

THE IMPACT OF VIEWING VISTAS ON PSYCHOLOGICAL WELL-BEING A STUDY ON THE SERVICE PROVIDERS IN SELECTED GOVERNMENT HOSPITALS IN THE HILL COUNTRY, SRI LANKA

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Abstract: This research explores the impact of natural vistas on the psychological well-being of healthcare professionals, in Sri Lankan government hospitals around the hill country region. Given the demanding and stressful nature of their roles, understanding the preferences of medical staff for scenic views and the effect of these views on their well-being is crucial. The study is rooted in the **Attention Restoration Theory by Kaplan and the Stress Reduction Theory by Ulrich, with a focus on specific parameters: Observer Landscape Distance (OLD), connection to the outside, visual content, and visual privacy.**

Data Collection was done in two stages: primary and secondary data collection. A mixed method approach was used in the research. The study was carried out in two hospitals in the Haputhale and Bandarawela districts. Literature suggests that the nursing staff spend most of the time in movement due to their duties; therefore, the nursing staff was selected to gather data. The research explores the relationship between exposure to natural vistas and the well-being of these professionals, considering factors such as accessibility and placement of nature views, selection of suitable vegetation and the integration of restorative elements within hospital environments. The findings reveal that borrowed natural landscape views have a restorative effect on the mind, enhancing psychological well-being among medical staff. This highlights the significance of landscape architecture in hospital design, especially in hill country regions. Emphasizing surrounding vistas and elevations, rather than solely focusing on physical infrastructure, could substantially improve the quality of life for medical service providers.

Keywords: *Viewing Landscape, Vistas, Psychological Well-being, Nursing staff, Hill Country*

1. Introduction

According to the Attention Restoration Theory, the human mind's ability to concentrate improves when it engages with nature. Interacting with nature has been found to be effective in restoring emotions, which, in turn, enhances attention restoration. In stressful environments, it is evident that nature plays a significant role in efficiently restoring attention and reducing mental and physical fatigue (Kaplan, 1995).

The effectiveness of health service coverage depends on the presence, reachability, and competency of healthcare professionals to provide high-quality care that prioritizes the needs of individuals. Hilly landscapes in terrain cities or hill towns can psychologically impact people in hospital settings. Emotional rejection of the place occurs within a variety of user groups including people who need treatment and others like the patient's family or supportive staff. It is crucial to recognize that the physical environment, including the hospital landscape, plays a significant role in supporting the overall well-being of all hospital users, including patients, staff, and visitors. This research aims to investigate the influence of aesthetics and visual appeal of landscape elements on the psychological well-being of hospital staff in government hospitals situated in the picturesque hill country of Sri Lanka. The study will concentrate on comprehending how the natural environment, including green areas, gardens, and picturesque views, might improve people's psychological well-being in healthcare settings.

1.1. RESEARCH NEED

The hospital landscape must provide mental and physical well-being for all hospital users. Government sector hospitals are more focused on the service provided. In the private sector, hospitals place a greater emphasis on the health and satisfaction of their patients. The common factor of both sectors is the mental well-being of the workforce in the hospital environment. However, it is debatable whether the hospital landscapes in Sri Lanka are properly designed or designed to promote the psychological well-being of the workforce.

Hospital staff, including doctors, nurses, and support staff, often face high levels of stress and burnout due to the demanding nature of their work. Research suggests that exposure to nature and natural environments can positively impact mental health, reducing stress levels and improving overall well-being. Understanding the effects of viewing vistas on

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hospital staff can help in creating supportive environments that enhance their well-being. The main purpose of the study is to identify how the landscape vistas affect the psychological well-being, on the service providers in selected government hospitals in hill country Sri Lanka.

Hospitals are typically built with a focus on clinical functionality and frequently lack natural elements. The use of natural vistas in hospital settings not only enhances employee well-being but also helps to build healthier and more sustainable surroundings. Research can offer evidence-based suggestions for incorporating nature into hospital designs, ensuring that future medical facilities are supportive of both patients and staff members' well-being.

Due to the demanding and high-pressure nature of their work, staff members often spend extensive hours in a stressful and overloaded working environment, which has a detrimental impact on their psychological well-being. Maintaining good mental well-being is crucial in their profession. Therefore, the hospital landscape environment needs to provide support in preserving their psychological well-being.

How do the vistas of the hospital environment impact the psychological well-being of staff?

It mainly focuses on,

1. How do hospital staff perceive the landscape views in the hospital environment?
2. How do the landscape design criteria for landscape views impact the psychological well-being of hospital staff?
3. What is the significance of promoting psychological well-being among staff?

1.2. RESEARCH OBJECTIVES

Investigating the influence of aesthetics and visual appeal of landscape elements on the psychological well-being of hospital staff in government hospitals situated in the hill country of Sri Lanka, the research aims,

- To determine whether visual satisfaction is influenced by distant views of the visual content seen in the view.
- To evaluate how visual content contained natural elements versus built elements seen in the view.
- To identify the relationship between the psychological well-being of the workforce of the health sector and their surrounding environment.

1.3. LIMITATIONS AND SCOPE OF THE STUDY

Obtaining ethical clearance from the University of Moratuwa is a crucial but time-consuming process for research involving human subjects. The process of ethical clearance involves the committee's assessment of research ideas to ensure they adhere to ethical standards and protect the rights of participants, making it a time-consuming procedure in upholding the university's commitment to ethical research.

2.The Impact of Viewing Vistas on Psychological Well-Being

2.1 THE ESSENCE OF VIEWING SCENERY

Even a simple window view has been shown to be restorative for patients (Barnes et al., 1999; Ulrich 1999;). When caught, views of the terrain provide advantages that are similar to, if not superior. Views make people more aware of the spaces at their disposal. This awareness can inspire contemplation, a sense of mystery, and quiet fascination.

There are several different ways to view nature. The first is through a window; we frequently view natural landscapes in this way unconsciously. The second is on television, in a painting, or in a book. The third is by being in the presence of nature, for example, in a forest or a normally nearby nature (Lin, 2021). There is evidence that several of the earliest major cities, including Persia, China, and Greece, held the notion that looking at plants, water, mountains, and other natural components might lessen stress and be beneficial to workers in the healthcare field (Lin, 2021).

2.1.2 Viewing from the Window

The assessment of satisfaction levels is predicated on three subjective criteria, reflecting varying degrees of individual contentment.

- **Connection to the outside**

Is the desire to have visual contact with the outer world. This describes how much temporal information (i.e., sky and weather conditions, time of the day, visual contact with other dynamic information seen outside)

- **Visual privacy**

It is the unwelcome sensation of frequently feeling like you're being watched from the outside. You might wish to take action to remedy the situation if you feel that visual privacy is inadequate (e.g., draw the blinds or move to walk from your workstation).

- **Visual content**

This relates to elements in the image, whether they are close up or far away, that you find appealing. This might be the skyline in the distance, the buildings, the trees, or the lake. (Kent, Michael Schiavon, Stefano,2020).

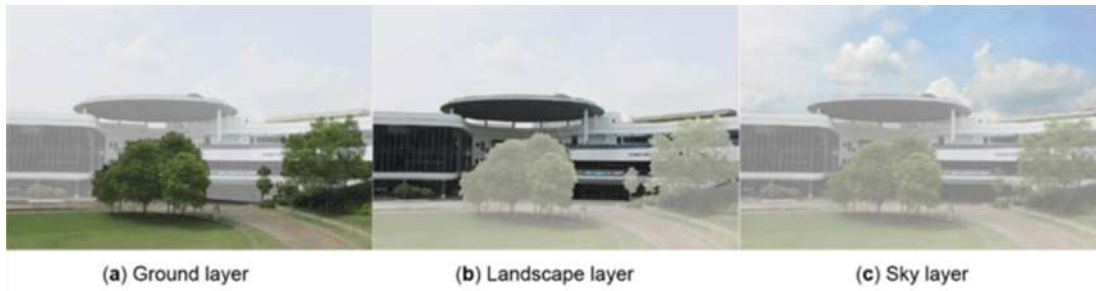


Figure 1, Horizontal stratification (Source; <https://www.researchgate.net/publication/343625639>)

2.2. NURSING STAFF AND WORK STRESS OF HOSPITAL ENVIRONMENT

Nurses are the "backbone" of every healthcare system, playing a crucial role. Because of their vital contributions, nurses are frequently referred to as such. Their work is broad and extraordinarily complex, though, and one of the major difficulties they encounter is their heavy workload. This high workload represents a significant source of work-related stress for nurses, with the potential to trigger feelings of anxiety and emotional exhaustion. It's also significant that it might directly affect patient safety and treatment.



Figure 2, Case study selection criteria (Source- compiled by the author)

2.3 THE SIGNIFICANCE OF PSYCHOLOGICAL WELL-BEING

Psychological well-being, also referred to as mental well-being, plays a crucial role in the overall satisfaction and happiness of individuals. It is influenced significantly by natural environments, as supported by numerous studies such as Kaplan (1989), Herzog (1997), and Hartig et al. (2003). These studies provide ample evidence that natural and green environments, often termed restorative environments, have a positive impact on mental well-being. Many other types of research provide enough evidence that mental well-being is affected mostly by restorative environments which are green and natural in many cases.

The measurement of psychological factors is categorized under the qualitative study; thus, it requires parameters for easy measurement. So, the conversion of the qualities into a measurable parameter is as below. Here the definition is taken as mentioned in (Abraham et al., 2010) since the study of Abraham accommodates the Landscape and the Wellbeing which is quite similar study. The qualities mentioned in the study of (Abraham et al., 2010) regarding psychological well-being are as follows.

- Attention restoration
- Stress reduction
- Evoking positive emotions

These qualities were converted into measurable parameters accommodating the meaning and the other literature on perceptions.

- Attention restoration - Feeling calm.
- Stress reduction - Feeling free, stress released.
- Evoking positive emotions - Feeling pleased

3. Theoretical background and theoretical framework

Multiple researchers have examined theories regarding psychological well-being and highlighted the importance of landscape characteristics in improving mental and physical health. Elements like vegetation, water, stones, and lighting within landscapes play a significant role in influencing psychological well-being. Notably, hospitals have been identified as

environments that can enhance psychological health through various means, including reducing stress, boosting mood, restoring attention, evoking positive emotions, and increasing satisfaction with healthcare services (Petros & Georgi, 2011). This study, which is based on the vistas of the hospital environment and the psychological well-being of Nursing staff can be substituted for the Attention Restoration Theory Stress Reduction Theory, and visual aspects.

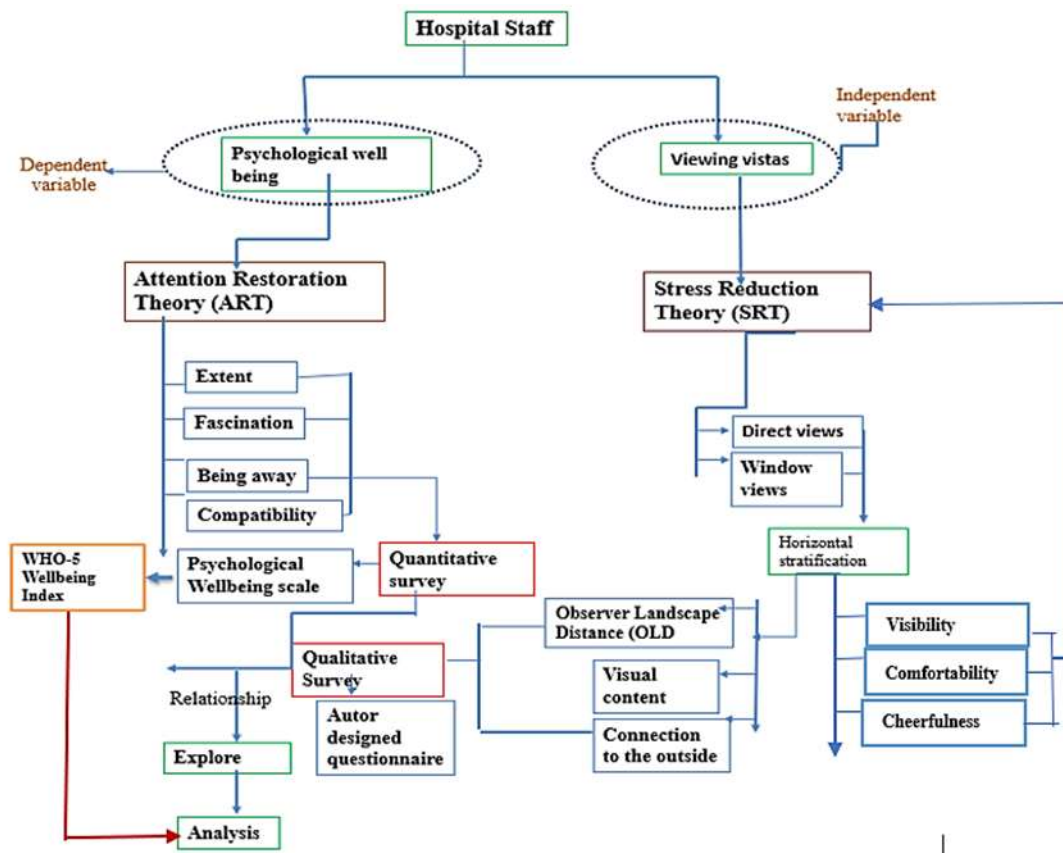


Figure 3, The theoretical framework of the study (Source- compiled by the author)

4. Research Methodology

The research methodology employed a mixed-method approach to investigate the correlation between the mental well-being of medical staff and the surrounding landscape views within a hospital environment. This study aimed to ascertain the significance of landscape vistas in enhancing psychological well-being by examining two distinct aspects: borrowed views and hospital landscape views.

Data for this research study were gathered through a two-stage process:

1. Literature Survey
2. Case Study

The selection of case study locations was a critical aspect of this research. Two key criteria were considered in the selection process:

Hilly Landscapes in Terrain Cities or Hill Towns: These specific geographical settings were chosen as they are known to have varied psychological effects on individuals within hospital settings. The presence of hills and natural terrain can influence the perception of the environment and its impact on mental well-being.

Comparison of Natural Environment Views vs. Built Environment Views: The research design involved a comparative analysis between the psychological effects of natural landscape views and those of built environments within hospitals. To facilitate this comparison effectively, specific locations were selected based on the following considerations:

4.1. FIELD STUDY DATA COLLECTION

The case study helped collect data to prove the research study. Data collection was carried out in two steps: primary and secondary data collection.

- Primary Data - For the primary data collection, field observations, and photographic analysis

- Secondary data collection - a structured questionnaire (Questionnaire-A), was used for collecting data for the identification of the impact of landscape views on medical staff psychological well-being.

Table 1: Data collecting methods

1. Field Observations	Photographs taken and maps prepared were used to analyze the findings from the observations and interviews. Layouts, maps, photographs, graphs (bar and pie), and flow charts were used for presenting the collected data and the findings from the primary data.
2. Structured Questionnaire	The questionnaire survey was conducted among the nursing staff. Along with their preference to answer the questionnaire online or physically without disturbing the staff activities, visitors, and patients, the questionnaire survey was conducted during their break time.
3. Wellbeing Scale questionnaire	WHO-5 Wellbeing Index The psychological well-being of health workers was measured using the WHO-5 Wellbeing Index which is a brief, disease-unspecific, and non-invasive self-rating scale. This questionnaire was also conducted in the same way as mentioned above.

4.2 CASE STUDY SAMPLE SELECTION

In order to achieve the best data for the study, nursing staff was selected as the sample workforce as they spend 29% of working time on movement due to their duties. Therefore, they have much more interaction with the views of the environment than any other service provider in the healthcare institution.

5. Case Studies, Data Analysis, and Presentation

5.1 CASE STUDIES

Hilly landscapes in terrain cities or hill towns can have various psychological impacts on people in hospital settings. The effectiveness of health service coverage depends on the presence, reachability, and competency of healthcare professionals to provide high-quality care that prioritizes the needs of individuals.

This research was carried out at two government district hospitals, Haputhale and Bandarawela District Hospitals.

Table 2: Location Data

Location: Sri Lanka > Uva Province > Badulla >	
Elevation of Bandarawela	Elevation of Haputhale
Longitude: 80.9981576	Longitude: 80.9525655
Latitude: 6.825878	Latitude: 6.7654136
Elevation: 1273m / 4176feet	Elevation: 1414m / 4639feet

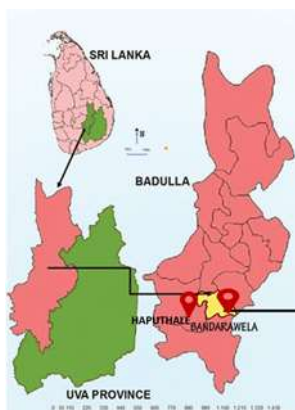


Figure 4, Location of Haputhale & Bandarawela in Sri Lanka
(Source: https://elevation.maplogs.com/poi/haputale_sri_lanka.)

5.2. WINDOW VIEWS / DIRECT VIEWS WHICH PROVIDE.

In fig 5 shows the participants' opinions about the effectiveness of viewing long-distance views on their well-being. According to the collected data, a majority of participants state that they agreed with the statement about the effectiveness of viewing long-distance views in landscapes. Only very few participants liked the short-distance view. The majority of the participants said that there was no effectiveness of short-distance views on their mental well-being.

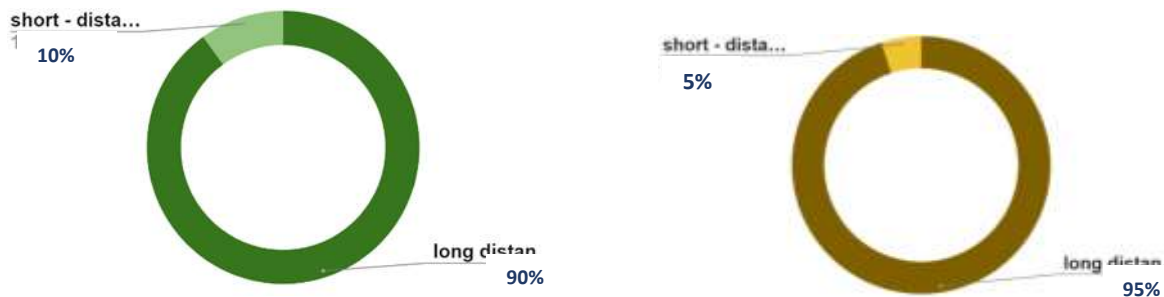


Figure 5, Reference between long-distance view vs short-distance view (Source: compiled by the author)

5.3. SATISFACTION LEVEL OF WINDOW VIEWS FROM THE WARD ENVIRONMENT

Satisfaction levels of nursing staff at Haputhale Hospital regarding the window views from their ward environment:

This indicates that the majority of nursing staff (60%) are neutral about their satisfaction level with the window views from their ward environment at Haputhale Hospital. A substantial portion (35%) is satisfied, and a smaller group (5%) is very satisfied.

A significant majority (65%) of nursing staff at Bandarawela Hospital are dissatisfied with the window views from their ward environment. A notable portion (25%) is neutral, and a smaller percentage (10%) is satisfied.

The satisfaction levels among nursing staff at Haputhale Hospital with the window views from their ward environment appear to be mixed, with the majority expressing neutrality. A notable portion does indicate satisfaction, but the absence of percentages for "Dissatisfied" and "Very dissatisfied" prevents a comprehensive assessment of the distribution.

Conversely, at Bandarawela Hospital, the data paints a clearer picture, revealing that a significant majority of nursing staff are dissatisfied with the window views in their ward environment. This points to a prevailing concern or issue among the staff regarding the existing views, suggesting a pressing need for potential improvements or modifications to address their dissatisfaction effectively.

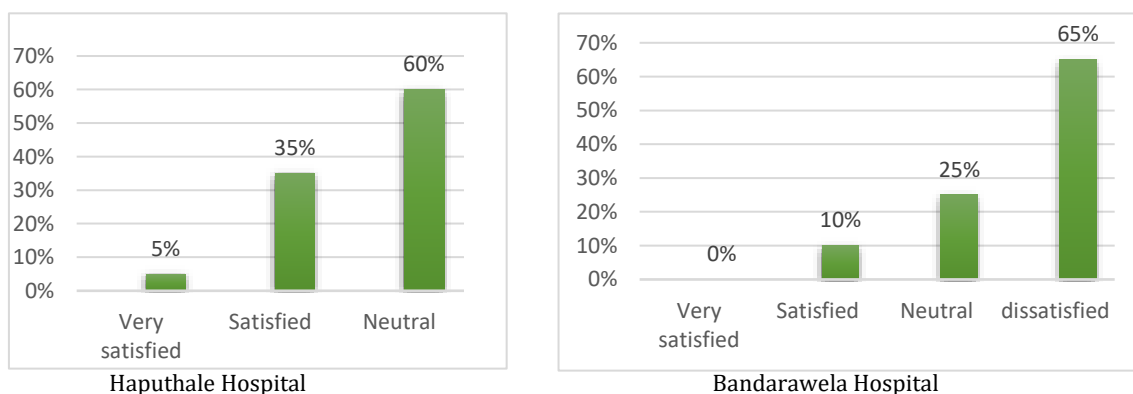


Figure 6, Satisfaction level of Window views from your ward environment (Source: compiled by the au-thor)

5.4 DIRECT IMMERSION

The collected data shows a clear tendency among nursing staff at both Haputhale Hospital and Bandarawela Hospital regarding the potential therapeutic effect of natural environments in mitigating work-related stress. At Haputhale Hospital, a significant majority aligns with this belief, with a smaller yet noteworthy portion strongly endorsing it. Meanwhile, at Bandarawela Hospital, the majority of nursing staff strongly agrees with this perspective, supported by a substantial portion in agreement. These findings collectively emphasize the widespread recognition among nursing staff of the positive influence of natural surroundings in alleviating the stress associated with their work, displaying the importance of incorporating such elements into the healthcare environment.

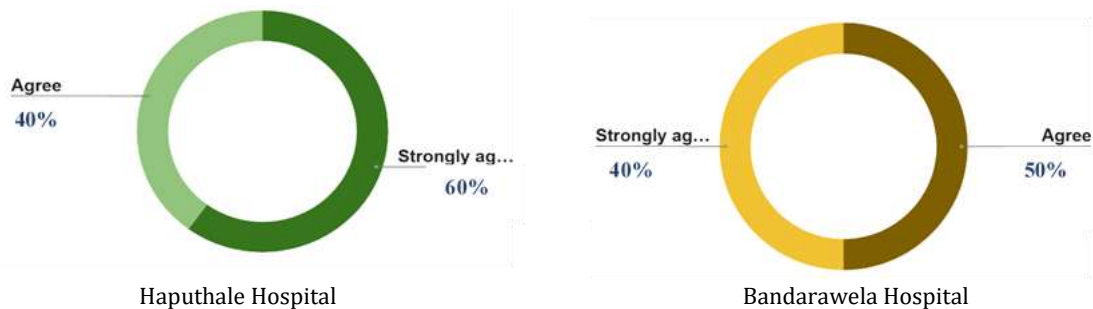


Figure 7, The work stress is recovered when viewing or engaging with the natural environment within the hospital
(Source: compiled by the author)

5.5 THE TEMPORAL INFORMATION FROM VIEWING THE OUTSIDE VIEWS FROM THE WINDOW

The nursing staff at Haputhale Hospital indicated the following preferences for perceiving temporal information from viewing outside views through windows: 50% mentioned sky conditions, 80% noted the time of the day, and 75% observed weather conditions.

The nursing staff at Bandarawela Hospital indicated the following preferences for perceiving temporal information from viewing outside views through windows: 95% noted the time of the day, and 25% observed weather conditions.

The differences in preferences for temporal information and outside views among nursing staff at Bandarawela Hospital and Haputhale Hospital show the importance of tailoring hospital environments to meet the specific needs and preferences of staff members. Understanding that the majority of nursing staff at Bandarawela Hospital place a high value on being able to ascertain the time of day through window views can inform hospital design decisions, ensuring that temporal cues are easily accessible.

Meanwhile, at Haputhale Hospital, the strong preference for natural elements in outside views highlights the potential positive impact of incorporating greenery and mountain vistas into the hospital's design. Such natural vistas may contribute to the psychological well-being and job satisfaction of nursing staff, creating a more conducive work environment.

In both cases, the study emphasizes the significance of considering staff preferences when designing healthcare facilities to enhance the overall experience and well-being of hospital employees.

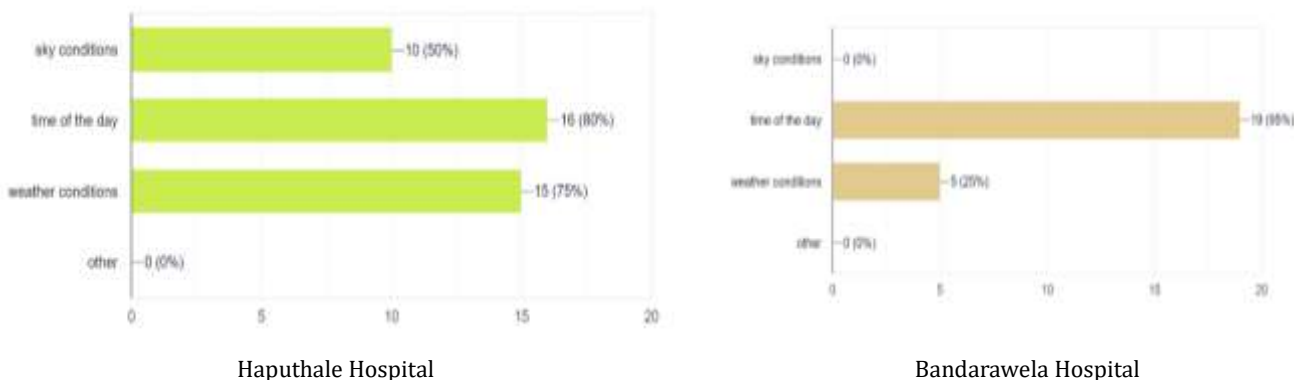
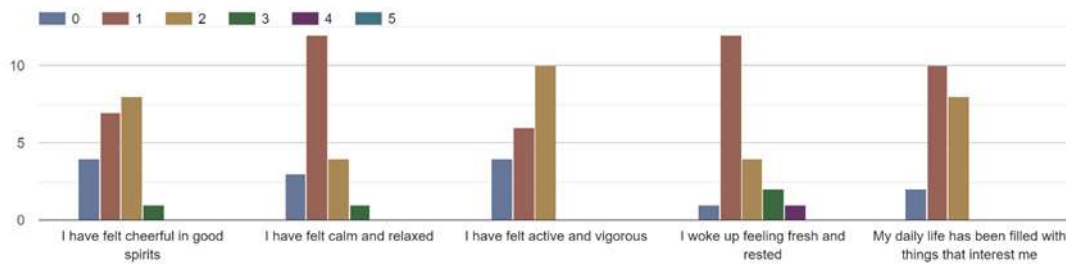


Figure 8, The temporal information is from viewing the outside views from the window
(Source: compiled by the author)

5.6 IMPACT OF WELL-BEING ASSESSMENT





Bandarawela Hospital

View 1

view 2

view 3

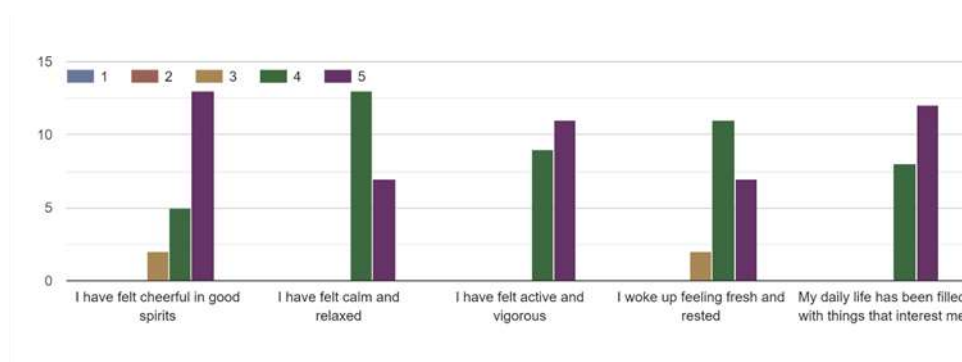


Figure 9, Impact of selected views on Haputale and Bandarawela Hospital premises

Cheerfulness in Good Spirits: The scores for cheerfulness consistently show high levels, with all staff members rating themselves at 4 or 5. This suggests that the nursing staff at Haputale Hospital felt cheerful and in good spirits during the past two weeks.

Calm and Relaxed: Similar to cheerfulness, the scores for calmness and relaxation are consistently high, with all staff members rating themselves at 4 or 5. This indicates that the staff felt calm and relaxed during this period.

Active and Vigorous: The ratings for feeling active and vigorous are consistently high, with all staff members rating themselves at 4 or 5. This suggests that the staff felt energetic and active during the past two weeks.

Waking Up Feeling Fresh and Rested: The ratings for feeling fresh and rested upon waking up are high, with all staff members rating themselves at 4 or 5. This implies that the staff generally experienced good quality sleep and felt refreshed in the mornings.

Daily Life Interest: The ratings for daily life being filled with interesting things are consistently high, with all staff members rating this aspect at 4 or 5. This indicates that the nursing staff found their daily life to be engaging and interesting.

Overall, the data suggests that the nursing staff at Haputale Hospital reported very high levels of well-being and positive emotions over the past two weeks. They consistently felt cheerful, calm, active, well-rested, and interested in their daily life. This is encouraging for the staff's psychological well-being during this time. However, as with any data, it's important to continue monitoring and supporting their mental health to ensure it remains positive in the long term.

Cheerful in Good Spirits: The scores for feeling cheerful in good spirits vary between 0 and 3, with an average score of approximately 12. This indicates some variability in the staff's mood over the past two weeks, with some individuals feeling more cheerful than others.

Calm and Relaxed: The scores for feeling calm and relaxed range from 0 to 3, with an average score of approximately 11. Similar to cheerfulness, there is some variability in the level of calmness and relaxation among the staff.

Active and Vigorous: The scores for feeling active and vigorous vary from 0 to 2, with an average score of approximately 12. This suggests that while there is some level of physical activity and Vigor reported, it has not been consistently high among all staff members.

Waking Up Feeling Fresh and Rested: The scores for waking up feeling fresh and rested range from 1 to 4, with an average score of approximately 16. This indicates that the quality of sleep and how refreshed staff feel in the mornings have been somewhat variable.

Daily Life Interest: The scores for daily life being filled with things that interest varies between 1 and 2, with an average score of approximately 14. This suggests that there is a moderate level of interest in daily life activities, but it also shows some variability.

Overall, the data suggests that there is some variability in the psychological well-being of the nursing staff at Bandarawela Hospital over the past two weeks. It's important to consider that factors such as workload, personal circumstances, and stress may contribute to these variations.

5.7 OVERALL SUMMARY OF WELL-BEING ASSESSMENT

- When we contemplate the impact of viewing natural vistas versus built views on the psychological well-being of staff members, an intriguing pattern emerges. The data reveals that nursing staff members at Haputhale Hospital, who are exposed to natural vistas, tend to experience a higher level of psychological well-being compared to the staff at Bandarawela Hospital.
- Natural vistas, with their lush greenery, picturesque mountains, and soothing elements of nature, appear to contribute positively to the psychological state of the Haputhale staff. The substantial preference for natural views over built views suggests that the connection to nature nurtures a sense of tranquillity, allowing their minds to rejuvenate and escape from the strains of their work.
- On the other hand, the staff at Bandarawela Hospital, who encounter built views, might not benefit from the same level of natural engagement. The clear difference in what each hospital prefers suggests that the surroundings might affect mental health. The lack of greenery and natural elements in built views could be contributing to a comparatively lower sense of psychological well-being among Bandarawela staff members.

6. Conclusion

The hospital with more favourable natural views not only reflects a distinct preference for such landscapes over urban elements but also correlates with significantly higher levels of well-being among its staff. Haputhale Hospital consistently outperforms Bandarawela Hospital in terms of views, signalling a preference for natural vistas and a visually engaging, restful environment fostered by longer Observer Landscape Distances (OLDs). These prolonged OLDs often found in natural settings align with the well-being benefits linked to nature immersion and stress reduction. The well-being assessment further solidifies this connection, with participants from Haputhale Hospital achieving higher average well-being percentages, while Bandarawela Hospital recorded considerably lower average well-being percentages. This robust correlation underscores the pivotal role of natural vistas in enhancing the psychological well-being of individuals, emphasizing the importance of creating environments that promote a connection with nature in healthcare settings. Through this study, the significance of surrounding vistas, and elevations in improving the psychological well-being of medical staff, has been acknowledged as a crucial factor, rather than solely concentrating on the physical design of the space. These research findings would be useful to improve the quality of service of the health service providers in the healthcare sector. It can be helpful to develop sustainable service from the workforce towards the patients.

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