. Lupien, 2007). Perception of stress is highly personal and occurs due to multiple reasons. Numerous studies reveal that nursing is a high-stress profession causing fatigue and detrimental implication on patient outcomes. In general, nurses often face high stress in the hospital environment (Hinshaw & Atwood, 1984) and it may affect their duties and responsibilities and even behavioral patterns (Pati, D., Harvey Jr, T. E., & Barach, P. 2008).

In healthcare settings, patient care is the dominant function and comprehensively depends on direct caregivers i.e., nurses. Recently, stress in nurses is being a highly concerning aspect to achieve the purpose, but there are few architectural studies showing the working environment effect of stress in nurses linking patient safety and well-being. The state of the work environment could result in high stressors factors and could modify critical aspects of performed duties such as alertness, irritability, attention, problem-solving and decision ability, and energy level that resulted in unwanted mistakes (Barach & Weinger, 2007). Previously, Stress in nurses was considered an operational and management issue, less related to the physical environment of the hospital (Khamisa, N., Oldenburg, B., Peltzer, K., & Ilic, D. 2015). Exposure to exterior views from healthcare settings may have an impact on nurses and it is suggested that caregivers working in windowless spaces or spaces far from windows reported lower levels of well-being compared to other staff members (Pati, D., Harvey Jr, T.E. and Barach, P., 2008).

Research on adults and children has documented four major components which improve the physical environment, the presence of nature, reduced noise and reduced crowd, proper lighting, and availability of music (Sherman, Varni, Ulrich, & Malcarne 2005). Exposure to Natural views is important to individuals who have long worked and spent the whole day in the same room (Collins, B.L., 1975). The provision of exterior view, natural light and airflow are the salient features of the physical environment, which have profound significance to increase efficiency, productivity and occupant satisfaction in healthcare settings (Liu, Y., Wang, Z., Zhang, Z., Hong, J., & Lin, B. 2018). In a study of a hospital in Turkey, where the sample size was 141 nurses displayed higher job satisfaction and less occupational stress when exposed to natural light for more than 3 hours per day (Alimoglu & Donmez, 2005). It is found in research on manufacturing companies in southern Europe that the employees' intention to quit and occupational stress were significantly lowered if they have exposure to natural views (Beale, Lawrence, Leather, & Pyrgas, 1998).

Exposure to exterior views of nature is known for its

restorative effects. According to research, nurses who are exposed to the outside nature had better perceived alertness and much less acute stress, whereas nurses who are not exposed to nature report less perceived alertness and even more stress (Pati, Harvey Jr., & Barach, 2008). Research by Dr Roger Ulrich shows that patients who had surgery and were given rooms with views of the exterior recovered more quickly and had fewer complaints about their treatment compared to patients with a window view of a brick wall (Ulrich, 1984). A study comparing nature views consisting of green vegetation with urban scenes, showed that nature views significantly improve the emotional state of a stressed individual, whereas exposure to the urban scene tended to work against emotional well-being (Parsons, R. J. 1991). Research focusing on individual choice found that nature views were preferred over views comprising architectural features, such as building structures (Lin, T.Y., Le, A.V. and Chan, Y.C., 2022).

3. Study Framework

Figure 1 represents a framework of the relationship between exterior views and stress in nurses. And, features of personal, organizational, and environmental considered variables of the study. Personal variables are age, gender, name of the working hospital, and working experiences. Organizational variables, working hours, shifts, number of attending patients, location of the nurse station, number of breaks and timing etc. The environmental variables concerning temperature, airflow, noise, lighting, etc.

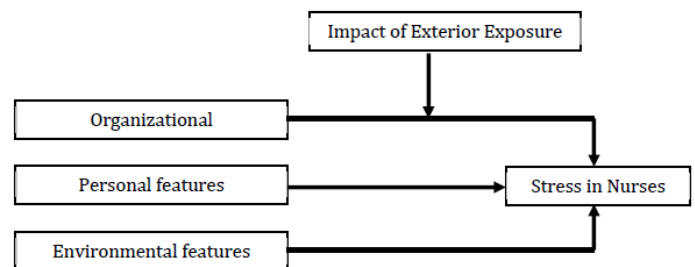


Fig 1: Research Framework

4. Methodology

The study consists of four steps. Firstly, a thorough literature search has been conducted to generate a theoretical basis on workplace stress in nurses and the impact of exterior exposure in the physical environment of the hospital. Secondly, observation of nurse activities during working hours; thirdly, a physical survey of the nursing unit to measure the window position and distance between the nurses' work station and window; and finally, a structured questionnaire survey was conducted to understand the effect of exterior view on nurses to reduce their stress. 50 consented nurses from three different hospitals participated in the questionnaire survey. The Hospitals were Dhaka Shishu Hospital, Salimullah Medical College and Mitford Hospital, and General Hospital. The third hospital is a private hospital and

architecturally and setting-wise different from the other two hospitals. These specific hospitals are selected due to their urban context and convenience for the survey. A correlational relationship between the variables in relation to exposure to the exterior has been analyzed through statistical analysis by using SPSS version 23.

5. Description of the Hospitals:

Three different hospitals were chosen to conduct the investigation in the context of Dhaka metropolitan city. One of the three hospitals is a govt. medical college hospital namely, Salimullah Medical College and Mitford Hospital is located in the old Dhaka context with different view content, including the river view, garden view and urban view from a different inpatient unit. The second one is a private general hospital, located in a dense commercial context with a view of urban roads and buildings. The third one is the autonomous pediatric hospital, Dhaka Shishu (Children) Hospital with a view of the inner courtyard and frontal parking lot. Figures 2, 3, and 4 displayed the context. 50 nurses from the above hospitals were surveyed, and all the participants were female and working in the different inpatient units. Among 50 nurses, 20 were from Dhaka Shishu Hospital, 20 nurses were from Sir Salimullah Medical College and Midfort Hospital and the other 10 were from the General Hospital, the private one. Due to the smaller capacity, area and location of the private hospital, the lesser number of nurses has been questioned.

5.1. Dhaka Shishu (children) Hospital

The hospital was established in 1972 just after independence. It was funded by the late Professor Tofayel Ahmed, the Bangladesh Government, the Save the Children Fund of the UK and the World Vision of Bangladesh. Now the hospital is 500 beds children's hospital which is the largest Children's hospital in Bangladesh.



Fig 2: Location of the Dhaka Shishu Hospital

5.1.1 Dhaka Shishu (children) Hospital Site and Context

This hospital is located in Shere -E – Bangla Nagor,

Agargaon, Dhaka the hospital zone of the Dhaka District. The hospital has a broad parking lot in the front and a court between the inpatient units. Most of the nursing unit got the opportunity to look exterior view during their duty.

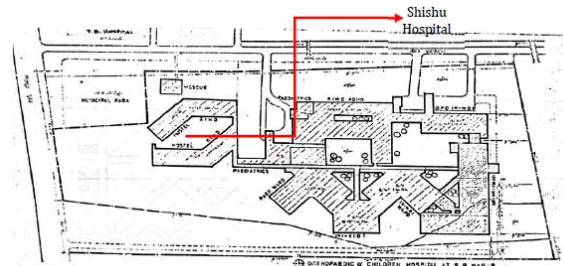


Fig 3: Dhaka Shishu Hospital plan



Fig 4: Dhaka Shishu Hospital Images

5.1.2 Dhaka Shishu (Children) Hospital Floor Plan

Nurse stations of General wards on the ground and third floor were located inside the wards and the nurse station for the cabins on the third floor was located outside at the middle position from the cabins. The general wards on the ground floor had a parking lot view and a building view from the nurse station and the general ward on the third floor had a landscape view. The nurse station for the cabin on the third floor had both parking lot views on one side and landscape on the other. Due to

high demand, all the wards accommodated more beds than their capacity and the number of nurses in lesser than required. Therefore, the workload was more on the duty nurses which create stress for them.

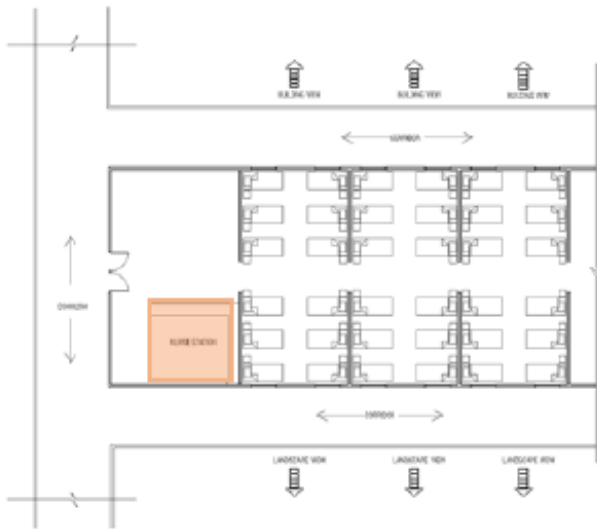


Fig 5: Third Floor Male General Ward



Fig 6: Fifth Floor General Gynae

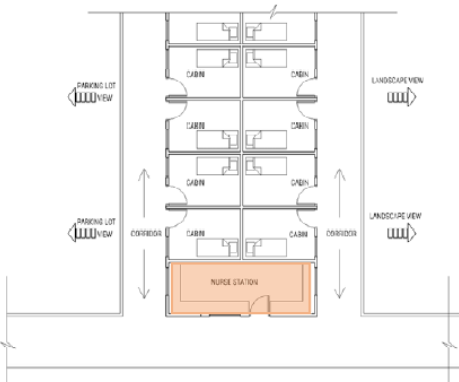


Fig 7: Fourth Floor Inpatient

5.2. Salimullah Medical College Hospital and Mitford Hospital

Sir Salimullah Medical College Mitford Hospital is a government organization. Mitford Hospital is the first Hospital in Bangladesh. This is a tertiary-level hospital. Due to the location and facilities, the hospital is serving doubled its capacity. Among 600 beds, only 240 from different departments are paying for beds. It is affiliated with the University of Dhaka.



Fig 8: Salimullah Medical Collage and Mitford Hospital Location

5.2.1 Salimullah Medical College Hospital and Mitford Hospital Site and Context

The hospital is located in the old part of the capital, Dhaka, on the Buriganga River banks. The hospital provides general as well as specialized services. It occupies an area of about 12.8 acres of land on the river bank, and the hospital complex comprises more than 14 blocks of no particular architectural significance but historically important. Most of the blocks were originally singlestoried and now have been raised four- to ten stories.

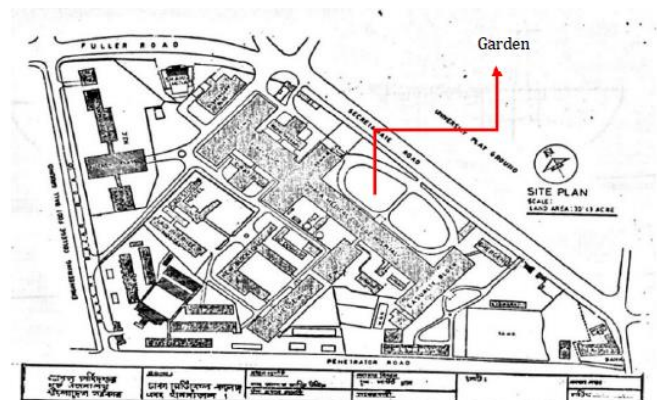


Fig 9: Salimullah Medical Collage Hospital Plan



Fig 10: Salimullah Medical Collage Hospital Image

5.2.2 Salimullah Medical College Hospital and Mitford Hospital Floor Plans

The survey was conducted in the Male General Ward, Gynae Ward and ICU of the Salimullah Medical College Hospital and Mitford Hospital. In all the cases the nurse station was positioned inside the ward and in the case of the ICU, it is a functional requirement.

The male General Ward on the third floor had a building view on one side and a landscape view on the other from the outside corridor. The gynae ward had only a building view from the ward's window. And the ICU had only a building view from the ICU windows. Moreover, the windows were always closed due to protect from infection. The stress level of ICU nurses is naturally more than ward nurses due to the mood of operations.



Fig 11: Third Floor Male General Ward



Fig 12: Fifth Floor General Gynae

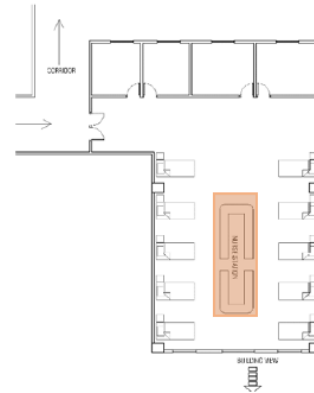


Fig 13: Third Floor ICU

5.3. General Hospital and Diagnostic Center Site and Context

General Hospital is a 100 beds private hospital, located in one of the busy commercial areas of Dhaka city. The building is an old commercial building not designed for hospitals. Therefore, the functional layout is not properly arranged. Moreover, there was no available floor plan for this hospital. There are long verandas on every floor that look out on the secondary road beside the main Mirpur Road. The busy urban view is the only view from the front verandas of this hospital.

5.3.1 General Hospital and Diagnostic Center Site and Context

The location of hospital in a busy urban setting. Therefore, the hospital has views of built-form, urban roads and vehicles. Long verandahs in front of inpatient wards allow exterior exposure.

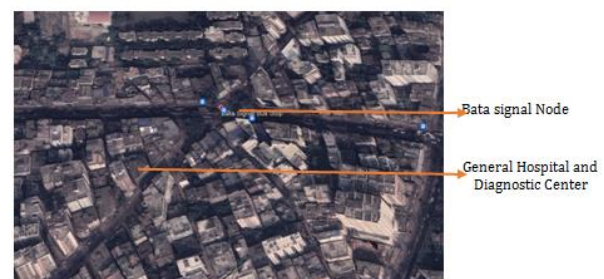


Fig 14: General Hospital and Diagnostic Center Location

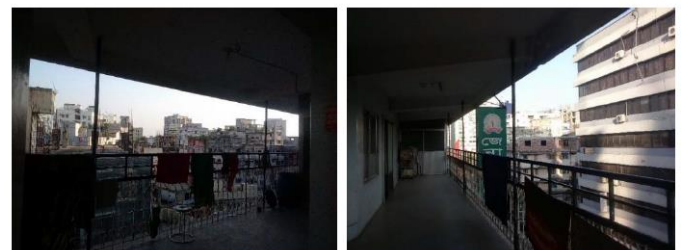


Fig 15: General Hospital images (View from Verandas)

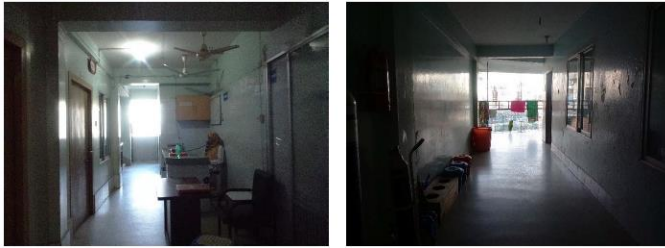


Fig 16: General Hospital and Diagnostic Center Images (Nurse Station)

5. 3.2. General Hospital and Diagnostic Center Floor plan

The Nurse Station on each floor of the general hospital and Diagnostic Center is located centrally for the overall inpatient unit. The location was outside the ward and cabin just beside the service core. The location and capacity were functionally not appropriate, moreover, the physical environment was dark and poor which affected the operation of the duty nurses. The position of the openings was far from the position of the nurse station therefore the opportunity for exposure to the exterior view was lesser than in the other two hospitals

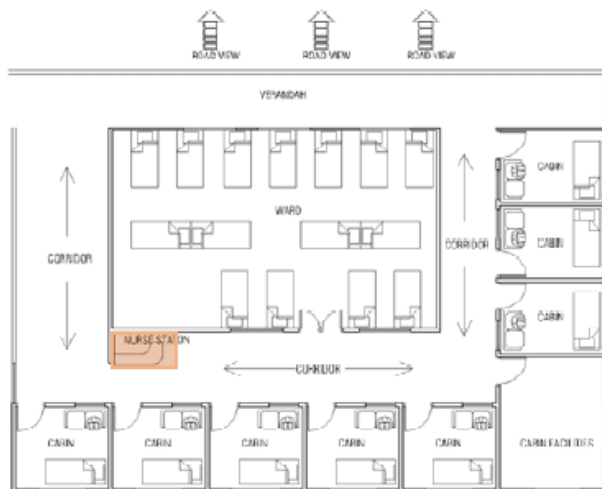


Fig17: Sixth Floor General Ward

6. Data Collection and Analysis

Data analysis was conducted using SPSS version 23 for Windows. Three main categories of data analyses were conducted by using correlational analysis.

The data collection was based on a structured questionnaire that was divided into four sections, the first section was about demographic factors, the second section was concerning organizational characteristics, the third section was concerning environmental features and the last part was relating the impact of exterior view on other dependent variables. As it is proven in the literature that stress in nurses is caused by several variables and exterior view has a certain level of impact therefore, the analysis tries to reveal the impact of exterior view on nurses' stress

levels in relation to personal factors, Organizational characteristics and physical environmental features.

In general, a strong correlation is considered when the correlation coefficient, $r = 0.7-0.9$; a moderate correlation is considered when $r = 0.4-0.6$; and a weak correlation is considered when $r = 0.1-0.3$ (Dancey & Reidy, 2004; Gibbs, 2010). However, in the case of social or behavioral studies research has shown that the correlation between two variables rarely exceeds 0.4 in absolute value (Nolan, 2007).

6.1. Impact of exterior view in relation to personal features

In research on the work patterns of 393 nurses (such as shift, overtime, and hours worked), along with errors and near misses, it was discovered that caregiver errors and lapses were connected with their work patterns (Oklahoma Nurses Association, 2005–2006). It was also discovered that working overtime made things worse, especially after a 12-hour shift. Thus, in this research, it was intended that nurses' personal factors such as age, blood pressure, working experience, working hours, and schedule will affect the experience of exterior view.

Table 1. Analysis of personal factors with the impact of exterior view.

	The exterior view is a green landscape/river	The exterior view is a parking lot /road traffic	The exterior view is refreshing to me	I notice the exterior view several times during my shift	The exterior view is stressful to me	The exterior view helps me to relax when I am stressed	I find myself concentrating while looking at the exterior view	I find myself scattered while looking at the exterior view	I feel more relaxed if I have more exposure towards the view.	I am satisfied with the overall design of the unit
Age	-.011	.011	.097	.094	-.131	.120	.166	-.300*	.183	-.074
work experience (years)	.043	-.043	.129	.033	-.153	.082	.193	-.362**	.272	-.149
Daily Working Hours	.239	.239	.168	.116	-.245	.053	.430**	-.475**	.161	-.372**
Working Schedule	-.062	.062	-.247	.179	1.000*	.343**	.079	-.083	.062	-.167
Working floor	.033	.033	.147	.098	.114	-.032	-.179	.321*	-.077	.392**
blood pressure	.067	.067	.143	.137	-.059	.123	.170	-.237	.178	.000

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

Personal factors frequently influence the experience of stress and it may result physically. The analysis of all variables taken together and the analysis shows there is a higher significant negative correlation between scattered feelings and daily working hours ($r = -.475^{**}$) explained that if the working hour increased the effect of exterior view did not give any restoration from stress. A significantly higher correlation between perception of concentration with working hours ($r = .430^{**}$) is found which illustrates the level of concentration increased if there is the opportunity for exterior view in a long shift. The question about satisfaction with the overall interior environment was asked to evaluate the perception of nurses on the working environment and the data shows that the working load counted in hours is in significant negative correlation with the satisfaction level. The work

experience shows there is a moderate level of negative correlation ($r = -.362^{**}$) with scattered feelings means scattered feelings decrease with the work experiences. Further, the satisfaction of nurses with the overall physical environment is in a significant correlation ($r = .392^{**}$) with the working floor, which means workplace satisfaction is also related to which floor nurses work. There is a moderate inverse correlation ($r = -.345^{**}$) found in the working schedule and the influence of exterior view in relaxation. Studies found that long working hours cause high-level stress in nurses. Analysis of working hours reveals a moderate level of significant inverse correlation ($r = -.372^{**}$) with the satisfaction of nurses with the overall interior environment which describes when working hours increases the satisfaction level decreases.

6.2 Impact of exterior view in relation to organizational characteristics:

The organizational characteristics section of the questionnaire included questions concerning the attended patient number, the time required to complete the round, the required time for attending to the individual patient, the number of patients' calls, options of bringing supplies, number of breaks, and number of times get out of the unit. This section of the questionnaire was conducted to reveal the effect of exterior view on organizational working pattern stressors.

Table 2. Analysis of organizational characteristics with the impact of exterior view.

	The exterior view is a green landscape/ river view	The exterior view is a parking lot /road traffic	The exterior view is refreshing to me	I notice the exterior view several times during my working hours	The exterior view is stressful for me	The exterior view helps me to relax when I am understressing	The exterior view makes me more impulsive when I am in stress.	I find myself concentrating while looking at the exterior view.	I find myself scattered while looking at the exterior view.	I feel more relaxed if I have more exposure towards the view.
Nurse station Position	-.173	.173	-.169	-.170	.054	-.128	.124	-.160	.443**	.033
How many patients do you have to attend during your working hours	.342*	-.342*	.261	.321*	-.054	.223	-.157	.290*	-.158	-.287*
Required time, you need to complete the round	-.365**	.365**	-.003	-.227	-.059	-.113	.091	-.081	-.049	.238
Required time, to attend to an individual patient	-.286*	.286*	-.126	-.199	-.023	-.084	-.006	-.105	-.147	.366**
How many times do you have to attend the patient call	.123	-.123	.051	.156	-.229	.021	-.350*	.179	-.286*	.085
How many times do you have to go for supplies	.147	-.147	.069	-.115	-.087	.110	-.062	.079	-.095	-.159
How many times do you take breaks during your working hour	.381**	-.381**	.115	.327*	-.032	.132	-.082	.121	-.127	-.206
How many times do you have to get out of the unit (for any reason)	.544**	-.544**	.248	.252	-.098	.053	-.175	.251	-.188	-.311*
do you think it is stressful to work in this environment	.287*	-.287*	.035	.077	.157	.032	-.031	.276	-.196	-.196

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

In hospitals, organizational characteristics involving patient management are often considered timeconsuming and stressful as it involves continuous observation and caregiving. From above table 2, the analysis displays a significantly higher positive correlation of ($r = .443^{**}$) in nurse station position with scattered feelings of nurses' perception. It explains the position of the nurse stations does not provide any proper or clear exterior view that can help them to cope with stress. However, it is possible

for different nurse station positions to show different relations with the effectiveness of the exterior view. There is a significant moderate positive correlation is found ($r = .381^{**}$) with view content i.e., of green landscape or river view with a number of break times and it also displays a negative significant correlation between a parking lot or building view and a number of break times. It reveals that when there is a natural view the nurses are more likely to have more breaks on the other hand when the content is the parking lot or built-form the number of breaks decreases. The analysis shows view contents have a significant correlation with the required time to complete the round, it is a positive correlation ($r = .365^{**}$) when the content is a parking lot, building or road view and a negative correlation ($r = -.365^{**}$) when the content is green landscape or river view. The correlations illustrate that nurses require more time to cover the round when the view content is man-made whereas it requires less time when it is a natural view from the workplace. A moderate level of significant correlation ($r = .366^{**}$) has been found between the required time for attending to individual patients and expected relaxation due to more exposures.

6.3 Impact of exterior view in relation to environmental features:

The physical environment itself could be an additional source of stress. This section of the questionnaire included questions concerning the comfortability of environmental features such as temperature, airflow, lighting, odor, noise level and the number of exposures in the unit. Several studies have proven that stress levels depend on environmental features broadly.

Table 3. Analysis of environmental features with the impact of exterior view.

	The exterior view is a green landscape/ river view	The exterior view is a parking lot /road traffic	The exterior view is refreshing to me	I notice the exterior view several times during my working hours	The exterior view is stressful for me	The exterior view helps me to relax when I am understressing	The exterior view makes me more impulsive when I am in stress.	I find myself concentrating while looking at the exterior view.	I find myself scattered while looking at the exterior view.	I feel more relaxed if I have more exposure towards the view.	I am satisfied with the overall interior design of the unit
The overall environment of the patient unit is staff friendly	.310*	-.310*	-.012	.166	.102	.123	.152	-.006	.085	-.434**	.737**
The ambient temperature is comfortable for working	.308*	-.308*	.081	.104	.132	.175	.031	.092	.117	-.571**	.431**
The overall lighting of the unit is satisfactory for working	-.194	.194	-.019	.044	.059	.010	.124	-.038	.049	-.101	.043
The airflow in the unit is comfortable	.407**	-.407**	.159	.282*	-.163	.281*	-.132	.173	-.089	-.480**	.473**
The noise level of the unit is at an optimum level	.108	-.108	.014	-.005	.182	.068	-.018	.177	-.170	-.108	.179
The odor of the unit is not bothering me.	.037	-.037	-.118	.109	.034	.135	.184	-.186	.222	-.252	.450**
The number of exposures (window and Door) is enough for the unit	.208	-.208	.128	.180	.131	.352*	.061	.152	-.126	-.565**	.454**

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

Table 3 reveals the relationship between environmental features and perception of the exterior view. The analysis of all cases concerning environmental features shows that a significantly high negative correlation has been found ($r = -.480^{**}$) between the airflow of the interior and the expected number of

exposures. A significantly high positive correlation ($r=.473^{**}$) exists in the perception of the comfort of airflow and satisfaction with the overall interior environment. The existing comfortability of airflow is in positive correlation with contents of view ($r=.407^{**}$) for green landscape or river view and in negative correlation ($r=-.407^{**}$) with the parking lot of road view. The correlational relationships explain that the interior of the workplace felt comfortable to nurses when there are enough windows or openings to allow airflow and when the view content is natural more comfort is ensured. The satisfaction of the overall interior environment shows a significantly higher correlation with a comfortable temperature, condition of odor and existing number of exposures ($r=.431^{**}$), ($r=.450^{**}$), and ($r=.454^{**}$) respectively. These correlational relationships display that the satisfaction of the workplace of nurses increases with the environmentally comfortable interior. The analysis shows a significant inverse correlation ($r=-.434^{**}$) of the expected perception of relaxation with the existing overall working condition of the unit in relation to the exterior view. A higher positive correlation is displayed between overall satisfaction and the number of exposures, meaning the satisfaction of nurses increased if there are more exposures in the interior. Higher significant correlations are found when the environmental condition included more openings that are in relation to the exterior view and comfort.

6.4. Impact of exterior view in relation to view content:

Views of nature always create a favorable influence. From the above analysis, it has been seen that the contents of view have a profound relationship with stressor factors and the impact of natural versus urban is well defined in the literature. Table 6 is an illustration of questions including the view noticing factor, perception towards stress and relaxation, perception of concentration and scattered feelings, the satisfaction of overall interior environment and expectation of relaxation in terms of exposure towards the view.

Table 4. Analysis of view content with the impact of exterior view.

	I notice the exterior view several times during my working hours.	The exterior view is pleasant for me.	The exterior view helps me to relax when I am under stress.	The exterior view makes me more impulsive when I am in stress.	I find myself concentrating while looking at the exterior view.	I find myself looking at the exterior view.	I feel more relaxed if I have more exposure towards the view.	I am satisfied with the overall interior design of the unit.
The exterior view is a green landscape/ river view	.287*	-.064	.099	-.115	.242	-.253	-.500**	.301*
The exterior view is a parking lot/road traffic	.287*	.064	-.099	.115	-.242	.253	.500**	-.301*

** . Correlation is significant at the 0.01 level (2-tailed).

In table 4, the analysis of all cases taken together shows the expected number of exposures in relation to relaxation displayed a significantly negative higher correlation ($R=-.500^{**}$) with the view content of green landscape or river view the condition describes when the content is green landscape or river view the existing number of exposures is enough for coping with stress.

Further, in the case of the road parking lot or building view, it is a higher positive significant correlation ($r=.500^{**}$) with the expected number of exposures towards the view meaning, there is more expectation of exposure when the view content is man-made.

7. Discussion and result

The data analysis reveals that;

- Stress on nurses caused by personal factors does not have a significant relationship with the impact of exterior view and it does not modulate with view content either its nature or built form.
- Organizational characteristic stressors data analysis reveals a significant relationship with the impact of exterior view and shows a high correlation with view content. Nurse stations with natural exterior views showed more relaxed behavioral patterns than nurse stations with parking lots or built-form views.
- Environmental features are highly significant in relation to the impact of exterior view and the variables significantly change with view content.
- From the above analysis the result reveals that the contents of the view are an important factor and it has a noticeable significance in reducing the stress level in nurses.

Currently, Studies involving the analysis of nature views and light in patient rooms get more emphasis. However, the physical environment and its effect on nurses are not always highlighted in a hospital environment. From the above findings, it can be stated that for nurses, access to an exterior view is as important as for patients which influentially modifies patients' outcomes.

8. Limitations of the Study

Despite of small sample size of the study, a range of expected outcomes confirmed by data analysis is notable, and it develops a good basis for further studies. The small sample size and differences in architectural characteristics of the three hospitals are the limitations of this study. A more robust correlational relationship could be found if the study were conducted under similar conditions.

9. Conclusion

The study reveals that exposure to the exterior can positively affect nurses. It can reduce stress levels and sharpen focus in the daily hospital environment. On a long-term basis, it might enhance job satisfaction and retention. Quality of view—referring to contents of view might provide physical and psychological restoration from stress been demonstrated to be significant in nurses' concentration on their patients and their care. A number of strategies can be followed to ensure a supportive, restorative, and stress-reducing work environment for

nurses in the hospital. By creating opportunities for exposure to the exterior view, considering nature as the main content of view, incorporating larger windows or exposure in the nurse station, considering resting places near to view, and incorporating views in the wards or patient rooms where nurse work. Therefore, it is advised to take these considerations as a strategy during the planning level to minimize the operational estimation.

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